DPDT (TRANSFER) COAXIAL SWITCH

DPDT / Bypass DPDT: 411 Failsafe | SMA, 2.9 mm (K)

- DC-18 GHz
- DC-40 GHz
- Low/Medium Power
- 1M/5M Life Cycles

RF Characteristics

Frequency GHz	VSWR (max)	Isolation dB (min)	Ins. Loss dB (max)
DC-1	1.10	85	0.10
1-4	1.20	80	0.20
4-8	1.30	70	0.30
8-12	1.40	65	0.40
12-18	1.50	60	0.50
DC-40	*Consult with factory for data*		

Specifications

Operating Voltage (across temperature range):
12 Vdc (11-14 Vdc)
24 Vdc (20-28 Vdc)
28 Vdc (24-32 Vdc)

Coil Current (max. @ nom. Vdc & 25°C)*:
12 Vdc 350 mA
24 Vdc 205 mA
28 Vdc 145 mA

Switching Time:
20 ms maximum

Operating Temperature:
-25°C to +65°C (Standard)
-55°C to +85°C (Extended "T" Option)

Mechanical Life Cycles*:
1,000,000 minimum
5,000,000 minimum ("U" Option)

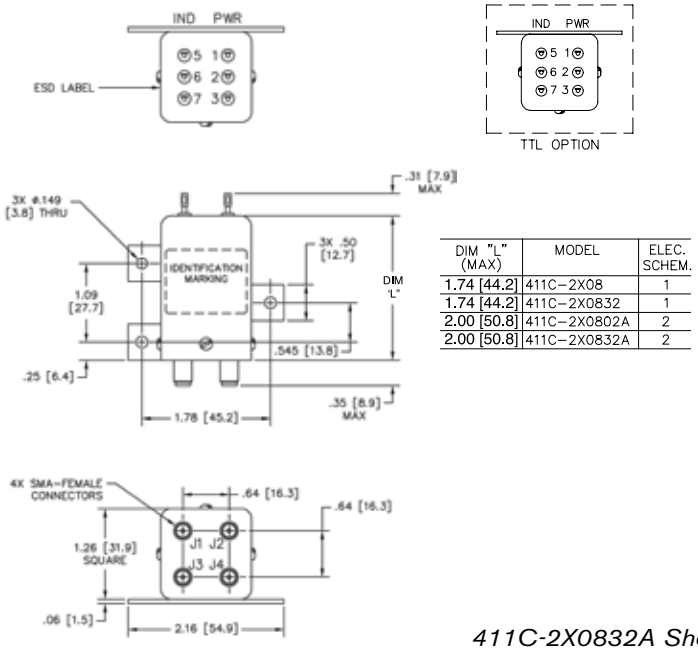
Vibration, Operating:
10G RMS, 20-2000 Hz

Mechanical Shock, Non-Operating:
50G, 1/2 Sine, 11 ms

Nominal Weight*:
4.0 oz. (113 g.)

* Performance and weight varies depending on selected options

Mechanical



DIM "L" (MAX)	MODEL	ELEC. SCHEM.
1.74 [44.2]	411C-2X08	1
1.74 [44.2]	411C-2X0832	1
2.00 [50.8]	411C-2X0802A	2
2.00 [50.8]	411C-2X0832A	2

411C-2X0832A Shown
For Electrical Schematic, see page # 2-7

Part Number Selector

411C J – 2 2 08 02 A – ROHS

Special Options
A = High Power
B = Bypass (J2-J4)
D = Bypass (J1-J2)
E = Bypass (J3-J4)
F = Bypass (J1-J3)
I = Immersion Seal
J = 'D' Connector
K = 26.5 GHz*
N = No Mounting Bracket
S = Epoxy Seal
T = -55°C to + 85°C
U = 5M Life Cycles
W = Low PIM
Y = 40 GHz

Actuator
2 = Failsafe
6 = Failsafe with Suppression Diode

*Not available with all options

Coil Voltage
2 = 12 Vdc
3 = 28 Vdc
8 = 24 Vdc
9 = 15 Vdc

Connectors
08 = SMA Female
11 = 2.9 mm (K)
71 = SMB Female

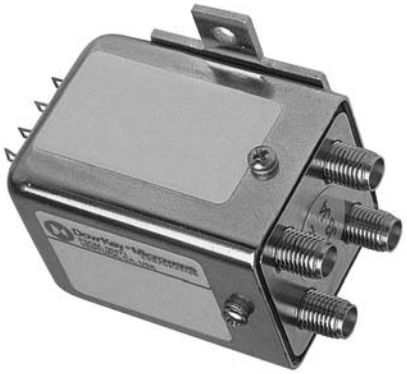
Indicators
02 = No Indicators**
32 = Indicators

**Declared only with Circuit Options

Circuit Options
A = TTL High
B = TTL High Military (JANTX)
L = TTL Low

Note: TTL option includes suppression diode. Other options may be available and all combinations may not be possible. Please consult with factory.

DPDT / Bypass DPDT: 411 Latching | SMA, 2.9 mm (K)



- DC-18 GHz
- DC-40 GHz
- Low/Medium Power
- 1M/5M Life Cycles

RF Characteristics

Frequency GHz	VSWR (max)	Isolation dB (min)	Ins. Loss dB (max)
0-1	1.10	85	0.10
1-4	1.20	80	0.20
4-8	1.30	70	0.30
8-12	1.40	65	0.40
12-18	1.50	60	0.50
DC-40	*Consult with factory for data*		

Specifications

Operating Voltage (across temperature range):
12 Vdc (11-14 Vdc)
24 Vdc (20-28 Vdc)
28 Vdc (24-32 Vdc)

Coil Current (max. @ nom. Vdc & 25°C)*:
12 Vdc 320 mA
24 Vdc 175 mA
28 Vdc 135 mA

Switching Time:
20 ms maximum

Operating Temperature:
-25°C to +65°C (Standard)
-55°C to +85°C (Extended "T" Option)

Mechanical Life, Cycles*:
1,000,000 minimum
5,000,000 minimum ("U" Option)

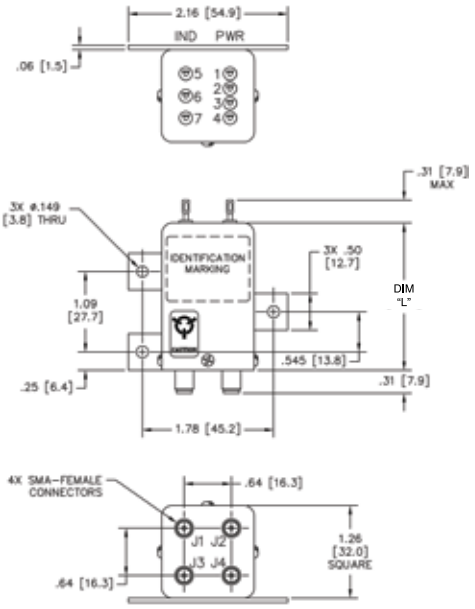
Vibration, Operating:
10G RMS, 20-2000 Hz

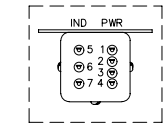
Mechanical Shock, Non-Operating:
50G, 1/2 Sine, 11 ms

Nominal Weight*:
4.0 oz. (113 g.)

* Performance and weight varies depending on selected options.

Mechanical





DIM "L" (MAX)	MODEL	ELEC. SCHEM.
1.74 [44.2]	411C-3X08	4
1.74 [44.2]	411C-3X0832	4
2.00 [50.8]	411C-4X08	5
2.00 [50.8]	411C-4X0832	5
2.00 [50.8]	411C-4X0802A	6
2.00 [50.8]	411C-4X0832A	6

411C-4X0832A Shown
For Electrical Schematic, see page # 2-7

Part Number Selector

411C J - 4 2 08 02 A - ROHS

Special Options
A = High Power
B = Bypass (J2-J4)
D = Bypass (J1-J2)
E = Bypass (J3-J4)
F = Bypass (J1-J3)
I = Immersion Seal
J = 'D' Connector
K = 26.5 GHz*
N = No Mounting Bracket
R = (+) Com
S = Epoxy Seal
T = -55°C to + 85°C
U = 5M Life Cycles
W = Low PIM ; Y = 40 GHz

Actuator
3 = Pulse Latching
4 = Latching Self Cutoff
7 = Pulse Latching with Suppression Diode

*Not available with all options

Coil Voltage
2 = 12 Vdc
3 = 28 Vdc
8 = 24 Vdc
9 = 15 Vdc

Connectors
08 = SMA Female
11 = 2.9 mm (K)
71 = SMB Female

Indicators
02 = No Indicators*
32 = Indicators

*Declared only with Circuit Options

Circuit Options
A = TTL High
L = TTL Low
N = CANBus

Note: TTL option includes suppression diode. Other options may be available and all combinations may not be possible. Please consult with factory.

DPDT Special Bypass: 411FL Failsafe | SMA

- DC-4 GHz
- Low/Medium Power
- 2M Cycles

RF Characteristics

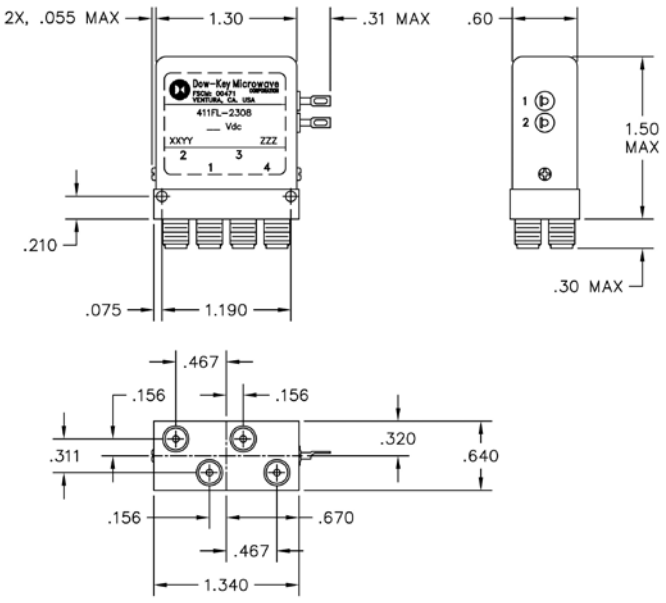
Frequency GHz	VSWR (max)	Isolation dB (min)	Ins. Loss dB (max)
DC-1	1.10	85	0.10
1-2	1.15	80	0.15
2-3	1.20	70	0.20
3-4	1.30	65	0.25

Specifications

Operating Voltage (across temperature range):
28 Vdc (24-32 Vdc)
Coil Current (max. @ nom. Vdc & 25°C)*:
28 Vdc 230 mA
Switching Time:
15 ms maximum
Operating Temperature:
-25°C to +65°C (Standard)
Mechanical Life Cycles:
2,000,000 minimum
Vibration, Operating:
10G RMS, 20-2000 Hz
Mechanical Shock, Non-Operating:
50G, 1/2 Sine, 11 ms
Nominal Weight*:
1.6 oz. (46 g.)

* Performance and weight varies depending on selected options.

Mechanical



411FL-2308 Shown
For Electrical Schematic, see page # 2-7

Part Number Selector

411FL – 2 3 08 – ROHS

Family	Actuator	Coil Voltage	Connectors
411FL = Transfer Bypass (1-3)	2 = Failsafe	3 = 28 Vdc	08 = SMA Female

412 Failsafe | N, BNC, TNC, SC

DPDT

- DC-2 GHz
- DC-6 GHz
- DC-12.4 GHz
- Medium/High Power
- 1M Cycles

RF Characteristics

Frequency GHz	VSWR (max)	Isolation dB (min)	Ins. Loss dB (max)
DC-1	1.15	85	0.15
1-2	1.20	80	0.20
2-4	1.25	70	0.25
4-8	1.45	60	0.40
8-12.4	1.60	60	0.50

Note: Performance applies to N and TNC type connectors. Consult with factory for other performances.

Specifications

Operating Voltage (across temperature range):
12 Vdc (11-14 Vdc)
24 Vdc (20-28 Vdc)
28 Vdc (24-32 Vdc)

Coil Current (max. @ nom. Vdc & 25°C)*:
12 Vdc 320 mA
24 Vdc 200 mA
28 Vdc 185 mA

Switching Time:
20 ms maximum

Operating Temperature:
-25°C to +65°C (Standard)
-55°C to +85°C (Extended "T" Option)

Mechanical Life, Cycles:
1,000,000 minimum

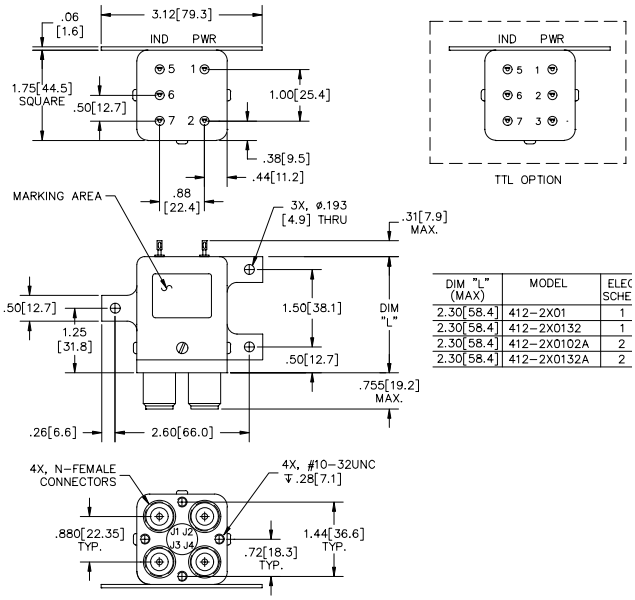
Vibration, Operating:
10G RMS, 20-2000 Hz

Mechanical Shock, Non-Operating:
30 G, 1/2 Sine, 11 ms

Nominal Weight*:
14 oz. (397 g.)

* Performance and weight varies depending on selected options.

Mechanical



DIM "L" (MAX)	MODEL	ELEC SCHE
2.30[58.4]	412-2X01	1
2.30[58.4]	412-2X0132	1
2.30[58.4]	412-2X0102A	2
2.30[58.4]	412-2X0132A	2

412 -2X0132 Shown
For Electrical Schematic, see page # 2-7

Part Number Selector

412 J - 2 2 01 02 A - ROHS

Special Options	Actuator	Coil Voltage	Connectors	Indicators	Circuit Options
A = High Power	2 = Failsafe	2 = 12 Vdc	01 = N Female	02 = No Indicators**	A = TTL High
C = Special Mounting Bracket	6 = Failsafe with Suppression Diode	3 = 28 Vdc	02 = BNC Female	32 = Indicators	
J = 'D' Connector		8 = 24 Vdc	03 = TNC Female		
N = No Mounting Bracket		9 = 15 Vdc	53 = SC Female*	**Declared only with Circuit Options	
P = Power Plug			*Consult Dow-Key for dimensions		
S = Epoxy Seal					
T = -55°C to + 85°C					
W = Low PIM					

Note: TTL option includes suppression diode. Other options may be available and all combinations may not be possible. Please consult with factory.

DPDT

412 Latching | N, BNC, TNC, SC

- DC-2 GHz
- DC-6 GHz
- DC-12.4 GHz
- Medium/High Power
- 1M Cycles

RF Characteristics

Frequency GHz	VSWR (max)	Isolation dB (min)	Ins. Loss dB (max)
DC-1	1.15	85	0.15
1-2	1.20	80	0.20
2-4	1.25	70	0.25
4-8	1.45	60	0.40
8-12.4	1.60	60	0.50

Note: Performance applies to N and TNC type connectors. Consult with factory for other performances.

Specifications

Operating Voltage (across temperature range):
12 Vdc (11-14 Vdc)
24 Vdc (20-28 Vdc)
28 Vdc (24-32 Vdc)

Coil Current (max. @ nom. Vdc & 25°C)*:
12 Vdc 320 mA
24 Vdc 240 mA
28 Vdc 185 mA

Switching Time:
20 ms maximum

Operating Temperature:
-25°C to +65°C (Standard)
-55°C to +85°C (Extended "T" Option)

Mechanical Life, Cycles:
1,000,000 minimum

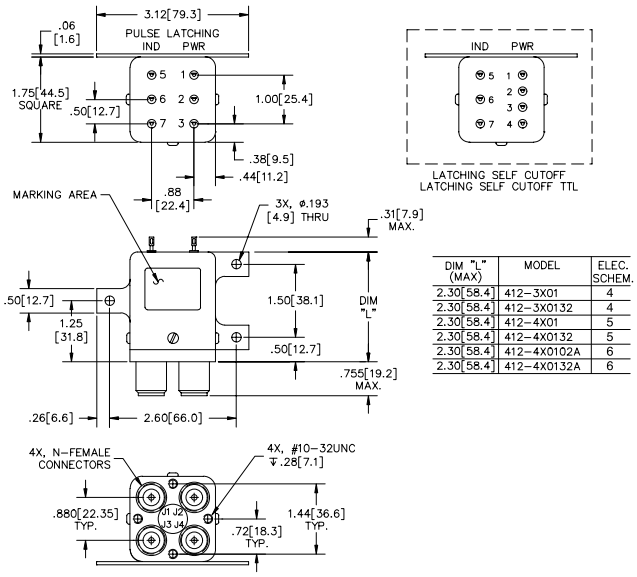
Vibration, Operating:
10G RMS, 20-2000 Hz

Mechanical Shock, Non-Operating:
30 G, 1/2 Sine, 11 ms

Nominal Weight*:
14 oz. (397 g.)

* Performance and weight varies depending on selected options.

Mechanical



DIM "L" (MAX)	MODEL	ELEC. SCHEM.
2.30[58.4]	412-3X01	4
2.30[58.4]	412-3X0132	4
2.30[58.4]	412-4X01	5
2.30[58.4]	412-4X0132	5
2.30[58.4]	412-4X0102A	6
2.30[58.4]	412-4X0132A	6

412-3X0132 Shown
For Electrical Schematic, see page # 2-7

Part Number Selector

412 **J** - **4** **2** **01** **02** **A** - **ROHS**

Special Options
A = High Power
C = Special Mounting Bracket
J = 'D' Connector
N = No Mounting Bracket
P = Power Plug
R = (+) Com
S = Epoxy Seal
T = -55°C to + 85°C
W = Low PIM

Actuator
3 = Pulse Latching
4 = Latching Self Cutoff
7 = Pulse Latching with Suppression Didoes

Coil Voltage
2 = 12 Vdc
3 = 28 Vdc
8 = 24 Vdc
9 = 15 Vdc

Connectors
01 = N Female
02 = BNC Female
03 = TNC Female
53 = SC Female*

*Consult Dow-Key for dimensions

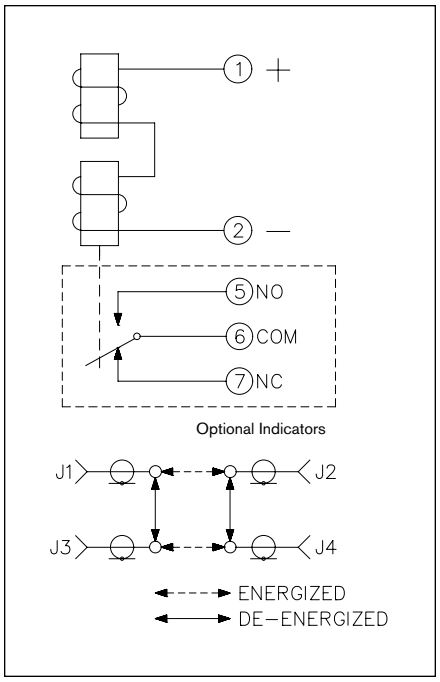
Indicators
02 = No Indicators**
32 = Indicators

**Declared only with Circuit Options

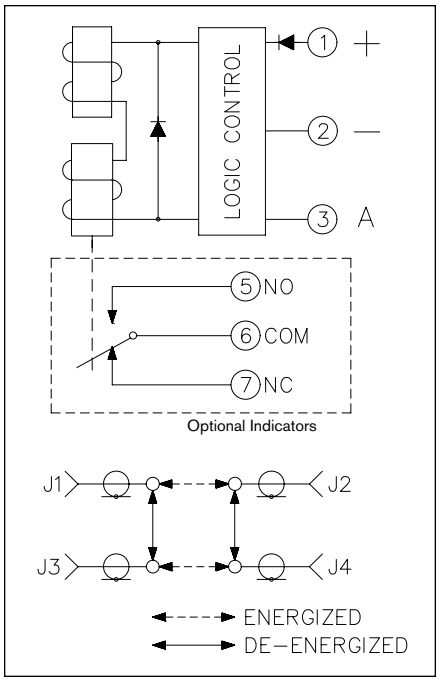
Circuit Options
A = TTL High

Note: TTL option includes suppression diode. Other options may be available and all combinations may not be possible. Please consult with factory.

01 411C/412 Failsafe



02 411C/412 Failsafe TTL



03 Logic Truth Table

FAILSAFE TTL - SCH #2

LOGIC TRUTH TABLE		
RF PATH	INDICATOR PATH	LOGIC INPUT "A"
J1–J3/J2–J4	NC–COM	0
J1–J2/J3–J4	NO–COM	1

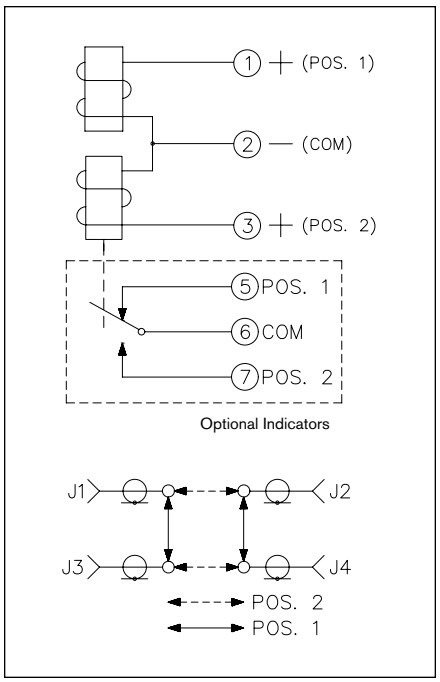
"0" = 0.0V–0.8V
"1" = 2.4V–5.5V

SELF CUTOFF TTL - SCH #6

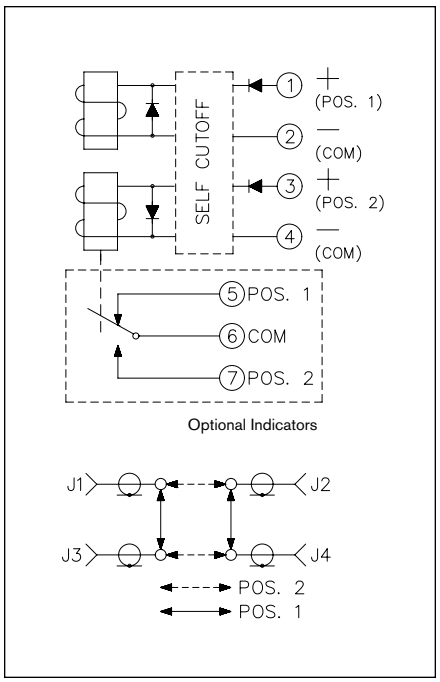
LOGIC TRUTH TABLE			
RF PATH	INDICATOR PATH	LOGIC INPUT "A"	LOGIC INPUT "B"
J1–J3/J2–J4	COM–1	1	0
J1–J2/J3–J4	COM–2	0	1

"0" = 0.0V–0.8V
"1" = 2.4V–5.5V

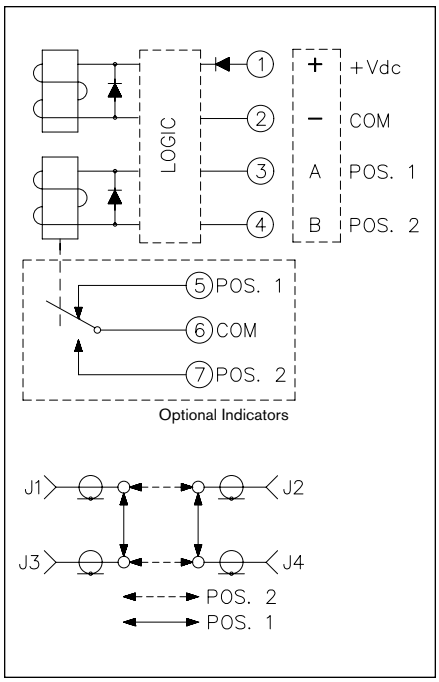
04 411C/412 Pulse



05 411C/412 Self Cutoff



06 411C/412 Self Cutoff TTL



DPDT

300 Latching | N, TNC, SC

- DC-6.5 GHz
- DC-12.4 GHz
- Ruggedized
- 100K Cycles

RF Characteristics

Frequency GHz	VSWR (max)	Isolation dB (min)	Ins. Loss dB (max)
DC-1	1.20	60	0.15
1-4	1.35	60	0.25
4-8	1.45	60	0.35
8-12	1.50	60	0.50

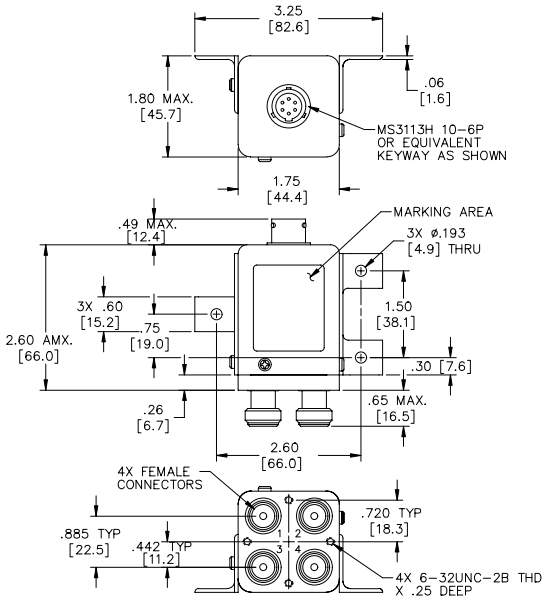
Note: Performance applies to N and TNC type connectors. Consult with factory for other performances.

Specifications

Operating Voltage (across temperature range):
28 Vdc (20-30 Vdc)
Coil Current (max. @ nom. Vdc & 20°C)*:
28 Vdc 650 mA
Switching Time:
20 ms maximum
Operating Temperature:
-40°C to +85°C
Mechanical Life Cycles:
100,000 minimum
Vibration, Operating:
20g's sine/random
Mechanical Shock, Non-Operating:
50G, 1/2 Sine, 11 ms
Nominal Weight:
12 oz. (340 g.)

* Performance varies depending on selected options.

Mechanical



300C00100 Shown
For Electrical Schematic, see page # 2-12

Part Number Selector

300C **0** **0100** - **60** - **ROHS**

Family
300C = Transfer Latching

Connectors
0 = N Female
3 = TNC Female
5 = SC Female*

*Consult with Dow-Key for dimensions.

Voltage/Actuator
0100 = 28 Vdc/Self Cutoff
0200 = 28 Vdc/Self Cutoff with Indicators
1100 = 28 Vdc/Pulse
1200 = 28 Vdc/Pulse with Indicators

Options
60 = High Power**

**See Power Chart on page # iii

- DC-6.5 GHz
- DC-12.4 GHz
- Ruggedized
- 100K Cycles

RF Characteristics

Frequency GHz	VSWR (max)	Isolation dB (min)	Ins. Loss dB (max)
DC-1	1.20	60	0.15
1-4	1.35	60	0.25
4-8	1.45	60	0.35
8-12.4	1.50	60	0.50

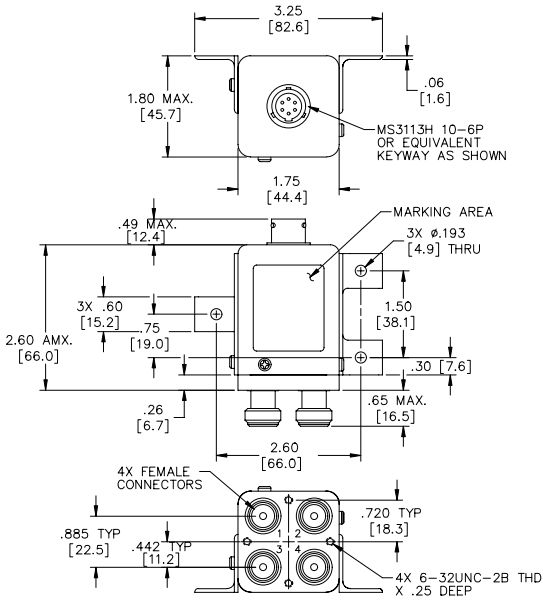
Note: RF Characteristics are for type N & TNC Female connectors, consult Dow-Key for other connector configurations

Specifications

Operating Voltage (across temperature range):
28 Vdc (20-30 Vdc)
Coil Current (max. @ nom. Vdc & 20°C)*:
28 Vdc 280 mA
Switching Time:
20 ms maximum
Operating Temperature:
-40°C to +85°C
Mechanical Life, Cycles:
100,000 minimum
Vibration, Operating:
20g's sine/random
Mechanical Shock, Non-Operating:
50G, 1/2 Sine, 11 ms
Nominal Weight:
12 oz. (340 g.)

* Performance varies depending on selected options.

Mechanical



310C00100 Shown
For Electrical Schematic, see page # 2-12

310C | 0 | 0100 - 60 - ROHS

Family
310C = Transfer Failsafe

Connectors
0 = N Female
3 = TNC Female
5 = SC Female*

*Consult with Dow-Key for dimensions.

Voltage
0100 = 28 Vdc
0200 = 28 Vdc with Indicators

Options
60 = High Power**

**See Power Chart on page # iii

700 Latching | SMA

- DC-18 GHz
- Ruggedized
- 100K Cycles

RF Characteristics

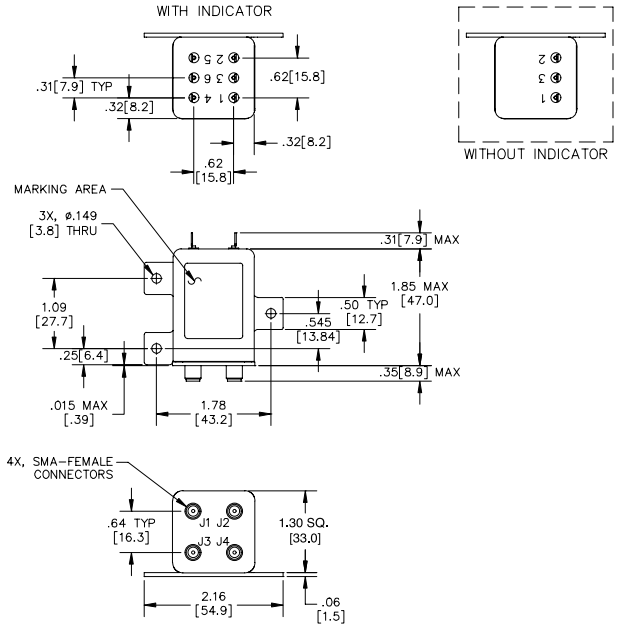
Frequency GHz	VSWR (max)	Isolation dB (min)	Ins. Loss dB (max)
DC-1	1.15	80	0.15
1-4	1.25	60	0.25
4-8	1.35	60	0.35
8-12.4	1.50	60	0.50
12.4-18	1.50	60	0.50

Specifications

Operating Voltage (across temperature range):
28 Vdc (20-30 Vdc)
Coil Current (typ. @ nom. Vdc & 20°C)*:
28 Vdc 65 mA
Switching Time:
20 ms maximum
Operating Temperature:
-55°C to +85°C
Mechanical Life Cycles:
100,000 minimum
Vibration, Operating:
20g's sine/random
Mechanical Shock, Non-Operating:
50G, 1/2 Sine, 11 ms
Nominal Weight*:
3.5 oz. (100 g.)

* Performance and weight varies depending on selected options.

Mechanical



700C70100 Shown
For Electrical Schematic, see page # 2-12

Part Number Selector

700C **7** **0100** - **20** - **ROHS**

Family	Connectors	Voltage/Actuator	Options
700C = Transfer Latching	7 = SMA Female	0100 = 28 Vdc/Self Cutoff	20 = DC Power Plug
		0200 = 28 Vdc/Self Cutoff with Indicators	30 = TTL High
		1100 = 28 Vdc/Pulse	
		1200 = 28 Vdc/Pulse with Indicators	

- DC-18 GHz
- Ruggedized
- 100K Cycles

RF Characteristics

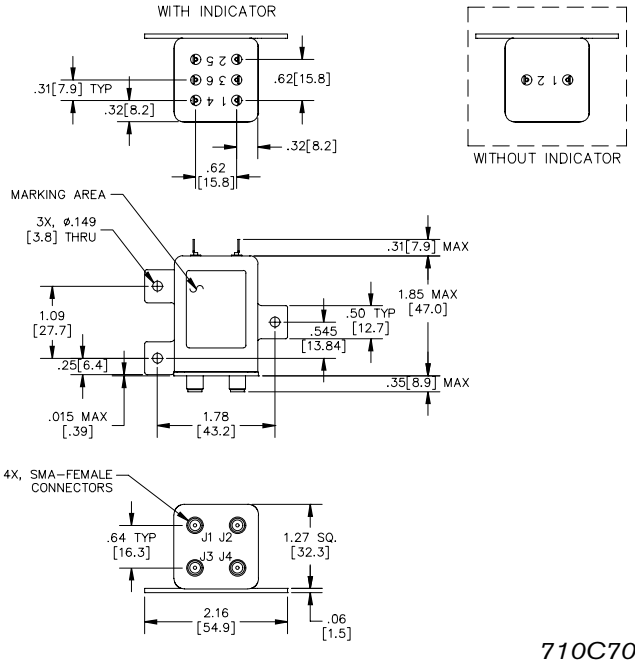
Frequency GHz	VSWR (max)	Isolation dB (min)	Ins. Loss dB (max)
DC-1	1.15	80	0.15
1-4	1.25	60	0.25
4-8	1.35	60	0.35
8-12.4	1.50	60	0.50
12.4-18	1.50	60	0.50

Specifications

Operating Voltage (across temperature range):
28 Vdc (20-30 Vdc)
Coil Current (max. @ nom. Vdc & 20°C)*:
28 Vdc 120 mA
Switching Time:
20 ms maximum
Operating Temperature:
-55°C to +85°C
Mechanical Life Cycles*:
100,000 minimum
Vibration, Operating:
20g's sine/random
Mechanical Shock, Non-Operating:
50G, 1/2 Sine, 11 ms
Nominal Weight*:
3.5 oz. (100 g.)

* Performance and weight varies depending on selected options.

Mechanical

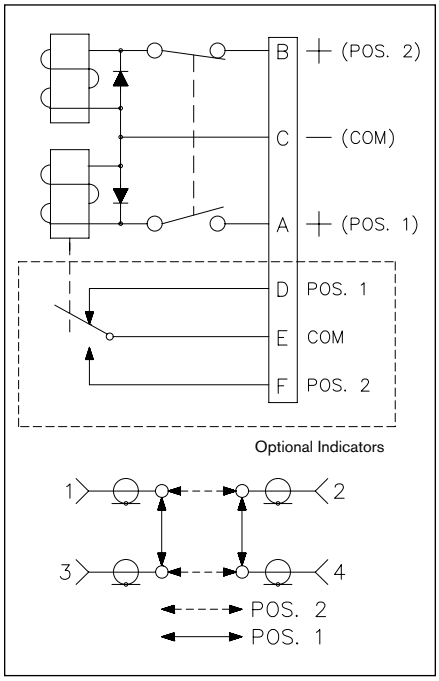


710C70200 Shown
For Electrical Schematic, see page # 2-12

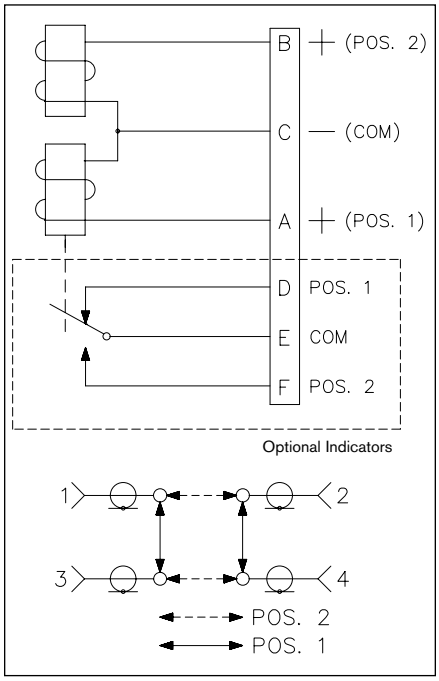
710C | 7 | 0100 - 20 - ROHS

Family	Connectors	Voltage	Options
710C = Transfer Failsafe	7 = SMA Female	0100 = 28 Vdc	20 = DC Power Plug
		0200 = 28 Vdc with Indicators	30 = TTL High

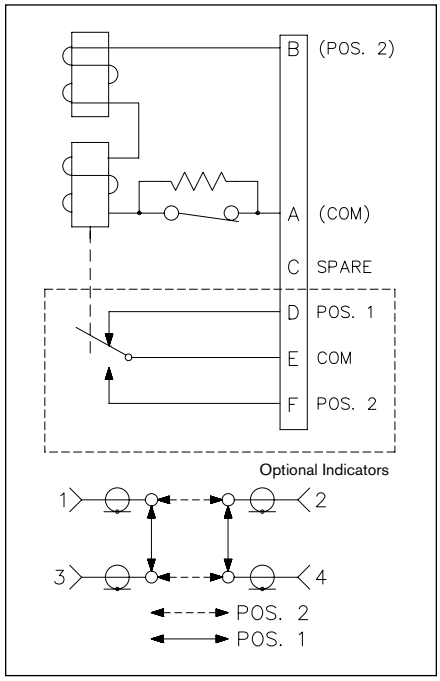
01 300 Self Cutoff



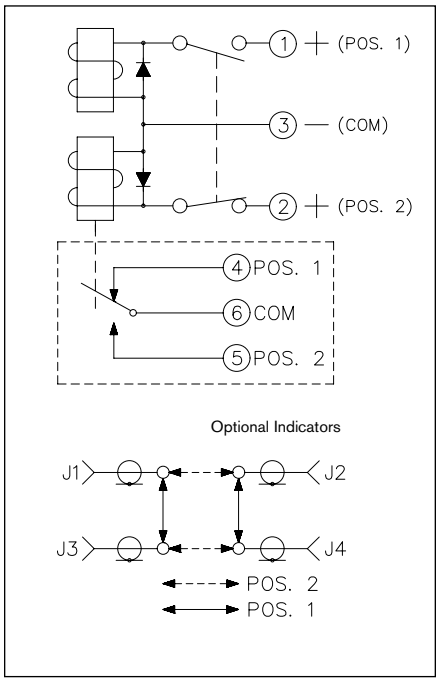
02 300 Pulse



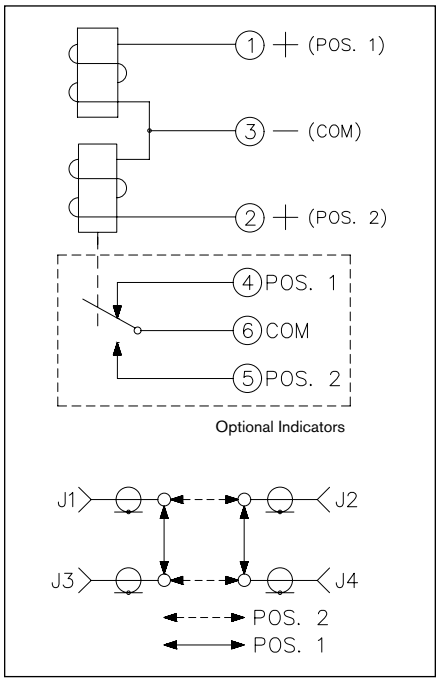
03 310 Failsafe



04 700 Self Cutoff



05 700 Pulse



06 710 Failsafe