

## SPDT, Terminated, Electromechanical Relay Latching Switch, DC to 53GHz, 28VDC, Indicators, Solder Terminal, 2.4mm

The FMSW8016 is a Single Pole Double Throw (SPDT) electromechanical relay switch that operates across an ultra wide frequency range from DC to 53 GHz and can handle up to 3 Watts of Average Power in a break before make condition. The 50 Ohm design has a Latching Actuator that magnetically latches in place after the control voltage is removed. For power sensitive applications, this is the best actuator option. The output ports are terminated in 50 ohms when switched in the isolation (off) state. An additional feature includes indicators to monitor the switch position. Impressive typical performance includes 0.8 dB insertion loss and isolation greater than 80 dB. This switch requires +28 Vdc bias voltage and operates over a temperature range of -25°C to +65°C. The rugged and compact package assembly supports 2.4mm female connectors and solder terminal pins for DC control. And for highly reliable operation, the model is guaranteed to meet MIL-STD-202 environmental test conditions for shock and random vibration.

### Electrical Specifications (TA = +25°C, DC Voltage = 28 Vdc)

Switch Type	SPDT
Actuator Type	Latching
Actuator Options	Indicators

Description	Min	Typ	Max	Units
Frequency Range	DC		53	GHz
Impedance		50		Ohms
Operating Voltage	26	28	30	Volts
Actuating Current @ 28 Volts			200	mA
VSWR		1.7:1	2.8:1	
Insertion Loss		0.8	1.8	dB
Isolation	50	80		dB
Input Power			3	Watts
Switching Time			20	ms

### Performance by Frequency

Description	F1	F2	F3	F4	F5	Units
Frequency Range	DC - 6	6 - 18	18 - 26.5	26.5 - 40	40 - 50	GHz
VSWR, Max	1.2:1	1.3:1	1.6:1	1.6:1	1.8:1	
Insertion Loss, Max	0.2	0.3	0.6	0.6	1.1	dB
Isolation, Min	80	70	70	70	50	dB

### Performance by Frequency

Description	F6	F7	F8	F9	F10	Units
Frequency Range	50 - 52	52 - 53				GHz
VSWR, Max	2.2:1	2.8:1				
Insertion Loss, Max	1.3	1.8				dB
Isolation, Min	50	50				dB



### Features:

- Single Pole Double Throw (SPDT) Electromechanical Relay Switch
- DC to 53 GHz Frequency Range
- Latching Actuator
- Terminated
- Indicators
- 1M Lifecycle Rating
- Insertion Loss 0.8 dB typ
- Isolation > 80 dB typ
- VSWR as low as 1.2:1 max
- Solder Terminal Pins for DC Control
- +28 Volt DC Bias
- 2.4mm Female Connectors
- -25°C to +65°C Operating Temperature
- Up to 3 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

Fairview Microwave  
 301 Leora Ln., Suite 100  
 Lewisville, TX 75056  
 Tel: 1-800-715-4396 / (972) 649-6678  
 Fax: (972) 649-6689  
[www.fairviewmicrowave.com](http://www.fairviewmicrowave.com)  
[sales@fairviewmicrowave.com](mailto:sales@fairviewmicrowave.com)

**Mechanical Specifications**

**Size**

Length	1.95 in [49.53 mm]
Width/Diameter	2.75 in [69.85 mm]
Height	0.92 in [23.37 mm]
Weight	0.16 lbs [72.57 g]
Finish	Electroless Nickel

**Connectors**

RF Connector Type	2.4mm Female
Control Connector	Solder Terminals

**Environmental Specifications**

**Temperature**

Operating Range	-25 to +65 deg C
Storage Range	-55 to +100 deg C

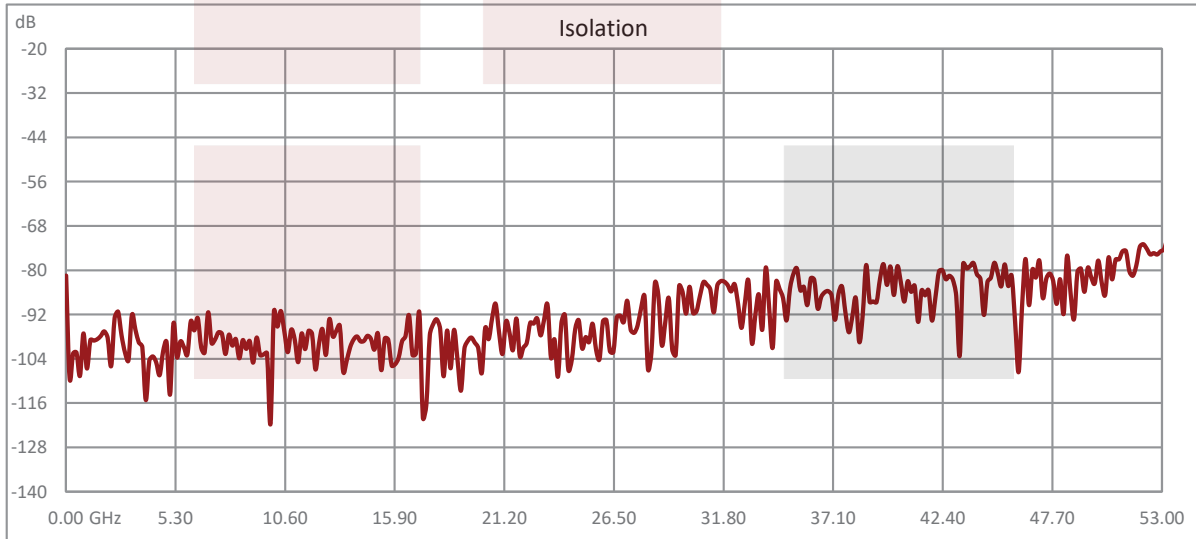
Shock	MIL-STD-202 Method 213, Condition D, 500G (non operational)
Vibration	MIL-STD-202 Method 204, Condition D, 10G RMS (non operational)

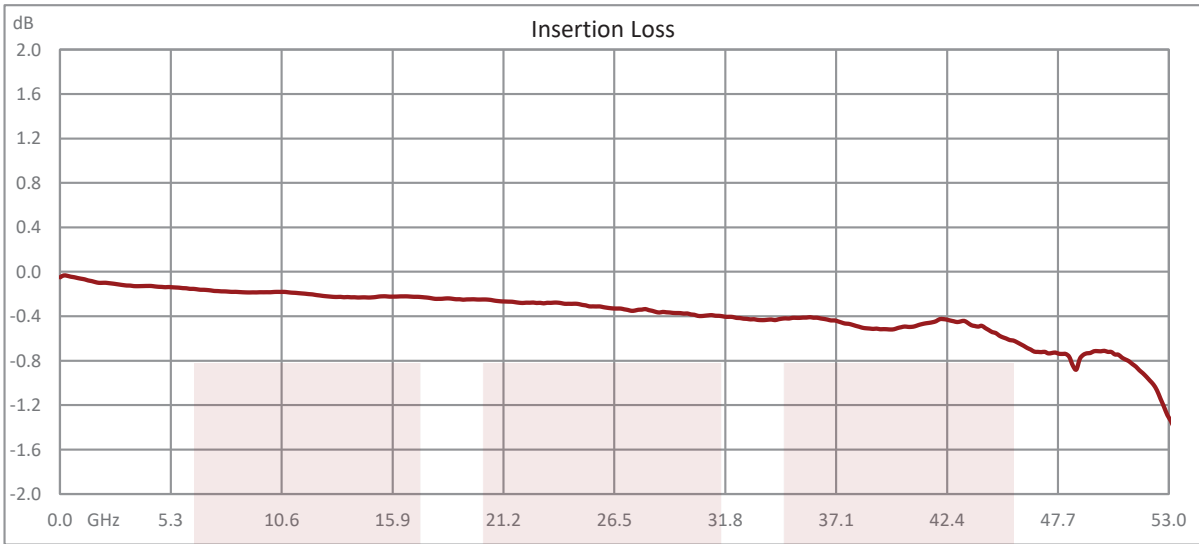
**Compliance Certifications** (see [product page](#) for current document)

**Plotted and Other Data**

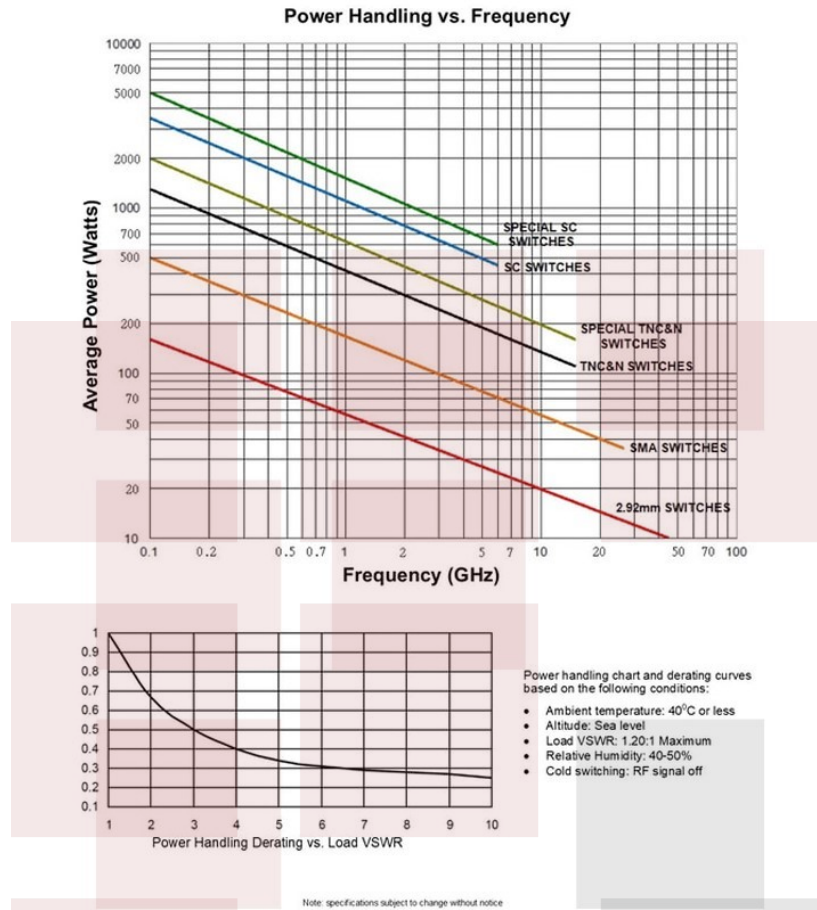
Notes:

**Typical Performance Data**





**Power Handling vs. Frequency**

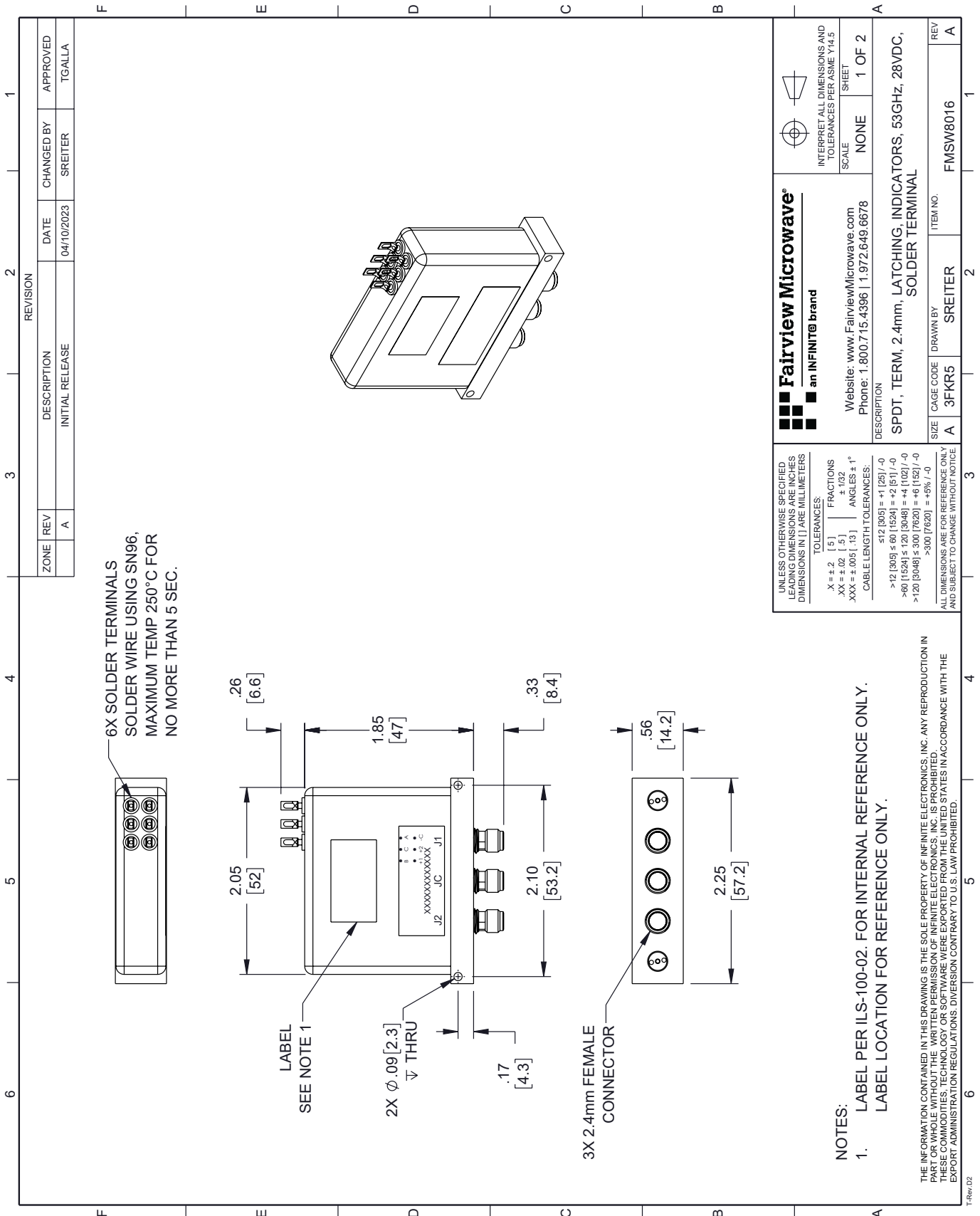


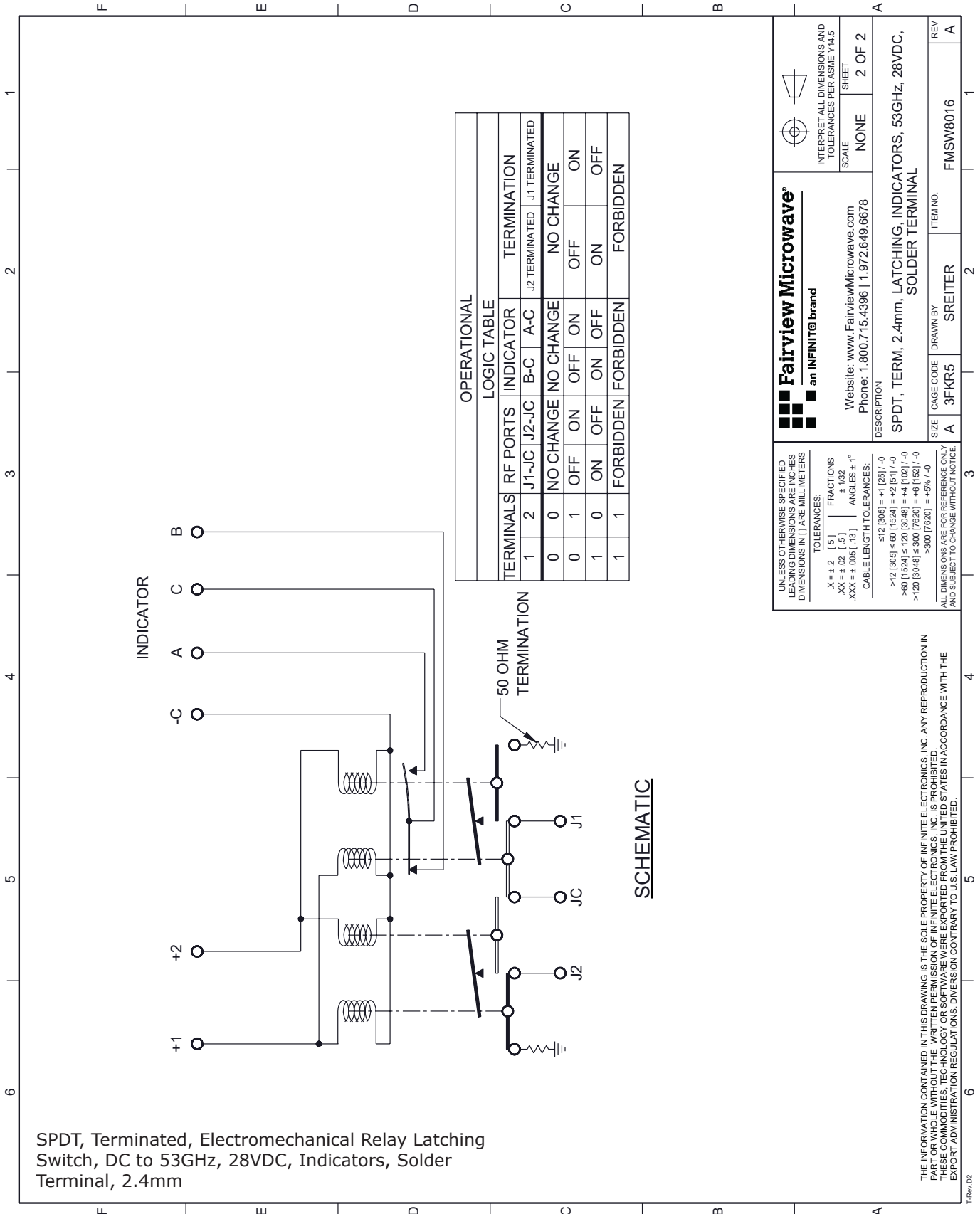
SPDT, Terminated, Electromechanical Relay Latching Switch, DC to 53GHz, 28VDC, Indicators, Solder Terminal, 2.4mm from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Lewisville, Texas. Fairview Microwave is RF on-demand.

For additional information on this product, please click the following link: [SPDT, Terminated, Electromechanical Relay Latching Switch, DC to 53GHz, 28VDC, Indicators, Solder Terminal, 2.4mm FMSW8016](https://www.fairviewmicrowave.com/spdt-latching-53-ghz-electro-mechanical-relay-switch-indicators-28v-2.4mm-fmsw8016)

URL: <https://www.fairviewmicrowave.com/spdt-latching-53-ghz-electro-mechanical-relay-switch-indicators-28v-2.4mm-fmsw8016-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.





SPDT, Terminated, Electromechanical Relay Latching Switch, DC to 53GHz, 28VDC, Indicators, Solder Terminal, 2.4mm

**Fairview Microwave®**  
an INFINITE® brand

Website: [www.FairviewMicrowave.com](http://www.FairviewMicrowave.com)  
Phone: 1.800.715.4396 | 1.972.649.6678

INTERPRET ALL DIMENSIONS AND TOLERANCES PER ASME Y14.5 SHEET

SCALE: NONE 2 OF 2

---

DESCRIPTION  
SPDT, TERM, 2.4mm, LATCHING, INDICATORS, 53GHz, 28VDC, SOLDER TERMINAL

SIZE	CAGE CODE	DRAWN BY	ITEM NO.	REV
A	3FKR5	SREITER	FMSW8016	A

---

UNLESS OTHERWISE SPECIFIED, LEADING DIMENSIONS ARE IN INCHES, DIMENSIONS IN [ ] ARE MILLIMETERS.

TOLERANCES:  
 .X ± .2 [ .5 ] FRACTIONS  
 .XX ± .02 [ .5 ] ± .132 ANGLES ± 1°  
 .XXX ± .005 [ .13 ]

CABLE LENGTH TOLERANCES:  
 ≤ 12 [ 305 ] = ± 1 [ 25 ] / -0  
 > 12 [ 305 ] ≤ 60 [ 1524 ] = +2 [ 51 ] / -0  
 > 60 [ 1524 ] ≤ 120 [ 3048 ] = +4 [ 102 ] / -0  
 > 120 [ 3048 ] ≤ 300 [ 7620 ] = +6 [ 152 ] / -0  
 > 300 [ 7620 ] = +5% / -0

ALL DIMENSIONS ARE FOR REFERENCE ONLY AND SUBJECT TO CHANGE WITHOUT NOTICE.

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF INFINITE ELECTRONICS, INC. ANY REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF INFINITE ELECTRONICS, INC. IS PROHIBITED. THESE COMMODITIES, TECHNOLOGY OR SOFTWARE WERE EXPORTED FROM THE UNITED STATES IN ACCORDANCE WITH THE EXPORT ADMINISTRATION REGULATIONS. DIVERSION CONTRARY TO U.S. LAW PROHIBITED.