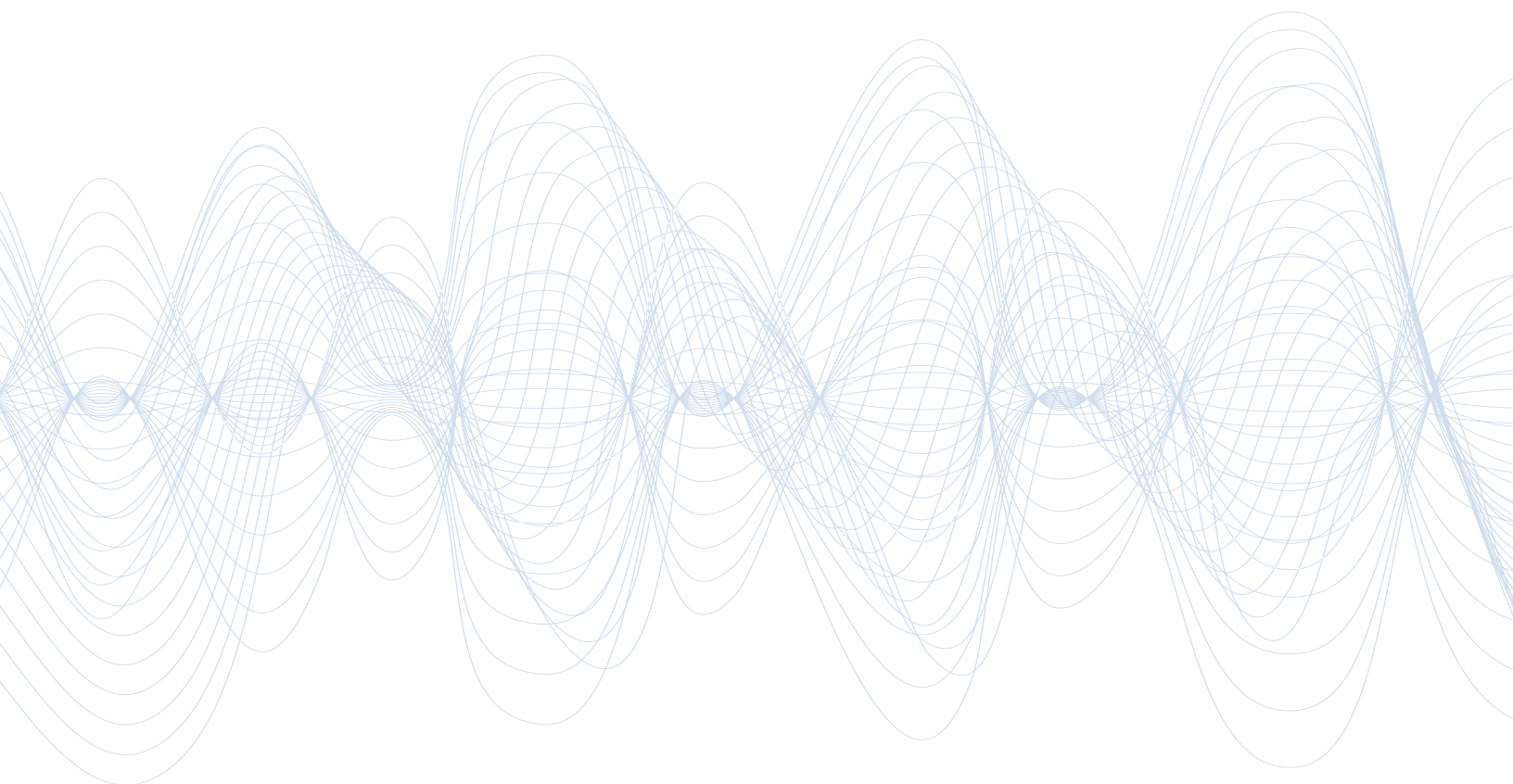
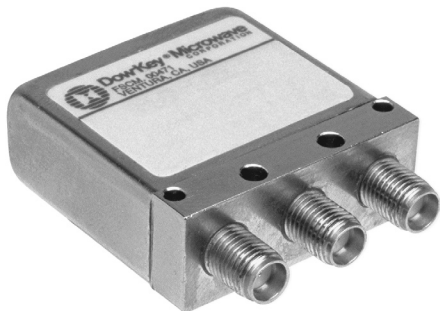


SPDT COAXIAL SWITCH



DowKey® Microwave
CORPORATION

A **DOVER** COMPANY



- DC-18 GHz
- DC-26.5 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	1.15	80	0.15
4-8	1.20	70	0.20
8-12	1.30	65	0.30
12-18	1.35	60	0.35
*18-26.5	1.50	55	0.50
*26.5-40	1.90	55	0.80

* Performance varies depending on selected options

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 195 mA
- 24 Vdc 125 mA
- 28 Vdc 95 mA

Switching Time:

15 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:

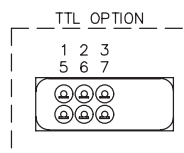
30G, 1/2 Sine, 11 ms

Nominal Weight*:

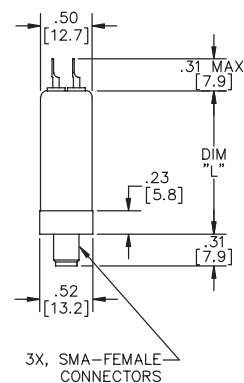
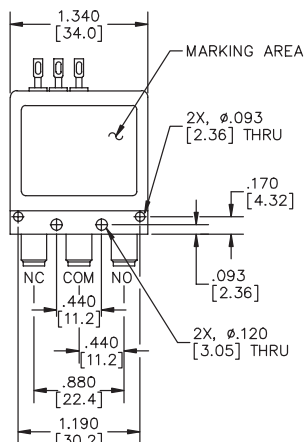
1.4 oz. (40 g.)

* Performance and weight varies depending on selected options. Values listed are for Standard 401 Failsafe model.

Mechanical



DIM "L" (MAX)	MODEL	ELEC. SCHEM.
1.40 [35.6]	401-2X08	1
1.40 [35.6]	401-2X0832	1
1.80 [45.7]	401-2X0802A	2
1.80 [45.7]	401-2X0832A	2



401-2X0832 Shown
For Electrical Schematic, see page # 1-4

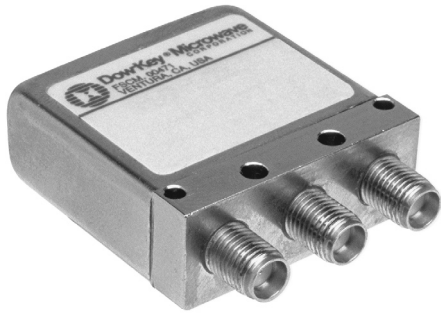
Part Number Selector

401 J - 2 2 08 02 A - ROHS

Special Options	Actuator	Coil Voltage	Connectors	Indicators	Circuit Options
A = High Power	2 = Failsafe	2 = 12 Vdc	08 = SMA Female	02 = No Indicators*	A = TTL High
I = Immersion Seal	6 = Failsafe with Suppression Diode	3 = 28 Vdc	11 = 2.9 mm (K)	32 = Indicators	L = TTL Low
J = 'D' Connector		8 = 24 Vdc			
K = 26.5 GHz					
S = Epoxy Seal					
T = -55°C to + 85°C					
U = 5M Life Cycles					
Y = 40 GHz					

* 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-18 GHz
- DC-26.5 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	1.15	80	0.15
4-8	1.20	70	0.20
8-12	1.30	65	0.30
12-18	1.35	60	0.35
*18-26.5	1.50	55	0.50
*26.5-40	1.90	55	0.80

* Performance varies depending on selected options

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 230 mA
- 24 Vdc 135 mA
- 28 Vdc 115 mA

Switching Time:

15 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:

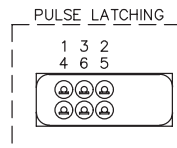
30G, 1/2 Sine, 11 ms

Nominal Weight*:

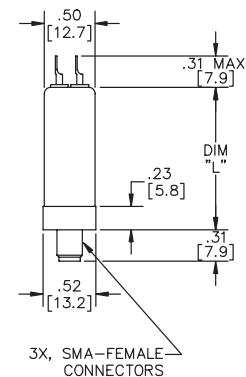
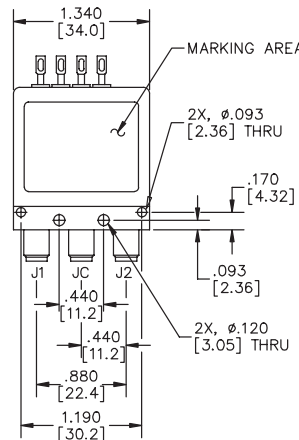
1.4 oz. (40 g.)

* Performance and weight varies depending on selected options. Values listed are for Standard 401 Latching model.

Mechanical



DIM "L" (MAX)	MODEL	ELEC. SCHEM.
1.40 [35.6]	401-3X08	3
1.40 [35.6]	401-3X0832	3
1.80 [45.7]	401-4X08	4
1.80 [45.7]	401-4X0832	4
1.80 [45.7]	401-4X0802A	5
1.80 [45.7]	401-4X0832A	5



401-4X0832 Shown

For Electrical Schematic, see page # 1-4

Part Number Selector

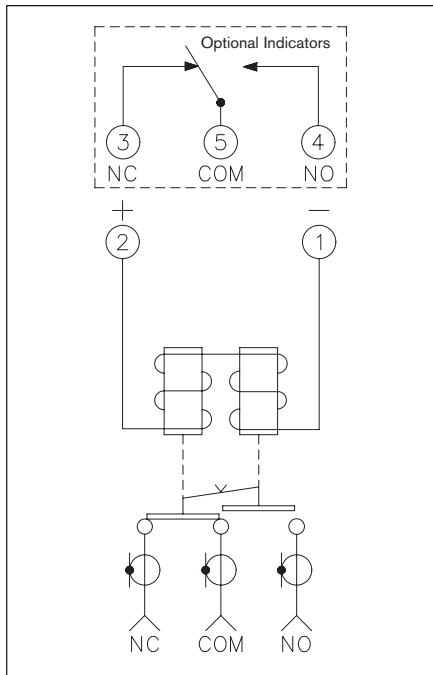
401 J - 4 2 08 02 A - ROHS

Special Options	Actuator	Coil Voltage	Connectors	Indicators	Circuit Options
A = High Power	3 = Pulse Latching	2 = 12 Vdc	08 = SMA Female	02 = No Indicators*	A = TTL High
I = Immersion Seal	4 = Latching Self Cutoff	3 = 28 Vdc	11 = 2.9 mm (K)	32 = Indicators	L = TTL Low
J = 'D' Connector	7 = Pulse Latching with Suppression Diode	8 = 24 Vdc			
K = 26.5 GHz					
S = Epoxy Seal					
T = -55°C to + 85°C					
U = 5M Life Cycles					
Y = 40 GHz					

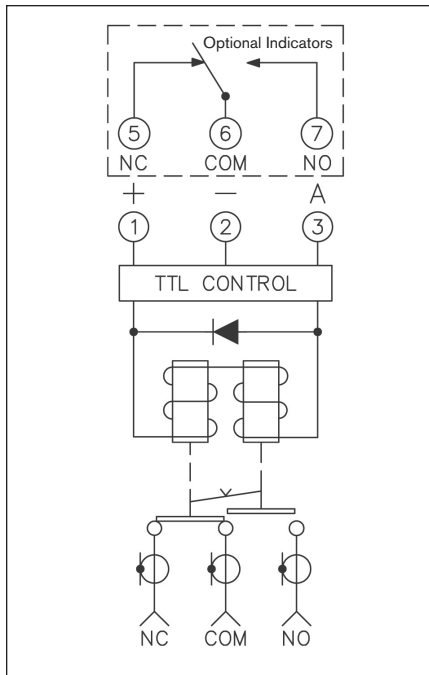
* Declared only with Circuit Options

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

01 401 Failsafe



02 401 Failsafe TTL



03 Logic Truth Table

FAILSAFE TTL - SCH #2

LOGIC TRUTH TABLE		
RF PATH	INDICATOR PATH	LOGIC INPUT "A"
NC-COM	NC-COM	0
NO-COM	NO-COM	1

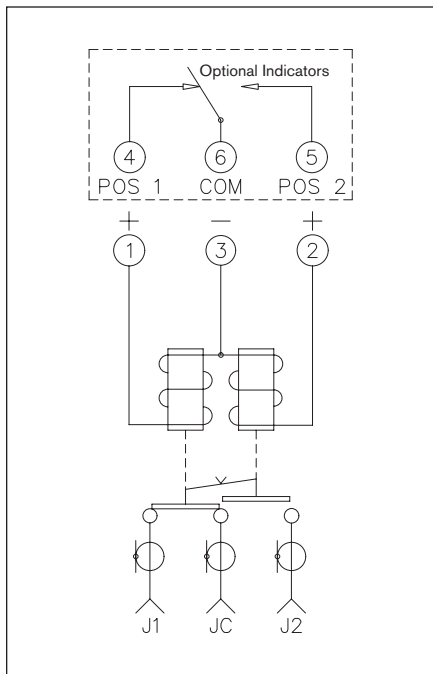
"0" = 0.0V-0.8V
 "1" = 2.4V-5.5V

SELF CUTOFF TTL - SCH #6

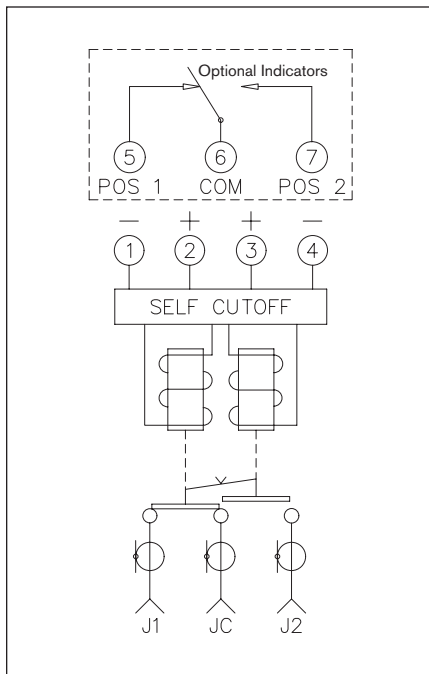
LOGIC TRUTH TABLE			
RF PATH	INDICATOR PATH	LOGIC INPUT "A"	LOGIC INPUT "B"
JC-J1	COM-1	1	0
JC-J2	COM-2	0	1

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

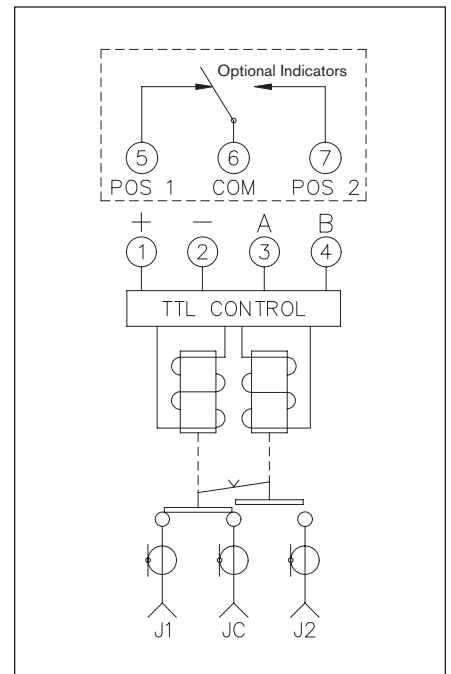
04 401 Pulse



05 401 Self Cutoff



06 401 Self Cutoff TTL





- DC-2 GHz
- DC-6 GHz
- DC-12.4 GHz
- Medium/High Power
- 1M Life 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	1.50	60	0.50

Performance applies to N, BNC, and TNC type connectors. Consult with factory for SC-type connectors.

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 275 mA
- 24 Vdc 155 mA
- 28 Vdc 115 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:

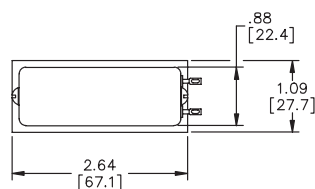
30G, 1/2 Sine, 11 ms

Nominal Weight*:

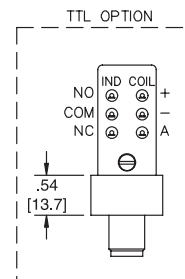
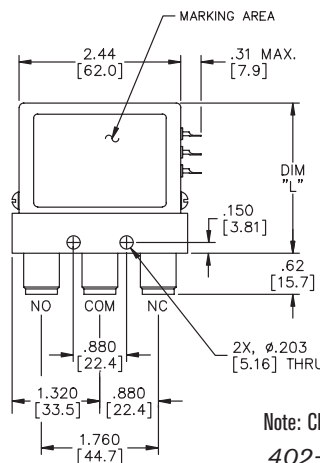
9.0 oz. (255 g.)

* Performance and weight varies depending on selected options. Values listed are for Standard 402 Failsafe model.

Mechanical



DIM "L" (MAX)	MODEL*	ELEC. SCHEM.
2.30 [58.4]	402-2X01	1
2.30 [58.4]	402-2X0132	1
2.30 [58.4]	402-2X0102A	2
2.30 [58.4]	402-2X0132A	2



Note: Chart reflects N, BNC, and TNC type of connectors only.
402-2X0132 Shown
For Electrical Schematic, see page # 1-7

Part Number Selector

402 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
I = Immersion Seal	6 = Failsafe with Suppression Diode	3 = 28 Vdc	02 = BNC Female	32 = Indicators	L = TTL Low
J = 'D' Connector		8 = 24 Vdc	03 = TNC Female		
P = Power Connector			53 = SC Female*		
S = Epoxy Seal					
T = -55°C to + 85°C					

* Consult Dow-Key for dimensions

** 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 Life 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	1.50	60	0.50

Performance applies to N, BNC, and TNC type connectors. Consult with factory for SC-type connectors.

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 180 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

Vibration, Operating:

10G RMS, 20-2000 Hz

Mechanical Shock, Non-Operating:

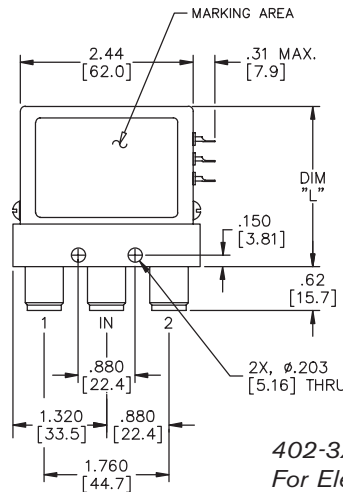
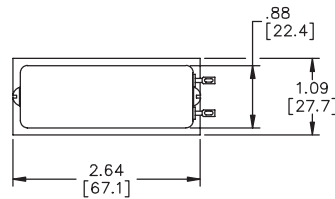
30G, 1/2 Sine, 11 ms

Nominal Weight*:

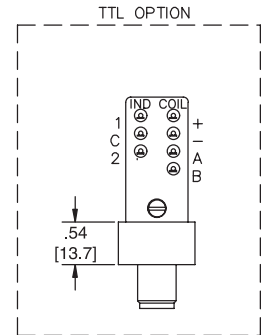
9.0 oz. (255 g.)

* Performance and weight varies depending on selected options. Values listed are for Standard 402 Latching model.

Mechanical



DIM "L" (MAX)	MODEL *	ELEC. SCHEM.
2.30 [58.4]	402-3X01	4
2.30 [58.4]	402-3X0132	4
2.40 [61.0]	402-4X01	5
2.40 [61.0]	402-4X0132	5
2.40 [61.0]	402-4X0102A	6
2.40 [61.0]	402-4X0132A	6



402-3X0132 Shown
For Electrical Schematic, see page # 1-7

Part Number Selector

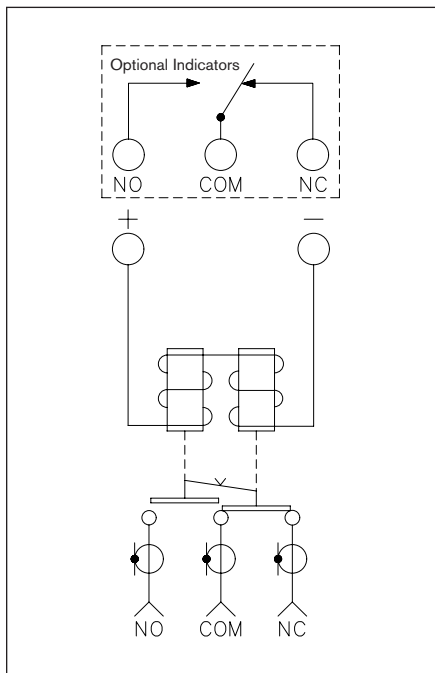
402 J - 4 2 01 02 A - ROHS

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
I = Immersion Seal	4 = Latching Self Cutoff	3 = 28 Vdc	02 = BNC Female	32 = Indicators	L = TTL Low
J = 'D' Connector	7 = Pulse Latching with Suppression Diodes	8 = 24 Vdc	03 = TNC Female		
P = Power Connector			53 = SC Female*	** Declared only with Circuit Options	
S = Epoxy Seal					
T = -55°C to + 85°C					

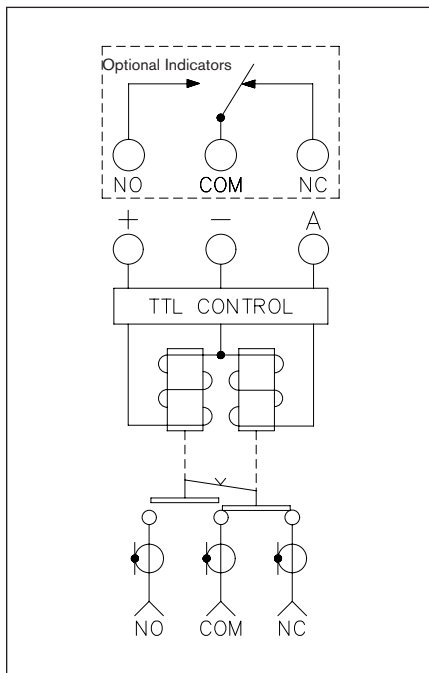
* Consult Dow-Key for dimensions

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

01 402 Failsafe



02 402 Failsafe TTL



03 Logic Truth Table

FAILSAFE TTL - SCH #2

LOGIC TRUTH TABLE		
RF PATH	INDICATOR PATH	LOGIC INPUT "A"
NC-COM	NC-COM	0
NO-COM	NO-COM	1

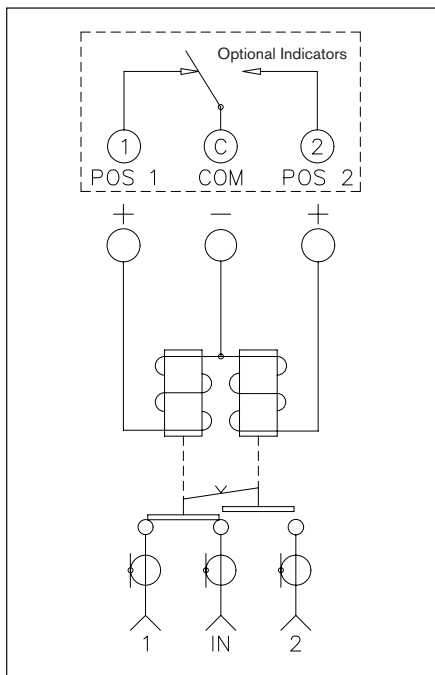
"0" = 0.0V-0.8V
 "1" = 2.4V-5.5V

SELF CUTOFF TTL - SCH #6

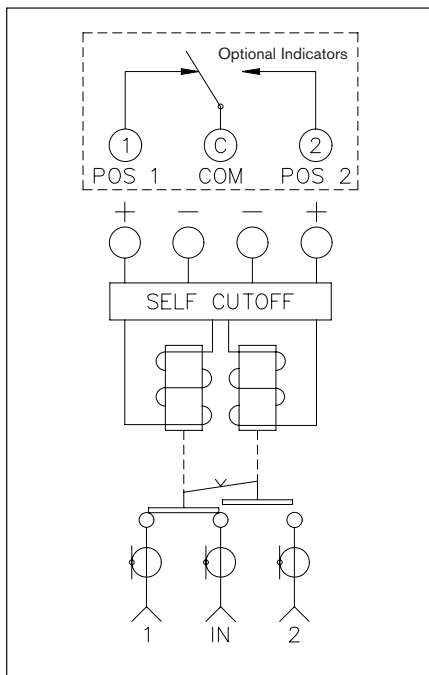
LOGIC TRUTH TABLE			
RF PATH	INDICATOR PATH	LOGIC INPUT "A"	LOGIC INPUT "B"
IN-1	COM-1	1	0
IN-2	COM-2	0	1

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

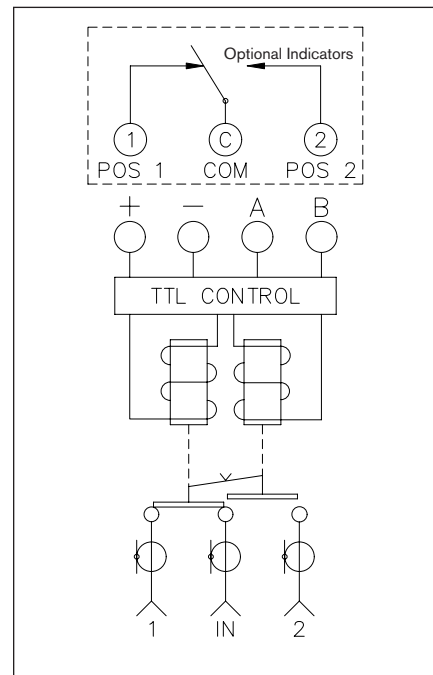
04 402 Pulse



05 402 Self Cutoff



06 402 Self Cutoff TTL





- DC-18 GHz
- DC-26.5 GHz
- Low/Medium Power
- 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	1.15	80	0.15
4-8	1.20	70	0.20
8-12	1.30	65	0.30
12-18	1.35	60	0.35
*18-26.5	1.50	55	0.50

* Performance varies depending on selected options

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 450 mA
- 24 Vdc 225 mA
- 28 Vdc 200 mA

Switching Time:

15 ms maximum

Operating Temperature:

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

Mechanical Life Cycles:

5,000,000 minimum

Vibration, Operating:

10G RMS, 20-2000 Hz

Mechanical Shock, Non-Operating:

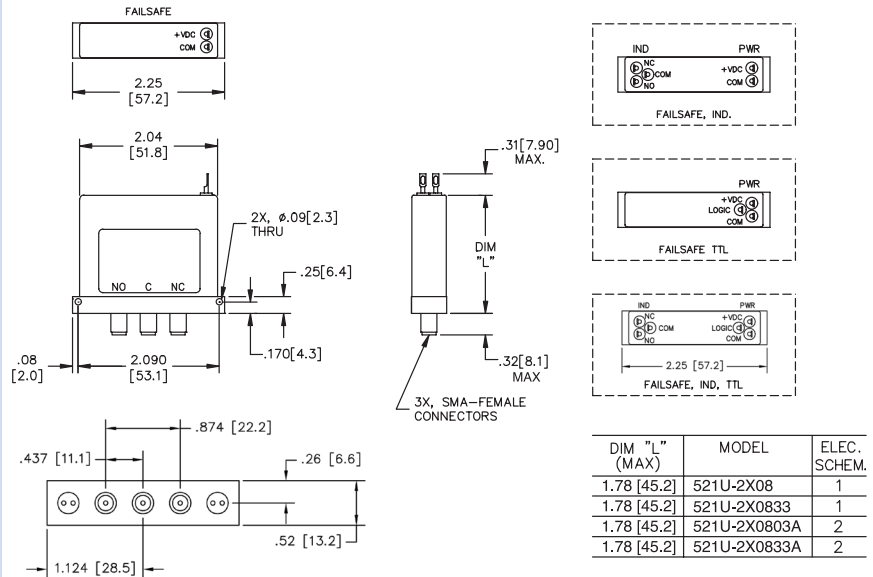
30G, 1/2 Sine, 11 ms

Nominal Weight*:

2.5 oz. (71 g.)

* Performance and weight varies depending on selected options.

Mechanical



521U-2X0803 Shown
For Electrical Schematic, see page # 1-12

Part Number Selector

521 J U - 2 2 08 03 A - ROHS

Special Options	Actuator	Coil Voltage	Connectors	Indicators	Circuit Options
I = Immersion Seal	2 = Failsafe	2 = 12 Vdc	08 = SMA Female	02 = No Indicators, Unterminated Ports*	A = TTL High
J = 'D' Connector	6 = Failsafe with Suppression Diode	3 = 28 Vdc		03 = No Indicators, 2W Terminations	L = TTL Low
K = 26.5 GHz		8 = 24 Vdc		**32 = Indicators, Unterminated Ports	* Declared only with Circuit Options
R = (+) Com				**33 = Indicators, 2W Terminations	** Offered with 1M Life Cycles 521-Series
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.



- DC-18 GHz
- DC-26.5 GHz
- Low/Medium Power
- 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	1.15	80	0.15
4-8	1.20	70	0.20
8-12	1.30	65	0.30
12-18	1.35	60	0.35
*18-26.5	1.50	55	0.50

* Performance varies depending on selected options

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 265 mA
- 24 Vdc 205 mA
- 28 Vdc 175 mA

Switching Time:

15 ms maximum

Operating Temperature:

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

Mechanical Life Cycles*:

5,000,000 minimum

Vibration, Operating:

10G RMS, 20-2000 Hz

Mechanical Shock, Non-Operating:

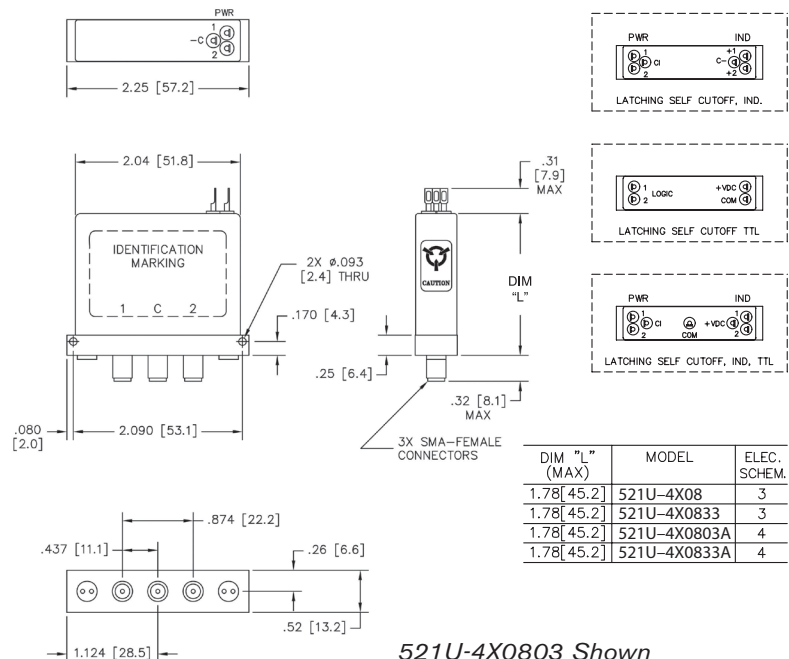
30G, 1/2 Sine, 11 ms

Nominal Weight*:

2.5 oz. (71 g.)

* Performance and weight varies depending on selected options.

Mechanical

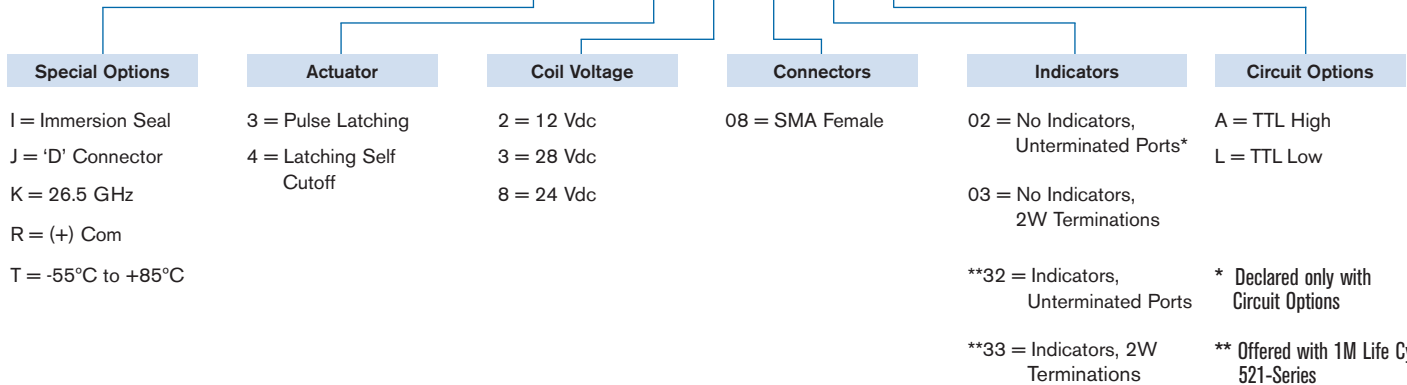


521U-4X0803 Shown

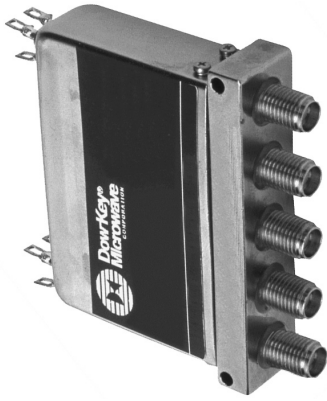
For Electrical Schematic, see page # 1-12

Part Number Selector

521 J U - 4 2 08 03 A - ROHS



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



- DC-40 GHz
- Low Power
- 1M Life Cycles

RF Characteristics

Frequency GHz	VSWR (max)	Isolation dB (min)	Ins. Loss dB (max)
DC-6	1.30	80	0.30
6-12	1.40	70	0.40
12-18	1.50	65	0.50
18-26.5	1.70	60	0.70
26.5-40	1.80	55	0.80

Specifications

Operating Voltage (across temperature range):

- 12 Vdc (11-14 Vdc)
- 28 Vdc (24-32 Vdc)

Coil Current (max. @ nom. Vdc & 25°C)*:

- 12 Vdc 450 mA
- 24 Vdc 225 mA
- 28 Vdc 200 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:

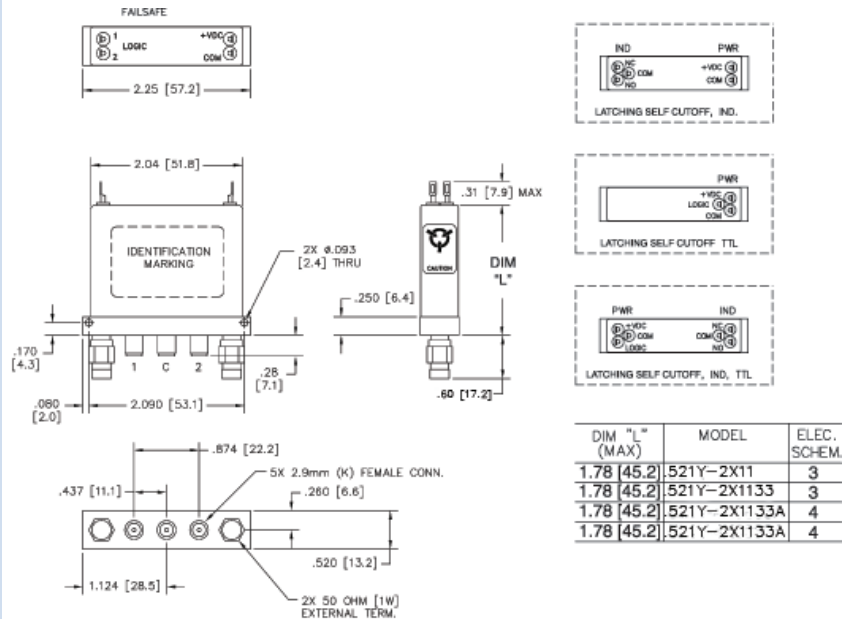
30G, 1/2 Sine, 11 ms

Nominal Weight*:

2.5 oz. (71 g.)

* Performance and weight varies depending on selected options.

Mechanical



521Y-221103 shown

For Electrical Schematic, see page # 1-12

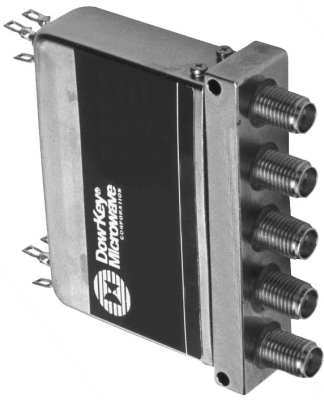
Part Number Selector

521 J Y - 2 2 11 03 A - ROHS

Special Options	Actuator	Coil Voltage	Connectors	Indicators	Circuit Options
I = Immersion Seal J = 'D' Connector T = -55°C to +85°C	2 = Failsafe	2 = 12 Vdc 3 = 28 Vdc 8 = 24 Vdc	11 = 2.9 mm	02 = No Indicators, Unterminated Ports* 03 = No Indicators, 1W External Terminations 32 = Indicators, Unterminated Ports 33 = Indicators, 1W External Terminations	A = TTL High L = TTL Low

* 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-40 GHz
- Low Power
- 1M Life Cycles

RF Characteristics

Frequency GHz	VSWR (max)	Isolation dB (min)	Ins. Loss dB (max)
DC-6	1.30	80	0.30
6-12	1.40	70	0.40
12-18	1.50	65	0.50
18-26.5	1.70	60	0.70
26.5-40	1.80	55	0.80

Specifications

Operating Voltage (across temperature range):

- 12 Vdc (11-14 Vdc)
- 28 Vdc (24-32 Vdc)

Coil Current (typ. @ nom. Vdc & 25°C)*:

- 12 Vdc 440 mA
- 24 Vdc 220 mA
- 28 Vdc 190 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:

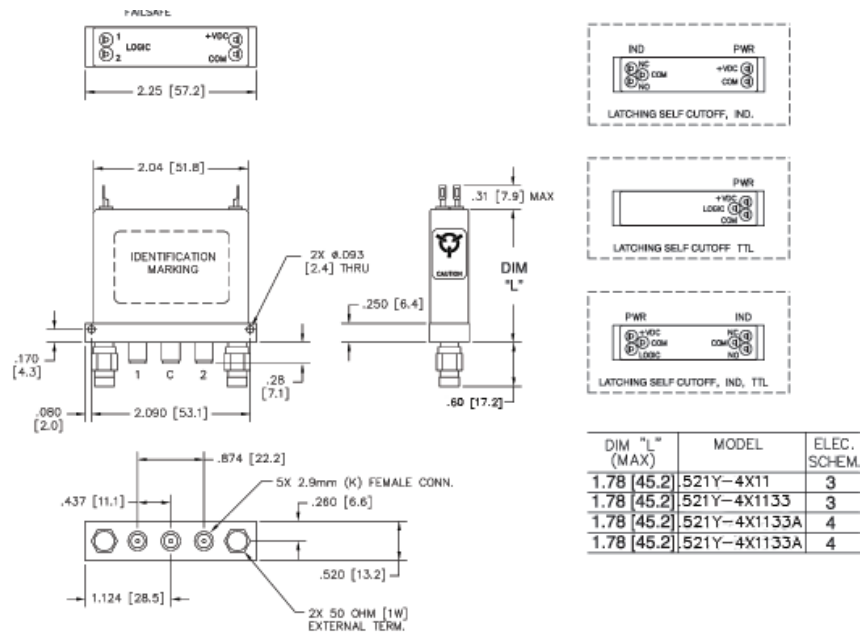
30G, 1/2 Sine, 11 ms

Nominal Weight*:

2.5 oz. (71 g.)

* Performance and weight varies depending on selected options.

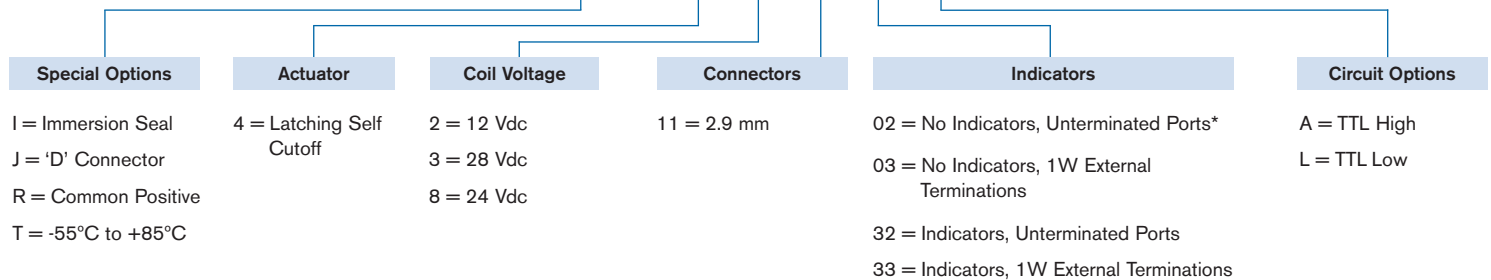
Mechanical



DIM "L" (MAX)	MODEL	ELEC. SCHEM.
1.78 [45.2]	521Y-4X11	3
1.78 [45.2]	521Y-4X1133	3
1.78 [45.2]	521Y-4X1133A	4
1.78 [45.2]	521Y-4X1133A	4

Part Number Selector

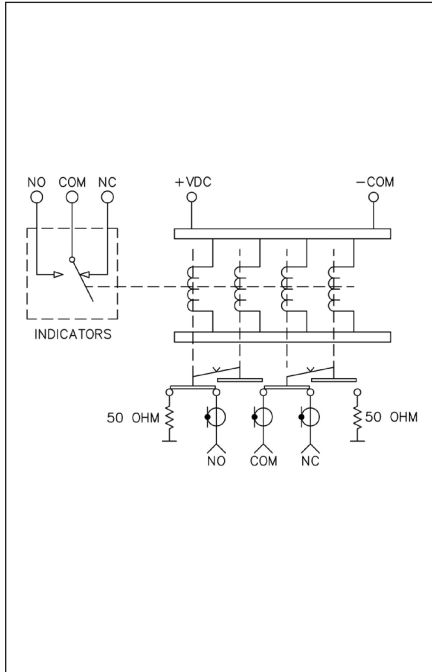
521 J Y - 4 2 11 03 A - ROHS



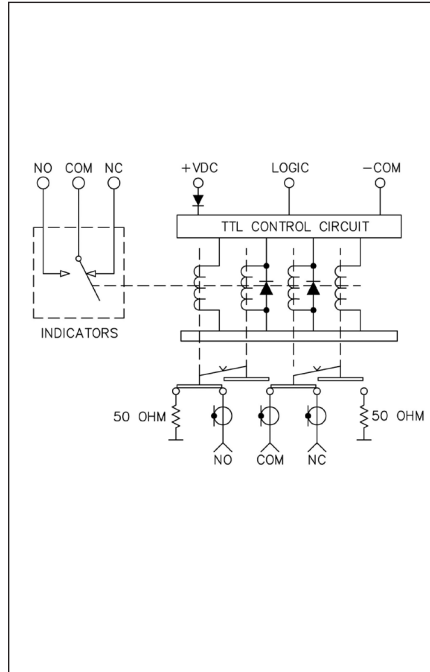
* Declared only with Circuit Options

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

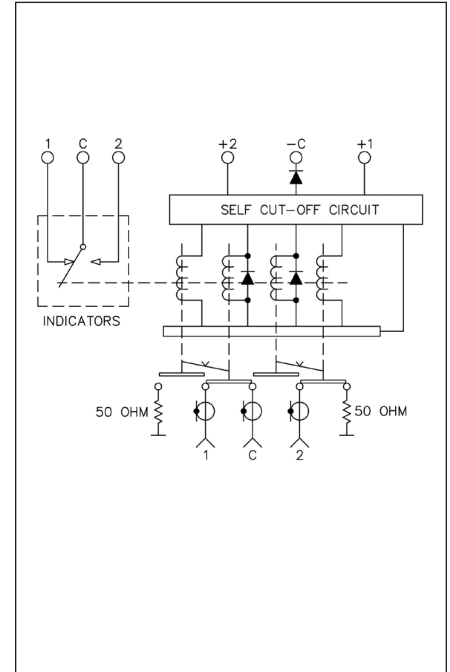
01 521U/521Y Failsafe



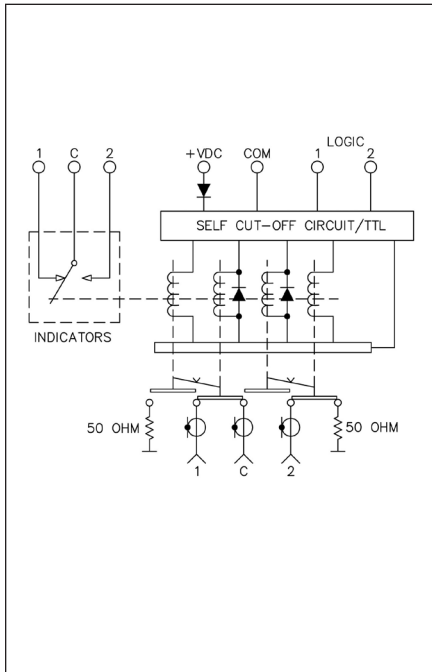
02 521U/521Y Failsafe TTL



03 521U/521Y Self Cutoff



04 521U/521Y Self Cutoff TTL



05 521U/521Y Logic Truth Table

FAILSAFE TTL - SCH #2

LOGIC TRUTH TABLE		
RF PATH	INDICATOR PATH	LOGIC INPUT
NC-COM	NC-COM	0
NO-COM	NO-COM	1

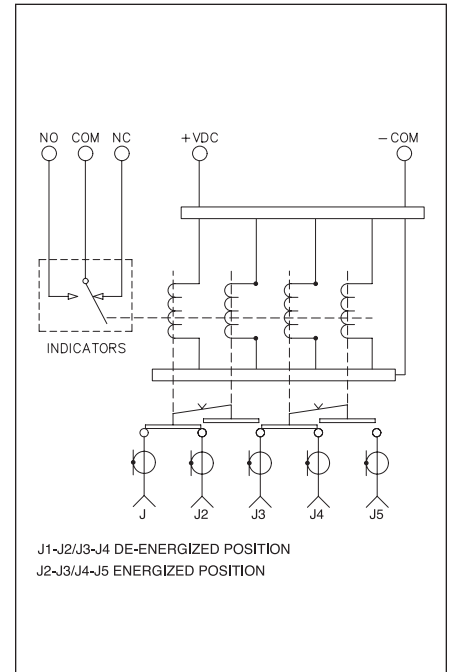
LOGIC HI (ON) 1 = 2.4-5.5Vdc
 LOGIC LOW (OFF) 0 = 0-0.8Vdc

SELF CUTOFF TTL - SCH #4

LOGIC TRUTH TABLE		
RF PATH	LOGIC INPUT "1"	LOGIC INPUT "2"
C-1	1	0
C-2	0	1

LOGIC HI (ON) = 2.4-5.5Vdc
 LOGIC LOW (OFF) = 0-0.8Vdc

06 521U Unterminated



Note: Diagram shown as Failsafe Unterminated. Consult with factory for other options.