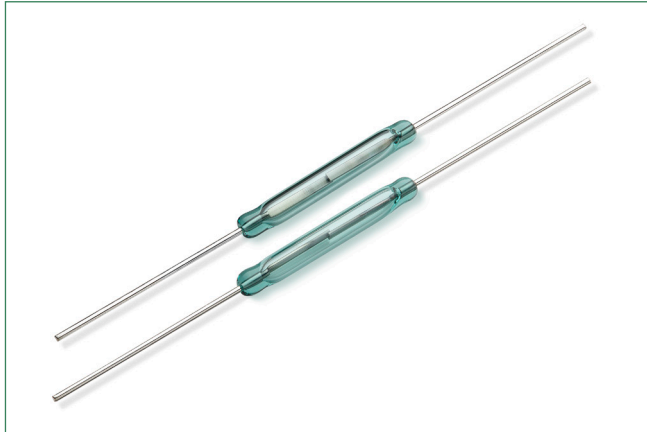


# MVSR-20

## 19.7mm Reed Switch



### Web Resources



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

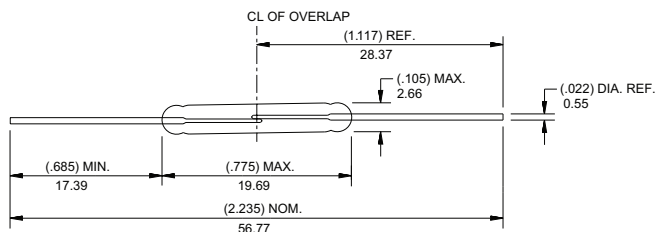
### Agency Approvals

Agency	Agency File Number
	E47258 E471070

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

### Dimensions

Dimensions in mm (inch)



### 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  $10^{12}$  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
- 2000V to 3600V Minimum Breakdown Voltage
- 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

### 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>	Vdc - max.	1000
		Vac - max.	265
	Breakdown <sup>4</sup>	Vdc - min.	< 32AT = 2000 min 32-48 AT = 3000 min 37-48 AT = 3600 min
Current <sup>3</sup>	Switching <sup>2</sup>	Adc - max.	0.50
	Carry	Aac - max.	0.35
		Adc - max.	1.30
Capacitance	Contact	pF - typ.	0.43
Resistance	Contact, Initial Insulation	$\Omega$ - max.	0.100
		$\Omega$ - min.	$10^{12}$
Temperature	Operating	$^{\circ}\text{C}$	-65 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.

# MVSR-20

## 19.7mm Reed Switch

### Product Characteristics

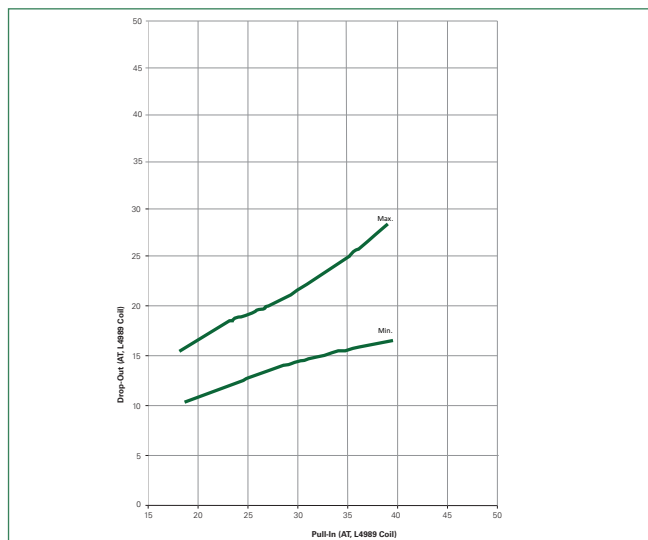
Operating Characteristics		
Operate Time <sup>1</sup>	-	0.75ms - max.
Release Time <sup>1</sup>	-	0.30ms - max.
Shock <sup>2</sup>	11ms 1/2 sine wave	20G - max.
Vibration <sup>2</sup>	50-2000 Hertz	10G - max.
Resonant Frequency	-	3.5kHz - typ.

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:

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

#### MVSR-20-22-28

Series

AT Range

17-23 AT  
17-28 AT  
22-28 AT  
22-33 AT  
27-33 AT  
27-38 AT

Example:  
22-28 AT product  
is MVSR-20-22-28  
MVSR-20E\*-32-38<sup>2</sup>  
MVSR-20E\*-37-43<sup>2</sup>  
MVSR-20E\*-42-48<sup>2</sup>  
MVSR-20EH\*-37-43<sup>3</sup>  
MVSR-20EH\*-42-48<sup>3</sup>

#### Note:

1. These AT values are the before-modification values of the bare reed switch.
2. E = 3000V Voltage Breakdown
3. EH = 3600V Voltage Breakdown

### Packaging

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

**Disclaimer Notice** - Information furnished is believed to be accurate and reliable. However, users should independently evaluate the suitability of and test each product selected for their own applications. Littelfuse products are not designed for, and may not be used in, all applications. Read complete Disclaimer Notice at [www.littelfuse.com/disclaimer-electronics](http://www.littelfuse.com/disclaimer-electronics).