

Coaxial Relays, Series TR02

SPDT / SMA (DC – 26.5 GHz) / K (26.5 – 40 GHz) / with Scheduling
Switching: Failsafe / Latching



Specifications

Technical data	
Contact material	Plated Au
Switching Sequence	Break before make
Switching time	15 msec max
Impedance	50 Ω
Temperature range	-25°C up to +65°C (standard) -55 up to +85°C (option "E")
Relative humidity	5 up to 85 %
Operation Life (cycles)	1 million (standard)
Vibration (operation)	10 G RMS, 20 – 2000 Hz
Mechanical shock (non- operating)	50 G, 1/2 sine, 11 msec
Control	Solder Pins or DSUB9

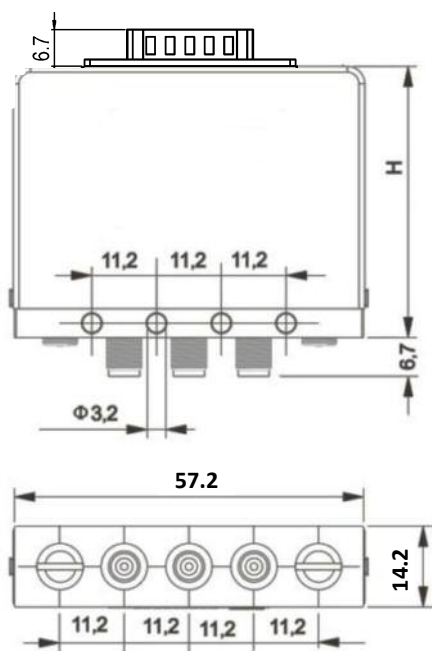
Coil Voltage (V DC)		12	18	24	28
Current (mA) max.	Failsafe	380	280	200	170
	Latching	400	240	180	170

Other coil voltage options are available on request.

Standard models

Frequency Range (GHz)	VSWR max.	Insertion loss (dB) max.	Isolation (dB) min.
DC – 6	1.20	0.20	70
6 – 12	1.25	0.25	70
12 – 18	1.40	0.40	60
18 – 26.5	1.70	0.70	55
26.5 – 32	1.90	0.80	50
32 – 40	2.00	1.00	50

Dimensions



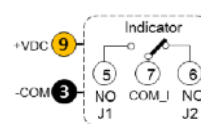
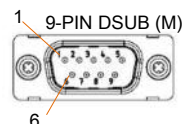
$H = 47 \text{ mm (max.)}$

$H = 53 \text{ mm (max.)}$ for option with TTL and/or „self cutoff“

$H = 60 \text{ mm (max.)}$ with indicator

Mechanical drawing in mm, tolerance $\pm 0.5 \text{ mm}$

Pin-Assignment – Failsafe

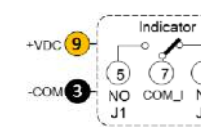
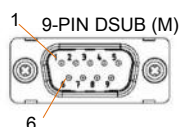


Pin No.	PINOUT
1	A1/V1 (J1-COM)
2	UNUSED
3	COM-
4	UNUSED
5	1 (IND.)
6	2 (IND.)
7	COM. I (IND.)
8	UNUSED
9	+VDC/+VDCI

Optional Indicator Specifications

Max. withstand Voltage: 60 V
 Max. current capacity: 100 mA
 Max. "ON" resistance: 16 Ω
 Note: +V DC and -C must be connected to operate

Pin-Assignment – Latching



Pin No.	PINOUT
1	A1/V1 (J1-COM)
2	A2/V2 (J2-COM)
3	COM-
4	UNUSED
5	1 (IND.)
6	2 (IND.)
7	COM. I (IND.)
8	UNUSED
9	+VDC/+VDCI

Optional Indicator Specifications

Max. withstand Voltage: 60 V
 Max. current capacity: 100 mA
 Max. "ON" resistance: 16 Ω
 Note: +V DC and -C must be connected to operate

Circuit Diagram – Failsafe

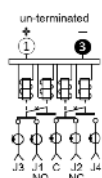


Fig. 1

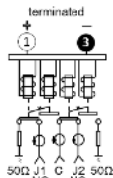


Fig. 2

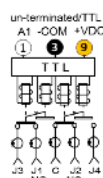


Fig. 3

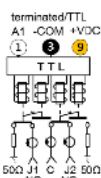


Fig. 4

Circuit Diagram – Latching

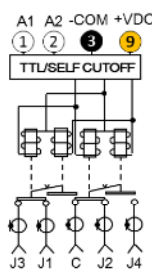


Fig. 5

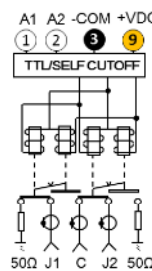


Fig. 6

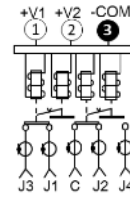
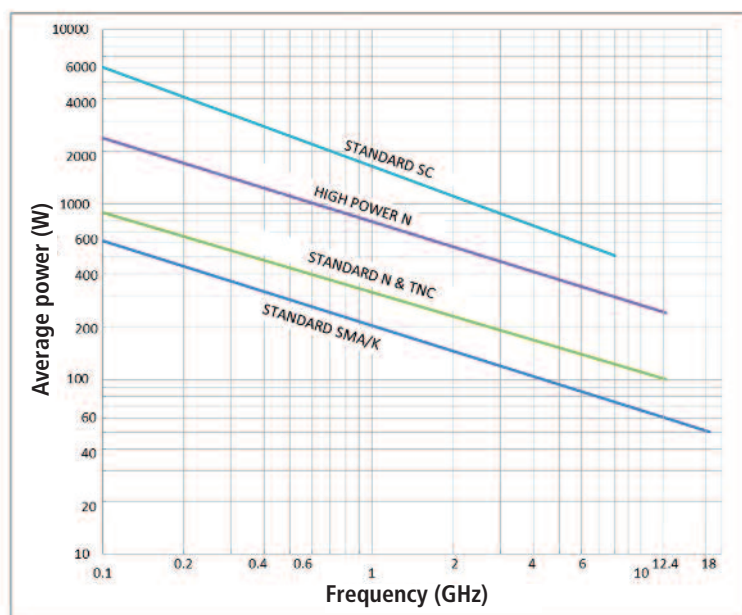


Fig. 7

Power chart



VSWR	Derating Factor
1.5 : 1	0.96
2.0 : 1	0.88
2.5 : 1	0.84
3.0 : 1	0.75
3.5 : 1	0.70
4.0 : 1	0.64
4.5 : 1	0.60
5.0 : 1	0.56

This graph is based on the following conditions:

- Ambient temperature +20°C
- Sea level 0
- VSWR 1 : 1
- Cold switching

Ordering scheme

	Switchmodel	Function/ configuration	Coil- voltage	Connections	Frequency range	Actuator/Control	Special options
TR	XX-	X	XX	X	XX	X	-XX
TEleRel	01 = DPDT	F = Failsafe	12 Volt	C = SC female	01 = DC up to 1 GHz	0 = with overvoltage protection	C = positive common
TEleRel	02 = SPDT	L = Latching	18 Volt	K = 2.92 mm female	03 = DC up to 3 GHz	without TTL/self cutoff	D = Sub-D
TEleRel	03 = SP3T	N = Normally open	24 Volt	L = 2.4 mm female	04 = DC up to 4 GHz	1 = with TTL-driver	E = extended temperature range
TEleRel	04 = SP4T		28 Volt	N = N female	05 = DC up to 5 GHz	2 = self cutoff (only at Latching)	H = high performance
TEleRel	05 = SP5T			S = SMA female	12 = DC up to 12.4 GHz	3 = self cutoff & TTL	(5 mio. switching cycles)
TEleRel	06 = SP6T				16 = DC up to 16 GHz	(nur bei latching)	I = Indicators
TEleRel	07 = SP7T				18 = DC up to 18 GHz	4 = without overvoltage protection	L = low PIM
TEleRel	08 = SP8T				26 = DC up to 26.5 GHz	without TTL/self cutout	M = moisture seal
TEleRel	09 = SP9T				40 = DC up to 40 GHz	5 = with binary decoder	N = without mounting
TEleRel	10 = SP10T						bracket at DPDT
TEleRel	11 = SP11T						P = high power
TEleRel	12 = SP12T						T = scheduling
TEleRel	13 = SP13T						V = V-design
TEleRel	14 = SP14T						Y = Y-design
TEleRel	15 = SP15T						
TEleRel	16 = SP16T						
TEleRel	17 = SP17T						
TEleRel	18 = SP18T						
***Please note that some options are not available depending on the modell							

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