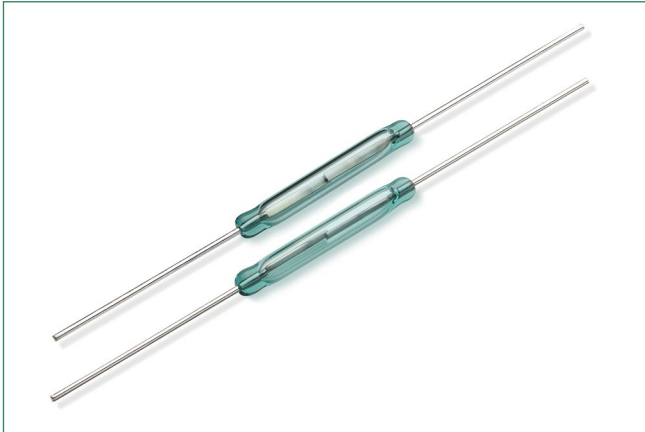


# MVSR-20

## 19.7mm Reed Switch



### Description

The MVSR-20 series 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 and Benefits

- Miniature normally open switch
- Capable of switching 1000 Vdc at 1 mA or 0.5 A up to 10 W
- Minimum voltage breakdown 2000 Vdc
- Available sensitivity range 17-48AT
- Hermetically sealed switch contacts are not affected by and have no effect on their external environment
- Zero operating power required for contact closure

### Web Resources



Download ECAD models, order samples, and find technical resources at [www.littelfuse.com](http://www.littelfuse.com)

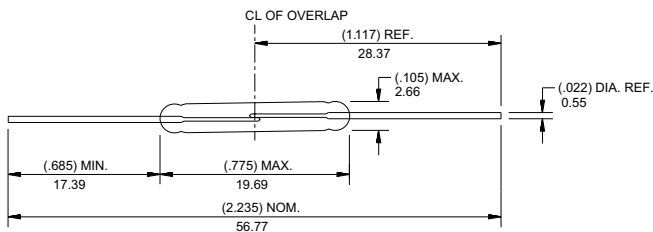
### Agency Approvals

| Agency | Agency File Number | Ampere-Turns Range |
|--------|--------------------|--------------------|
|        | E67006             | 17-48 AT           |

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
- Automatic test equipment

### Switch Type

|                     |                              |
|---------------------|------------------------------|
| <b>Contact Form</b> | A (SPST-NO)                  |
| <b>Materials</b>    | Body: Glass                  |
|                     | 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. | 10                                                              |
| Voltage <sup>3</sup>        | Switching <sup>2</sup><br>Breakdown <sup>4</sup> | Vdc - max.  | 1000                                                            |
|                             |                                                  | Vac - max.  | 265                                                             |
|                             |                                                  | Vdc - min.  | < 32AT = 2000 min<br>32-38 AT = 3000 min<br>37-48 AT = 3600 min |
| Current <sup>3</sup>        | Switching <sup>2</sup><br>Carry                  | Adc - max.  | 0.50                                                            |
|                             |                                                  | Aac - max.  | 0.35                                                            |
|                             |                                                  | Adc - max.  | 1.30                                                            |
| Capacitance                 | Contact                                          | pF - typ.   | 0.43                                                            |
| Resistance                  | Contact, Initial Insulation                      | Ω - max.    | 0.100                                                           |
|                             |                                                  | Ω - min.    | 10 <sup>12</sup>                                                |
| Temperature                 | Operating                                        | °C          | -65 to +125                                                     |
|                             | Storage <sup>5</sup>                             |             |                                                                 |

#### Notes:

- Contact rating - Product of the switching voltage and current should never exceed the wattage rating. Contact Littelfuse for additional load/life information.
- 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.

- Electrical Load Life Expectancy - Contact Littelfuse with voltage, current values along with type of load.
- Breakdown Voltage- per MIL-STD-202, Method 301.
- Storage Temperature - Long time exposure at elevated temperature may degrade solderability of the leads.

# MVSR-20

## 19.7mm Reed Switch

### Product Characteristics

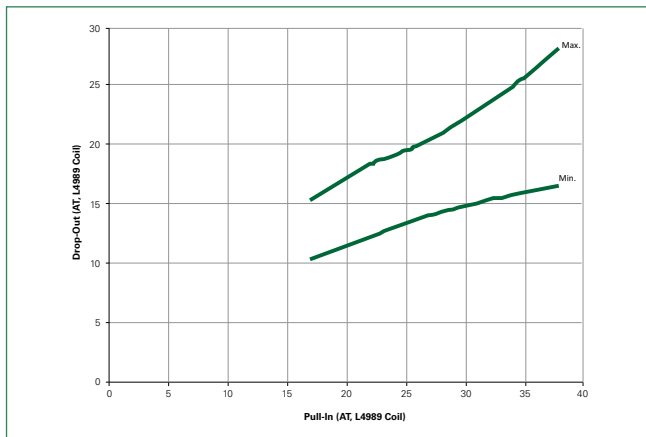
| Operating Characteristics |                     |               |
|---------------------------|---------------------|---------------|
| Operate Time <sup>1</sup> | -                   | 0.75ms - max. |
| Release Time <sup>1</sup> | -                   | 0.30ms - max. |
| Shock <sup>2</sup>        | 11 ms 1/2 sine wave | 20G - max.    |
| Vibration <sup>2</sup>    | 50-2000 Hertz       | 10G - max.    |
| Resonant Frequency        | -                   | 3.5kHz - typ. |

| Magnetic Characteristics        |              |           |
|---------------------------------|--------------|-----------|
| Pull-In Range <sup>3</sup>      | Ampere Turns | 17-48     |
| Rating Sensitivity <sup>4</sup> | Ampere Turns | 35 and 45 |
| Test Coil                       | -            | L4989     |

**Notes:**

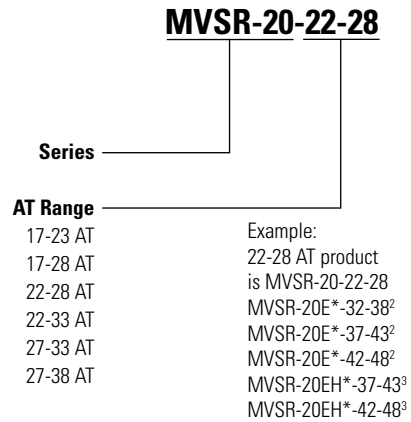
- Operate (including bounce)/Release Time - per EIA/NARM RS-421-A, diode suppressed coil (Coil II).
- Shock and Vibration - per EIA/NARM RS-421-A and MIL-STD-202.
- Pull-In Range - Contact Littelfuse for narrower AT ranges available.
- Rating Sensitivity - The value at which contact ratings and operating 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.
- E = 3000V Voltage Breakdown
- EH = 3600V Voltage Breakdown

### Packaging

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

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