DETAILED SPECIFICATION SHEET

SWITCHES, RADIO-FREQUENCY TRANSMISSION LINE (MICROSTRIP) (ELECTRICALLY OPERATED) CLASS 15, (PIN-MOUNTED) 1P2T

This specification is approved for use by all Departments and Agencies of the Department of Defense.

 Requirements for acquiring the switches described herein shall consist of this specification sheet and MIL-DTL-3928.

NOTES:
1. Dimensions are in inches.
2. Metric equivalents may be determined using 1.00 inch = 25.4 mm.
3. Unless otherwise specified, tolerances are ± .005 (± 0.13 mm) for three place decimals and ± .02 (± 0.5 mm) for two place decimals.

FIGURE 1. Switch configuration and schematic, part or identifying numbers M3928/29-01, M3928/29-02, M3928/29-03, M3928/29-04, M3928/29-05, and M3928/29-06.
POSITION 1. (ENERGIZE TERMINAL 1),
C CONNECTS TO 1,
2 IS OPEN CIRCUIT.

POSITION 2. (ENERGIZE TERMINAL 2),
C CONNECTS TO 2,
1 IS OPEN CIRCUIT.

NOTES:
1. Dimensions are in inches.
2. Metric equivalents may be determined using 1.00 inch = 25.4 mm.
3. Unless otherwise specified, tolerances are ± .005 (± 0.13 mm) for three place decimals and
   ± .02 (± 0.5 mm) for two place decimals.

FIGURE 2. Switch configuration and schematic, part or identifying numbers M3928/29-07, M3928/29-08,
M3928/29-09, M3928/29-10, M3928/29-11, and M3928/29-12.
### TABLE I. Electrical and performance characteristics.

<table>
<thead>
<tr>
<th>Part or identifying number M3928/29-</th>
<th>Fig. No.</th>
<th>Housing</th>
<th>Frequency range dc to GHz</th>
<th>VSWR Max</th>
<th>Insertion loss (dB) Max</th>
<th>Isolation (dB) Min</th>
<th>Switch time (ms) Max</th>
<th>Position indication circuit and rating</th>
<th>Life cycles x 1000 Min</th>
<th>Fail-safe or latching</th>
<th>Operating current (A) 1/</th>
<th>Holding current (A) 1/</th>
<th>Nominal operating voltage</th>
<th>Pickup voltage (less than)</th>
<th>Dropout voltage (less than)</th>
<th>Power and indicator connector</th>
<th>Weight (oz) Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>01N, S</td>
<td>1</td>
<td>0</td>
<td>18</td>
<td>1.7:1</td>
<td>0.7 2/</td>
<td>50 4/</td>
<td>15</td>
<td>None</td>
<td>1,000</td>
<td>F</td>
<td>0.1</td>
<td>0.1</td>
<td>28 V dc</td>
<td>&lt;20 V dc</td>
<td>---</td>
<td>Pin-mounted</td>
<td>.75</td>
</tr>
<tr>
<td>02N, S</td>
<td>1</td>
<td>0</td>
<td>8</td>
<td>1.4:1</td>
<td>0.4</td>
<td>60</td>
<td>15</td>
<td>None</td>
<td>1,000</td>
<td>F</td>
<td>0.1</td>
<td>0.1</td>
<td>28 V dc</td>
<td>&lt;20 V dc</td>
<td>---</td>
<td>Pin-mounted</td>
<td>.75</td>
</tr>
<tr>
<td>03N, S</td>
<td>1</td>
<td>0</td>
<td>18</td>
<td>1.7:1</td>
<td>0.7 3/</td>
<td>50 4/</td>
<td>15</td>
<td>None</td>
<td>1,000</td>
<td>F</td>
<td>0.17</td>
<td>0.17</td>
<td>12 V dc</td>
<td>&lt;10 V dc</td>
<td>---</td>
<td>Pin-mounted</td>
<td>.75</td>
</tr>
<tr>
<td>04N, S</td>
<td>1</td>
<td>0</td>
<td>8</td>
<td>1.4:1</td>
<td>0.4</td>
<td>60</td>
<td>15</td>
<td>None</td>
<td>1,000</td>
<td>F</td>
<td>0.17</td>
<td>0.17</td>
<td>12 V dc</td>
<td>&lt;10 V dc</td>
<td>---</td>
<td>Pin-mounted</td>
<td>.75</td>
</tr>
<tr>
<td>05N, S</td>
<td>1</td>
<td>0</td>
<td>18</td>
<td>1.7:1</td>
<td>0.7 3/</td>
<td>50 4/</td>
<td>15</td>
<td>None</td>
<td>1,000</td>
<td>F</td>
<td>0.4</td>
<td>0.4</td>
<td>5 V dc</td>
<td>&lt;4.5 V dc</td>
<td>---</td>
<td>Pin-mounted</td>
<td>.75</td>
</tr>
<tr>
<td>06N, S</td>
<td>1</td>
<td>0</td>
<td>8</td>
<td>1.4:1</td>
<td>0.4</td>
<td>60</td>
<td>15</td>
<td>None</td>
<td>1,000</td>
<td>F</td>
<td>0.4</td>
<td>0.4</td>
<td>5 V dc</td>
<td>&lt;4.5 V dc</td>
<td>---</td>
<td>Pin-mounted</td>
<td>.75</td>
</tr>
<tr>
<td>07 N, S</td>
<td>2</td>
<td>0</td>
<td>18</td>
<td>1.7:1</td>
<td>0.7 3/</td>
<td>50 4/</td>
<td>15</td>
<td>None</td>
<td>1,000</td>
<td>L</td>
<td>0.1</td>
<td>0</td>
<td>28 V dc</td>
<td>&lt;20 V dc</td>
<td>---</td>
<td>Pin-mounted</td>
<td>1.0</td>
</tr>
<tr>
<td>08 N, S</td>
<td>2</td>
<td>0</td>
<td>8</td>
<td>1.4:1</td>
<td>0.4</td>
<td>60</td>
<td>15</td>
<td>None</td>
<td>1,000</td>
<td>L</td>
<td>0.1</td>
<td>0</td>
<td>28 V dc</td>
<td>&lt;20 V dc</td>
<td>---</td>
<td>Pin-mounted</td>
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</tr>
<tr>
<td>09 N, S</td>
<td>2</td>
<td>0</td>
<td>18</td>
<td>1.7:1</td>
<td>0.7 3/</td>
<td>50 4/</td>
<td>15</td>
<td>None</td>
<td>1,000</td>
<td>L</td>
<td>0.17</td>
<td>0</td>
<td>12 V dc</td>
<td>&lt;10 V dc</td>
<td>---</td>
<td>Pin-mounted</td>
<td>1.0</td>
</tr>
<tr>
<td>10 N, S</td>
<td>2</td>
<td>0</td>
<td>8</td>
<td>1.4:1</td>
<td>0.4</td>
<td>60</td>
<td>15</td>
<td>None</td>
<td>1,000</td>
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<td>0.17</td>
<td>0</td>
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<td>---</td>
<td>Pin-mounted</td>
<td>1.0</td>
</tr>
<tr>
<td>11 N, S</td>
<td>2</td>
<td>0</td>
<td>18</td>
<td>1.7:1</td>
<td>0.7 3/</td>
<td>50 4/</td>
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<td>Pin-mounted</td>
<td>1.0</td>
</tr>
</tbody>
</table>

1/ At nominal voltage and 20°C.
2/ The VSWR at DC to 8 GHz is 1.4:1 maximum.
3/ The insertion loss at DC to 8 GHz is 0.4 dB maximum.
4/ The isolation at DC to 8 GHz is 60 dB minimum.
REQUIREMENTS:

Dimensions and configurations: See figures 1 and 2.

Termination: Open.

Nominal impedance: 50 ohms.

RF connections: Pins for printed circuit (pc) mount. Pins are soldered to microstrip.

Electrical and performance characteristics: See table I.

RF contacts: Break before make.

RF power handling capability: 10 watts.

Operating temperature: -55°C to +85°C.

Dielectric withstanding voltage:
  Actuator pins: 500 V dc.
  RF pins: 250 V rms.

Solar radiation: Not applicable.

RF energy leakage: Not applicable.

Terminal strength: Not applicable.

Part or Identifying Number: M3928/29- (and dash number from table I).

Referenced documents: This specification sheet only references MIL-DTL-3928.

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Air Force - 85 (Project 5985-2018-005)
DLA - CC

Review activities:
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Navy - AS, MC, OS
Air Force – 19, 99

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