

DPDT up to 40 GHz

SMA – SMA 2.9 – QMA – DIN 1.6/5.6



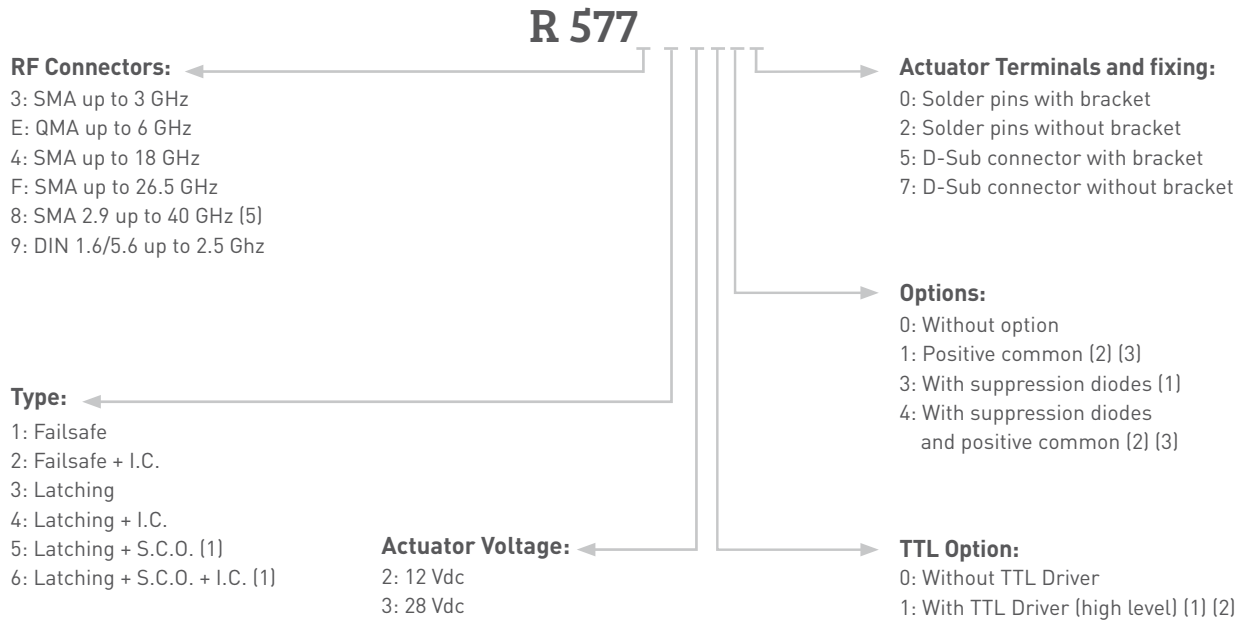
Radiall's DPDT switches offer excellent reliability, high performance and operating frequencies from DC to 40 GHz. Radiall's RAMSES concept guarantees a life span of 2.5 million cycles and provides a full array of options to respond to the needs of our customers.

These relays are well suited for applications across all markets including: Defense, Instrumentation, and Telecom.

Example of P/N:

R577F63105 is a DPDT SMA 26.5 GHz latching with Indicators, Self Cut-Off, 28 Vdc, TTL driver, D-Sub connector.

PART NUMBER SELECTION



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 and 6 because failsafe switches can be used with both polarities



(4): The QLF trademark (Quick Lock Formula®) standard applies to QMA and QN series and guaranties the full intermateability between suppliers using this trademark. Using QLF certified connectors also guarantees the specified level of RF performance.

(5): Connector SMA2.9 is equivalent to "K connector®", registered trademark of Anritsu

DPDT up to 40 GHz

SMA – SMA 2.9 – QMA – DIN 1.6/5.6

GENERAL SPECIFICATIONS

Operating mode		Failsafe		Latching	
Nominal operating voltage (across operating temperature)	Vdc	12 (10.2 / 13)	28 (24 / 30)	12 (10.2 / 13)	28 (24 / 30)
Coil resistance (+/-10%)	Ω	35	200	38	225
Nominal operating current at 23°C	mA	340	140	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 (Max)	ms	15			
Life		2.5 million cycles			
Connectors		SMA - SMA 2.9 - QMA - DIN 1.6/5.6			
Actuator terminals		Solder pins or male 9 pin D-Sub connector			
Operating temperature range	DIN 1.6/5.6	-25°C to +70°C			
	SMA - SMA 2.9 - QMA	-40°C to +85°C			
Storage temperature range	DIN 1.6/5.6	-40°C to +85°C			
	SMA - SMA 2.9 - QMA	-55°C to +85°C			
Vibration (MIL STD 202, Method 204D, Cond. C)		10-2000 Hz, 10g		operating	
Shock (MIL STD 202, Method 213B, Cond. G)		50g / 11 ms, ½ sine		operating	

RF PERFORMANCES

Connectors	Frequency range GHz		V.S.W.R. (max)	Insertion loss (max) dB	Isolation (min) dB	Impedance Ω
DIN 1.6/5/6	DC - 2.5	DC - 1	1.20	0.20	80	75
		1 - 25	1.30	0.30	70	
QMA	DC - 6	DC - 3	1.20	0.20	80	50
		3 - 6	1.20	0.30	70	
SMA	DC - 3 DC - 18 DC - 26.5	DC - 3	1.20	0.20	80	50
		3 - 8	1.30	0.30	70	
		8 - 12.4	1.40	0.40	65	
		12.4 - 18	1.50	0.50	60	
SMA 2.9	DC - 40	18 - 26.5	1.70	0.70	50	50
		DC - 6	1.30	0.30	70	
		6 - 12.4	1.40	0.40	60	
		12.4 - 18	1.50	0.50	60	
		18 - 26.5	1.70	0.70	55	
		26.5 - 40	1.90	0.80	50	

See page 4-4 for typical RF performance

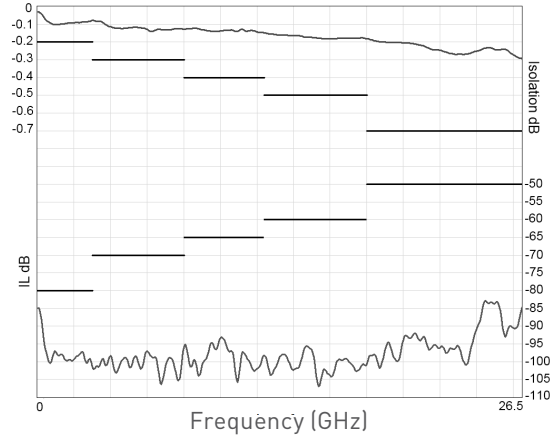
DPDT up to 40 GHz

SMA – SMA 2.9 – QMA – DIN 1.6/5.6

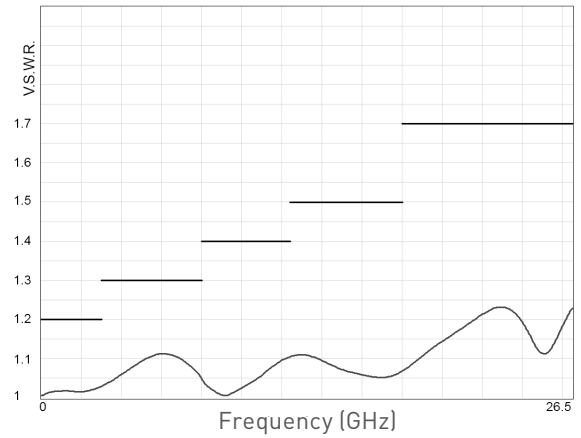
R577 TYPICAL RF PERFORMANCES

Example: DPDT SMA up to 26.5 GHz

Insertion Loss and Isolation

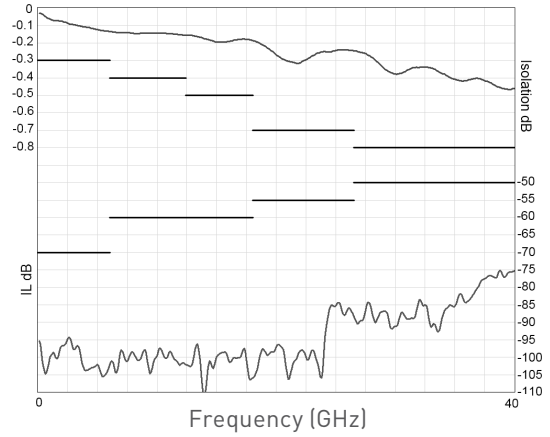


V.S.W.R.

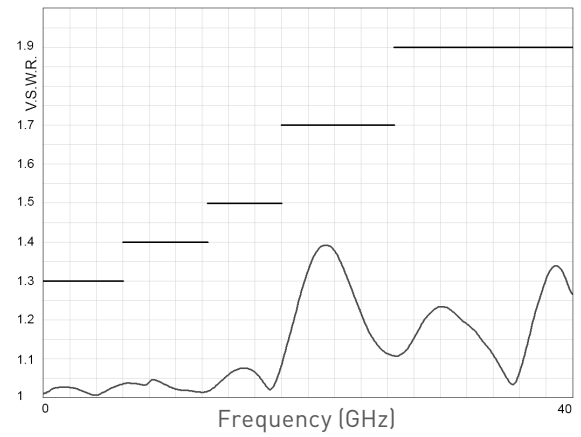


Example: DPDT SMA2.9 up to 40 GHz

Insertion Loss and Isolation



V.S.W.R.

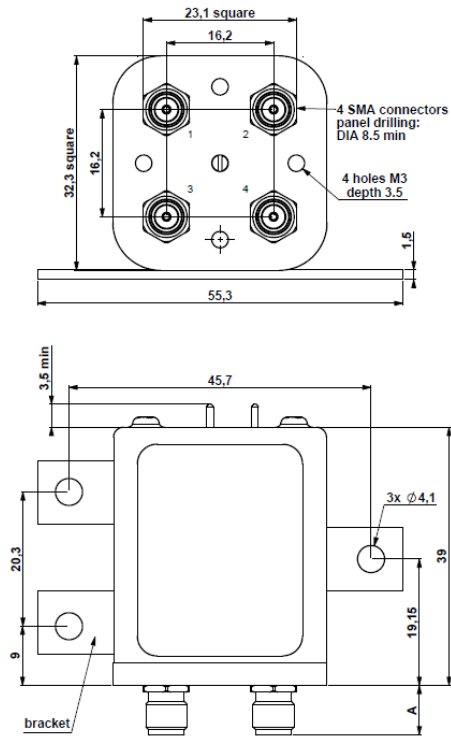


DPDT up to 40 GHz

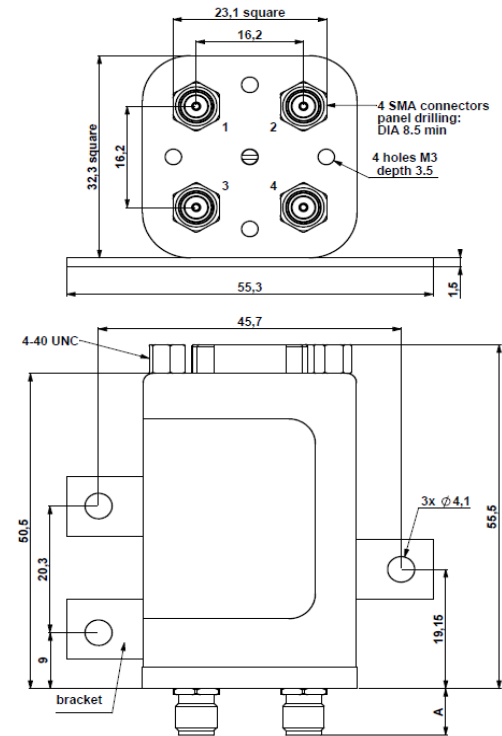
SMA – SMA 2.9 – QMA – DIN 1.6/5.6

TYPICAL OUTLINE DRAWING

With solder pins and bracket



With D-Sub connector and bracket



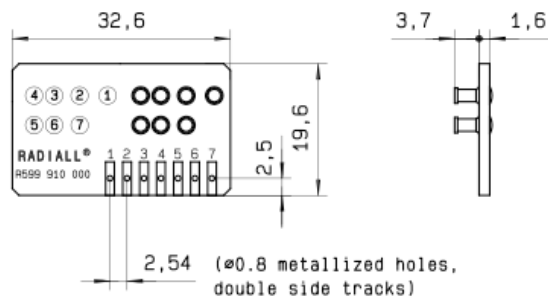
See page 4-13 for pin allocation

Connectors	SMA	SMA 2.9	QMA	DIN 1.6/5.6
A max (mm)	7.4	6.3	10.8	11.5

ACCESSORIES

A printed circuit board interface connector (ordered separately) has been designed for easy mounting on terminals.

For DPDT model R577 series => Radiall part number: **R599 910 000**



DPDT up to 12.4 GHz - Ramses Concept

N - BNC - TNC



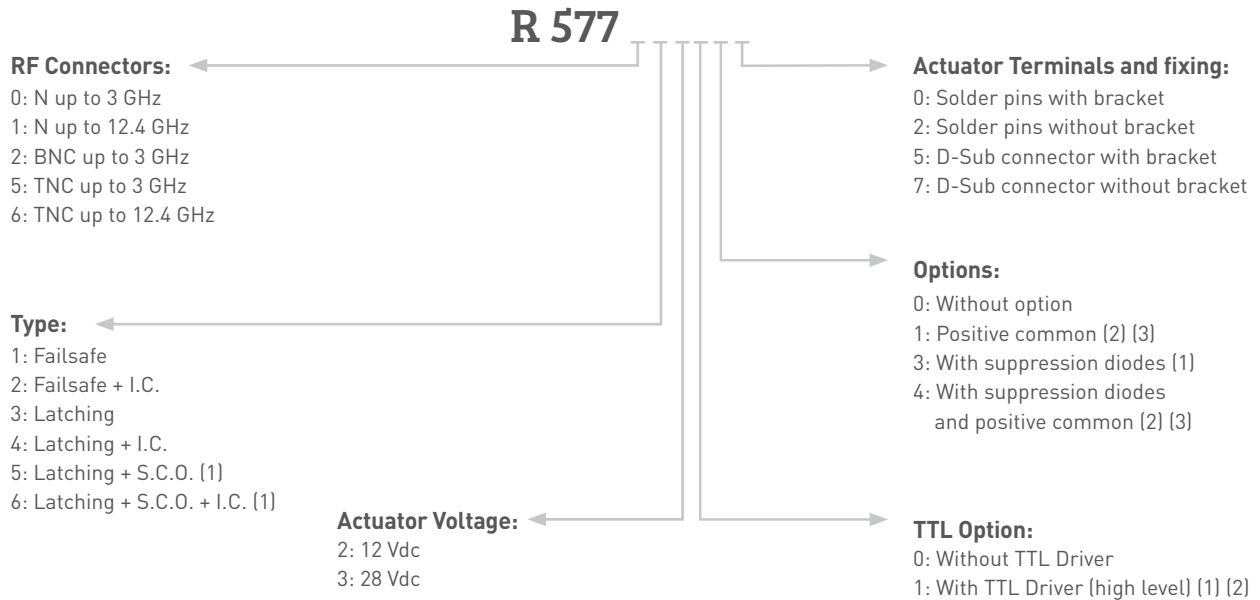
Radiall's DPDT switches offer excellent reliability, high performance and operating frequencies from DC to 12.4 GHz. Radiall's RAMSES concept guarantees a life span of 2.5 million cycles and provides a full array of options to respond to the needs of our customers.

These relays are well suited for applications across all markets including: Defense, Instrumentation, and Telecom.

Example of P/N:

R577122030 is a DPDT N 12.4 GHz, failsafe with Indicators, 12 Vdc, suppression diodes, solder pins with bracket.

PART NUMBER SELECTION



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

DPDT up to 12.4 GHz - Ramses Concept

N - BNC - TNC

RAMSES SERIES

GENERAL SPECIFICATIONS

Operating mode		Failsafe		Latching	
Nominal operating voltage (across operating temperature)	Vdc	12 (10.2 / 13)	28 (24 / 30)	12 (10.2 / 13)	28 (24 / 30)
Coil resistance (+/-10%)	Ω	35	200	38	225
Nominal operating current at 23°C	mA	340	140	320	125
Average power		See Power Rating Chart page 1-13			
TTL input	High Level	2.2 to 5.5 Volts			
	Low Level	0 to 0.8 Volts			
Switching time (Max)	ms	15			
Life		2.5 million cycles			
Connectors		N - BNC - TNC			
Actuator terminals		Solder pins or male 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. C)		10-2000 Hz, 10g		operating	
Shock (MIL STD 202, Method 213B, cond. G)		50g / 11 ms, ½ sine		operating	

RF PERFORMANCES

Connectors	Frequency Range GHz		V.S.W.R. (max)	Insertion Loss (max) dB	Isolation (min) dB	Impedance Ω
BNC	DC - 3	DC - 1	1.15	0.15	85	50
		1 - 2	1.20	0.20	80	
		2 - 3	1.25	0.25	75	
N - TNC	DC - 3 DC - 12.4	DC - 1	1.15	0.15	85	
		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	

See page 4-8 for typical RF performances

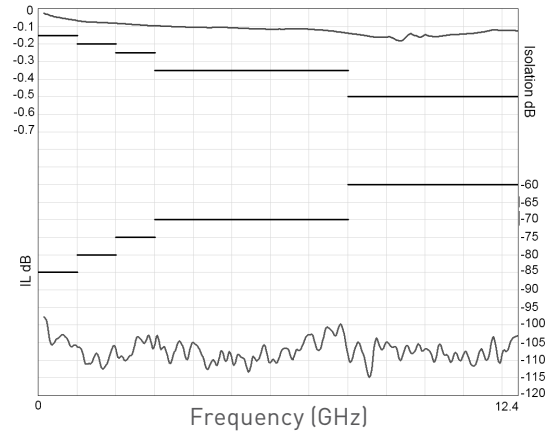
DPDT up to 12.4 GHz - Ramses Concept

N - BNC - TNC

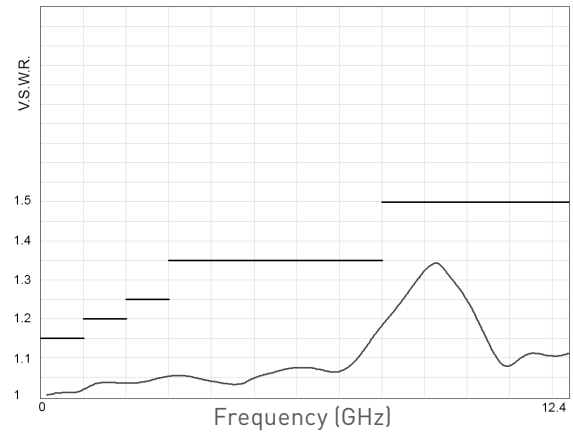
R577 TYPICAL RF PERFORMANCES

Example: DPDT N/TNC up to 12.4 GHz

Insertion Loss and Isolation

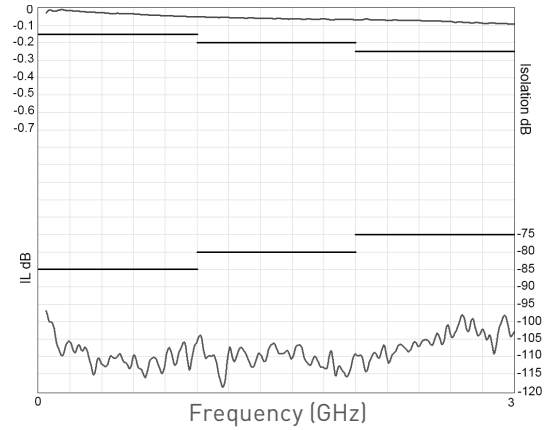


V.S.W.R.

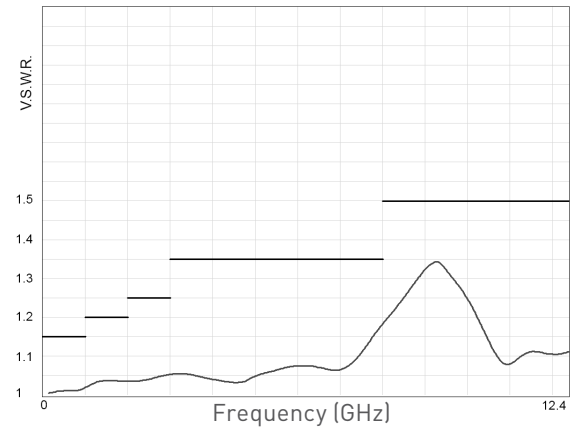


Example: DPDT BNC UP TO 3 GHz

Insertion Loss and Isolation



V.S.W.R.

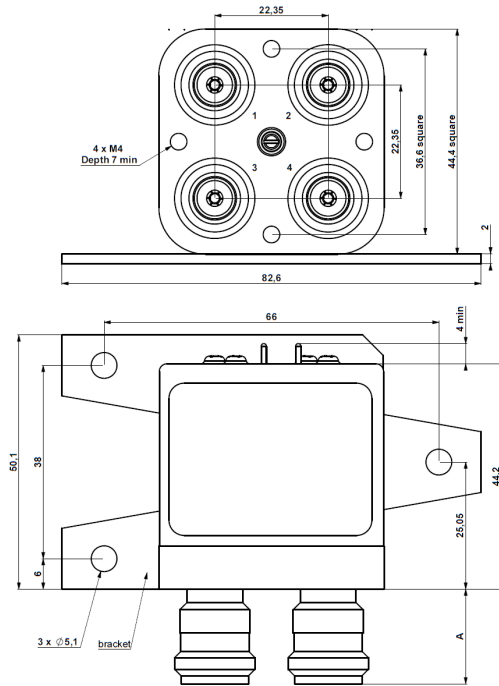


DPDT up to 12.4 GHz - Ramses Concept

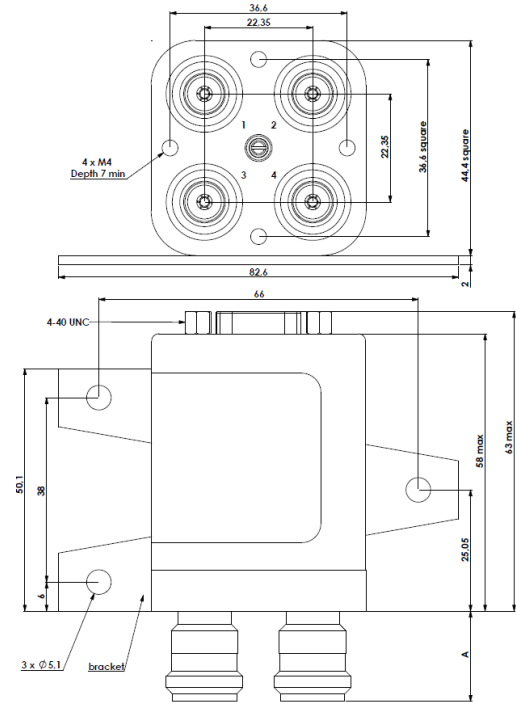
N - BNC - TNC

TYPICAL OUTLINE DRAWING

With solder pins and bracket



With D-Sub connector and bracket



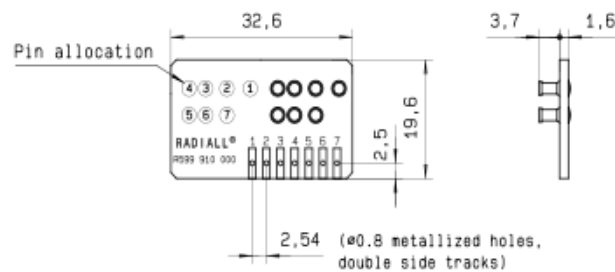
See page 4-13 for pin allocation

Connectors	N	BNC	TNC
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 DPDT model R577 series => Radiall part number: **R599 910 000**



Coaxial DPDT - Electrical Schematics

R577 Series

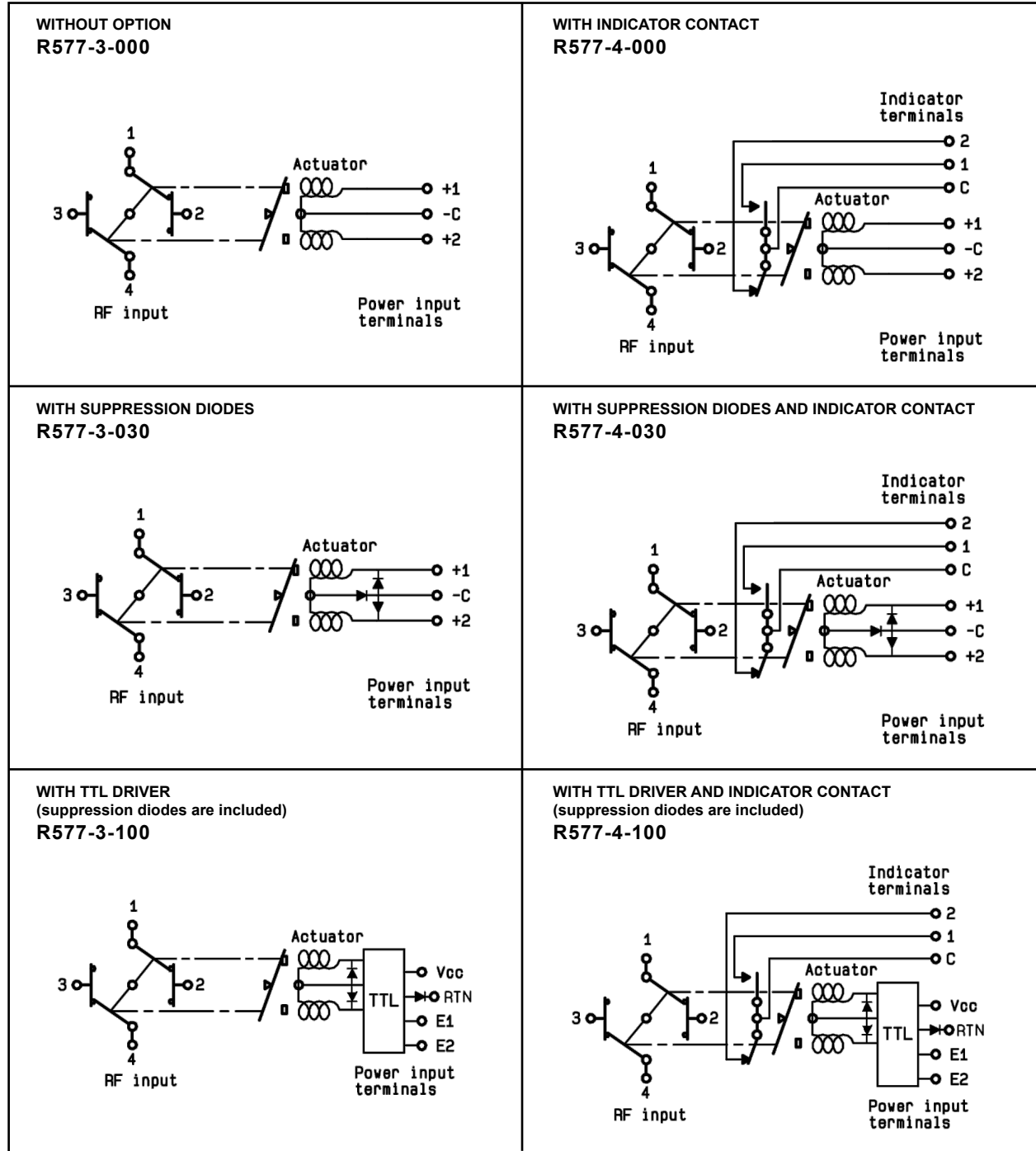
FAILSAFE

<p>WITHOUT OPTION R577-1-000</p> <p>Position: De energized</p> <p>RF input</p> <p>Actuator</p> <p>Power input terminals</p>	<p>WITH INDICATOR CONTACT R577-2-000</p> <p>Position: De energized</p> <p>RF input</p> <p>Actuator</p> <p>Power input terminals</p> <p>Indicator terminals</p>
<p>WITH SUPPRESSION DIODES R577-1-030</p> <p>Position: De energized</p> <p>RF input</p> <p>Actuator</p> <p>Power input terminals</p>	<p>WITH SUPPRESSION DIODES AND INDICATOR CONTACT R577-2-030</p> <p>Position: De energized</p> <p>RF input</p> <p>Actuator</p> <p>Power input terminals</p> <p>Indicator terminals</p>
<p>WITH TTL DRIVER (suppression diodes are included) R577-1-100</p> <p>Position: De energized</p> <p>RF input</p> <p>Actuator</p> <p>Power input terminals</p> <p>TTL</p>	<p>WITH TTL DRIVER AND INDICATOR CONTACT (suppression diodes are included) R577-2-100</p> <p>Position: De energized</p> <p>RF input</p> <p>Actuator</p> <p>Power input terminals</p> <p>Indicator terminals</p> <p>TTL</p>

Coaxial DPDT - Electrical Schematics

R577 Series

LATCHING



RAMSES SERIES

Coaxial DPDT - Electrical Schematics

R577 Series

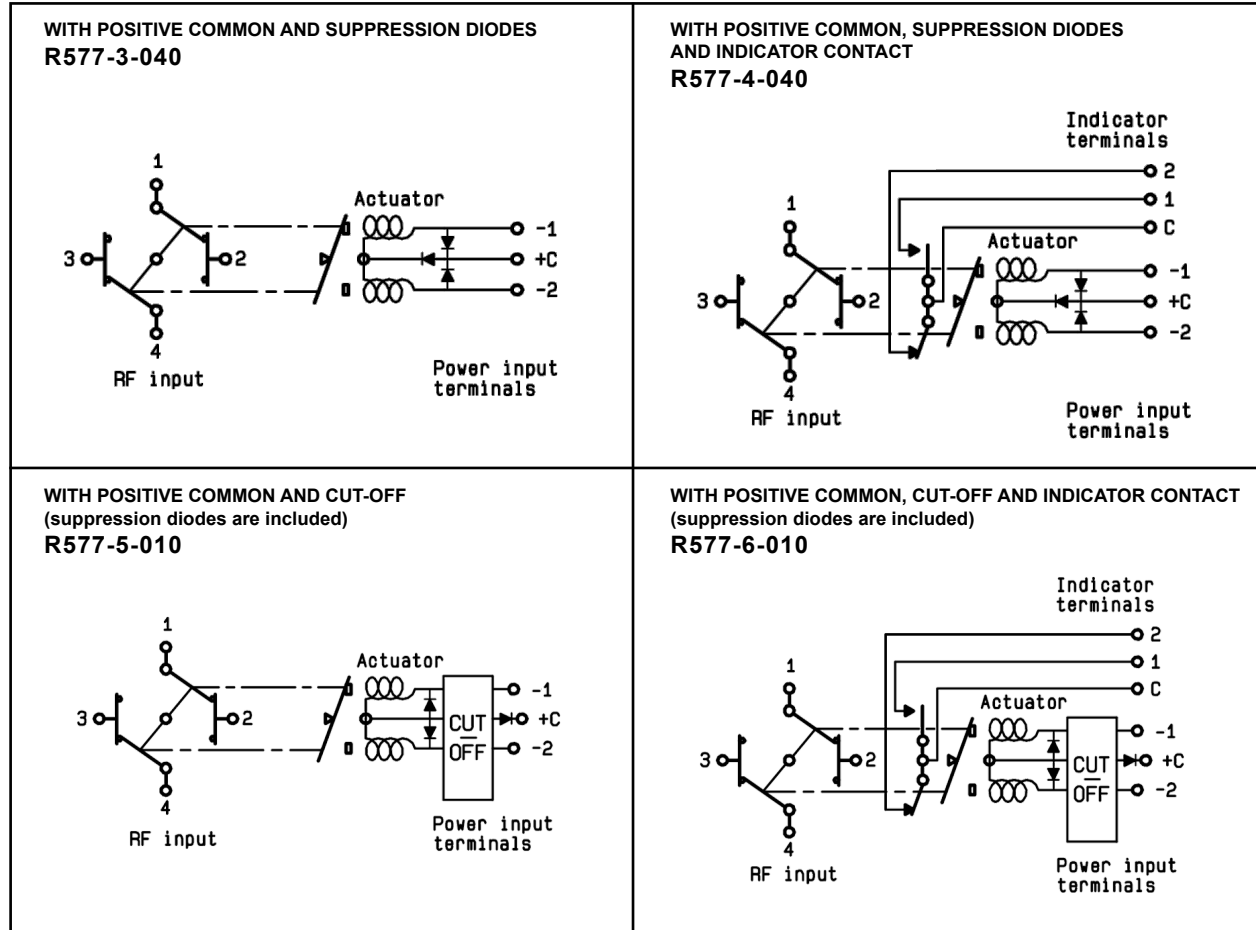
LATCHING

<p>WITH CUT-OFF (suppression diodes are included) R577-5-000</p> <p>RF input</p> <p>Actuator</p> <p>Power input terminals</p> <p>+1 -C +2</p>	<p>WITH CUT-OFF AND INDICATOR CONTACT (suppression diodes are included) R577-6-000</p> <p>Indicator terminals</p> <p>RF input</p> <p>Actuator</p> <p>Power input terminals</p> <p>+1 -C +2</p>
<p>WITH CUT-OFF AND TTL DRIVER R577-5-100</p> <p>RF input</p> <p>Actuator</p> <p>Power input terminals</p> <p>Vcc RTN E1 E2</p>	<p>WITH CUT-OFF AND INDICATOR CONTACT (suppression diodes are included) R577-6-100</p> <p>Indicator terminals</p> <p>RF input</p> <p>Actuator</p> <p>Power input terminals</p> <p>Vcc RTN E1 E2</p>
<p>WITH POSITIVE COMMON, NO OPTION R577-3-010</p> <p>RF input</p> <p>Actuator</p> <p>Power input terminals</p> <p>-1 +C -2</p>	<p>WITH POSITIVE COMMON AND INDICATOR CONTACT R577-4-010</p> <p>Indicator terminals</p> <p>RF input</p> <p>Actuator</p> <p>Power input terminals</p> <p>-1 +C -2</p>

Coaxial DPDT - Electrical Schematics

R577 Series

LATCHING



PIN IDENTIFICATION

Type	PIN							
	1	2	3	4	5	6	7	8
Failsafe	+		-					
Failsafe + I.C.	+		-			1	2	C
Failsafe + TTL	E		RTN	VCC				
Failsafe + I.C. + TTL	E		RTN	VCC		1	2	C
Latching	-1 or	-2 or	+C or					
Latching + Cut-off	+1	+2	-C					
Latching + I.C.	-1	-2 or	+C or			1	2	C
Latching + I.C. + Cut-off	or +1	+2	-C					
Latching + Cut-off								
Latching + Cut-off + I.C.	E2	E1	RTN	VCC				
Latching + TTL + I.C.	E2	E1	RTN	VCC		1	2	C

BOTTOM VIEW

