

SPDT up to 18 GHz

N - TNC - BNC



Radiall's RAMSES SPDT N, BNC & TNC switches are designed for high performance in RF & Microwave systems up to 18 GHz.

Radiall's RAMSES concept (modular concept) offers a full range of configurations. They are commonly used for applications where high power handling capability is required.

These switches are dedicated to all market applications including: defense, instrumentation and telecommunications.

Example of P/N:

R570113035 is a SPDT N 12.4 GHz, failsafe, 28 Vdc, with suppression diodes, without option, D-Sub connector.

PART NUMBER SELECTION

R 570

Frequency Range:

- 0: N up to 3 GHz
- 1: N up to 12.4 GHz
- 2: BNC up to 3 GHz
- 5: TNC up to 3 GHz
- 6: TNC up to 12.4 GHz
- D: TNC up to 18 GHz

Type:

- 1: Failsafe
- 2: Failsafe + I.C.
- 3: Latching
- 4: Latching + I.C.
- 5: Latching + S.C.O. (1)
- 6: Latching + S.C.O. + I.C. (1)

Actuator Voltage:

- 2: 12 Vdc
- 3: 28 Vdc

Actuator Terminals:

- 0: Solder pins
- 5: D-Sub connector

Options:

- 0: Without option
- 1: Positive common (2) (3)
- 3: With suppression diodes (1)
- 4: With suppression diodes and positive common (2) (3)

TTL Option:

- 0: Without TTL driver
- 1: With TTL driver (high level) (1) (2)

I.C.: Indicator contact - S.C.O.: Self Cut-Off

(1): Suppression diodes are already included in Self Cut-Off & TTL option

(2): Polarity is not relevant to application for switches with TTL driver

(3): Positive common shall be specified only with type 3, 4, 5 & 6 because failsafe switches can be used with both polarities

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GENERAL SPECIFICATION

Operating mode		Failsafe		Latching	
Nominal operating voltage (across temperature range)	Vdc	12	28	12	28
		(10.2 to 13)	(24 to 30)	(10.2 to 13)	(24 to 30)
Coil resistance at 23°C (+/-10%)	Ω	38	275	38	225
Operating current at 23°C	mA	320	102	320	125
Average power		See Power Rating Chart page 1-13			
TTL input	High level	2.2 to 5.5 Volts		800µA max 5.5 Volts	
	Low level	0 to 0.8 Volts		20µA max 0.8 Volts	
Switching time	ms	10			
Life		2.5 million cycles			
Connectors		N - TNC - BNC			
Actuator terminals		Solders pins or 9 pin D-Sub connector			
Operating temperature range		-40°C to +85°C			
Storage temperature range		-55°C to +85°C			
Vibration [MIL STD 202, Method 204D, cond.D]		10-2000 Hz, 20g		Operating	
Shock [MIL STD 202, Method 213B, cond.C]		100g, 6 ms, ½ sine		Non operating	

RF PERFORMANCES

Connectors	Frequency Range GHz	V.S.W.R. [max]	Insertion Loss (max) dB	Isolation (min) dB	Impedance Ω	
N / TNC	DC - 3 DC - 12.4	DC - 1	1.15	0.15	85	50
		1-2	1.20	0.20	80	
		2 - 3	1.25	0.25	75	
		3 - 8	1.35	0.35	70	
		8 - 12.4	1.50	0.50	60	
TNC 18GHz	DC - 18	DC - 6	1.30	0.30	70	
		6 - 12.4	1.50	0.50	60	
		12.4 - 18	1.60	0.70	60	
BNC	DC - 3	DC - 1	1.15	0.15	85	
		1 - 2	1.20	0.20	80	
		2-3	1.25	0.25	75	

Note: see page 2-22 for typical RF performances

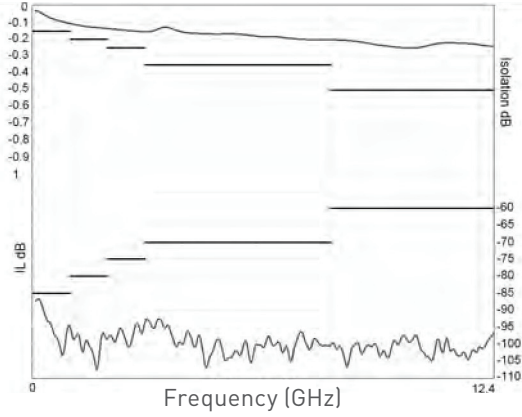
SPDT up to 18 GHz

N - TNC - BNC

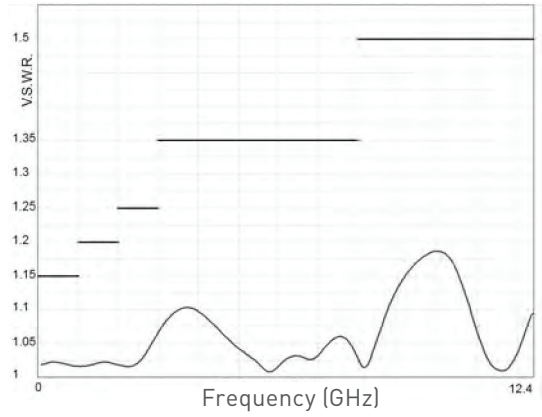
R570 TYPICAL RF PERFORMANCES

Example: SPDT N and TNC up to 12.4 GHz

Insertion Loss and Isolation

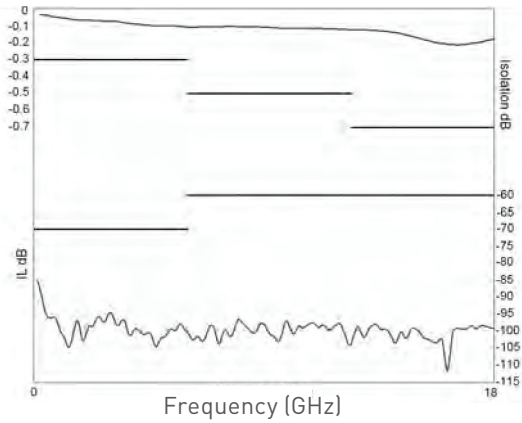


V.S.W.R.

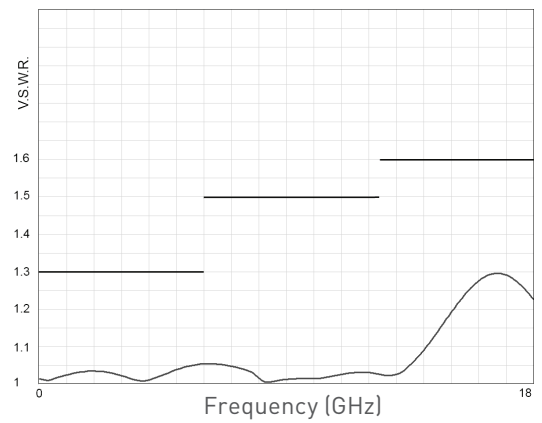


Example: SPDT TNC up to 18 GHz

Insertion Loss and Isolation



V.S.W.R.

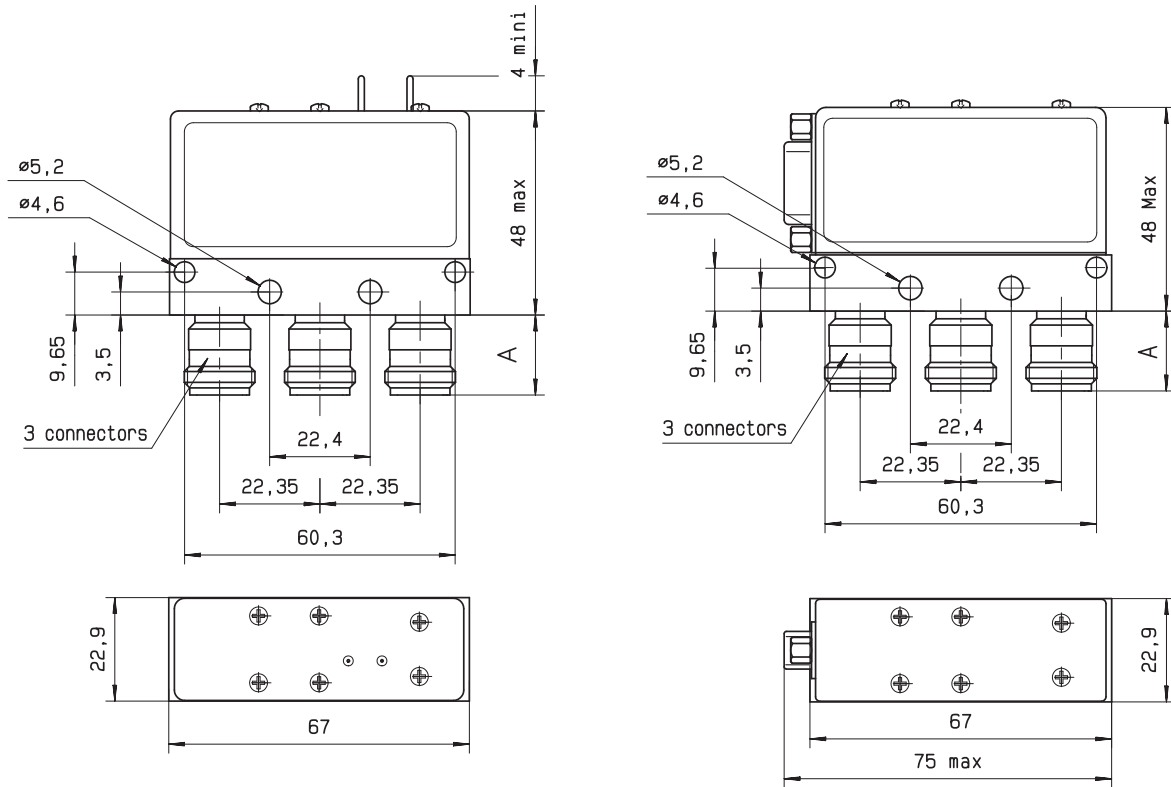


SPDT up to 18 GHz

N - TNC - BNC

TYPICAL OUTLINE DRAWING

Example: SPDT N and TNC up to 12.4 GHz



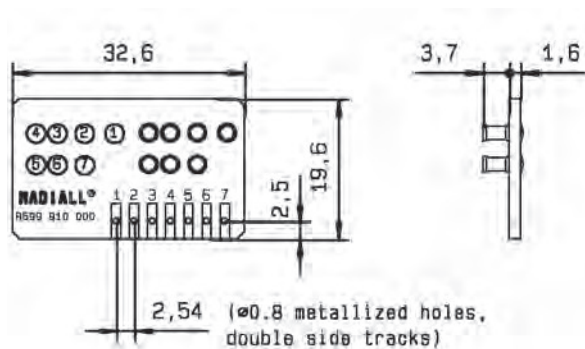
See page 2-27 for pin allocation

See page 2-27 for D-Sub pin allocation

Connectors	N	TNC	BNC
A max (mm)	18.8	11	11

ACCESSORIES

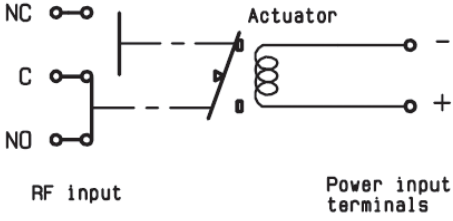
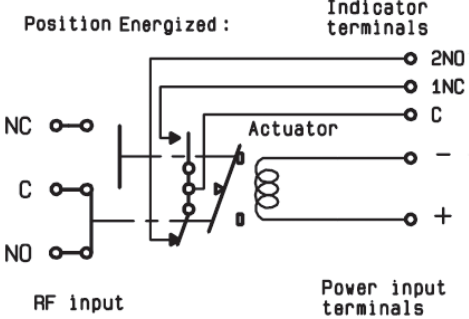
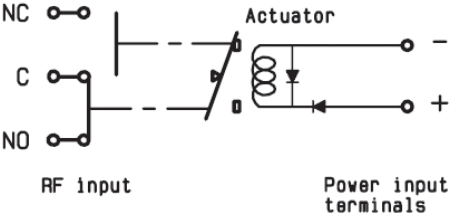
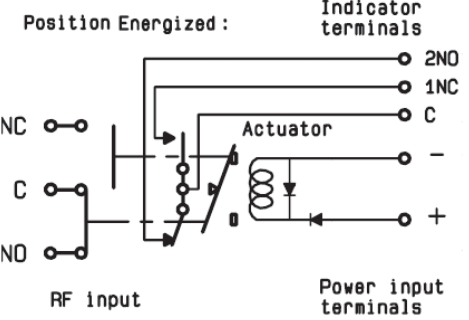
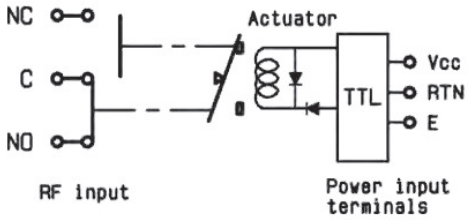
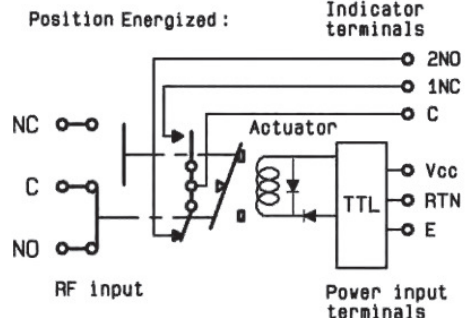
A printed circuit board interface connector (ordered separately) has been designed for easy mounting on terminals. For SPDT model R570 series => Radiall part number: **R599 910 000**



Coaxial SPDT - Electrical Schematics

R570/R572 Series

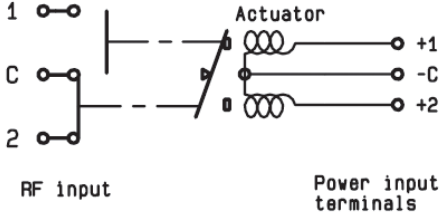
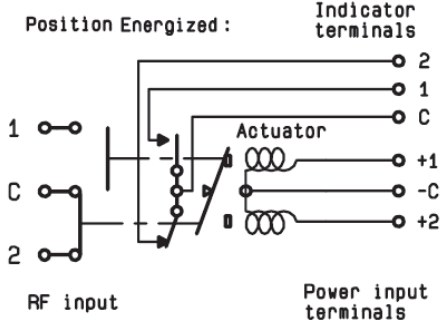
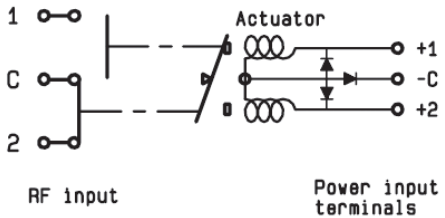
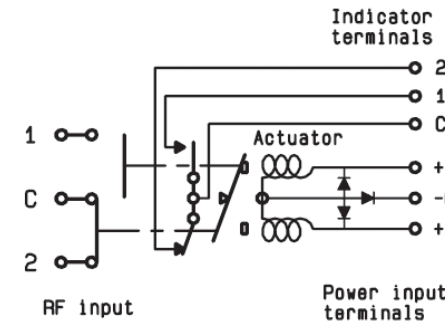
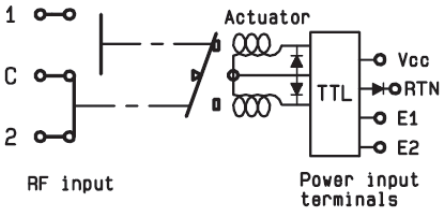
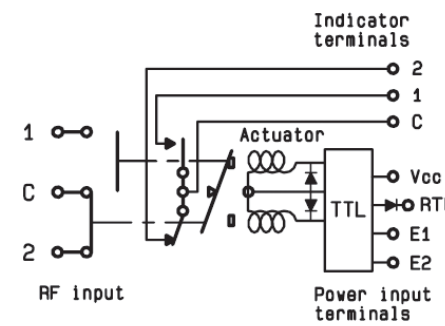
FAILSAFE

<p>WITHOUT OPTION R570 -1- 000 / R572 -1- 000</p> <p>Position Energized :</p>  <p>RF input</p> <p>Power input terminals</p>	<p>WITH INDICATOR CONTACT R570 -2- 000</p> <p>Position Energized :</p>  <p>RF input</p> <p>Power input terminals</p> <p>Indicator terminals</p> <p>2NO</p> <p>1NC</p> <p>C</p>
<p>WITH SUPPRESSION DIODES R570 -1- 030</p> <p>Position Energized :</p>  <p>RF input</p> <p>Power input terminals</p>	<p>WITH SUPPRESSION DIODES AND INDICATOR CONTACT R570 -2- 030</p> <p>Position Energized :</p>  <p>RF input</p> <p>Power input terminals</p> <p>Indicator terminals</p> <p>2NO</p> <p>1NC</p> <p>C</p>
<p>WITH TTL DRIVER (supression diodes are included) R570 -1- 100</p> <p>Position Energized :</p>  <p>RF input</p> <p>Power input terminals</p> <p>Vcc</p> <p>RTN</p> <p>E</p>	<p>WITH TTL DRIVER AND INDICATOR CONTACT (supression diodes are included) R570 -2- 100</p> <p>Position Energized :</p>  <p>RF input</p> <p>Power input terminals</p> <p>Indicator terminals</p> <p>2NO</p> <p>1NC</p> <p>C</p> <p>Vcc</p> <p>RTN</p> <p>E</p>

Coaxial SPDT - Electrical Schematics

R570/R572 Series

LATCHING

<p>WITHOUT OPTION R570-3- 000 AND R572 -3- 000</p>  <p>RF input</p> <p>Power input terminals</p>	<p>WITH INDICATOR CONTACT R570 -4- 000</p> <p>Position Energized :</p>  <p>Indicator terminals</p> <p>RF input</p> <p>Power input terminals</p>
<p>WITH SUPPRESSION DIODES R570 -3- 030</p>  <p>RF input</p> <p>Power input terminals</p>	<p>WITH SUPPRESSION DIODES AND INDICATOR CONTACT R570 -4- 030</p>  <p>Indicator terminals</p> <p>RF input</p> <p>Power input terminals</p>
<p>WITH TTL DRIVER (supression diodes are included) R570 -3- 100</p>  <p>RF input</p> <p>Power input terminals</p>	<p>WITH TTL DRIVER AND INDICATOR CONTACT (supression diodes are included) R570 -4- 100</p>  <p>Indicator terminals</p> <p>RF input</p> <p>Power input terminals</p>

Coaxial SPDT - Electrical Schematics

R570/R572 Series

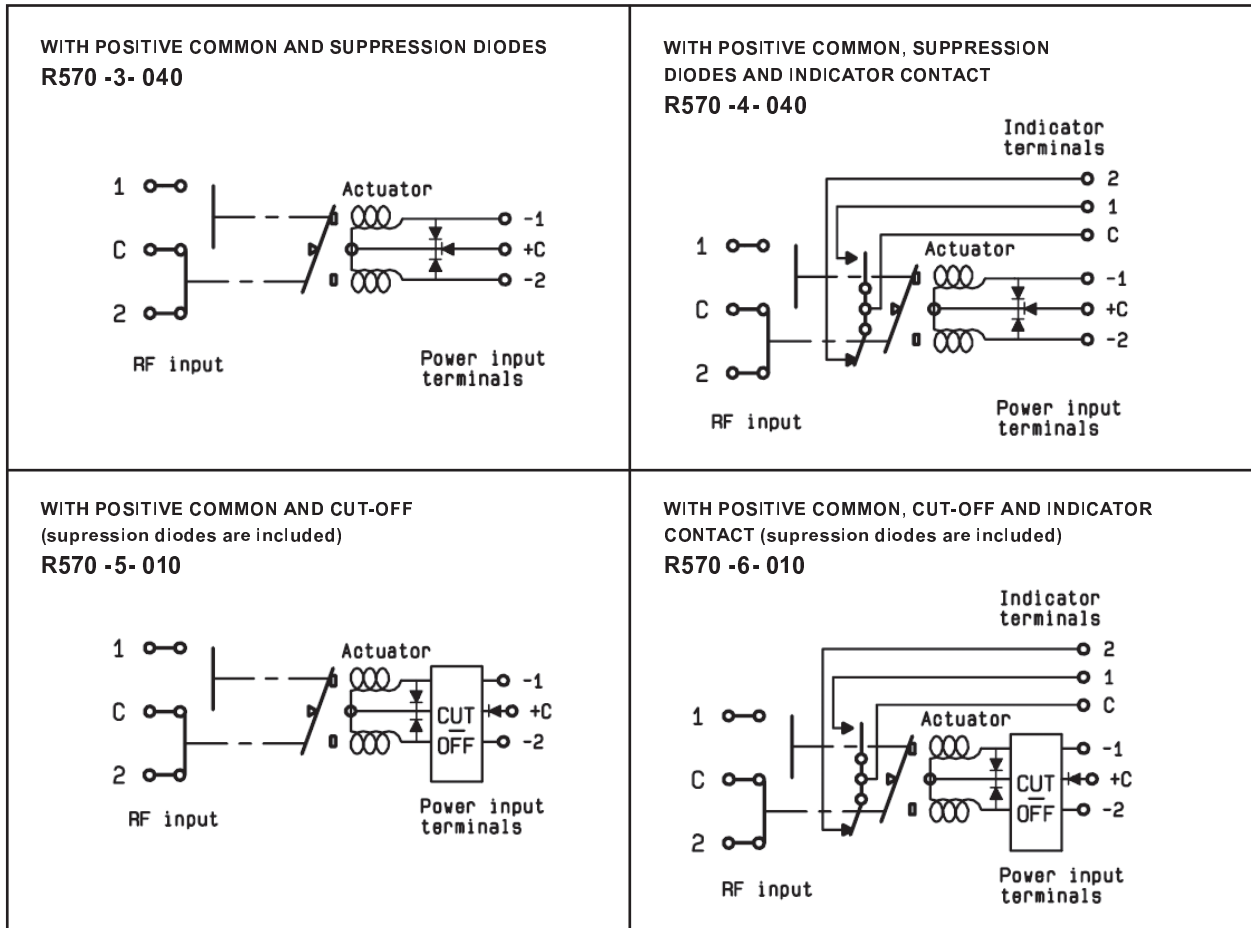
LATCHING

<p>WITHOUT CUT-OFF (supression diodes are included) R570 -5- 000</p>	<p>WITHOUT CUT-OFF AND INDICATOR CONTACT (supression diodes are included) R570 -6- 000</p>
<p>WITHOUT CUT-OFF AND TTL DRIVER (supression diodes are included) R570 -5- 100</p>	<p>WITHOUT CUT-OFF, TTL AND INDICATOR CONTACT (supression diodes are included) R570 -6- 100</p>
<p>WITH POSTIVE COMMON, NO OPTION R570 -3- 010 / R572 -3- 010</p>	<p>WITH POSTIVE COMMON AND INDICATOR CONTACT R570 -4- 010</p>

Coaxial SPDT - Electrical Schematics

R570/R572 Series

LATCHING



PIN IDENTIFICATION

Type	PIN							
	1	2	3	4	6	7	8	
Failsafe	+		-					
Failsafe + I.C.	+		-		2NO	1NC	C	
Failsafe + TTL	E		RTN	VCC				
Failsafe + I.C. + TTL	E		RTN	VCC	2NO	1NC	C	
Latching	-2	-1	+C					
Latching + Cut-off	or +2	or +1	or -C					
Latching + I.C.	-2	-1	+C		2	1	C	
Latching + I.C. + Cut-off	or +2	or +1	or -C					
Latching + TTL	E2	E1	RTN	VCC				
Latching + TTL + Cut-off	E2	E1	RTN	VCC	2	1	C	
Latching + TTL + I.C.	E2	E1	RTN	VCC	2	1	C	
Latching + TTL + I.C. + Cut-off	E2	E1	RTN	VCC	2	1	C	

