

WR90 Reflective Waveguide DPDT Electromechanical Switch 8.2GHz–12.5GHz



Product Description

RFDPDTW90A is a reflective waveguide DPDT electromechanical switch with a frequency range of 8.2 to 12.5GHz.

The power handling of this switch is 1KW max. The typical insertion loss is 0.15dB and the isolation is 70dB with the speed of 80ms. This electromechanical switch works with a +28 VDC power supply.

The electromechanical switch's interface is WR90.
The operating temperature of this product is from -40 to +70°C.

Features

- Reflective Waveguide Electromechanical Switch
- DPDT configuration
- Magnetic latching
- Operating life of 0.1 million cycles
- Guaranteed repeatability of 0.02dB up to 0.1 million cycle
- Standard Drive Compatible
- Supply Voltage +28VDC
- Insertion Loss +0.15dB
- Isolation 60dB

Typical Applications

- Wireless Infrastructure
- Military and Aerospace Applications
- Test Instrumentation
- Radar Systems
- 5G Wireless Communications
- Microwave Radio Systems
- TR Modules
- Research and Development
- Cellular Base Stations

Electrical Specifications ($T_A = +25^\circ\text{C}$)

Parameter	Min	Typ	Max	Units
Frequency Range	8.2		12.5	GHz
Insertion Loss			0.15	dB
VSWR			1.15	:1
Isolation	70			dB
Average Power			1	KW
Peak Power			100	KW
Switching Speed		80		ms
Life Cycles		0.1		Million
Repeatability			0.02	dB
Supply Current ($V_{CC} = +28\text{VDC}$)		1		A
Weight		1.33 Max.		lbs.
Impedance		50		Ohms
Waveguide Type		WR90		
Flange Type		Cover		
Actuator Type		Latching		
Contact		Break Before Make		
Control		Ground		
Package		Epoxy Sealed (Standard)		
		Hermetically Sealed (Optional)		

Absolute Maximum Ratings

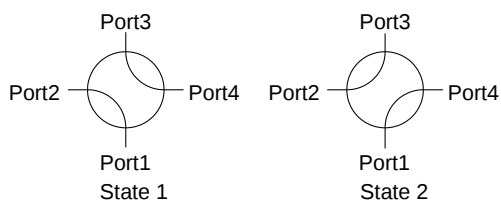
Parameter	Rating
Supply Voltage Range	+22 ~ +32VDC

Environmental Specifications and Test Standards

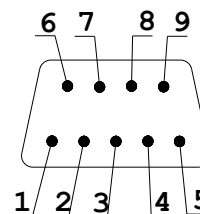
Parameter	Description
Operational Temperature	-40°C to +70°C (Case Temperature)
Storage Temperature	-55°C to +85°C
Thermal Shock	-40°C → +70°C (5 Cycles / 10 hours)
*Random Vibration	MIL-STD-202G Table 214-I, Test Condition Letter C 1.5 Hours Per Axis
High Temperature Burn In	Temperature +85°C for 72 Hours
Shock	1. Weight >20g, 50g half sine wave for 11ms, Speed variation 3.44m/s 2. Weight <=20g, 100g Half sine wave for 6ms, Speed variation 3.75m/s 3. Total 18 times (6 directions, 3 repetitions per direction).
Altitude	Standard: 30,000 Ft (Epoxy Sealed Controlled Environment) Optional: Hermetically Sealed (60,000 ft. 1.0 PSI min)
Hermetically Sealed (Optional)	MIL-STD-883 (For Hermetically Sealed Units)

*For vibration testing details please see additional information section.

Control Methods

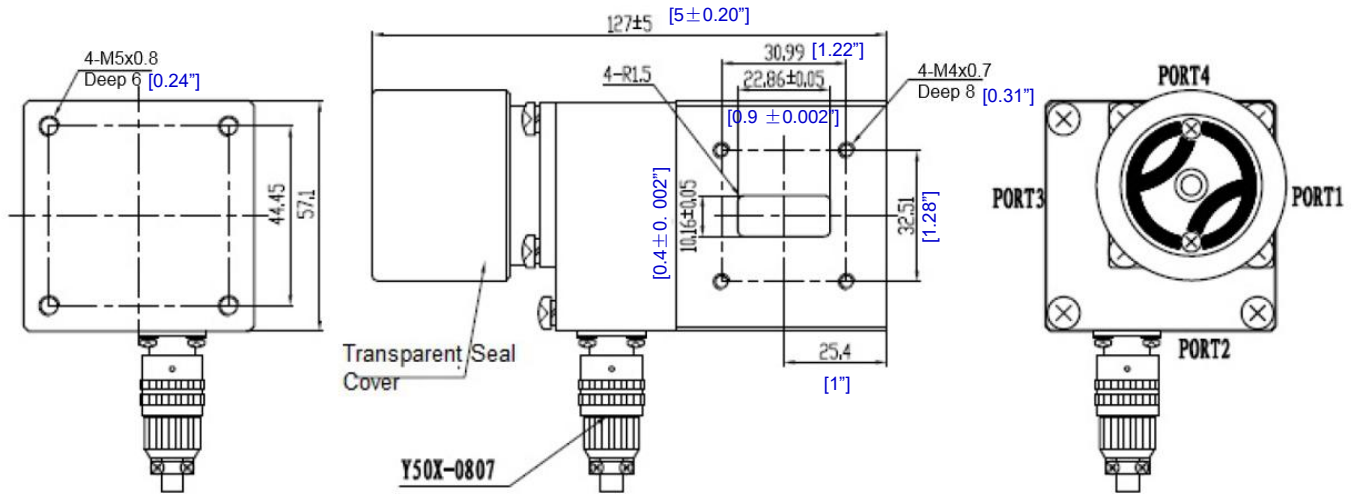


Control Port: Y50X-0807



Switch State	Pin 1	+28V Pin 2	Pin 3	Feedback Signal(Pin 5 is common)	
				Pin 4	Pin 5
State 1	Vcc	GND	OPEN	Connect with Pin 5	Disconnect from Pin 5
State 2	OPEN	GND	Vcc	Disconnect from Pin 5	Connect with Pin 5

Outline Drawing



Notes:

1. Package Material: Aluminum
2. Inside Finish: Natural conductive oxidation; Outside Finish: Black paint with control part
3. All dimensions are in millimeters [inches].
4. Tolerances ± 0.02 [0.008] unless otherwise specified.



Additional Information

Documentation

ESD Policy

https://rflambda.com/pdf/rflambda_esd_control.pdf

Connector Torque Specifications

https://www.rflambda.com/pdf/Torque_Specifications.pdf

Random Vibration Test Standard

https://www.rflambda.com/pdf/rflambda_random_vibration_MIL-STD-202G.pdf

Ordering Information

Part Number	Modification	Description
RFD PDTW90A	WR90	8.2GHz-12.5GHz Electromechanical Switch

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