

SP4T Normally Open Electro-Mechanical Relay Switch DC to 26.5 GHz , TTL, 90W, 12V, 2M Lifecycles, Suppression Diodes, Indicators, SMA

The FMSW6423 is a Single Pole Four Throw (SP4T) electromechanical relay switch that operates across a wide frequency range of DC to 26.5 GHz and can handle up to 90 Watts of CW input power in a break before make condition. The 50 Ohm design is rated for 2 million lifecycles and features a Normally Open Actuator where the selected position remains active with constant voltage, all positions are open when voltage is removed. Additional features include TTL logic control, suppression diodes which limit voltage spikes or reverse current, and Indicators to monitor the switch position. Impressive typical performance includes 0.4 dB insertion loss and isolation greater than 80 dB. This switch requires +12Vdc bias voltage and operates over a temperature range of -25°C to +70°C. The rugged and compact package assembly supports SMA female connectors and a 15 pin D-Sub Connector for all command control functions. And for highly reliable operation, the model is guaranteed to meet MIL-STD-202 environmental test conditions for shock and random vibration.

Electrical Specifications

Switch Type	SP4T
Actuator Type	Normally Open
Switching Sequence	Break before Make
Actuator Options	TTL Logic
TTL Control	on: 2.4 to 5.5 Volts off: 0 to 0.8 Volts

Description	Min	Typ	Max	Units
Frequency Range	DC		26.5	GHz
Impedance		50		Ohms
Operating Voltage	11	12	13	Volts
Actuating Current @ 12 Volts At +20°C			250	mA
VSWR		1.4:1	1.7:1	
Insertion Loss		0.4	0.7	dB
Isolation	70	80		dB
Input Power (CW)			90	Watts
Switching Time			20	ms

Performance by Frequency

Description	F1	F2	F3	F4	F5	Units
Frequency Range	DC - 6	6 - 12	12 - 18	18 - 26.5		GHz
VSWR, Max	1.2:1	1.3:1	1.4:1	1.7:1		
Insertion Loss, Max	0.15	0.25	0.4	0.7		dB
Isolation, Min	80	80	80	70		dB



Features:

- Single Pole Four Throw Electromechanical Relay Switch
- DC to 26.5 GHz Frequency Range
- Normally Open Actuator
- TTL Logic Control
- Suppression Diodes
- Indicators
- 2M Lifecycle Rating
- Insertion Loss 0.4 dB typ
- Isolation > 80 dB typ
- VSWR 1.4:1 typ
- 15 Pin D-Sub Connector for Command Control Functions
- +12 Volt DC Bias
- SMA Female Connectors
- -25°C to +70°C Operating Temperature
- Up to 90 Watt Average Power Handling
- 50 Ohm Design
- Hot Switching Capability - Consult Factory
- S-Parameter Data available upon request
- Rugged Design meets Mil-STD-202 Test Conditions

Applications:

- Aerospace & Defense
- Test & Measurement
- Microwave Radio Systems
- Military & Commercial Communication Systems
- Research & Development
- SATCOM
- Wireless Communications
- Enterprise
- IoT

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Mechanical Specifications

Size

Body Material and Plating	Aluminum
Package Type	Connectorized
Operating Life	2,000,000 Cycles

Connectors

RF Connector Type	SMA Female
Control Connector	Solder Terminals

Environmental Specifications

Temperature

Operating Range	-25 to +70 deg C
Storage Range	-55 to +100 deg C

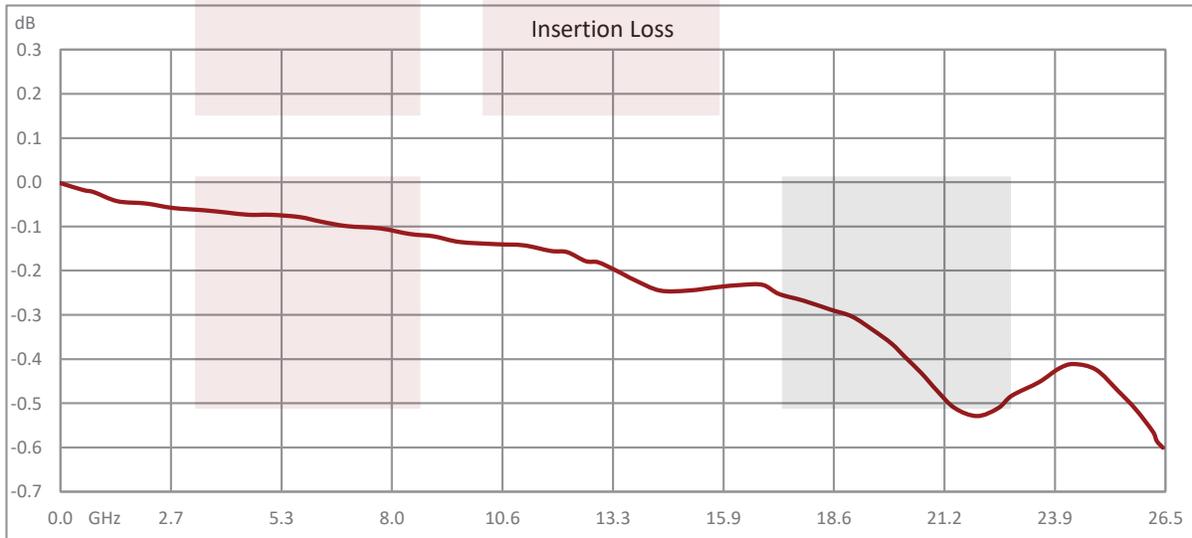
Humidity	Moisture Resistance
Shock	MIL-STD-202 Method 213, Cond. D 500G Non Operating
Vibration	MIL-STD-202 Method 204, Cond. D 10G RMS Non Operating

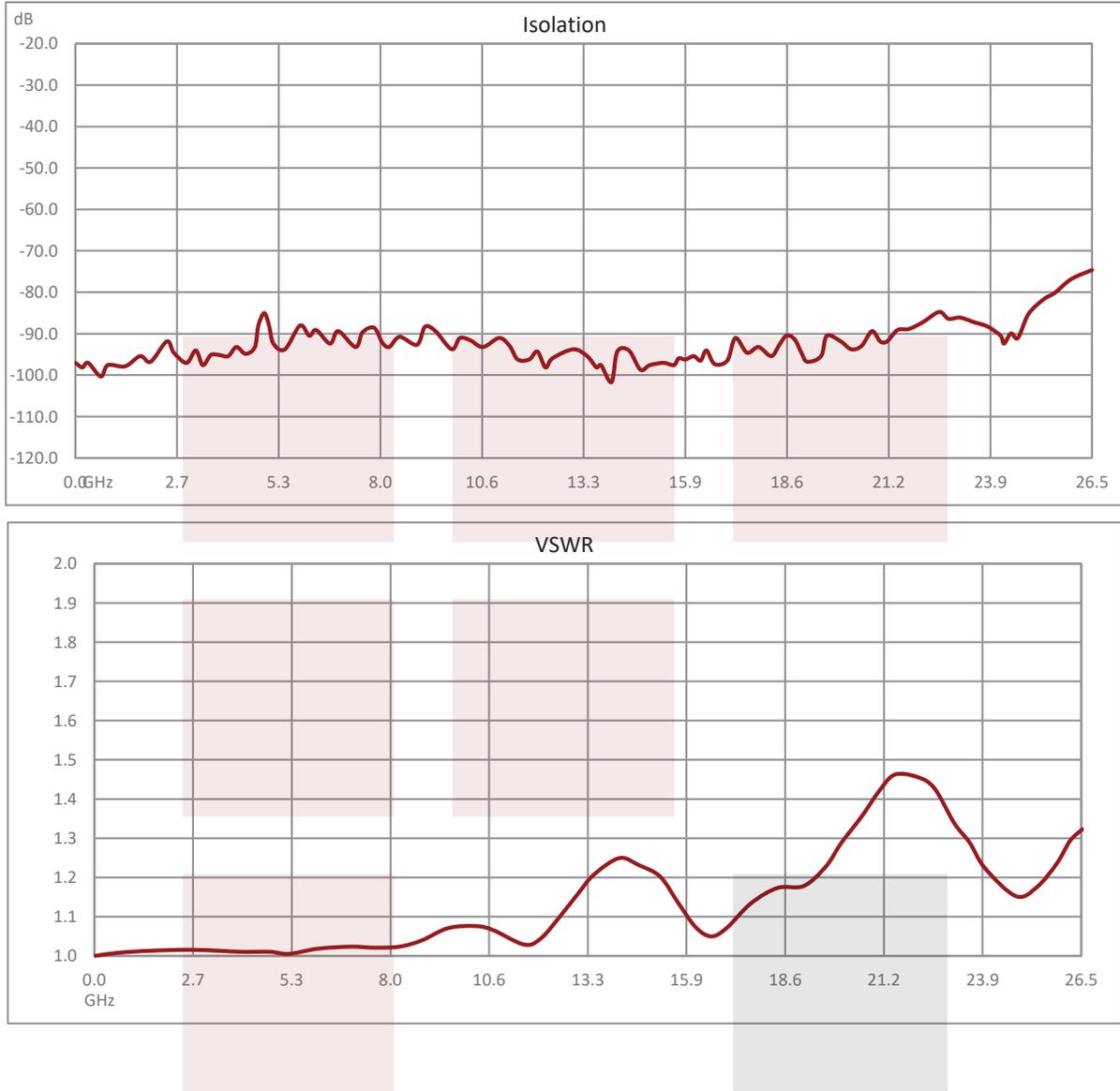
Compliance Certifications (see [product page](#) for current document)

Plotted and Other Data

Notes:

Typical Performance Data



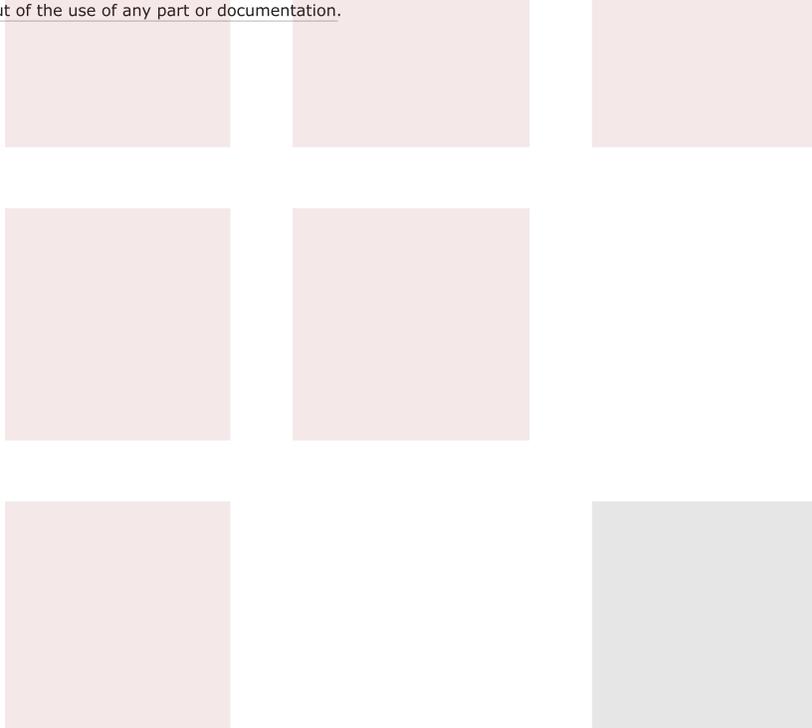


SP4T Normally Open Electro-Mechanical Relay Switch DC to 26.5 GHz , TTL, 90W, 12V, 2M Lifecycles, Suppression Diodes, Indicators, SMA from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Lewisville, Texas. Fairview Microwave is RF on-demand.

For additional information on this product, please click the following link: [SP4T Normally Open Electro-Mechanical Relay Switch DC to 26.5 GHz , TTL, 90W, 12V, 2M Lifecycles, Suppression Diodes, Indicators, SMA FMSW6423](#)

URL: <https://www.fairviewmicrowave.com/sp4t-normally-open-26.5-ghz-electro-mechanical-relay-switch-90w-12v-sma-fmsw6423-p.aspx>

The information contained in this document is accurate to the best of our knowledge and representative of the part described herein. It may be necessary to make modifications to the part and/or the documentation of the part, in order to implement improvements. Fairview Microwave reserves the right to make such changes as required. Unless otherwise stated, all specifications are nominal. Fairview Microwave does not make any representation or warranty regarding the suitability of the part described herein for any particular purpose, and Fairview Microwave does not assume any liability arising out of the use of any part or documentation.



REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	9/11/2020	T.GALLA

PIN 1

Ø 1.50 [38.1]

PIN 15

15PIN D-SUB MALE

.31 [7.9] MAX

LABEL PER ILS-100-02 (SEE NOTE 1)

2.62 [66.5] MAX

.120 [3.05]

.090 [2.29]

.31 [7.9] MAX

□ 1.750 [44.45]

.687 [17.45]

Ø 1.062 [26.97] B.C

5X SMA FEMALE

□ 1.374 [34.90]

.687 [17.45]

NOTES:

1. LABEL PER ILS-100-02. FOR INTERNAL REFERENCE ONLY. LABEL LOCATION FOR REFERENCE ONLY.

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THIRD-ANGLE PROJECTION

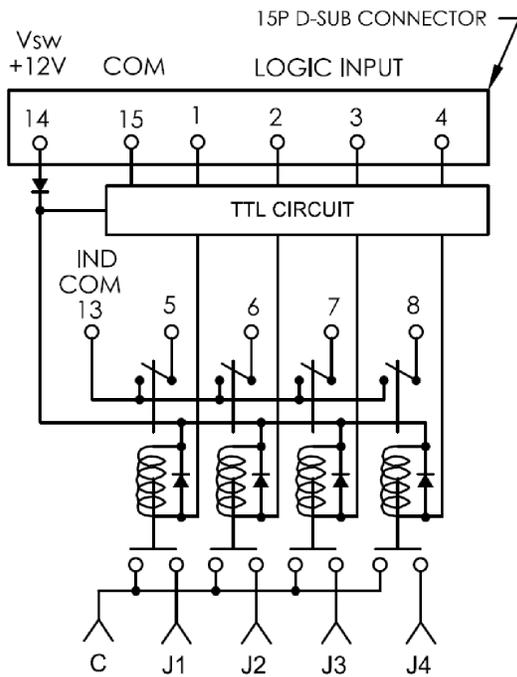
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SHEET 1 OF 2

SCALE N/A

<p>Fairview Microwave an INFINIT[®] brand</p> <p>TITLE</p> <p>SP4T Normally Open Electro-Mechanical Relay Switch DC to 26.5 GHz , TTL, 90W, 12V, 2M Lifecycles, Suppression Diodes, Indicators, SMA</p>		<p>UNLESS OTHERWISE SPECIFIED LEADING DIMENSIONS ARE INCHES DIMENSIONS IN [] ARE MILLIMETERS</p> <p>TOLERANCES:</p> <p>.X = ±.2 [5.08] FRACTIONS ± 1/32</p> <p>.XX = ±.02 [.51] ANGLES ± 1°</p> <p>.XXX = ±.005 [.13]</p>		<p>CABLE LENGTH (L) TOLERANCES:</p> <p>L ≤ 12 [305] = +1 [25] / -0</p> <p>12 [305] < L ≤ 60 [1524] = +2 [51] / -0</p> <p>60 [1524] < L ≤ 120 [3048] = +4 [102] / -0</p> <p>120 [3048] < L ≤ 300 [7620] = +6 [152] / -0</p> <p>300 [7620] < L = +5%L / -0</p>	
		<p>ALL DIMENSIONS SHOWN ARE FOR REFERENCE ONLY.</p>		<p>SCALE N/A</p>	
SIZE A	CAGE CODE 3FKR5	DRAWN BY K.DANG	ITEM NO. FMSW6423	REV A	

T-Rev.D



RF POSITION
SCHMATIC

PIN ASSIGNMENT

TERMINALS LOGIC INPUT PINS	RF PATH				INDICATOR			
	J1	J2	J3	J4	5	6	7	8
1 ("1")	ON	OFF	OFF	OFF	ON	OFF	OFF	OFF
2 ("1")	OFF	ON	OFF	OFF	OFF	ON	OFF	OFF
3 ("1")	OFF	OFF	ON	OFF	OFF	OFF	ON	OFF
4 ("1")	OFF	OFF	OFF	ON	OFF	OFF	OFF	ON

PIN 15. COM
PIN 14. Vsw +12VDC
PIN 13. IND COM

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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 K.DANG	ITEM NO. FMSW6423	REV A
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T-Rev.D