

# MVSR-20 19.7mm Reed Switch



## Description

The MVSR-20 reed switch is a miniature, normally open switch with a 19.69mm long x 2.66mm diameter (0.775" x 0.105") glass envelope, capable of high voltage switching of up to 1kVdc at 1mA. It has high insulation resistance of 10<sup>12</sup> ohms minimum and contact resistance less than 100 milli-ohms.

## Features

- Miniature normally open switch
- Capable of switching 1000Vdc at 1mA or 0.5A up to 10W
- Minimum voltage breakdown 2000 Vdc
- Available sensitivity range 17-38 AT

## Benefits

- Hermetically sealed switch contacts are not affected by and have no effect on their external environment
- Zero operating power required for contact closure

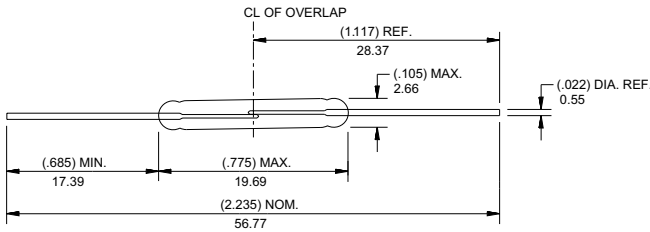
## Agency Approvals

| Agency | Agency File Number | Ampere-Turns Range |
|--------|--------------------|--------------------|
|        | E67006             | 0.125A - 4A        |

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

## Dimensions

Dimensions in mm (inch)



## Applications

- Reed relays (particularly suitable for high voltage breakdown applications)
- Security
- Limit switching
- Telecoms line switching
- Industrial equipment

## 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/WA - max. | 10          |
| Voltage <sup>3</sup>        | Switching <sup>2</sup><br>Breakdown <sup>4</sup> | Vdc - max.  | 1000        |
|                             |                                                  | Vac - max.  | 265         |
|                             |                                                  | Vdc - min.  | 2000        |
|                             |                                                  | Vdc - max.  | 1.30        |
| Current <sup>3</sup>        | Switching <sup>2</sup><br>Carry                  | Adc - max.  | 0.50        |
|                             |                                                  | Aac - max.  | 0.35        |
|                             |                                                  | Adc - max.  | 1.30        |
| Resistance                  | Contact, Initial Insulation                      | Ω - max.    | 65V         |
|                             |                                                  | Ω - min.    |             |
| Capacitance                 | Contact                                          | pF - typ.   | 0.2         |
| Temperature                 | Operating                                        | °C          | -75 to +125 |
|                             | Storage <sup>5</sup>                             |             |             |

**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.

### Product Characteristics

#### Operating Characteristics

|                           |                    |               |
|---------------------------|--------------------|---------------|
| Operate Time <sup>1</sup> | -                  | 0.75ms - max. |
| Release Time <sup>1</sup> | -                  | 0.30ms - max. |
| Shock <sup>2</sup>        | 11ms 1/2 sine wave | 100G - max.   |
| Vibration <sup>2</sup>    | 50-2000 Hertz      | 30G - max.    |
| Resonant Frequency        | -                  | 3.2kHz - typ. |

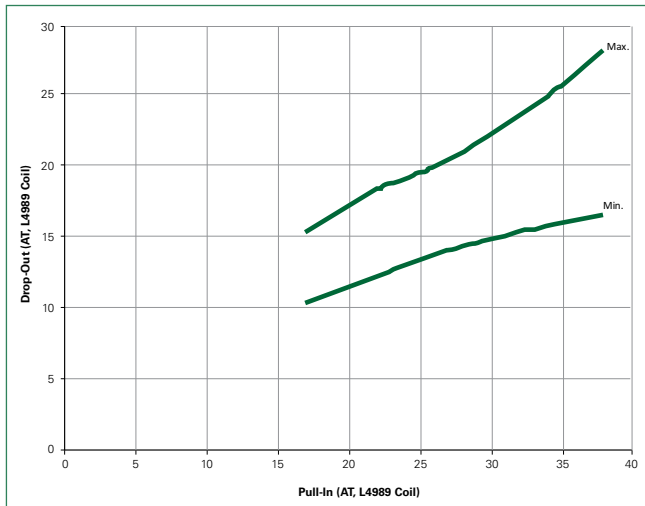
#### Magnetic Characteristics

|                                 |              |       |
|---------------------------------|--------------|-------|
| Pull-In Range <sup>3</sup>      | Ampere Turns | 17-38 |
| Rating Sensitivity <sup>4</sup> | Ampere Turns | 35    |
| Test Coil                       | -            | L4989 |

#### Notes:

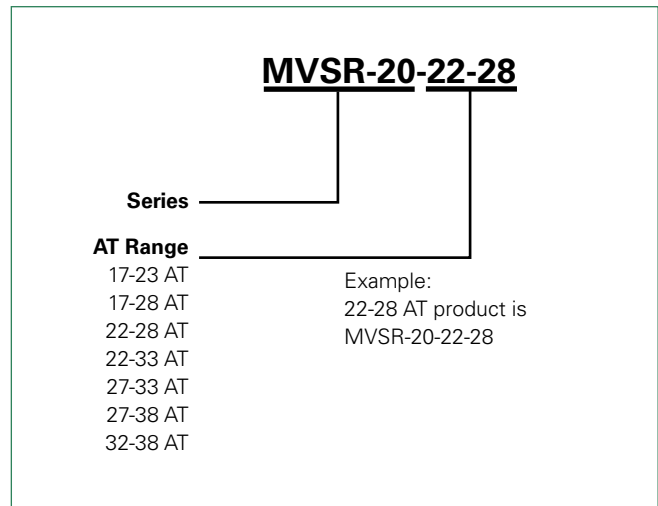
- Operate (including bounce)/Release Time - per EIA/NARM RS-421-A, diode suppressed coil (Coil II).
- Shock and Vibration - per EIA/NARM RS-421-A and MIL-STD-202.
- Pull-In Range - Contact Littelfuse for narrower AT ranges available.
- Rating Sensitivity - The value at which contact ratings and operating characteristics are determined. Derating may be required below this value.
- 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     | -                         | -            |

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