

## SP4T, Electromechanical Relay Normally Open Switch, DC to 43 GHz, 28VDC, 10W, Indicators, TTL, Diodes, Solder Terminals, 2.92mm

The FMSW7291 is a Single Pole Four Throw (SP4T) electromechanical relay switch that operates across an ultra wide frequency range from DC to 43 GHz and can handle up to 10 Watts of Average 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, Indicators to monitor the switch position, and Suppression Diodes which limit voltage spikes or reverse current. Impressive typical performance includes 0.4 dB insertion loss and isolation greater than 70 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 2.92mm 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	SP4T
Actuator Type	Normally Open
Actuator Options	Indicators, TTL Logic, Diodes

Description	Min	Typ	Max	Units
Frequency Range	DC		43	GHz
Operating Voltage	26	28	30	Volts
Actuating Current @ 28 Volts			140	mA
VSWR		1.4:1	2.1:1	
Insertion Loss		0.4	1.6	dB
Isolation	40	85		dB
Input Power			10	Watts
Switching Time			20	ms

### Performance by Frequency

Description	F1	F2	F3	F4	F5	Units
Frequency Range	DC - 6	6 - 12	12 - 18	18 - 28	28 - 34	GHz
VSWR, Max	1.25:1	1.4:1	1.5:1	1.8:1	1.8:1	
Insertion Loss, Max	0.2	0.4	0.5	0.9	1	dB
Isolation, Min	70	60	60	60	60	dB

### Performance by Frequency

Description	F6	F7	F8	F9	F10	Units
Frequency Range	34 - 40	40 - 43				GHz
VSWR, Max	1.8:1	2.1:1				
Insertion Loss, Max	1.3	1.6				dB
Isolation, Min	50	40				dB



### Features:

- Single Pole Four Throw (SP4T) Electromechanical Relay Switch
- DC to 43 GHz Frequency Range
- Normally Open Actuator
- TTL Logic Control
- Indicators
- Suppression Diodes
- 2M Lifecycle Rating
- Insertion Loss 0.4 dB typ
- Isolation > 70 dB typ
- VSWR as low as 1.25:1 max
- Solder Terminal Pines for DC Control
- +28 Volt DC Bias
- 2.92mm Female Connectors
- -25°C to +65°C Operating Temperature
- Up to 10 Watts 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**

Length	1.75 in [44.45 mm]
Width/Diameter	1.75 in [44.45 mm]
Height	2.5 in [63.5 mm]
Weight	0.22 lbs [99.79 g]
Body Material and Plating	Electroless Nickel

**Connectors**

RF Connector Type	2.92mm Female
Control Connector	Solder Terminals

**Environmental Specifications**

**Temperature**

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

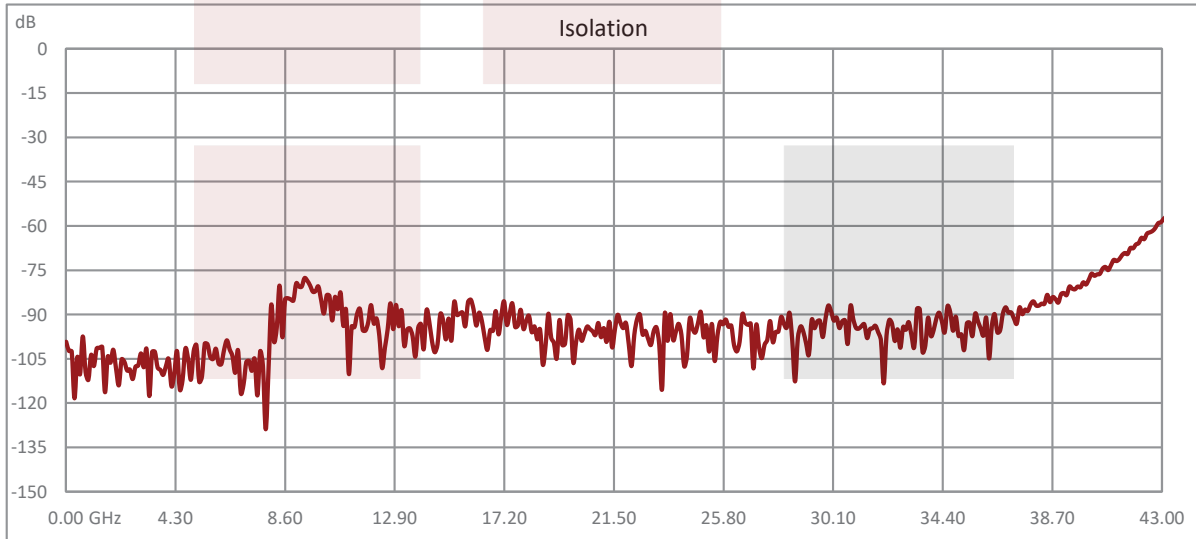
Shock	MIL-STD-202 Method 213, Condition D, 500G (non operational)
Vibration	MIL-STD-202 Method 204, Condition D, 10G RMS (non operational)

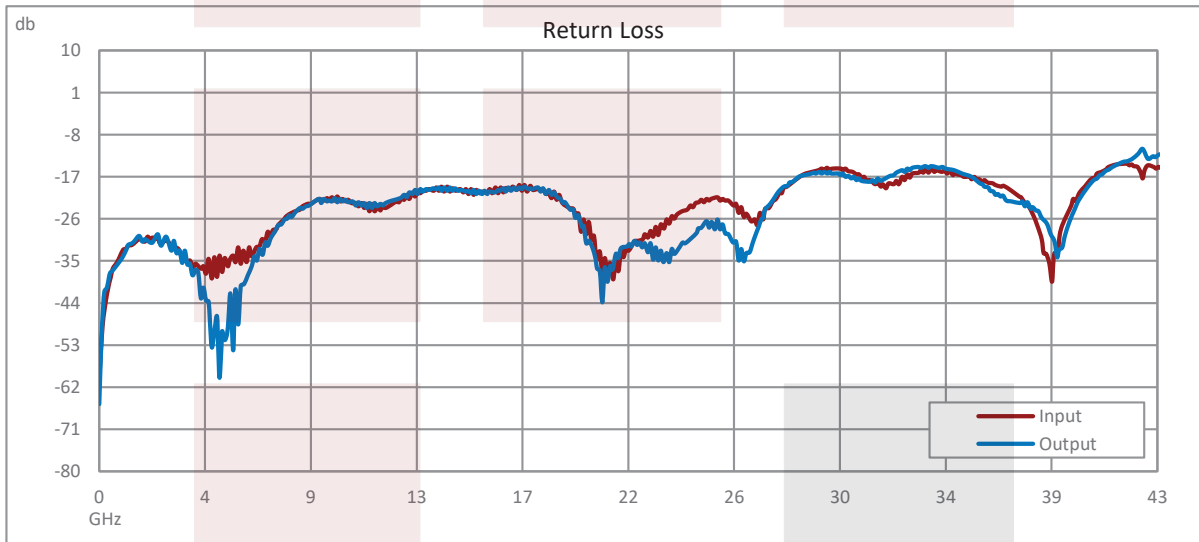
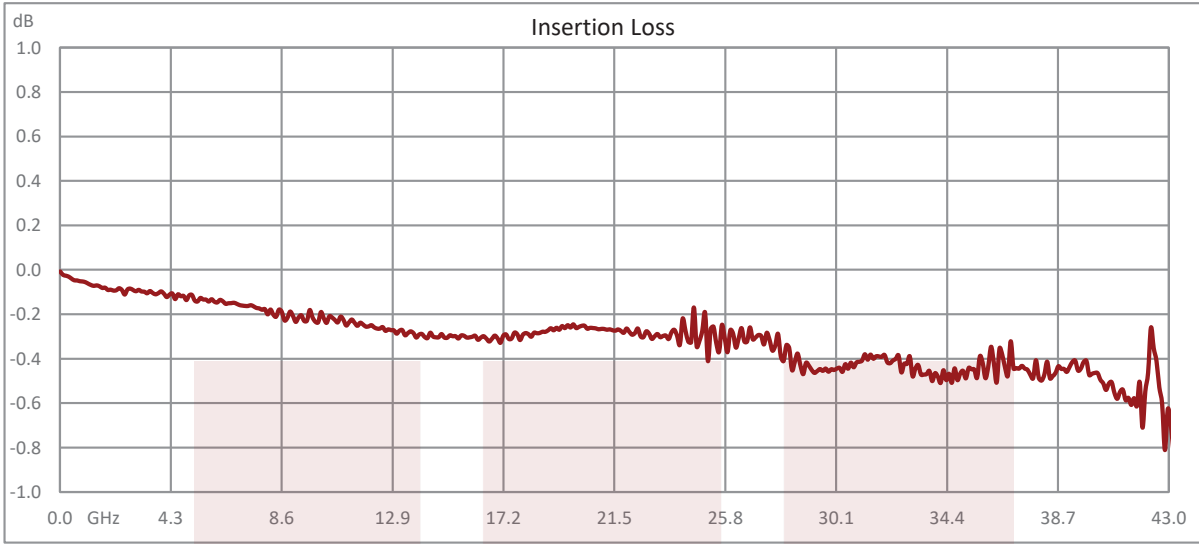
**Compliance Certifications** (see [product page](#) for current document)

**Plotted and Other Data**

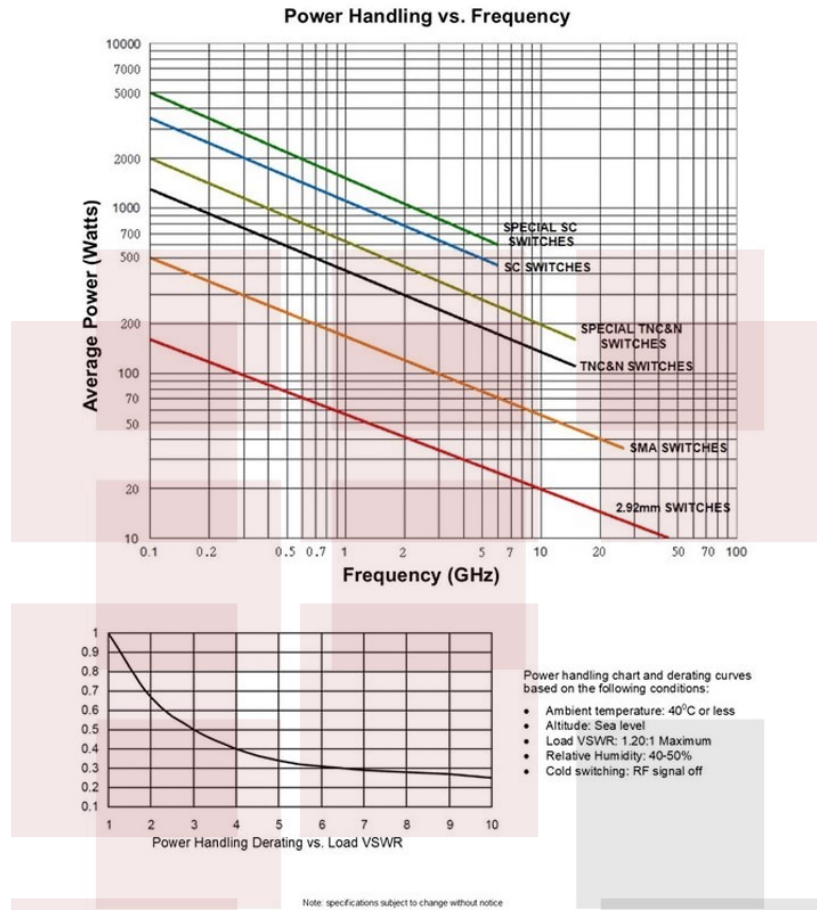
Notes:

**Typical Performance Data**





**Power Handling vs. Frequency**

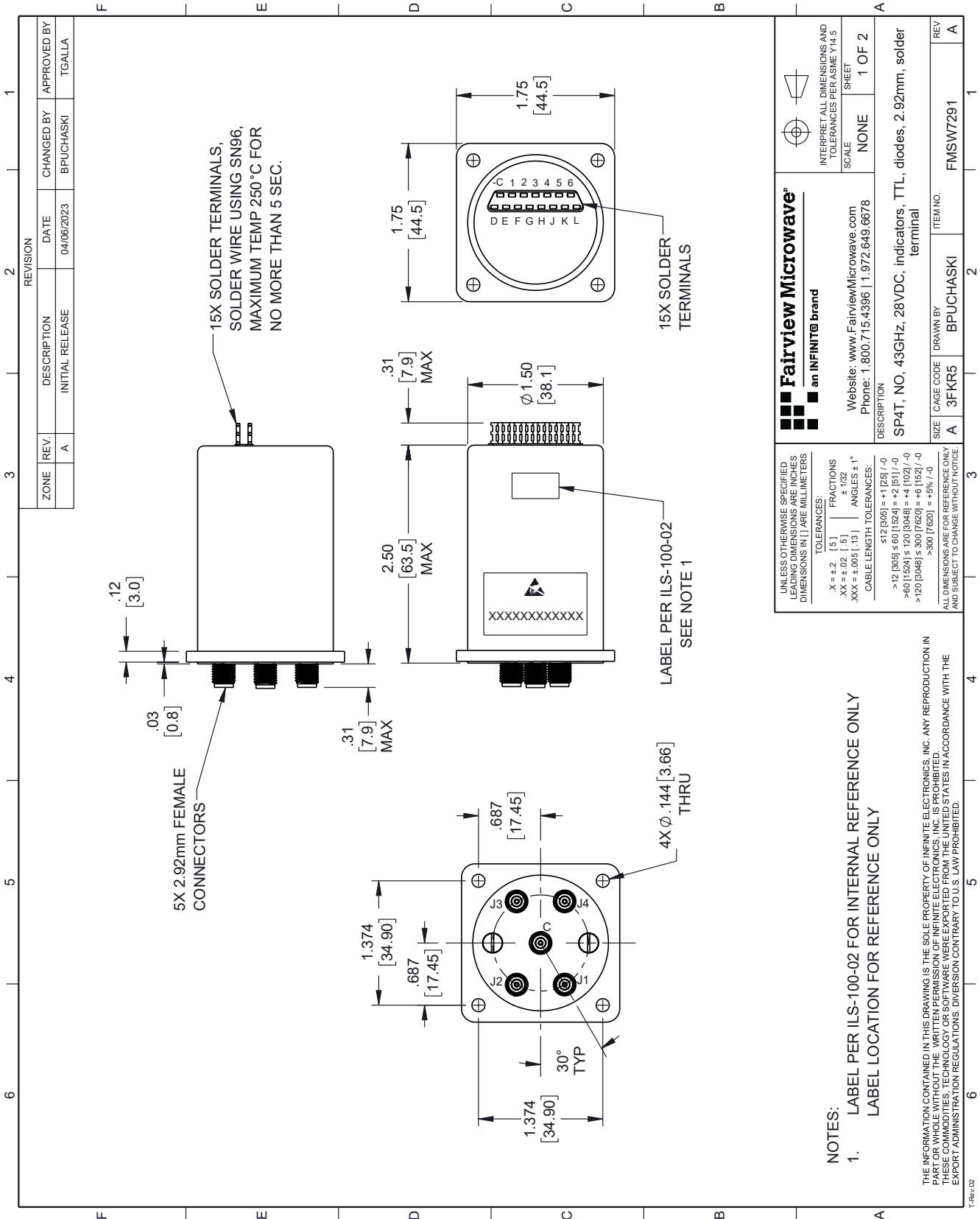


SP4T, Electromechanical Relay Normally Open Switch, DC to 43 GHz, 28VDC, 10W, Indicators, TTL, Diodes, Solder Terminals, 2.92mm from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Lewisville, Texas. Fairview Microwave is RF on-demand.

For additional information on this product, please click the following link: [SP4T, Electromechanical Relay Normally Open Switch, DC to 43 GHz, 28VDC, 10W, Indicators, TTL, Diodes, Solder Terminals, 2.92mm FMSW7291](https://www.fairviewmicrowave.com/sp4t-normally-open-43-ghz-electro-mechanical-relay-switch-indicators-ttl-diodes-28v-2.92mm-fmsw7291)

URL: <https://www.fairviewmicrowave.com/sp4t-normally-open-43-ghz-electro-mechanical-relay-switch-indicators-ttl-diodes-28v-2.92mm-fmsw7291-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.



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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  
SCALE: NONE  
SHEET: 1 OF 2

DESCRIPTION: SP4T, NO, 43GHz, 28VDC, indicators, TTL, diodes, 2.92mm, solder terminal

UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES AND DIMENSIONS IN LARGE MILLIMETERS

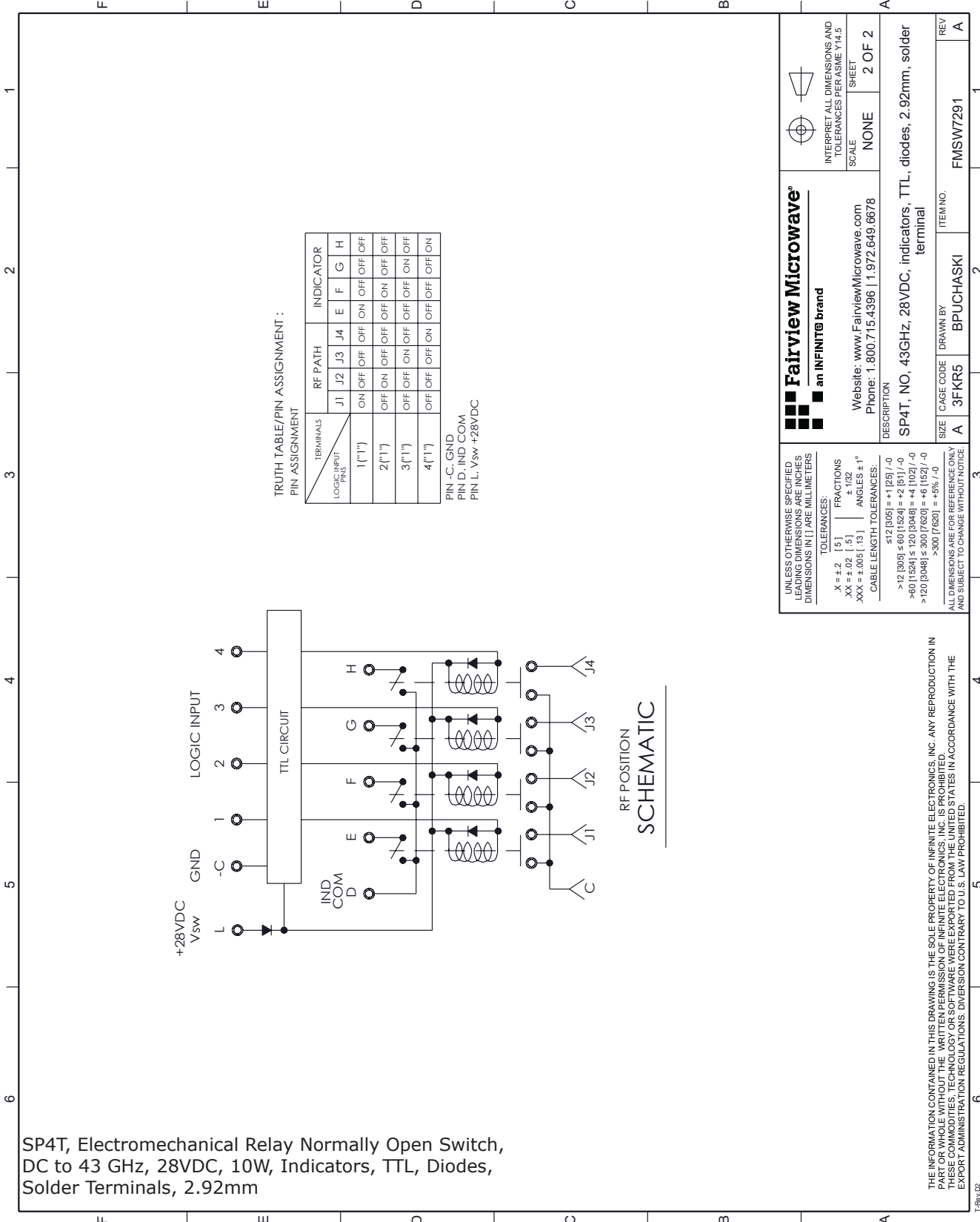
TOLERANCES:  
 .X = ±.2 [5] FRACTIONS  
 .XX = ±.02 [.5] ANGLES ± 1°  
 .XXX = ±.005 [.13] ANGLES ± 1°

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.

- NOTES:
- LABEL PER ILS-100-02 FOR INTERNAL REFERENCE ONLY  
LABEL LOCATION FOR REFERENCE ONLY

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INTERPRET ALL DIMENSIONS AND TOLERANCES PER ASME Y14.5  
SCALE: NONE SHEET: 2 OF 2

DESCRIPTION: SP4T, NO, 43GHz, 28VDC, indicators, TTL, diodes, 2.92mm, solder terminal

ITEM NO. FMSW7291

REV A

SIZE A CAGE CODE 3FKR5 DRAWN BY BPUCHASKI