REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	PRODUCTION RELEASE	11/17/16	K.R.
B	REVISED PER ECO 11684	4/25/17	K.R.

Nominal Coil Voltage	Part Number
12 Vdc	R461JK-420853
24 Vdc	R461JK-480853

REVISIONS	B	B	B	B	B	
SHEET NO.	1	2	3	4	5	

APPROVALS	DATE
DRAWN SARA LEE	03/17/2016
ENGINEERING J. WESSELY	4/18/2017
QUALITY S. LYNCH	11/15/2016
MANUFACTURING R. GARCIA	11/16/2016

DowKey ®
Microwave
CORPORATION
A DOVER TECHNOLOGIES COMPANY

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SWITCH, SP6T, LATCHING SELF CUT-OFF, IDC-16P
SMA-FEMALE CONNECTORS, OPTICAL INDICATORS
50 OHM [2W] TERMINATIONS, 5 MIL CYCLE, 26.5 GHz

CODE IDENT. NO.	DWG. NO.			
00471	R461JK-4X0853			
SCALE NONE	FINAL ASSY: R461JK-480853	SHEET	1	OF	5

OUTLINE DRAWING:

16 PIN IDC CONNECTOR

.59 [14.9]

CAUTION

PIN 1

∅2.234 [56.7]

Dow-Key Microwave CORPORATION
00471

IDENTIFICATION
MARKING

2.55
[64.9]

7X .27 [6.9]

.086 [2.2]

6X 50 OHM [2W] INTERNAL
TERMINATIONS

7X SMA-FEMALE CONNETOR
6X SPACED ON ∅1.062 [27.0] BC

□2.25
[57.2]

□1.800
[45.7]

1
6
2
C
5
3
4

4X ∅.172 [4.4]
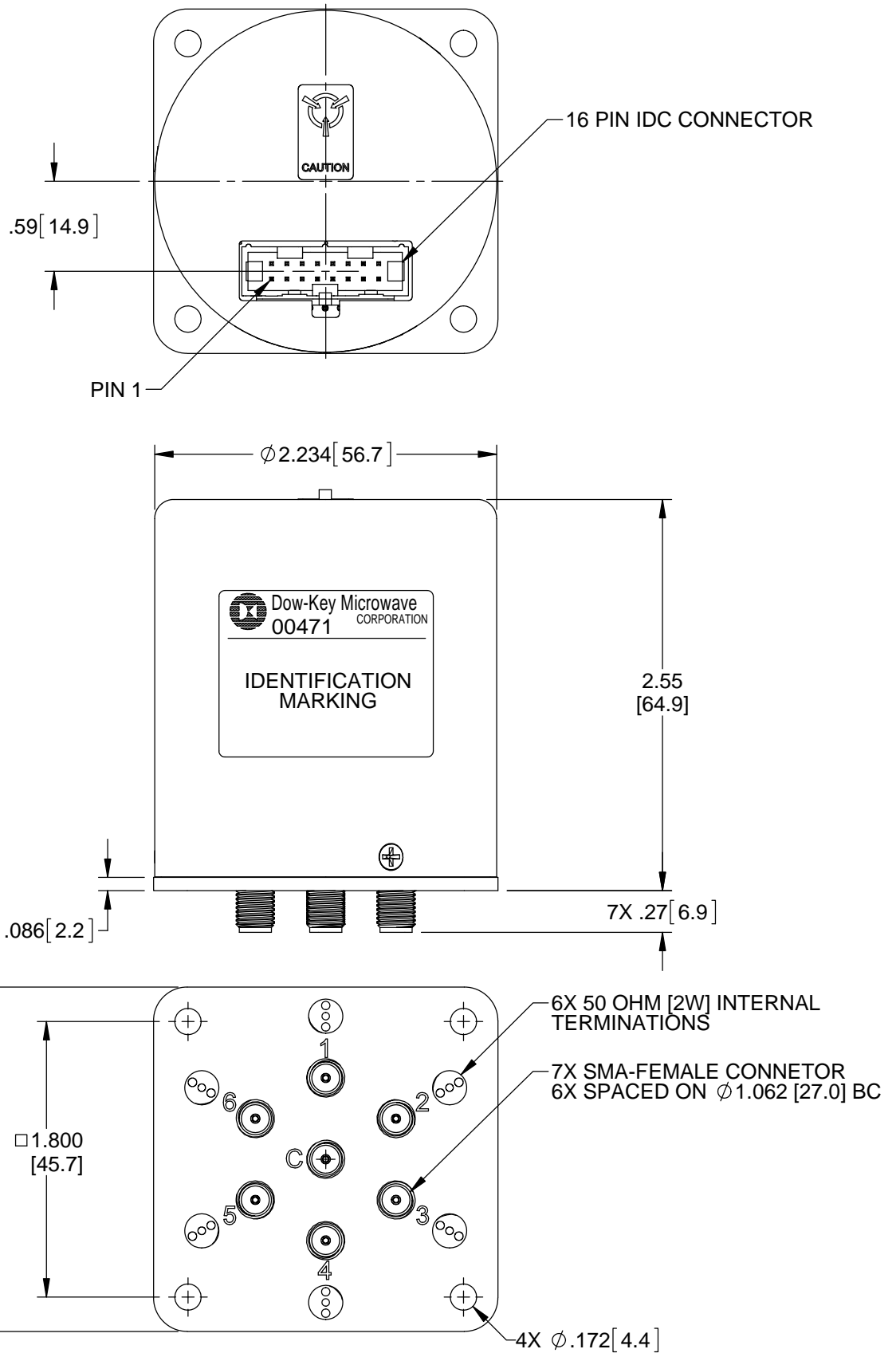
UNLESS OTHERWISE SPECIFIED TOLERANCES ARE:	CODE IDENT. NO. 00471	DWG. NO. R461JK-4X0853	REV. B
.XXX ±.010 ANGLES: ±3° .XX ±.030	SCALE NONE	FINAL ASSY: R461JK-480853	SHEET 2 OF 5

[ ] MILLIMETERS

04-0004 REV. C 5/27/10

SPECIFICATION:

1.0 RF CHARACTERISTICS:

1.1 FREQUENCY (GHz)	DC - 4	4 - 12.4	12.4 - 18	18 - 26.5
1.2 VSWR (RATIO MAX)	1.20:1	1.30:1	1.45:1	1.65:1
1.3 VSWR, TERMINATION (RATIO MAX)	1.20:1	1.30:1	1.45:1	1.70:1
1.4 INSERTION LOSS (dB MAX)	0.20	0.35	0.45	0.70
1.4.1 REPEATABILITY (MAX)	0.03 dB @ 25°C (DC - 26.5 GHz)			
1.5 ISOLATION (dB TYP)	100	100	75	70
1.6 HOT SWITCHING (WATTS CW)	2	2	2	2
1.7 IMPEDANCE (NOMINAL)	50 OHMS			

2.0 ACTUATION DATA:

2.1

NOMINAL VOLTAGE	OPERATING VOLTAGE	($I_{(cc)}$) COIL CURRENT (TYP) @ NOMINAL VOLTAGE & 25°C
12	11 - 14	180mA
24	20 - 32	75mA

2.2 SWITCHING TIME   15mS MAX

2.3 OPERATING MODE   LATCHING SELF CUT-OFF

2.4 STAND BY CURRENT ($I_{(Q)}$)   50 mA MAX

2.5 OPERATING CURRENT ($I_{(T)}$) $I_{(T)} = I_{(Q)} + (I_{(cc)} \times N)$
                                         N IS THE NUMBER OF POSITIONS SIMULTANEOUSLY OPENED OR CLOSED.

3.0 MECHANICAL:

3.1 CONTACT ARRANGEMENT   SP6T

3.2 RF CONTACTS   BREAK BEFORE MAKE OR MAKE BEFORE BREAK

3.3 WEIGHT   8.4 oz (238 g) NOMINAL

3.4 DESIGN LIFE*   5,000,000 CYCLES MINIMUM

4.0 ENVIRONMENTAL:

4.1 OPERATING TEMPERATURE   -25°C TO +75°C

4.2 STORAGE TEMPERATURE   -55°C TO +85°C

4.3 VIBRATION

   4.3.1 SINUSOIDAL OPERATING   7g, 10 - 2000 Hz

   4.3.2 SINUSOIDAL SURVIVAL   20g, 20 - 2000 Hz at 0.06 in p-p

   4.3.3 RANDOM (OPERATING)   2.41g (rms), 12 min/AXIS

4.4 SHOCK (OPERATING)   50 g at 11mS
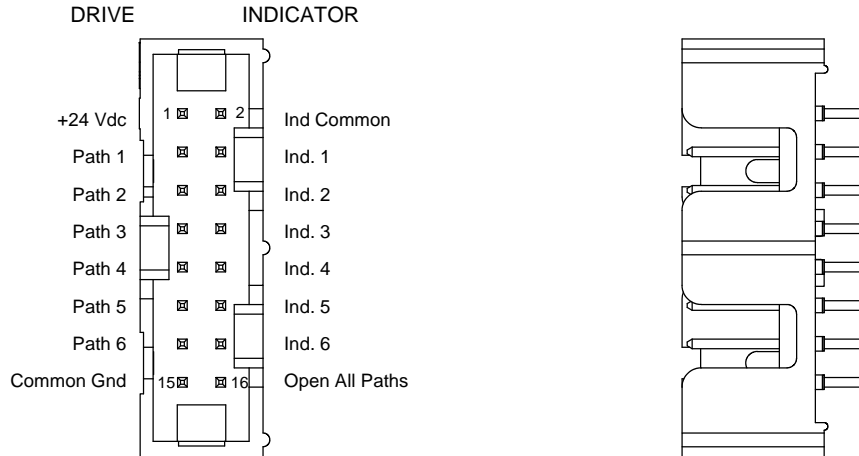
4.5 ALTITUDE (SURVIVAL)   50,000 FEET

* FOR 24V UNITS:

DESIGN LIFE IS 5 MILLION CYCLES MINIMUM, WHEN DRIVEN AT VOLTAGES $20 \leq$ Vsupply ≤ 28 VDC

DESIGN LIFE IS 2 MILLION CYCLES MINIMUM WHEN DRIVEN AT VOLTAGES $28 <$ Vsupply ≤ 32 VDC.

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SCALE NONE	FINAL ASSY: R461JK-480853		SHEET 3 OF 5

DRIVING THE SWITCH

DRIVE   INDICATOR

+24 Vdc	1 2 Ind Common
Path 1	Ind. 1
Path 2	Ind. 2
Path 3	Ind. 3
Path 4	Ind. 4
Path 5	Ind. 5
Path 6	Ind. 6
Common Gnd	15 16 Open All Paths

Each RF path can be closed by applying Ground to the corresponding "drive" pin. Any non-driven path will be simultaneously opened by internal logic.

Standard drive:
- Connect pin 15 to ground.
- Connect pin 1 to supply voltage
- Select (close) desired RF path by applying Ground to the corresponding "drive" pin (Ex: apply Ground to pin 3 to close RF path 1).
- To select another path, ensure that all unwanted RF path "drive" pins are disconnected from Ground (to prevent multiple RF path engagement). Apply Ground to the "drive" pin which corresponds to the desired RF path.
- To open all RF paths, ensure that all RF path "drive" pins are disconnected from Ground. Complete the operation by applying Ground to pin 16.

Break-Before-Make
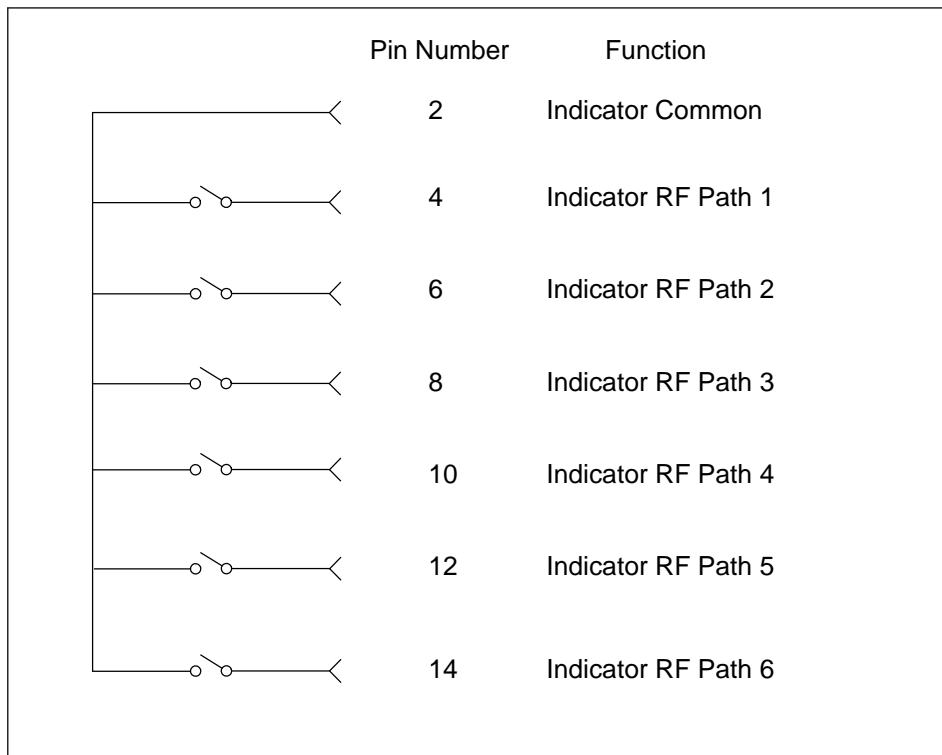Open the undesired RF path. After 15 mS (minimum), close the new RF path.

Make-Before-Break
Ensure that the previously selected RF path "drive" is connected to Ground, then close the new RF path. The previously selected path can then be de-selected.

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ELECTRONIC POSITION INDICATORS:

The electronic position indicators consist of optically isolated, solid state relays which are driven by, photo-electric sensors coupled to the mechanical position of the RF paths moving elements. The circuitry consists of a common which can be connected to an output corresponding to the selected RF path. If one or more RF paths are closed, the corresponding indicators will be connected to the common. The solid state relays are configured for AC and/or DC operation. The electronic position indicators require the supply voltage to be connected to pin 1 and Ground connected to pin 15.

Pin Number	Function
2	Indicator Common
4	Indicator RF Path 1
6	Indicator RF Path 2
8	Indicator RF Path 3
10	Indicator RF Path 4
12	Indicator RF Path 5
14	Indicator RF Path 6

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