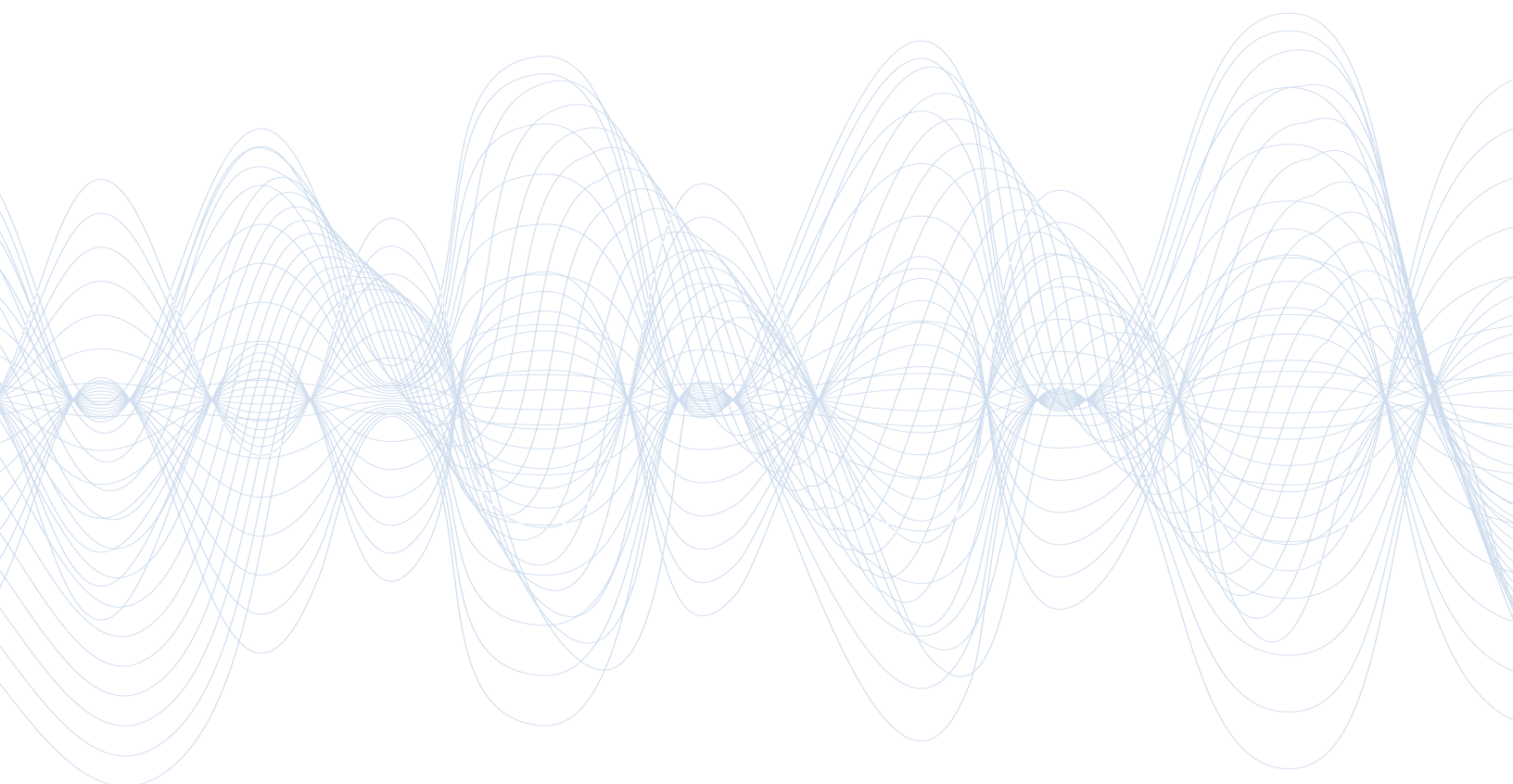
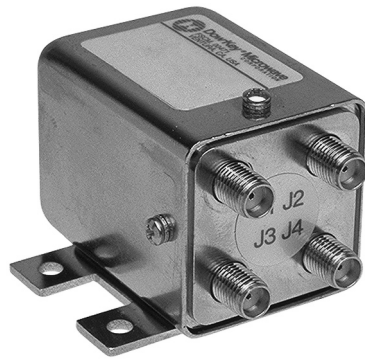


DPDT/TRANSFER COAXIAL SWITCH



Dow-Key® Microwave
CORPORATION

A **DOVER** COMPANY



- 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

For DC-40 GHz switches contact the factory

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:

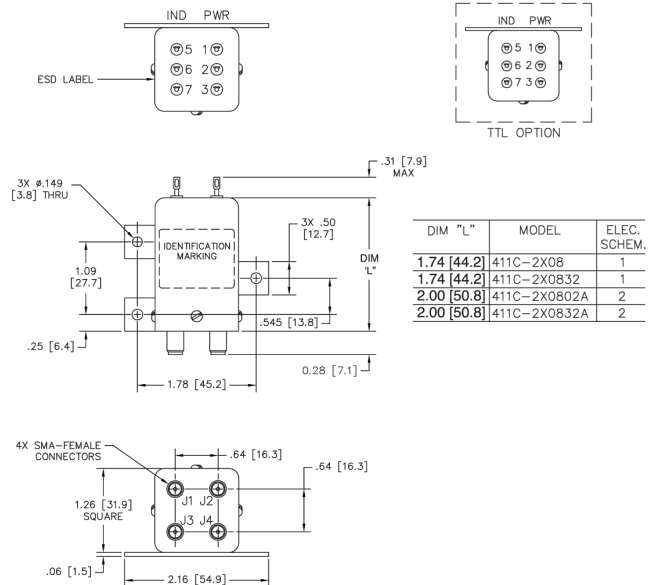
- 30G, 1/2 Sine, 11 ms

Nominal Weight*:

- 4.0 oz. (113 g.)

* Performance and weight varies depending on selected options

Mechanical



411C-2X0832A Shown

For Electrical Schematic, see page # 2-6

Part Number Selector

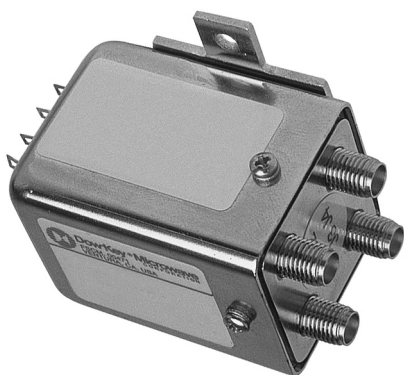
411C J - 2 2 08 02 A - ROHS				
Special Options	Actuator	Coil Voltage	Connectors	Indicators
A = High Power	2 = Failsafe	2 = 12 Vdc	08 = SMA Female	02 = No Indicators*
B = Bypass (J2-J4)	6 = Failsafe with Suppression Diode	3 = 28 Vdc	11 = 2.9 mm (K)	32 = Indicators
D = Bypass (J1-J2)		8 = 24 Vdc		
E = Bypass (J3-J4)				
F = Bypass (J1-J3)				
I = Immersion Seal				
J = 'D' Connector				
N = No Mounting Bracket				
S = Epoxy Seal				
T = -55°C to + 85°C				
U = 5M Life Cycles				
Y = 40 GHz				

* Declared only with Circuit Options

Circuit Options

- A = TTL High
- L = TTL Low

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



RF Characteristics

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

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

For DC-40 GHz switches contact the factory

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:

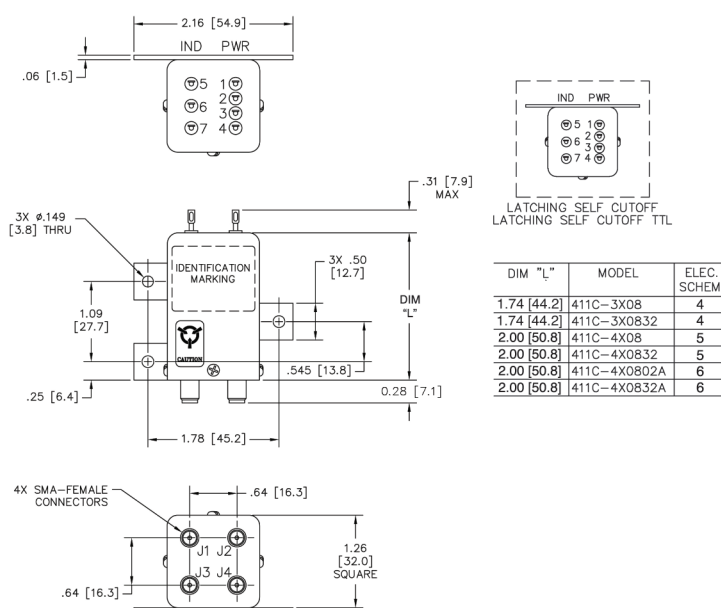
30G, 1/2 Sine, 11 ms

Nominal Weight*:

4.0 oz. (113 g.)

* Performance and weight varies depending on selected options.

Mechanical



411C-4X0832A Shown

For Electrical Schematic, see page # 2-6

Part Number Selector

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
 N = No Mounting Bracket
 R = (+) Com
 S = Epoxy Seal
 T = -55°C to + 85°C
 U = 5M Life Cycles
 Y = 40 GHz

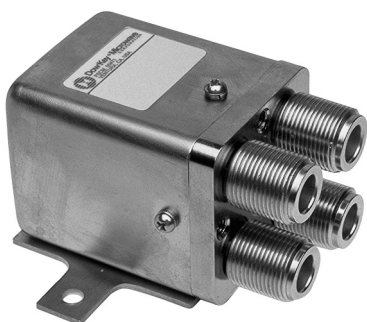
411C J - 4 2 08 02 A - ROHS

Actuator	Coil Voltage	Connectors	Indicators	Circuit Options
3 = Pulse Latching	2 = 12 Vdc	08 = SMA Female	02 = No Indicators*	A = TTL High
4 = Latching Self Cutoff	3 = 28 Vdc	11 = 2.9 mm (K)	32 = Indicators	L = TTL Low
7 = Pulse Latching with Suppression Diode	8 = 24 Vdc			N = CANBus

* Declared only with Circuit Options

* Declared only with Circuit Options

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



- 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	0.60

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:

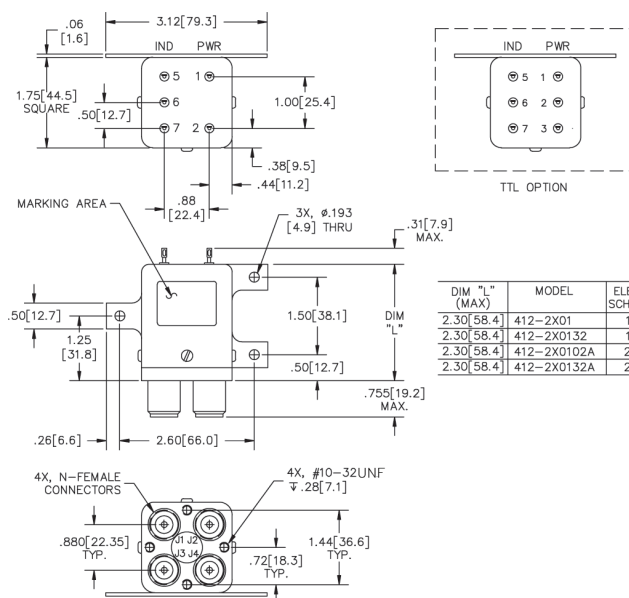
- 30G, 1/2 Sine, 11 ms

Nominal Weight*:

- 14 oz. (397 g.)

* Performance and weight varies depending on selected options.

Mechanical



412-2X0132 Shown

For Electrical Schematic, see page # 2-6

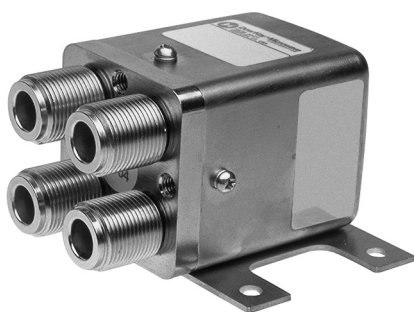
Part Number Selector

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			53 = SC Female*	** Declared only with Circuit Options	
P = Power Plug					
S = Epoxy Seal					
T = -55°C to +85°C					

* Contact Dow-Key for dimensions

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



RF Characteristics

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

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	0.60

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:

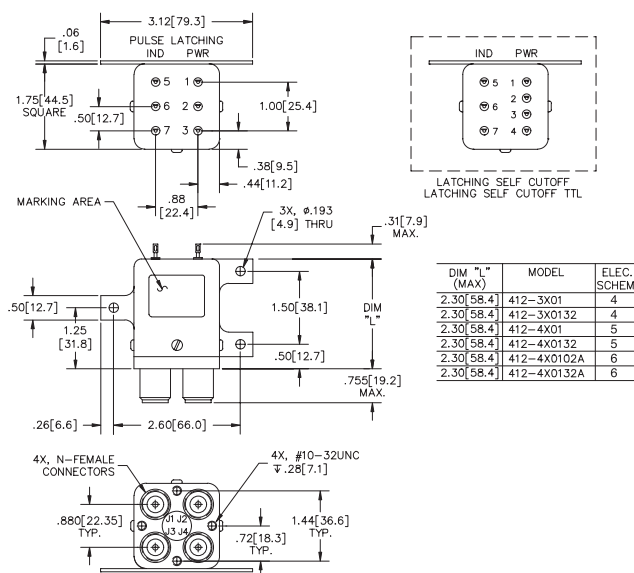
30G, 1/2 Sine, 11 ms

Nominal Weight*:

14 oz. (397 g.)

* Performance and weight varies depending on selected options.

Mechanical



412-3X0132 Shown
For Electrical Schematic, see page # 2-6

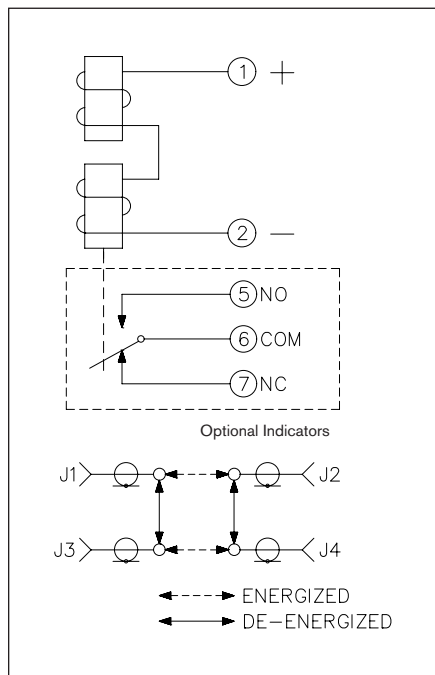
Part Number Selector

412 J - 4 2 01 02 A - ROHS

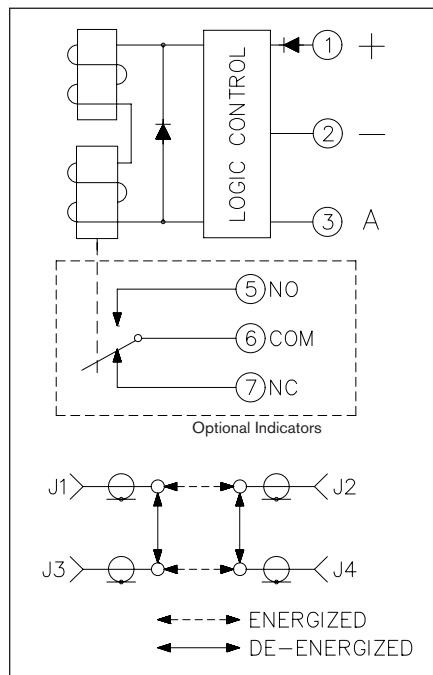
Special Options	Actuator	Coil Voltage	Connectors	Indicators	Circuit Options
A = High Power	3 = Pulse Latching	2 = 12 Vdc	01 = N Female	02 = No Indicators**	A = TTL High
C = Special Mounting Bracket	4 = Latching Self Cutoff	3 = 28 Vdc	02 = BNC Female	32 = Indicators	
J = 'D' Connector	7 = Pulse Latching with Suppression Didoes	8 = 24 Vdc	03 = TNC Female		
N = No Mounting Bracket			53 = SC Female*	** Declared only with Circuit Options	
P = Power Plug			* Contact Dow-Key for dimensions		
R = (+) Com					
S = Epoxy Seal					
T = -55°C to + 85°C					

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

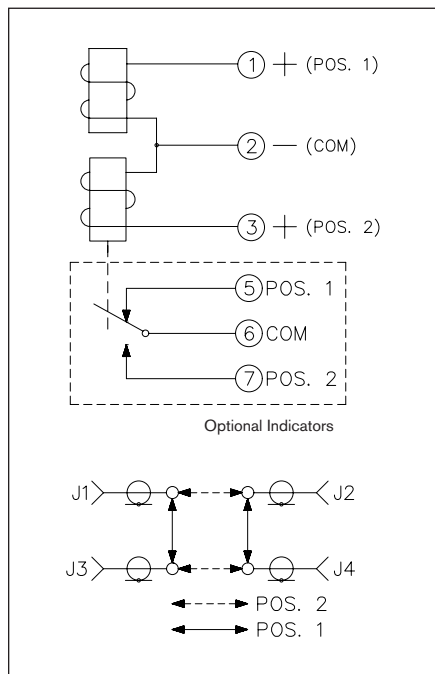
"0" = 0.0V-0.8V
"1" = 2.4V-5.5V

SELF CUTOFF TTL - SCH #6

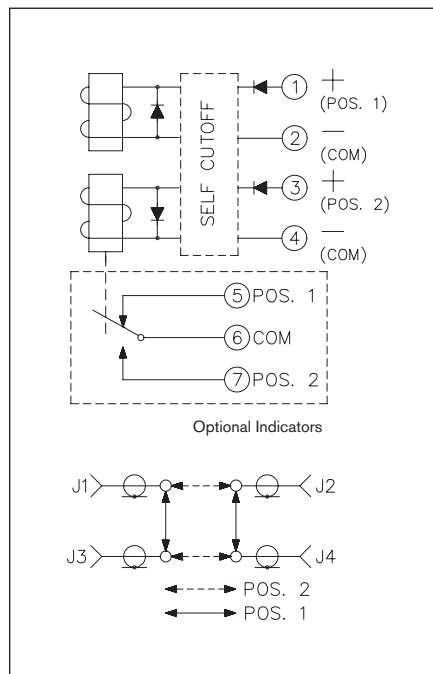
LOGIC TRUTH TABLE			
RF PATH	INDICATOR PATH	LOGIC INPUT "A"	LOGIC INPUT "B"
J1-J3/J2-J4	COM-1	1	0
J1-J2/J3-J4	COM-2	0	1

"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

