DETAIL SPECIFICATION SHEET

SWITCHES, RADIO-FREQUENCY TRANSMISSION
LINE (COAXIAL) (ELECTRICALLY AND MANUALLY OPERATED)
CLASS 7

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

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

Position 1 (de-energized or fail-safe position), J1 connects to J4, and J3 connects to J2.
Position 2 (energized position), J1 connects to J2, and J3 connects to J4.

FIGURE 1. PIN M3928/8-01.
**NOTES:**

1. Dimension are in inches.
2. Metric equivalents are given for general information only (1.00 inch = 25.4 mm).
3. Metric equivalents are in parentheses.
4. Corners of case may be round or square.
5. Unless otherwise specified, tolerances are ± .010 inch (± 0.25 mm) for three place decimals and ± .03 inch (± 0.76 mm) for two place decimals.

**FIGURE 1. PIN M3928/8-01 - Continued.**
Position 1 (de-energized or fail-safe position),
C connects to NC connector.
Position 2 (energized position),
C connects to NO connector

NOTES:
1. Dimension are in inches.
2. Metric equivalents are given for general information only (1.00 inch = 25.4 mm).
3. Metric equivalents are in parentheses.
4. Corners of case may be round or square.
5. Unless otherwise specified, tolerances are \( \pm .010 \) inch \( (\pm 0.25 \text{ mm}) \) for three place decimals and \( \pm .03 \) inch \( (\pm 0.76 \text{ mm}) \) for two place decimals.

FIGURE 2. PIN M3928/8-03.
Position 1 (de-energized or fail-safe position),
C connects to NC connector.
Position 2 (energized position),
C connects to NO connector.

NOTES:
1. Dimension are in inches.
2. Metric equivalents are given for general information only (1.00 inch = 25.4 mm).
3. Metric equivalents are in parentheses.
4. Corners of case may be round or square.
5. Unless otherwise specified, tolerances are ± .010 inch (± 0.25 mm) for three place decimals and ± .03 inch (± 0.76 mm) for two place decimals.

FIGURE 3. Pins M3928/8-05 and M3928/7-07.
Position 1 (de-energized or fail-safe position),
C connects to NC connector.
Position 2 (energized position),
C connects to NO connector

NOTES:
1. Dimension are in inches.
2. Metric equivalents are given for general information only (1.00 inch = 25.4 mm).
3. Metric equivalents are in parentheses.
4. Corners of case may be round or square.
5. Unless otherwise specified, tolerances are ± .010 inch (± 0.25 mm) for three place decimals and ± .03 inch (± 0.76 mm) for two place decimals.

FIGURE 4. PIN M3928/8-18.
Position 1 (de-energized or fail-safe position),
  C connects to NC connector.
Position 2 (energized position),
  C connects to NO connector

NOTES:
1. Dimension are in inches.
2. Metric equivalents are given for general information only (1.00 inch = 25.4 mm).
3. Metric equivalents are in parentheses.
4. Corners of case may be round or square.
5. Unless otherwise specified, tolerances are ±.010 inch (±0.25 mm) for three place decimals and ±.03 inch (±0.76 mm) for two place decimals.

FIGURE 5. PIN M3928/8-19.
Position 1 (de-energized or fail-safe position),
C connects to NC connector.

Position 2 (energized position),
C connects to NO connector.

NOTES:
1. Dimension are in inches.
2. Metric equivalents are given for general information only (1.00 inch = 25.4 mm).
3. Metric equivalents are in parentheses.
4. Corners of case may be round or square.
5. Unless otherwise specified, tolerances are ± .010 inch (± 0.25 mm) for three place decimals and ± .03 inch (± 0.76 mm) for two place decimals.

FIGURE 6. PIN M3928/8-20.
Position JC = common.
Position J1 through J6 - normally open.

### Dimensions

<table>
<thead>
<tr>
<th>Letter</th>
<th>Inches</th>
<th>Millimeters</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>.65</td>
<td>16.5</td>
</tr>
<tr>
<td>B</td>
<td>.041</td>
<td>1.04</td>
</tr>
<tr>
<td>C</td>
<td>.260 dia</td>
<td>6.60 dia</td>
</tr>
<tr>
<td>D</td>
<td>.78</td>
<td>19.8</td>
</tr>
<tr>
<td>E</td>
<td>1.50</td>
<td>38.1</td>
</tr>
<tr>
<td>F</td>
<td>2.03</td>
<td>51.6</td>
</tr>
</tbody>
</table>

**NOTES:**
1. Dimension are in inches.
2. Metric equivalents are given for general information only (1.00 inch = 25.4 mm).
3. Metric equivalents are in parentheses.
4. Corners of case may be round or square.
5. Unless otherwise specified, tolerances are ± .010 inch (± 0.25 mm) for three place decimals and ± .03 inch (± 0.76 mm) for two place decimals.
6. Three mounting holes .138 inch (3.51 mm) -32 UNC-2B, 120 degrees apart on a .906 inch (23.01 mm) radius.

FIGURE 7. PIN M3928/8-21.
### Dimensions

<table>
<thead>
<tr>
<th>Letter</th>
<th>Inches</th>
<th>Millimeters</th>
<th>Letter</th>
<th>Inches</th>
<th>Millimeters</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>.198 - .178</td>
<td>5.03 - 4.52</td>
<td>M</td>
<td>.198 - .178</td>
<td>5.03 - 4.52</td>
</tr>
<tr>
<td>D</td>
<td>.947 - .927</td>
<td>24.05 - 23.55</td>
<td>N</td>
<td>.947 - .927</td>
<td>24.05 - 23.55</td>
</tr>
<tr>
<td>E</td>
<td>.198 - .178</td>
<td>5.03 - 4.52</td>
<td>P</td>
<td>.198 - .178</td>
<td>5.03 - 4.52</td>
</tr>
<tr>
<td>F</td>
<td>1.026 - 1.006</td>
<td>26.06 - 25.55</td>
<td>Q</td>
<td>.791 - .771</td>
<td>20.09 - 19.58</td>
</tr>
<tr>
<td>H</td>
<td>.635 - .615</td>
<td>16.13 - 15.62</td>
<td>S</td>
<td>1.89 - 1.83</td>
<td>48.0 - 46.5</td>
</tr>
<tr>
<td>J</td>
<td>3.03 - 2.97</td>
<td>77.0 - 75.4</td>
<td>T</td>
<td>.138-32 UNC-2B No. 6</td>
<td>3.51-32 UNC-2B No. 6</td>
</tr>
</tbody>
</table>

### NOTES:
1. Dimension are in inches.
2. Metric equivalents are given for general information only (1.00 inch = 25.4 mm).
3. Metric equivalents are in parentheses.
4. Unless otherwise specified, tolerances are ± .010 inch (± 0.25 mm) for three place decimals and ± .03 inch (± 0.76 mm) for two place decimals.

**FIGURE 8.** PIN M3928/8-22.
TABLE I. Electrical and performance characteristics.

<table>
<thead>
<tr>
<th>PIN M39288/8-</th>
<th>Fig. No.</th>
<th>Housing</th>
<th>Configuration</th>
<th>Manual or remote</th>
<th>Solenoid or motor</th>
<th>Fail-safe or latching</th>
<th>Frequency range DC to GHz</th>
<th>VSWR (max)</th>
<th>Insertion loss (max)</th>
<th>Isolation (min)</th>
<th>Switching time (max)</th>
<th>Position indicating circuit</th>
<th>Life cycles x 1000</th>
<th>Operating voltage nominal</th>
<th>Pickup voltage (max)</th>
<th>Dropout voltage (min)</th>
<th>Operating current (max)</th>
<th>Holding current</th>
<th>Power and indicator connector</th>
<th>Weight (max) (oz)</th>
</tr>
</thead>
<tbody>
<tr>
<td>01N, S</td>
<td>1</td>
<td>O</td>
<td>TR</td>
<td>R</td>
<td>S</td>
<td>F</td>
<td>1.55</td>
<td>1.3:1</td>
<td>0.42</td>
<td>30</td>
<td>20</td>
<td>None</td>
<td>1000</td>
<td>28 V dc</td>
<td>18 V dc</td>
<td>3 V dc</td>
<td>0.2</td>
<td>0.2</td>
<td>Solder terminals Solder terminals Solder terminals Solder terminals Solder terminals Solder terminals Solder terminals Solder terminals</td>
<td>12 (341)</td>
</tr>
<tr>
<td>03N, S</td>
<td>2</td>
<td>O</td>
<td>1P2T</td>
<td>R</td>
<td>S</td>
<td>F</td>
<td>1.55</td>
<td>1.3:1</td>
<td>0.42</td>
<td>30</td>
<td>20</td>
<td>None</td>
<td>1000</td>
<td>28 V dc</td>
<td>18 V dc</td>
<td>3 V dc</td>
<td>0.2</td>
<td>0.2</td>
<td>Solder terminals Solder terminals Solder terminals Solder terminals Solder terminals Solder terminals Solder terminals Solder terminals</td>
<td>12 (341)</td>
</tr>
<tr>
<td>05N, S</td>
<td>3</td>
<td>O</td>
<td>1P2T</td>
<td>R</td>
<td>S</td>
<td>F</td>
<td>1.55</td>
<td>1.3:1</td>
<td>0.42</td>
<td>30</td>
<td>20</td>
<td>None</td>
<td>1000</td>
<td>115 V ac</td>
<td>93 V ac</td>
<td>5 V ac</td>
<td>0.3</td>
<td>0.3</td>
<td>Solder terminals Solder terminals Solder terminals Solder terminals Solder terminals Solder terminals Solder terminals Solder terminals</td>
<td>12 (341)</td>
</tr>
<tr>
<td>07N, S</td>
<td>3</td>
<td>O</td>
<td>1P2T</td>
<td>R</td>
<td>S</td>
<td>F</td>
<td>1.55</td>
<td>1.3:1</td>
<td>0.42</td>
<td>30</td>
<td>20</td>
<td>None</td>
<td>1000</td>
<td>110 V dc</td>
<td>84 V dc</td>
<td>10 V dc</td>
<td>0.2</td>
<td>0.2</td>
<td>Solder terminals Solder terminals Solder terminals Solder terminals Solder terminals Solder terminals Solder terminals Solder terminals</td>
<td>7 (199)</td>
</tr>
<tr>
<td>18N, S 4/5</td>
<td>4</td>
<td>O</td>
<td>1P2T</td>
<td>R</td>
<td>S</td>
<td>F</td>
<td>4</td>
<td>1.4:1</td>
<td>0.3</td>
<td>30</td>
<td>15</td>
<td>None</td>
<td>1000</td>
<td>28 V dc</td>
<td>18 V dc</td>
<td>5 V dc</td>
<td>0.1</td>
<td>0.1</td>
<td>Solder terminals Solder terminals Solder terminals Solder terminals Solder terminals Solder terminals Solder terminals Solder terminals</td>
<td>12 (341)</td>
</tr>
<tr>
<td>19N, S 4/5</td>
<td>5</td>
<td>O</td>
<td>1P2T</td>
<td>R</td>
<td>S</td>
<td>F</td>
<td>4</td>
<td>1.4:1</td>
<td>0.3</td>
<td>30</td>
<td>15</td>
<td>None</td>
<td>1000</td>
<td>28 V dc</td>
<td>18 V dc</td>
<td>5 V dc</td>
<td>0.1</td>
<td>0.1</td>
<td>Solder terminals Solder terminals Solder terminals Solder terminals Solder terminals Solder terminals Solder terminals Solder terminals</td>
<td>7 (199)</td>
</tr>
<tr>
<td>20N, S</td>
<td>6</td>
<td>E</td>
<td>1P2T</td>
<td>R</td>
<td>S</td>
<td>F</td>
<td>6</td>
<td>1.5:1</td>
<td>0.3</td>
<td>20</td>
<td>25</td>
<td>None</td>
<td>1000</td>
<td>28 V dc</td>
<td>18 V dc</td>
<td>10 V dc</td>
<td>0.125</td>
<td>0.125</td>
<td>Solder terminals Solder terminals Solder terminals Solder terminals Solder terminals Solder terminals Solder terminals Solder terminals</td>
<td>7 (199)</td>
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<td>1P6T</td>
<td>M</td>
<td>---</td>
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<td>3</td>
<td>1.25:1</td>
<td>0.2</td>
<td>50</td>
<td>---</td>
<td>None</td>
<td>25</td>
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<tr>
<td>22N, S</td>
<td>8</td>
<td>E</td>
<td>1P4T</td>
<td>R</td>
<td>S</td>
<td>F</td>
<td>1.5</td>
<td>1.5:1</td>
<td>0.1</td>
<td>41</td>
<td>12</td>
<td>None</td>
<td>1000</td>
<td>28 V dc</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
</tbody>
</table>

1/ Dash numbers 02, 04, 06, and 08 through 17 have been deleted.

2/ At nominal operating voltage and 20°C.

3/ Mass in grams in parentheses.

4/ Termination is grounded.

5/ DC to .7 GHz.
MIL-DTL-3928/8E

REQUIREMENTS:

Dimensions and configurations:  See figures 1 through 8.
Nominal impedance:  50 ohms.
Termination:  Open.
RF power handling capability (average):  100 watts.
Electrical and performance characteristics:  See table I.
RF connectors:  BNC connectors shall mate with BNC male connectors in accordance with MIL-PRF-39012/16.
Vibration:  Method I.
Operating temperature:  -55° C to +85° C.
Part or Identifying Number (PIN):  M3928/8- (dash number from table I).

TABLE II.  PIN to type cross-reference.

<table>
<thead>
<tr>
<th>PIN M3928/8-</th>
<th>Type</th>
<th>SA-</th>
<th>/U</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td></td>
<td>1348</td>
<td></td>
</tr>
<tr>
<td>03</td>
<td></td>
<td>1350</td>
<td></td>
</tr>
<tr>
<td>05</td>
<td></td>
<td>1352</td>
<td></td>
</tr>
<tr>
<td>07</td>
<td></td>
<td>1354</td>
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</table>

Referenced documents:  In addition to MIL-DTL-3928, this document references the following MIL-PRF-39012/16

Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extent of the changes.

Custodians:  Preparing activity:
Army - CR  DLA - CC
Navy - EC
Air Force - 85 (Project 5985-2011-004)
DLA - CC

Review activities:
Army - MI
Navy - AS, MC, OS, SH
Air Force - 19, 99

NOTE:  The activities listed above were interested in this document as of the date of this document.  Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at https://assist.daps.dla.mil.