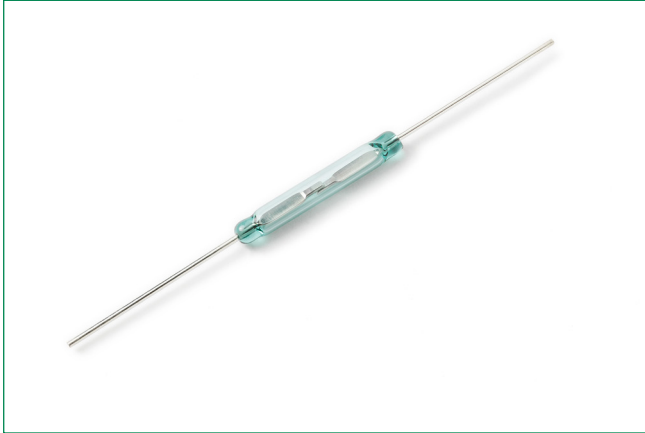


# MRPR-20

## 20.3mm Miniature High Voltage and High Power Reed Switch



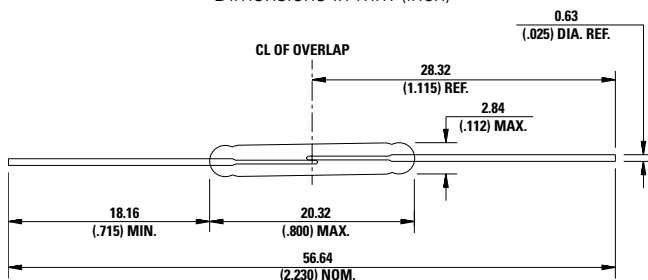
### Agency Approvals

| Agency | Agency File Number | Ampere-Turns Range |
|--------|--------------------|--------------------|
| US     | E47258, E471070    | 17-43 AT           |

**Note:** Contact Littelfuse for specific agency approval ratings.

### Dimensions

Dimensions in mm (inch)



### Description

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.

### 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

### Applications

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

### Switch Type

|              |                                             |
|--------------|---------------------------------------------|
| Contact Form | A (SPST-NO)                                 |
| Materials    | Body: Glass<br>Leads: Tin-plated Ni-Fe wire |

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

### Electrical Ratings

|                             |                        |                    |             |
|-----------------------------|------------------------|--------------------|-------------|
| Contact Rating <sup>1</sup> |                        | W/VA - max.        | 50          |
| Voltage <sup>3</sup>        | Switching <sup>2</sup> | Vdc - max.         | 250         |
|                             |                        | Vac - max.         | 265         |
|                             | Breakdown <sup>4</sup> | Vdc - min.         | 750         |
| Current <sup>3</sup>        | Switching <sup>2</sup> | Adc - max.         | 1.5         |
|                             |                        | Aac - max.         | 1.1         |
|                             | Carry                  | Adc - max.         | 3.0         |
| Resistance                  | Contact, Initial       | $\Omega$ - max.    | 0.100       |
|                             | Insulation             | $\Omega$ - min.    | $10^{10}$   |
| Capacitance                 | Contact                | pF - typ.          | 0.2         |
| Temperature                 | Operating              | $^{\circ}\text{C}$ | -20 to +125 |
|                             | Storage <sup>5</sup>   | $^{\circ}\text{C}$ | -65 to +125 |

#### 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.
4. Breakdown Voltage - per MIL-STD-202, Method 301.
5. Storage Temperature - Long time exposure at elevated temperature may degrade solderability of the leads.

# MRPR-20

## 20.3mm Miniature High Voltage and High Power Reed Switch

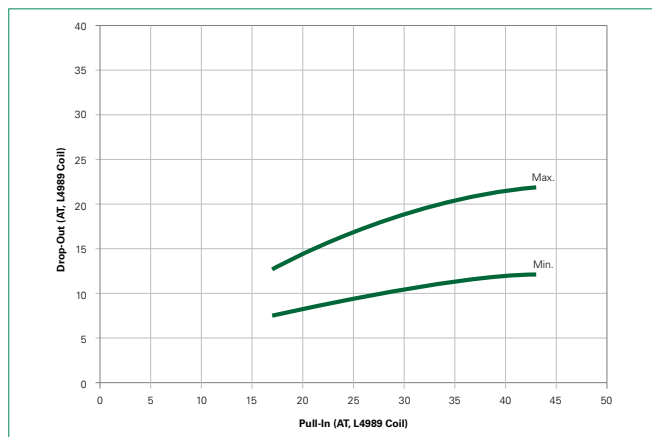
### Product Characteristics

| Operating Characteristics       |                    |               |
|---------------------------------|--------------------|---------------|
| Operate Time <sup>1</sup>       |                    | 0.75ms - max. |
| Release Time <sup>1</sup>       |                    | 0.3ms - max.  |
| Shock <sup>2</sup>              | 11ms 1/2 sine wave | 100G - max.   |
| Vibration <sup>2</sup>          | 50-2000 Hertz      | 30G - max.    |
| Resonant Frequency              |                    | 2.1kHz - typ. |
| Magnetic Characteristics        |                    |               |
| Pull-In Range <sup>3</sup>      | Ampere Turns       | 17-43         |
| Rating Sensitivity <sup>4</sup> | Ampere Turns       | 22            |
| Test Coil                       | -                  | L4989         |

**Notes:**

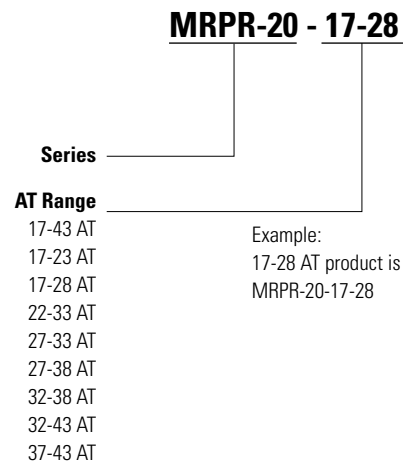
1. Operate (including bounce)/Release Time - per EIA/NARM RS-421-A, diode suppressed coil (Coil II).
2. Shock and Vibration - per EIA/NARM RS-421-A and MIL-STD-202.
3. Pull-In Range - Contact Littelfuse for narrower AT ranges available.
4. Rating Sensitivity - The value at which contact ratings and operating 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



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

### Packaging

| Packaging Option | Packaging Specification | Quantity | Quantity & Packaging Code | Taping Width |
|------------------|-------------------------|----------|---------------------------|--------------|
| Bulk             | Bulk                    | 1000     | N/A                       | N/A          |

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