

**D2 SERIES
SPDT SWITCH
DC-12.4 GHz ◆ N, BNC, TNC**



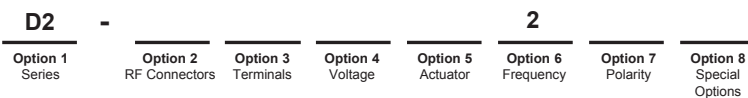
The **D2 Series** features N, BNC or TNC connectors and a frequency range of DC to 12.4 GHz.

This series is available with fail-safe, latching self cut-off or pulse latching functions.

RF Impedance: 50 ohms nominal
Temperature Range: -35°C to +85°C ambient
Operating Life: 1,000,000 cycles min.
Switching Time: 15 mSec max.
Switching Sequence: Break Before Make
Environmental: Designed in Accordance to MIL-DTL-3928 (Testing and Operation Modes)

AVAILABLE OPTIONS

OPTION 2 RF CONNECTORS	OPTION 4 VOLTAGE	OPTION 5 ACTUATOR	OPTION 6 FREQUENCY	OPTION 8 SPECIAL OPTIONS
1 - N 2 - BNC 3 - TNC	1 - 6 Vdc +/- 10% 2 - 12 Vdc +/- 10% 3 - 24-30 Vdc 4 - 48 Vdc +/- 10% 5 - 110 Vdc +/- 10% 6 - 12-15 Vdc 7 - 18-20 Vdc 8 - 20-24 Vdc	Fail-safe A - Standard M - Diodes B - Indicators Q - Diodes, Indicators	2 - DC to 12.4 GHz	L - TTL (High) LL - TTL (Low) P - High Power Handling
OPTION 3 TERMINALS		Latching Self Cut-Off D - Diodes E - Diodes, Indicators	OPTION 7 POLARITY	
1 - Solder Terminals 2 - Circular Connector 4 - Sub M miniature D-Shell Connector		Pulse Latching C - Standard Y - Diodes F - Indicators L - Diodes, Indicators	0 - Not Applicable 8 - Positive Common 9 - Negative Common	
		Normally Open K - Standard J - Diodes H - Indicators G - Diodes, Indicators		



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Standard Custom Electro-Mechanical Switches

**DC-12.4 GHz, Type N and TNC
SP2T Series 023**

RF Performance

Freq. Range (GHz)	DC-3	3-8	8-12.4
VSWR (max.)	1.2	1.35	1.5
Insertion Loss (dB max.)	0.2	0.35	0.5
Isolation (dB min.)	80	70	60



Additional Specifications

RF Impedance..... 50 ohms nominal
 Actuating Voltage*..... 28 Vdc
 Actuating Current*..... Failsafe: 180 mA (max.)
 Latching: 200 mA (max.)
 Switching Time..... 15 ms (max.)
 Switching Sequence..... Break Before Make
 Operating Mode*..... Failsafe
 Operating Ambient Temperature..... -35°C to +70°C
 Operating Life..... 1 Million Cycles per Position

* Specifications for 28 Vdc, 25°C
 NOTES:
 Designed to meet MIL-S-3928.
 Power Handling shown on page 235.

Options Available (refer to pages 231-232)

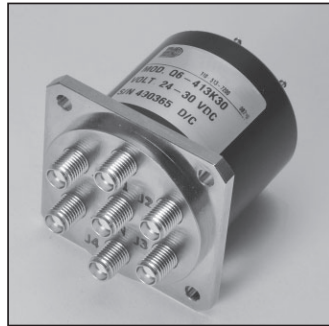
GROUP 2 ACTUATOR A - FAILSAFE B - LATCHING D - NORM OPEN	GROUP 4 RF CONNECTORS D - TYPE N E - TNC G - OTHER (SPECIFY)	GROUP 6 VOLTAGE B - 12VDC C - 24VDC D - 28VDC E - 48VDC G - OTHER (SPECIFY)	GROUP 8 POLARITY A - COMMON PLUS B - COMMON MINUS C - NOT RELEVANT TO APPLICATION OR SWITCHES WITH LOGIC
GROUP 3 OPTIONS 0 - NONE 1 - 50 OHM TERMINATION CIRCUITRY 2 - INDICATOR CIRCUITRY 3 - SUPPRESSION DIODES 4 - TTL LOGIC HIGH 7 - SELF DE-ENERGIZING CIRCUITRY 9 - OTHER (SPECIFY) V - MOSFET DRIVER	GROUP 5 TERMINALS 1 - SOLDER (STANDARD) 2 - POWER CONNECTOR, FAST DISCONNECT (STANDARD MIL) 3 - POWER CONNECTOR, FAST DISCONNECT (SUB MIN. "D") 4 - SOLDER (LOOP) 5 - OTHER (SPECIFY)	GROUP 7 FREQUENCY 0 - DC - 1 GHz 1 - DC - 3 GHz 2 - DC - 8 GHz 3 - DC - 12.4 GHz 7 - OTHER (SPECIFY)	GROUP 9 MOUNTING 0 - STANDARD MOUNTING HOLES 3 - OTHER (SPECIFY)

Switch Height (A) for Selected Options

DIM A ±.03	GROUP 2 ACTUATOR	GROUP 3 OPTIONS
2.00	A, D	0,3,4 or 5,V
2.00	B	0,3,4 or 5,V
2.24**	B	2,3,4 or 5,7,V
2.24**	A, D	2,3,4 or 5,V

** Dimension for switches with Standard Narda Power Connector MS3113H-10-6P mating with MS3116E-10-65

Q SERIES
1P3T to 1P6T
MULTI POSITION SWITCH
DC-18 GHz ♦ **SMA**



The **Q Series** features SMA connectors and a frequency range of DC to 18 GHz.

This series is available with normally open functions.

RF Impedance:	50 ohms nominal
Temperature Range:	-35°C to +85°C ambient
Operating Life:	1,000,000 cycles min.
Switching Time:	15 mSec max.
Switching Sequence:	Break Before Make
Environmental:	Designed in Accordance to MIL-DTL-3928 (Testing and Operation Modes)

SPECIFICATIONS

Frequency	VSWR (max.)	Insertion Loss (dB max.)	Isolation (dB min.)
DC-3 GHz	1.20	0.20	80
3-8 GHz	1.30	0.30	70
8-12.4 GHz	1.40	0.40	60
12.4-18 GHz	1.50	0.50	60

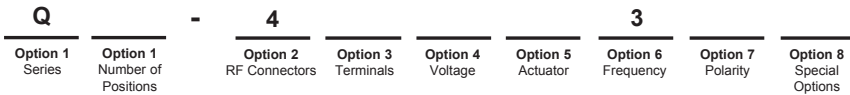
Actuator Current (typical)	12Vdc	12-15 Vdc	20-24 Vdc	24-30Vdc
Normally Open	270mA	270mA	150mA	160mA

* If reduced coil current is required, please contact Factory.

AVAILABLE OPTIONS

OPTION 2 RF CONNECTORS	OPTION 4 VOLTAGE	OPTION 5 ACTUATOR	OPTION 6 FREQUENCY	OPTION 8 SPECIAL OPTIONS
4 - SMA	1 - 6 Vdc +/- 10% 2 - 12 Vdc +/- 10% (USB Optional)	Normally Open G - Diodes, Indicators (USB Optional) H - Indicators (USB Optional) J - Diodes K - Standard	3 - DC to 18 GHz	L - TTL (High) LL - TTL (Low) F - Flange P - High Power Handling U - USB
OPTION 3 TERMINALS	3 - 24-30 Vdc 4 - 48 Vdc +/- 10% 5 - 110 Vac +/- 10% 6 - 12-15 Vdc (USB Optional) 7 - 18-20 Vdc 8 - 20-24 Vdc		OPTION 7 POLARITY	
1 - Solder Terminals 2 - Circular Connector 4 - Sub Miniature D-Shell Connector 5 - USB			0 - Not Applicable, USB 8 - Positive Common 9 - Negative Common	

Please Note: USB integration can only be applied to Voltage Options 12Vdc, & 15Vdc, Polarity Option # 3, and Terminals Option # 3. The switch has a mini-USB socket on the enclosure interface which provides communication between switch and computers. Additionally, the enclosure also has a Molex socket for 12Vdc connection, which is required to power RF switch. The switch is accompanied with a CD driver, a 3 ft. USB cable and a 12 Vdc AC/DC adapter.



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Standard Custom Electro-Mechanical Switches

DC-26.5 GHz, SMA
SP3T-SP6T Series 030-060

RF Performance

Freq. Range (GHz)	DC-3	3-8	8-12.4	12.4-18	18-26.5
VSWR (max.)	1.2	1.3	1.4	1.5	1.8
Insertion Loss (dB max.)	0.2	0.3	0.4	0.5	0.8
Isolation (dB min.)	80	70	60	60	45



Additional Specifications

RF Impedance..... 50 ohms nominal
 Actuating Voltage*..... 28 Vdc
 Actuating Current*..... Normally Open: 140 mA (max.)
 DA: 280 mA (max.)
 Switching Time..... 15 ms (max.)
 Switching Sequence..... Break Before Make
 Operating Ambient Temperature..... -35°C to +70°C
 Operating Life..... 1 Million Cycles per Position

* Specifications for 28 Vdc, 25°C

NOTES:
 Designed to meet MIL-S-3928.
 Power Handling shown on page 235.

Options Available (refer to pages 231-232)

GROUP 2 ACTUATION D - NORM OPEN DA - NORM OPEN FAILSAFE TO POSITION 1	GROUP 4 RF CONNECTORS A - SMA G - OTHER (SPECIFY)	GROUP 6 VOLTAGE B - 12VDC C - 24VDC D - 28VDC E - 48VDC G - OTHER (SPECIFY) H - 15VDC I - 18VDC	GROUP 8 POLARITY A - COMMON PLUS B - COMMON MINUS C - NOT RELEVANT TO APPLICATION OR SWITCHES WITH LOGIC
GROUP 3 OPTIONS 0 - NONE 2 - INDICATOR CIRCUITRY 3 - SUPPRESSION DIODES 4 - TTL LOGIC HIGH 9 - OTHER (SPECIFY) V - MOSFET DRIVER Y - BCD TTL DECODER	GROUP 5 TERMINALS 1 - SOLDER (STANDARD) 2 - POWER CON- NECTOR, FAST DISCONNECT (STANDARD MIL) 3 - POWER CON- NECTOR, FAST DISCONNECT (SUB MIN. "D") 4 - SOLDER (LOOP) 5 - OTHER (SPECIFY)	GROUP 7 FREQUENCY 0 - DC - 1 GHz 1 - DC - 3 GHz 2 - DC - 8 GHz 3 - DC - 12.4 GHz 4 - DC - 18 GHz 6 - DC - 26.5 GHz 7 - OTHER (SPECIFY)	GROUP 9 MOUNTING 2 - FLANGE 3 - OTHER (SPECIFY)

**Switch Height (A)
for Selected Options**

DIM A ±.03	GROUP 2 ACTUATION	GROUP 3 OPTIONS
1.56	D	0
2.00	D, DA	2,3
2.25	D, DA	2,3,4 OR 5,Y,V
2.50**	D, DA	2,3,4 OR 5,Y,V

** Dimension for switches with Standard Narda Power Connector MS3112E-14-15P mating with MS3116E-14-15S

Exception: switches with options: 4-TTL Logic High, V-MOSFET Driver, Y-BCD Decoder use Power Connector MS3112E-14-18P mating with MS3116E-14-18S.

M SERIES
1P3T to 1P6T
MULTI POSITION SWITCH
DC-18 GHz ♦ **SMA**



The **M Series** features SMA connectors and a frequency range of DC to 18 GHz.

This series is available with latching self cut-off or normally open functions.

RF Impedance: 50 ohms nominal
Temperature Range: -35°C to +85°C ambient
Operating Life: 1,000,000 cycles min.
Switching Time: 15 mSec max.
Switching Sequence: Break Before Make
Environmental: Designed in Accordance to MIL-DTL-3928 (Testing and Operation Modes)

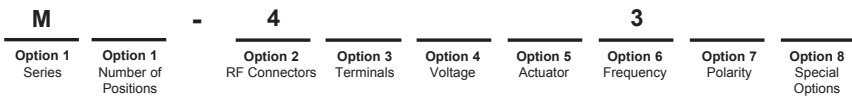
Frequency	VSWR (max.)	Insertion Loss (dB max.)	Isolation (dB min.)
DC-3 GHz	1.20	0.20	80
3-8 GHz	1.30	0.30	70
8-12.4 GHz	1.40	0.40	60
12.4-18 GHz	1.50	0.50	60

Actuator Current (typical)	12Vdc	12-15 Vdc	20-24 Vdc	24-30Vdc
Normally Open	240mA	240mA	170mA	140mA
Latching	500mA	370mA	180mA	180mA

* If reduced coil current is required, please contact Factory.

AVAILABLE OPTIONS				
OPTION 2 RF CONNECTORS	OPTION 4 VOLTAGE	OPTION 5 ACTUATOR	OPTION 6 FREQUENCY	OPTION 8 SPECIAL OPTIONS
4 - SMA	1 - 6 Vdc +/- 10% 2 - 12 Vdc +/- 10% (USB Optional)	Latching Self Cut-Off D - Diodes (USB Optional) E - Diodes, Indicators (USB Optional)	3 - DC to 18 GHz	L - TTL (High) LL - TTL (Low) 1 - Bracket F - Flange P - High Power Handling R - Reset (Latching Only) C - BCD U - USB
OPTION 3 TERMINALS	3 - 24-30 Vdc 4 - 48 Vdc +/- 10%	Normally Open	OPTION 7 POLARITY	
1 - Solder Terminals 2 - Circular Connector 4 - Sub Miniature D-Shell Connector 5 - USB	5 - 110 Vdc +/- 10% 6 - 12-15 Vdc (USB Optional) 7 - 18-20 Vdc 8 - 20-24 Vdc	G - Diodes, Indicators (USB Optional) H - Indicators J - Diodes (USB Optional) K - Standard N - Failsafe to Position 1 - Standard R - Failsafe to Position 1 - Diodes S - Failsafe to Position 1 - Diodes, Indicators	0 - Not Applicable, USB 8 - Positive Common 9 - Negative Common	

Please Note: USB integration can only be applied to Voltage Options 12Vdc, & 15Vdc, Polarity Option # 3, and Terminals Option # 3. The switch has a mini-USB socket on the enclosure interface which provides communication between switch and computers. Additionally, the enclosure also has a Molex socket for 12Vdc connection, which is required to power RF switch. The switch is accompanied with a CD driver, a 3 ft. USB cable and a 12 Vdc AC/DC adapter.



Standard Custom Electro-Mechanical Switches

DC-18 GHz, SMA
SP3T-SP6T Series 032-062

RF Performance

Freq. Range (GHz)	DC-3	3-8	8-12.4	12.4-18
VSWR (max.)	1.2	1.3	1.4	1.5
Insertion Loss (dB max.)	0.2	0.3	0.4	0.5
Isolation (dB min.)	80	70	60	60

Additional Specifications

RF Impedance..... 50 ohms nominal
 Actuating Voltage*..... 28 Vdc
 Actuating Current* Normally Open: 160 mA
 Latching: (n)** X 100 mA
DA: 2 x 160 mA
 Switching Time..... 15 ms (max.)
 Switching Sequence..... Break Before Make
 Operating Ambient Temperature..... -35°C to +70°C
 Operating Life..... 1 Million Cycles per Position

* Specifications for 28 Vdc, 25°C
 ** n = number of positions

NOTES:
 Designed to meet MIL-S-3928.
 Power Handling shown on page 235.

Options Available (refer to pages 231-232)

GROUP 2 ACTUATION B - LATCHING C - LATCHING RESET D - NORM OPEN DA - NORM OPEN FAILSAFE TO POSITION 1	GROUP 4 RF CONNECTORS A - SMA G - OTHER (SPECIFY)	GROUP 6 VOLTAGE B - 12VDC C - 24VDC D - 28VDC E - 48VDC G - OTHER (SPECIFY) H - 15VDC I - 18VDC	GROUP 8 POLARITY A - COMMON PLUS B - COMMON MINUS C - NOT RELEVANT TO APPLICATION OR SWITCHES WITH LOGIC
GROUP 3 OPTIONS 0 - NONE 1 - 50 OHM TERMINATION 2 - INDICATOR CIRCUITRY 3 - SUPPRESSION DIODES 4 - TTL LOGIC HIGH 7 - SELF DE-ENERGIZING CIRCUITRY 9 - OTHER (SPECIFY) V - MOSFET DRIVER Y - BCD TTL DECODER	GROUP 5 TERMINALS 1 - SOLDER (STANDARD) 2 - POWER CON- NECTOR, FAST DISCONNECT (STANDARD MIL) 3 - POWER CON- NECTOR, FAST DISCONNECT (SUB MIN. "D") 4 - SOLDER (LOOP) 5 - OTHER (SPECIFY)	GROUP 7 FREQUENCY 0 - DC - 1 GHz 1 - DC - 3 GHz 2 - DC - 8 GHz 3 - DC - 12.4 GHz 4 - DC - 18 GHz 7 - OTHER (SPECIFY)	GROUP 9 MOUNTING 0 - STANDARD MOUNTING HOLES 1 - BRACKET 2 - FLANGE 3 - OTHER (SPECIFY)



Standard SEM models from this series are available from stock. See page 230 for a complete listing of stock switches.

Switch Height (A) for Selected Options

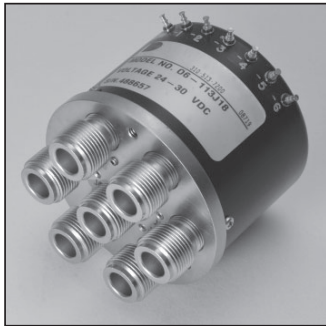
DIM A ±.03	GROUP 2 ACTUATION	GROUP 3 OPTIONS
2.12	D, DA	0,3
2.37	B, C	3,7
2.37	D, DA	2,3
2.62	B, C	2,3,4 OR 5,7,Y,V
2.62	D, DA	2,3,4 OR 5,Y,V
2.96 [‡]	B, C	2,3,4 OR 5,7,Y,V
2.96 [‡]	D, DA	2,3,4 OR 5,Y,V

[‡] Dimension for switches with Standard Narda Power Connector MS3112E-14-15P mating with MS3112E-14-15S

Exception: switches with options: 4-TTL Logic High, V-MOSFET Driver, Y-BCD Decoder use Power Connector MS3112E-14-18P mating with MS3116E-14-18S.

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O SERIES
1P3T to 1P6T
MULTI POSITION SWITCH
DC-12.4 GHz ♦ **N, BNC, TNC**



The **O Series** features N, BNC or TNC connectors and a frequency range of DC to 12.4 GHz.

This series is available with latching self cut-off or normally open functions.

RF Impedance:	50 ohms nominal
Temperature Range:	-35°C to +85°C ambient
Operating Life:	1,000,000 cycles min.
Switching Time:	15 mSec max.
Switching Sequence:	Break Before Make
Environmental:	Designed in Accordance to MIL-DTL-3928 (Testing and Operation Modes)

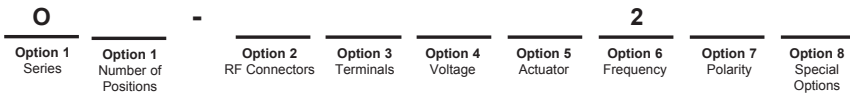
Frequency	VSWR (max.)	Insertion Loss (dB max.)	Isolation (dB min.)
DC-3 GHz	1.20	0.20	80
3-8 GHz	1.35	0.35	70
8-12.4 GHz	1.50	0.50	60

Actuator Current (typical)	12Vdc	12-15 Vdc	20-24 Vdc	24-30Vdc
Normally Open	240mA	240mA	170mA	140mA
Latching	280mA	280mA	270mA	220mA

* If reduced coil current is required, please contact Factory.

OPTION 2 RF CONNECTORS	OPTION 4 VOLTAGE	OPTION 5 ACTUATOR	OPTION 6 FREQUENCY	OPTION 8 SPECIAL OPTIONS
1 - N	1 - 8 Vdc +/- 10%	Latching Self Cut-Off		L - TTL (High)
2 - BNC	2 - 12 Vdc +/- 10%	D - Diodes (USB Optional)	2 - DC to 12.4 GHz	LL - TTL (Low)
3 - TNC	3 - 24-30 Vdc (USB Optional)	E - Diodes, Indicators (USB Optional)		1 - Bracket
		Normally Open		F - Flange
		G - Diodes, Indicators (USB Optional)		M - Manual Override
		H - Indicators		P - High Power Handling
		J - Diodes (USB Optional)		R - Reset (Latching Only)
		K - Standard		C - BCD
		N - Failsafe to Position 1 - Standard		U - USB
		R - Failsafe to Position 1 - Diodes		
		S - Failsafe to Position 1 - Diodes, Indicators		

Please Note: USB integration can only be applied to Voltage Options 12Vdc, & 15Vdc, Polarity Option # 3, and Terminals Option # 3. The switch has a mini-USB socket on the enclosure interface which provides communication between switch and computers. Additionally, the enclosure also has a Molex socket for 12Vdc connection, which is required to power RF switch. The switch is accompanied with a CD driver, a 3 ft. USB cable and a 12 Vdc AC/DC adapter.



Power Monitors and Sensors

RF Switching Products

Passive Components

Integrated Microwave Assemblies (IMAs)

Introduction

Standard Custom Electro-Mechanical Switches

DC-12.4 GHz, Type N and TNC

SP3T-SP6T Series 033-063



RF Performance

Freq. Range (GHz)	DC-3	3-8	8-12.4
VSWR (max.)	1.2	1.35	1.5
Insertion Loss (dB max.)	0.2	0.35	0.5
Isolation (dB min.)	80	70	60

Additional Specifications

RF Impedance.....	50 ohms nominal
Actuating Voltage*.....	28 Vdc
Actuating Current*.....	Normally Open: 140 mA (max.) Latching: (n)** x 100 mA
.....DA:	350 mA
Switching Time.....	20 ms (max.)
Switching Sequence.....	Break Before Make
Operating Ambient Temperature.....	-35°C to +70°C
Operating Life.....	1 Million Cycles per Position

* Specifications for 28 Vdc, 25°C
 ** n = number of positions

NOTES:
 Designed to meet MIL-S-3928.
 Power Handling shown on page 235.

Switch Height (A) for Selected Options

DIM A ±.03	GROUP 2 ACTUATION	GROUP 3 OPTIONS
2.20	D, DA	0,3
2.46	B, C	3,7
2.46	D, DA	2,3
2.88	B, C	2,3,7
3.08 [‡]	B, C	2,3,4 OR 5,7,Y
3.08 [‡]	D, DA	2,3,4 OR 5,Y

[‡] Dimension for switches with Standard Narda Power Connector MS3112E-14-15P mating with MS3112E-14-15S

Exception: switches with options: 4-TTL Logic High, V-MOSFET Driver, Y-BCD Decoder use Power Connector MS3112E-14-18P mating with MS3116E-14-18S.

Options Available (refer to pages 231-232)

GROUP 2 ACTUATION B - LATCHING C - LATCHING RESET D - NORM OPEN DA - NORM OPEN FAILSAFE TO POSITION 1	GROUP 4 RF CONNECTORS D - TYPE N E - TNC G - OTHER (SPECIFY)	GROUP 6 VOLTAGE B - 12VDC C - 24VDC D - 28VDC E - 48VDC G - OTHER (SPECIFY) H - 15VDC I - 18VDC	GROUP 8 POLARITY A - COMMON PLUS B - COMMON MINUS C - NOT RELEVANT TO APPLICATION OR SWITCHES WITH LOGIC
GROUP 3 OPTIONS 0 - NONE 1 - 50 OHM TERMINATION 2 - INDICATOR CIRCUITRY 3 - SUPPRESSION DIODES 4 - TTL LOGIC HIGH 7 - SELF DE-ENERGIZING CIRCUITRY 9 - OTHER (SPECIFY) V - MOSFET DRIVER Y - BCD TTL DECODER	GROUP 5 TERMINALS 1 - SOLDER (STANDARD) 2 - POWER CONNECTOR, FAST DISCONNECT (STANDARD MIL) 3 - POWER CONNECTOR, FAST DISCONNECT (SUB MIN. "D") 4 - SOLDER (LOOP) 5 - OTHER (SPECIFY)	GROUP 7 FREQUENCY 0 - DC-1 GHz 1 - DC-3 GHz 2 - DC-8 GHz 3 - DC-12.4 GHz 7 - OTHER (SPECIFY)	GROUP 9 MOUNTING 0 - STANDARD MOUNTING HOLES 1 - BRACKET 2 - FLANGE 3 - OTHER (SPECIFY)

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**SM/SME SERIES (MINIATURE 1P3T TO 1P6T)
DC-26.5 GHz | SMA**



The **SM Series** features SMA connectors and a frequency range of DC to 18 GHz.

The **SME Series** also features SMA connectors and has a frequency range of DC to 26.5 GHz.

Both series are available with failsafe or normally open functions. Future designs will offer latching; logic driver and indicators.

- Weight:** 5.0 oz
- RF Impedance:** 50 ohms nominal
- Operating Temperature:** -55°C to +85°C ambient
- Operating Life:** 1,000,000+ cycles min.
- Switching Sequence:** Break before make



MULTI POSITION SWITCH

SPECIFICATIONS

Frequency	VSWR (max.)	Insertion Loss (dB max.)	Isolation (dB min.)
DC-4 GHz	1.15	0.25	75
4-8 GHz	1.25	0.30	70
8-12 GHz	1.30	0.35	65
12-18 GHz	1.40	0.45	60
18-26.5 GHz	2.00	1.00	55

Actuator Current (typical)	12Vdc		15Vdc		24Vdc		28Vdc	
	Failsafe	Consult Ducommun	Consult Ducommun	205mA	Consult Ducommun	205mA	Consult Ducommun	65 mA
Normally Open	150 mA		110 mA		75mA			65 mA

If reduced coil current is required, please contact rfsales@ducommun.com.

Position	NO	NC	Latching
Switching Time - mSec (Max)	15	35	N/A

AVAILABLE OPTIONS

OPTION 3 VOLTAGE	OPTION 4 ACTUATOR	OPTION 5 POLARITY
1 - 12 Vdc 2 - 28 Vdc 3 - 15 Vdc 5 - Other 6 - 24 Vdc 7 - 5 Vdc	Failsafe A - Standard B - Diodes	1 - Negative 2 - Positive 3 - Not Applicable
	Normally Open L - Standard M - Diodes	OPTION 6 TERMINALS 1 - Solder Terminals 3 - Other (Specify) 4 - Micro Miniature D-Shell Connector

ADDITIONAL OPTIONS

OPTION 7 STANDARD OPTIONS
1 - Moisture Seal 2 - High Temperature (125° C) 3 - Moisture Seal & High Temperature (125° C)

For additional options, please contact rfsales@ducommun.com for part numbers.

SM/SME

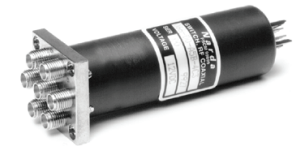
- Option 1
Positions
- Option 2
Series
- Option 3
Voltage
- Option 4
Actuator
- Option 5
Polarity
- Option 6
Terminals

Standard Custom Electro-Mechanical Switches

**DC-26.5 GHz, SMA
SP3T-SP6T Series 036-066**

RF Performance

Freq. Range (GHz)	DC-3	3-8	8-12.4	12.4-18	18-26.5
VSWR (max.)	1.15	1.25	1.35	1.45	1.9
Insertion Loss (dB max.)	0.15	0.25	0.35	0.45	0.9
Isolation (dB min.)	85	75	65	65	45



Additional Specifications

- RF Impedance..... 50 ohms nominal
- Actuating Voltage*..... 28 Vdc
- Actuating Current*..... Normally Open: 160 mA (max.)
- Switching Time..... 15 ms (max.)
- Switching Sequence..... Break Before Make
- Operating Ambient Temperature..... -35°C to +70°C
- Operating Life..... 1 Million Cycles per Position

* Specifications for 28 Vdc, 25°C

NOTES:

Standard Power Connector is Berg P/N 69168-108, mates with P/N 65846-016 (not supplied). Power Handling shown on page 235.

Standard SEM models from this series are available from stock. See page 230 for a complete listing of stock switches.

Options Available (refer to pages 231-232)

GROUP 2 ACTUATOR D - NORM OPEN DA - NORM OPEN FAILSAFE TO POSITION 1	GROUP 4 RF CONNECTORS A - SMA G - OTHER (SPECIFY)	GROUP 6 VOLTAGE B - 12VDC C - 24VDC D - 28VDC G - OTHER (SPECIFY) H - 15VDC I - 18VDC	GROUP 8 POLARITY A - COMMON PLUS B - COMMON MINUS C - NOT RELEVANT TO APPLICATION OR SWITCHES WITH LOGIC
GROUP 3 OPTIONS 0 - NONE 3 - SUPPRESSION DIODES 9 - OTHER (SPECIFY)	GROUP 5 TERMINALS 2 - POWER CON- NECTOR, FAST DISCONNECT (STANDARD MIL)	GROUP 7 FREQUENCY 0 - DC - 1 GHz 1 - DC - 3 GHz 2 - DC - 8 GHz 3 - DC - 12.4 GHz 4 - DC - 18 GHz 6 - DC - 26.5 GHz 7 - OTHER (SPECIFY)	GROUP 9 MOUNTING 2 - FLANGE

L SERIES
1P7T to 1P8T
MULTI POSITION SWITCH
DC-9 GHz ♦ N, BNC, TNC



The **L Series** features N, BNC or TNC connectors and a frequency range of DC to 9 GHz.

This series is available with latching self cut-off or normally open functions.

RF Impedance:	50 ohms nominal
Temperature Range:	-35°C to +85°C ambient
Operating Life:	1,000,000 cycles min.
Switching Time:	35 mSec max.
Switching Sequence:	Break Before Make
Environmental:	Designed in Accordance to MIL-DTL-3928 (Testing and Operation Modes)

Frequency	VSWR (max.)	Insertion Loss (dB max.)	Isolation (dB min.)
DC-3 GHz	1.20	0.20	80
3-5 GHz	1.35	0.35	70
5-9 GHz	1.50	0.50	60

Actuator Current (typical)	12Vdc	12-15 Vdc	20-24 Vdc	24-30Vdc
Normally Open	240mA	240mA	170mA	140mA
Latching	280mA	280mA	270mA	220mA

* If reduced coil current is required, please contact Factory.

OPTION 2 RF CONNECTORS		OPTION 4 VOLTAGE		OPTION 5 ACTUATOR		OPTION 6 FREQUENCY		OPTION 8 SPECIAL OPTIONS																					
1 - N	2 - BNC	3 - TNC	4 - 6 Vdc +/- 10%	5 - 12 Vdc +/- 10% (USB Optional)	6 - 24-30 Vdc	7 - 48 Vdc +/- 10%	8 - 110 Vac +/- 10%	9 - 12-15 Vdc (USB Optional)	10 - 18-20 Vdc	11 - 20-24 Vdc	12 - Latching Self Cut-Off	13 - D - Diodes (USB Optional)	14 - E - Diodes, Indicators (USB Optional)	15 - G - Diodes, Indicators (USB Optional)	16 - H - Indicators	17 - J - Diodes (USB Optional)	18 - K - Standard	19 - N - Failsafe to Position 1 - Standard	20 - R - Failsafe to Position 1 - Diodes	21 - S - Failsafe to Position 1 - Diodes, Indicators	22 - 2 - DC to 9 GHz	23 - L - TTL (High)	24 - LL - TTL (Low)	25 - 1 - Bracket	26 - F - Flange	27 - P - High Power Handling	28 - R - Reset (Latching Only)	29 - C - BCD	30 - U - USB

Please Note: USB integration can only be applied to Voltage Options 12Vdc, & 15Vdc, Polarity Option # 3, and Terminals Option # 3. The switch has a mini-USB socket on the enclosure interface which provides communication between switch and computers. Additionally, the enclosure also has a Molex socket for 12Vdc connection, which is required to power RF switch. The switch is accompanied with a CD driver, a 3 ft. USB cable and a 12 Vdc AC/DC adapter.

L	-	2							
Option 1 Series	Option 1 Number of Positions	Option 2 RF Connectors	Option 3 Terminals	Option 4 Voltage	Option 5 Actuator	Option 6 Frequency	Option 7 Polarity	Option 8 Special Options	

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Standard Custom Electro-Mechanical Switches

DC-10 GHz, Type N and TNC
SP7T-SP8T Series 073-083

RF Performance

Freq. Range (GHz)	DC-3	3-8	8-10
VSWR (max.)	1.2	1.35	1.5
Insertion Loss (dB max.)	0.2	0.35	0.5
Isolation (dB min.)	80	70	60

Additional Specifications

RF Impedance..... 50 ohms nominal
 Actuating Voltage*.....28 Vdc
 Actuating Current*.....Normally Open: 160 mA (max.)
Latching: (n)** x 100 mA
DA: 350 mA
 Switching Time.....20 ms (max.)
 Switching Sequence.....Break Before Make
 Operating Mode*.....Normally Open
 Operating Ambient Temperature.....-35°C to +70°C
 Operating Life..... 1 Million Cycles per Position

* Specifications for 28 Vdc, 25°C
 ** n = number of positions

NOTES:
 Designed to meet MIL-S-3928.
 Power Handling shown on page 235.

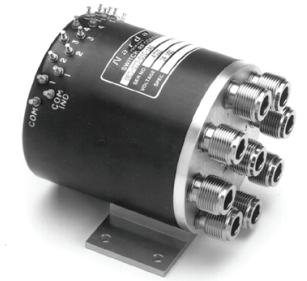
Options Available (refer to pages 231-232)

GROUP 2 ACTUATION B - LATCHING C - LATCHING RESET D - NORM OPEN DA - NORM OPEN FAILSAFE TO POSITION 1	GROUP 4 RF CONNECTORS D - TYPE N E - TNC G - OTHER (SPECIFY)	GROUP 6 VOLTAGE B - 12VDC C - 24VDC D - 28VDC E - 48VDC G - OTHER (SPECIFY) H - 15VDC I - 18VDC	GROUP 8 POLARITY A - COMMON PLUS B - COMMON MINUS C - NOT RELEVANT TO APPLICATION OR SWITCHES WITH LOGIC
GROUP 3 OPTIONS 0 - NONE 1 - 50 OHM TERMINATION 2 - INDICATOR CIRCUITRY 3 - SUPPRESSION DIODES 4 - TTL LOGIC HIGH 7 - SELF DE-ENERGIZING CIRCUITRY 9 - OTHER (SPECIFY) V - MOSFET DRIVER Y - BCD TTL DECODER	GROUP 5 TERMINALS 1 - SOLDER (STANDARD) 2 - POWER CONNECTOR, FAST DISCONNECT (STANDARD MIL) 3 - POWER CONNECTOR, FAST DISCONNECT (SUB MIN. "D") 4 - SOLDER (LOOP) 5 - OTHER (SPECIFY)	GROUP 7 FREQUENCY 0 - DC - 1 GHz 1 - DC - 3 GHz 2 - DC - 8 GHz 3 - DC - 12.4 GHz 7 - OTHER (SPECIFY)	GROUP 9 MOUNTING 0 - STANDARD MOUNTING HOLES 1 - BRACKET 2 - FLANGE 3 - OTHER (SPECIFY)

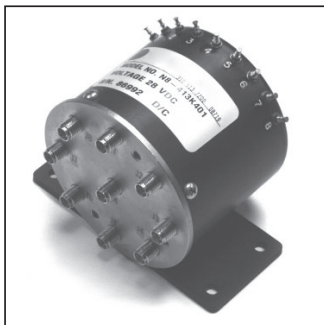
Switch Height (A) for Selected Options

DIM A ±.03	GROUP 2 ACTUATION	GROUP 3 OPTIONS
2.20	D, DA	0,3
3.07	B, C	2,3,7
3.07	D, DA	2,3
3.07*	B, C	1,2,3,4 OR 5,7,Y
3.07*	D, DA	1,2,3,4 OR 5,Y

* Dimension for switches with Standard Narda Power Connector M53112E-16-26P mating with M53112E-16-26S



N SERIES
1P7T to 1P8T
MULTI POSITION SWITCH
DC-15 GHz ♦ **SMA**



The **N Series** features SMA connectors and a frequency range of DC to 15 GHz.

This series is available with latching self cut-off or normally open functions.

RF Impedance: 50 ohms nominal
Temperature Range: -35°C to +85°C ambient
Operating Life: 1,000,000 cycles min.
Switching Time: 15 mSec max.
Switching Sequence: Break Before Make
Environmental: Designed in Accordance to MIL-DTL-3928 (Testing and Operation Modes)

SPECIFICATIONS

Frequency	VSWR (max.)	Insertion Loss (dB max.)	Isolation (dB min.)
DC-3 GHz	1.20	0.20	80
3-8 GHz	1.30	0.30	70
8-12.4 GHz	1.40	0.40	60
12.4-15 GHz	1.50	0.50	60

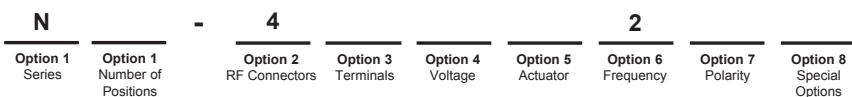
Actuator Current (typical)	12Vdc	12-15 Vdc	20-24 Vdc	24-30Vdc
Normally Open	240mA	240mA	170mA	140mA
Latching	280mA	280mA	180mA	180mA

* If reduced coil current is required, please contact Factory.

AVAILABLE OPTIONS

OPTION 2 RF CONNECTORS		OPTION 4 VOLTAGE		OPTION 5 ACTUATOR		OPTION 6 FREQUENCY		OPTION 8 SPECIAL OPTIONS	
4 - SMA	1 - 6 Vdc +/- 10%	2 - 12 Vdc +/- 10% (USB Optional)	Latching Self Cut-Off		2 - DC to 15 GHz	L - TTL (High)	LL - TTL (Low)	T - Bracket	F - Flange
			D - Diodes (USB Optional)	E - Diodes, Indicators (USB Optional)					
OPTION 3 TERMINALS		3 - 24-30 Vdc	Normally Open		OPTION 7 POLARITY		P - High Power Handling	R - Reset (Latching Only)	C - BCD
1 - Solder	4 - 48 Vdc +/- 10%	5 - 110 Vdc +/- 10%	G - Diodes, Indicators (USB Optional)	0 - Not Applicable, USB	0 - Not Applicable, USB	U - USB			
2 - Circular Connector	6 - 12-15 Vdc (USB Optional)	7 - 18-20 Vdc	H - Indicators	8 - Positive Common	8 - Positive Common				
4 - Sub Miniature D-Shell Connector	8 - 20-24 Vdc		J - Diodes (USB Optional)	9 - Negative Common	9 - Negative Common				
5 - USB			K - Standard						
			N - Failsafe to Position 1 - Standard						
			R - Failsafe to Position 1 - Diodes						
			S - Failsafe to Position 1 - Diodes, Indicators						

Please Note: USB integration can only be applied to Voltage Options 12Vdc, & 15Vdc, Polarity Option # 3, and Terminals Option # 3. The switch has a mini-USB socket on the enclosure interface which provides communication between switch and computers. Additionally, the enclosure also has a Molex socket for 12Vdc connection, which is required to power RF switch. The switch is accompanied with a CD driver, a 3 ft. USB cable and a 12 Vdc AC/DC adapter.



Power Monitors and Sensors

RF Switching Products

Passive Components

Integrated Microwave Assemblies (IMAs)

Introduction

Standard Custom Electro-Mechanical Switches

DC-18 GHz, SMA
SP7T-SP8T Series 075-085



RF Performance

Freq. Range (GHz)	DC-3	3-8	8-12.4	12.4-16	16-18
VSWR (max.)	1.2	1.3	1.4	1.5	1.7
Insertion Loss (dB max.)	0.2	0.3	0.4	0.55	0.7
Isolation (dB min.)	80	70	60	60	55

Additional Specifications

RF Impedance 50 ohms nominal
 Actuating Voltage* 28 Vdc
 Actuating Current* Normally Open: 160 mA (max.)
 Latching: (n)** x 100 mA
 DA: 350 mA
 Switching Time 15 ms (max.)
 Switching Sequence Break Before Make
 Operating Ambient Temperature -35°C to +70°C
 Operating Life 1 Million Cycles per Position

* Specifications for 28 Vdc, 25°C

** n = number of positions

NOTES:
 Designed to meet MIL-5-3928.
 Power Handling shown on page 235.

Switch Height (A) for Selected Options

DIM A ±.03	GROUP 2 ACTUATION	GROUP 3 OPTIONS
2.10	D, DA	0,3
2.50	B, C	2,3,7
2.50	D, DA	2,3
2.91 [‡]	B, C	1,2,3,4 OR 5,7,Y,V
2.91 [‡]	D, DA	1,2,3,4 OR 5,Y,V

[‡] Dimension for switches with Standard Narda Power Connector MS3112E-16-26P mating with MS3116E-16-26S

Options Available (refer to pages 231-232)

GROUP 2 ACTUATION B - LATCHING RESET C - LATCHING RESET D - NORM OPEN DA - NORM OPEN FAILSAFE TO POSITION 1	GROUP 4 RF CONNECTORS A - SMA G - OTHER (SPECIFY)	GROUP 6 VOLTAGE B - 12 VDC C - 24 VDC D - 28 VDC E - 48 VDC G - OTHER (SPECIFY) H - 15 VDC I - 18 VDC	GROUP 8 POLARITY A - COMMON PLUS B - COMMON MINUS C - NOT RELEVANT TO APPLICATION OR SWITCHES WITH LOGIC
GROUP 3 OPTIONS 0 - NONE 1 - 50 OHM TERMINATION 2 - INDICATOR CIRCUITRY 3 - SUPPRESSION DIODES 4 - TTL LOGIC HIGH 7 - SELF DE-ENERGIZING CIRCUITRY 9 - OTHER (SPECIFY) V - MOSFET DRIVER Y - BCD TTL DECODER	GROUP 5 TERMINALS 1 - SOLDER (STANDARD) 2 - POWER CON- NECTOR, FAST DISCONNECT (STANDARD MIL) 3 - POWER CON- NECTOR, FAST DISCONNECT (SUB MIN. "D") 4 - SOLDER (LOOP) 5 - OTHER (SPECIFY)	GROUP 7 FREQUENCY 0 - DC - 1 GHz 1 - DC - 3 GHz 2 - DC - 8 GHz 3 - DC - 12.4 GHz 4 - DC - 18 GHz 7 - OTHER (SPECIFY)	GROUP 9 MOUNTING 0 - STANDARD MOUNTING HOLES 1 - BRACKET 2 - FLANGE 3 - OTHER (SPECIFY)

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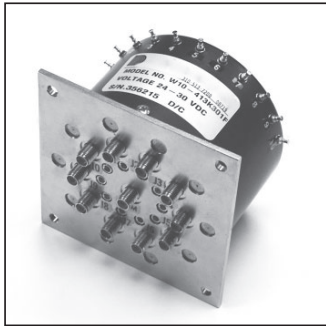
E-MAIL: nardaeast@L-3com.com

TEL: +1 631 231-1700



265

W SERIES
1P8T to 1P10T
MULTI POSITION SWITCH
DC-18 GHz ♦ **SMA**



The **W Series** features SMA connectors and a frequency range of DC to 18 GHz.

This series is available with normally open functions only.

RF Impedance: 50 ohms nominal
Temperature Range: -35°C to +85°C ambient
Operating Life: 1,000,000 cycles min.
Switching Time: 15 mSec max.
Switching Sequence: Break Before Make
Environmental: Designed in Accordance to MIL-DTL-3928 (Testing and Operation Modes)

SPECIFICATIONS

Frequency	VSWR (max.)	Insertion Loss (dB max.)	Isolation (dB min.)
DC-3 GHz	1.20	0.20	80
3-8 GHz	1.30	0.30	70
8-12.4 GHz	1.40	0.40	60
12.4-15.5 GHz	1.50	0.50	60
15.5-18 GHz	1.80	0.80	55

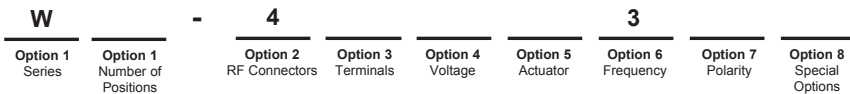
Actuator Current (typical)	12Vdc	12-15 Vdc	20-24 Vdc	24-30Vdc
Normally Open	270mA	270mA	150mA	140mA

* If reduced coil current is required, please contact Factory.

AVAILABLE OPTIONS

OPTION 2 RF CONNECTORS	OPTION 4 VOLTAGE	OPTION 5 ACTUATOR	OPTION 6 FREQUENCY	OPTION 8 SPECIAL OPTIONS
4 - SMA	1 - 6 Vdc +/- 10% 2 - 12 Vdc +/- 10% (USB Optional)	Normally Open G - Diodes, Indicators (USB Optional) H - Indicators J - Diodes (USB Optional) K - Standard	3 - DC to 18 GHz	L - TTL (High) LL - TTL (Low) 1 - Bracket F - Flange R - Reset (Latching Only) C - BCD H - Terminated U - USB
OPTION 3 TERMINALS	3 - 24-30 Vdc 4 - 48 Vdc +/- 10% 5 - 110 Vac +/- 10% 6 - 12-15 Vdc (USB Optional) 7 - 18-20 Vdc 8 - 20-24 Vdc		OPTION 7 POLARITY	
1 - Solder Terminals 2 - Circular Connector 4 - Sub Miniature D-Shell Connector 5 - USB			0 - Not Applicable, USB 8 - Positive Common 9 - Negative Common	

Please Note: USB integration can only be applied to Voltage Options 12Vdc, & 15Vdc, Polarity Option # 3, and Terminals Option # 3. The switch has a mini-USB socket on the enclosure interface which provides communication between switch and computers. Additionally, the enclosure also has a Molex socket for 12Vdc connection, which is required to power RF switch. The switch is accompanied with a CD driver, a 3 ft. USB cable and a 12 Vdc AC/DC adapter.



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Standard Custom Electro-Mechanical Switches

DC-18 GHz, SMA
SP9T-SP10T Series 091-101
Normally Open and Normally Open with Termination

RF Performance

Freq. Range (GHz)	DC-3	3-8	8-12.4	12.4-15.5	15.5-18
VSWR (max.)	1.2	1.3	1.4	1.5	1.7
Insertion Loss (dB max.)	0.2	0.3	0.4	0.5	0.7
Isolation (dB min.)	80	70	60	60	55



Additional Specifications

RF Impedance..... 50 ohms nominal
 Actuating Voltage*..... 28 Vdc
 Actuating Current*..... Normally Open: 160 mA (max.)
DA: 350 mA
 Switching Time..... 15 ms (max.)
 Switching Sequence..... Break Before Make
 Operating Ambient Temperature..... -35°C to +70°C
 Operating Life..... 1 Million Cycles per Position

* Specifications for 28 Vdc, 25°C

NOTES:
 Designed to meet MIL-S-3928.
 Power Handling shown on page 235.

Options Available (refer to pages 231-232)

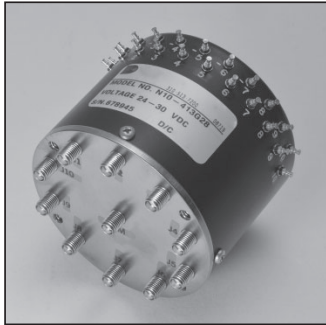
GROUP 2 ACTUATOR D - NORM OPEN DA - NORM OPEN FAILSAFE TO POSITION 1	GROUP 4 RF CONNECTORS A - SMA G - OTHER (SPECIFY)	GROUP 6 VOLTAGE B - 12VDC C - 24VDC D - 28VDC E - 48VDC G - OTHER (SPECIFY) H - 15VDC I - 18VDC	GROUP 8 POLARITY A - COMMON PLUS B - COMMON MINUS C - NOT RELEVANT TO APPLICATION OR SWITCHES WITH LOGIC
GROUP 3 OPTIONS 0 - NONE 1 - 50 OHM TERMINATION 2 - INDICATOR CIRCUITRY 3 - SUPPRESSION DIODES 4 - TTL LOGIC HIGH 9 - OTHER (SPECIFY) V - MOSFET DRIVER Y - BCD TTL DECODER	GROUP 5 TERMINALS 1 - SOLDER (STANDARD) 2 - POWER CONNECTOR, FAST DISCONNECT (STANDARD MIL) 3 - POWER CONNECTOR, FAST DISCONNECT (SUB MIN. "D") 4 - SOLDER (LOOP) 5 - OTHER (SPECIFY)	GROUP 7 FREQUENCY 0 - DC - 1 GHz 1 - DC - 3 GHz 2 - DC - 8 GHz 3 - DC - 12.4 GHz 4 - DC - 18 GHz 7 - OTHER (SPECIFY)	GROUP 9 MOUNTING 0 - STANDARD MOUNTING HOLES 1 - BRACKET 2 - FLANGE 3 - OTHER (SPECIFY)

Switch Height (A) for Selected Options

DIM A ±.03	GROUP 2 ACTUATION	GROUP 3 OPTIONS
2.10	D, DA	1,3
2.50	D, DA	1,2,3
2.91**	D, DA	1,2,3,4 OR 5,Y,V

** Dimension for switches with Standard Narda Power Connector MS3112E-16-26P mating with MS3116E-16-26S.

N SERIES
1P9T to 1P10T
MULTI POSITION SWITCH
DC-10.5 GHz ◆ SMA



The **N Series** features SMA connectors and a frequency range of DC to 10.5 GHz.

This series is available with latching self cut-off or normally open functions.

RF Impedance: 50 ohms nominal
Temperature Range: -35°C to +85°C ambient
Operating Life: 1,000,000 cycles min.
Switching Time: 15 mSec max.
Switching Sequence: Break Before Make
Environmental: Designed in Accordance to MIL-DTL-3928 (Testing and Operation Modes)

SPECIFICATIONS

Frequency	VSWR (max.)	Insertion Loss (dB max.)	Isolation (dB min.)
DC-3 GHz	1.20	0.20	80
3-8 GHz	1.40	0.40	70
8-10.5 GHz	1.50	0.50	60

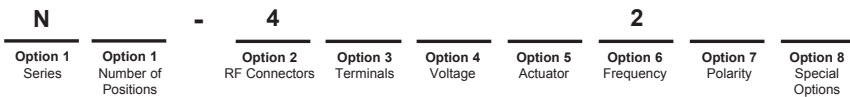
Actuator Current (typical)	12Vdc	12-15 Vdc	20-24 Vdc	24-30Vdc
Normally Open	240mA	240mA	170mA	140mA
Latching	280mA	280mA	180mA	180mA

* If reduced coil current is required, please contact Factory.

AVAILABLE OPTIONS

OPTION 2 RF CONNECTORS	OPTION 4 VOLTAGE	OPTION 5 ACTUATOR	OPTION 6 FREQUENCY	OPTION 8 SPECIAL OPTIONS
4 - SMA	1 - 6 Vdc +/- 10% 2 - 12 Vdc +/- 10% (USB Optional)	Latching Self Cut-Off D - Diodes (USB Optional) E - Diodes, Indicators (USB Optional)	2 - DC to 10.5 GHz	L - TTL (High) LL - TTL (Low) 1 - Bracket F - Flange P - High Power Handling R - Reset (Latching Only) C - BCD U - USB
OPTION 3 TERMINALS	3 - 24-30 Vdc 4 - 48 Vdc +/- 10% 5 - 110 Vac +/- 10% 6 - 12-15 Vdc (USB Optional)	Normally Open G - Diodes, Indicators (USB Optional) H - Indicators J - Diodes (USB Optional) K - Standard N - Failsafe to Position 1 - Standard R - Failsafe to Position 1 - Diodes S - Failsafe to Position 1 - Diodes, Indicators	OPTION 7 POLARITY 0 - Not Applicable, USB 8 - Positive Common 9 - Negative Common	
1 - Solder Terminals 2 - Circular Connector 4 - Sub Miniature 5 - USB	7 - 18-20 Vdc 8 - 20-24 Vdc			

Please Note: USB integration can only be applied to Voltage Options 12Vdc, & 15Vdc, Polarity Option # 3, and Terminals Option # 3. The switch has a mini-USB socket on the enclosure interface which provides communication between switch and computers. Additionally, the enclosure also has a Molex socket for 12Vdc connection, which is required to power RF switch. The switch is accompanied with a CD driver, a 3 ft. USB cable and a 12 Vdc AC/DC adapter.



Power Monitors and Sensors

RF Switching Products

Passive Components

Integrated Microwave Assemblies (IMAs)

Introduction

Standard Custom Electro-Mechanical Switches



DC-18 GHz, SMA

SP9T-SP10T Series 091-101
Latching and Latching with Termination

RF Performance

Freq. Range (GHz)	DC-3	3-8	8-12.4	12.4-15.5	15.5-18
VSWR (max.)	1.2	1.3	1.4	1.5	1.7
Insertion Loss (dB max.)	0.2	0.3	0.4	0.5	0.7
Isolation (dB min.)	80	70	60	60	55

Additional Specifications

RF Impedance..... 50 ohms nominal
 Actuating Voltage*..... 28 Vdc
 Actuating Current*..... Latching: (n)** x 100 mA (max.)
 Switching Time..... 15 ms (max.)
 Switching Sequence..... Break Before Make
 Operating Ambient Temperature..... -35°C to +70°C
 Operating Life..... 1 Million Cycles per Position

* Specifications for 28 Vdc, 25°C

** n = number of positions

NOTES:

Designed to meet MIL-5-3928.
 Power Handling shown on page 235.

Switch Height (A) for Selected Options

DIM A ±.03	GROUP 2 ACTUATION	GROUP 3 OPTIONS
2.10	D, DA	1,3
2.60	B, C	1,2,3,7
2.60	D, DA	1,2,3
2.98 [‡]	B, C	1,2,3,4 OR 5,7,Y
2.98 [‡]	D, DA	1,2,3,4 OR 5,Y

[‡] Dimension for switches with Standard Narda Power Connector MS3112E-16-26P mating with MS3116E-16-26S

Options Available (refer to pages 231-232)

GROUP 2 ACTUATION	GROUP 4 RF CONNECTORS	GROUP 6 VOLTAGE	GROUP 8 POLARITY
B - LATCHING C - LATCHING RESET	A - SMA G - OTHER (SPECIFY)	B - 12 VDC C - 24 VDC D - 28 VDC E - 48 VDC F - OTHER (SPECIFY) H - 15 VDC I - 18 VDC	A - COMMON PLUS B - COMMON MINUS C - NOT RELEVANT TO APPLICATION OR SWITCHES WITH LOGIC
GROUP 3 OPTIONS	GROUP 5 TERMINALS	GROUP 7 FREQUENCY	GROUP 9 MOUNTING
0 - NONE 1 - 50 OHM TERMINATION 2 - INDICATOR CIRCUITRY 3 - SUPPRESSION DIODES 4 - TTL LOGIC HIGH 7 - SELF DE-ENERGIZING CIRCUITRY 9 - OTHER (SPECIFY) V - MOSFET DRIVER Y - BCD TTL DECODER	1 - SOLDER (STANDARD) 2 - POWER CONNECTOR, FAST DISCONNECT (STANDARD MIL) 3 - POWER CONNECTOR, FAST DISCONNECT (SUB MIN. "D") 4 - SOLDER (LOOP) 5 - OTHER (SPECIFY)	0 - DC - 1 GHz 1 - DC - 3 GHz 2 - DC - 8 GHz 3 - DC - 12.4 GHz 4 - DC - 18 GHz 7 - OTHER (SPECIFY)	0 - STANDARD MOUNTING HOLES 1 - BRACKET 2 - FLANGE 3 - OTHER (SPECIFY)

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**T4 SERIES
TRANSFER SWITCH
DC-18 GHz ◆ SMA**



Power Monitors
and Sensors

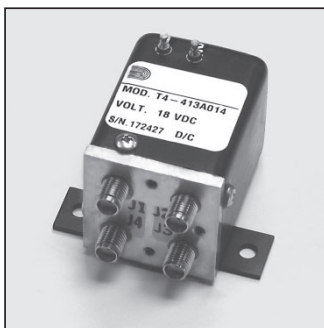
RF Switching
Products

Passive
Components

Integrated Microwave
Assemblies (IMAs)

Introduction

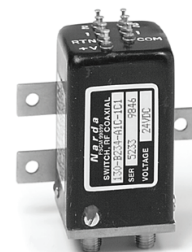
Standard Custom Electro-Mechanical Switches



The **T4 Series** features SMA connectors and a frequency range of DC to 18 GHz.

This series is available with fail-safe, latching self cut-off or pulse latching functions.

RF Impedance: 50 ohms nominal
Temperature Range: -35°C to +85°C ambient
Operating Life: 1,000,000 cycles min.
Switching Time: 15 mSec max.
Switching Sequence: Break Before Make
Environmental: Designed in Accordance to MIL-DTL-3928 (Testing and Operation Modes)



**DC-26.5 GHz, SMA
DP2T Series 130 Transfer Switch**

RF Performance

Freq. Range (GHz)	DC-3	3-8	8-12.4	12.4-18	18-26.5
VSWR (max.)	1.2	1.3	1.4	1.5	1.7
Insertion Loss (dB max.)	0.2	0.3	0.4	0.5	0.7
Isolation (dB min.)	80	70	60	60	50

Additional Specifications

RF Impedance..... 50 ohms nominal
 Actuating Voltage*..... 28 Vdc
 Actuating Current* Fail-safe: 280 mA (max.)
 Latching: 350 mA (max.)
 Switching Time..... 15 ms (max.)
 Switching Sequence..... Break Before Make
 Operating Ambient Temperature..... -35°C to +70°C
 Operating Life..... 1 Million Cycles per Position

* Specifications for 28 Vdc, 25°C

NOTES:
 Designed to meet MIL-5-3928.
 Power Handling shown on page 235.

Standard SEM models from this series are available from stock. See page 230 for a complete listing of stock switches, XSEM series.

**Switch Height (A)
for Selected Options**

DIM A ±.03	GROUP 2 ACTUATION	GROUP 3 OPTIONS
1.73	A, D	0,2,3
1.73	B	0,2
2.10	A, D	2,3,4 or 5,V
2.10	B	2,3,4 OR 5,7,V
2.50**	B	2,3,4 OR 5,7,V
2.50**	A, D	2,3,4 OR 5,V

** Dimension for switches with Standard Narda Power Connector MS3112E-12-8P mating with MS3116E-12-8S

Options Available (refer to pages 231-232)

GROUP 2 ACTUATION A - FAILSAFE B - LATCHING	GROUP 4 RF CONNECTORS A - SMA G - OTHER (SPECIFY)	GROUP 6 VOLTAGE B - 12VDC C - 24VDC D - 28VDC E - 48VDC G - OTHER (SPECIFY) H - 15VDC I - 18VDC	GROUP 8 POLARITY A - COMMON PLUS B - COMMON MINUS C - NOT RELEVANT TO APPLICATION OR SWITCHES WITH LOGIC
GROUP 3 OPTIONS 0 - NONE 2 - INDICATOR CIRCUITRY 3 - SUPPRESSION DIODES 4 - TTL LOGIC HIGH 7 - SELF DE-ENERGIZING CIRCUITRY 9 - OTHER (SPECIFY) V - MOSFET DRIVER	GROUP 5 TERMINALS 1 - SOLDER (STANDARD) 2 - POWER CONNECTOR, FAST DISCONNECT (STANDARD MIL) 3 - POWER CONNECTOR, FAST DISCONNECT (SUB MIN. "D") 4 - SOLDER (LOOP) 5 - OTHER (SPECIFY)	GROUP 7 FREQUENCY 0 - DC - 1 GHz 1 - DC - 3 GHz 2 - DC - 8 GHz 3 - DC - 12.4 GHz 4 - DC - 18 GHz 5 - DC - 18.5 GHz 6 - DC - 26.5 GHz 7 - OTHER (SPECIFY)	GROUP 9 MOUNTING 0 - STANDARD MOUNTING HOLES 1 - BRACKET 3 - OTHER (SPECIFY)

SPECIFICATIONS

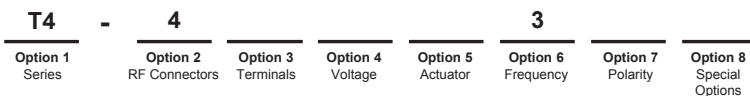
Frequency	VSWR (max.)	Insertion Loss (dB max.)	Isolation (dB min.)
DC-3 GHz	1.20	0.20	80
3-8 GHz	1.30	0.30	70
8-12.4 GHz	1.40	0.40	60
12.4-18 GHz	1.50	0.50	60

Actuator Current (typical)	12Vdc	12-15 Vdc	20-24 Vdc	24-30Vdc
Fail-safe	480mA	480mA	330mA	280mA
Latching	280mA	280mA	270mA	220mA

* If reduced coil current is required, please contact Factory.

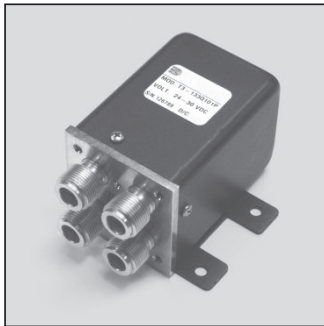
AVAILABLE OPTIONS

OPTION 2 RF CONNECTORS	OPTION 4 VOLTAGE	OPTION 5 ACTUATOR	OPTION 6 FREQUENCY	OPTION 8 SPECIAL OPTIONS
4 - SMA	1 - 6 Vdc +/- 10% 2 - 12 Vdc +/- 10% 3 - 24-30 Vdc 4 - 48 Vdc +/- 10% 5 - 110 Vac +/- 10% 6 - 12-15 Vdc 7 - 18-20 Vdc 8 - 20-24 Vdc	Fail-safe A - Standard Diodes M - Indicators Diodes, Indicators Latching Self Cut-Off D - Diodes E - Diodes, Indicators Pulse Latching C - Standard Diodes Y - Indicators Diodes, Indicators	3 - DC to 18 GHz	L - TTL (High) LL - TTL (Low) 1 - Bracket M - Manual Override P - High Power Handling
OPTION 3 TERMINALS			OPTION 7 POLARITY	
1 - Solder Terminals 2 - Circular Connector 4 - Sub M inialture D-Shell Connector			0 - Not Applicable 8 - Positive Common 9 - Negative Common	



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**T3 SERIES
TRANSFER SWITCH
DC-12.4 GHz ◆ N, BNC, TNC**



The **T3 Series** features N, BNC or TNC connectors and a frequency range of DC to 12.4 GHz.

This series is available with fail-safe, latching self cut-off or pulse latching functions.

RF Impedance:	50 ohms nominal
Temperature Range:	-35°C to +85°C ambient
Operating Life:	1,000,000 cycles min.
Switching Time:	15 mSec max.
Switching Sequence:	Break Before Make
Environmental:	Designed in Accordance to MIL-DTL-3928 (Testing and Operation Modes)

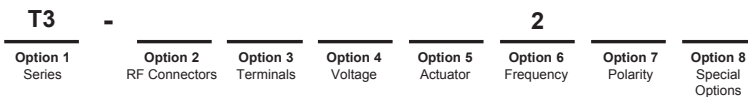
Frequency	VSWR (max.)	Insertion Loss (dB max.)	Isolation (dB min.)
DC-3 GHz	1.20	0.20	80
3-8 GHz	1.35	0.35	70
8-12.4 GHz	1.50	0.50	60

Actuator Current (typical)	12Vdc	15 Vdc	22 Vdc	28 Vdc
Failsafe	480mA	480mA	270mA	280mA
Latching	280mA	280mA	270mA	220mA

* If reduced coil current is required, please contact Factory.

AVAILABLE OPTIONS

OPTION 2 RF CONNECTORS	OPTION 4 VOLTAGE	OPTION 5 ACTUATOR	OPTION 6 FREQUENCY	OPTION 8 SPECIAL OPTIONS
1 - N 2 - BNC 3 - TNC	1 - 6 Vdc +/- 10% 2 - 12 Vdc +/- 10% 3 - 24-30 Vdc 4 - 48 Vdc +/- 10% 5 - 110 Vdc +/- 10%	Fail-Safe A - Standard B - Indicators M - Diodes Q - Diodes, Indicators	2 - DC to 12.4 GHz	L - TTL (High) LL - TTL (Low) 1 - Bracket M - Manual Override P - High Power Handling
OPTION 3 TERMINALS	6 - 12-15 Vdc 7 - 18-20 Vdc 8 - 20-24 Vdc	Latching Self Cut-Off D - Diodes E - Diodes, Indicators	OPTION 7 POLARITY 0 - Not Applicable 8 - Positive Common 9 - Negative Common	
1 - Solder Terminals 2 - Circular Connector 4 - Sub Miniature D-Shell Connector		Pulse Latching C - Standard Y - Diodes F - Indicators L - Diodes, Indicators		



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Standard Custom Electro-Mechanical Switches

**DC-12.4 GHz, Type N and TNC
DP2T Series 132 Transfer Switch**

RF Performance

Freq. Range (GHz)	DC-3	3-8	8-12.4
VSWR (max.)	1.2	1.35	1.5
Insertion Loss (dB max.)	0.2	0.35	0.5
Isolation (dB min.)	80	70	60



Additional Specifications

RF Impedance..... 50 ohms nominal
 Actuating Voltage*..... 28 Vdc
 Actuating Current*..... Failsafe: 360 mA (max.)
 Latching: 360 mA (max.)
 Switching Time..... 20 ms (max.)
 Switching Sequence..... Break Before Make
 Operating Ambient Temperature..... -35°C to +70°C
 Operating Life..... 1 Million Cycles per Position

* Specifications for 28 Vdc, 25°C

NOTES:
 Designed to meet MIL-S-3928.
 Power Handling shown on page 235.

Options Available (refer to pages 231-232)

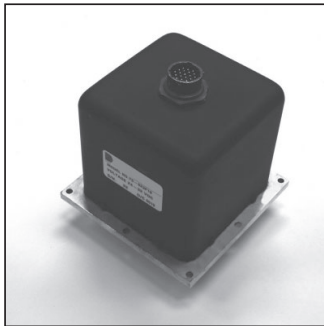
GROUP 2 ACTUATION A - FAILSAFE B - LATCHING	GROUP 4 RF CONNECTORS D - TYPE N E - TNC G - OTHER (SPECIFY)	GROUP 6 VOLTAGE B - 12VDC C - 24VDC D - 28VDC E - 48VDC G - OTHER (SPECIFY) H - 15VDC I - 18VDC	GROUP 8 POLARITY A - COMMON PLUS B - COMMON MINUS C - NOT RELEVANT TO APPLICATION OR SWITCHES WITH LOGIC
GROUP 3 OPTIONS 0 - NONE 2 - INDICATOR CIRCUITRY 3 - SUPPRESSION DIODES 4 - TTL LOGIC HIGH 7 - SELF DE-ENERGIZING CIRCUITRY 9 - OTHER (SPECIFY) V - MOSFET DRIVER	GROUP 5 TERMINALS 1 - SOLDER (STANDARD) 2 - POWER CONNECTOR, FAST DISCONNECT (STANDARD MIL) 3 - POWER CONNECTOR, FAST DISCONNECT (SUB MIN "D") 4 - SOLDER (LOOP) 5 - OTHER (SPECIFY)	GROUP 7 FREQUENCY 0 - DC - 1 GHz 1 - DC - 3 GHz 2 - DC - 8 GHz 3 - DC - 12.4 GHz 7 - OTHER (SPECIFY)	GROUP 9 MOUNTING 0 - STANDARD MOUNTING HOLES 1 - BRACKET 3 - OTHER (SPECIFY)

Switch Height (A) for Selected Options

DIM A ±.03	GROUP 2 ACTUATION	GROUP 3 OPTIONS
2.13	A, D	0,2,3,4 or 5,V
2.13	B	0,2,3,4 OR 5,7,V
2.63**	B	0,2,3,4 OR 5,7,V
2.63**	A, D	0,2,3,4 OR 5,V

** Dimension for switches with Standard Narda Power Connector MS3112E-12-8P mating with MS3116E-12-8S

**T5 SERIES
TRANSFER SWITCH
DC- 6.5 GHz ◆ SC**



The **T5 Series** features SC connectors and a frequency range of DC to 6.5 GHz.

This series is available with fail-safe, latching self cut-off or pulse latching functions.

RF Impedance: 50 ohms nominal
Temperature Range: -35°C to +85°C ambient
Operating Life: 1,000,000 cycles min.
Switching Time: 15 mSec max.
Switching Sequence: Break Before Make
Environmental: Designed in Accordance to MIL-DTL-3928 (Testing and Operation Modes)

SPECIFICATIONS

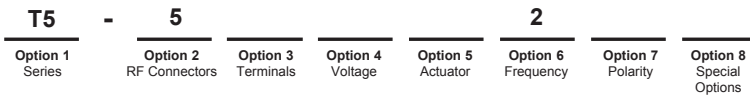
Frequency	VSWR (max.)	Insertion Loss (dB max.)	Isolation (dB min.)
DC-1 GHz	1.15	0.15	60
1-3 GHz	1.35	0.35	60
3-6.5 GHz	1.50	0.50	60

Actuator Current (typical)	Actuator Current			
	12Vdc	12-15 Vdc	20-24 Vdc	24-30Vdc
Failsafe	480mA	480mA	270mA	280mA
Latching	280mA	280mA	270mA	220mA

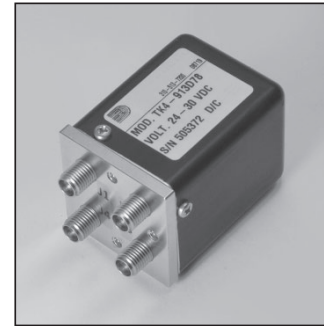
* If reduced coil current is required, please contact Factory.

AVAILABLE OPTIONS

OPTION 2 RF CONNECTORS	OPTION 4 VOLTAGE	OPTION 5 ACTUATOR	OPTION 6 FREQUENCY	OPTION 8 SPECIAL OPTIONS
5 - SC	1 - 6 Vdc +/- 10% 2 - 12 Vdc +/- 10% 3 - 24-30 Vdc 4 - 48 Vdc +/- 10% 5 - 110 Vac +/- 10%	Failsafe A - Standard B - Indicators M - Diodes Q - Diodes, Indicators	2 - DC to 6.5 GHz	L - TTL (High) LL - TTL (Low) 1 - Bracket M - Manual Override P - High Power Handling
OPTION 3 TERMINALS	6 - 12-15 Vdc 7 - 18-20 Vdc 8 - 20-24 Vdc	Latching Self Cut-Off D - Diodes E - Diodes, Indicators	OPTION 7 POLARITY 0 - Not Applicable 8 - Positive Common 9 - Negative Common	
1 - Solder Terminals 2 - Circular Connector 4 - Sub M Inialture D-Shell Connector		Pulse Latching C - Standard F - Indicators Y - Diodes L - Diodes, Indicators		



**TK4 SERIES
TRANSFER SWITCH
DC- 40 GHz ◆ K**



The **TK4 Series** features K connectors and a frequency range of DC to 40 GHz.

This series is available with failsafe, latching self cut-off or pulse latching functions.

RF Impedance: 50 ohms nominal
Temperature Range: -35°C to +85°C ambient
Operating Life: 1,000,000 cycles min.
Switching Time: 15 mSec max.
Switching Sequence: Break Before Make
Environmental: Designed in Accordance to MIL-DTL-3928 (Testing and Operation Modes)

SPECIFICATIONS

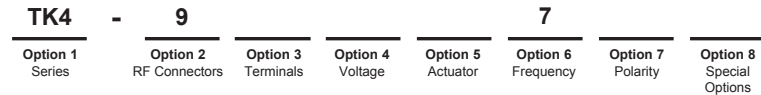
Frequency	VSWR (max.)	Insertion Loss (dB max.)	Isolation (dB min.)
DC-6 GHz	1.30	0.30	70
6-12 GHz	1.40	0.40	60
12-18 GHz	1.50	0.50	60
18-26.5 GHz	1.70	0.70	55
26.5-40 GHz	2.00	1.00	50

Actuator Current (typical)	Actuator Current			
	12Vdc	12-15 Vdc	20-24 Vdc	24-30Vdc
Failsafe	480mA	480mA	330mA	280mA
Latching	280mA	280mA	270mA	220mA

* If reduced coil current is required, please contact Factory.

AVAILABLE OPTIONS

OPTION 2 RF CONNECTORS	OPTION 4 VOLTAGE	OPTION 5 ACTUATOR	OPTION 6 FREQUENCY	OPTION 8 SPECIAL OPTIONS
9 - K	1 - 6 Vdc +/- 10% 2 - 12 Vdc +/- 10% 3 - 24-30 Vdc 4 - 48 Vdc +/- 10% 5 - 110 Vac +/- 10%	Failsafe A - Standard B - Indicators M - Diodes Q - Diodes, Indicators	7 - DC to 40 GHz	L - TTL (High) LL - TTL (Low) 1 - Bracket
OPTION 3 TERMINALS	6 - 12-15 Vdc 7 - 18-20 Vdc 8 - 20-24 Vdc	Latching Self Cut-Off D - Diodes E - Diodes, Indicators	OPTION 7 POLARITY 0 - Not Applicable 8 - Positive Common 9 - Negative Common	
1 - Solder Terminals 2 - Circular Connector 4 - Sub M Inialture D-Shell Connector		Pulse Latching C - Standard F - Indicators Y - Diodes L - Diodes, Indicators		



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The **TL4 Series** features 2.4 mm connectors and a frequency range of DC to 46 GHz.

This series is available with failsafe, latching self cut-off or pulse latching functions.

RF Impedance: 50 ohms nominal
Temperature Range: -35°C to +85°C ambient
Operating Life: 1,000,000 cycles min.
Switching Time: 15 mSec max.
Switching Sequence: Break before make
Environmental: Designed in accordance to MIL-DTL-3928 (testing and operation modes)

SPECIFICATIONS

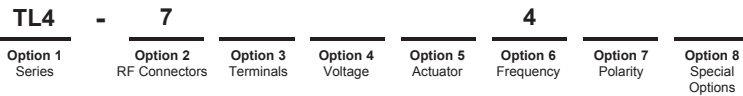
Frequency	VSWR (max.)	Insertion Loss (dB max.)	Isolation (dB min.)
DC-6 GHz	1.30	0.30	70
6-12 GHz	1.40	0.40	60
12-18 GHz	1.50	0.50	60
18-26.5 GHz	1.70	0.70	55
26.5-46 GHz	2.00	1.00	50

Actuator Current (typical)	12Vdc	12-15 Vdc	20-24 Vdc	24-30Vdc
Failsafe	480mA	480mA	330mA	280mA
Latching	280mA	280mA	270mA	220mA

If reduced coil current is required, please contact rfsales@ducommun.com.

AVAILABLE OPTIONS

OPTION 2 RF CONNECTORS	OPTION 4 VOLTAGE	OPTION 5 ACTUATOR	OPTION 6 FREQUENCY	OPTION 8 SPECIAL OPTIONS
7 - 2.4 mm	1 - 0 Vdc +/- 10% 2 - 12 Vdc +/- 10% 3 - 24-30 Vdc 4 - 48 Vdc +/- 10% 5 - 110 Vac +/- 10%	Failsafe A - Standard M - Diodes B - Indicators Q - Diodes, Indicators	4 - DC to 46 GHz	L - TTL (High) LL - TTL (Low) 1 - Bracket
OPTION 3 TERMINALS	6 - 12-15 Vdc 7 - 18-20 Vdc 8 - 20-24 Vdc	Latching Self Cut-Off D - Diodes E - Diodes, Indicators	OPTION 7 POLARITY 0 - Not Applicable 8 - Positive Common 9 - Negative Common	
1 - Solder Terminals 2 - Circular Connector 4 - Sub Miniature D-Shell Connector		Pulse Latching C - Standard Y - Diodes		



**D5 SERIES
SPDT SWITCH
HIGH POWER
DC-6.5 GHz ◆ SC**



The **D5 Series** features SC connectors and a frequency range of DC to 6.5 GHz.

This series is available with fail-safe, latching self cut-off or pulse latching functions.

RF Impedance: 50 ohms nominal
Temperature Range: -35°C to +85°C ambient
Operating Life: 1,000,000 cycles min.
Switching Time: 15 mSec max.
Switching Sequence: Break Before Make
Environmental: Designed in Accordance to MIL-DTL-3928 (Testing and Operation Modes)

SPECIFICATIONS

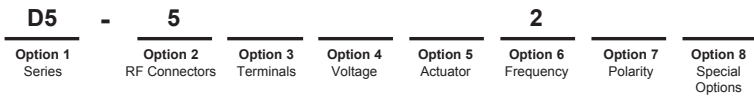
Frequency	VSWR (max.)	Insertion Loss (dB max.)	Isolation (dB min.)
DC-1 GHz	1.15	0.15	60
1-3 GHz	1.35	0.35	60
3-6.5 GHz	1.50	0.50	60

Actuator Current (typical)	12Vdc	12-15 Vdc	20-24 Vdc	24-30Vdc
Failsafe	240mA	240mA	200mA	190mA
Latching	140mA	140mA	130mA	130mA

* If reduced coil current is required, please contact Factory.

AVAILABLE OPTIONS

OPTION 2 RF CONNECTORS	OPTION 4 VOLTAGE	OPTION 5 ACTUATOR	OPTION 6 FREQUENCY	OPTION 8 SPECIAL OPTIONS
5 - SC	1 - 6 Vdc +/- 10% 2 - 12 Vdc +/- 10% 3 - 24-30 Vdc 4 - 48 Vdc +/- 10% 5 - 110 Vac +/- 10%	Failsafe A - Standard M - Diodes B - Indicators Q - Diodes, Indicators	2 - DC to 6.5 GHz	L - TTL (High) LL - TTL (Low) P - High Power Handling
OPTION 3 TERMINALS	6 - 12-15 Vdc 7 - 18-20 Vdc 8 - 20-24 Vdc	Latching Self Cut-Off D - Diodes E - Diodes, Indicators	OPTION 7 POLARITY 0 - Not Applicable 8 - Positive Common 9 - Negative Common	
1 - Solder Terminals 2 - Circular Connector 4 - Sub Miniature D-Shell Connector		Pulse Latching C - Standard F - Indicators		



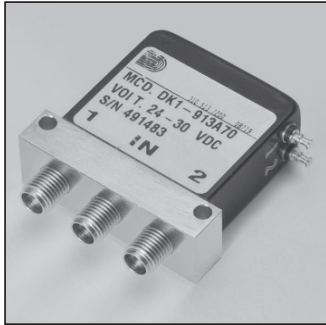
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**DK1 SERIES
SPDT SWITCH
DC-40 GHz ◆ K**



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**DL1 SERIES
DC-46 GHz | 2.4 mm**



The DK1 Series features K connectors and a frequency range of DC to 40 GHz.

This series is available with fail-safe, latching self cut-off or pulse latching functions.

RF Impedance: 50 ohms nominal
Temperature Range: -35°C to +85°C ambient
Operating Life: 1,000,000 cycles min.
Switching Time: 15 mSec max.
Switching Sequence: Break Before Make
Environmental: Designed in Accordance to MIL-DTL-3928 (Testing and Operation Modes)

SPDT SWITCH



The DL1 Series features 2.4 mm connectors and a frequency range of DC to 46 GHz.

This series is available with fail-safe, latching self cut-off or pulse latching functions.

RF Impedance: 50 ohms nominal
Temperature Range: -35°C to +85°C ambient
Operating Life: 1,000,000 cycles min.
Switching Time: 15 mSec max.
Switching Sequence: Break before make
Environmental: Designed in accordance to MIL-DTL-3928 (testing and operation modes)

SPECIFICATIONS

Frequency	VSWR (max.)	Insertion Loss (dB max.)	Isolation (dB min.)
DC-6 GHz	1.30	0.30	70
6-12 GHz	1.40	0.40	60
12-18 GHz	1.50	0.50	60
18-26.5 GHz	1.70	0.70	55
26.5-32 GHz	1.90	0.80	50
32-40 GHz	2.00	1.00	50

Actuator Current (typical)	Actuator Voltage			
	12Vdc	12-15 Vdc	20-24 Vdc	24-30Vdc
Fail-safe	240mA	300mA	200mA	140mA
Latching	141mA	176mA	109mA	88mA

* If reduced coil current is required, please contact Factory.

SPECIFICATIONS

Frequency	VSWR (max.)	Insertion Loss (dB max.)	Isolation (dB min.)
DC-6 GHz	1.30	0.30	70
6-12 GHz	1.40	0.40	60
12-18 GHz	1.50	0.50	60
18-26.5 GHz	1.70	0.70	55
26.5-32 GHz	1.90	0.80	50
32-46 GHz	2.00	1.00	50

Actuator Current (typical)	Actuator Voltage			
	12Vdc	12-15 Vdc	20-24 Vdc	24-30Vdc
Fail-safe	240mA	300mA	200mA	140mA
Latching	141mA	176mA	109mA	88mA

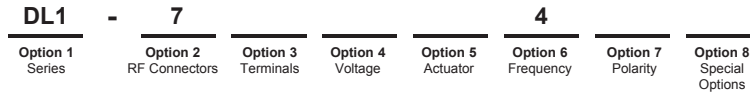
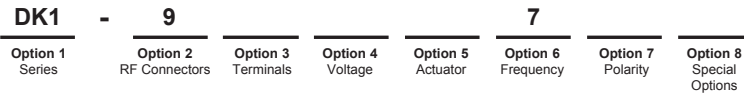
If reduced coil current is required, please contact rfsales@ducommun.com.

AVAILABLE OPTIONS

OPTION 2 RF CONNECTORS	OPTION 4 VOLTAGE	OPTION 5 ACTUATOR	OPTION 6 FREQUENCY	OPTION 8 SPECIAL OPTIONS
9 - K	1 - 6 Vdc +/- 10% 2 - 12 Vdc +/- 10% 3 - 24-30 Vdc	Fail-safe A - Standard M - Diodes B - Indicators Q - Diodes, Indicators	7 - DC to 40 GHz	L - TTL (High) LL - TTL (Low)
OPTION 3 TERMINALS	4 - 48 Vdc +/- 10% 5 - 110 Vac +/- 10% 6 - 12-15 Vdc 7 - 18-20 Vdc 8 - 20-24 Vdc	Latching Self Cut-Off D - Diodes E - Diodes, Indicators	OPTION 7 POLARITY 0 - Not Applicable 8 - Positive Common 9 - Negative Common	
1 - Solder Terminals 4 - Sub Miniature D-Shell Connector		Pulse Latching C - Standard Y - Diodes F - Indicators L - Diodes, Indicators		

AVAILABLE OPTIONS

OPTION 2 RF CONNECTORS	OPTION 4 VOLTAGE	OPTION 5 ACTUATOR	OPTION 6 FREQUENCY	OPTION 8 SPECIAL OPTIONS
7 - 2.4 mm	1 - 6 Vdc +/- 10% 2 - 12 Vdc +/- 10% 3 - 24-30 Vdc	Fail-safe A - Standard M - Diodes B - Indicators Q - Diodes, Indicators	4 - DC to 46 GHz	L - TTL (High) LL - TTL (Low)
OPTION 3 TERMINALS	4 - 48 Vdc +/- 10% 5 - 110 Vac +/- 10% 6 - 12-15 Vdc 7 - 18-20 Vdc 8 - 20-24 Vdc	Latching Self Cut-Off D - Diodes E - Diodes, Indicators	OPTION 7 POLARITY 0 - Not Applicable 8 - Positive Common 9 - Negative Common	
1 - Solder Terminals 4 - Sub Miniature D-Shell Connector		Pulse Latching C - Standard Y - Diodes F - Indicators		



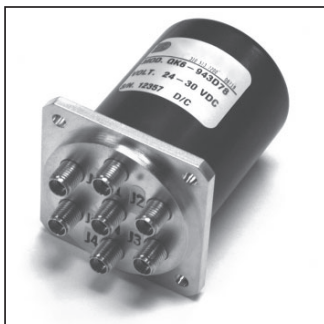
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QK SERIES
1P3T to 1P6T
MULTI POSITION SWITCH
DC-40 GHz ◆ K



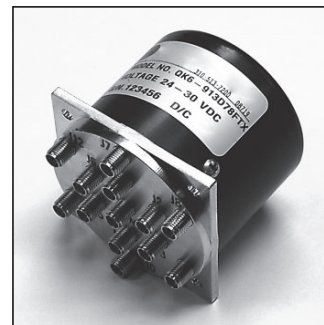
QK SERIES
1P3T to 1P6T MULTI POSITION 50
OHM TERMINATED SWITCH
DC- 40 GHz ◆ K



The **QK Series** features K connectors and a frequency range of DC to 40 GHz.

This series is available with latching self cut-off or normally open functions.

RF Impedance: 50 ohms nominal
Temperature Range: -35°C to +85°C ambient
Operating Life: 1,000,000 cycles min.
Switching Time: 15 mSec max.
Switching Sequence: Break Before Make
Environmental: Designed in Accordance to MIL-DTL-3928 (Testing and Operation Modes)



The **QK Series** features K connectors and a frequency range of DC to 40 GHz.

This series is available with latching self cut-off or normally open functions with terminations.

RF Impedance: 50 ohms nominal
Temperature Range: -35°C to +85°C ambient
Operating Life: 1,000,000 cycles min.
Switching Time: 15 mSec max.
Switching Sequence: Break Before Make
Environmental: Designed in Accordance to MIL-DTL-3928 (Testing and Operation Modes)

SPECIFICATIONS

Frequency	VSWR (max.)	Insertion Loss (dB max.)	Isolation (dB min.)
DC-6 GHz	1.30	0.20	70
6-12 GHz	1.40	0.40	60
12-18 GHz	1.50	0.50	60
18-26.5 GHz	1.70	0.70	55
26.5-40 GHz	2.00	1.00	50

Actuator Current (typical)	12Vdc	12-15 Vdc	20-24 Vdc	24-30Vdc
Normally Open	180mA	180mA	130mA	140mA

* If reduced coil current is required, please contact Factory.

SPECIFICATIONS

Frequency	VSWR (max.)	Insertion Loss (dB max.)	Isolation (dB min.)
DC-6 GHz	1.30	0.20	70
6-12 GHz	1.40	0.40	60
12-18 GHz	1.50	0.50	60
18-26.5 GHz	1.70	0.70	55
26.5-40 GHz	2.00	1.00	50

Actuator Current (typical)	12Vdc	12-15 Vdc	20-24 Vdc	24-30Vdc
Normally Open	282mA	353mA	218mA	175mA

* If reduced coil current is required, please contact Factory.

AVAILABLE OPTIONS

OPTION 2 RF CONNECTORS	OPTION 4 VOLTAGE	OPTION 5 ACTUATOR	OPTION 6 FREQUENCY	OPTION 8 SPECIAL OPTIONS
9 - K	1 - 6 Vdc +/- 10% 2 - 12 Vdc +/- 10% (USB Optional) 3 - 24-30 Vdc 4 - 48 Vdc +/- 10% 5 - 110 Vdc +/- 10% 6 - 12-15 Vdc (USB Optional) 7 - 18-20 Vdc 8 - 20-24 Vdc	Normally Open G - Diodes, Indicators (USB Optional) H - Indicators J - Diodes (USB Optional) K - Standard	7 - DC to 40 GHz OPTION 7 POLARITY 0 - Not Applicable, USB 8 - Positive Common 9 - Negative Common	L - TTL (High) LL - TTL (Low) 1 - Bracket F - Flange U - USB
OPTION 3 TERMINALS				OPTION 8 SPECIAL OPTIONS
1 - Solder Terminals 2 - Circular Connector 4 - Sub Miniature D-Shell Connector 5 - USB				L - TTL (High) LL - TTL (Low) R - Reset (Latching Only) T - Termination U - USB

Please Note: USB integration can only be applied to Voltage Options 12Vdc, & 15Vdc, Polarity Option # 3, and Terminals Option # 3. The switch has a mini-USB socket on the enclosure interface which provides communication between switch and computers. Additionally, the enclosure also has a Molex socket for 12Vdc connection, which is required to power RF switch. The switch is accompanied with a CD driver, a 3 ft. USB cable and a 12 Vdc AC/DC adapter.

AVAILABLE OPTIONS

OPTION 2 RF CONNECTORS	OPTION 4 VOLTAGE	OPTION 5 ACTUATOR	OPTION 6 FREQUENCY	OPTION 8 SPECIAL OPTIONS
9 - K	1 - 6 Vdc +/- 10% 2 - 12 Vdc +/- 10% (USB Optional) 3 - 24-30 Vdc 4 - 48 Vdc +/- 10% 5 - 110 Vdc +/- 10% 6 - 12-15 Vdc (USB Optional) 7 - 18-20 Vdc 8 - 20-24 Vdc	Latching Self Cut-Off D - Diodes (USB Optional) E - Diodes, Indicators (USB Optional)	7 - DC to 40 GHz OPTION 7 POLARITY 0 - Not Applicable, USB 8 - Positive Common 9 - Negative Common	L - TTL (High) LL - TTL (Low) R - Reset (Latching Only) T - Termination U - USB
OPTION 3 TERMINALS				OPTION 8 SPECIAL OPTIONS
1 - Solder Terminals 2 - Circular Connector 4 - Sub Miniature D-Shell Connector 5 - USB				L - TTL (High) LL - TTL (Low) R - Reset (Latching Only) T - Termination U - USB

Please Note: USB integration can only be applied to Voltage Options 12Vdc, & 15Vdc, Polarity Option # 3, and Terminals Option # 3. The switch has a mini-USB socket on the enclosure interface which provides communication between switch and computers. Additionally, the enclosure also has a Molex socket for 12Vdc connection, which is required to power RF switch. The switch is accompanied with a CD driver, a 3 ft. USB cable and a 12 Vdc AC/DC adapter.

QK

- 9

7

Option 1 Series	Option 1 Number of Positions	Option 2 RF Connectors	Option 3 Terminals	Option 4 Voltage	Option 5 Actuator	Option 6 Frequency	Option 7 Polarity	Option 8 Special Options

QK

- 9

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Option 1 Series	Option 1 Number of Positions	Option 2 RF Connector	Option 3 Terminals	Option 4 Voltage	Option 5 Actuator	Option 6 Frequency	Option 7 Polarity	Option 8 Special Options

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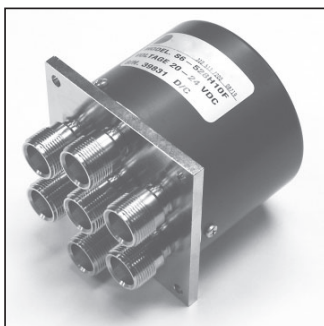
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S SERIES
1P3T to 1P6T
MULTI POSITION SWITCH
DC- 6.5 GHz ◆ SC



QL SERIES (1P3T TO 1P6T)
DC-46 GHz | 2.4 MM

310.513.7200
 rfsales@ducommun.com
 www.ducommun.com



The **S Series** features SC connectors and a frequency range of DC to 6.5 GHz and is designed for high power applications.

This series available with latching self cut-off or normally open functions.

RF Impedance: 50 ohms nominal
Temperature Range: -35°C to +85°C ambient
Operating Life: 1,000,000 cycles min.
Switching Time: 15 mSec max.
Switching Sequence: Break Before Make
Environmental: Designed in Accordance to MIL-DTL-3928 (Testing and Operation Modes)



The **QL Series** features 2.4mm connectors and a frequency range of DC to 46 GHz.

This series is available with normally open functions.

RF Impedance: 50 ohms nominal
Temperature Range: -35°C to +85°C ambient
Operating Life: 1,000,000 cycles min.
Switching Time: 15 mSec max.
Switching Sequence: Break before make
Environmental: Designed in accordance to MIL-DTL-3928 (testing and operation modes)

SPECIFICATIONS

Frequency	VSWR (max.)	Insertion Loss (dB max.)	Isolation (dB min.)
DC-1 GHz	1.15	0.15	80
1-3 GHz	1.35	0.35	70
3-6.5 GHz	1.50	0.50	60

Actuator Current (typical)	12Vdc	12-15 Vdc	20-24 Vdc	24-30Vdc
Normally Open	240mA	240mA	170mA	140mA
Latching	280mA	280mA	270mA	220mA

* If reduced coil current is required, please contact Factory.

SPECIFICATIONS

Frequency	VSWR (max.)	Insertion Loss (dB max.)	Isolation (dB min.)
DC-6 GHz	1.30	0.20	70
6-12 GHz	1.40	0.40	60
12-18 GHz	1.50	0.50	60
18-26.5 GHz	1.70	0.70	55
26.5-46 GHz	2.00	1.00	50

Actuator Current (typical)	12Vdc	12-15 Vdc	20-24 Vdc	24-30Vdc
Normally Open	180mA	180mA	130mA	140mA

If reduced coil current is required, please contact rfsales@ducommun.com.

AVAILABLE OPTIONS

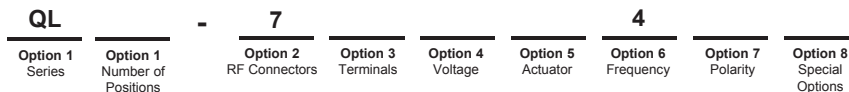
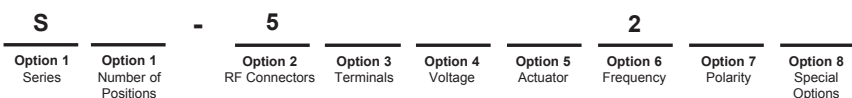
OPTION 2 RF CONNECTORS	OPTION 4 VOLTAGE	OPTION 5 ACTUATOR	OPTION 6 FREQUENCY	OPTION 8 SPECIAL OPTIONS
5 - SC	1 - 6 Vdc +/- 10% 2 - 12 Vdc +/- 10% 3 - 24-30 Vdc (USB Optional)	Latching Self Cut-Off D - Diodes (USB Optional) E - Diodes, Indicators (USB Optional)	2 - DC to 6.5 GHz	L - TTL (High) LL - TTL (Low) 1 - Bracket F - Flange R - Reset (Latching Only) C - BCD U - USB
OPTION 3 TERMINALS	4 - 48 Vdc +/- 10% 5 - 110 Vac +/- 10% 6 - 12-15 Vdc (USB Optional) 7 - 18-20 Vdc 8 - 20-24 Vdc	Normally Open G - Diodes, Indicators (USB Optional) H - Indicators J - Diodes (USB Optional) K - Standard N - Fallsafe to Position 1 - Standard R - Fallsafe to Position 1 - Diodes S - Fallsafe to Position 1 - Diodes, Indicators	OPTION 7 POLARITY 0 - Not Applicable, USB 8 - Positive Common 9 - Negative Common	
1 - Solder Terminals 2 - Circular Connector 4 - Sub Miniature D-Shell Connector 5 - USB				

Please Note: USB integration can only be applied to Voltage Options 12Vdc, & 15Vdc, Polarity Option # 3, and Terminals Option # 3. The switch has a mini-USB socket on the enclosure interface which provides communication between switch and computers. Additionally, the enclosure also has a Molex socket for 12Vdc connection, which is required to power RF switch. The switch is accompanied with a CD driver, a 3 ft. USB cable and a 12 Vdc AC/DC adapter.

MULTI POSITION SWITCH

AVAILABLE OPTIONS

OPTION 2 RF CONNECTORS	OPTION 4 VOLTAGE	OPTION 6 ACTUATOR	OPTION 8 FREQUENCY	OPTION 8 SPECIAL OPTIONS
7 - 2.4mm	1 - 6 Vdc +/- 10% 2 - 12 Vdc +/- 10% 3 - 24-30 Vdc 4 - 48 Vdc +/- 10% 5 - 110 Vac +/- 10% 6 - 12-15 Vdc 7 - 18-20 Vdc 8 - 20-24 Vdc	Normally Open G - Diodes, Indicators H - Indicators J - Diodes K - Standard	3 - DC to 46 GHz	L - TTL (High) LL - TTL (Low)
OPTION 3 TERMINALS			OPTION 7 POLARITY 0 - Not Applicable 8 - Positive Common 9 - Negative Common	
1 - Solder Terminals 2 - Circular Connector 4 - Sub Miniature D-Shell Connector				



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