Description

The 59166 is a miniature overmolded reed switch 16.00mm x 2.40mm x 2.40mm (0.630” x 0.094” x 0.094”) with Gull Wing leads. It has normally open contact, capable of switching up to 200Vdc at 10W.

Note: The 57045 Actuator is sold separately.

Features & Benefits

- Two-part magnetically operated proximity switch
- Gull Wing Leads
- Tape and reel option
- Solder reflow capable
- Thermoset overmolded material
- RoHS Compliant
- ATEX certified for use in European explosive atmospheres: II 3 G Ex nC IIC Gc
- Certified for use in North American Hazardous Locations: Class I, Division 2 and Zone 2
- Suitable for pick and place
- No standby power requirement
- Operates through non-ferrous materials such as wood, plastic or aluminium
- Hermetically sealed, magnetically operated contacts continue to operate long after optical and other technologies fail due to contamination

Applications

- Position and Limit Sensing
- Security System Switch
- Door and Window Proximity Sensing
- Metering
- Automotive Electronics
- Anti-Tamper Detection
- Small Appliances

Additional Information

Agency Approvals

<table>
<thead>
<tr>
<th>Agency</th>
<th>Agency File Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>UL</td>
<td>E61760</td>
</tr>
<tr>
<td>DEMKO</td>
<td>DEMKO 14 ATEX 1393U II 3 G Ex nC IIC Gc</td>
</tr>
</tbody>
</table>

Note: Contact Littelfuse for specific agency approval ratings.

Dimensions

Dimensions in mm (inch)

- 2x 0.89 (0.035)
- 2.00 (0.079)
- 1.50 (0.059)
- 2.51 (0.099)
- 2.51 (0.099)
- 2.40 (0.094)
- 19.51 (0.768)
- 16.00 MAX (0.630)

Soldering Footprint

Dimensions in mm (inch)

- 20.20 (0.795)
59166 Series
Miniature Overmolded Reed Switch

Electrical Ratings

<table>
<thead>
<tr>
<th>Contact Type</th>
<th>Normally Open</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact Rating 1</td>
<td>VA/Watt - max. 10</td>
</tr>
<tr>
<td>Voltage 3</td>
<td>Switching 2 Vdc - max. 200</td>
</tr>
<tr>
<td>Current 3</td>
<td>Switching 2 Adc - max. 0.5</td>
</tr>
<tr>
<td>Resistance</td>
<td>Contact, Initial Insulation Ω - max. 0.2</td>
</tr>
<tr>
<td>Capacitance</td>
<td>Contact pF - typ. 0.3</td>
</tr>
<tr>
<td>Temperature</td>
<td>Operating °C -40 to +125</td>
</tr>
</tbody>
</table>

Product Characteristics

<table>
<thead>
<tr>
<th>59166 Series</th>
<th>Miniature Overmolded Reed Switch</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operate Time 5</td>
<td>ms - max. 1.0</td>
</tr>
<tr>
<td>Release Time 5</td>
<td>ms - max. 1.0</td>
</tr>
<tr>
<td>Shock 6</td>
<td>11ms 1⁄2 sine G - max. 100</td>
</tr>
<tr>
<td>Vibration 6</td>
<td>50-2000 Hz G - max. 30</td>
</tr>
</tbody>
</table>

Notes:
1. Contact rating - Product of the switching voltage and current should never exceed the wattage rating. Contact Littelfuse for additional load/life information.
2. When switching inductive and/or capacitive loads, the effects of transient voltages and/or currents should be considered. Refer to Application Notes AN108A and AN107 for details.
3. Electrical Load Life Expectancy - Contact Littelfuse with voltage, current values along with type of load.
5. Operate (including bounce)/Release Time - per EIA/NARM RS-421-A, diode suppressed coil (Coil II).

Sensitivity Options (Using 57045 Actuator)

<table>
<thead>
<tr>
<th>Select Option</th>
<th>S</th>
<th>T</th>
<th>U</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switch Type</td>
<td>Pull-In AT Range</td>
<td>Activate Distance, D mm (inch) Average</td>
<td>Pull-In AT Range</td>
</tr>
<tr>
<td>1 Normally Open</td>
<td>10-15</td>
<td>7.4 (.292)</td>
<td>15-20</td>
</tr>
</tbody>
</table>

Note:
1. Pull-In AT Range: These AT values are the before molding and modification AT of the 59166.
2. The activation distance is average value post modification for the Gull wing option C or D.

Termination Specification

<table>
<thead>
<tr>
<th>Select Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>C Gull Wing bulk packed</td>
<td></td>
</tr>
<tr>
<td>D Gull Wing tape and reel</td>
<td></td>
</tr>
</tbody>
</table>

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Specifications are subject to change without notice.
Revised: GD, 05/23/23

Actuator

Switch
### Part Numbering System

**Switch:**

- **Series:** 59166
- **Switch Type:** 1
- **Sensitivity:** X
- **Termination and Packaging:** 00
- **Actuator:** X

**Part Numbering System**

- **Actuator:** 57045
- **Series:** 00
- **Standard Actuator:** 00

**Note:** The 57045 Actuator is sold separately.

### Product Marking

- **Part Number:** 59166-1-X-00-X
- **Date Code:** XXXX

### Packaging

<table>
<thead>
<tr>
<th>Packaging Option</th>
<th>Packaging Specification</th>
<th>Quantity</th>
<th>Quantity and Packaging Code</th>
<th>Taping Width</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulk</td>
<td>Bulk</td>
<td>1500</td>
<td>B</td>
<td>N/A</td>
</tr>
<tr>
<td>Tape and Reel</td>
<td>EIA-RS-481-1</td>
<td>1500</td>
<td>R</td>
<td>32.00/(1.260)</td>
</tr>
</tbody>
</table>

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