



SP6T Normally Open DC to 26.5 GHz Electro-Mechanical Relay Switch, TTL, Up To 90W, 12V, 2M Lifecycles, Suppression Diodes, Indicators, SMA

Electromechanical Relay Switches Technical Data Sheet

PE71S6428

Features

- Single Pole Double Throw Electromechanical Relay Switch
- DC to 12 GHz Frequency Range
- Normally Open
- TTL Logic Control
- Suppression Diodes
- Indicators
- 2M Lifecycle Rating
- Insertion Loss 0.4 dB typ
- Isolation > 80 dB typ
- VSWR 1.4:1 typ
- +COM Reverse Polarity
- 12 Volt DC Bias
- 15 PIN D-SUB Connector for Command Control Functions
- SMA Female Connectors
- -25°C to +65°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

Description

The PE71S6428 is a Single Pole Six Throw (SP6T) 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 control logic, suppression diodes which limit voltage spikes or reverse current, and indicators. This switch requires 12Vdc bias voltage and operates over a temperature range of -25°C to +65°C. Impressive typical performance includes 0.4 dB insertion loss and isolation greater than 80 dB. 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	SP6T
Actuator Type	Failsafe
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	Minimum	Typical	Maximum	Units
Frequency Range	DC		26.5	GHz
Impedance		50		Ohms
Operating Voltage	11	12	13	Volts
Actuating Set Current @ 12 Volts			250	mA

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [SP6T Normally Open DC to 26.5 GHz Electro-Mechanical Relay Switch, TTL, Up To 90W, 12V, 2M Lifecycles, Suppression Diodes, Indicators, SMA PE71S6428](#)



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At +20°C

VSWR		1.4:1	1.7:1	
Insertion Loss		0.4	0.6	dB
Isolation	70	80		dB
Input Power (CW)			90	Watts
Switching Time			20	ms Max

Performance by Frequency

Description	F1	F2	F3	F4	F5	Units
Frequency Range	DC to 6	6 to 12	12 to 18	18 to 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	0.6		dB
Isolation, Min	80	80	80	70		dB

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

Humidity
Shock

Moisture Resistance
MIL-STD-202 Method 213, Cond. D 500G Non Operating

Vibration

MIL-STD-202 Method 204, Cond. D 10G RMS Non Operating

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Electromechanical Relay Switches Technical Data

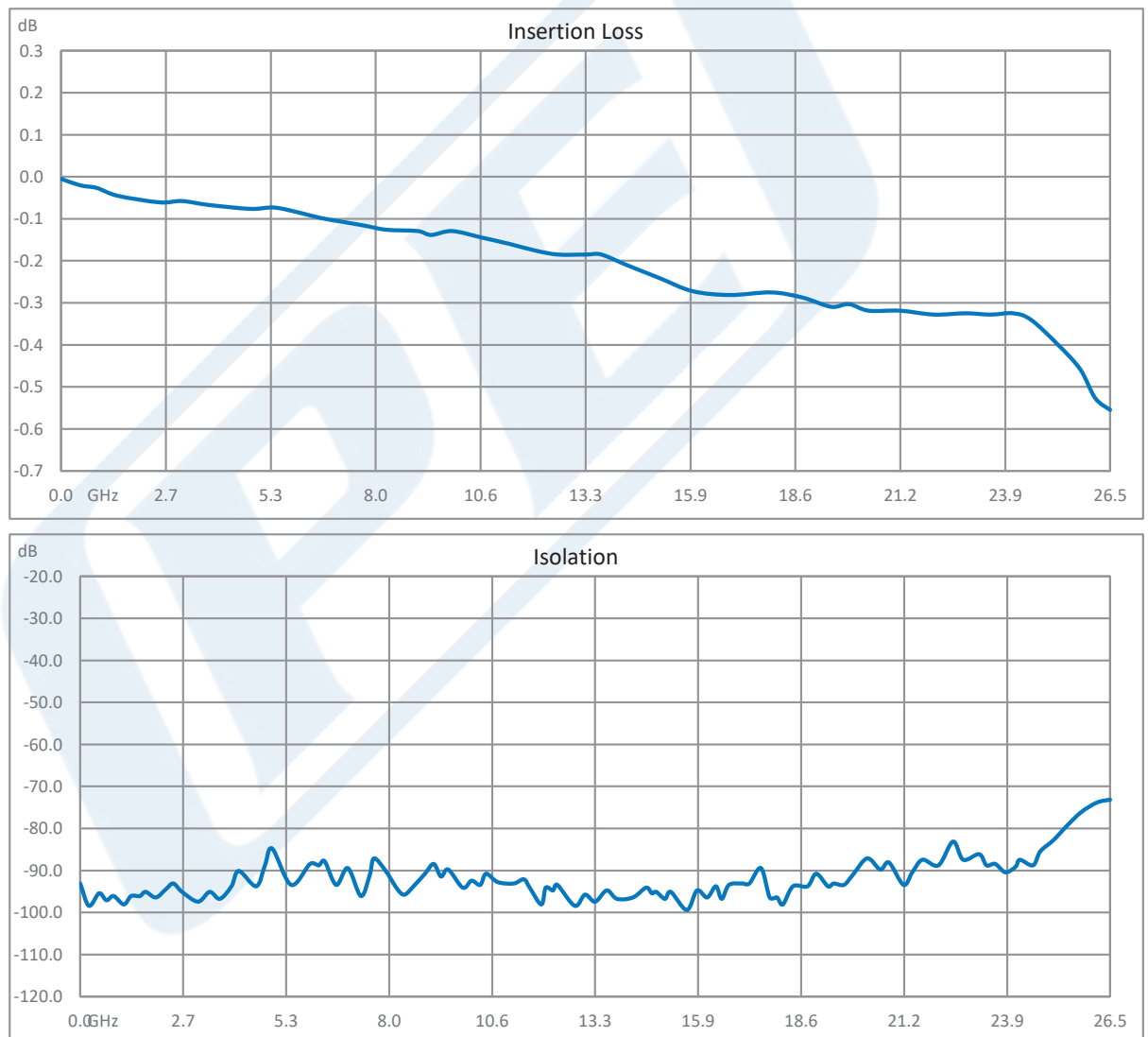
PE71S6428

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

Plotted and Other Data

Notes:

Typical Performance Data



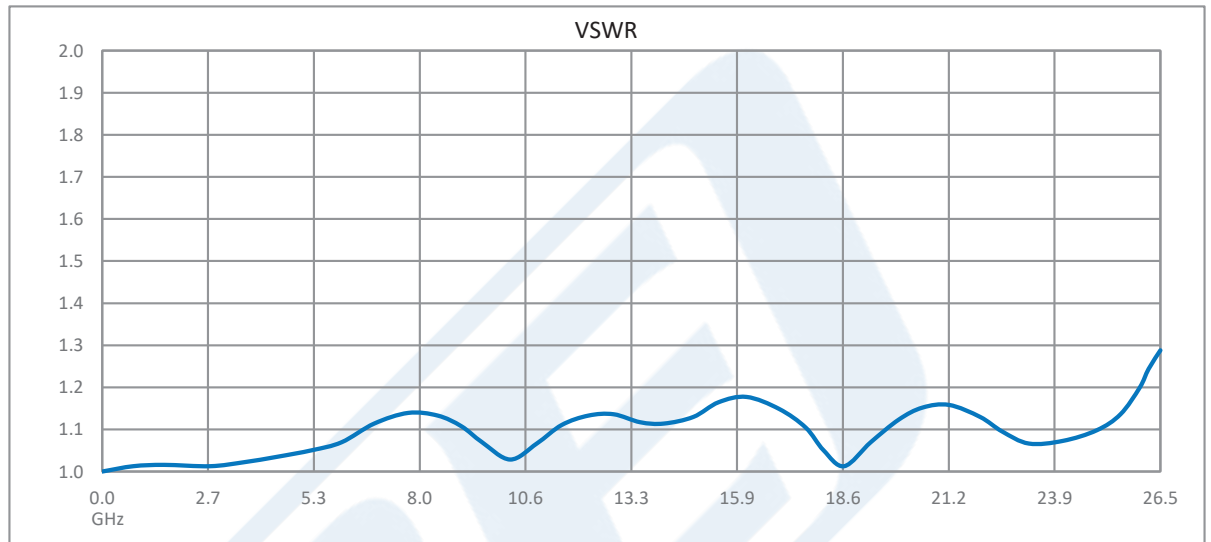
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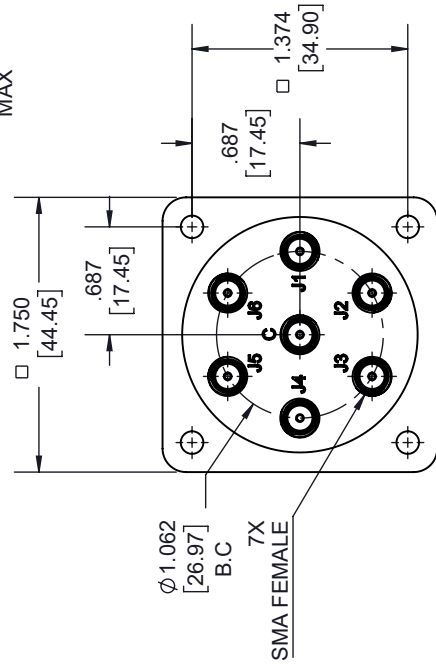
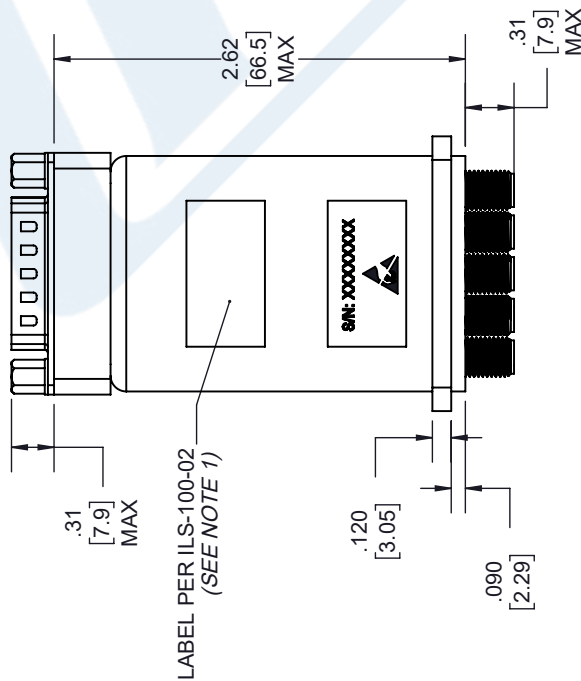
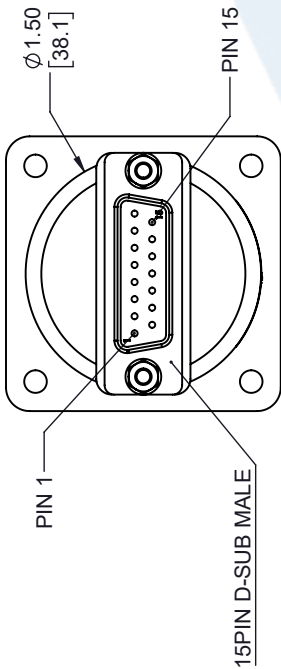
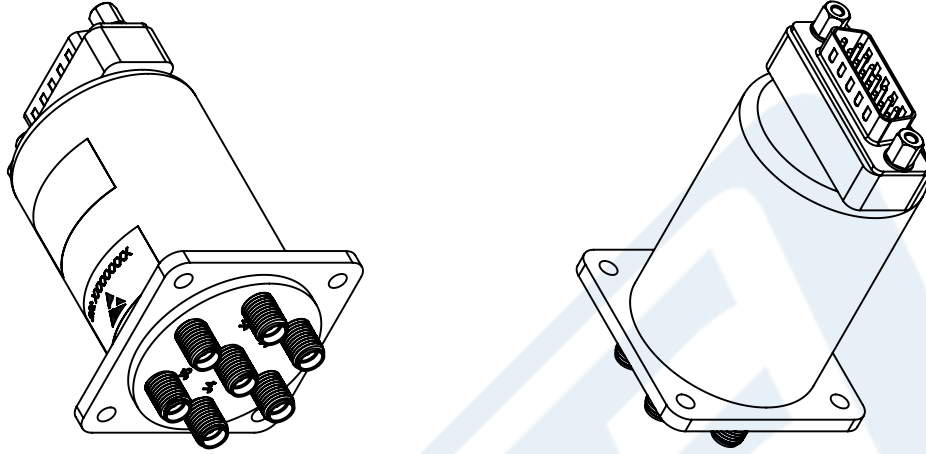
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PE71S6428 CAD Drawing

SP6T Normally Open DC to 26.5 GHz Electro-Mechanical Relay Switch, TTL,
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REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	9/4/2020	T.GALLA



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

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

TOLERANCES:
.X = ±.2 [5.08] FRACTIONS
.XX = ±.02 [.51] ± 1/32
.XXX = ±.005 [.13] ANGLES ± 1°

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

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SHEET 1 OF 2

SCALE N/A

REV A

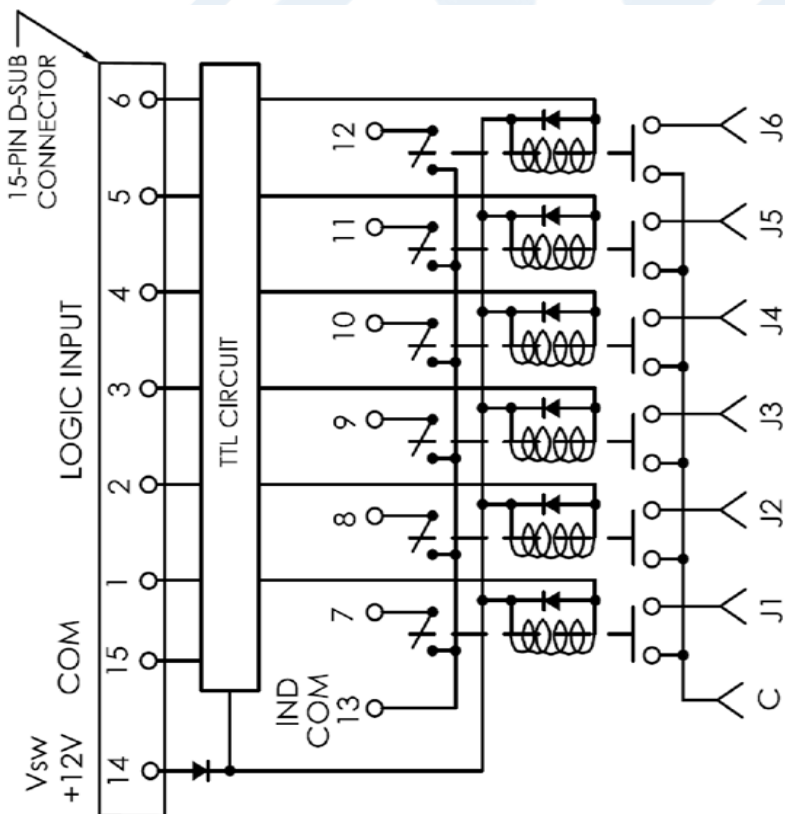
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RF POSITION
SCHEMATIC

PIN ASSIGNMENT

TERMINALS	RF PATH						INDICATOR						
	J1	J2	J3	J4	J5	J6	7	8	9	10	11	12	
LOGIC INPUT PINS													
1 ("1")	ON	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	
2 ("1")	OFF	ON	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF	
3 ("1")	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF	
4 ("1")	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF	
5 ("1")	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	ON	OFF	
6 ("1")	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	ON	

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

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