

WR-28 Waveguide Electromechanical Relay Failsafe, Ka Band Switch SPDT/DPDT 40 GHz Max Freq., 550 Watts UG O-Ring, 12V, TTL, Indicators

The FMWGS6058 WR28 waveguide electromechanical switch operates across a wide frequency range from 26.5 GHz to 40 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 failsafe 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 typical performance includes 0.07 dB typ insertion loss, 69 dB typ Isolation and 1.05:1 typ VSWR. 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 0.55 kW CW maximum, and an unpressurized peak power rating up to 13.3 kW. Operating life is 250K cycles minimum. The waveguide ports have UG O-Ring grooves with 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/DPDT
Actuator Type	Failsafe
Actuator Options	TTL Logic, Window Indicator, Manual Override
TTL Control	on: 2.4 to 5.5 Volts off: 0 to 0.8 Volts
TTL Control Current	5 mA at 5.5 Volts 5 mA at 0.8 Volts

Description	Min	Typ	Max	Units
Frequency Range	26.5		40	GHz
Impedance		50		Ohms
Operating Voltage	10.8	12	13.2	Volts
Actuating Current @ 12 Volts		240	300	mA
VSWR		1.05:1	1.15:1	
Insertion Loss		0.07	0.15	dB
Isolation	55	69		dB
Switching Time		<80		ms
Input Power (CW)			550	Watts
Input Power (Peak/Unpressurized)			13.3	kWatts

Electrical Specification Notes:

Active logic switch command duration must be maintained to keep switch in energized position.

Maximum switching rate not to exceed 30 per minute



Features:

- 26.5 to 40 GHz SPDT Waveguide Switch
- Optional DPDT Configuration
- WR28 Waveguide with UG O-Ring Grooves
- Failsafe Actuator and Position Indicator
- Insertion Loss: 0.07 dB typ
- Isolation: 69 dB typ
- Switching Time: <80 msec typ
- +12 Vdc Nominal Voltage
- Input Power Rating up to 0.55 kW CW max
- Unpressurized Peak Power Rating up to 13.3 kW
- 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

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Mechanical Specifications

Size

Length	2.11 in [53.59 mm]
Width/Diameter	2.11 in [53.59 mm]
Height	3.35 in [85.09 mm]
Weight	0.88 lbs [399.16 g]
Operating Life	250,000 Cycles
Operating Pressure	30 psig

Configuration

Waveguide Size	WR-28
Flange Type	UG O-Ring
Body Material and Plating	Aluminum, Black
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 IAW IP67

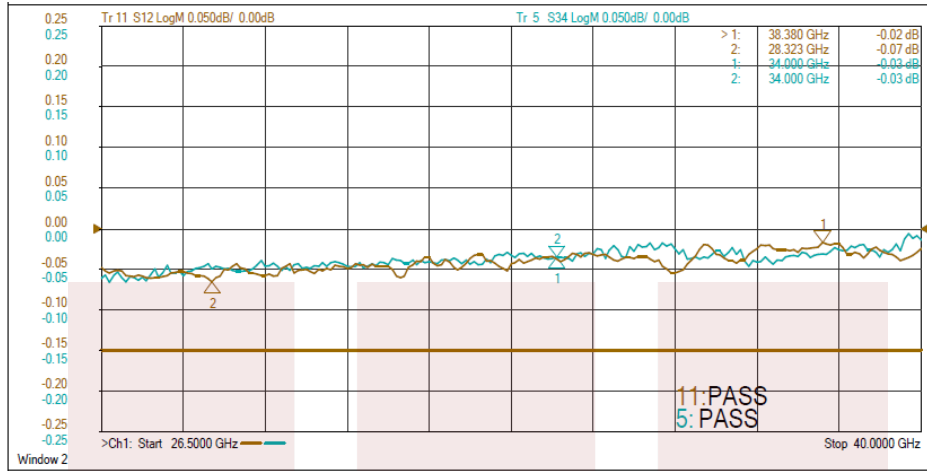
Compliance Certifications (see [product page](#) for current document)

Plotted and Other Data

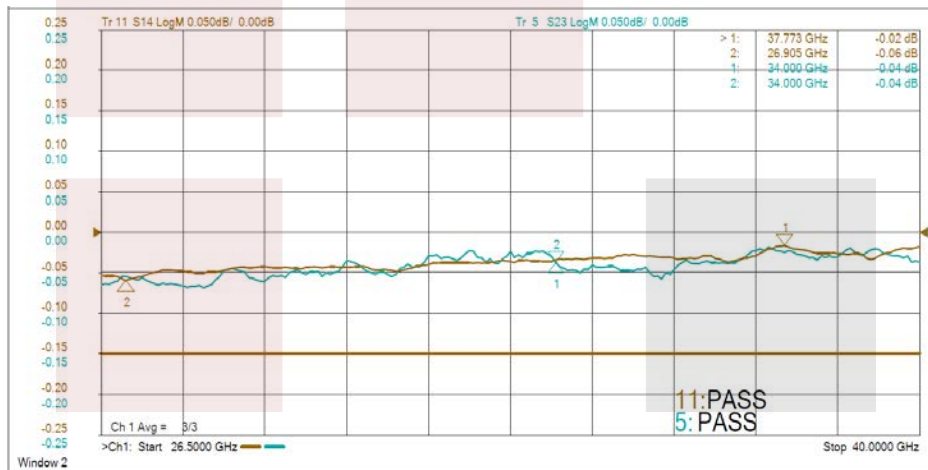
Notes:

Typical Performance Data

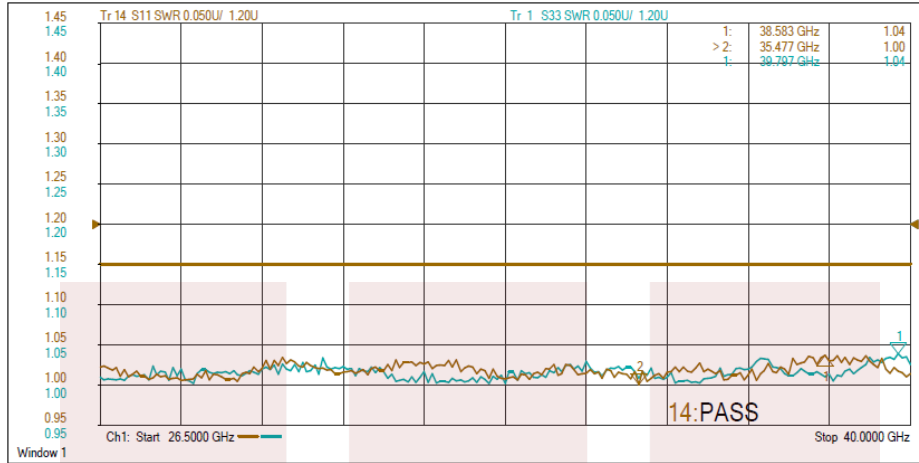
Typical (Position 1) Insertion Loss



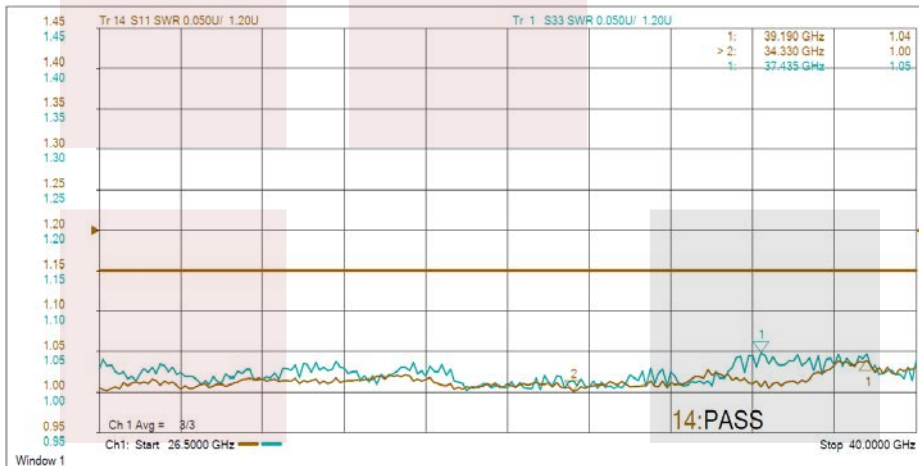
Typical (Position 2) Insertion Loss



Typical (Position 1)
VSWR



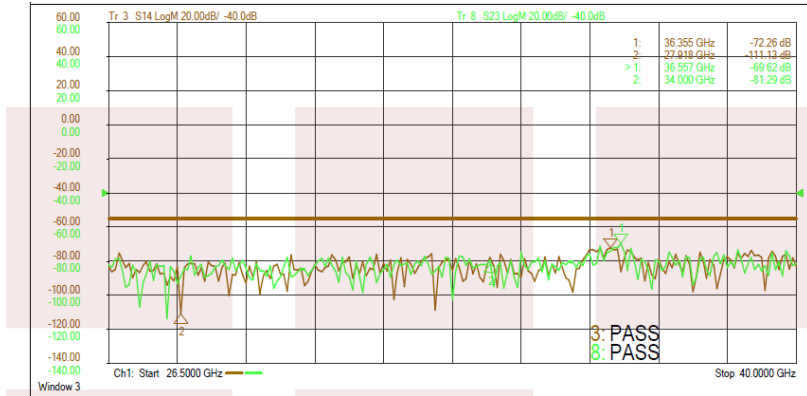
Typical (Position 2)
VSWR



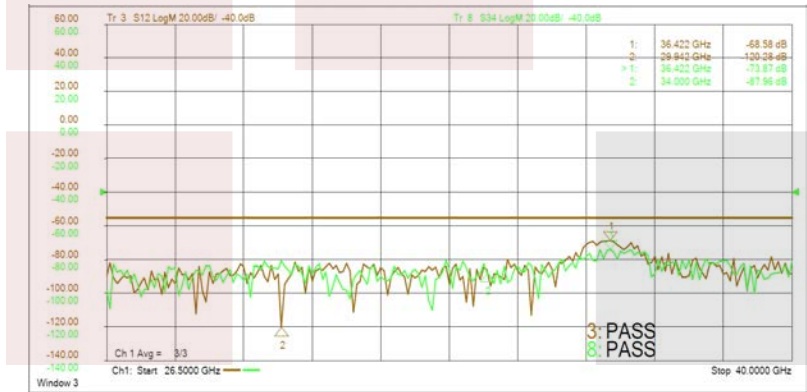


SUMMARY TEST DATA

Typical (Position 1)
Isolation



Typical (Position 2)
Isolation

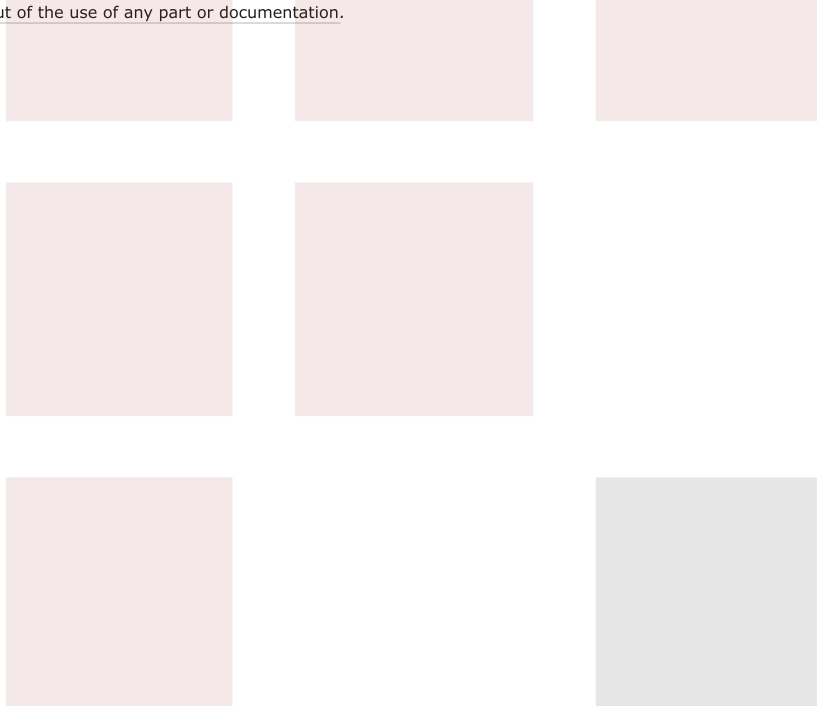


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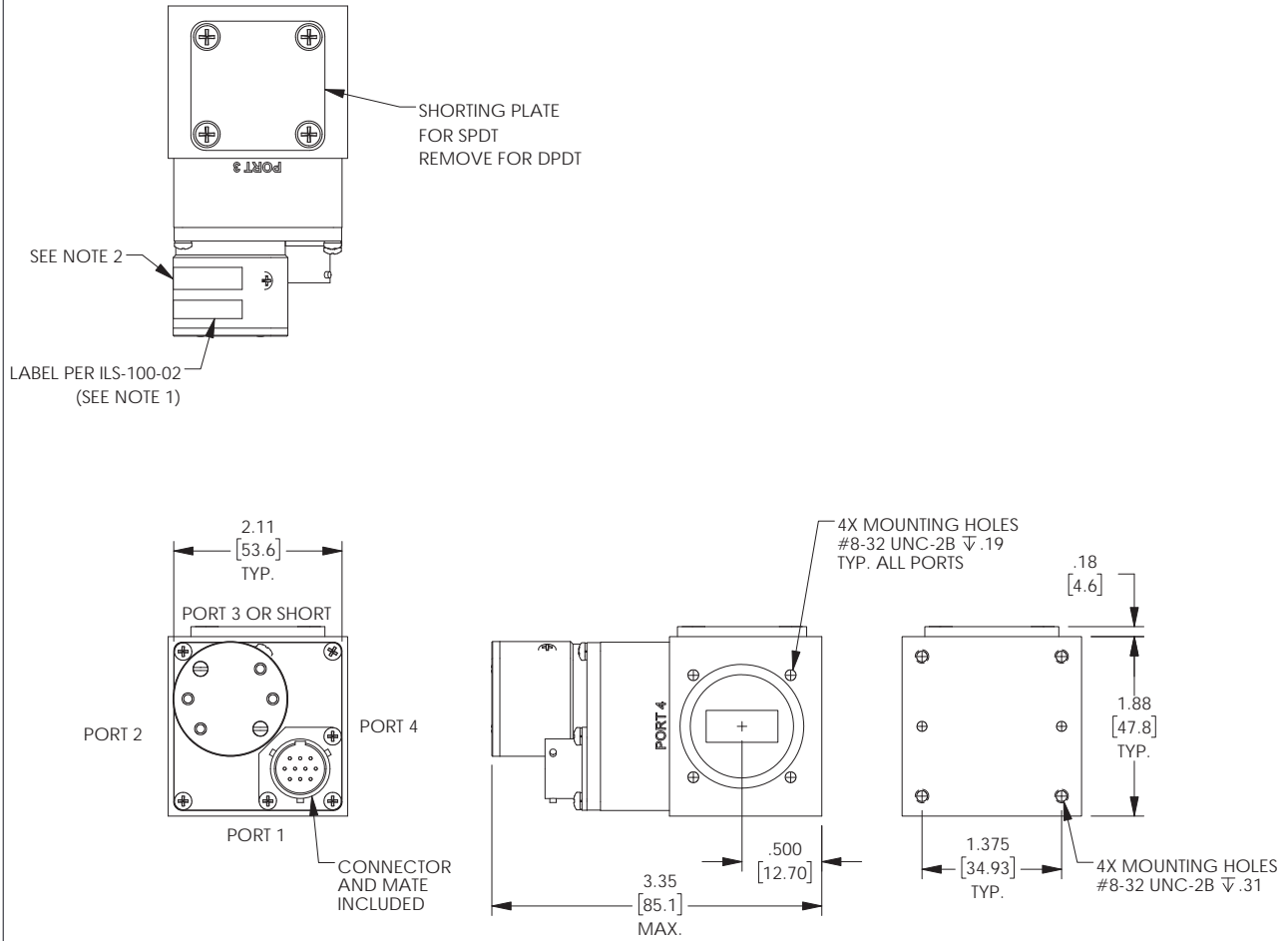
For additional information on this product, please click the following link: [WR-28 Waveguide Electromechanical Relay Failsafe, Ka Band Switch SPDT/DPDT 40 GHz Max Freq., 550 Watts UG O-Ring, 12V, TTL, Indicators FMWGS6058](#)

URL: <https://www.fairviewmicrowave.com/wr-28-waveguide-electromechanical-relay-failsafe-switch-spdt-dpdt-40-ghz-fmwgs6058-p.aspx>

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REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	03/26/2021	TGALLA



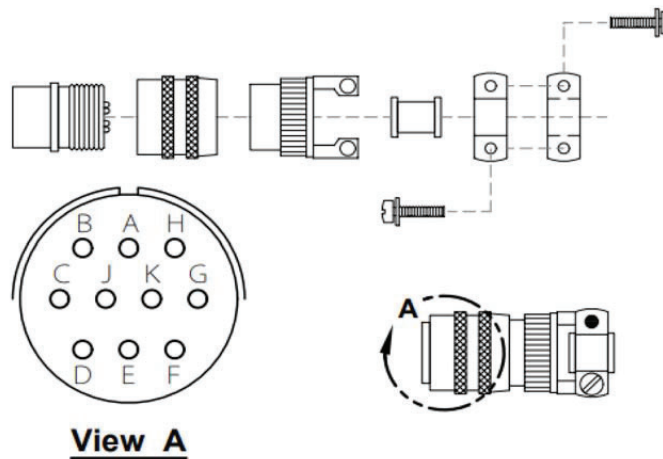
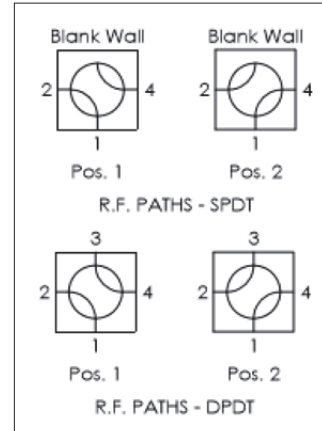
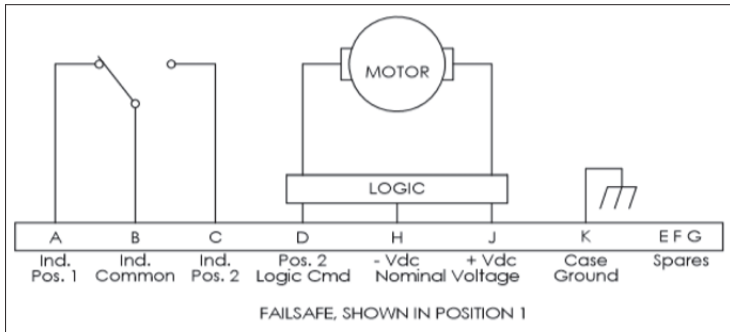
- NOTES:
 1. LABEL PER ILS-100-02. FOR INTERNAL REFERENCE ONLY.
 2. SERIAL NUMBER AND DATE CODE ARE COMBINED. EX: 2020040500001

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TITLE
 WR-28 Waveguide Electromechanical Relay Failsafe,
 Ka Band Switch SPDT/DPDT 40 GHz Max Freq., 550
 Watts UG O-Ring, 12V, TTL, Indicators

UNLESS OTHERWISE SPECIFIED LEADING DIMENSIONS ARE INCHES DIMENSIONS IN [] ARE MILLIMETERS		THIRD-ANGLE PROJECTION	
TOLERANCES:		CABLE LENGTH (L) TOLERANCES:	
.X = ± 2 [5.08]	FRACTIONS ± 1/32	L ≤ 12 [305] = +1 [25] / -0	<p>THE INFORMATION AND DESIGN IN THIS DOCUMENT IS THE PROPERTY OF FAIRVIEW MICROWAVE CORPORATION. ALL RIGHTS RESERVED.</p>
.XX = ± .02 [.51]	ANGLES ± 1°	12 [305] < L ≤ 60 [1524] = +2 [51] / -0	
.XXX = ± .005 [.13]		60 [1524] < L ≤ 120 [3048] = +4 [102] / -0	
		120 [3048] < L ≤ 300 [7620] = +6 [152] / -0	
ALL DIMENSIONS SHOWN ARE FOR REFERENCE ONLY.			SHEET 1 OF 2
SCALE	N/A		
SIZE A	CAGE CODE 3FKR5	DRAWN BY DFRISIELLO	ITEM NO. FMWGS6058
			REV A

T-Rev.D



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		120 [3048] < $L \leq 300$ [7620] = +6 [152] / -0
		300 [7620] < $L = +5\%L$ / -0

THIRD-ANGLE PROJECTION



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SHEET 2 OF 2

ALL DIMENSIONS SHOWN ARE FOR REFERENCE ONLY.

SCALE N/A

SIZE A	CAGE CODE 3FKR5	DRAWN BY DFRISIELLO	ITEM NO. FMWGS6058	REV A
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