



WR-187 Waveguide Electromechanical Relay SPDT/  
DPDT Latching Switch, C Band 5.85 GHz Max. Freq.,  
22,000 Watts, CPR Flat, 12V, Self Cut Off

## Waveguide Electromechanical Relay Switches Technical

**PEWGS6030**

### Features

- 3.95 to 5.85 GHz SPDT Waveguide Switch
- Optional DPDT Configuration
- WR-187 Waveguide
- Insertion Loss: 0.02 dB Max
- Isolation: 80 dB min
- +12 Vdc Nominal Voltage
- Input Power Rating up to 22 KW CW max
- Latching Self Cut Off Actuator
- Position Indicator and Manual Override Access
- Fully Weatherized Package
- Quick Connect Circular DC Connector with Mate
- -40°C to +85°C Operating Temperature

### Applications

- Electronic Warfare
- Electronic Countermeasures
- Microwave Radio
- VSAT
- Radar
- Space Systems
- Test Instrumentation
- Research and Development

### Description

The PEWGS6030 electromechanical WR-187 waveguide switch operates across a wide frequency range from 5.85 GHz to 8.2 GHz and is configured for single pole double throw (SPDT) operation. A shorting plate on port 3 can be removed for optional double pole double throw (DPDT) operation. This innovative design features a latching Self Cut Off actuator and patented motor drive with arc suppression. The motor drive housing supports a viewable position indicator window and a cover that can be removed for manual override access.

Impressive performance includes 0.02 dB max insertion loss, 80 dB min Isolation, 1.05:1 max VSWR, and an operating life of 250K cycles minimum. The design operates across a temperature range of -40°C to +85°C, requires +12Vdc nominal bias voltage, and has an input power rating of up to 22 KW CW maximum. The waveguide ports have standard CPR Flat Flanges. The rugged package design is fully weatherized for up to 100% humidity exposure and supports a quick connect circular 6 pin MIL-SPEC DC bias connector with mate included.

### Electrical Specifications

Switch Type  
Actuator Type  
Actuator Options

SPDT/DPDT  
Latching  
Self Cut Off, Set Indicators, Manual Override, Viewing Window

| Description                  | Minimum | Typical | Maximum | Units  |
|------------------------------|---------|---------|---------|--------|
| Frequency Range              | 3.95    |         | 5.85    | GHz    |
| Operating Voltage            | 10      | 12      | 20      | Volts  |
| Actuating Current @ 12 Volts |         |         | 1       | A      |
| VSWR                         |         |         | 1.05:1  |        |
| Insertion Loss               |         |         | 0.02    | dB     |
| Isolation                    | 80      |         |         | dB     |
| Switching Time               |         | 150     |         | ms     |
| Input Power (CW)             |         |         | 22      | kWatts |

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [WR-187 Waveguide Electromechanical Relay SPDT/DPDT Latching Switch, C Band 5.85 GHz Max. Freq., 22,000 Watts, CPR Flat, 12V, Self Cut Off PEWGS6030](#)



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### Mechanical Specifications

#### Size

|                    |                |
|--------------------|----------------|
| Operating Life     | 250,000 Cycles |
| Operating Pressure | 30 psig        |

#### Configuration

|                            |                |
|----------------------------|----------------|
| Waveguide Size             | WR-187         |
| Flange Type                | CPR Flat       |
| Body Material and Plating  | Aluminum, Gold |
| Body Plating Specification | MIL-DTL-5541   |

### Environmental Specifications

#### Temperature

|                 |                   |
|-----------------|-------------------|
| Operating Range | -40 to +85 deg C  |
| Storage Range   | -55 to +100 deg C |

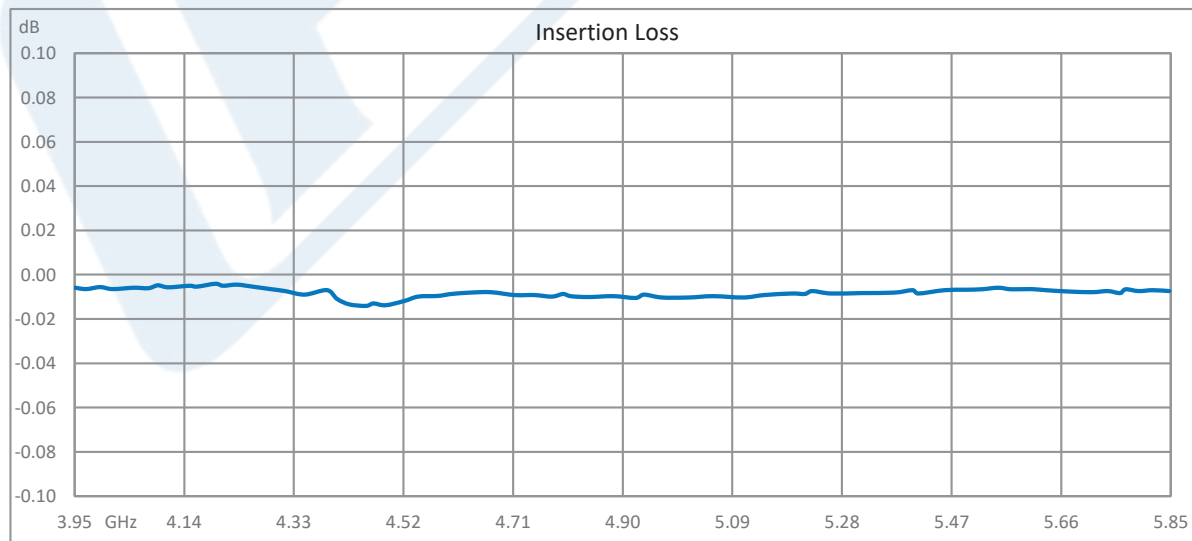
|          |                              |
|----------|------------------------------|
| Humidity | 0 to 100%, Fully Weatherized |
|----------|------------------------------|

**Compliance Certifications** (see [product page](#) for current document)

### Plotted and Other Data

Notes:

#### Typical Performance Data



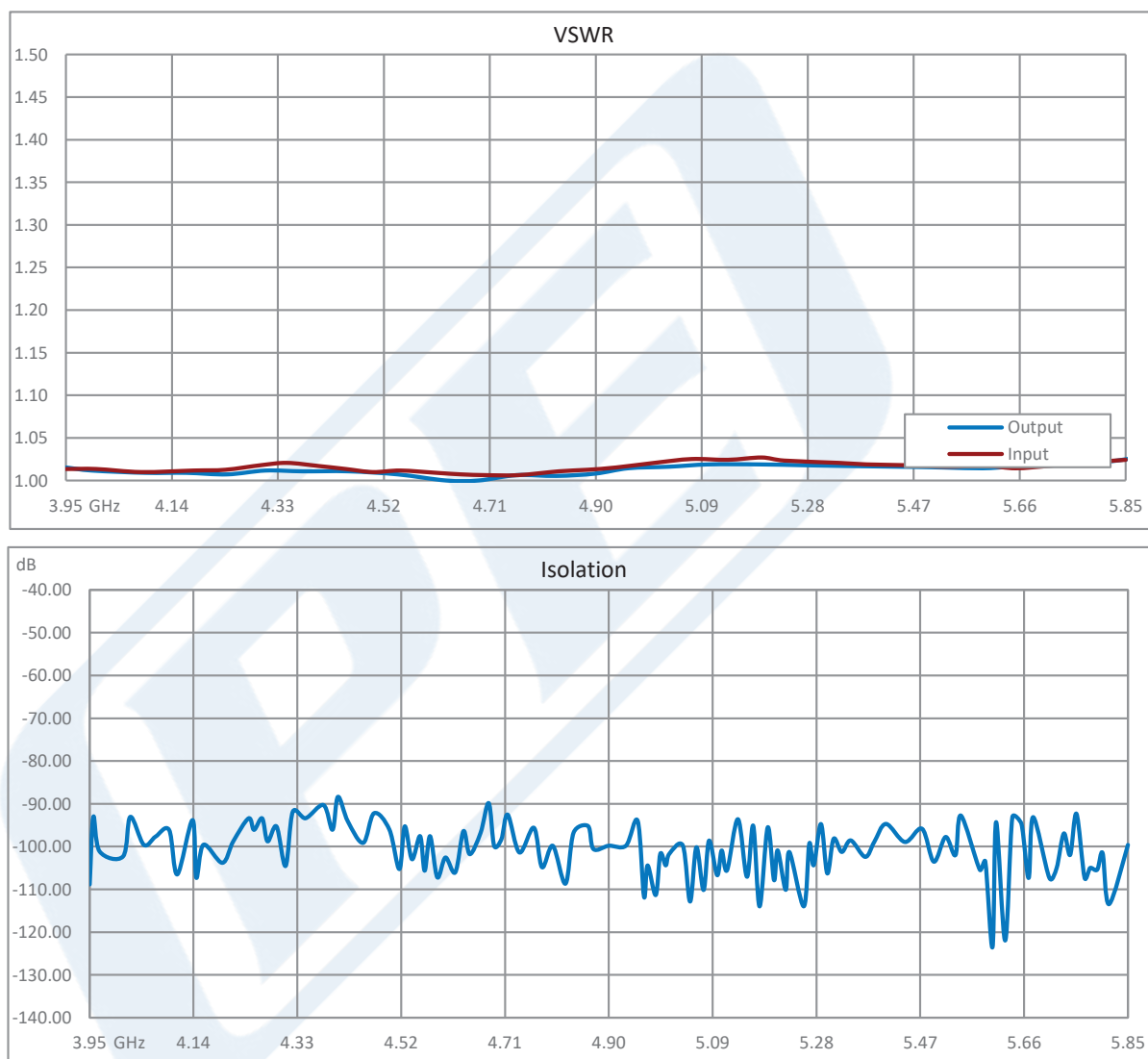
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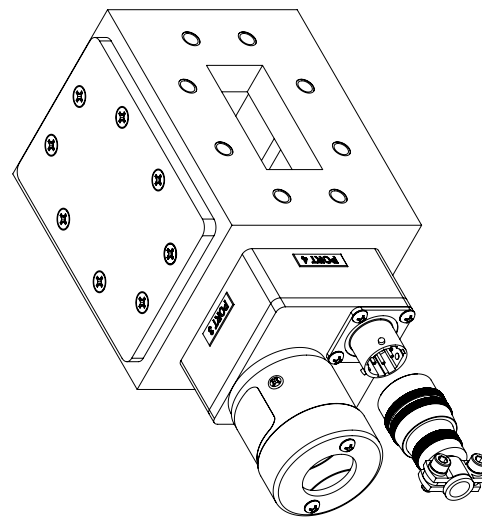
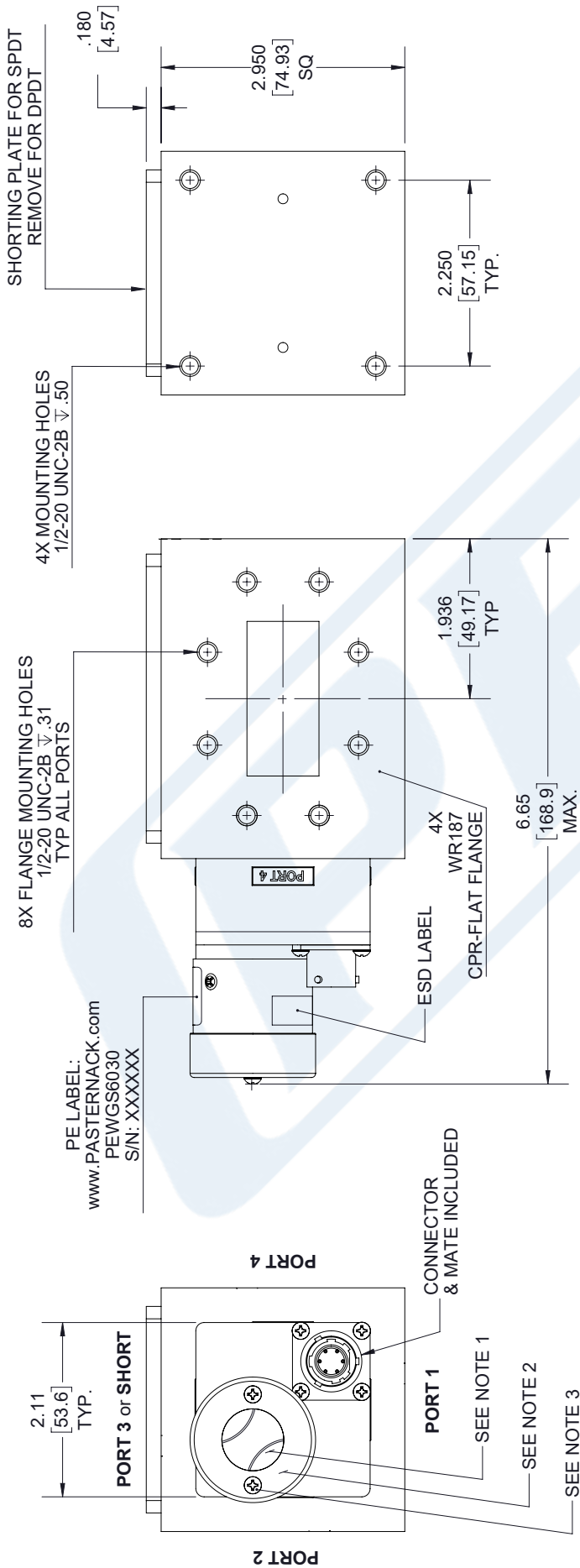
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# PEWGS6030 CAD Drawing

WR-187 Waveguide Electromechanical Relay SPDT/DPDT Latching Switch,  
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## NOTES:

1. MANUAL OVERRIDE & POSITION INDICATOR.
2. WEATHERIZED COVER WITH CLEAR VIEWING WINDOW.
3. FOR ACCESS TO MANUAL OVERRIDE LOOSEN (2) CAPTIVE SCREWS.



## REVISIONS

| REV. | DESCRIPTION     | DATE     | APPROVED |
|------|-----------------|----------|----------|
| A    | INITIAL RELEASE | 07/16/19 | T. GALLA |

UNLESS OTHERWISE SPECIFIED  
LEADING DIMENSIONS ARE IN INCHES  
DIMENSIONS IN [ ] ARE MILLIMETERS

**TOLERANCES:**

|          |        |             |
|----------|--------|-------------|
| X±.2     | [5.08] | FRACTIONS   |
| XX±.01   | [.25]  | ±.132       |
| XXX±.005 | [.13]  | ANGLES ± 1° |

ALL DIMENSIONS SHOWN  
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THIRD-ANGLE PROJECTION



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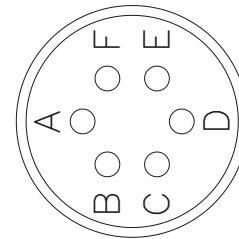
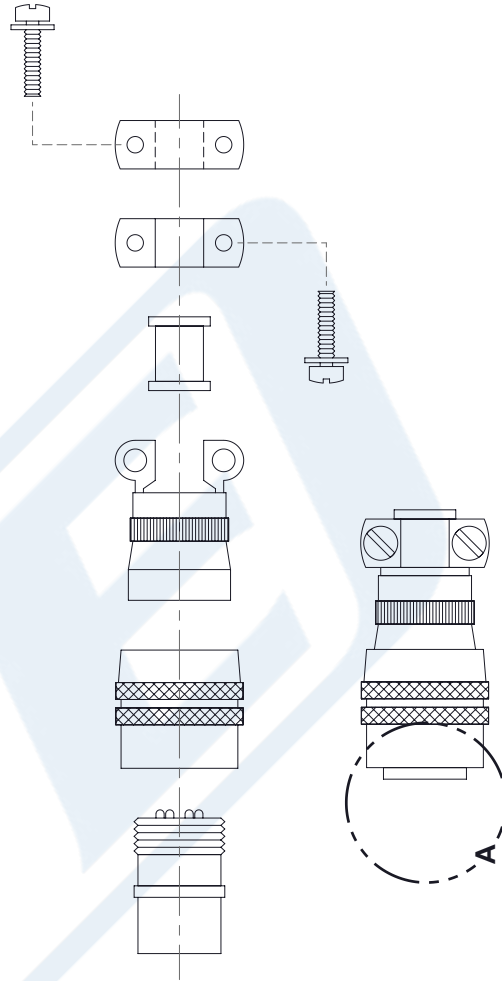
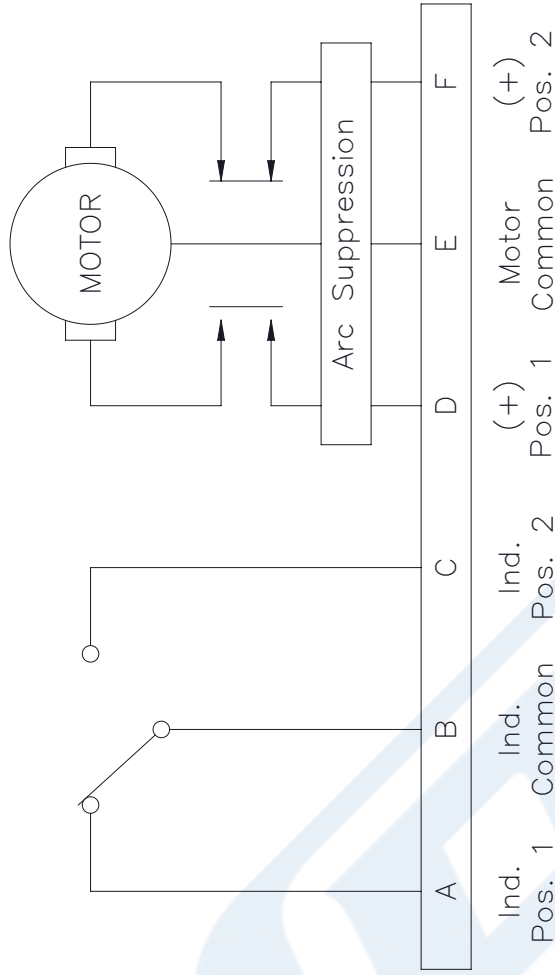
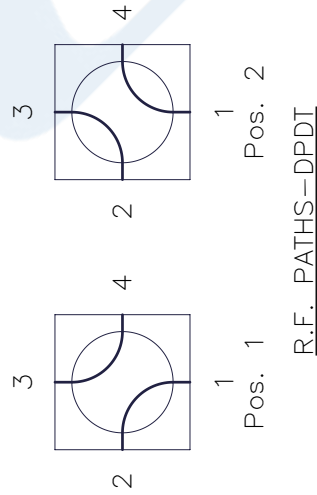
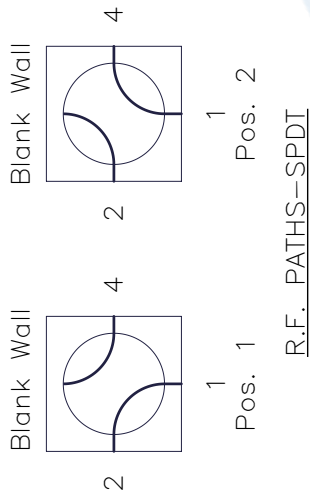
SCALE N/A

| SIZE | CAGE  | DRAWN BY | PART NUMBER | REV |
|------|-------|----------|-------------|-----|
| A    | 53919 | K.DANG   | PEWGS6030   | A   |

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VIEW A

|                                                                                                  |           |
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| XX±.01 [.25]                                                                                     | ±.132     |
| XXX±.005 [.13]                                                                                   | ±.132     |
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