

PL-700SM-B SERIES

Metal Shell Auto-Coupling Connectors
27 pole capacity circular shell connectors

PL-700SM-B FEATURES

Compact and configurable, the PL-700 Series connector is Alden's most versatile offering in a sub .700" diameter package. PL-700 Series connectors attach to a cable with a Press & Seal™ backshell that provides the refined look and performance of an overmolded product.

Packaging (intuitive, compact, configurable)

- Pulse-Lok® auto-latch / mating confirmation
- Up to 27 contact positions

- 14 standard color combinations
- Available as an overmolded cable assembly
- Custom configurations available

Performance (for harsh environments)

- Press & Seal™ self-sealing contacts & backshell
- Water Proof
- Sterilizable
- Chemical resistant housing
- High mating cycle capability
- Rugged metal shell

SPECIFICATIONS

Electrical (See Table A)

Mating Life: 5,000 cycles min.
Contact Resistance: < 10 milliohms*

Material

Connector Housing: Nickel Plated Brass
Flex Reliefs: Thermoplastic Rubber
Contacts: Pins = Brass, Sockets = Bronze Alloy
Gold Plate per MIL-G-45204C
30 - 45µ" Gold over 50 - 200µ" Nickel strike

Mechanical

Mating Cycles: 20K cycles max
Retention Force (axial):
• Mated Connectors: 75 lbs. Minimum
• Cable to Connector: to 50 lbs. typical
• Backshell to Connector: 50 lbs. Minimum

Housing Styles (illustrated on page 2)

- Plug – in-line, cable-mount
- Receptacle – front panel-mount
- Receptacle – in-line, cable-mount

Environmental

- Operating Temp: -20C to +125C**
- Moisture Resistance: to IP-67
- Sterilizable: steam, gamma & EtO
- Chem. Resistance: common OR cleaning solvents

* post conditioning

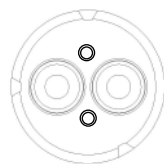
** dependent on backshell material

TABLE A: STANDARD CONTACT CONFIGURATIONS & SPECIFICATIONS

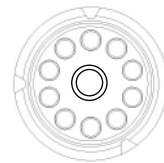
Up to 27 contact positions



Standard hybrid circuit arrangements



Coaxial & custom circuits available



Number of Poles	Contact Size Pin ϕ (mm)	Max Wire Gauge	Operating Voltage	Operating Current	Contact Resistance
27	0.5	28	300 V RMS	0.5 A	< 14m ohms
24	0.5	28	300 V RMS	0.5 A	< 14m ohms
18	0.5	28	300 V RMS	0.9 A	< 14m ohms
14	0.7	22	300 V RMS	0.9 A	< 6m ohms
12	0.7	22	300 V RMS	1.2 A	< 6m ohms
10	0.7	22	300 V RMS	2.0 A	< 6m ohms
7	0.7	22	300 V RMS	2.1 A	< 6m ohms
6	0.7	22	300 V RMS	2.1 A	< 6m ohms
5	0.7	22	300 V RMS	2.4 A	< 6m ohms
4	0.7	22	300 V RMS	2.4 A	< 6m ohms
4	2/1.5 + 2/1.7	16 / 22	300 V RMS	7.0 A / 3.0 A	< 6m ohms
3	0.7	22	300 V RMS	3.0 A	< 6m ohms
2	0.7	22	300 V RMS	3.0 A	< 6m ohms
2	1.5	16	300 V RMS	13.0 A	< 2m ohms
1	0.7	22	300 V RMS	3.0 A	< 6m ohms
1	2.3	12	300 V RMS	15.0 A	< 2m ohms

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PL-700SM-B SERIES

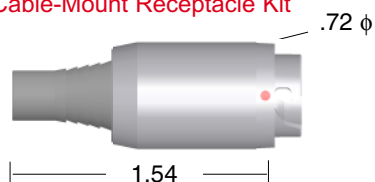
Plastic Shell Auto-Coupling Connectors

27 Pole Capacity circular shell connectors

STANDARD HOUSING OPTIONS

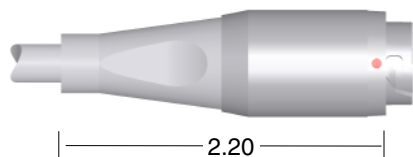
IN-LINE RECEPTACLES

Cable-Mount Receptacle Kit



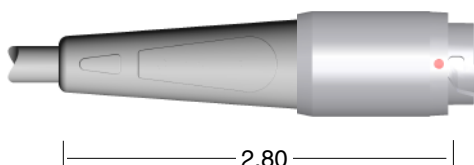
Select this component from Table B

Cable-Mount Receptacle Kit with optional Press & Seal™ Backshell



Select Press & Seal™ Backshell from Table C

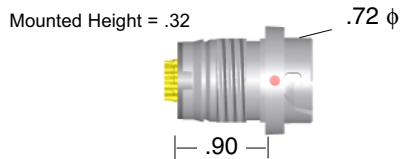
Cable-Mount Receptacle with optional overmolded strain relief



Refer to PL Series Overmolding Guide

PANEL MOUNT RECEPTACLES

Front Panel-Mount Receptacle



Panel Thickness Range to .187"
Select this component from Table B

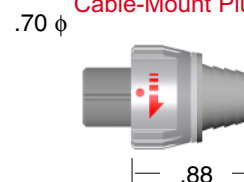
Front Panel-Mount Receptacle with Dust Cover



Dust cover is optional.
Component # 300390

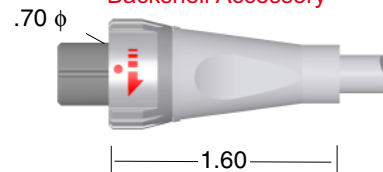
IN-LINE PLUGS

Cable-Mount Plug Kit



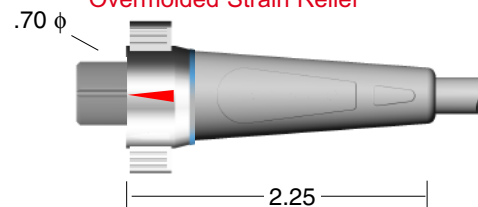
Select this component from Table B

Cable-Mount Plug with Press & Seal™ Backshell Accessory



Select Press & Seal™ Backshell from Table C

Plug with Relief Tabs and Optional Overmolded Strain Relief



Refer to PL Series Overmolding Guide

All dimensions in inches (except where noted)

TABLE B:

STANDARD PART NUMBERS

Number of Poles	In-Line Receptacle	Panel Mount Receptacle		In-Line Plug Standard	In-Line Plug with Release Tabs
	Solder Cup	Solder Cup	PCB	Solder Cup	Solder Cup
27	357062	356062	356149	355062	353062
24	357131	356131	356209	355131	353131
18	357125	356125	356203	355125	353125
14	357048	356048	356143	355048	353048
12	357119	356119	356197	355119	353119
10	357034	356113	356191	355113	353113
7	357107	356028	356137	355028	353028
6	357107	356072	356185	355072	353072
5	357101	356071	356179	355071	353071
4	357095	356095	356173	355095	353095
2 + 2	357020	356020	-	355020	353020
3	357059	356089	356167	355089	353089
2 x .7mm	357080	356080	356161	355080	353080
2 x 1.5mm	357083	356077	-	355077	353077
1 x .7mm	357071	356101	356155	355101	353101
1 x 2.3mm	357006	356006	-	355006	353006

Note: Part numbers cover black housings in Key 1 configuration. For options utilize the Alden connector configurator located @ www.aldenproducts.com/configurator

Options Include:

IndicatorColor Options
Mating Key Options

Black, Blue, Red standard
2 Standard Keys, Proprietary Keys Available

*Press & Seal(tm) contacts, crimp or solder termination

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Contact Termination

"Press & Seal" Contact System



Available on 1 to 7-pole configurations
Accepts wire gauges up to 12 AWG (1 pole),
16 AWG (2 poles), 22 AWG (7 poles)

All Connectors

"Press & Seal" Features & Benefits

- Contacts provide IP-67 water-tight seal when inserted into insulator
- Easy *crimp & poke* installation
- Excellent contact retention
- Contacts may be crimped or soldered

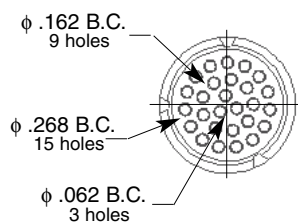


Fixed Solder Cup

Tiered solder cups provide easy access to center positions. Canted cups facilitate quick and easy wire positioning. Standard on 10 to 27-pole configurations

PCB Termination

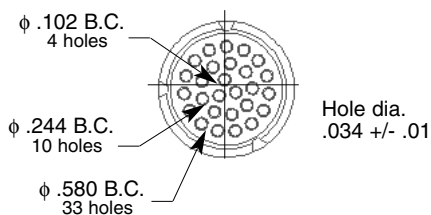
PCB Mounting Template - 27 Pole



Request Sales Drawing SD-106486

Panel-Mount Receptacles

PCB Mounting Template - 14 Pole



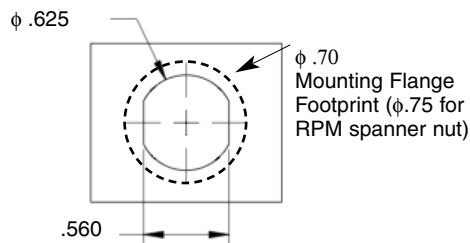
Request Sales Drawing SD-106487

Panel 2

Features & Benefits

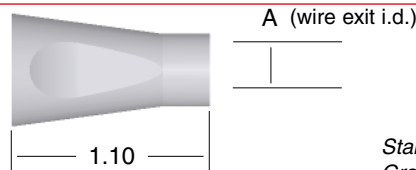
- Available in most pole counts from 1 to 27 poles
- PCB stand-offs ensure proper positioning
- Convenient packaging -- high-temperature contact cures may be soldered to PCB and snapped into panel-mounted receptacle housing later

Panel-Mount Cut-Out Templates



Applies to both front & rear panel-mount receptacles

In-Line Plug & Receptacle Backshell Table C



Standard color is black.
Gray is optional.

In-Line Backshell -

The PL-700 plug housing is designed to accept Alden's one piece, Press & Seal PVC Backshell. This unique backshell simply snaps into place providing an IP-67 rated seal to the plug housing and cable exit without hardware resulting in a clean overmolded look. For optimum sealing we suggest selecting a wire exit i.d. that is at least .005" smaller than your nominal cable diameter.

Accessories

Plug Soaking Cap



Alden P/N 300391

Standard color is black. Gray optional.

Assembly Instructions

Panel-Mount Receptacle (1 to 7 pole) = AI-PL30A

Panel-Mount Receptacle (10 to 27 pole) = AI-PL30B

In-Line Plug (1 to 7 pole) = AI-PL31A

In-Line Plug (10 to 27 pole) = AI-PL31B

Dimension A	Part # Black	Part # Gray	Accessory Description
0.053	300350	300351	Plug Backshell
0.064	300352	300353	Plug Backshell
0.075	300354	300355	Plug Backshell
0.086	300356	300357	Plug Backshell
0.096	300358	300359	Plug Backshell
0.104	300360	300361	Plug Backshell
0.120	300362	300363	Plug Backshell
0.129	300364	300365	Plug Backshell
0.142	300366	300367	Plug Backshell
0.153	300368	300369	Plug Backshell
0.162	300370	300371	Plug Backshell
0.170	300372	300373	Plug Backshell
0.186	300374	300375	Plug Backshell
0.204	300376	300377	Plug Backshell
0.215	300378	300379	Plug Backshell
0.225	300380	300381	Plug Backshell
0.235	300382	300383	Plug Backshell
0.249	300384	300385	Plug Backshell
0.264	300386	300387	Plug Backshell
0.300	300388	300389	Plug Backshell

All measurements in inches

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Metal Shell Auto-Coupling Connectors

27 Pole Capacity Circular Shell

PL-700 SERIES PLUG & RECEPTACLE ASSEMBLY TOOLS

Field or Bench Assembly Tools

Part Number

Contact Insertion Hand Tools (for 1 to 7 poles)

- | | |
|------------------------------------|--------|
| - Insertion Hand Tool # 12 Contact | 390020 |
| - Insertion Hand Tool # 16 Contact | 390021 |
| - Insertion Hand Tool # 22 Contact | 390022 |
- (Order the required nest(s) from the following selections)

Insulator Loading Nests for Hand Tools

- | | |
|--------------------------------|--------|
| - In-Line Plug, Key Pattern #1 | 390025 |
| - In-Line Plug, Key Pattern #2 | 390026 |
| - Receptacle | 390027 |

Connector Kit Hand Assembly Tools

- | | |
|---------------------------------------|--------|
| - Hand Vice Grip with Fixture Adapter | 390010 |
|---------------------------------------|--------|
- (Order the required nest(s) from the following selections)
- | | |
|---|--------|
| - Back Shell Fixture (.050" to .190" Cable Diameter) | 390002 |
| - Panel Mount Receptacle Insulator Fixture & Back Shell Fixture (.200" to >300" Cable Diameter) | 390003 |
| - In-Line Plug Insulator Fixture & In-line Receptacle Adapter Fixture | 390004 |

Back Shell Sizing Tools

- | | |
|---|--------|
| - Tool for Cable Diameter of .050" to .120" | 390042 |
| - Tool for Cable Diameter of .120" to .190" | 390043 |
| - Tool for Cable Diameter of .200" to .300" | 390044 |

Spanner Wrench

- | | |
|---|-----------|
| - Tightens RPM Receptacle's Mounting Ring | 390045-88 |
|---|-----------|

Contact Termination Tools

- | | |
|-------------------------------|--------|
| - Pneumatic Crimper | 390040 |
| - Stand for Pneumatic Crimper | 390041 |
| - Hand Crimper | 390035 |
| - Size - #12 Crimp Die | 390032 |
| - Size - #16 Crimp Die | 390031 |
| - Size - #22 Crimp Die | 390030 |

Production arbor press & fixturing is available upon request.

Receptacle



- 1 Receptacle Housing
2 Receptacle Insulator

In-Line Plug



- 1 Plug Insulator
2 Plug Housing Assembly

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