**MRPR-20**

20.3mm Miniature High Voltage and High Power Reed Switch

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**Specifications**

The MRPR-20 Reed Switch is a miniature, normally open switch with a 20.32mm long x 2.84mm diameter (0.800" x 0.112") glass envelope, capable of high voltage and power switching of 265Vac at 50VA. The MRPR-20 has high insulation resistance of $10^{10}$ ohms minimum and contact resistance less than 100 milli-ohms.

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**Agency Approvals**

<table>
<thead>
<tr>
<th>Agency File Number</th>
<th>Ampere-Turns Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>E47258, E471070</td>
<td>17-43 AT</td>
</tr>
</tbody>
</table>

Note: Contact Littelfuse for specific agency approval ratings.

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**Dimensions**

Dimensions in mm (inch)

- **CL OF OVERLAP**
- **0.63** (0.025) DIA. REF.
- **28.32** (1.115) REF.
- **2.84** (0.112) MAX.

- **18.16** (0.715) MIN.
- **20.32** (0.800) MAX.
- **56.64** (2.230) NOM.

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**Features & Benefits**

- Miniature normally open switch
- Capable of switching 265Vac or 1.5A at up to 50W/VA
- Minimum breakdown voltage 750Vdc
- Available sensitivity range 17-43 AT
- UL Recognized to UL 121201, UL 60079-0, UL 60079-15, C22.2 No. 213-17 C22.2 No. 60079-0 and C22.2 No. 60079-15.
- Approved to EN 60079-0 and EN 60079-15.
- Hermetically sealed switch contacts are not affected by and have no effect on their external environment
- Zero operating power required for contact
- High voltage and power switching with a miniature switch

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**Applications**

- Reed relays (suitable for switching global mains voltage)
- Limit switching
- Telecom line switching
- Heavy Load Switching

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**Switch Type**

- **Contact Form**: A (SPST-NO)
- **Body**: Glass
- **Leads**: Tin-plated Ni-Fe wire

Note: SPST-NO = Single-pole, single-throw, normally open

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**Electrical Ratings**

<table>
<thead>
<tr>
<th>Contact Rating</th>
<th>W/VA - max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage</td>
<td></td>
</tr>
<tr>
<td>Switching</td>
<td>Vdc - max.</td>
</tr>
<tr>
<td>Breakdown</td>
<td>Vdc - min.</td>
</tr>
<tr>
<td>Current</td>
<td></td>
</tr>
<tr>
<td>Switching</td>
<td>Adc - max.</td>
</tr>
<tr>
<td>Carry</td>
<td>Adc - max.</td>
</tr>
<tr>
<td>Resistance</td>
<td></td>
</tr>
<tr>
<td>Contact, Initial Insulation</td>
<td>Ω - max.</td>
</tr>
<tr>
<td></td>
<td>Ω - min.</td>
</tr>
<tr>
<td>Capacitance</td>
<td></td>
</tr>
<tr>
<td>Contact</td>
<td>pF - typ.</td>
</tr>
<tr>
<td>Temperature</td>
<td></td>
</tr>
<tr>
<td>Operating</td>
<td>°C</td>
</tr>
<tr>
<td>Storage</td>
<td>°C</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. Storage Temperature - Long time exposure at elevated temperature may degrade solderability of the leads.
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Product Characteristics

<table>
<thead>
<tr>
<th>Operating Characteristics</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Operate Time ¹</td>
<td>0.75ms - max.</td>
</tr>
<tr>
<td>Release Time ²</td>
<td>0.3ms - max.</td>
</tr>
<tr>
<td>Shock ²</td>
<td>11ms 1/2 sine wave</td>
</tr>
<tr>
<td>Vibration ²</td>
<td>50-2000 Hertz</td>
</tr>
<tr>
<td>Resonant Frequency</td>
<td>2.1kHz - typ.</td>
</tr>
</tbody>
</table>

Magnetic Characteristics

<table>
<thead>
<tr>
<th>Pull-In Range ³</th>
<th>Ampere Turns</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rating Sensitivity ⁴</td>
<td>17-43</td>
</tr>
<tr>
<td>Test Coil</td>
<td>L4989</td>
</tr>
</tbody>
</table>

Notes:
1. Operate (including bounce)/Release Time - per EIA/NARIM RS-421-A, diode suppressed coil (Coil II).
3. Pull-In Range - Contact Littelfuse for narrower AT ranges available.
4. Rating Sensitivity - The value at which contact ratings and operating characteristics are determined. Derating may be required below this value.
5. Custom modifications of forming and/or cutting of reed switches are available. Please contact Littelfuse.

Drop-Out vs. Pull-In Chart

Note: Chart represents the range of Drop-Out, min to max for a given Pull-In value.

Part Numbering System

MRPR-20 - 17-28

Example: 17-43 AT product is MRPR-20-17-43
17-28 AT product is MRPR-20-17-28

Series
AT Range
17-43 AT
17-23 AT
17-28 AT
22-33 AT
27-33 AT
27-38 AT
32-38 AT
32-43 AT
37-43 AT

Note: These AT values are the before-modification values of the bare reed switch.

Packaging

<table>
<thead>
<tr>
<th>Packaging Option</th>
<th>Packaging Specification</th>
<th>Quantity</th>
<th>Quantity &amp; Packaging Code</th>
<th>Taping Width</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulk</td>
<td>Bulk</td>
<td>1000</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

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