

# MLRR-3 15.2mm Miniature Close Differential Reed Switch



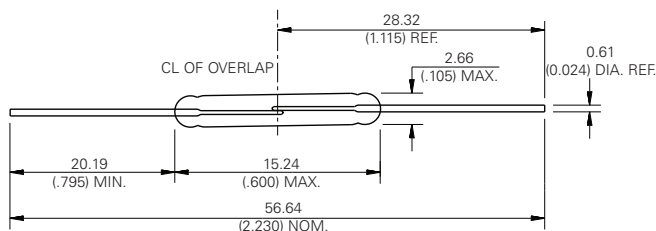
## Agency Approvals

| Agency                                                                            | Agency File Number | Ampere-Turns Range |
|-----------------------------------------------------------------------------------|--------------------|--------------------|
|  | E47258<br>E471070  | 17-38 AT           |

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

## Dimensions

Dimensions in mm



## Description

The MLRR-3 Reed Switch is a miniature, normally open switch with a 15.24mm long x 2.54mm diameter (0.600" x 0.100") glass envelope, capable of switching 200Vdc at 20W with close differential (CD) characteristics. It has high insulation resistance of  $10^{10}$  ohms minimum and contact resistance less than 100 milli-ohms.

This reed switch is also available in a surface mount version, that is, MLSM-3. It can handle light inductive loads.

## Features

- Miniature normally open switch
- Capable of switching 200Vdc or 01.0A at up to 20W.
- Available sensitivity range 17-38 AT
- Close differential AT between PI and DO value
- Maximum switched current of 1.0Amps

## Benefits

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

## Applications

- Security
- Limit Switching
- Office Equipments
- Light Inductive Loads

## Switch Type

|              |                                              |
|--------------|----------------------------------------------|
| Contact Form | A (SPST-NO)                                  |
| Materials    | Body: Glass<br>Leads: Tin Plated Nickel Iron |

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

## Electrical Ratings

|                             |                                |                                    |                    |
|-----------------------------|--------------------------------|------------------------------------|--------------------|
| Contact Rating <sup>1</sup> |                                | Watt - max.                        | 20                 |
| Voltage <sup>3</sup>        | Switching <sup>2</sup>         | Vdc - max.                         | 200                |
|                             | Breakdown <sup>4</sup>         | Vac - max.                         | 140                |
|                             |                                | Vdc - min.                         | 250                |
| Current <sup>3</sup>        | Switching <sup>2</sup>         | Adc - max.                         | 1.0                |
|                             | Carry                          | Aac - max.                         | 0.7                |
|                             |                                | Adc - max.                         | 1.2                |
| Resistance                  | Contact, Initial Insulation    | $\Omega$ - max.<br>$\Omega$ - min. | 0.100<br>$10^{10}$ |
| Capacitance                 | Contact                        | pF - typ.                          | 0.4                |
| Temperature                 | Operating Storage <sup>5</sup> | °C                                 | -40 to +125        |
|                             |                                | °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.

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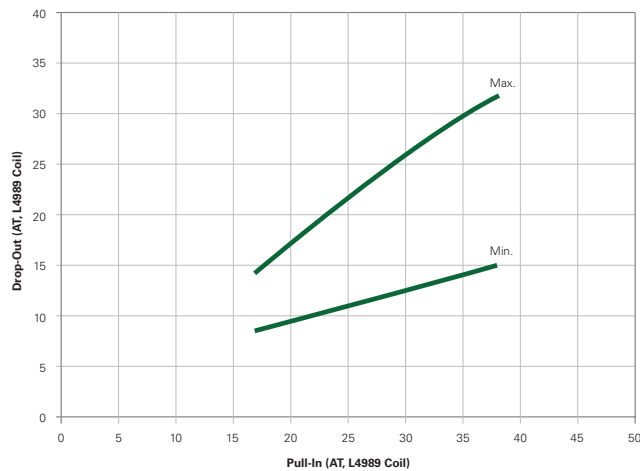
## Product Characteristics

| Operating Characteristics       |                    |                |
|---------------------------------|--------------------|----------------|
| Operate Time <sup>1</sup>       |                    | 0.7ms - max.   |
| Release Time <sup>1</sup>       |                    | 0.2ms - max.   |
| Shock <sup>2</sup>              | 11ms 1/2 sine wave | 100G - max.    |
| Vibration <sup>2</sup>          | 50-2000 Hertz      | 30G - max.     |
| Resonant Frequency              |                    | 6.25kHz - typ. |
| Magnetic Characteristics        |                    |                |
| Pull-In Range <sup>3</sup>      | Ampere Turns       | 17-38          |
| Rating Sensitivity <sup>4</sup> | Ampere Turns       | 20             |
| Test Coil                       |                    | L4989          |

### Notes:

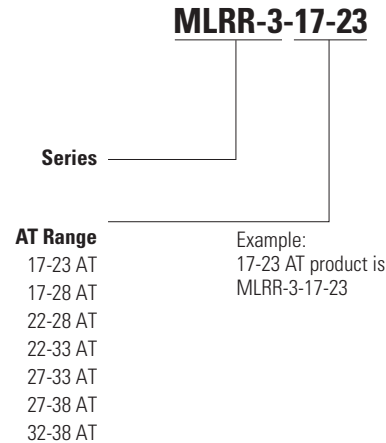
1. Operate (including bounce)/Release Time - per EIA/NARM RS-421-A, diode suppressed coil (Coil II).
2. Shock and Vibration - per EIA/NARM RS-421-A and MIL-STD-202.
3. Pull-In Range - Contact Littelfuse for narrower AT ranges available.
4. Rating Sensitivity - The value at which contact ratings and operating 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:** The chart represents the range of Drop-Out, minimum to maximum 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                    | 3000     | N/A                       | N/A          |