

# AVX Wire-to-Board Connectors



Version 10.10

**AVX**  
A KYOCERA GROUP COMPANY

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# SSL - Discrete Wire IDC



## Series 9175



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
- Voltage Rating: 125 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

<b>00</b>	<b>9175</b>	<b>00X</b>									
Prefix	Series	Number of Ways									
		<table border="1"> <thead> <tr> <th>Code</th> <th>No of Ways</th> <th>Details</th> </tr> </thead> <tbody> <tr> <td>002</td> <td>2</td> <td>Page 3</td> </tr> <tr> <td>003</td> <td>3</td> <td>Page 4</td> </tr> </tbody> </table>	Code	No of Ways	Details	002	2	Page 3	003	3	Page 4
Code	No of Ways	Details									
002	2	Page 3									
003	3	Page 4									

<b>001</b>									
Wire Gauge Size									
<table border="1"> <thead> <tr> <th>Code</th> <th>Accepted Wire Gauge</th> <th>Wire Insulation</th> </tr> </thead> <tbody> <tr> <td>001</td> <td>28 Gauge Solid or Stranded</td> <td>Min Ø 0.70</td> </tr> <tr> <td></td> <td>26 Gauge Solid or Stranded</td> <td>Max Ø 1.00</td> </tr> </tbody> </table>	Code	Accepted Wire Gauge	Wire Insulation	001	28 Gauge Solid or Stranded	Min Ø 0.70		26 Gauge Solid or Stranded	Max Ø 1.00
Code	Accepted Wire Gauge	Wire Insulation							
001	28 Gauge Solid or Stranded	Min Ø 0.70							
	26 Gauge Solid or Stranded	Max Ø 1.00							

<b>X</b>									
Insulator Color									
<table border="1"> <thead> <tr> <th>Code</th> <th>Color</th> <th>Application</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>Black</td> <td>Industrial</td> </tr> <tr> <td>1</td> <td>White</td> <td>Lighting</td> </tr> </tbody> </table>	Code	Color	Application	0	Black	Industrial	1	White	Lighting
Code	Color	Application							
0	Black	Industrial							
1	White	Lighting							

<b>06</b>
Plating Option
06 = Pure Tin all over

Certification: UL File #E320991

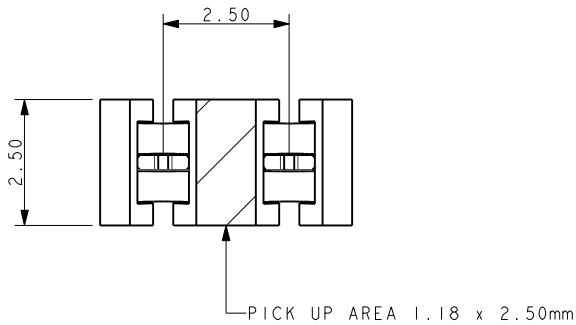


# SSL - Discrete Wire IDC



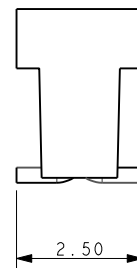
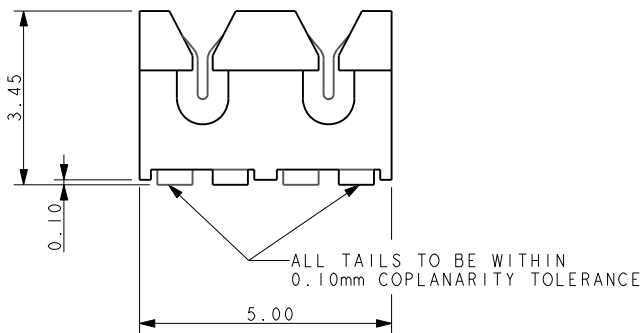
## Series 9175

### 26-28 AWG 2 WAY IDC CONNECTOR



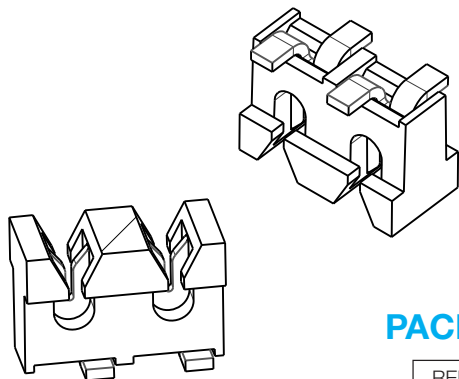
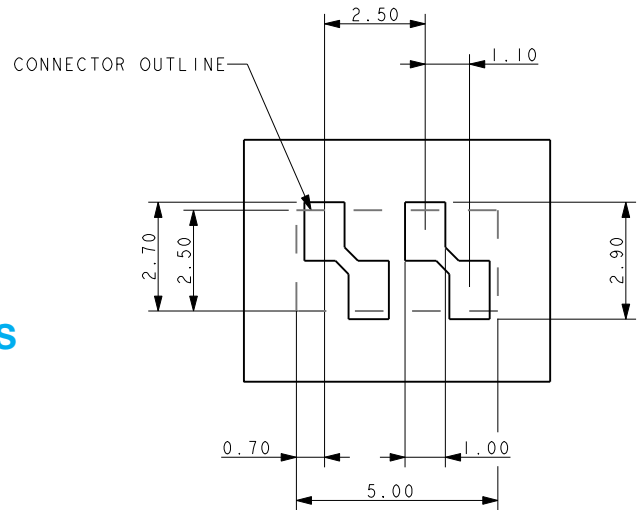
**NOTES:**

1. CONNECTOR FOR IDC WIRE TO BOARD CONNECTION.
2. CONTACT MATERIAL: PHOSPHORE BRONZE.  
INSULATION MATERIAL: HIGH TEMPERATURE NYLON 46.  
COLOR REFER TO PAGE 2.
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 REFER TO ELCO SPEC 201-01-100.



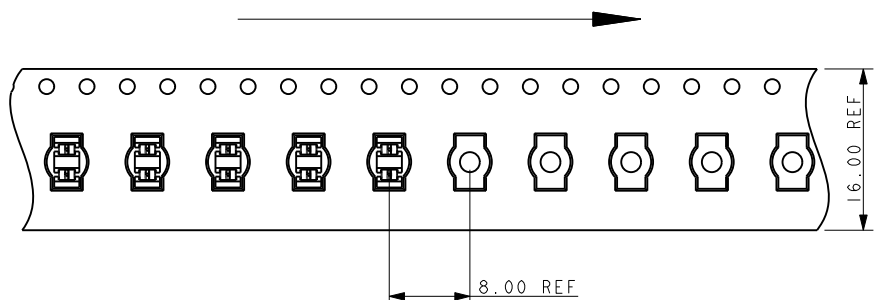
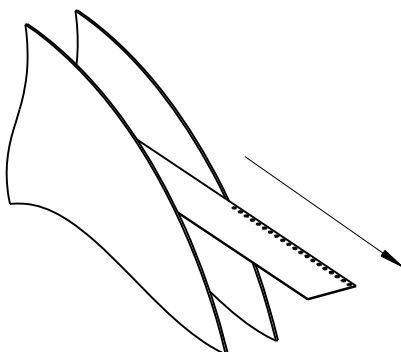
### SMT PCB LAYOUT

PURE TIN PADS



### PACKING DETAILS

REEL QTY	2000
LEADER	500MM
TRAILER	500MM
REEL / BOX	7
PACK QTY	14000

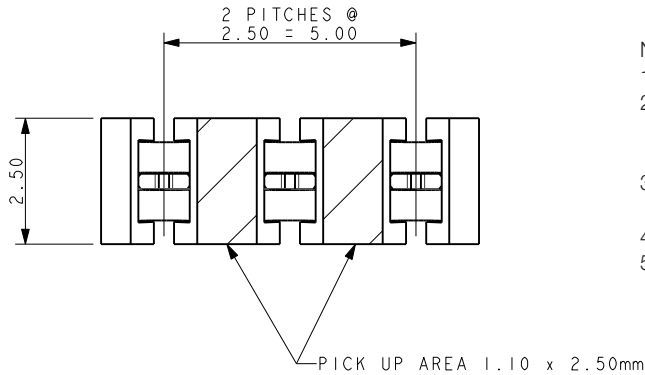


# SSL - Discrete Wire IDC



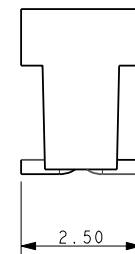
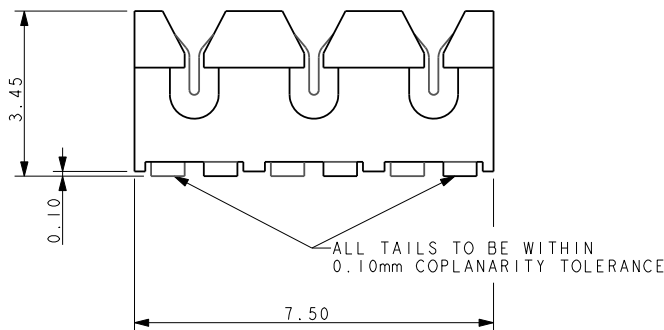
## Series 9175

### 26-28 AWG 3 WAY IDC CONNECTOR



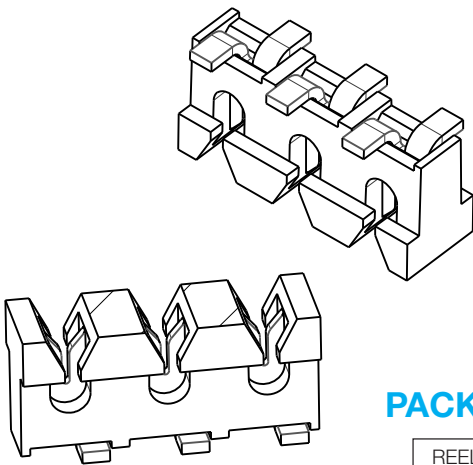
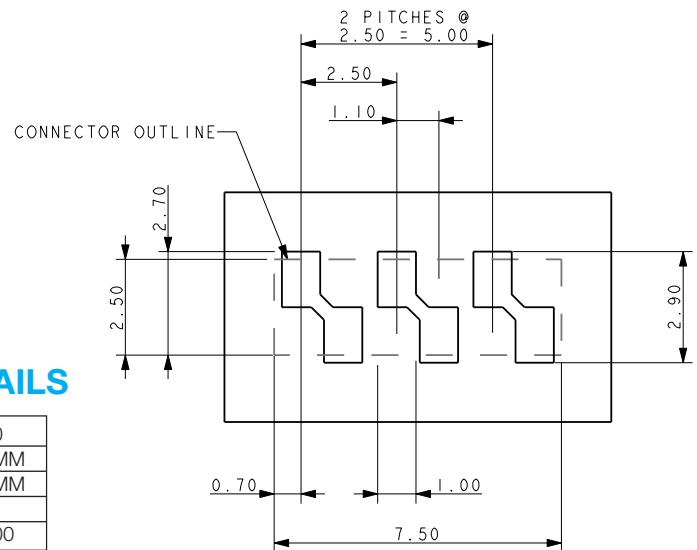
**NOTES:**

1. CONNECTOR FOR IDC WIRE TO BOARD CONNECTION.
2. CONTACT MATERIAL: PHOSPHORE BRONZE.  
INSULATION MATERIAL: HIGH TEMPERATURE NYLON 46.  
COLOR REFER TO PAGE 2.
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 REFER TO ELCO SPEC 201-01-100.



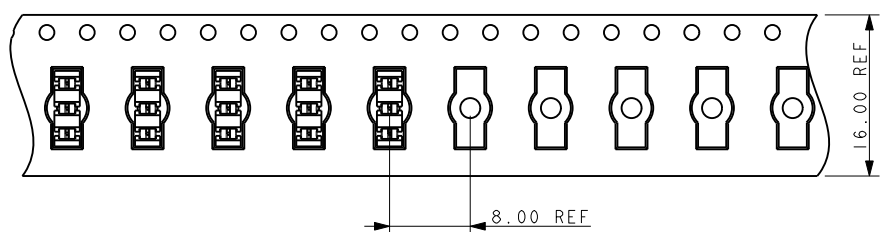
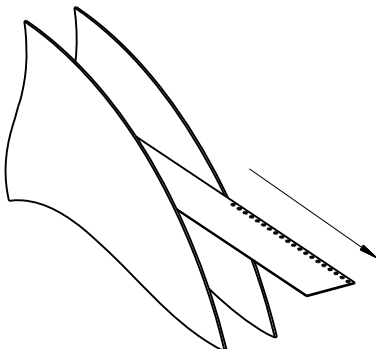
### SMT PCB LAYOUT

PURE TIN PADS



### PACKING DETAILS

REEL QTY	2000
LEADER	500MM
TRAILER	500MM
REEL / BOX	7
PACK QTY	14000

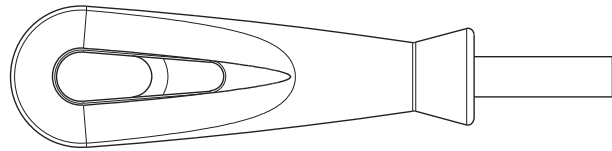


# SSL - Discrete Wire IDC



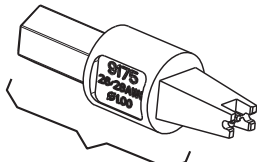
Series 9175

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



### UNIVERSAL HANDLE

Details	Tool Part Number
6.35 A/F HEX BIT HOLDER	06 7000 7730 01 000



ALL METAL

### HIGH PRODUCTION Metal

Max Insulation Dia	Tool Part Number
∅ 1.00	06 9175 7017 01 000

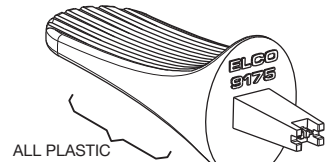


METAL SHANK

PLASTIC

### MED PRODUCTION Metal/Plastic

Max Insulation Dia	Tool Part Number
∅ 1.00	06 9175 7016 01 000



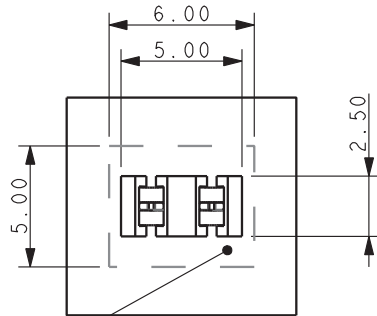
ALL PLASTIC

### LOW PRODUCTION Plastic

Max Insulation Dia	Tool Part Number
∅ 1.00	06 9175 7004 01 000

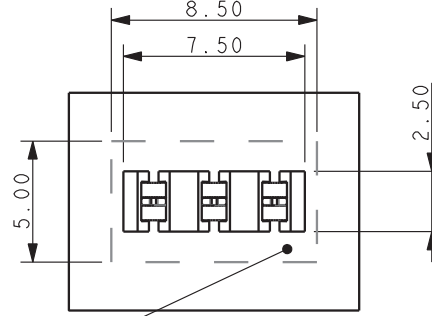
## CLEARANCE AREA ON PCB FOR HAND TOOLING

### 2 WAY



AREA TO BE KEPT CLEAR FOR TOOLING

### 3 WAY



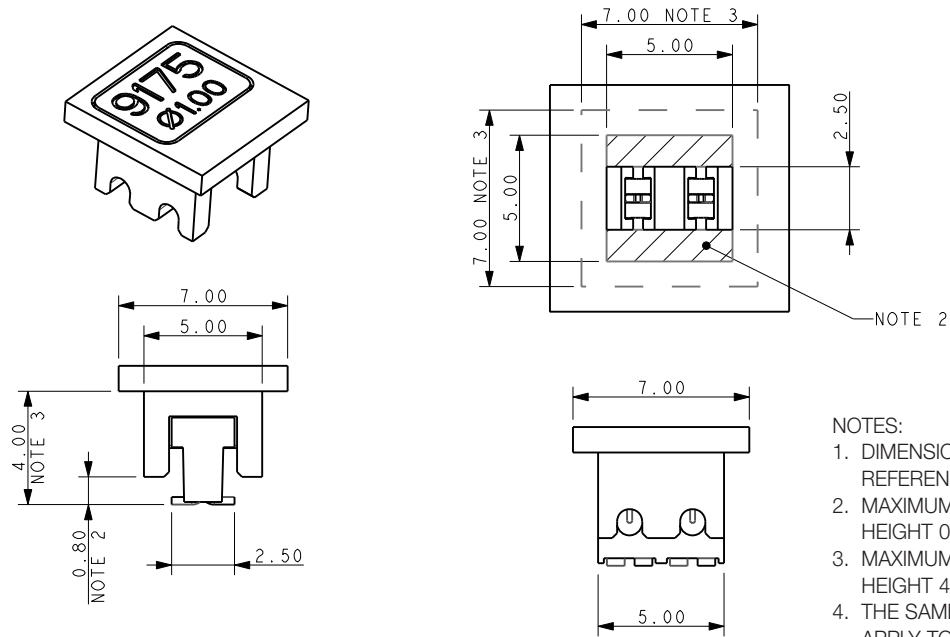
AREA TO BE KEPT CLEAR FOR TOOLING

### 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



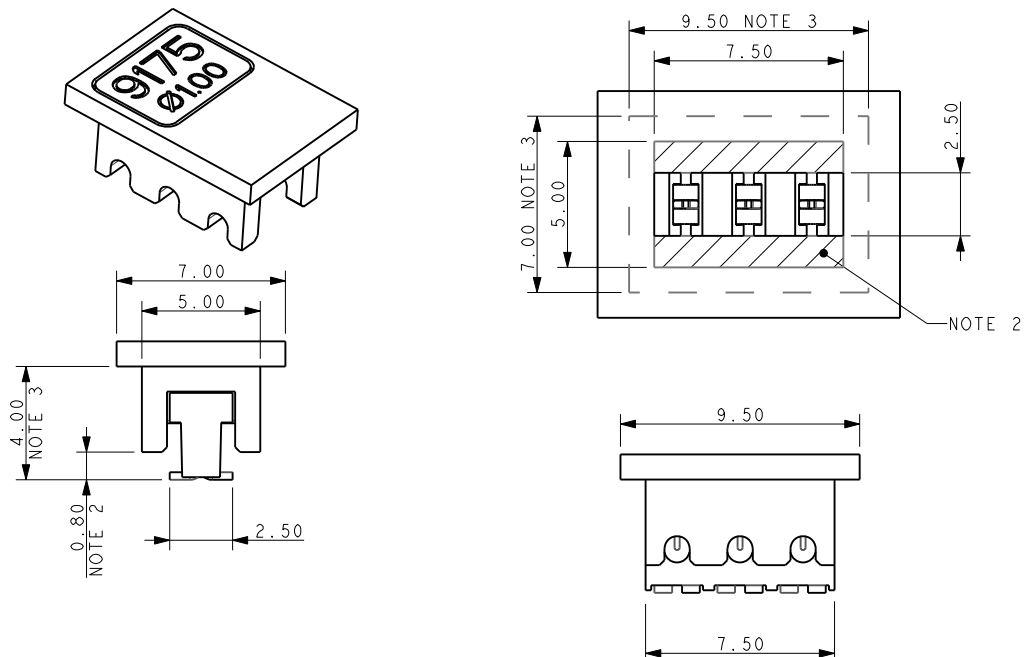
NOTES:

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.

#### 3 WAY TOOL

TOOL NUMBER 06-9175-7017-01-003

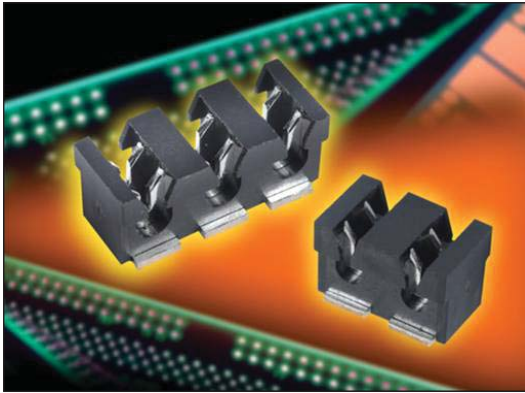
SKETCH SHOWS PCB RESTRICTED AREAS FOR ASSEMBLY TOOLING



# SSL - Discrete Wire IDC



## Series 9176



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: 250 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**  
Prefix

**9176**  
Series

**00X**  
Number of Ways

Code	No of Ways	Details
001	1	Page 8
002	2	Page 9
003	3	Page 10

**00X**  
Wire Gauge Size

Code	Accepted Wire Gauge	Wire Insulation	Cap Code Pages 11-12
001	18 Gauge Stranded	Ø 1.6-2.1	021
011	20 Gauge Stranded	Ø 1.6-2.1	021
022	22 Gauge Stranded	Ø 1.1-1.6	016
032	24 Gauge Stranded	Ø 1.1-1.6	016

**X**  
Insulator Color

Code	Color	Application
0	Black	Industrial
1	White	Lighting

**06**  
Plating Option  
06 = Pure Tin all over

Certification: UL File #E320991



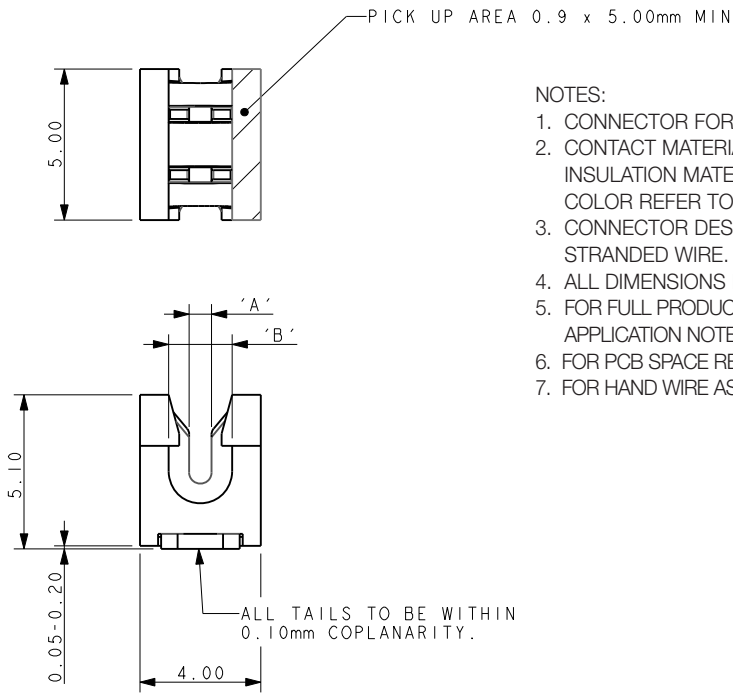


# SSL - Discrete Wire IDC



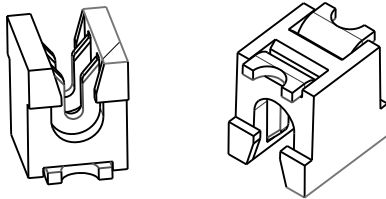
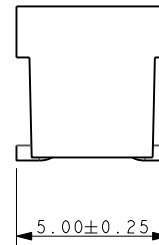
## Series 9176

### 18-24 AWG 1 WAY IDC CONNECTOR



**NOTES:**

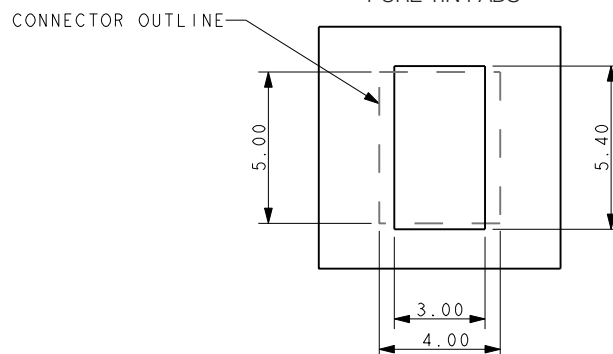
- CONNECTOR FOR IDC WIRE TO BOARD CONNECTION.
- CONTACT MATERIAL: PHOSPHORE BRONZE.  
INSULATION MATERIAL: HIGH TEMPERATURE NYLON 46.  
COLOR REFER TO PAGE 7.
- CONNECTOR DESIGNED TO ACCEPT BETWEEN 24 AND 18 GAUGE STRANDED WIRE.
- ALL DIMENSIONS FOR REFERENCE UNLESS OTHERWISE STATED.
- FOR FULL PRODUCT SPECIFICATION REFER TO ELCO SPEC 201-01-106 AND APPLICATION NOTES 201-01-124.
- FOR PCB SPACE RESTRICTED BY WIRE ASSEMBLY TOOLING REFER TO PAGE 11.
- FOR HAND WIRE ASSEMBLY TOOLING REFER TO PAGE 13.



Code	Accepted Wire Gauge	A	Wire Insulation	B
001	18 Gauge Stranded	0.72	Ø 1.6-2.1	2.1
011	20 Gauge Stranded	0.60	Ø 1.6-2.1	2.1
022	22 Gauge Stranded	0.47	Ø 1.1-1.6	1.6
032	24 Gauge Stranded	0.37	Ø 1.1-1.6	1.6

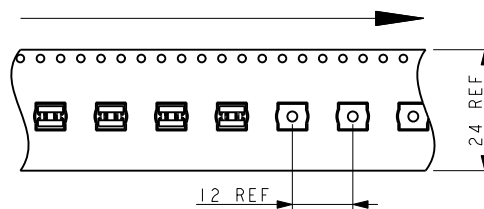
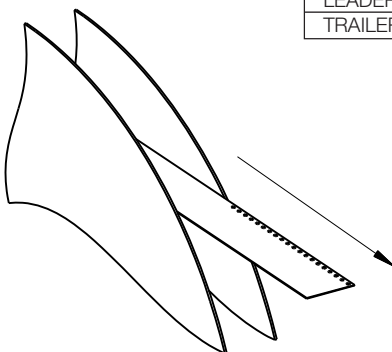
### SMT PCB LAYOUT

PURE TIN PADS



### PACKING DETAILS

REEL QTY	1000
LEADER	480MM
TRAILER	120MM

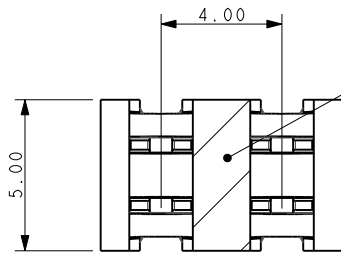


# SSL - Discrete Wire IDC



## Series 9176

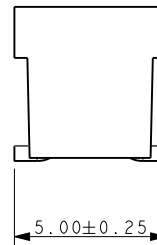
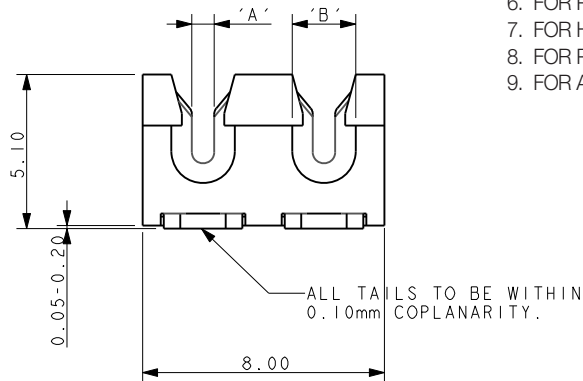
### 18-24 AWG 2 WAY IDC CONNECTOR



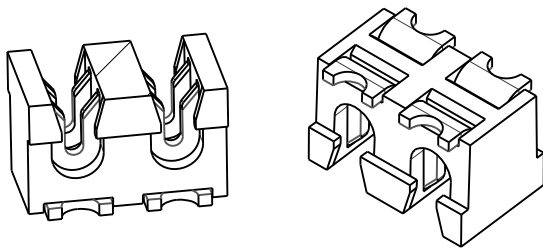
PICK UP AREA 1.9 x 5.00mm MIN

**NOTES:**

1. CONNECTOR FOR IDC WIRE TO BOARD CONNECTION.
2. CONTACT MATERIAL: PHOSPHORE BRONZE.  
INSULATION MATERIAL: HIGH TEMPERATURE NYLON 46.  
COLOR REFER TO PAGE 7.
3. CONNECTOR DESIGNED TO ACCEPT BETWEEN 24 AND 18 GAUGE STRANDED WIRE.
4. ALL DIMENSIONS FOR REFERENCE UNLESS OTHERWISE STATED.
5. FOR FULL PRODUCT SPECIFICATION REFER TO ELCO SPEC 201-01-106 AND APPLICATION NOTES 201-01-124.
6. FOR PCB SPACE RESTRICTED BY WIRE ASSEMBLY TOOLING REFER TO PAGE 11.
7. FOR HAND WIRE ASSEMBLY TOOLING REFER TO PAGE 13
8. FOR PRESS WIRE ASSEMBLY TOOLING REFER TO PAGE 14.
9. FOR ACCESSORY CAPS REFER TO PAGES 11 AND 12.

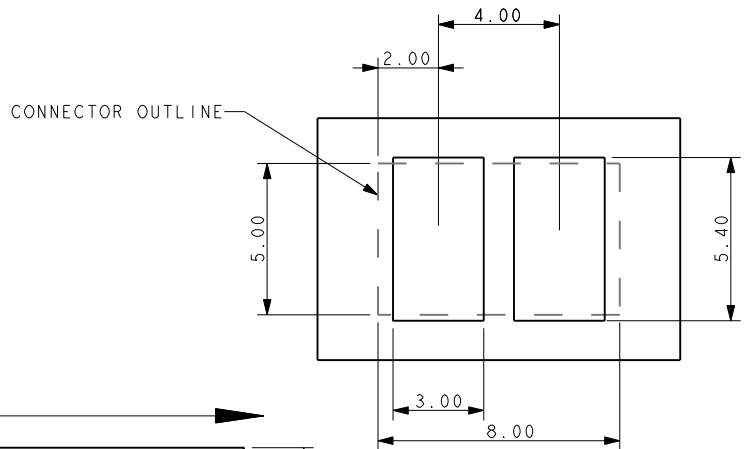


Code	Accepted Wire Gauge	A	Wire Insulation	B
001	18 Gauge Stranded	0.72	Ø 1.6-2.1	2.1
011	20 Gauge Stranded	0.60	Ø 1.6-2.1	2.1
022	22 Gauge Stranded	0.47	Ø 1.1-1.6	1.6
032	24 Gauge Stranded	0.37	Ø 1.1-1.6	1.6



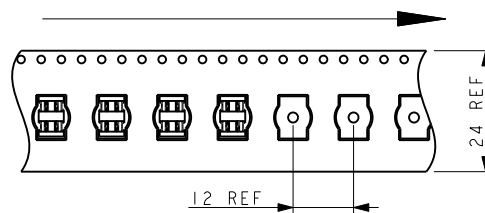
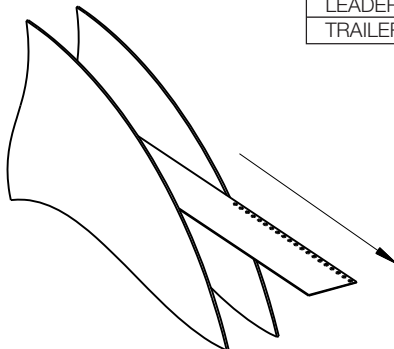
### SMT PCB LAYOUT

PURE TIN PADS



### PACKING DETAILS

REEL QTY	1000
LEADER	480MM
TRAILER	120MM

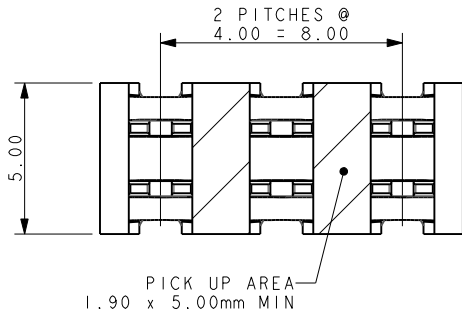


# SSL - Discrete Wire IDC



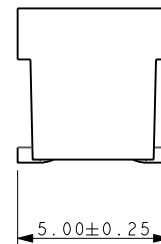
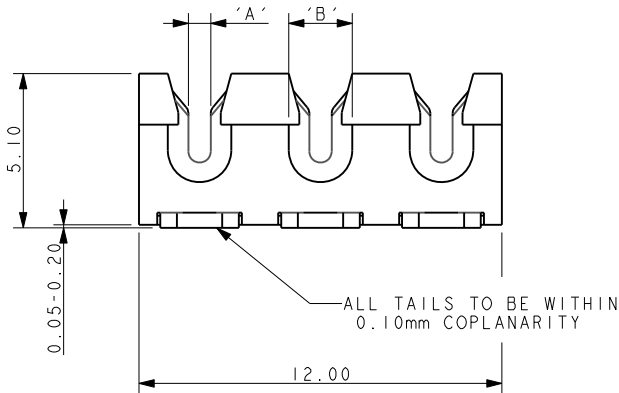
## Series 9176

### 18-24 AWG 3 WAY IDC CONNECTOR

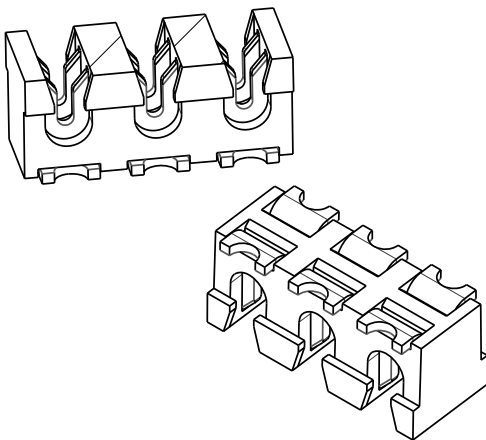


**NOTES:**

1. CONNECTOR FOR IDC WIRE TO BOARD CONNECTION.
2. CONTACT MATERIAL: PHOSPHORE BRONZE.  
INSULATION MATERIAL: HIGH TEMPERATURE NYLON 46.  
COLOR REFER TO PAGE 7.
3. CONNECTOR DESIGNED TO ACCEPT BETWEEN 24 AND 18 GAUGE STRANDED WIRE.
4. ALL DIMENSIONS FOR REFERENCE UNLESS OTHERWISE STATED.
5. FOR FULL PRODUCT SPECIFICATION REFER TO ELCO SPEC 201-01-106 AND APPLICATION NOTES 201-01-124.
6. FOR PCB SPACE RESTRICTED BY WIRE ASSEMBLY TOOLING REFER TO PAGE 11.
7. FOR HAND WIRE ASSEMBLY TOOLING REFER TO PAGE 13
8. FOR PRESS WIRE ASSEMBLY TOOLING REFER TO PAGE 14.
9. FOR ACCESSORY CAPS REFER TO PAGES 11 AND 12.

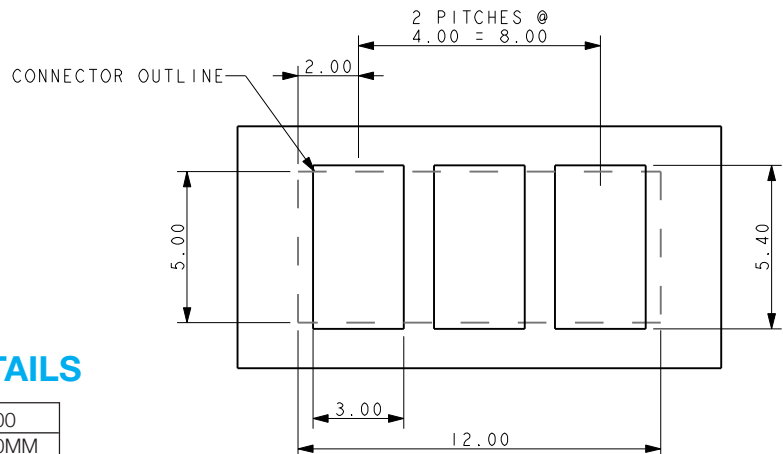


Code	Accepted Wire Gauge	A	Wire Insulation	B
001	18 Gauge Stranded	0.72	Ø 1.6-2.1	2.1
011	20 Gauge Stranded	0.60	Ø 1.6-2.1	2.1
022	22 Gauge Stranded	0.47	Ø 1.1-1.6	1.6
032	24 Gauge Stranded	0.37	Ø 1.1-1.6	1.6



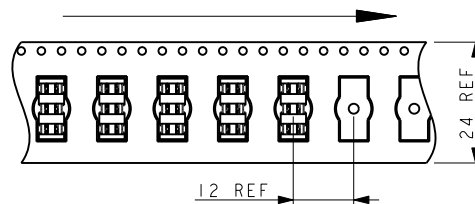
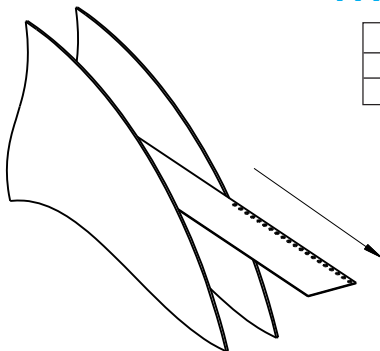
### SMT PCB LAYOUT

PURE TIN PADS



### PACKING DETAILS

REEL QTY	1000
LEADER	480MM
TRAILER	120MM



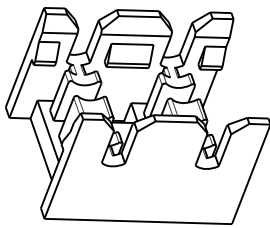
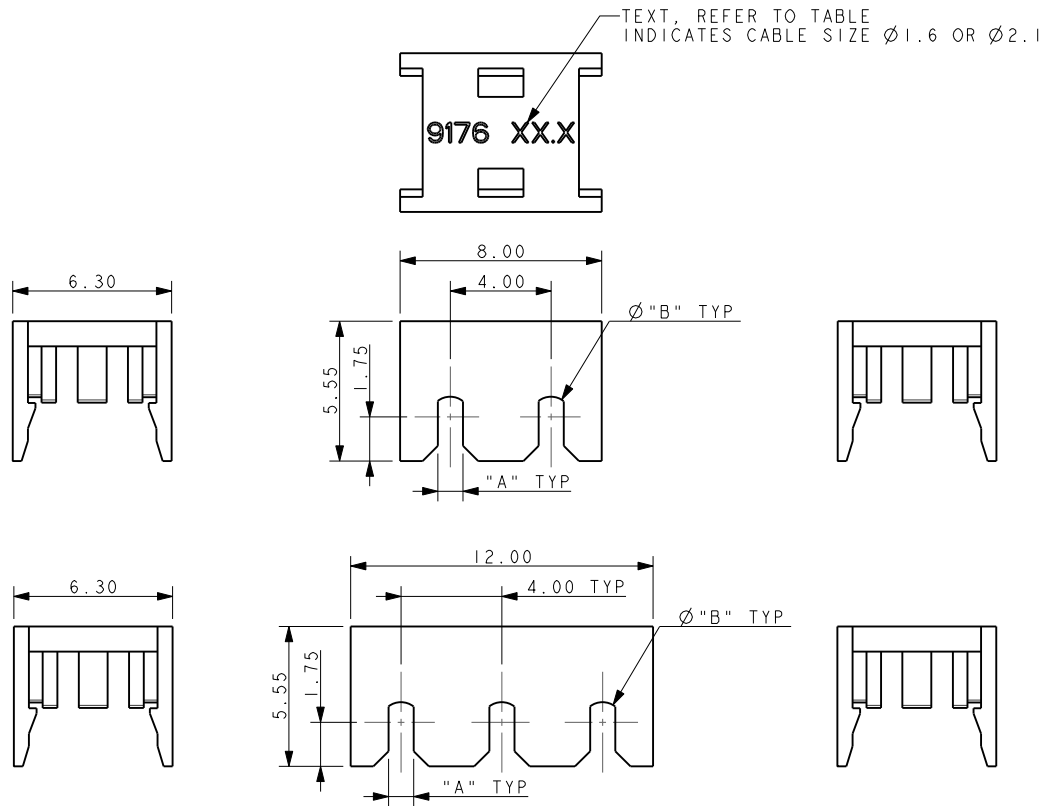
# SSL - Discrete Wire IDC



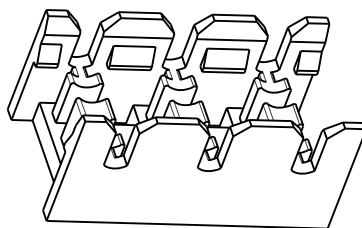
## Series 9176

60-9176-00X-0XX-X00

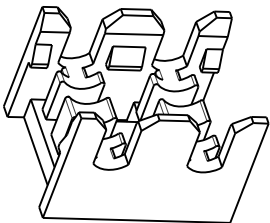
### ACCESSORY CAP – THROUGH WIRE



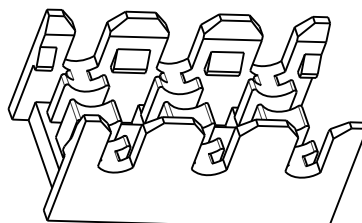
60-9176-002-016-X00



60-9176-003-016-X00



60-9176-002-021-X00



60-9176-003-021-X00

#### NOTES:

1. CAP FOR IDC WIRE TO BOARD CONNECTION, 2 AND 3 WAY, THROUGH WIRE.
2. FOR USE WITH STANDARD 9176 IDC CONNECTORS, SEE PAGE 7 FOR THE CORRECT PART CODE TO MATCH WIRE.
3. CAP MATERIAL: GLASS FILLED NYLON 46, FOR COLORS SEE TABLE BELOW.
4. DIMENSIONS A, B AND TEXT, SEE TABLE BELOW.
5. CAPS DESIGNED TO ACCOMMODATE WIRE INSULATION DIAMETERS 1.1MM TO 1.6MM AND 1.6MM TO 2.1MM.
6. ALL DIMENSIONS SHOWN ARE REFERENCE DIMENSIONS.
7. PACKED IN BAGS, 1000 PIECES PER BAG.

Code	Slot A (AWG)	Diameter B	Text
016	1.60 (22-24)	1.00	9176 $\varnothing 1.6$
021	2.10 (18-20)	1.50	9176 $\varnothing 2.1$

Color	X00
Black	000
White	100

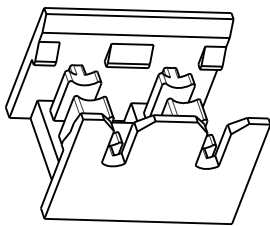
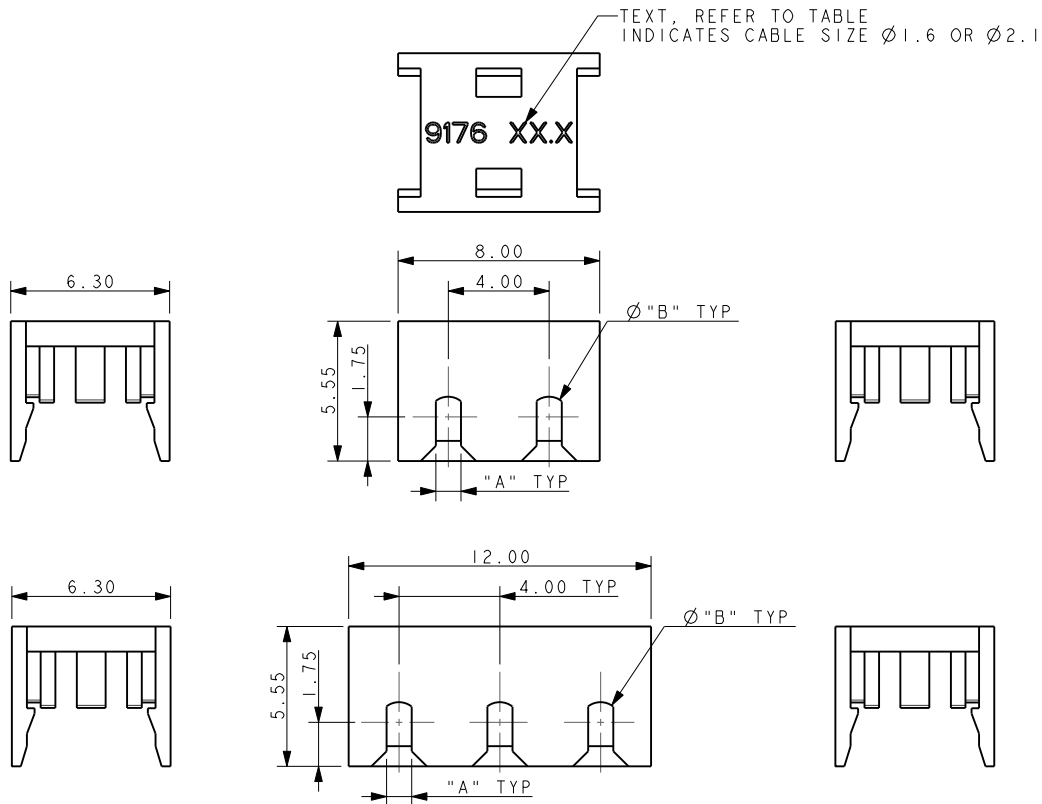


# SSL - Discrete Wire IDC

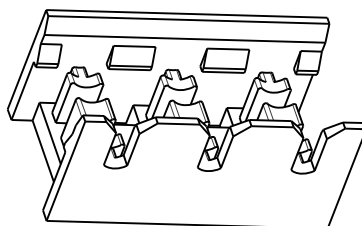


## Series 9176

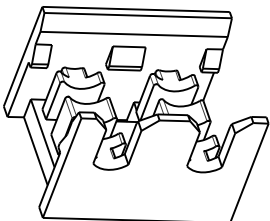
### 60-9176-00X-0XX-X99 ACCESSORY CAP - WIRE STOP



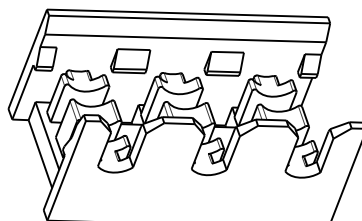
60-9176-002-016-X99



60-9176-003-016-X99



60-9176-002-021-X99



60-9176-003-021-X99

**NOTES:**

1. CAP FOR IDC WIRE TO BOARD CONNECTION, 2 AND 3 WAY, WITH WIRE STOP.
2. FOR USE WITH STANDARD 9176 IDC CONNECTORS, SEE PAGE 7 FOR THE CORRECT PART CODE TO MATCH WIRE.
3. CAP MATERIAL: GLASS FILLED NYLON 46, FOR COLORS SEE TABLE BELOW.
4. DIMENSIONS A, B AND TEXT, SEE TABLE BELOW.
5. CAPS DESIGNED TO ACCOMMODATE WIRE INSULATION DIAMETERS 1.1MM TO 1.6MM AND 1.6MM TO 2.1MM.
6. ALL DIMENSIONS SHOWN ARE REFERENCE DIMENSIONS.
7. PACKED IN BAGS, 1000 PIECES PER BAG.

Code	Slot A (AWG)	Diameter B	Text
016	1.60 (22-24)	1.00	9176 Ø1.6
021	2.10 (18-20)	1.50	9176 Ø2.1

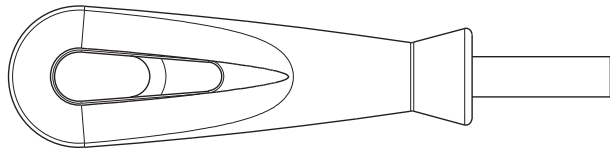
Color	X99
Black	099
White	199

# SSL - Discrete Wire IDC



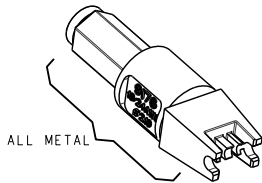
Series 9176

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



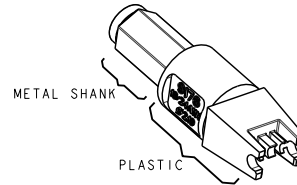
### UNIVERSAL HANDLE

Details	Tool Part Number
6.35 A/F HEX BIT HOLDER	06 7000 7730 01 000



### HIGH PRODUCTION Metal

Max Insulation Dia (AWG)	Tool Part Number
2.10 (18-20)	06 9176 7017 01 000
1.60 (22-24)	06 9176 7017 02 000

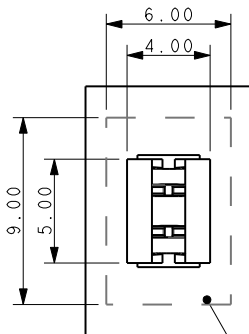


### MED PRODUCTION Metal/Plastic

Max Insulation Dia (AWG)	Tool Part Number
2.10 (18-20)	06 9176 7016 01 000
1.60 (22-24)	06 9176 7016 02 000

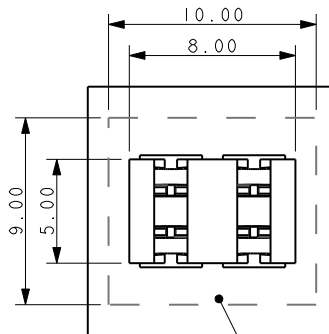
## CLEARANCE AREA ON PCB FOR HAND TOOLING

### 1 WAY



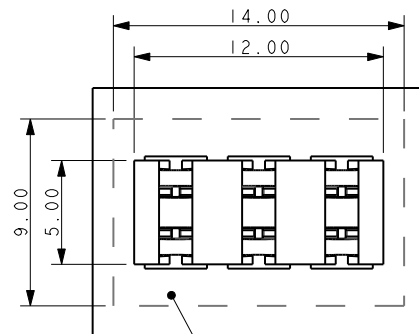
AREA TO BE KEPT CLEAR FOR TOOLING

### 2 WAY



AREA TO BE KEPT CLEAR FOR TOOLING

### 3 WAY



AREA TO BE KEPT CLEAR FOR TOOLING

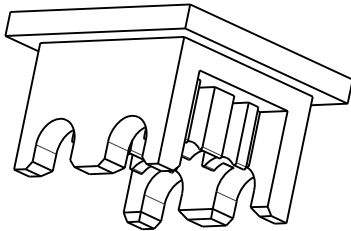
# SSL - Discrete Wire IDC



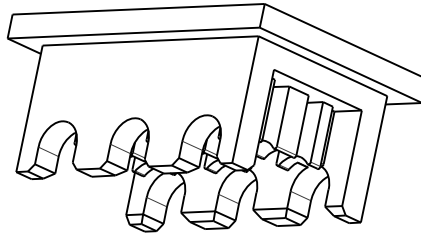
Series 9176

## INSERTION TOOLING REQUIRES HAND PRESS WITH FLAT ROCK PLATES

2 WAY



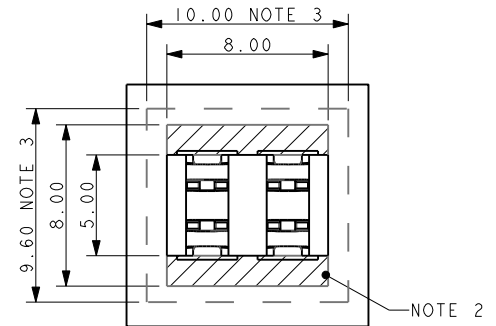
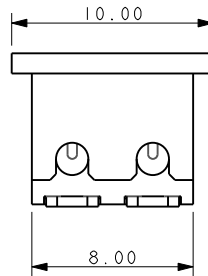
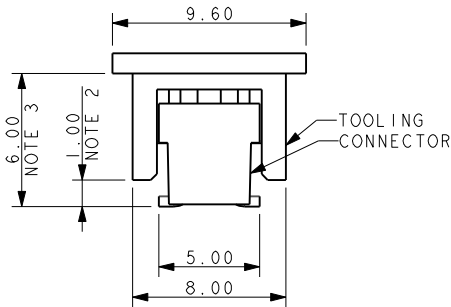
3 WAY



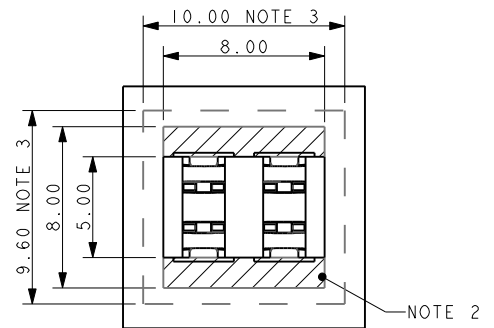
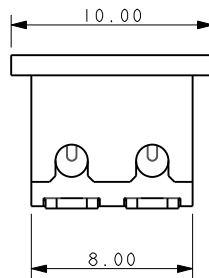
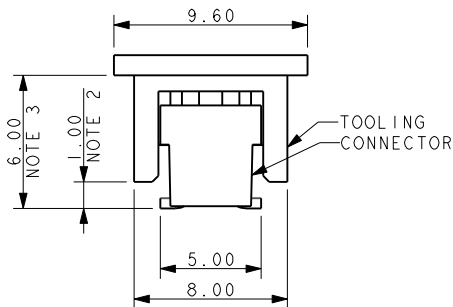
### HIGH PRODUCTION Metal

No. of Ways	Max Insulation Dia (AWG)	Tool Part Number
2	2.10 (18-20)	06 9176 7017 01 002
	1.60 (22-24)	06 9176 7017 02 002
3	2.10 (18-20)	06 9176 7017 01 003
	1.60 (22-24)	06 9176 7017 02 003

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 13.



# SSL - 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

<b>70</b>	<b>9176</b>	<b>001</b>	<b>4XX</b>	<b>006</b>												
Prefix	Series	Number of Ways	Wire Gauge Size	Plating Option												
70 = Contact				06 = Pure Tin all over												
		<table border="1"> <thead> <tr> <th>Code</th> <th>No of Ways</th> <th>Details</th> </tr> </thead> <tbody> <tr> <td>001</td> <td>1</td> <td>Page 17</td> </tr> </tbody> </table>	Code	No of Ways	Details	001	1	Page 17	<table border="1"> <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> </tbody> </table>	Code	Accepted Wire Gauge	422	22 Gauge Stranded	432	24 Gauge Stranded	
Code	No of Ways	Details														
001	1	Page 17														
Code	Accepted Wire Gauge															
422	22 Gauge Stranded															
432	24 Gauge Stranded															

### HOW TO ORDER – CAP OPTIONS

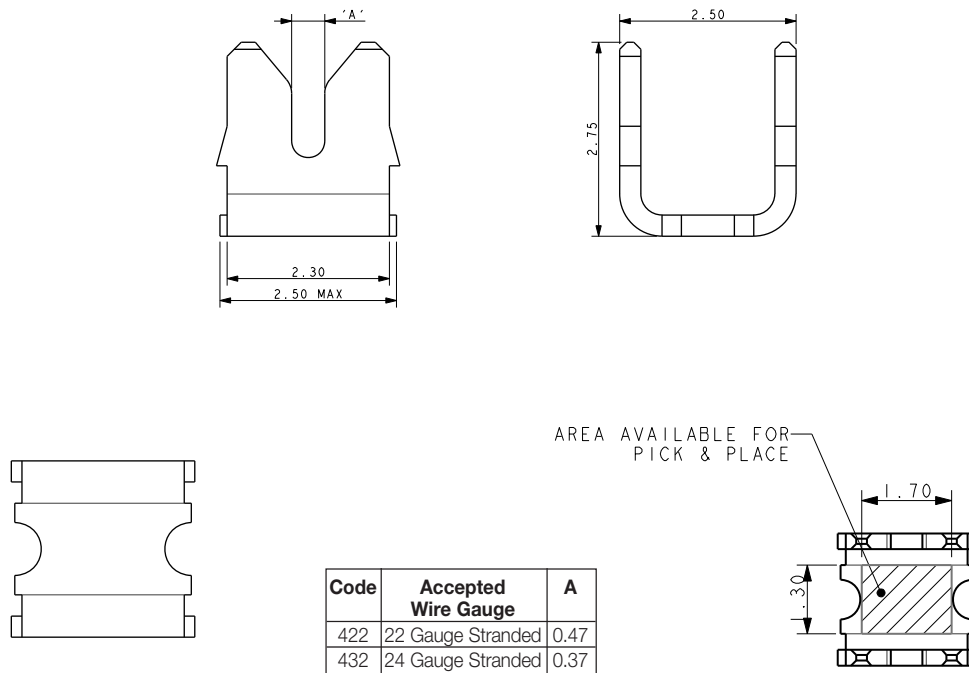
<b>60</b>	<b>9176</b>	<b>001</b>	<b>4XX</b>	<b>X00</b>																			
Prefix	Series	Number of Ways	Wire Gauge Size	Insulator Color																			
60 = Cap																							
		<table border="1"> <thead> <tr> <th>Code</th> <th>No of Ways</th> <th>Details</th> </tr> </thead> <tbody> <tr> <td>001</td> <td>1</td> <td>Page 19</td> </tr> </tbody> </table>	Code	No of Ways	Details	001	1	Page 19	<table border="1"> <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 border="1"> <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	No of Ways	Details																					
001	1	Page 19																					
Code	Wire Insulation																						
415	Ø 1.0-1.5																						
Code	Color	Application																					
000	Black	Industrial																					
100	White	Lighting																					



# SSL - Discrete Wire IDC Contact & Cap

Series 9176-400

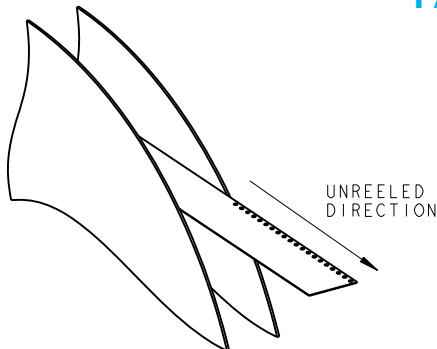
## CONTACT DETAILS



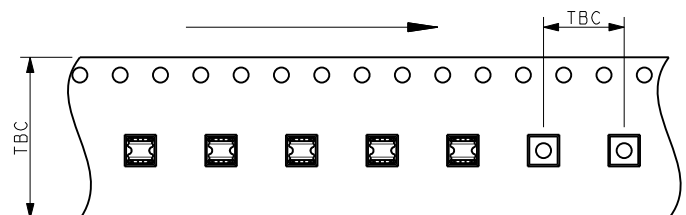
### NOTES:

1. CONNECTOR FOR IDC WIRE TO BOARD CONNECTION.
2. CONTACT MATERIAL: PHOSPHORE BRONZE.
3. CONTACT PLATING: PURE TIN.
4. CONNECTOR DESIGNED TO ACCEPT BETWEEN 22 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 17.
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 18 FOR WIRE INTO CONTACT.

## PACKING DETAILS



REEL QTY	1000
LEADER	480MM
TRAILER	120MM



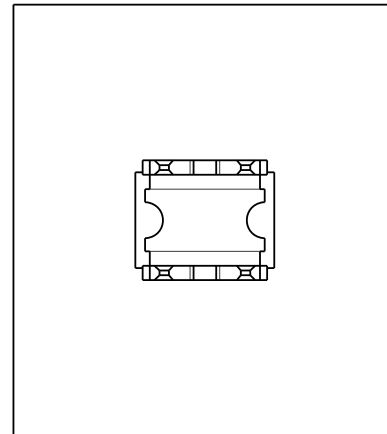
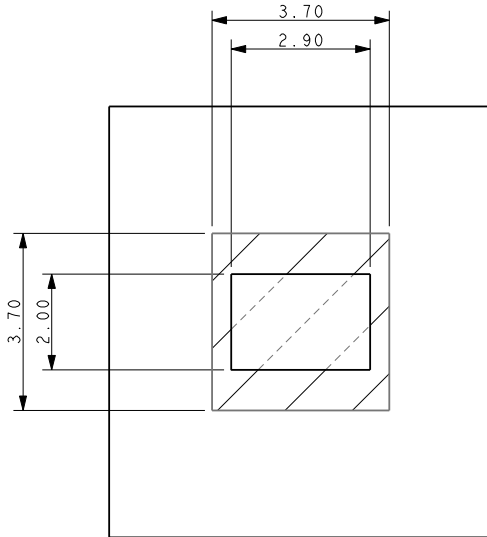
# SSL - Discrete Wire IDC Contact & Cap **AVX**

Series 9176-400

## 22-24 AWG IDC WIRE TO BOARD CONNECTOR SINGLE CONTACT

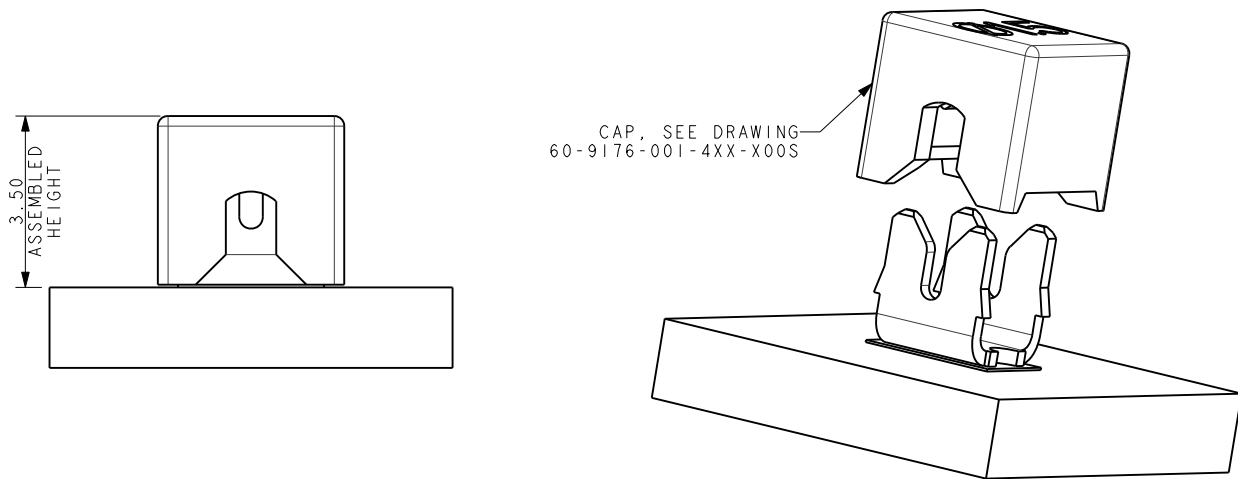
### SMT PCB LAYOUT

PURE TIN PADS



ORIENTATION OF CONTACT ON PAD

### ASSEMBLED/INSTALLED PRODUCTS



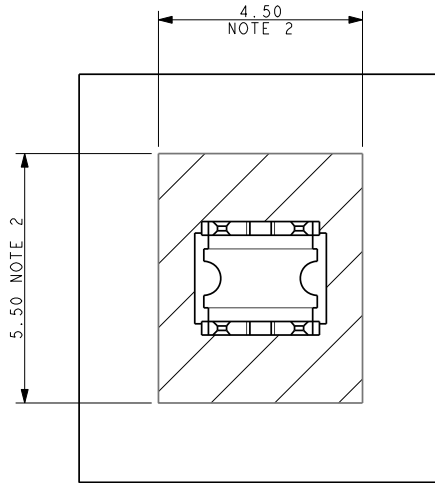
#### NOTES:

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 18.

# SSL - Discrete Wire IDC Contact & Cap

Series 9176-400

## ASSEMBLY TOOLING – CAP NOT USED WIRE ONTO CONTACT

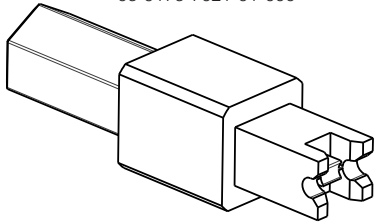


**NOTES:**

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

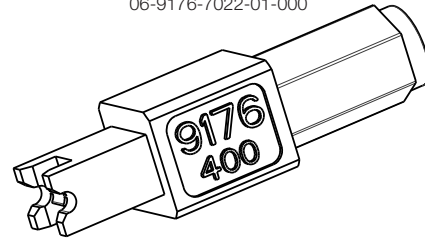
### METAL TOOL – HIGH VOLUME

06-9176-7021-01-000



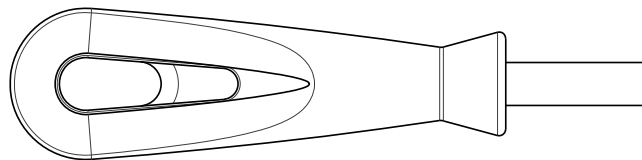
### PLASTIC TOOL – LOW/MEDIUM VOLUME

06-9176-7022-01-000



### UNIVERSAL HANDLE

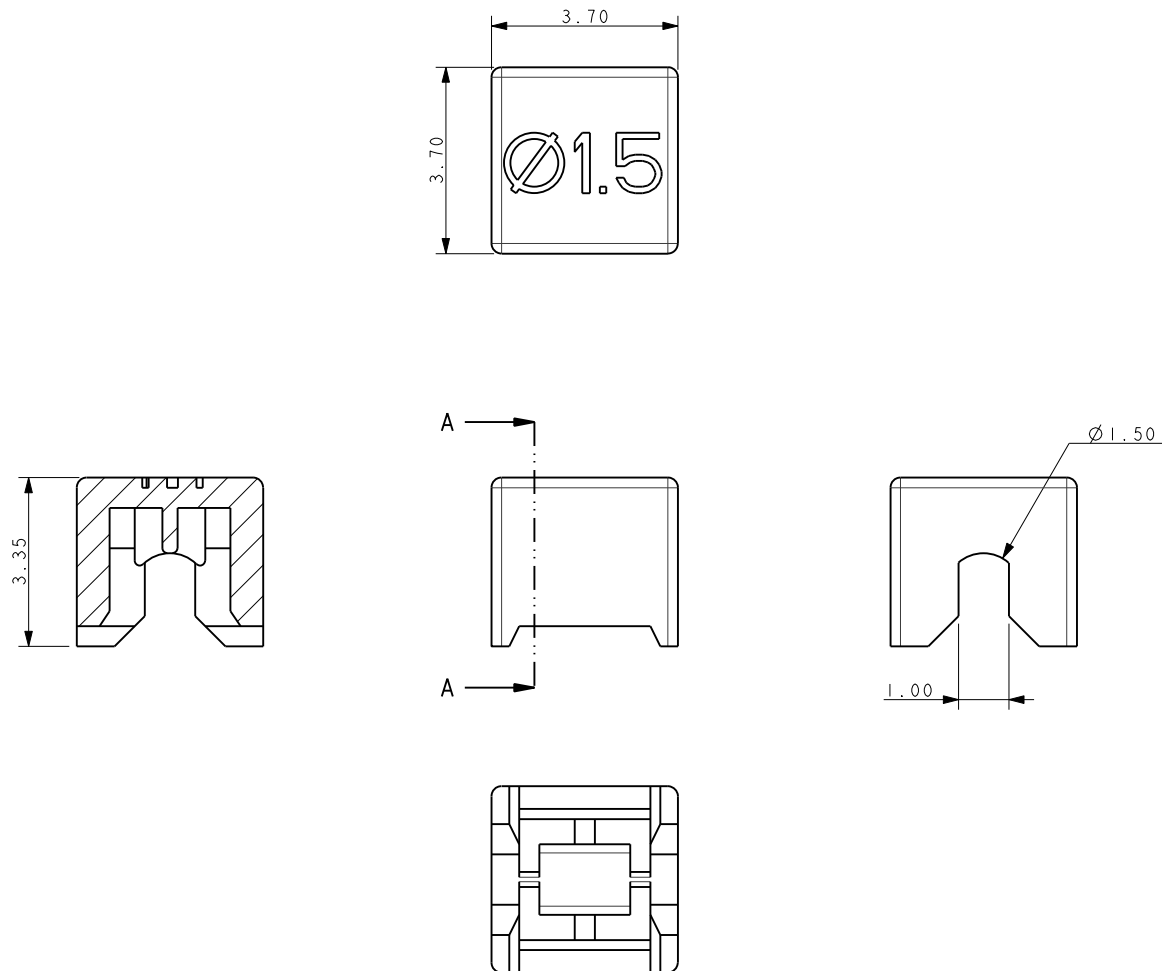
06 7000 7730 01 000



# SSL - Discrete Wire IDC Contact & Cap

Series 9176-400

## CAP DETAILS

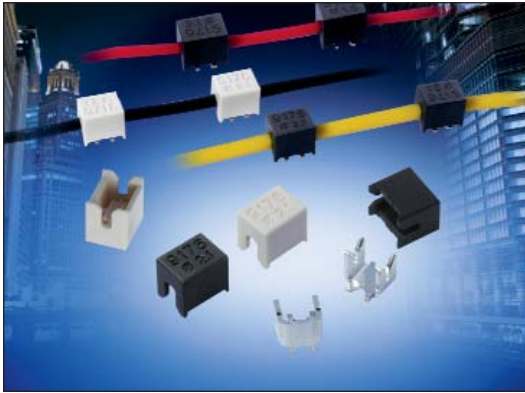


### NOTES:

1. CAP FOR IDC WIRE TO BOARD CONNECTION.
2. CAP MATERIAL: GLASS FILLED NYLON 46, COLOR SEE PAGE 15.
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 INSTALATION DETAILS REFER TO DRAWING 70-9176-001-4XX-006S.

# SSL - Discrete Wire IDC Contact & Cap

## 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

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

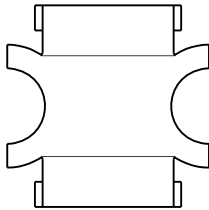
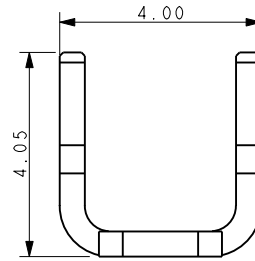
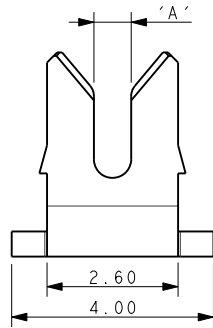
### HOW TO ORDER – CAP OPTIONS

<b>60</b>	<b>9176</b>	<b>001</b>	<b>5XX</b>	<b>X00</b>																					
Prefix	Series	Number of Ways	Wire Gauge Size	Insulator Color																					
60 = Cap																									
		<table border="1"> <thead> <tr> <th>Code</th> <th>No of Ways</th> <th>Details</th> </tr> </thead> <tbody> <tr> <td>001</td> <td>1</td> <td>Page 24</td> </tr> </tbody> </table>	Code	No of Ways	Details	001	1	Page 24	<table border="1"> <thead> <tr> <th>Code</th> <th>Wire Insulation (AWG)</th> </tr> </thead> <tbody> <tr> <td>516</td> <td>1.1-1.6 (22-24)</td> </tr> <tr> <td>521</td> <td>1.6-2.1 (18-20)</td> </tr> </tbody> </table>	Code	Wire Insulation (AWG)	516	1.1-1.6 (22-24)	521	1.6-2.1 (18-20)	<table border="1"> <thead> <tr> <th>Code</th> <th>Color</th> <th>Application</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>Black</td> <td>Industrial</td> </tr> <tr> <td>1</td> <td>White</td> <td>Lighting</td> </tr> </tbody> </table>	Code	Color	Application	0	Black	Industrial	1	White	Lighting
Code	No of Ways	Details																							
001	1	Page 24																							
Code	Wire Insulation (AWG)																								
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521	1.6-2.1 (18-20)																								
Code	Color	Application																							
0	Black	Industrial																							
1	White	Lighting																							

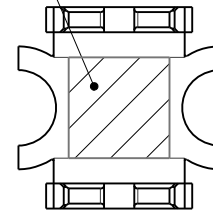
# SSL - Discrete Wire IDC Contact & Cap

Series 9176-500

## CONTACT DETAILS



AREA AVAILABLE FOR PICK & PLACE 2.00mm SQUARE

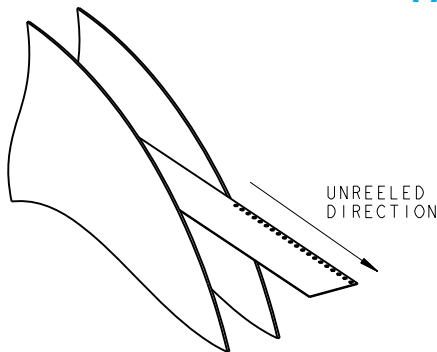


Code	Accepted Wire Gauge	A
501	18 Gauge Stranded	0.72
511	20 Gauge Stranded	0.60
522	22 Gauge Stranded	0.47
532	24 Gauge Stranded	0.37

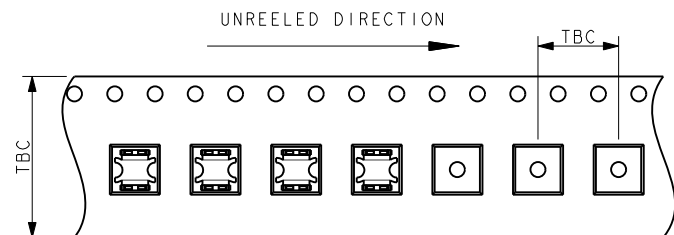
### NOTES:

- CONNECTOR FOR IDC WIRE TO BOARD CONNECTION.
- CONTACT MATERIAL: PHOSPHORE BRONZE.
- CONTACT PLATING: PURE TIN.
- CONNECTOR DESIGNED TO ACCEPT BETWEEN 18 AND 24 GAUGE STRANDED WIRE. SEE TABLE.
- ALL DIMENSIONS FOR REFERENCE UNLESS OTHERWISE STATED.
- FOR FULL PRODUCT SPECIFICATION REFER TO ELCO SPEC 201-01-106 AND APPLICATION NOTES 201-01-124.
- SMT PCB LAYOUT, REFER TO PAGE 22.
- PACKING IN TAPE AND REEL, QUANTITY 1000 PER REEL.
- WHEN REQUIRED, MATCHING CAP DETAILS ON DRAWING 60-9176-001-5XX-X00S.
- ASSEMBLY TOOLING ON PAGE 23 (WITH CAP AND WITHOUT CAP).

## PACKING DETAILS



REEL QTY	1000
LEADER	480MM
TRAILER	120MM



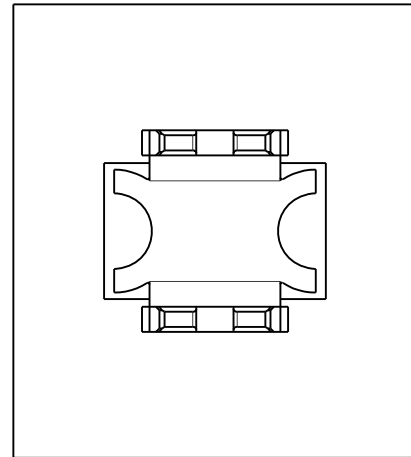
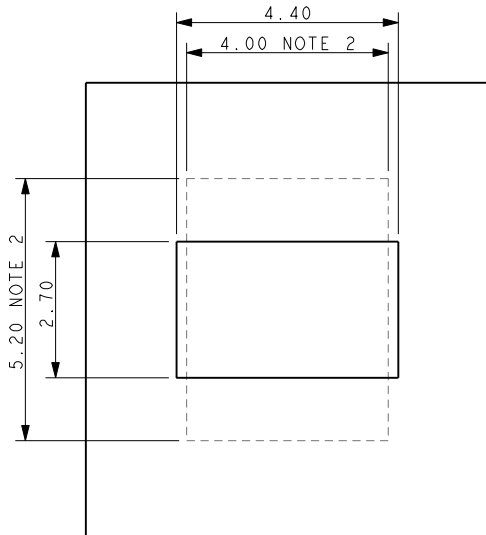
# SSL - Discrete Wire IDC Contact & Cap

Series 9176-500

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

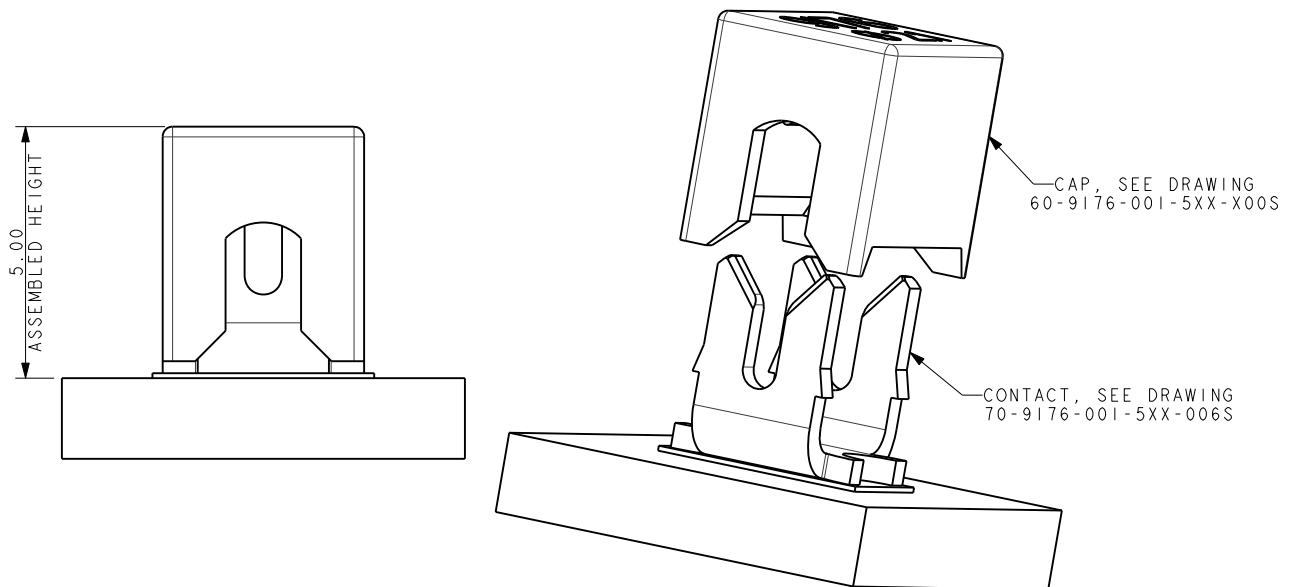
### SMT PCB LAYOUT

PURE TIN PADS



ORIENTATION OF CONTACT ON PAD

### ASSEMBLED/INSTALLED PRODUCTS



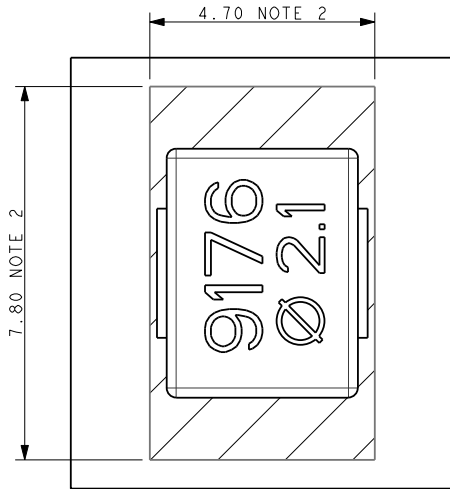
#### NOTES:

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 23 (WITH CAP AND WITHOUT CAP).

# SSL - Discrete Wire IDC Contact & Cap

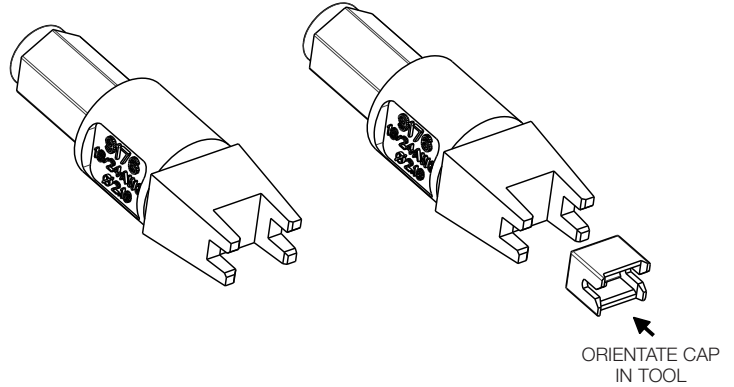
Series 9176-500

## ASSEMBLY TOOLING – CAP USED



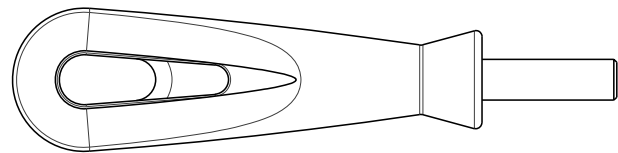
### CAP APPLICATION TOOL

06-9176-7018-01-000



### UNIVERSAL HANDLE

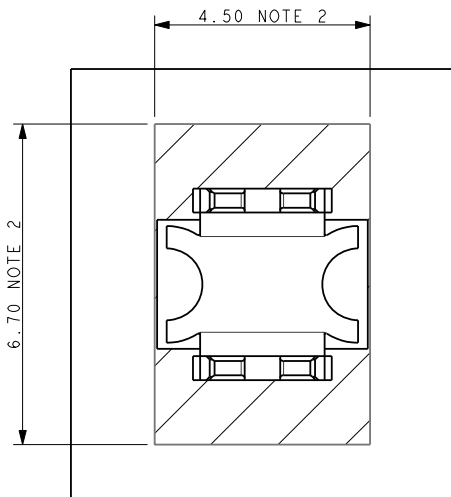
06 7000 7730 01 000



NOTES:

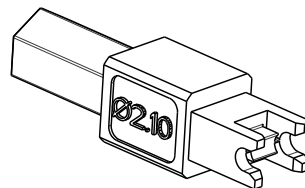
1. ASSEMBLY TOOLING FOR CAP.
2. AREA OF PCB TO BE KEPT CLEAR OF COMPONENTS, TACKS PERMISSIBLE.
3. WIRE AND CAP INSERTED IN ONE OPERATION.
4. REFER TO APPLICATION NOTE 201-01-124 FOR FURTHER INFORMATION.
5. REFER BELOW WHEN CONTACT USED WITHOUT CAP.

## ASSEMBLY TOOLING – CAP NOT USED WIRE ONTO CONTACT



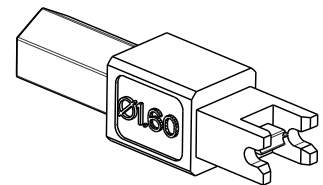
### 2.1 WIRE (18-20 AWG)

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



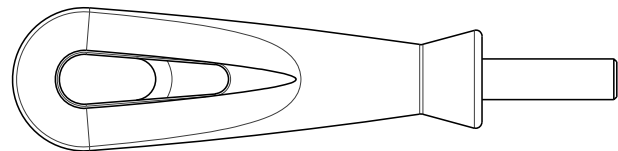
### 1.6 WIRE (22-24 AWG)

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.

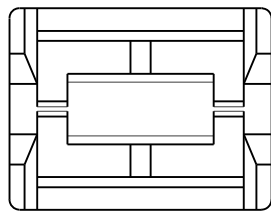
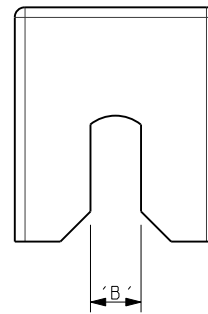
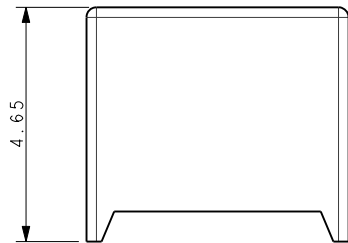
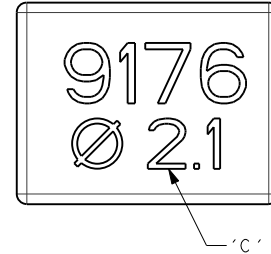
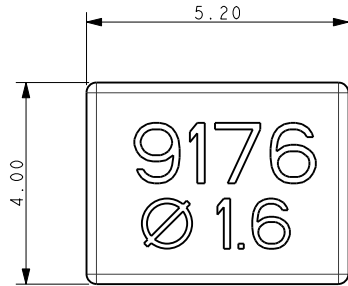
Wire Gauge	Wire Insulation $\phi$	Metal Tool High Volume	Plastic Tool Small to Medium Volume	Handle
22-24 AWG	1.10 to 1.60	06-9176-7019-02-000	06-9176-7020-02-000	06-7000-7730-01-000
18-20 AWG	1.60 to 2.10	06-9176-7019-01-000	06-9176-7020-01-000	06-9176-7730-01-000



# SSL - Discrete Wire IDC Contact & Cap

Series 9176-500

## 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

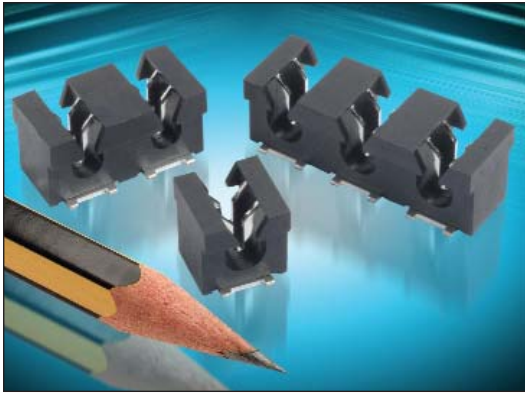
**NOTES:**

1. CAP FOR IDC WIRE TO BOARD CONNECTION.
2. CAP MATERIAL: GLASS FILLED NYLON 46, COLOR SEE PAGE 20.
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.

# SSL - Discrete Wire IDC



## Series 9177



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

### 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

**00**  
Prefix

**9177**  
Series

**00X**  
Number of Ways

Code	No of Ways	Details
001	1	Page 26
002	2	Page 27
003	3	Page 28

**00X**  
Wire Gauge Size

Code	Accepted Wire Gauge	Wire Insulation
001	14 AWG	Ø 4.25
012	16 AWG	Ø 3.50
022	18 AWG	Ø 3.50
033	20 AWG	Ø 2.75

**X**  
Insulator Color

Code	Color	Application
0	Black	Industrial
1	White	Lighting

**06**  
Plating Option  
06 = Pure Tin all over

Certification: UL File #E320991

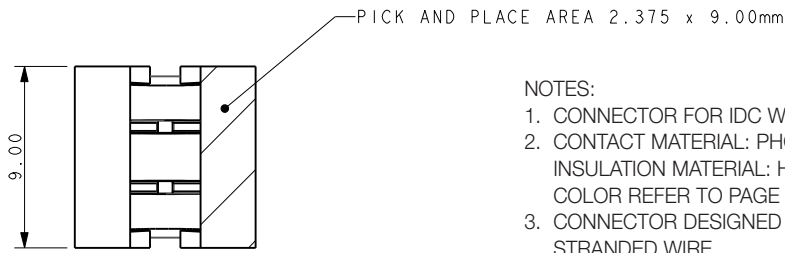


# SSL - Discrete Wire IDC



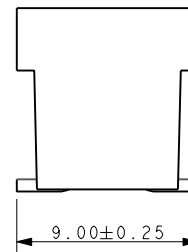
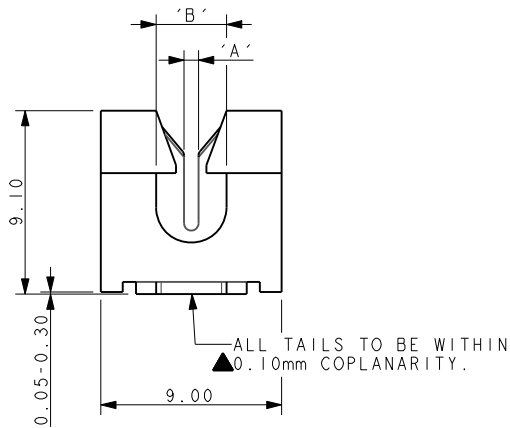
## Series 9177

### 14-20 AWG 1 WAY IDC CONNECTOR

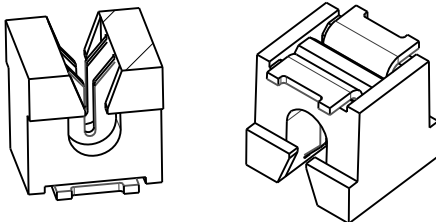


**NOTES:**

1. CONNECTOR FOR IDC WIRE TO BOARD CONNECTION.
2. CONTACT MATERIAL: PHOSPHORE BRONZE.  
INSULATION MATERIAL: HIGH TEMPERATURE NYLON 46.  
COLOR REFER TO PAGE 25.
3. CONNECTOR DESIGNED TO ACCEPT BETWEEN 14 AND 20 GAUGE STRANDED WIRE.
4. ALL DIMENSIONS FOR REFERENCE UNLESS OTHERWISE STATED.
5. FOR FULL PRODUCT SPECIFICATION REFER TO ELCO SPEC 201-01-109.
6. FOR PCB SPACE RESTRICTED BY ASSEMBLY TOOLING REFER TO PAGE 29.

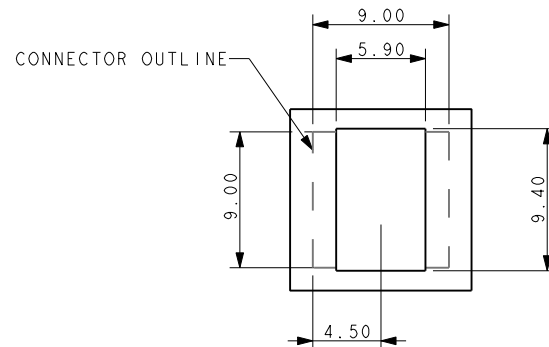


Code	Accepted Wire Gauge	A	Wire Insulation	B
001	14 Gauge Stranded	1.10	Ø 4.25 max	4.25
012	16 Gauge Stranded	0.82	Ø 3.50 max	3.50
022	18 Gauge Stranded	0.72	Ø 3.50 max	3.50
033	20 Gauge Stranded	0.60	Ø 2.75 max	2.75



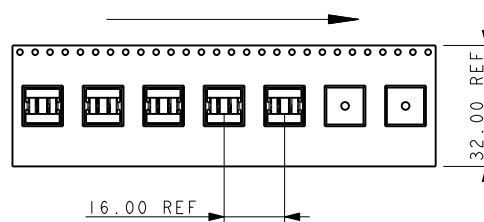
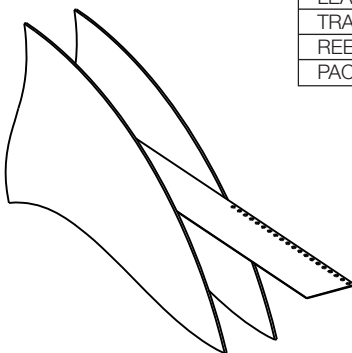
### SMT PCB LAYOUT

PURE TIN PADS



### PACKING DETAILS

REEL QTY	400
LEADER	500MM
TRAILER	400MM
REEL/BOX	4
PACK QTY	1600

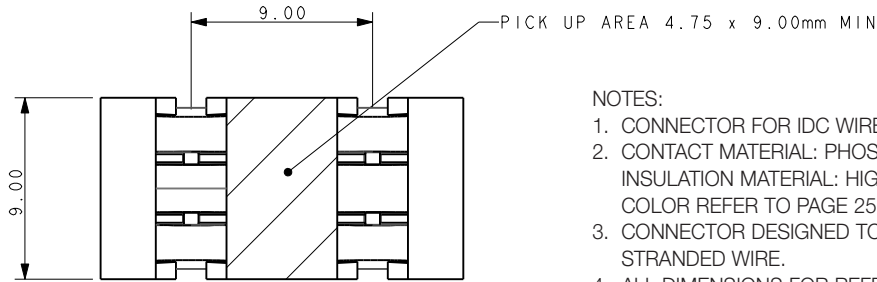


# SSL - Discrete Wire IDC



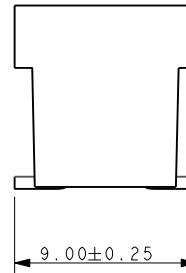
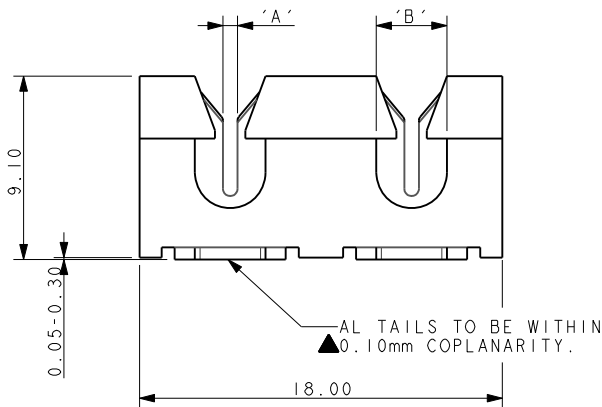
## Series 9177

### 14-20 AWG 2 WAY IDC CONNECTOR

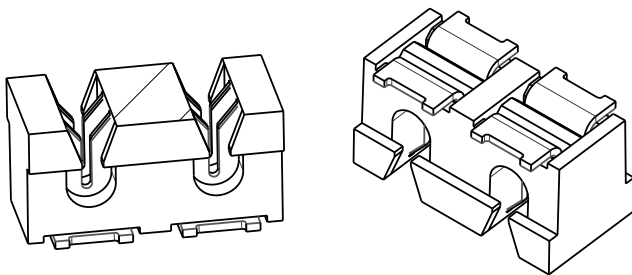


**NOTES:**

- CONNECTOR FOR IDC WIRE TO BOARD CONNECTION.
- CONTACT MATERIAL: PHOSPHORE BRONZE.  
INSULATION MATERIAL: HIGH TEMPERATURE NYLON 46.  
COLOR REFER TO PAGE 25.
- CONNECTOR DESIGNED TO ACCEPT BETWEEN 14 AND 20 GAUGE STRANDED WIRE.
- ALL DIMENSIONS FOR REFERENCE UNLESS OTHERWISE STATED.
- FOR FULL PRODUCT SPECIFICATION REFER TO ELCO SPEC 201-01-109.
- FOR PCB SPACE RESTRICTED BY ASSEMBLY TOOLING REFER TO PAGE 29.

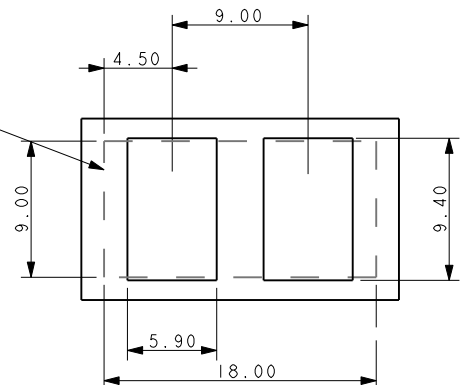


Code	Accepted Wire Gauge	A	Wire Insulation	B
001	14 Gauge Stranded	1.10	Ø 4.25 max	4.25
012	16 Gauge Stranded	0.82	Ø 3.50 max	3.50
022	18 Gauge Stranded	0.72	Ø 3.50 max	3.50
033	20 Gauge Stranded	0.60	Ø 2.75 max	2.75



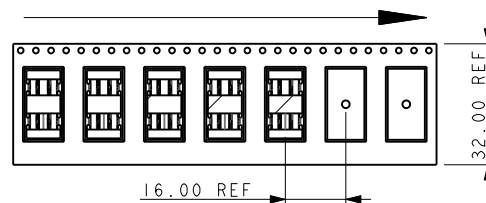
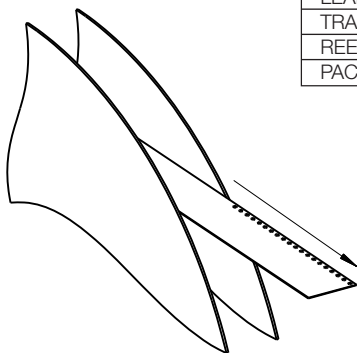
### SMT PCB LAYOUT

PURE TIN PADS



### PACKING DETAILS

REEL QTY	400
LEADER	500MM
TRAILER	400MM
REEL/BOX	4
PACK QTY	1600

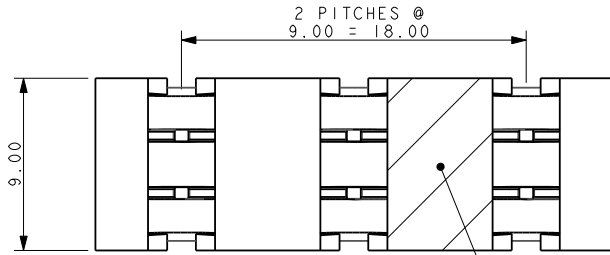


# SSL - Discrete Wire IDC



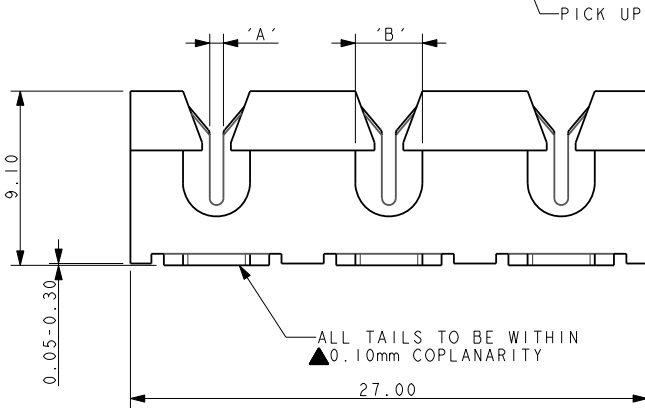
## Series 9177

### 14-20 AWG 3 WAY IDC CONNECTOR

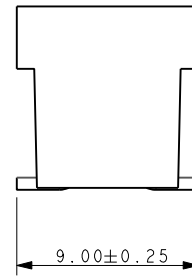


**NOTES:**

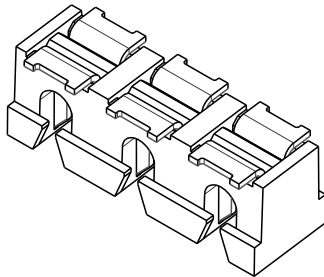
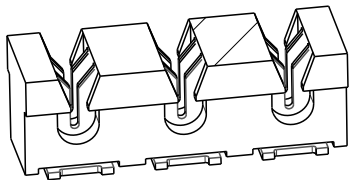
1. CONNECTOR FOR IDC WIRE TO BOARD CONNECTION.
2. CONTACT MATERIAL: PHOSPHORE BRONZE.  
INSULATION MATERIAL: HIGH TEMPERATURE NYLON 46.  
COLOR REFER TO PAGE 25.
3. CONNECTOR DESIGNED TO ACCEPT BETWEEN 14 AND 20 GAUGE STRANDED WIRE.
4. ALL DIMENSIONS FOR REFERENCE UNLESS OTHERWISE STATED.
5. FOR FULL PRODUCT SPECIFICATION REFER TO ELCO SPEC 201-01-109.
6. FOR PCB SPACE RESTRICTED BY ASSEMBLY TOOLING REFER TO PAGE 29.



PICK UP AREA 4.75 x 9.00mm MIN

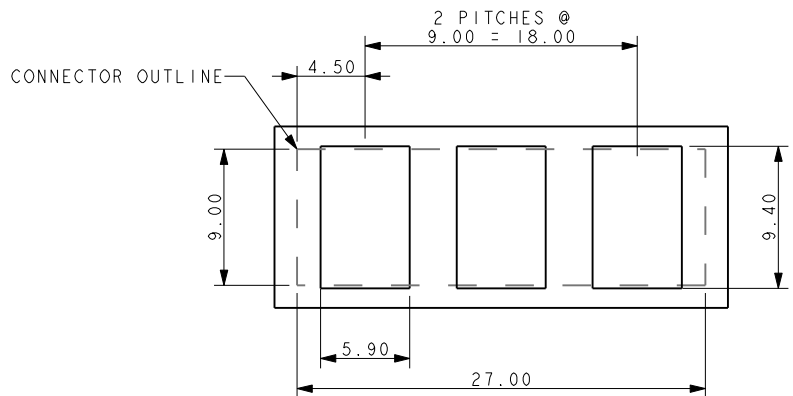


Code	Accepted Wire Gauge	A	Wire Insulation	B
001	14 Gauge Stranded	1.10	Ø 4.25 max	4.25
012	16 Gauge Stranded	0.82	Ø 3.50 max	3.50
022	18 Gauge Stranded	0.72	Ø 3.50 max	3.50
033	20 Gauge Stranded	0.60	Ø 2.75 max	2.75



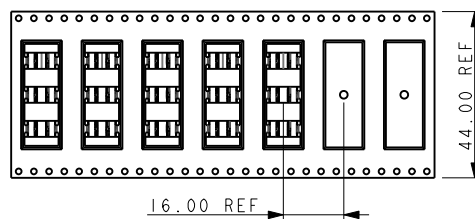
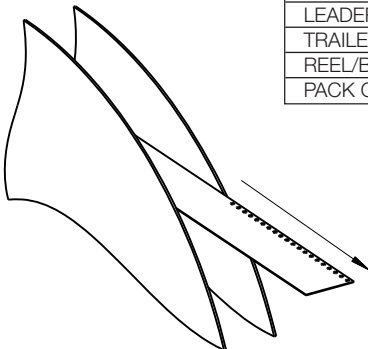
### SMT PCB LAYOUT

PURE TIN PADS



### PACKING DETAILS

REEL QTY	400
LEADER	500MM
TRAILER	400MM
REEL/BOX	4
PACK QTY	1600



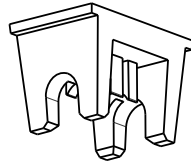
# SSL - Discrete Wire IDC



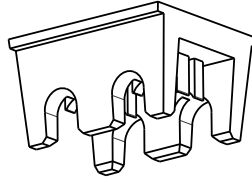
## Series 9177

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

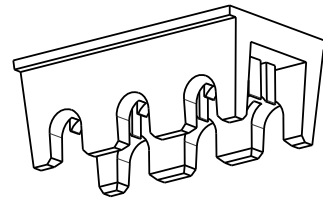
1 WAY



2 WAY



3 WAY



#### HIGH PRODUCTION Metal

No. of Ways	Max Insulation Dia (AWG)	Tool Part Number
1	4.25 (14)	06 9177 7017 01 001
	3.50 (16-18)	06 9177 7017 03 001
	2.75 (20)	06 9177 7017 03 001
2	4.25 (14)	06 9177 7017 01 002
	3.50 (16-18)	06 9177 7017 02 002
	2.75 (20)	06 9177 7017 03 002
3	4.25 (14)	06 9177 7017 01 003
	3.50 (16-18)	06 9177 7017 02 003
	2.75 (20)	06 9177 7017 03 003

#### MED PRODUCTION Plastic

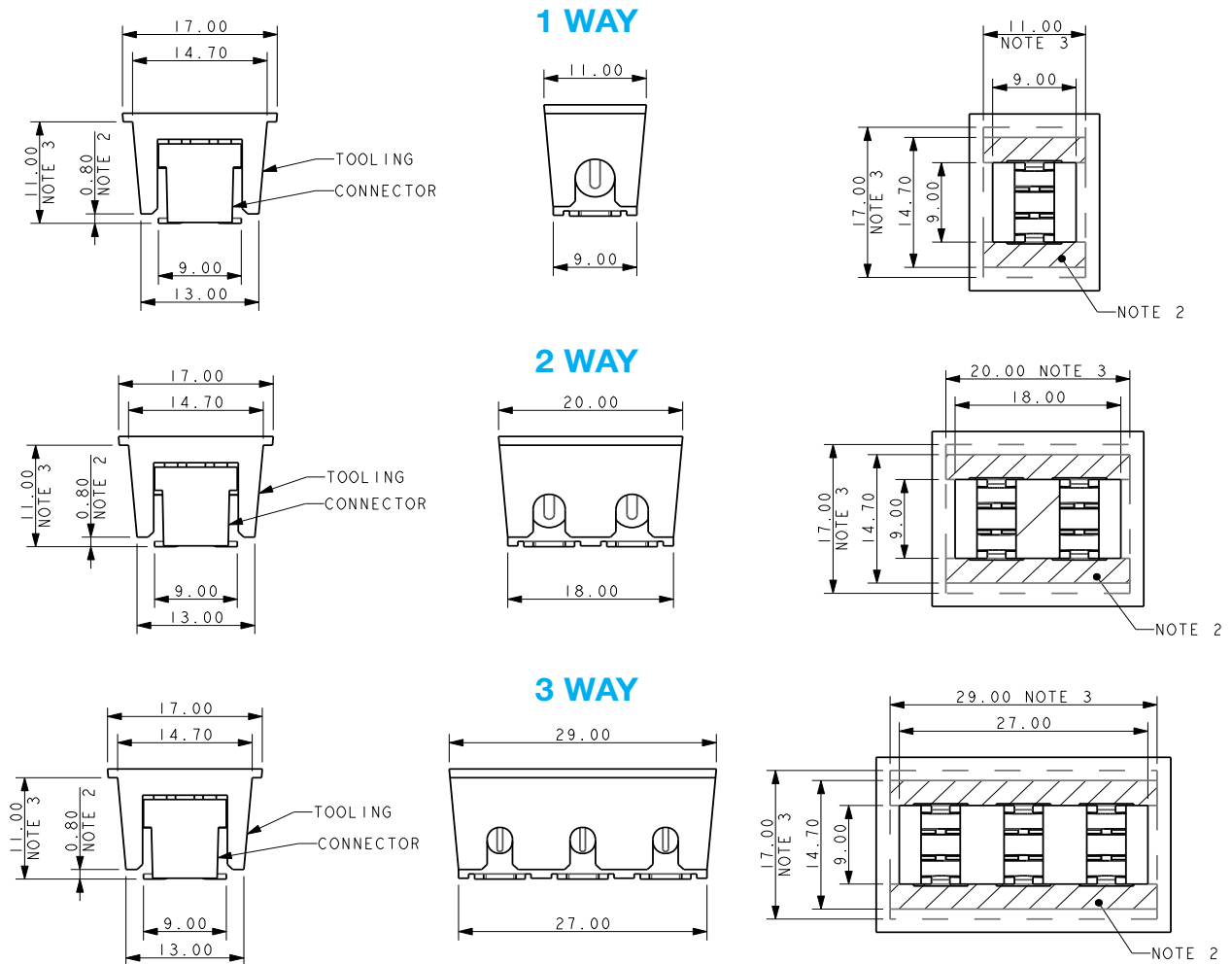
No. of Ways	Max Insulation Dia (AWG)	Tool Part Number
1	4.25 (14)	06 9177 7016 01 001
	3.50 (16-18)	06 9177 7016 02 001
	2.75 (20)	06 9177 7016 03 001
2	4.25 (14)	06 9177 7016 01 002
	3.50 (16-18)	06 9177 7016 02 002
	2.75 (20)	06 9177 7016 03 002
3	4.25 (14)	06 9177 7016 01 003
	3.50 (16-18)	06 9177 7016 02 003
	2.75 (20)	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.
2. MAXIMUM COMPONENT HEIGHT 0.80MM IN THIS AREA.
3. MAXIMUM COMPONENT HEIGHT 11.00 MM IN THIS AREA.
4. THE SAME RESTRICTIONS APPLY TO ALL WIRE INSULATION DIAMETERS.

### INSERTION TOOLING – PCB RESTRICTED AREAS FOR ASSEMBLY TOOLING



# Discrete Wire-to-Board; Poke-Home



## Series 9276



The new 9276 series connector provides a quick 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 (18-24 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. 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 18-24AWG 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: 250v AC

### ENVIRONMENTAL

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

### MECHANICAL

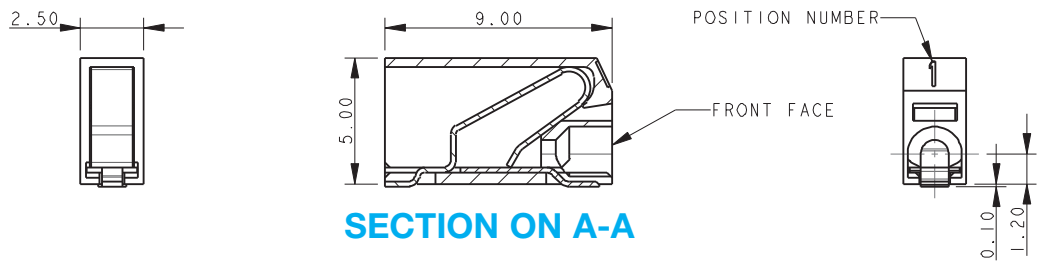
- Insulator Material: Glass-Filled Nylon 46; UL94V0
- Contact Material: Beryllium Copper / Phosphor Bronze
- Plating: Tin over Nickel
- Replacibility: 5 Cycles

### HOW TO ORDER

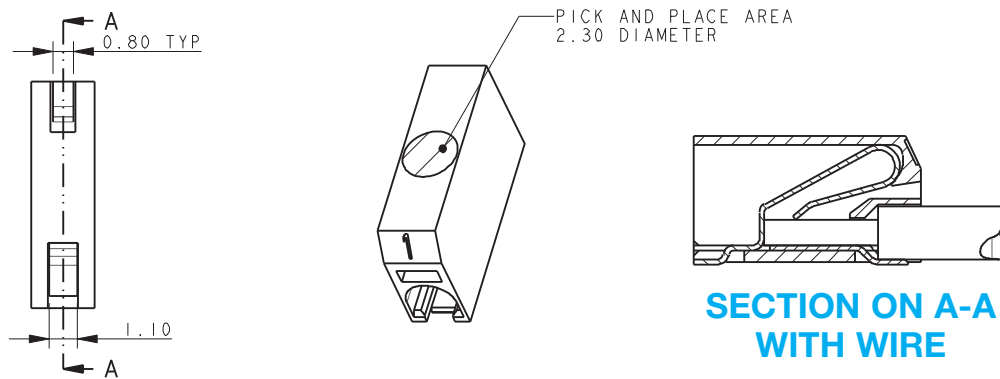
<b>00</b>	<b>9276</b>	<b>00X</b>	<b>0</b>	<b>21</b>	<b>X</b>	<b>06</b>																																						
Wire to Board Connector	Series	Number of Ways	Horizontal Mounting	Wire Size	Insulator Color	Plating Option																																						
		<table border="1" style="margin: auto;"> <thead> <tr> <th>Code</th> <th>No of Ways</th> <th>Details</th> </tr> </thead> <tbody> <tr><td>001</td><td>2</td><td>Page 31</td></tr> <tr><td>002</td><td>3</td><td>Page 32</td></tr> <tr><td>003</td><td>4</td><td>Page 33</td></tr> <tr><td>004</td><td>5</td><td>Page 34</td></tr> <tr><td>006</td><td>6</td><td>Page 35</td></tr> <tr><td>008</td><td>8</td><td>Page 36</td></tr> </tbody> </table>	Code	No of Ways	Details	001	2	Page 31	002	3	Page 32	003	4	Page 33	004	5	Page 34	006	6	Page 35	008	8	Page 36		<table border="1" style="margin: auto;"> <thead> <tr> <th>Code</th> <th>Wire Gauge</th> <th>Max Conductor</th> <th>Max Insulation</th> </tr> </thead> <tbody> <tr> <td>21</td> <td>18 - 24 AWG</td> <td>1.20mm Diameter</td> <td>2.10mm Diameter</td> </tr> </tbody> </table>	Code	Wire Gauge	Max Conductor	Max Insulation	21	18 - 24 AWG	1.20mm Diameter	2.10mm Diameter	<table border="1" style="margin: auto;"> <thead> <tr> <th>Code</th> <th>Color</th> <th>Application</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>Black</td> <td>Industrial</td> </tr> <tr> <td>1</td> <td>White</td> <td>Lighting</td> </tr> </tbody> </table>	Code	Color	Application	0	Black	Industrial	1	White	Lighting	Tin all over
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1	White	Lighting																																										



### 1 WAY WIRE TO BOARD CONNECTOR



**SECTION ON A-A**

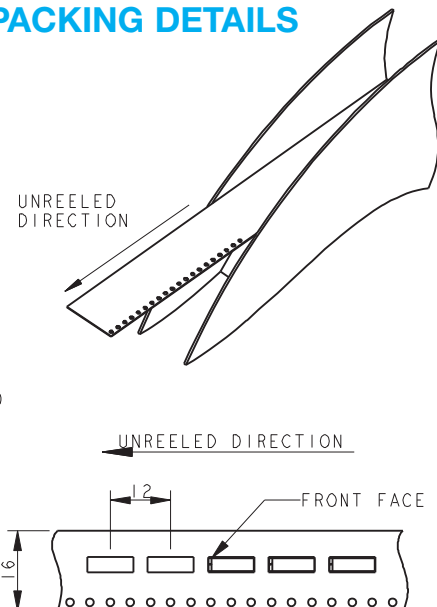


**SECTION ON A-A WITH WIRE**

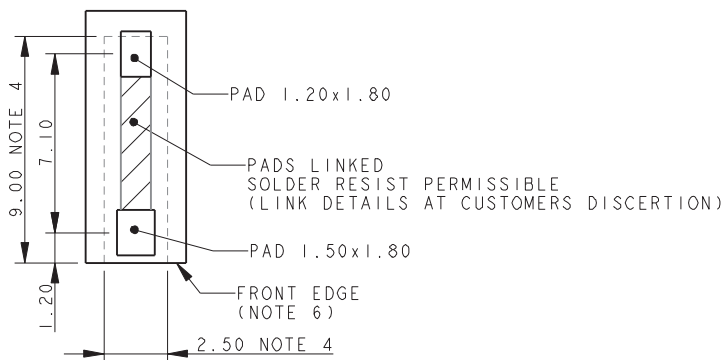
**NOTES:**

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 30.
3. CONTACT MATERIAL: COPPER ALLOY, 0.20MM THICK, TIN PLATED.
4. OUTLINE OF CONNECTOR.
5. WIRE ASSEMBLY / EXTRACTION, REFER TO PAGE 37.
6. FRONT FACE OF CONNECTOR CAN BE IN LINE WITH EDGE OF PCB.
7. PACKING TAPE AND REEL, QUANTITY 1000 PER REEL.

### PACKING DETAILS

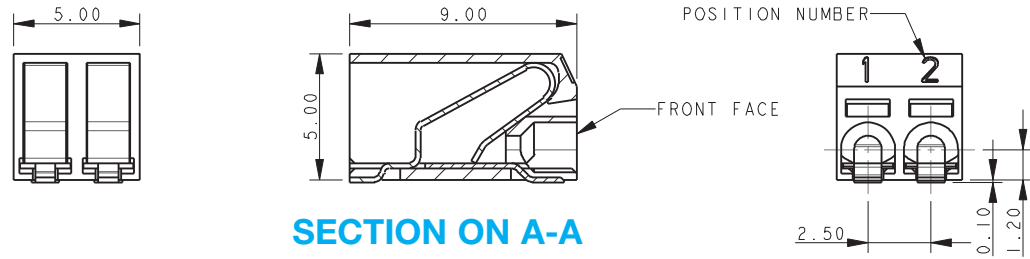


### 1 WAY PCB BOARD LAYOUT

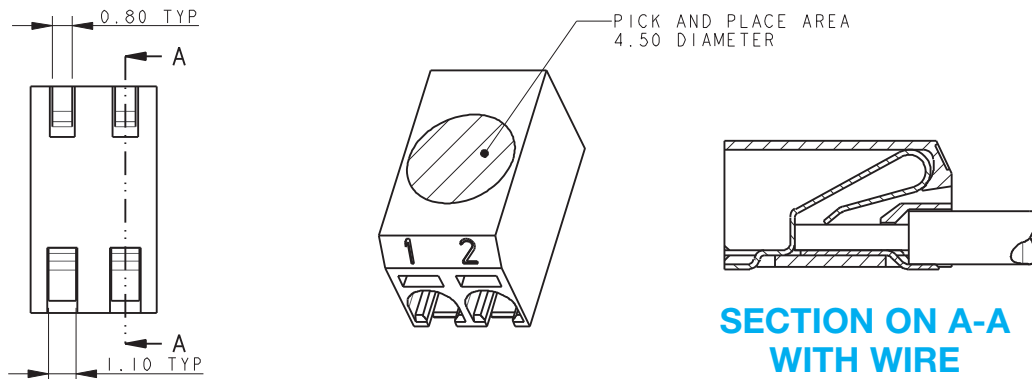




### 2 WAY WIRE TO BOARD CONNECTOR



**SECTION ON A-A**

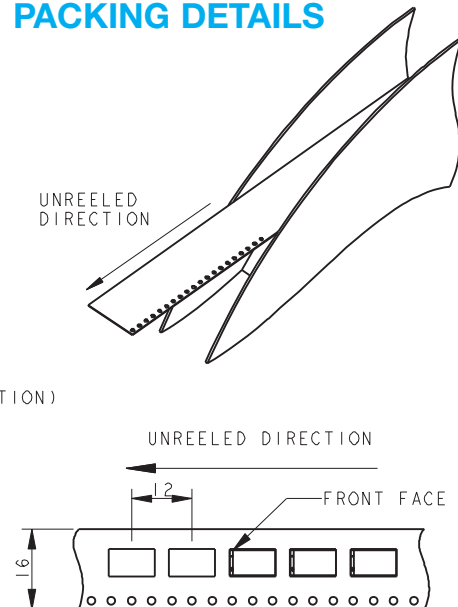


**SECTION ON A-A WITH WIRE**

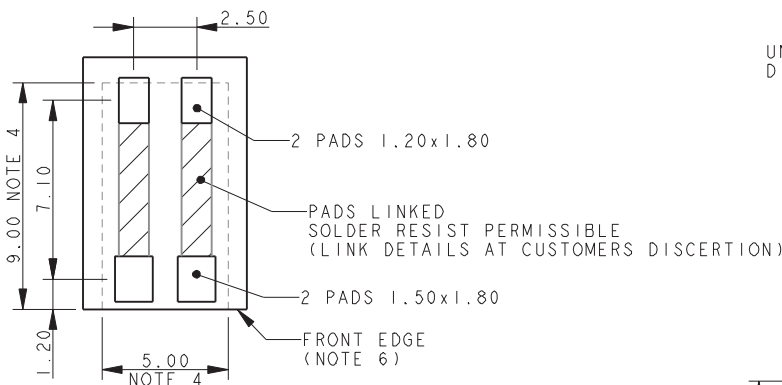
**NOTES:**

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 30.
3. CONTACT MATERIAL: COPPER ALLOY, 0.20MM THICK, TIN PLATED.
4. OUTLINE OF CONNECTOR.
5. WIRE ASSEMBLY / EXTRACTION, REFER TO PAGE 37.
6. FRONT FACE OF CONNECTOR CAN BE IN LINE WITH EDGE OF PCB.
7. PACKING TAPE AND REEL, QUANTITY 1000 PER REEL.

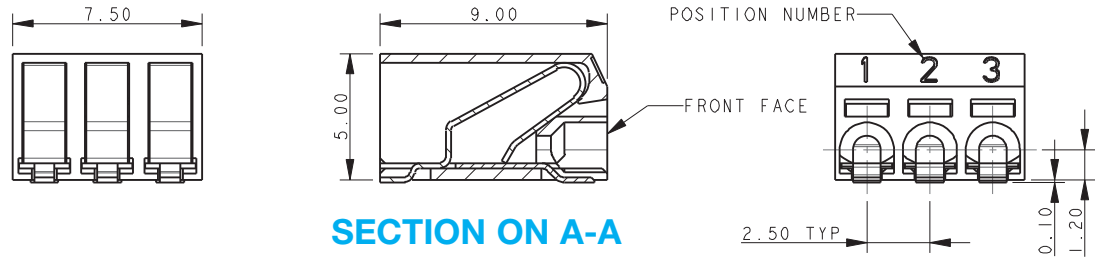
### PACKING DETAILS



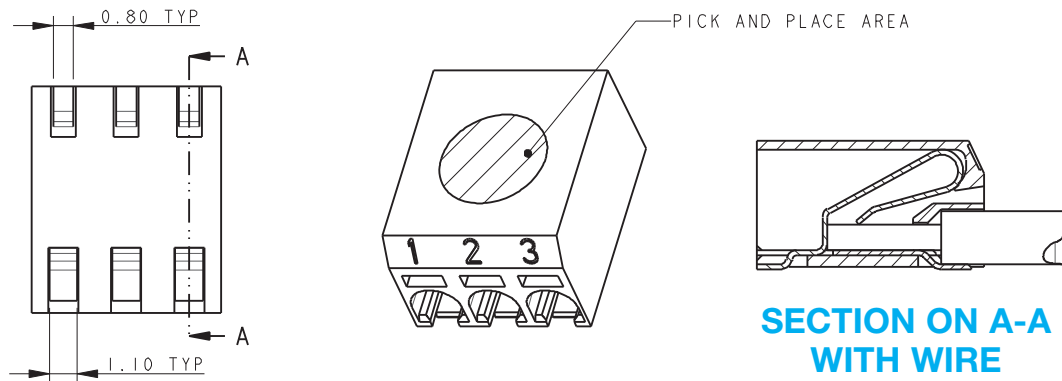
### 2 WAY PCB BOARD LAYOUT



### 3 WAY WIRE TO BOARD CONNECTOR



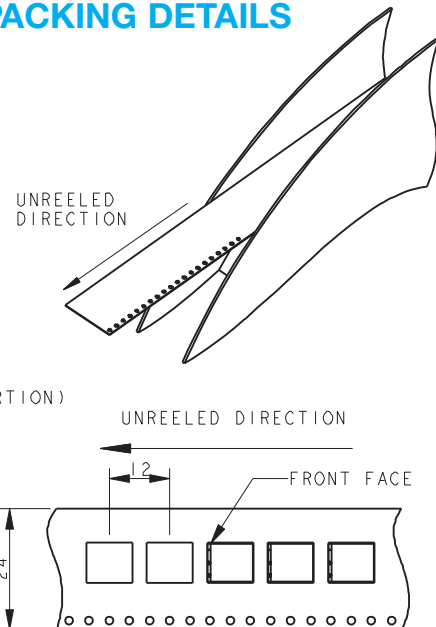
**SECTION ON A-A**



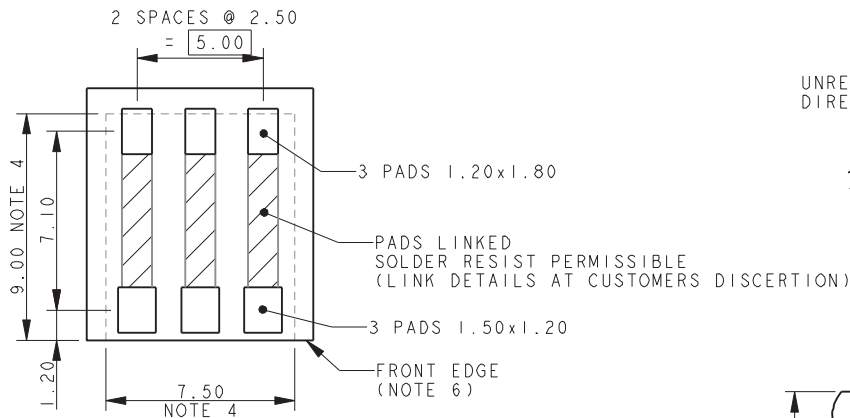
**NOTES:**

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 30.
3. CONTACT MATERIAL: COPPER ALLOY, 0.20MM THICK, TIN PLATED.
4. OUTLINE OF CONNECTOR.
5. WIRE ASSEMBLY / EXTRACTION, REFER TO PAGE 37.
6. FRONT FACE OF CONNECTOR CAN BE IN LINE WITH EDGE OF PCB.
7. PACKING TAPE AND REEL, QUANTITY 1000 PER REEL.

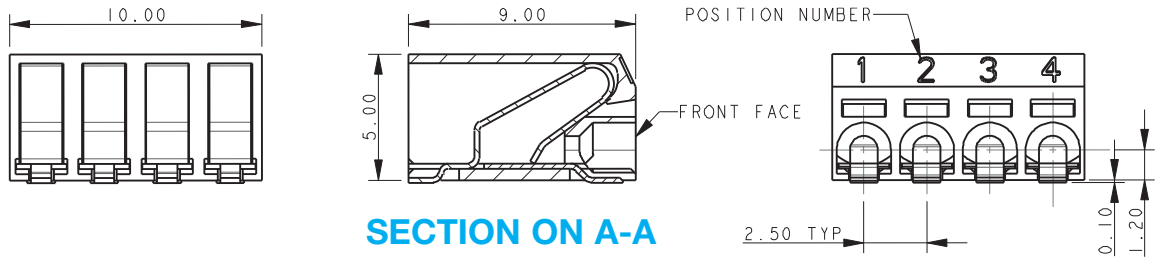
### PACKING DETAILS



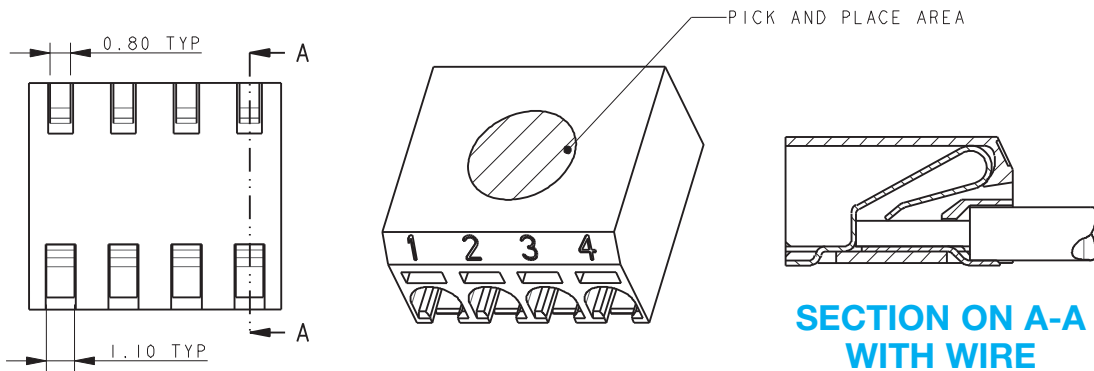
### 3 WAY PCB BOARD LAYOUT



### 4 WAY WIRE TO BOARD CONNECTOR



**SECTION ON A-A**

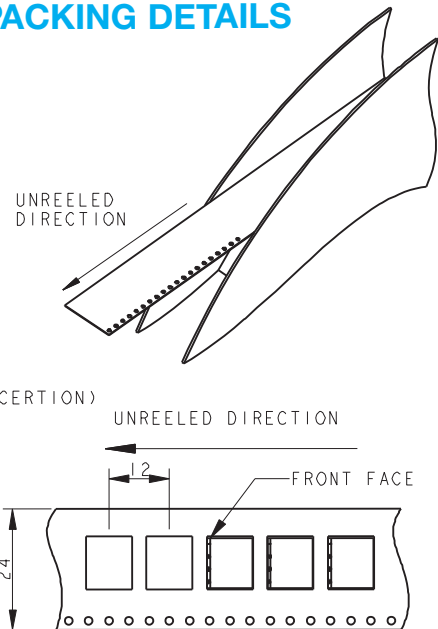


**SECTION ON A-A WITH WIRE**

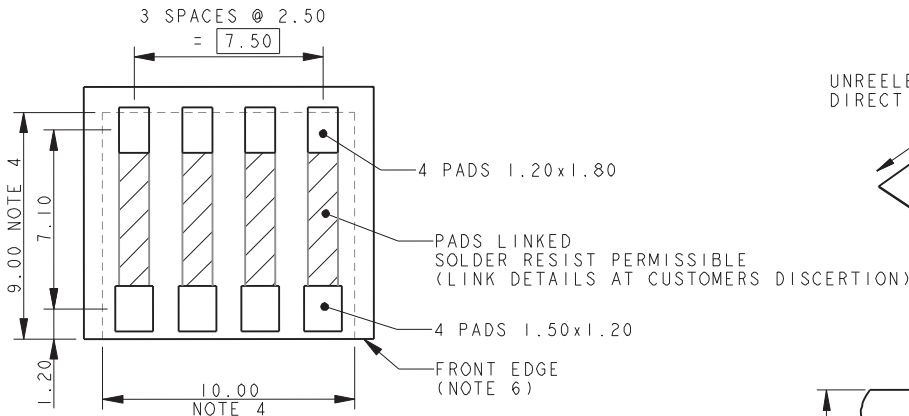
**NOTES:**

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 30.
3. CONTACT MATERIAL: COPPER ALLOY, 0.20MM THICK, TIN PLATED.
4. OUTLINE OF CONNECTOR.
5. WIRE ASSEMBLY / EXTRACTION, REFER TO PAGE 37.
6. FRONT FACE OF CONNECTOR CAN BE IN LINE WITH EDGE OF PCB.
7. PACKING TAPE AND REEL, QUANTITY 1000 PER REEL.

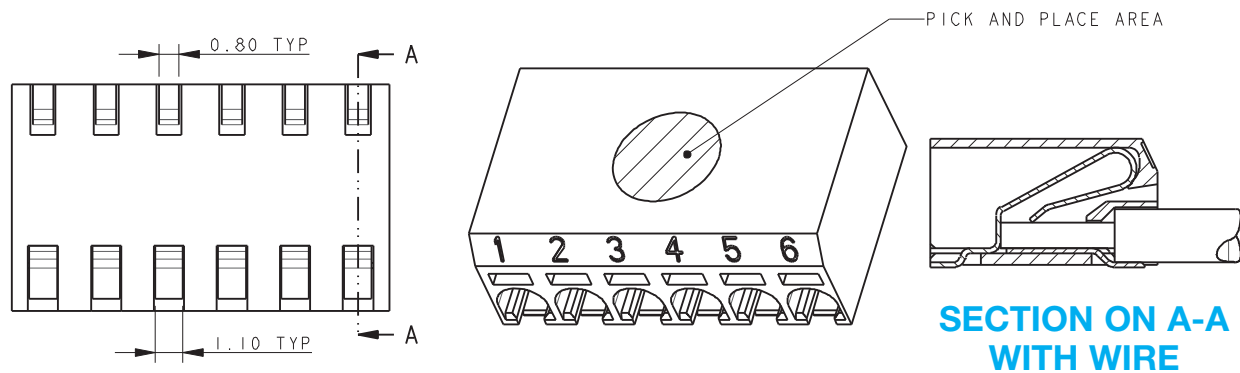
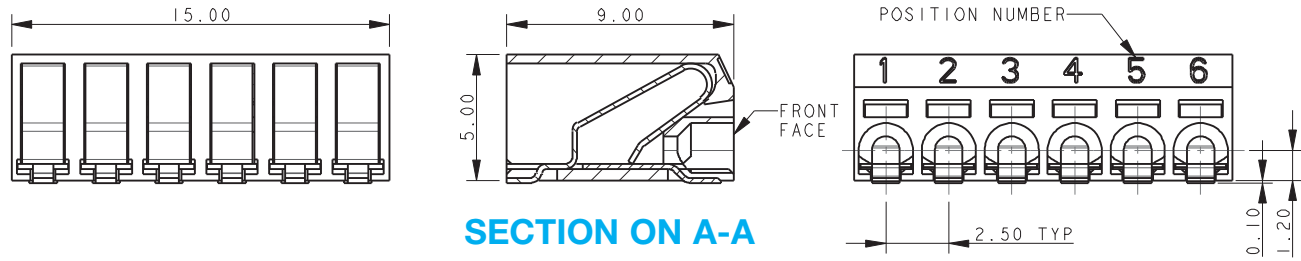
### PACKING DETAILS



### 4 WAY PCB BOARD LAYOUT



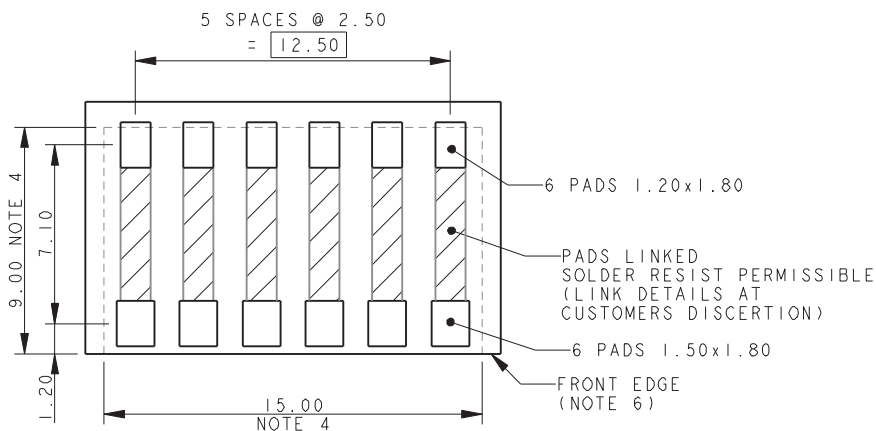
### 6 WAY WIRE TO BOARD CONNECTOR



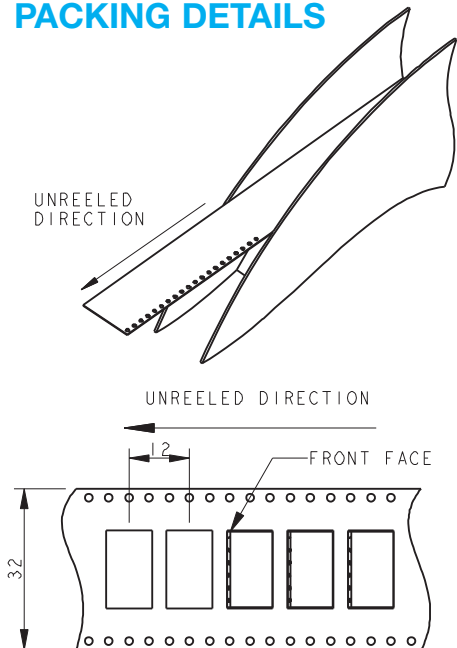
**NOTES:**

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 30.
3. CONTACT MATERIAL: COPPER ALLOY, 0.20MM THICK, TIN PLATED.
4. OUTLINE OF CONNECTOR.
5. WIRE ASSEMBLY / EXTRACTION, REFER TO PAGE 37.
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



### PACKING DETAILS

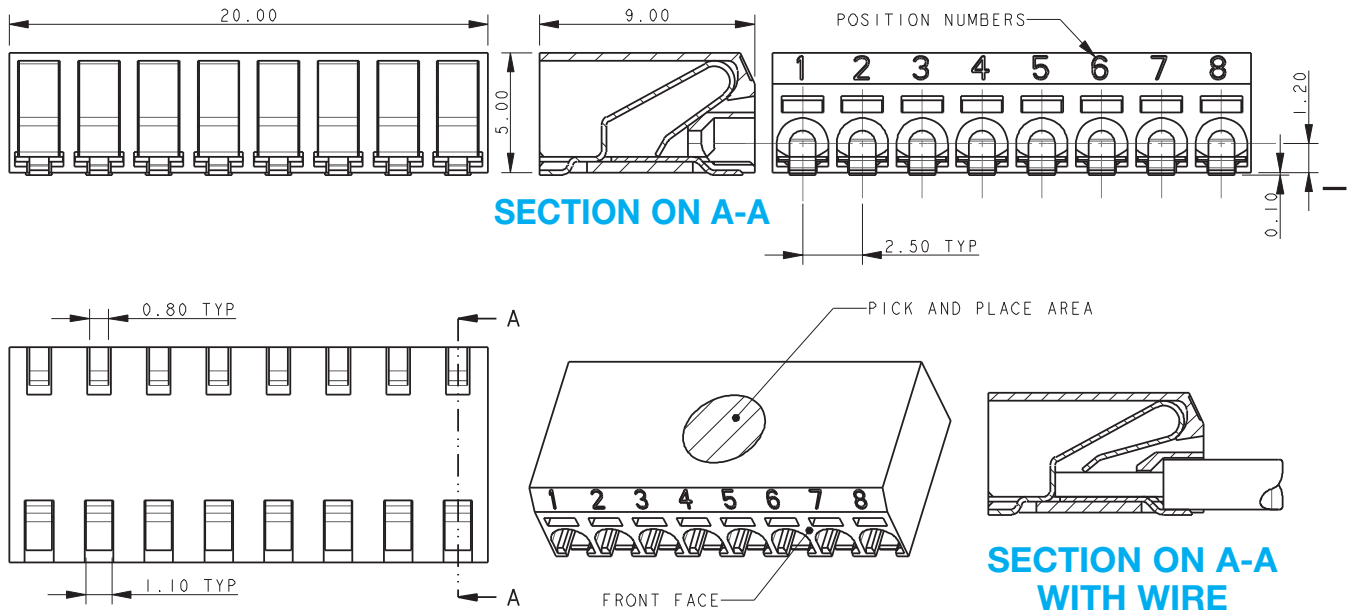


# Discrete Wire-to-Board; Poke-Home



## Series 9276

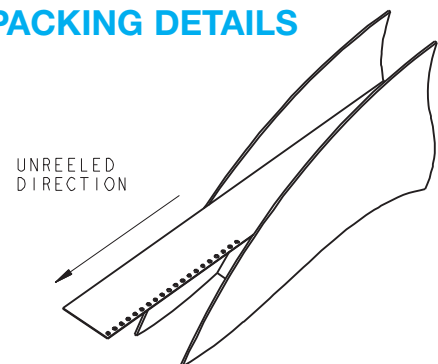
### 8 WAY WIRE TO BOARD CONNECTOR



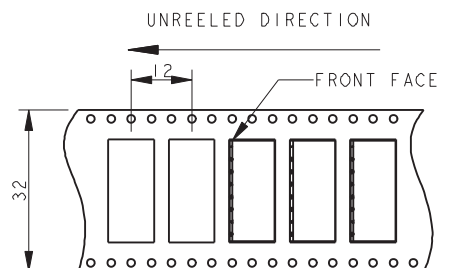
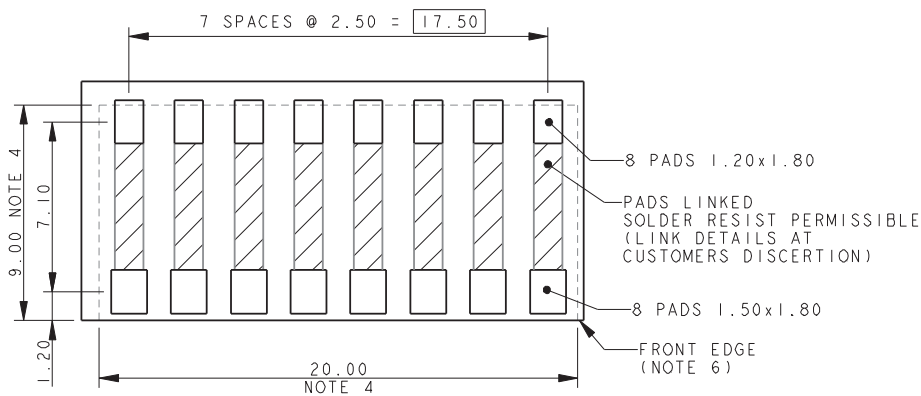
**NOTES:**

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 30.
3. CONTACT MATERIAL: COPPER ALLOY, 0.20MM THICK, TIN PLATED.
4. OUTLINE OF CONNECTOR.
5. WIRE ASSEMBLY / EXTRACTION, REFER TO PAGE 37.
6. FRONT FACE OF CONNECTOR CAN BE IN LINE WITH EDGE OF PCB.
7. PACKING TAPE AND REEL, QUANTITY 1000 PER REEL.

### PACKING DETAILS

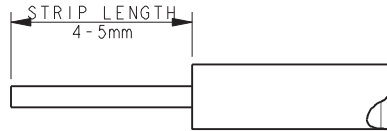


### 8 WAY PCB BOARD LAYOUT

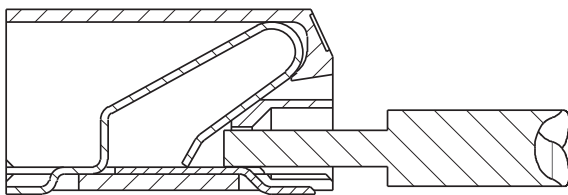


### WIRE ASSEMBLY

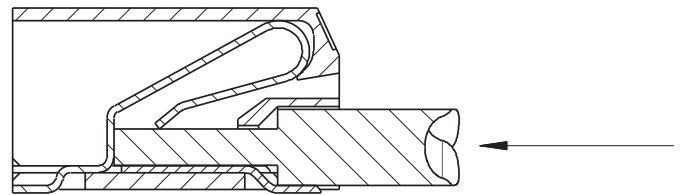
FOR FURTHER DETAILS REFER TO APPLICATION NOTES 201-01-127



TRIM INSULATION.  
DO NOT CRUSH CENTER OF WIRE.  
STRANDED WIRES TWISTED TOGETHER BEFORE INSETION.  
CHECK ALL STANDS OF WIRE ARE CORRECTLY ALIGNED  
ATER THE INSULATION IS REMOVED.

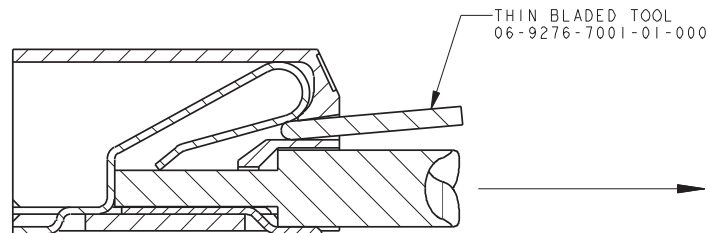


PUSH WIRE INTO HOLE IN FRONT OF CONNECTOR  
DO NOT BEND CONNECTOR



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.



## GENERAL DESCRIPTION

The 9157 series was specifically designed for portable equipment.

AVX now offers this two-part system as a standard product. The fixed SMT socket is designed to be housed within the confined dimensional constraints of the portable device.

The plug/cover connector has sprung contacts and is designed for termination to accessory equipment. The connector is designed to house fifteen signal contacts on a 1mm pitch rated at 1.5A. There is the option to include a switching RF coax.

A cradle SMT plug connector for docking applications is also available as standard and has the option of including a SMT RF coax.

Whatever your requirements, the 9157 series can also be customized to suit your application.

## APPLICATIONS

Suitable applications include:

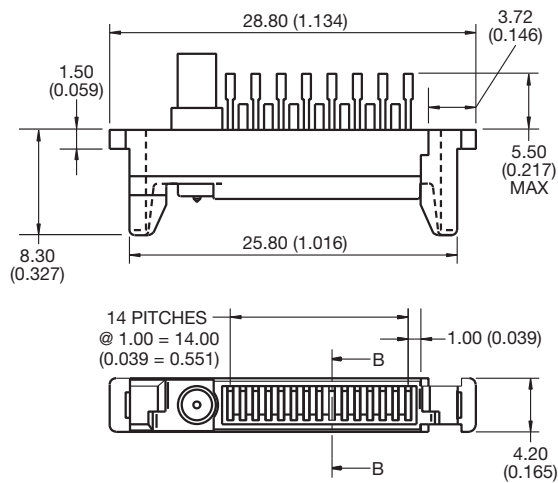
- Mobile Phones
- PDA
- Medical
- Docking/Charging for any portable device

## KEY FEATURES AND BENEFITS

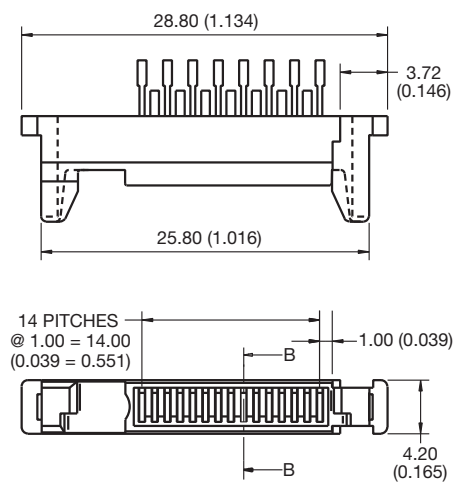
- Patented 20° angled face on the socket gives self-cleaning face when mated with plug.
- Metal Latching area integral to socket which saves PCB real estate.
- Integral to socket is a mechanical 50Ω switching coax for SMT termination.
- Single sprung plug contact design gives ten thousand mating cycles and cleaning/wiping action.
- Customer has option to terminate own RF coax using AVX custom tooling: 06-9157-7116-01-000.
- SMT plug has unique location pyramids that give positive alignment to portable device, and assist blind mating.
- RoHS Compliant.



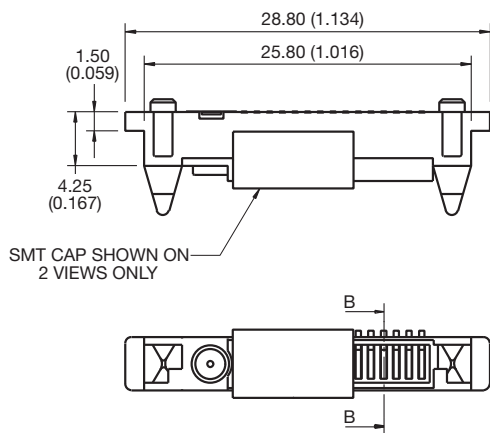
## Plug Wire with Coax



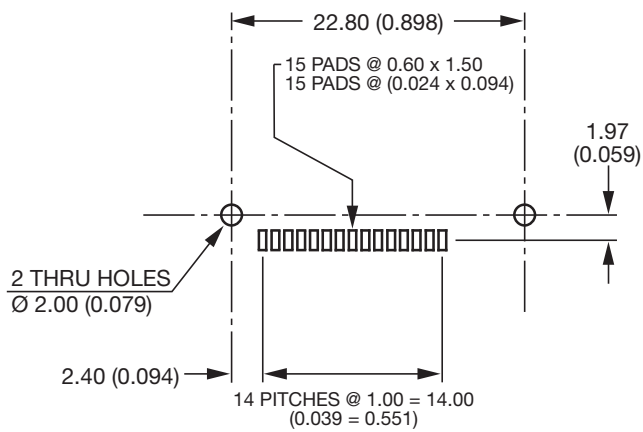
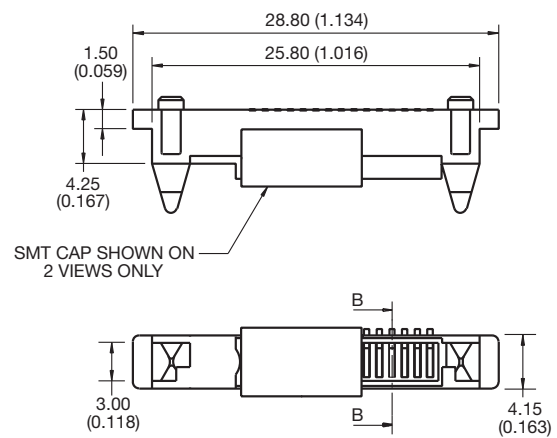
## Plug Wire without Coax



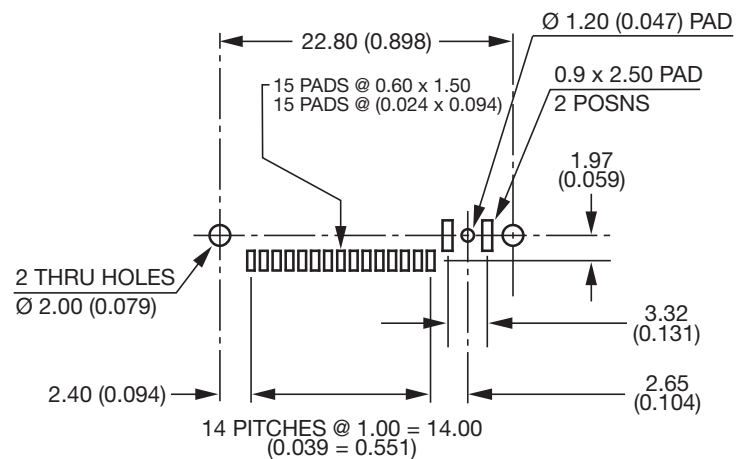
## SMT Plug with Coax



## SMT Plug without Coax



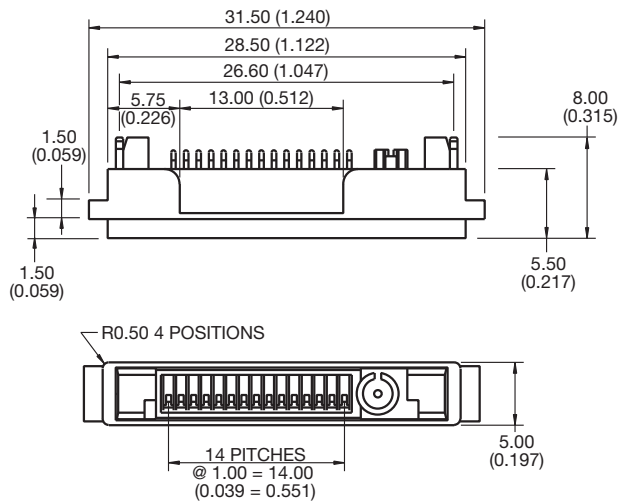
SUGGESTED PCB LAYOUT



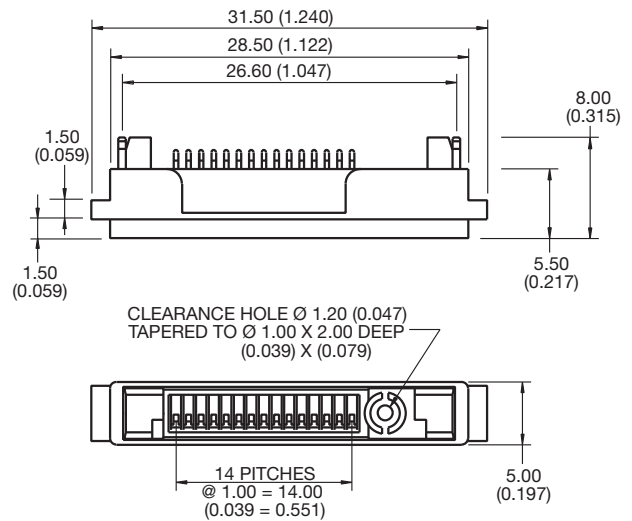
SUGGESTED PCB LAYOUT



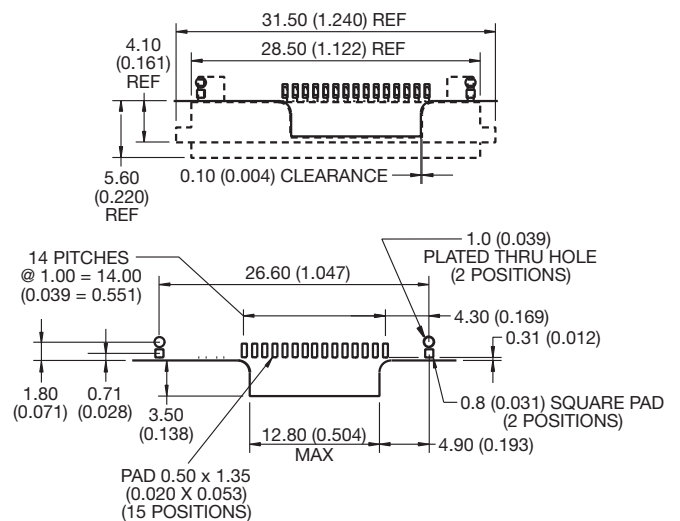
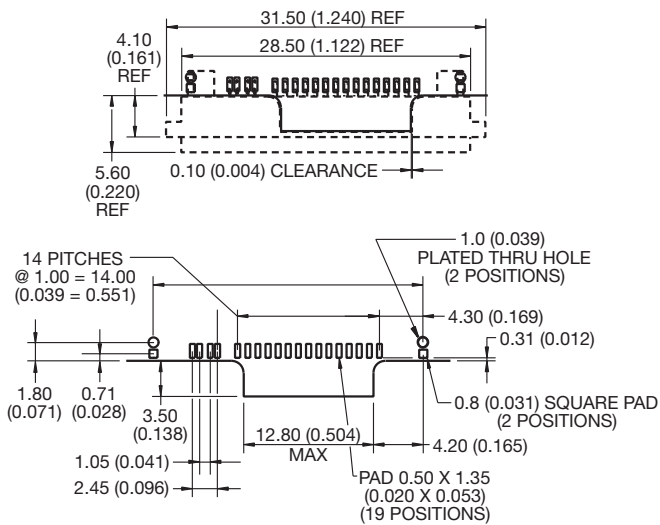
## SMT Socket with Coax



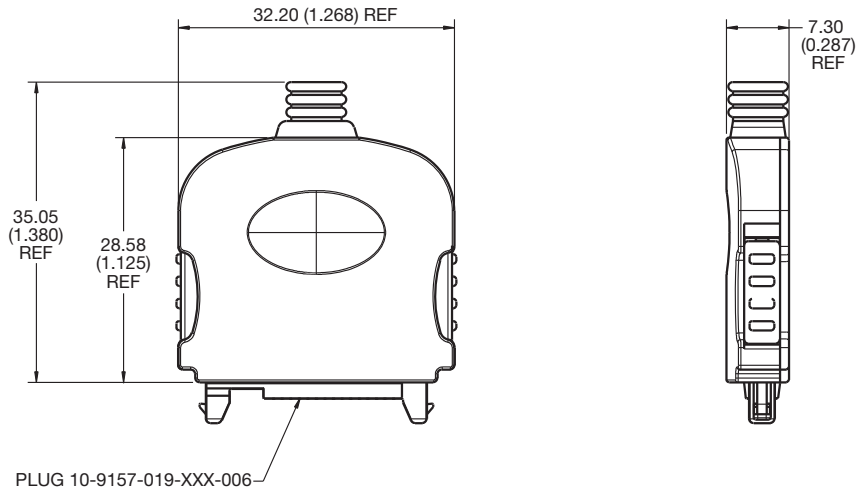
## SMT Socket without Coax



## SMT PAD LAYOUT

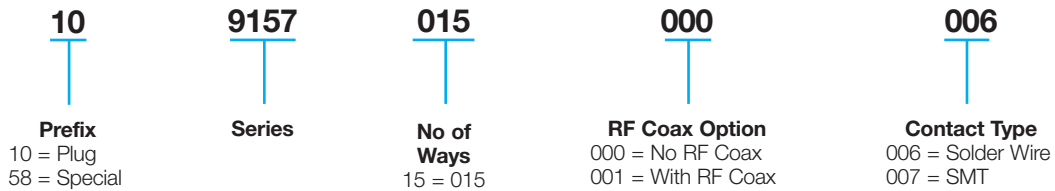


## Cover Kit

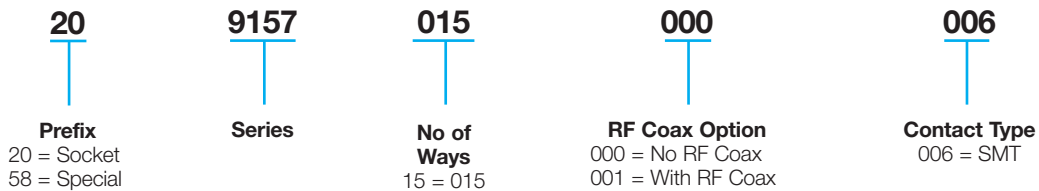


## HOW TO ORDER

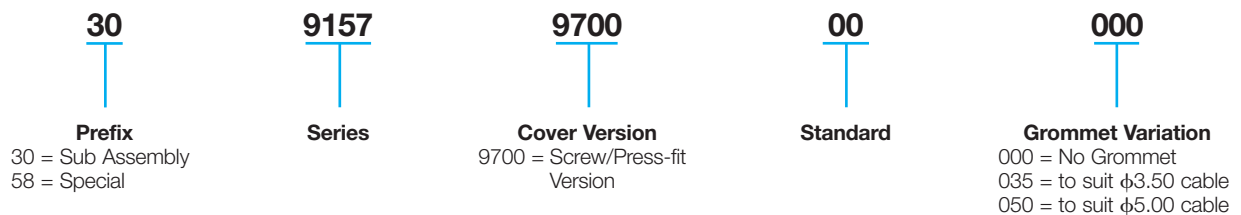
### Plug Options – Example



### Socket Options – Example



### Cover Options – Example \* Parts supplied in kit form



Patent: 2276285  
5540599

Note: Application tooling to terminate coax cable 06-9157-7116-01-000.

# 9157 MOBO® 19 Way I/O Connector



## GENERAL DESCRIPTION

Based on our standard 15 way 9157 I/O family, AVX has now released a family 19 way devices. This range includes a SMT 90 degree plug, a wire socket version that is used with the standard 9157 cover and a SMT socket for charging applications.

Options with the 90 degree SMT socket include the sealing of the connector contacts and the connector to the housing up to IP67. There is also an option to have an EMLB (early mate, late break) on pins 1 and 19.

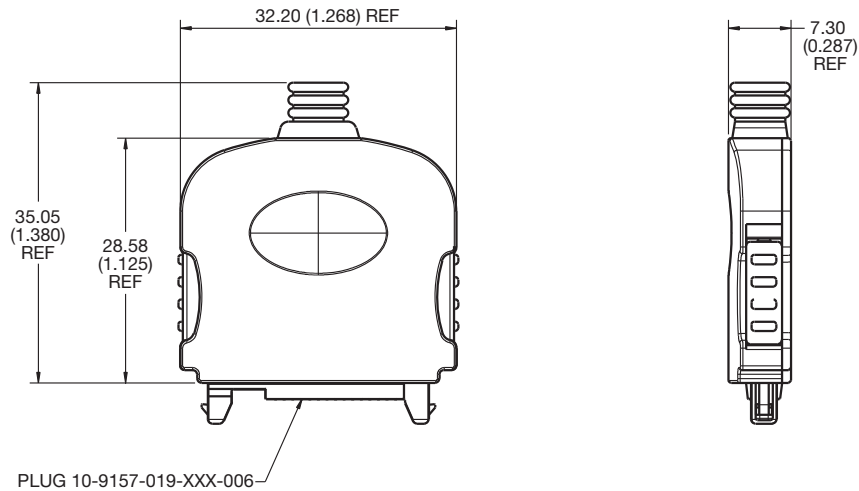
To achieve the seal to the device housing, it may be necessary to customize the device housing design.

On the SMT 90 degree version, we also have the capability of an integrated DC jack, enabling both the DC jack and the 19 way cover to be plugged in at the same time.

## AVAILABLE DEVICES:

<b>10 9157 019 000 006</b>	<b>Plug wire version</b>
<b>10 9157 019 000 007</b>	<b>SMT charging version</b>
<b>20 9157 019 000 006</b>	<b>90 degree SMT socket</b>
<b>30 9157 97 XX 00 000</b>	<b>Cover options see page 41</b>

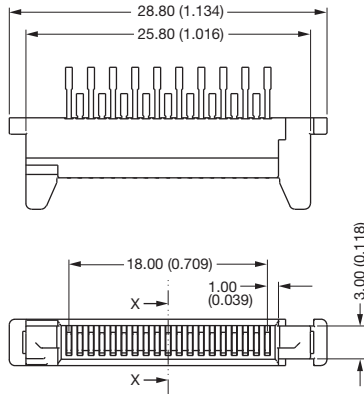
## Cover Kit



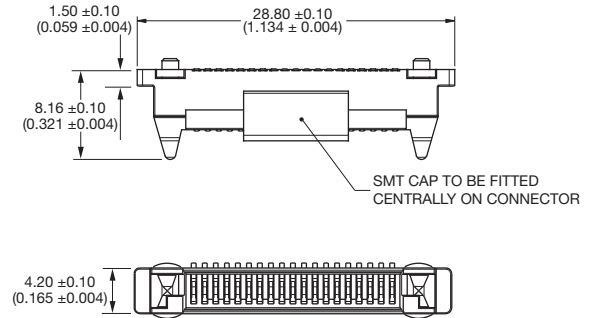
# 9157 MOBO® 19 Way I/O Connector



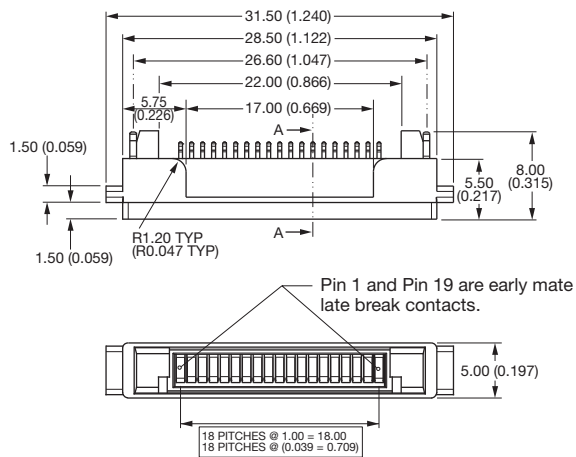
## Plug Wire



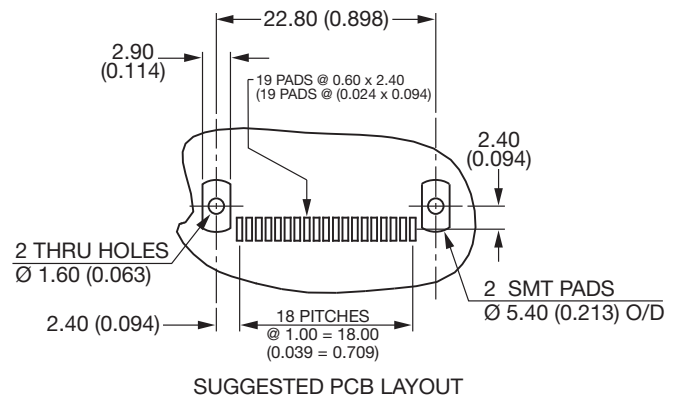
## SMT Plug



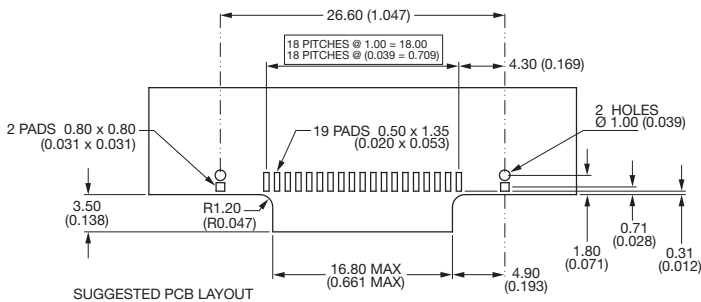
## SMT Socket



## SMT Plug (Suggested PCB Layout)



## SMT Socket (Suggested PCB Layout)





## GENERAL DESCRIPTION

An I/O interconnect system designed for portable equipment.

AVX offers this plug and socket reduced size system as a standard product. The fixed SMT socket is designed to be mounted on a PCB and housed within a portable device. The plug is designed for cable termination with options of single and double sided contacts and customizing the overmold cover or parts can be supplied as connector only for sub contract termination. The socket connector houses 16 contacts in two rows on 1.25mm pitch with a rating of 1 amp per contact. Both connectors are RoHS compliant.

## APPLICATIONS

Suitable applications include:

- Cellular Phones
- Handheld Devices
- Industrial Modules
- Medical Electronics

## KEY FEATURES AND BENEFITS

- No latching is required due to the click design of the contacts.
- Optional customization of the overmold cover.
- Options of single row (8 way) or dual row (16 way) plug connector.
- Compact size to optimize PCB real estate.
- Metal outer cover provides integrated PCB location and solder tab.
- Positive alignment and orientation of the plug and socket.
- 5K mating cycles and 1 amp rated.

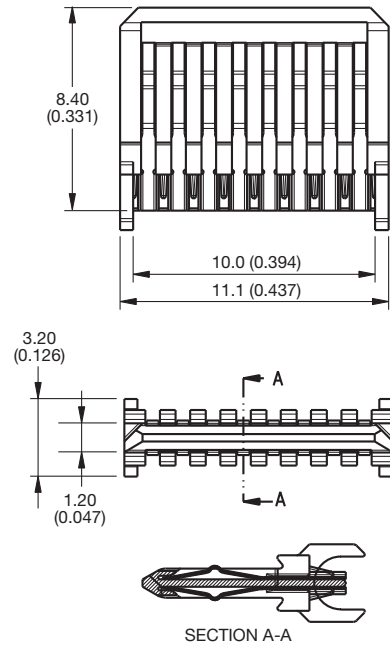
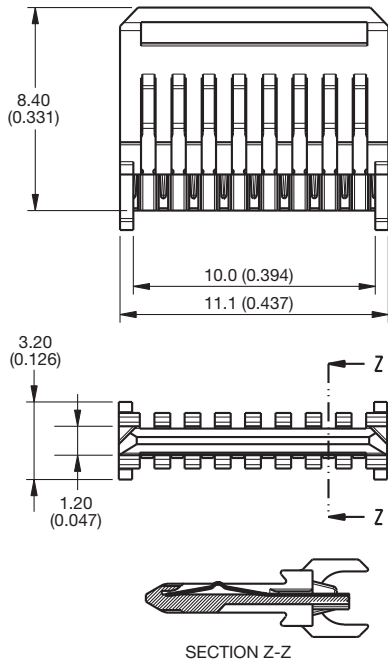


# 9257 Reduced Size I/O Connector

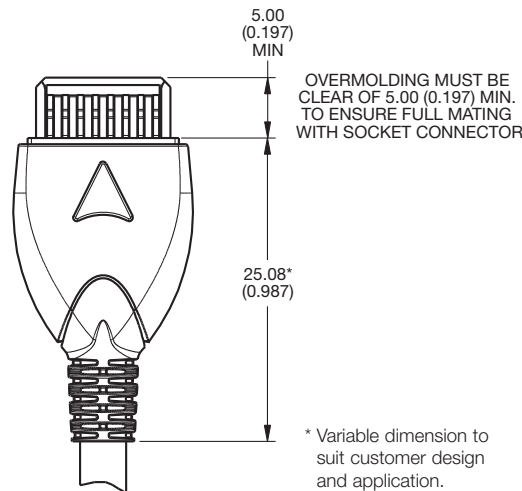


## Single Sided 8 Way I/O Plug Connector

## Dual Sided 16 Way I/O Plug Connector



## Suggested Overmolding for Plug Connector



## HOW TO ORDER

**10**  
Prefix  
10 = Plug Connector

**9257**  
Series

**016**  
No of Ways  
016 = 16 way dual sided  
008 = 8 way single sided

**001**  
Contact  
001 = Solder Bucket

**003**  
Plating Option  
003 = 0.8µm Selective Gold,  
Tin Tail

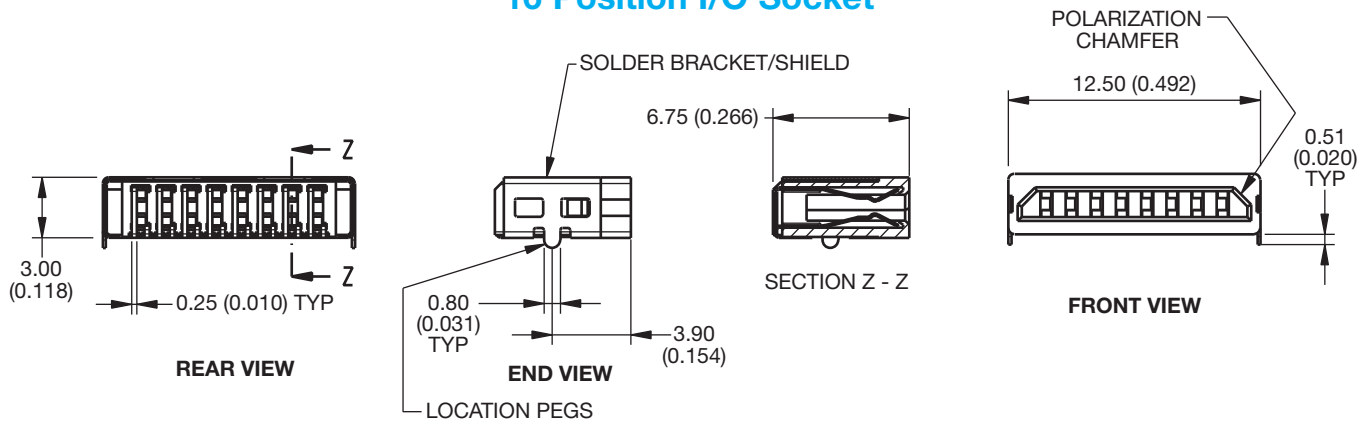
- Notes:
1. All dimensions are for reference only unless toleranced.
  2. For full product specification refer to AVX spec 201-01-089.
  3. Parts packed in tube with 50 parts per tube.



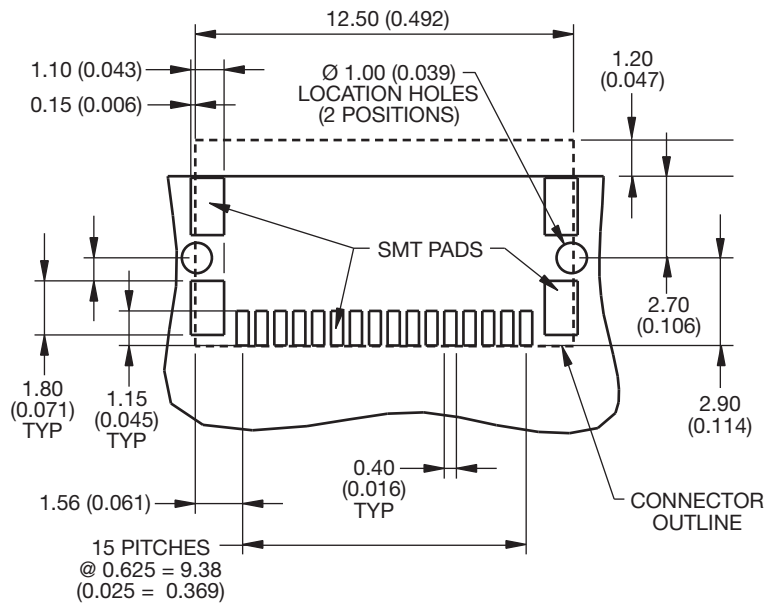
# 9257 Reduced Size I/O Connector



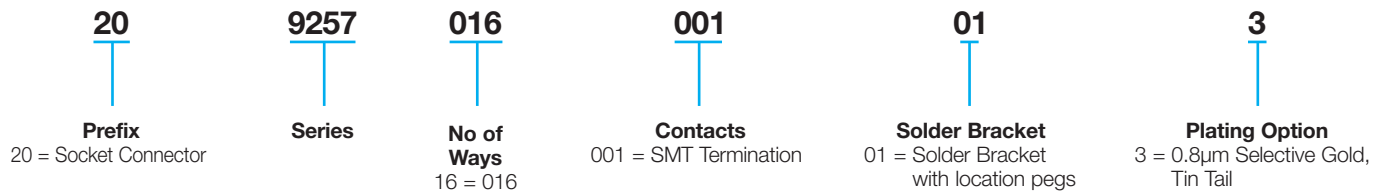
## 16 Position I/O Socket



## PCB Layout



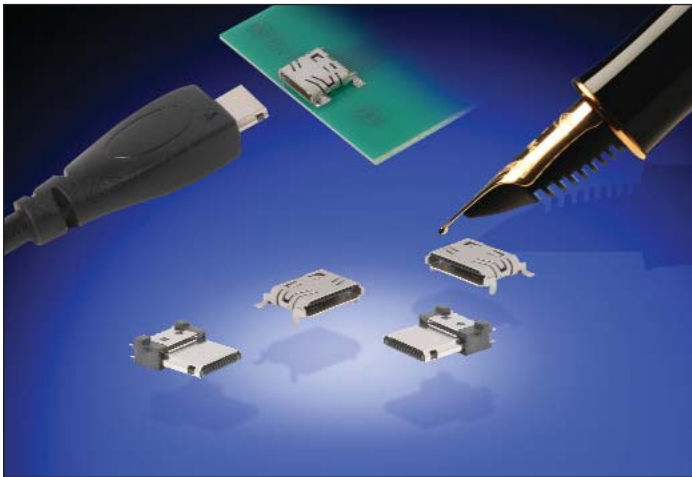
## HOW TO ORDER



Packing Details	
Reel Qty.	1100
Pack Qty.	5500

- Notes:
- 16 Way I/O Socket.
  - For full product specification refer to AVX spec 201-01-089.
  - General tolerance  $\pm 0.20$  (0.008) unless otherwise stated.
  - SMT feet within 0.13 (0.005) coplanarity.





## GENERAL DESCRIPTION

AVX offers the 12 way mini I/O connector as a standard product. The fixed SMT socket is designed to be mounted on a PCB and housed within a portable device. The plug is designed for cable termination with options of single and double sided contacts. Parts can be supplied as connectors only for sub contract termination, or with a custom overmold cover. The socket connector houses 12 contacts in a single row on 0.50mm pitch.

## APPLICATIONS

- Medical Electronics
- Cellular Phones
- Industrial Modules
- Hand Held Devices

## KEY FEATURES AND BENEFITS

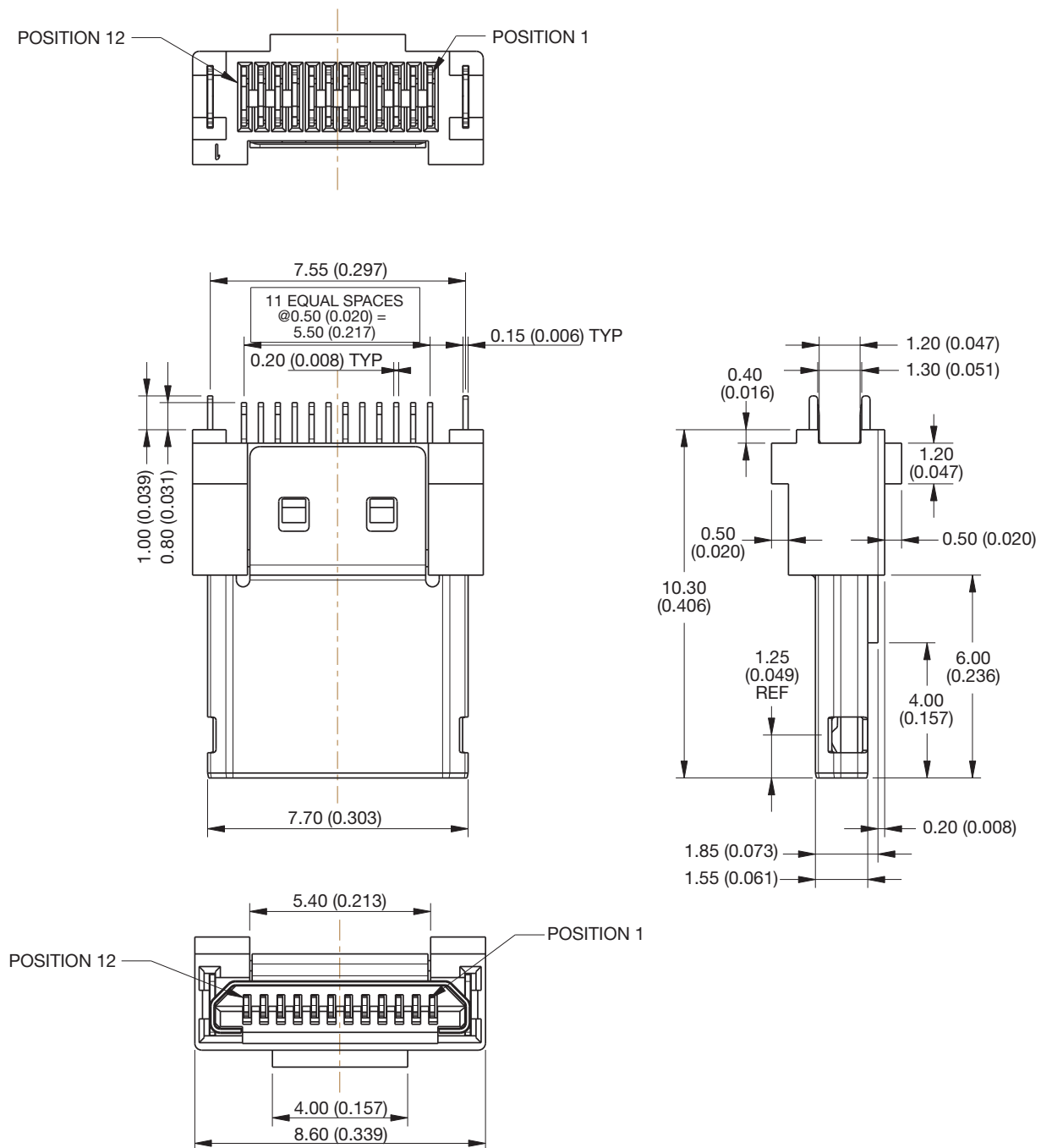
- No latching required due to the click design of the contacts.
- Optional customization of the overmold cover.
- Compact size to optimize PCB real estate.
- Metal outer cover provides integrated PCB location and solder tab.
- Positive alignment and orientation of the plug and socket.



# 9257 Mini I/O Connector



## 9257 STANDARD 12 WAY MINI I/O PLUG



### HOW TO ORDER

**10**

**Prefix**

10 = Plug Connector

**9257**

**Series**

**012**

**No of Ways**

12 = 012

**101**

**Contacts**

101 = Solder Tail

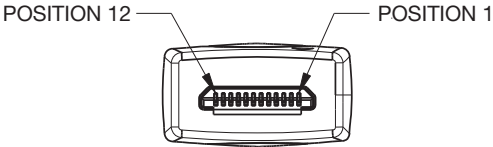
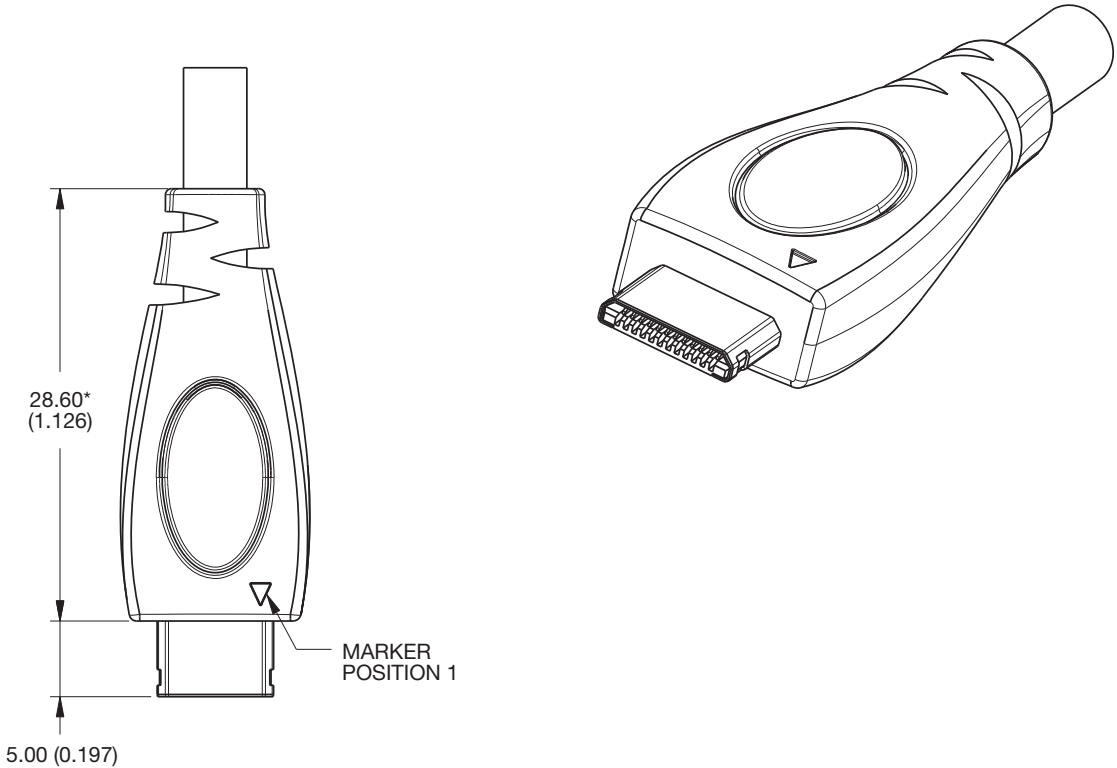
**006**

**Plating Option**

006 = 0.25µm Gold over Nickel



## SUGGESTED OVERMOLDING FOR PLUG CONNECTOR

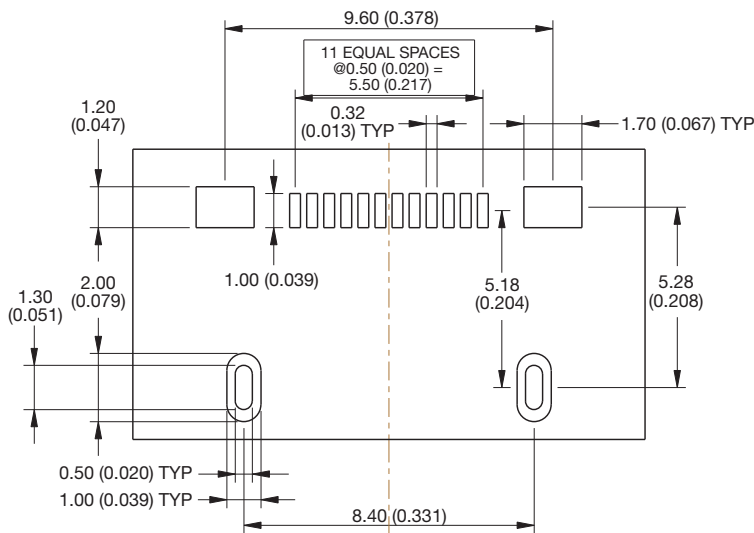
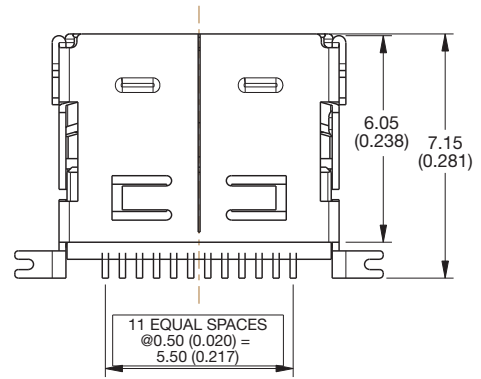
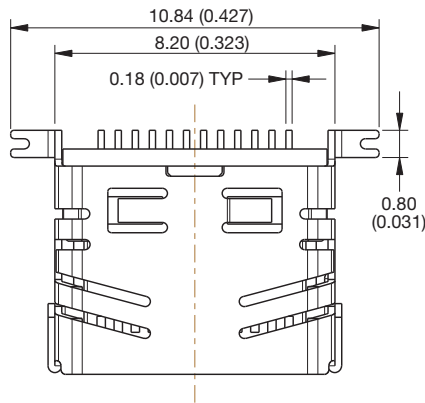


DIMENSION MARKED WITH A \* ARE VARIABLE DIMENSION TO SUIT CUSTOMER DESIGN AND APPLICATION

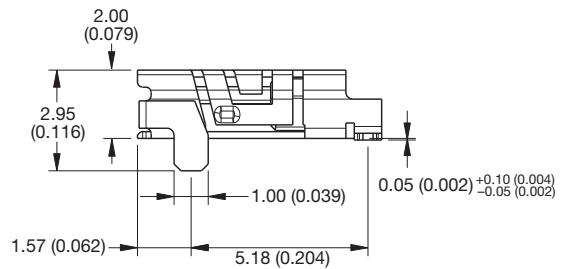
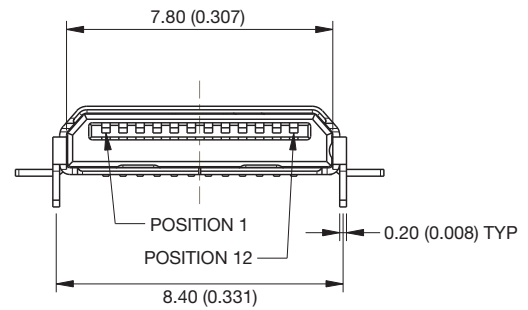
# 9257 Mini I/O Connector



## 9257 STANDARD 12 WAY MINI I/O SOCKET



**SUGGESTED PCB LAYOUT**



## HOW TO ORDER

**20**

**Prefix**

20 = Socket Connector

**9257**

**Series**

**012**

**No of Ways**

12 = 012

**101**

**Contacts**

101 = SMT Termination

**01**

**Solder Bracket**

01 = Solder Bracket with location pegs

**6**

**Plating Option**

6 = 0.25µm Gold over Nickel



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