



# WR-90 Waveguide Electromechanical Relay SPDT Latching Switch, X Band 12.4 GHz Max. Freq., 5,000 Watts, UG-39/U Square Cover, 12V

## Waveguide Electromechanical Relay Switches Technical

PEWGS6018

### Features

- 8.2 to 12.4 GHz SPDT Waveguide Switch
- Optional DPDT Configuration
- WR-90 Waveguide with O-Rings
- Insertion Loss: 0.05 dB typ
- Isolation: 105 dB typ
- +12 Vdc Nominal Voltage
- Input Power Rating up to 5 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 PEWGS6018 electromechanical WR-90 waveguide switch operates across a wide frequency range from 8.2 GHz to 12.4 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 0.05 dB typ insertion loss, 105 dB typ Isolation, 1.06:1 typ 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 5 KW CW maximum. The waveguide ports have Grooved UG-39/U Square Cover Flanges (O-Rings included) for pressurized operation. 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	SPDT
Actuator Type	Latching
Switching Sequence	Break Before Make
Actuator Options	Self Cut Off, Window Indicator, Manual Override
Polarity	Negative Common

Description	Minimum	Typical	Maximum	Units
Frequency Range	8.2		12.4	GHz
Impedance		50		Ohms
Operating Voltage	10	12	20	Volts
Actuating Current @ 12 Volts		471	786	mA
VSWR		1.06:1	1.1:1	
Insertion Loss		0.05	0.07	dB
Isolation	80	105		dB
Switching Time		60	80	ms
Input Power (CW)			5	KWatts

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [WR-90 Waveguide Electromechanical Relay SPDT Latching Switch, X Band 12.4 GHz Max. Freq., 5,000 Watts, UG-39/U Square Cover, 12V PEWGS6018](#)





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Input Power (Peak) 10% Duty Cycle	123	KWatts
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**Mechanical Specifications**

**Size**

Length	4.8 in [121.92 mm]
Width/Diameter	2.25 in [57.15 mm]
Height	2.25 in [57.15 mm]
Weight	1.47 lbs [666.78 g]

Operating Life (Cold Switching)	250,000 Cycles
Operating Pressure	30 psig

**Configuration**

Waveguide Size	WR-90
Flange Type	Square Cover
Flange Designation	UG-39/U
Body Material and Plating	Aluminum, Chem Film
Body Plating Specification	MIL-DTL-5541 Type II Class 3

Mechanical Specification Notes:  
Production Burn-In IAW MIL-DTL-55041 1500 cycles

**Environmental Specifications**

**Temperature**

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

Ingress Protection (IP) Rating	IP67
Humidity	0-100%, Fully Weatherized
ESD Sensitivity	ESD Sensitive Material, Transport material in Approved ESD bags. Handle in approved ESD Workstation.



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

**Plotted and Other Data**

Notes:

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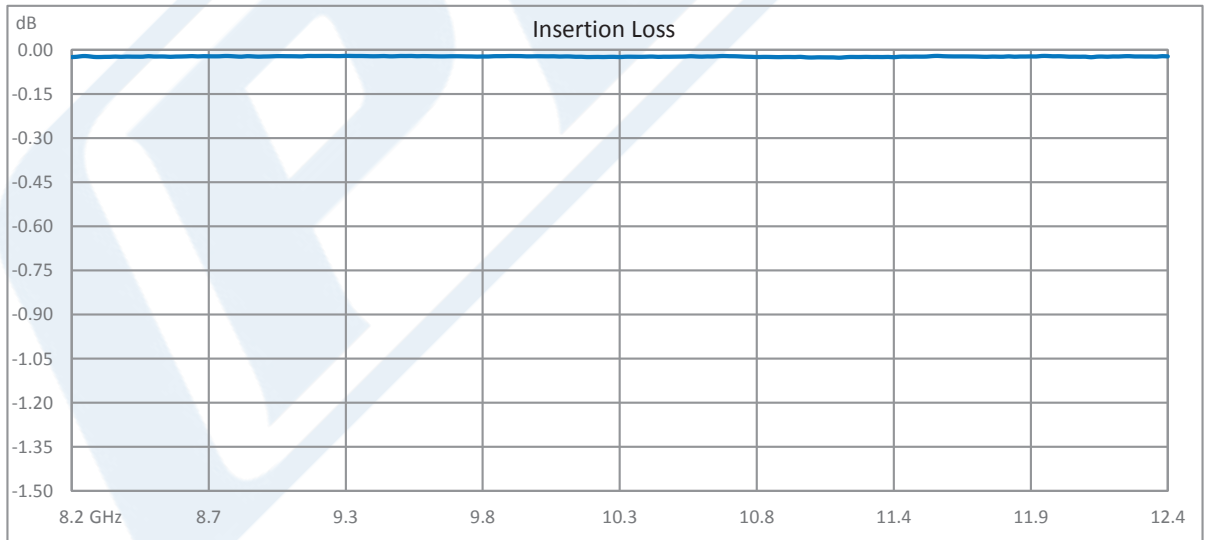
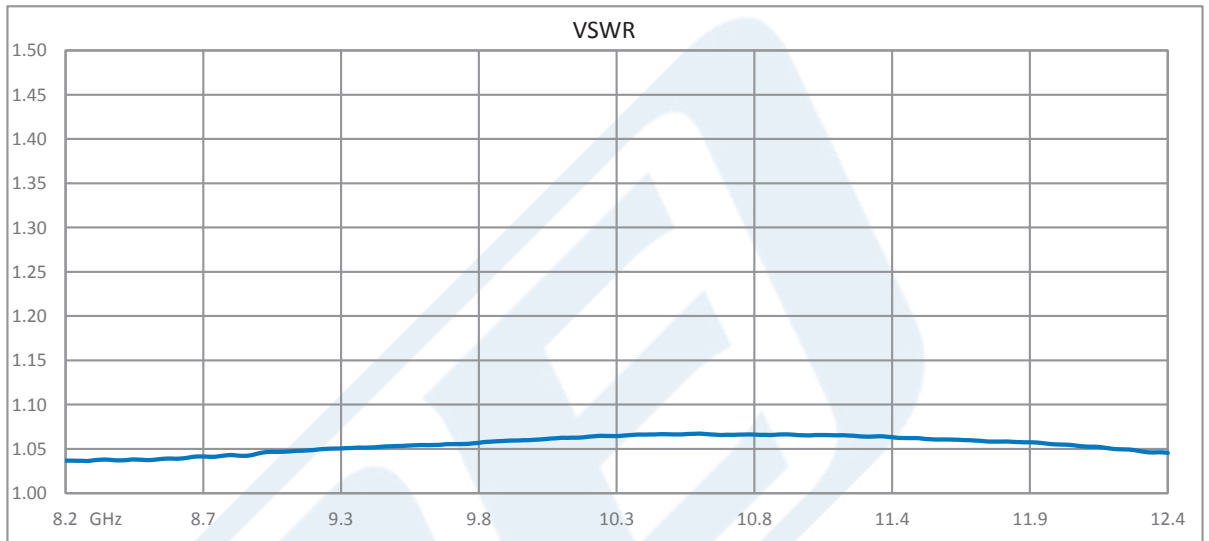


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Typical Performance Data



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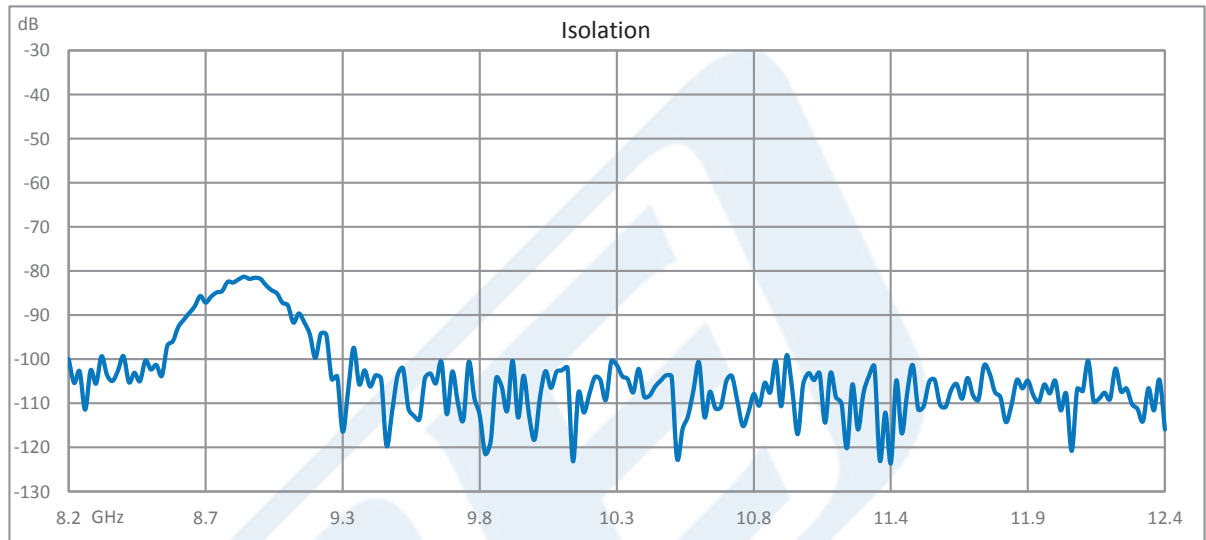




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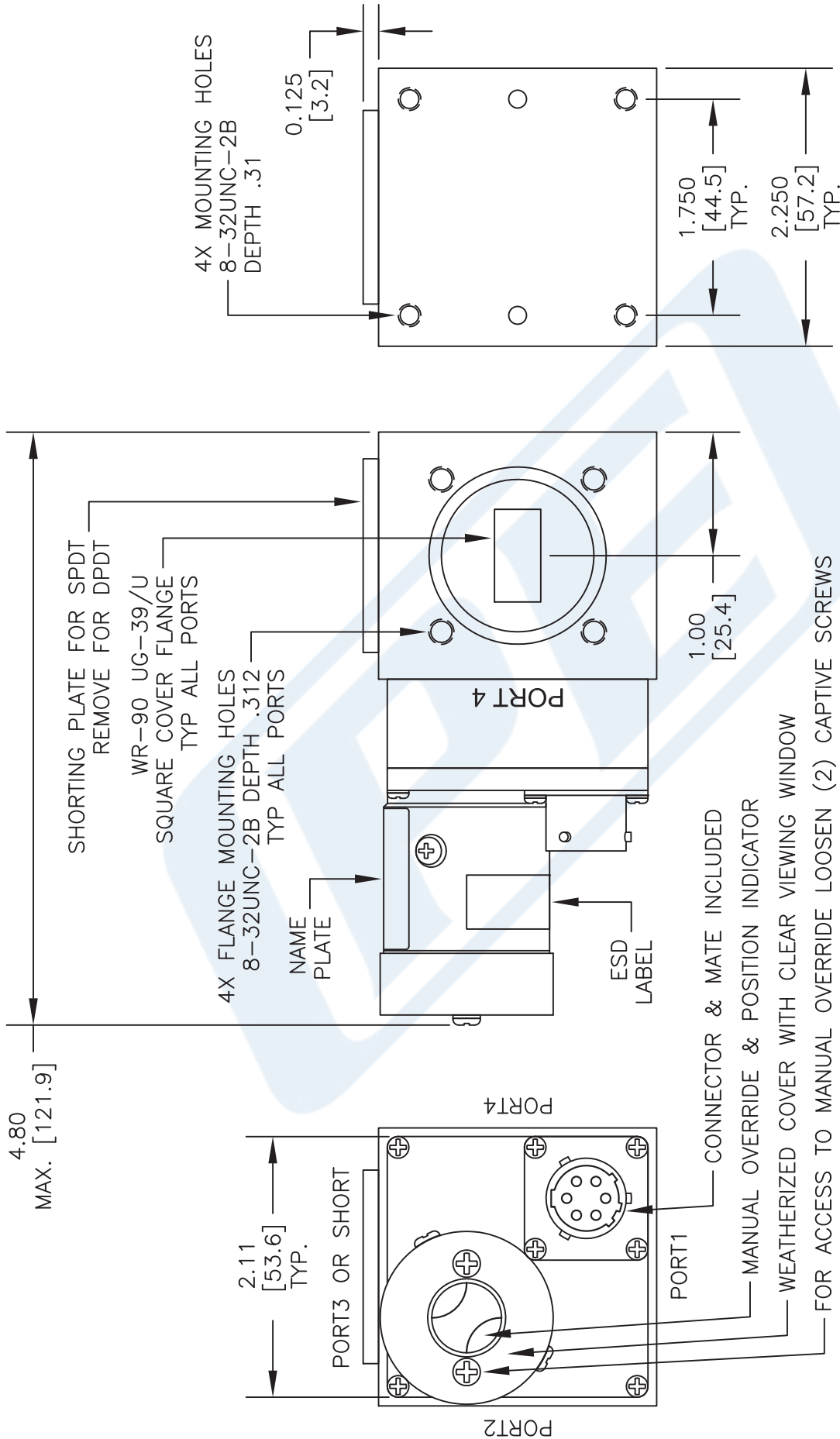
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# PEWGS6018 CAD Drawing

WR-90 Waveguide Electromechanical Relay SPDT Latching Switch, X Band  
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DWG TITLE

**PEWGS6018**

NOTES:  
1. UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE NOMINAL.  
2. ALL SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE AT ANY TIME.  
3. DIMENSIONS ARE IN INCHES [mm].

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CAD FILE 013017

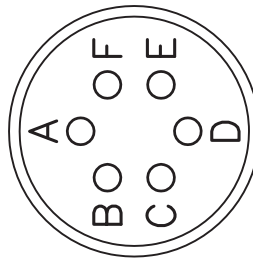
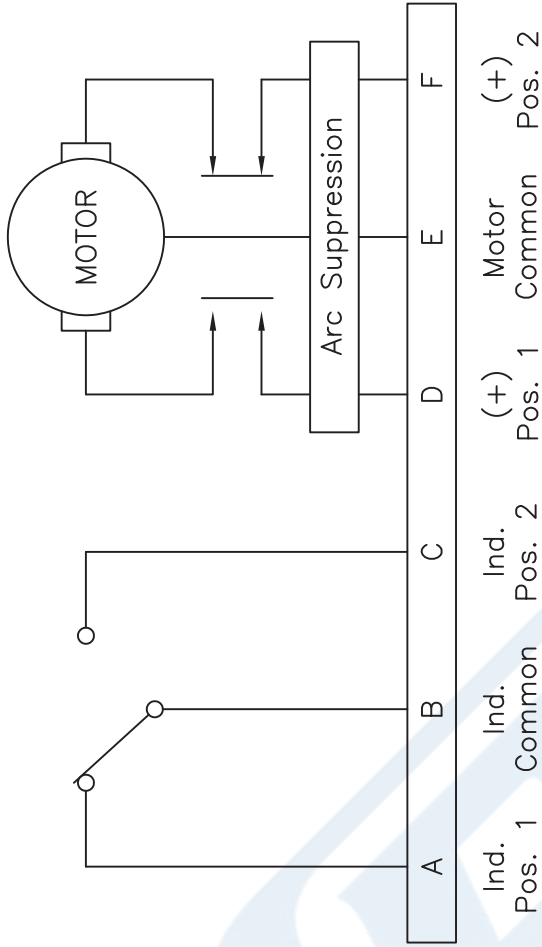
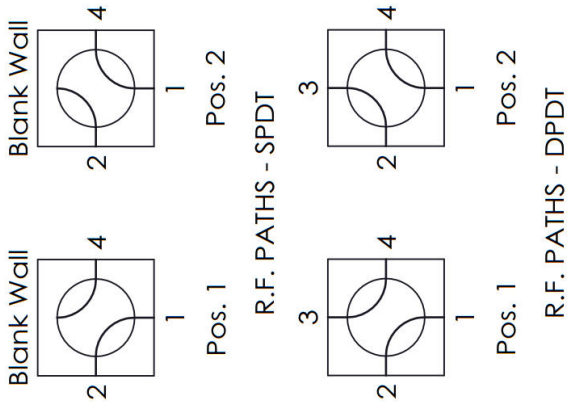
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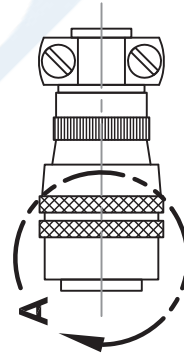
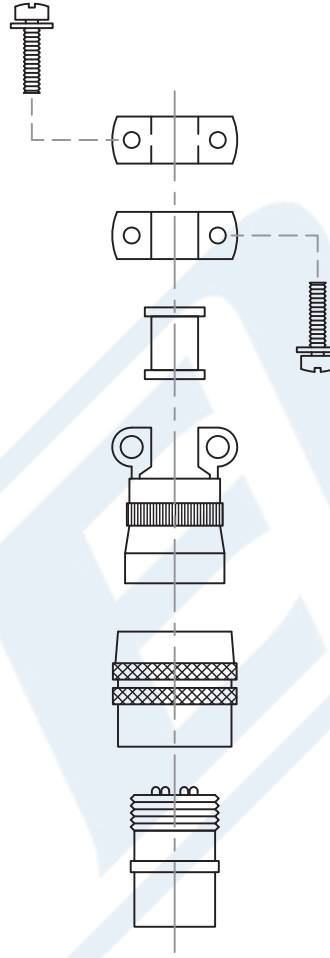
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**View A**



DWG TITLE

**PEWGS60**

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