

## WR-112 Waveguide Electromechanical Relay SPDT/ DPDT Latching Switch, X Band 10 GHz, 7,000 Watts, UG-51/U Square Cover, 12V, TTL Logic

### FMWGS6023



#### Features

- 7.05 to 10 GHz SPDT Waveguide Switch
- Optional DPDT Configuration
- WR-112 Waveguide with O-Rings
- Insertion Loss: 0.05 dB max
- Isolation: 80 dB min
- +12 Vdc Nominal Voltage
- Input Power Rating up to 7 kW CW max
- Latching TTL Logic 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 FMWGS6023 electromechanical WR-112 waveguide switch operates across a wide frequency range from 7.05 GHz to 10 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 TTL Logic controlled 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 typ insertion loss, 85 dB typ Isolation, 1.07:1 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 7 KW CW maximum. The waveguide ports have Grooved UG-51/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 10 pin MIL-SPEC DC bias connector with mate included.

Switch Type	SPDT
Actuator Type	Latching
Switching Sequence	Break Before Make
Actuator Options	TTL Logic, Self Cut Off, Window Indicator, Manual Override
TTL Control	on: 2.4 to 5.5 Volts
	off: 0 to 0.8 Volts
	5 mA at 5.5 Volts
	0 mA at 0.8 Volts
TTL Control Current	

Description	Min	Typ	Max	Units
Frequency Range	7.05		10	GHz
Impedance		50		Ohms
Operating Voltage	10	12	20	Volts
Actuating Current @ 12 Volts			1,000	mA
VSWR		1.07:1	1.1:1	
Insertion Loss		0.02	0.05	dB
Isolation	80	85		dB
Switching Time			100	ms
Input Power (CW)			7	kWatts

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Description	Min	Typ	Max	Units
Input Power (Peak/Unpressurized) 10% Duty Cycle			202	kWatts

Mechanical Specifications

<b>Size</b>		
Length		5.2 in [132.08 mm]
Width/Diameter		2.25 in [57.15 mm]
Height		2.25 in [57.15 mm]
Weight		1.5385 lbs [697.85 g]
Housing Material and Plating		Aluminum, Chem Film
Operating Life (Cold Switching)		250,000 Cycles
Operating Pressure		30 psig
<b>Connectors</b>		
Waveguide Size		WR-112
Flange Type		Square Cover
Flange Designation		UG-51/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

<b>Temperature</b>		
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

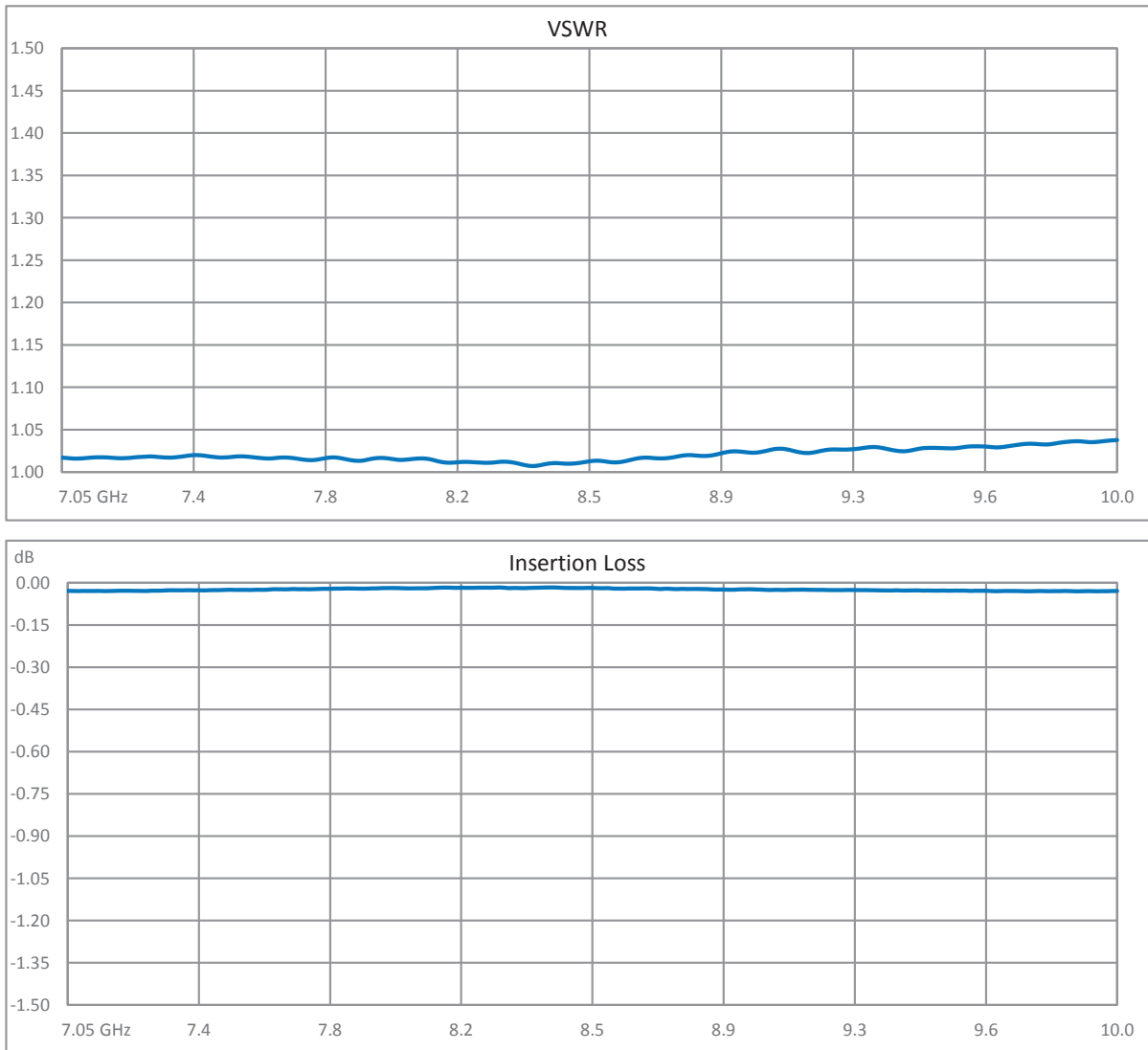
Notes:

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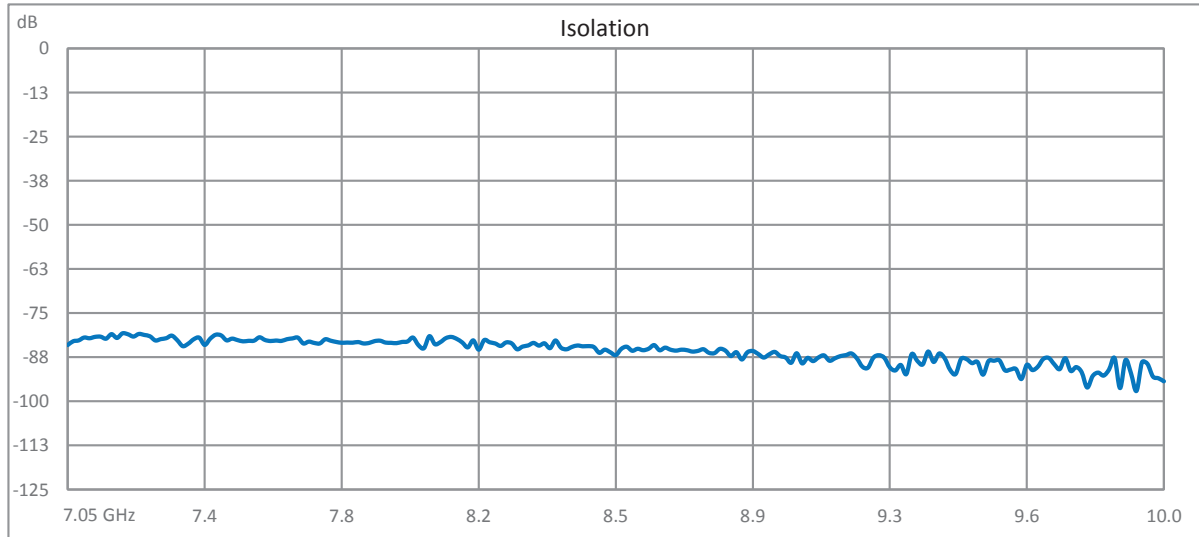
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### Typical Performance Data



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WR-112 Waveguide Electromechanical Relay SPDT/DPDT Latching Switch, X Band 10 GHz, 7,000 Watts, UG-51/U Square Cover, 12V, TTL Logic from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Lewisville, Texas. Fairview Microwave is RF on-demand.

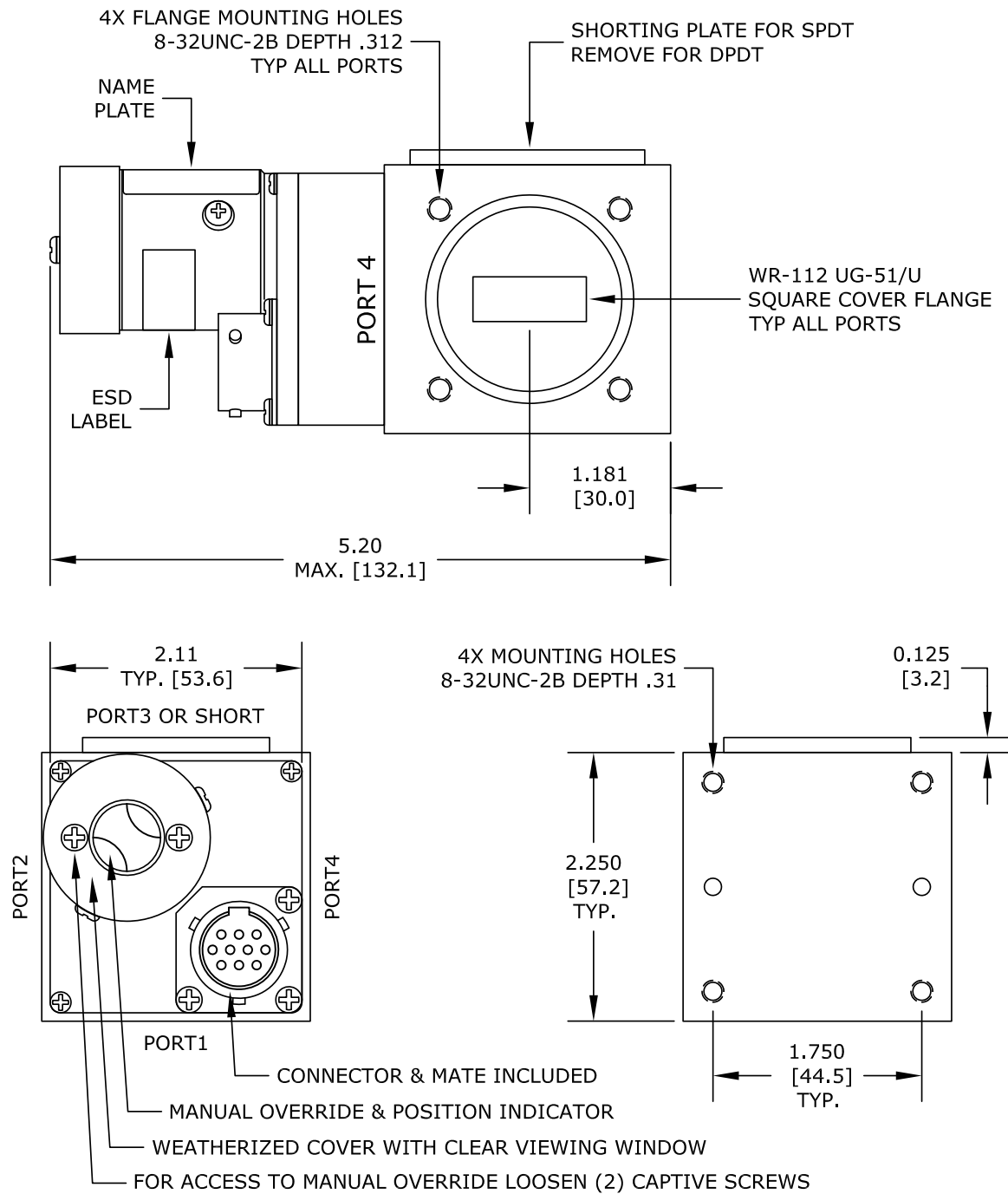
For additional information on this product, please click the following link: [WR-112 Waveguide Electromechanical Relay SPDT/DPDT Latching Switch, X Band 10 GHz, 7,000 Watts, UG-51/U Square Cover, 12V, TTL Logic FMWGS6023](https://www.fairviewmicrowave.com/wr-112-waveguide-electromechanical-relay-latching-switch-spdt-10-ghz-fm-wgs6023-p.aspx)

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FMWGS6023 CAD Drawing

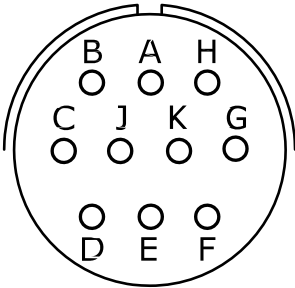
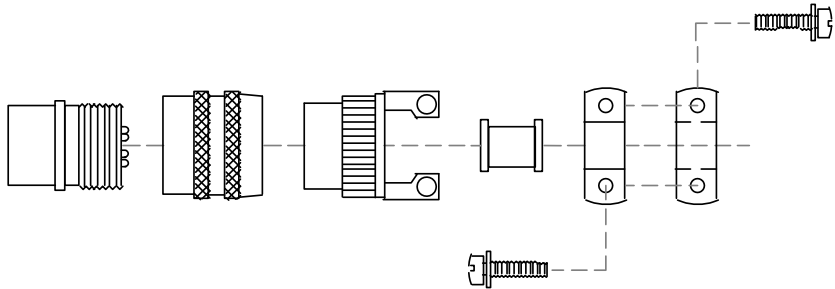
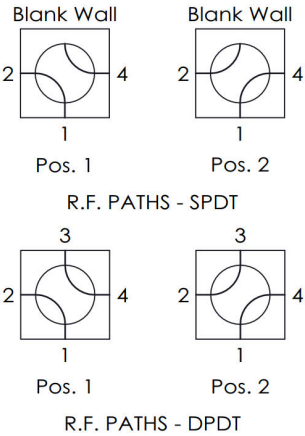
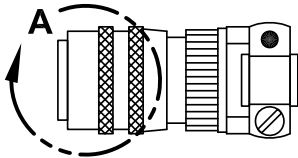
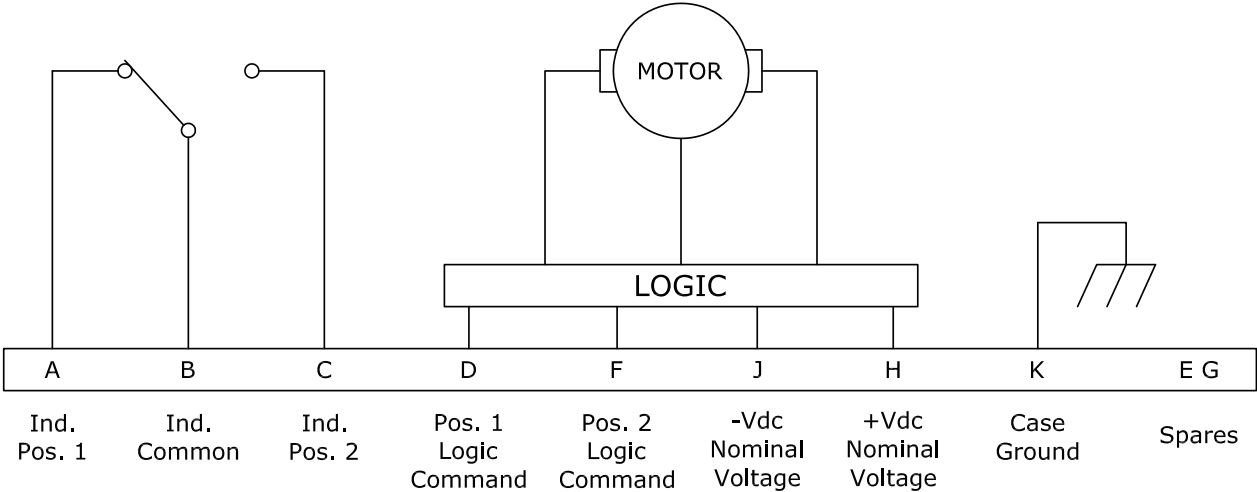
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