

# 3 POLE MINI PL SPEC Pak®

Sealed Power For Environmental Connections

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

3 Position Mini PL SPEC Pak® is a rugged and environmentally sealed (IP68) connector with a manually operated release latch. The 3 Position Mini PL leverages PowerMod® pin and socket contact technology, delivering capabilities up to 22 amps at 600 volts while handling wires from 24 to 12 AWG (0.5 to 2.5 mm²). The 30µ gold plated pins are available in 3 lengths, enabling sequenced contact mating options. These contacts sit inside a UV and flame resistant shells that are touch safe on both sides.

## Features

### Manual Release Latch

- Prevents accidental un-mating

### Pin & Socket Contact Technology

- Gold plated for greater conductivity

### 3 Pin Lengths Available

- Offers sequencing capabilities

### Touch Safe per UL 1977 Sec. 10.2

- Touch safe on both pin & socket sides

### Rugged & Environmentally Sealed Shells

- F1 weatherability rating per UL 746C
- V0 flammability rating per UL 94
- IP68, exceeds industry standards

## Electrical

### Current Rating (Amperes)

|                 |    |
|-----------------|----|
| UL 1977         | 22 |
| CSA (30°C Rise) | 16 |

### Voltage Rating

|                 |     |
|-----------------|-----|
| UL 1977 (AC/DC) | 600 |
|-----------------|-----|

### Dielectric Withstanding (AC)

2200

### Contact Resistance (average)

3 Milliohms

## Materials

|                |                                        |
|----------------|----------------------------------------|
| Shell          | PC                                     |
| Latch          | PC                                     |
| Flammability   | UL 94 V-0                              |
| Weatherability | UL764C / 12 mm, F1                     |
| Contacts       |                                        |
| Socket Body    | Copper Alloy,<br>200 µ inch Sn over Ni |
| Socket Contact | Copper Alloy,<br>30 µ inch Au over Ni  |
| Pin            | Copper Alloy,<br>30 µ inch Au over Ni  |

NOTE: Sn = tin Ni = nickel Au = Gold

## Mechanical

### Environmental Seal

|     |       |
|-----|-------|
| IEC | IP 68 |
| UL  | 50E   |

### Wire

|      |                                |
|------|--------------------------------|
| Size | 24 to 12 AWG<br>0.5 to 2.5 mm² |
|------|--------------------------------|

### Sealing Options

Sealing Gland

### Operating Temperature

-20 to 105°C  
-4 to 221°F

### Mating Cycles (no load)

500

### Contact Retention Force

10 lbf  
44 N

### Mating Force (nominal)

5 lb  
22 N

### Touch Safe (UL 1977 Sec 10.2)

Pass

### Latch Strength (nominal)

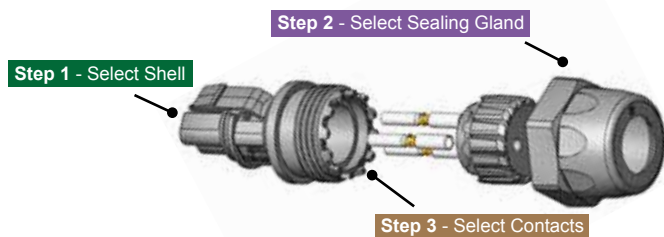
24 lb  
107 N

UL US File No. E26226

CSA Certified  
File No. LR25154

## ORDERING INFORMATION

SPEC Pak® Mini PL Series is a highly configurable environmentally sealed connector that can be purchased as component in bulk for volume production, or pre-packaged as a kit. Configuring a connector is an easy three step process.



### Step 1: Select Shell

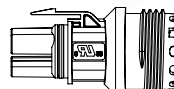
#### SPEC Pak® Shell Kits (sealing glands & contacts sold separately)

| Description            | - Part Numbers - |
|------------------------|------------------|
| Minimum Quantity ..... | 25               |
| Male, Receptacle Shell | SK1-019M03       |
| Female, Plug           | SK6-019M03       |
| Female, Jam Nut        | SK7-019M03       |
| Female, Cover          | SK9F-019         |
| Male, Cover            | SK9M-019         |



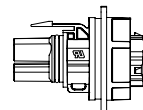
**SK1-019M03**  
Male Receptacle

Mates With:



**SK6-019M03**  
Female Plug

OR



**SK7-019M03**  
Female Panel, Jam Nut

### Step 2: Select Sealing Gland

#### FAQ

Q: Do I need a sealing gland?

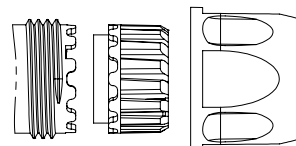
A: For IP68 rating, sealing glands are required with SK1-019M03 & SK6-019M03.

A: For splash resistance in the unmated condition, use optional wire sealing grommets with SK7-019M03. (See accessories on page 4).

Q: How do I select the appropriate sealing gland?

A: Identify the number of wires that will be used. Number of wires: \_\_\_\_\_

Identify the outer diameter (OD) of those wire(s). OD of the wires: \_\_\_\_\_



#### Material

|                 |         |
|-----------------|---------|
| Shell           | PC      |
| Sealing Grommet | EPDM    |
| Flammability    | UL94 V0 |
| Color           | Black   |

#### Torque Requirements

Hand tighten until snug, using a wrench tighten an additional 1/4 to 1/2 turn.

Wrench Size 22

#### Mechanical

##### Operating Temperature

-20° to 105°C  
-4° to 221°F

#### Bundled Cable

| Number of Wires           | Cable Range Wire Outer Diameter (OD) mm (in) | Part - Numbers - | Connector Kit Designation |
|---------------------------|----------------------------------------------|------------------|---------------------------|
| Minimum Quantity ..... 25 |                                              |                  |                           |
| 1                         | 3.0 to 4.5 (0.12 to 0.18)                    | PS1T20-5X        | PS 01                     |
| 1                         | 4.5 to 6.5 (0.18 to 0.26)                    | PS1T20-7X        | PS 02                     |
| 1                         | 6.5 to 8.5 (0.26 to 0.33)                    | PS1T20-9X        | PS 03                     |
| 1                         | 8.5 to 10.0 (0.33 to 0.39)                   | PS1T20-10X       | PS 04                     |
| 1                         | 10.0 to 11.5 (0.39 to 0.45)                  | PS1T20-12X       | PS 05                     |

#### Discrete Wires

| Number of Wires           | Cable Range Wire Outer Diameter (OD) mm (in) | Part - Numbers - | Connector Kit Designation |
|---------------------------|----------------------------------------------|------------------|---------------------------|
| Minimum Quantity ..... 25 |                                              |                  |                           |
| 2                         | 0.75 to 1.5 (0.03 to 0.06)                   | PS2T20-2X        | PM 21                     |
| 2                         | 1.5 to 2.6 (0.06 to 0.10)                    | PS2T20-3X        | PM 22                     |
| 3                         | 0.75 to 1.5 (0.03 to 0.06)                   | PS3T20-2X        | PM 31                     |
| 3                         | 1.6 to 2.6 (0.06 to 0.10)                    | PS3T20-3X        | PM 32                     |
| 3                         | 4.0 to 4.8 (0.16 to 0.19)                    | PS3T20-5X        | PM 35                     |

## Step 3: Select Contacts

### FAQ

Q: What should I consider when selecting the contacts?

A: Determine the number of amps (continuous and peak). See temperature charts.

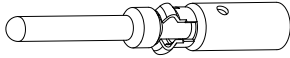
Amps (continuous) \_\_\_\_\_ at \_\_\_\_\_ volts & Peak Amps \_\_\_\_\_ for \_\_\_\_\_ seconds

Q: Which contacts are used in each shell?

A: Pins are used in SK1-019M03 (male receptacle).

Sockets are used in SK6-019M03 (female plug) & SK7-019M03 (female panel mount, jam nut)

### Pin Contacts (PowerMod® Series) - (For pre-mate and post-mate contacts for sequencing, contact the factory)



| Type                   | AWG      | mm <sup>2</sup> | ----- Part Numbers ----- |                 | Connector Kit Designation |
|------------------------|----------|-----------------|--------------------------|-----------------|---------------------------|
| Minimum Quantity ..... |          |                 | 500                      | 50              |                           |
| Standard Length 7.7    |          |                 |                          |                 |                           |
| Pin                    | 24 to 20 | 0.25 to 0.50    | PM16P2024S30             | PM16P2024S30-50 | P46                       |
| Pin                    | 20 to 16 | 0.50 to 1.30    | PM16P1620S30             | PM16P1620S30-50 | P45                       |
| Pin                    | 16 to 14 | 1.30 to 2.10    | PM16P1416S30             | PM16P1416S30-50 | P44                       |
| Pin                    | 12       | 2.5             | PM16P12S30               | PM16P12S30-50   | P47                       |

| Hand Tool | Pneumatic Tool |     |         | Insertion Tool | Extraction Tool |
|-----------|----------------|-----|---------|----------------|-----------------|
|           | Tool           | Die | Locator |                |                 |
| PM1000G1  | TM0001         | N/A | TL0001  | PM1002G1       | PM1003G1        |

### Socket Contacts (PowerMod® Series)

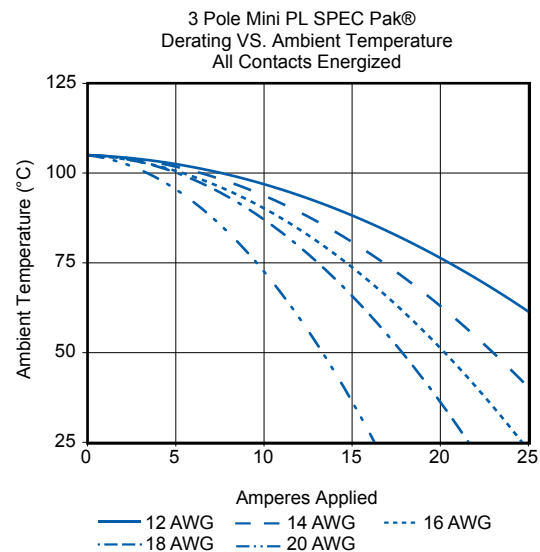
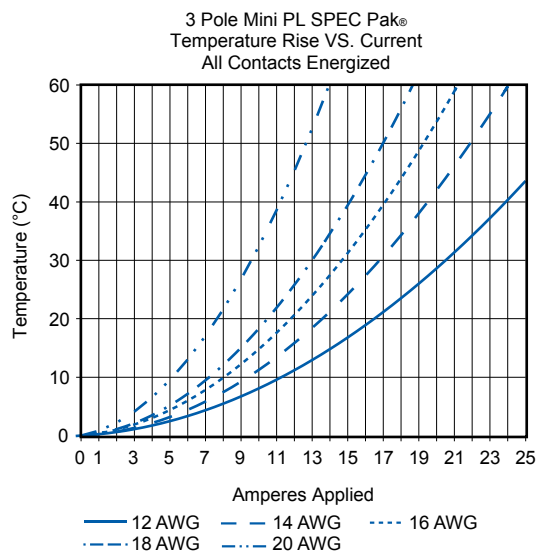


| Type                   | AWG      | mm <sup>2</sup> | ----- Part Numbers ----- |                 | Connector Kit Designation |
|------------------------|----------|-----------------|--------------------------|-----------------|---------------------------|
| Minimum Quantity ..... |          |                 | 500                      | 50              |                           |
| Socket                 | 24 to 20 | 0.25 to 0.50    | PM16S2024S32             | PM16S2024S32-50 | S46                       |
| Socket                 | 20 to 16 | 0.50 to 1.30    | PM16S1620S32             | PM16S1620S32-50 | S45                       |
| Socket                 | 16 to 14 | 1.30 to 2.10    | PM16S1416S32             | PM16S1416S32-50 | S44                       |
| Socket                 | 12       | 2.5             | PM16S12S32               | PM16S12S32-50   | S47                       |

| Hand Tool | Pneumatic Tool |     |         | Insertion Tool | Extraction Tool |
|-----------|----------------|-----|---------|----------------|-----------------|
|           | Tool           | Die | Locator |                |                 |
| PM1000G1  | TM0001         | N/A | TL0002  | PM1002G1       | PM1003G1        |

NOTE: APP tooling is required for UL & CSA compliance. Use of unapproved tools will void the connectors warranty.

## | TEMPERATURE CHARTS |



# | CONNECTOR KIT - PART NUMBER CONFIGURATOR |

| Step 1<br>Select Shell                                                                               |          |                          |              |                       | Step 2<br>Select Sealing Gland  |           | Step 3<br>Select contact                                                                    |            |
|------------------------------------------------------------------------------------------------------|----------|--------------------------|--------------|-----------------------|---------------------------------|-----------|---------------------------------------------------------------------------------------------|------------|
| Series                                                                                               | Color    | Shell Style <sup>1</sup> | Shell Size   | Insert<br>Arrangement | Wire<br>Protection <sup>1</sup> |           | Housing &<br>Contacts Arrangement <sup>2</sup>                                              |            |
| <b>S</b>                                                                                             | <b>K</b> | <b>1</b>                 | <b>- 019</b> | <b>M03</b>            | <b>PS</b>                       | <b>01</b> | <b>-</b>                                                                                    | <b>P46</b> |
| 1 = Male, Receptacle (Pins)<br>6 = Female Plug (Sockets)<br>7 = Female Panel Mount Jam Nut (Sockets) |          |                          |              |                       |                                 |           | P46 = 20 - 24 AWG Pin<br>P45 = 16 - 20 AWG Pin<br>P44 = 14 - 16 AWG Pin<br>P47 = 12 AWG Pin |            |
| 019                                                                                                  |          |                          |              |                       |                                 |           |                                                                                             |            |
| M03                                                                                                  |          |                          |              |                       |                                 |           |                                                                                             |            |
| 00 = No Wire Protection                                                                              |          |                          |              |                       |                                 |           | S46 = 20 - 24 AWG Socket                                                                    |            |
| PS = Plastic Single Hole                                                                             |          |                          |              |                       |                                 |           | S45 = 16 - 20 AWG Socket                                                                    |            |
| PM = Plastic Multi-Hole                                                                              |          |                          |              |                       |                                 |           | S44 = 14 - 16 AWG Socket                                                                    |            |
| 00 = No Wire Protection                                                                              |          |                          |              |                       |                                 |           | S47 = 12 AWG Socket                                                                         |            |
| 01 thru 99 = See page 3 for selection                                                                |          |                          |              |                       |                                 |           |                                                                                             |            |

<sup>1</sup> See page 2 for more information | <sup>2</sup> See page 3 for more information

## | ACCESSORIES (optional) |

### Wire Seal Accessories for use with SK7-021M03

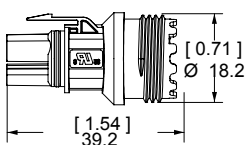
| Description                                                  | ----- Part Numbers ----- |             |
|--------------------------------------------------------------|--------------------------|-------------|
| Minimum Quantity                                             | 1                        | 50          |
| Wire Seal Retainer                                           | 2-8702P1                 | -           |
| Grommet, wire range 1.2 - 1.9mm (0.047" - 0.075") OD, Orange | 114916P1                 | 114916P1-50 |
| Grommet, wire range 1.9 - 2.4mm (0.75" - 0.090") OD, Yellow  | 114916P2                 | 114916P2-50 |
| Grommet, wire range 2.5 - 3.2mm (0.100" - 0.130") OD, Tan    | 114916P3                 | 114916P3-50 |
| Sealing Plug                                                 | 114916P4                 | 114916P4-50 |

### Covers

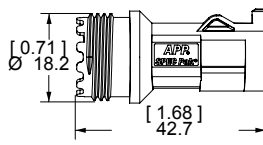
| Description            | - Part Numbers - |
|------------------------|------------------|
| Minimum Quantity ..... | 25               |
| Female Cover           | SK9F-019         |
| Male Cover             | SK9M-019         |

## | DIMENSIONS |

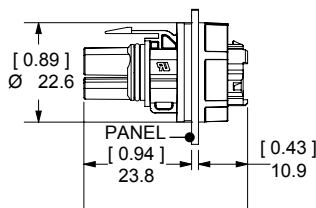
**Male Receptacle  
SK1-019M03**



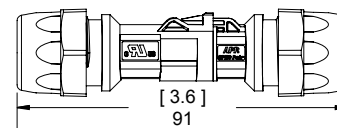
**Female Plug  
SK6-019M03**



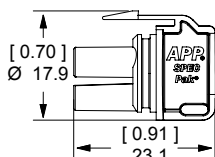
**Female Panel Mount  
SK7-019M03**



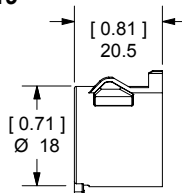
**SK1-019M03 & SK6-019M03 (mated)**



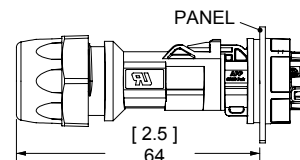
**Male Cover  
SK9M-019**



**Female Cover  
SK9F-019**



**SK1-019M03 & SK7-019M03 (mated)**



All Data Subject To Change Without Notice

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