

# MID POWER SPEC Pak®

Sealed Power For Environmental Connections



Marine | Wind Power | Lighting | Transportation | Pumps | Ground Support  
Machine Tool | Industrial Automation | Motor | Solar Power | Harsh Environments



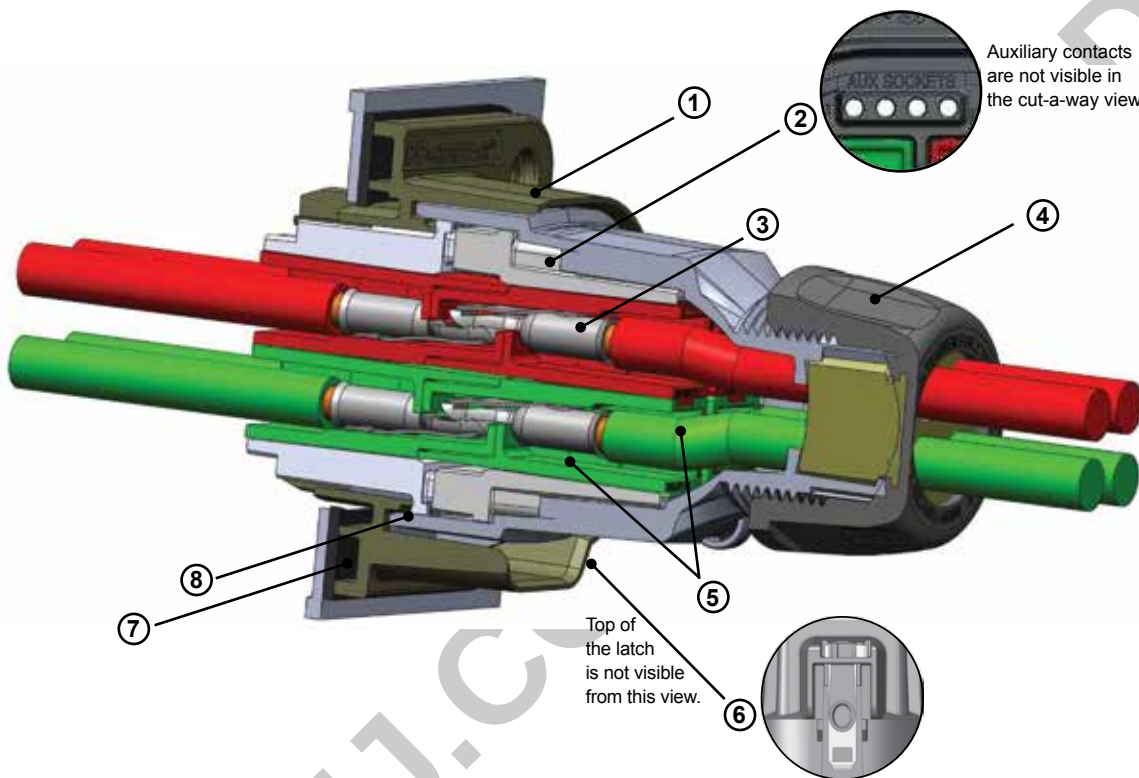
**APP**  
Anderson Power Products®

An **IDEAL** Company

# Rugged and Sealed (IP68) Plugs and Receptacles

The SPEC Pak® Mid Power is rugged and environmentally sealed (IP68). It leverages APP's core Powerpole® flat wiping contact technology, offering power handling capabilities up to 80 amps at 600 volts with signal.

The SPEC Pak® Mid Power shells are highly configurable. They accept up to four Powerpole® 75 (PP75) contacts and housings. They also accept up to 8 pin and socket auxiliary contacts providing the user signal and/or sequencing options. Assembly is made easy through the use of colored Powerpole® housings which can be matched to wire colors. They will accept wire sizes ranging from 12 to 6 AWG [3.3 to 13.3 mm²]. SPEC Pak® Mid Power is highly configurable providing users with a multitude of flexible design solutions in a single interconnect.



## 1 - Chemical & UV Resistant Ruggedized Shells

- Wire to Wire Configurations
- Wire to Panel Configurations

## 2 - Auxiliary Contacts for Signal and/or Sequencing (up to 8)

## 3 - Power Contacts (up to 4)

## 4 - Sealing Gland to Ensures (IP68) Environmental Seal

## 5 - Color Coded Powerpole® Housings to Match Wire Colors

## 6 - Stainless Steel Latches to Prevent Accidental Unmating

## 7 - IP68 Panel Mount Receptacle Gasket

## 8 - Sealing O-Ring Ensures (IP68) Environmental Seal

# Specifications

## ..... SPEC Pak® Shells Used With .....

|                                        | SPEC Pak® Shell | Powerpole® Power Contacts & Housings | Auxiliary Contacts <sup>[1]</sup> (PowerMod® Series) |
|----------------------------------------|-----------------|--------------------------------------|------------------------------------------------------|
| <b>Electrical</b>                      |                 |                                      |                                                      |
| Current Rating (Amperes)               |                 |                                      |                                                      |
| UL 1977                                | -               | 80 <sup>[2]</sup>                    | 5                                                    |
| CSA (30° C Rise)                       | -               | 50 <sup>[2]</sup>                    | 5                                                    |
| Voltage Rating                         |                 |                                      |                                                      |
| UL 1977 (AC/DC)                        | -               | 600                                  | 600                                                  |
| Dielectric Withstanding (AC)           | -               | 3,000                                | -                                                    |
| Contact Resistance Milliohms (average) | -               | 0.200 <sup>[3]</sup>                 | 2.000 <sup>[4]</sup>                                 |
| Hot Plug Amp Rating (UL 1977)          |                 |                                      |                                                      |
| 250 Cycles at 120V                     | -               | 50 <sup>[5]</sup>                    |                                                      |
| <b>Mechanical</b>                      |                 |                                      |                                                      |
| Environmental Seal                     |                 |                                      |                                                      |
| IP rating                              | IP68            | -                                    | -                                                    |
| Submersion (UL 50E)                    | Pass            | -                                    | -                                                    |
| Wire Size                              | -               | 12 to 6 AWG                          | 24 to 12 AWG                                         |
|                                        | -               | 3.3 to 13.3 mm <sup>2</sup>          | 0.50 to 2.5 mm <sup>2</sup>                          |
| Operating Temperature                  | -40° to 105° C  | -20° to 105° C                       | -40° to 105° C                                       |
|                                        | -40° to 221° F  | -4° to 221° F                        | -40° to 221° F                                       |
| Mating Cycles (no load)                |                 |                                      |                                                      |
| Silver Plated Contacts                 | -               | 1,500                                | -                                                    |
| Gold Plated Contacts                   | -               | -                                    | 1,500                                                |
| Contact Retention Force                | -               | > 50 lbf / 222 N                     | -                                                    |
| Insertion Force                        | -               | 28 lbf                               | -                                                    |
| Touch Safe (IEC 60529)                 | -               | IP10                                 | -                                                    |
| Drop Test (UL50E)                      | Pass            | -                                    | -                                                    |
| Panel Break Off (EIA 394-97)           | Pass            | -                                    | -                                                    |
| Crush Test (EIA 364-40B)               | Pass            | -                                    | -                                                    |
| <b>Materials</b>                       |                 |                                      |                                                      |
| Shell / Housing                        | PC/PBT          | PC                                   | PC/PBT                                               |
| Powerpole® Holder                      | PC/PBT          | -                                    | -                                                    |
| Latch                                  | Stainless Steel | -                                    | -                                                    |
| Flammability (UL 94)                   | V0              | V0                                   | V0                                                   |
| Weatherability (UL 764C)               | F1              | F1                                   | F1                                                   |
| Contacts                               |                 |                                      |                                                      |
| Base                                   | -               | Copper Alloy                         | Copper Alloy                                         |
| Plating                                | -               | Silver                               | Gold over Nickel                                     |

### NOTES:

1. Integral signal holders that holds up to 8 pins and 8 sockets.
2. Based on 6 AWG.
3. Based on 6 AWG 1-1/4" distance between probes.
4. Based on 20 AWG.
5. Hot Plug testing completed using individual Powerpole® housings and contacts, not installed in SPEC Pak® shells.



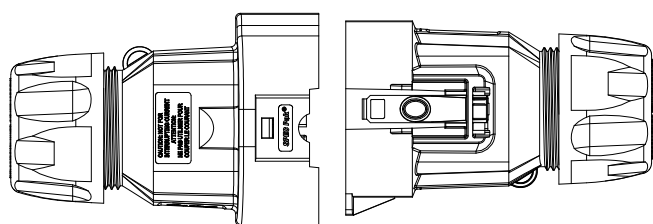
For other industry tests and/or agency approvals, contact customer service.

Product Selection Guide

SPEC Pak® is a highly configurable environmentally sealed connector, that can be purchased as components in bulk for volume production, or pre-packaged as a kit. For convenience, follow the steps below to determine component or kit part numbers.

| COMPONENT PART NUMBER GUIDE (FOR COMPONENT BULK PURCHASE) |

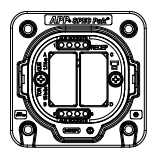
Step 1: Select Shell



SK6-076C04  
Plug

SK1-076C04  
Inline Receptacle

\* Select Shell Style, from page 6.



SK2-076C04  
Panel Mount Receptacle

Step 2: Select Wire Protection



\* Define:

|            | Number of Wires | Wire OD |
|------------|-----------------|---------|
| Wires      |                 |         |
| - Discrete |                 |         |
| - Bundled  |                 |         |

- \* Select wire protection that will accommodate the number of wires and outer diameter (OD) of the wire used in your application, from page 6.
- \* Wire protection is required for use with inline receptacles and plugs to obtain IP68 seal.

List Component Part Numbers Here:

| KIT PART NUMBER GUIDE (FOR KITTED CONNECTOR PURCHASE) |

Step 1 - (see page 6)

| SPEC Pak® Series |   | Shell Color | Shell Style (Select One)                                                                                            | Dash | Shell Size | Insert Arrangement |
|------------------|---|-------------|---------------------------------------------------------------------------------------------------------------------|------|------------|--------------------|
| S                | K |             | 1 = Inline Receptacle<br>2 = Panel Mount Receptacle<br>6 = Straight Plug<br>9 = Receptacle Cover<br>9P = Plug Cover | -    | 076        | C04                |

List Kit Part Number Here:

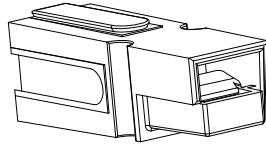
Receptacle Kit Part Number:

S K - 076 C04

Plug Kit Part Number:

S K - 076 C04

### Step 3: Select Housing Arrangement

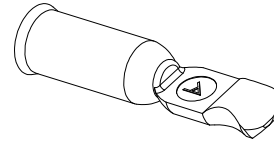


\* Define:

|                            | <u>Number of Wires</u> | <u>Number of Auxiliaries</u> |
|----------------------------|------------------------|------------------------------|
| <b>Housing Arrangement</b> |                        |                              |
| - AC Single Phase          | _____                  | _____                        |
| - AC 3 Phase               | _____                  | _____                        |
| - DC                       | _____                  | _____                        |
| - Other                    | _____                  | _____                        |

\* Select housing arrangement colors appropriate for your AC or DC application, from page 7.

### Step 4: Select Contacts



Power Contact



Pin Auxiliary Contact



Socket Auxiliary Contact

\* Define:

|                 | <u>Number of Circuits</u> | <u>Wire Gauge</u> |
|-----------------|---------------------------|-------------------|
| <b>Contacts</b> |                           |                   |
| - Power         | _____                     | _____             |
| - Auxiliary     | _____                     | _____             |
| - Other         | _____                     | _____             |

Amps (continuous): \_\_\_\_\_ Max amps at \_\_\_\_\_ volts

\* Select power and/or auxiliary contacts appropriate for your wire size (AWG or mm<sup>2</sup>), from page 7.

List Component Part Numbers Here:

### Step 2 - (see page 6)

..... Wire Protection .....  
Number of Holes Cable Sealing Range  
(Select Two)

00 = None  
PS = Plastic Single-hole  
PM = Plastic Multi-hole

00 = None  
01 - 99 = Various Gland Types  
(See Page 6)

NOTE: Panel Mount Receptacle is always "00 00".

Dash

-

### Step 3 - (see page 7)

.. Housing Arrangement ..

(Select One)

0 = Custom Configuration  
A = AC Single Phase  
B = AC 3 Phase, 3 Wire  
C = DC Circuit, 4 Wire  
Z = All Black

### Step 4 - (see page 7)

..... Contacts .....

(Select One)

Dash

-

### Custom

.... APP Content ....

Contact the factory  
Custom Configuration

0 = Custom Configuration

70 = 1307 Contact for #6 AWG (13.3 mm<sup>2</sup>)

71 = Please inquire for #8 AWG (8.4 mm<sup>2</sup>)

72 = 5953 Contact for #10/12 AWG (3.3 to 5.3 mm<sup>2</sup>)

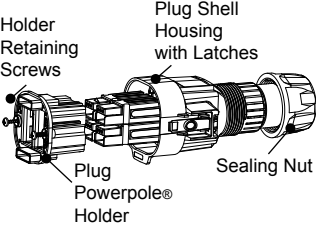
Ordering Information

PLUG  
SHELL KIT

Part Number & Description

**SK6-076C04**

- Plug shell
- Powerpole® holder - plug
- Powerpole® holder retaining screws M3.5 x 15mm
- Sealing Gland Nut (Sealing grommet sold separately)

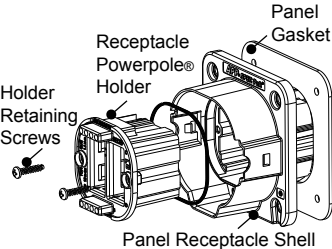


PANEL MOUNT  
RECEPTACLE KIT

Part Number & Description

**SK2-076C04**

- Panel mount receptacle shell
- Powerpole® holder - receptacle
- Panel mount receptacle gasket
- Powerpole® holder retaining screws M3.5 x 15mm

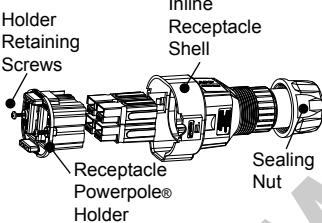


INLINE  
RECEPTACLE KIT

Part Number & Description

**SK1-076C04**

- Inline receptacle shell
- Powerpole® holder - receptacle
- Powerpole® holder retaining screws M3.5 x 15mm
- Sealing Gland Nut (Sealing grommet sold separately)



COVER  
KIT

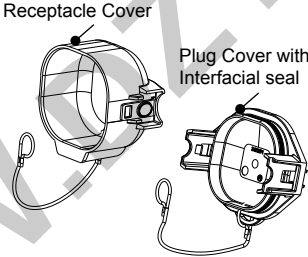
Part Number & Description

**SK9-076**  
Receptacle Cover Kit

- Cover (IP68) with lanyard

**SK9P-076**  
Plug Cover Kit

- Cover (IP68) with lanyard



Component Replacement Parts

| Part Number | Description                                   |
|-------------|-----------------------------------------------|
| 115129P1    | Panel Mount Receptacle Gasket                 |
| H1120P53    | Powerpole holder retaining screws M3.5 x 15mm |

**NOTE:**  
Mounting Hardware (4 each M4 or #8 screws) not included.  
Recommended torque for mounting hardware is 7-10 in-lbs.

WIRE PROTECTION - CABLE GLAND

Material

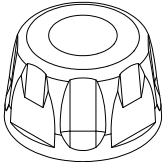
|                          |        |
|--------------------------|--------|
| Shell                    | PBT/PC |
| Sealing Grommet          | EPDM   |
| Flammability (UL 94)     | V0     |
| Weatherability (UL 764C) | F1     |
| Color                    | Black  |

Mechanical

|                                 |                                                 |
|---------------------------------|-------------------------------------------------|
| IP Rating                       | IP68                                            |
| Operating Temperature (UL 1977) | -40° to 105° C<br>-40° to 221° F                |
| Thread Type                     | Integrated into inline receptacle & plug shells |

Torque Requirements

Hand tighten. Using a 44 mm wrench or strap wrench, tighten an additional 3/4 - 1 turn.



Wire Protection

Straight Plastic Single & Multi Hole Cable Gland

| Number of Holes  | Cable Range Wire Outer Diameter mm (in) | Wrench Size Sealing Nut | Protection Designation |    | Sealing Grommet Only |                                      | Sealing Glands (includes sealing grommet & wire protection nut) |                                                      |
|------------------|-----------------------------------------|-------------------------|------------------------|----|----------------------|--------------------------------------|-----------------------------------------------------------------|------------------------------------------------------|
|                  |                                         |                         |                        |    | Part Numbers         |                                      |                                                                 |                                                      |
| Minimum Quantity |                                         |                         |                        |    | 10                   | For use with SK1-076C04 & SK6-076C04 | 10                                                              | For use with shell kit components purchased in bulk. |
| 1                | 18.0 - 24.0 mm (0.79" - 0.85")          | 44                      | PS                     | 01 | B02130P7             |                                      | PS1T40-24X                                                      |                                                      |
| 2                | 3.8 - 5.0mm (0.15" - 0.20")             | 44                      | PM                     | 21 | B02130P12            |                                      | PS2T40-5X                                                       |                                                      |
| 2                | 6.0 - 7.2mm (0.24" - 0.28")             | 44                      | PM                     | 22 | B02130P11            |                                      | PS2T40-7X                                                       |                                                      |
| 2                | 7.0 - 9.0mm (0.28" - 0.35")             | 44                      | PM                     | 23 | B02130P10            |                                      | PS2T40-9X                                                       |                                                      |
| 3                | 6.0 - 7.2mm (0.24" - 0.28")             | 44                      | PM                     | 32 | B02130P5             |                                      | PS3T40-7X                                                       |                                                      |
| 3                | 7.0 - 9.0mm (0.28" - 0.35")             | 44                      | PM                     | 33 | B02130P4             |                                      | PS3T40-9X                                                       |                                                      |
| 4                | 3.8 - 5.0mm (0.15" - 0.20")             | 44                      | PM                     | 41 | B02130P3             |                                      | PS4T40-5X                                                       |                                                      |
| 4                | 6.0 - 7.2mm (0.24" - 0.28")             | 44                      | PM                     | 42 | B02130P2             |                                      | PS4T40-7X                                                       |                                                      |
| 4                | 7.0 - 9.0mm (0.28" - 0.35")             | 44                      | PM                     | 43 | B02130P1             |                                      | PS4T40-9X                                                       |                                                      |

# C04 Housing Arrangement

Configured with up to 4 PP75 Contacts - Up to 80 Amps

## | Standard Housing Arrangements |

E = Empty

### 0 Custom Configuration

#### AC Single Phase

|   |        |        |
|---|--------|--------|
| A | 5916G4 | 5916G5 |
|   | 5916G6 | E      |

#### AC 3 Phase, 3 Wire

|   |        |        |
|---|--------|--------|
| B | 5916G4 | 5916G5 |
|   | 5916G7 | E      |

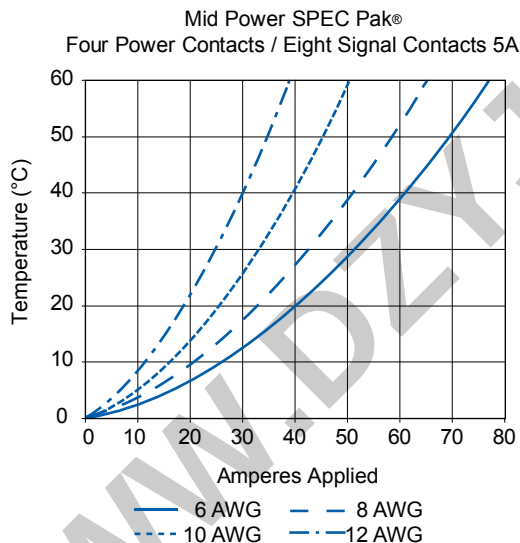
#### DC 2 Circuit, 4 Wire

|   |        |        |
|---|--------|--------|
| C | 5916G4 | 5916G4 |
|   | 5916G7 | 5916G7 |

#### All Black

|   |        |        |
|---|--------|--------|
| Z | 5916G4 | 5916G4 |
|   | 5916G4 | 5916G4 |

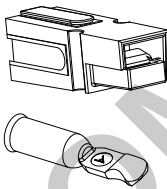
## | TEMPERATURE CHART |



## Ordering Information

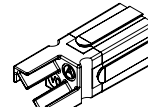
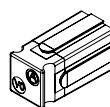
### PP75 Standard Power Contacts, Signal Contacts & Housings

| Description         | Part Number | Part Number |
|---------------------|-------------|-------------|
| Minimum Quantity .. | 1000        | 100         |
| Red                 | 5916G7-BK   | 5916G7      |
| Green               | 5916G6-BK   | 5916G6      |
| Black               | 5916G4-BK   | 5916G4      |
| White               | 5916G5-BK   | 5916G5      |
| Blue                | 5916-BK     | 5916        |
| Yellow              | 5916G15-BK  | 5916G15     |
| Orange              | 5916G14-BK  | 5916G14     |
| Gray                | 5916G16-BK  | 5916G16     |



### Spacer & Keying Accessory

| Description            | Part Number | Part Number |
|------------------------|-------------|-------------|
| Minimum Quantity ..... | 1000        | 100         |
| Red, Short             | 1399G23-BK  | 1399G23     |
| Red, Long              | 1399G21-BK  | 1399G21     |



Short

Long

### PP75 Silver Plated Wire Contacts

| Type                   | AWG        | mm <sup>2</sup> | Mating Force   | Part Numbers | Contact Code Designation | Hand Tool | Pneumatic Tool | Pneumatic Die | Pneumatic Locator |
|------------------------|------------|-----------------|----------------|--------------|--------------------------|-----------|----------------|---------------|-------------------|
| Minimum Quantity ..... |            |                 |                | 1000         | 100                      |           |                |               |                   |
| Individual 6           | 13.3       | Low             | 1307-BK        | 1307         | 70                       | 1309G4    | 1387G1         | 1388G6        | 1389G6            |
| Individual 8           | 8.4        | Low             | Please inquire |              | 71                       |           |                |               |                   |
| Individual 12 to 10    | 3.3 to 5.3 | Low             | 5953-BK        | 5953         | 72                       |           |                |               |                   |

### Auxiliary Contacts (PowerMod® series)

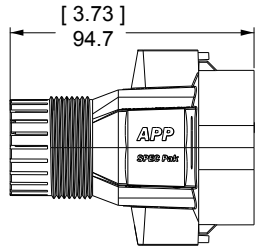
| Type                  | AWG      | mm²          | --- Part Number --- |                 |
|-----------------------|----------|--------------|---------------------|-----------------|
| Minimum Quantity..... |          |              | 500                 | 50              |
| Standard Length 7.7mm |          |              |                     |                 |
| Pin                   | 24 to 20 | 0.50 to 0.75 | PM16P2024S30        | PM16P2024S30-50 |
| Pin                   | 20 to 18 | 0.75 to 1.00 | PM16P1620S30        | PM16P1620S30-50 |
| Pin                   | 16 to 14 | 1.00 to 1.5  | PM16P1416S30        | PM16P1416S30-50 |
| Pin                   | 12       | 2.50         | PM16P12S30          | PM16P12S30-50   |
| Pre-Mate 9.3mm        |          |              |                     |                 |
| Pin                   | 24 to 20 | 0.50 to 0.75 | PM16P2024A30        | PM16P2024A30-50 |
| Pin                   | 20 to 18 | 0.75 to 1.00 | PM16P1620A30        | PM16P1620A30-50 |
| Pin                   | 16 to 14 | 1.00 to 1.5  | PM16P1416A30        | PM16P1416A30-50 |
| Pin                   | 12       | 2.50         | PM16P12A30          | PM16P12A30-50   |
| Post-Mate 6.4mm       |          |              |                     |                 |
| Pin                   | 24 to 20 | 0.50 to 0.75 | PM16P2024C30        | PM16P2024C30-50 |
| Pin                   | 20 to 18 | 0.75 to 1.00 | PM16P1620C30        | PM16P1620C30-50 |
| Pin                   | 16 to 14 | 1.00 to 1.5  | PM16P1416C30        | PM16P1416C30-50 |
| Pin                   | 12       | 2.50         | PM16P12C30          | PM16P12C30-50   |
| <hr/>                 |          |              |                     |                 |
| Socket                | 24 to 20 | 0.25 to 0.50 | PM16S2024S32        | PM16S2024S32-50 |
| Socket                | 20 to 16 | 0.50 to 1.30 | PM16S1620S32        | PM16S1620S32-50 |
| Socket                | 16 to 14 | 1.30 to 2.10 | PM16S1416S32        | PM16S1416S32-50 |
| Socket                | 12       | 2.5          | PM16S12S32          | PM16S12S32-50   |

| Hand Tool            | Hand Tool | Hand Locator | Pneumatic Tool | Pneumatic Locator |
|----------------------|-----------|--------------|----------------|-------------------|
| For use with pins    |           |              |                |                   |
| PM1000G1             | TM0001    | TL0001       | TP0001         | TL0001            |
| For use with sockets |           |              |                |                   |
| PM1000G1             | TM0001    | TL0002       | TP0002         | TL0002            |

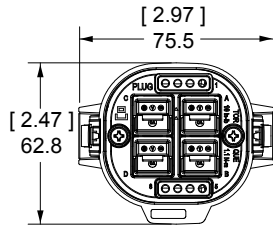
# Dimensions

## | PLUG MID POWER FOR PP75 HOUSINGS |

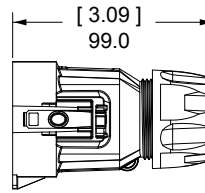
**Top View**



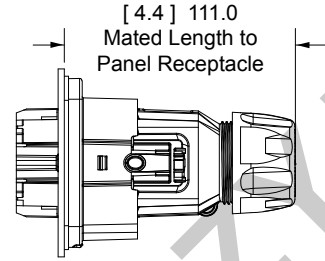
**Front View**



**Side View**

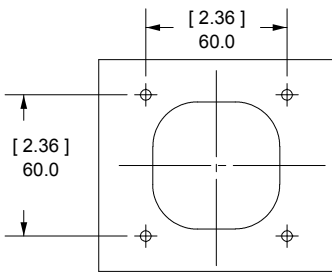


**Mated View**

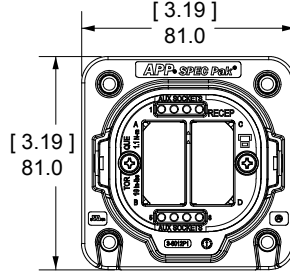


## | PANEL MOUNT RECEPTACLE MID-POWER FOR PP75 |

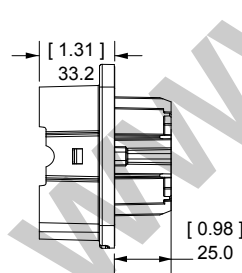
**Panel Cut Out**



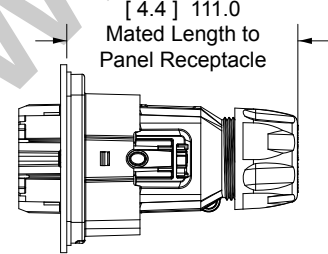
**Front View**



**Side View**

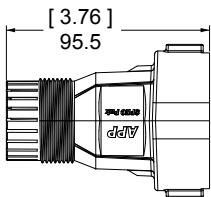


**Mated View**

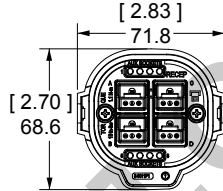


## | INLINE RECEPTACLE MID-POWER FOR PP75 |

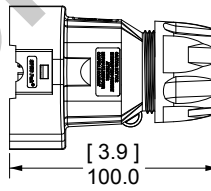
**Top View**



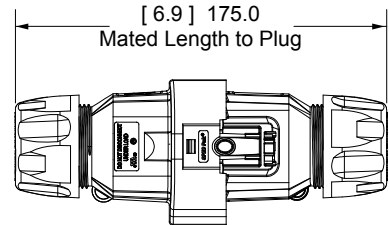
**Front View**



**Side View**

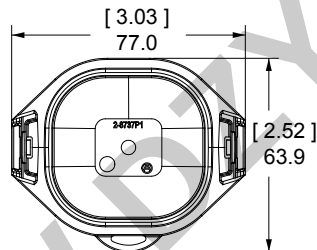


**Mated View**



## | PLUG COVER KIT |

**Front View**

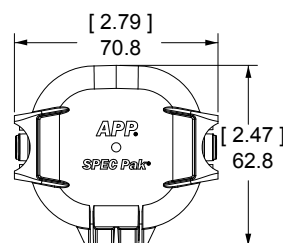


**Side View**



## | RECEPTACLE COVER KIT |

**Front View**



**Side View**

