

# HA15-2 15.2mm Sub-miniature HV Reed Switch



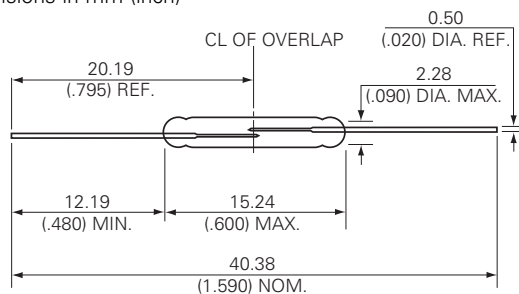
## Agency Approvals

| Agency       | Agency File Number | Ampere-Turns Range |
|--------------|--------------------|--------------------|
| <b>cULUS</b> | E47258<br>E471070  | 17-33 AT           |

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

## Dimensions

Dimensions in mm (inch)



## Description

The HA15-2 Reed Switch is a sub-miniature, normally open switch with a 15.24mm long x 2.28mm diameter (0.600" x 0.090") glass envelope and capable of high voltage switching of 265Vac at 10VA. It has high insulation resistance of  $10^{10}$  ohms minimum and contact resistance less than 100 milli-ohms. It can handle light inductive loads with no suppression circuitry and switch European mains voltage.

## Features

- Sub-miniature normally open switch
- Capable of switching 100-265Vac or 0.3A up to 20VA loads outside of this window is rated 10W max (see Electrical Ratings)
- Minimum voltage breakdown 400Vdc (17-23AT) and 450Vdc (22+ AT)
- Available sensitivity range 17-33 AT

## Benefits

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

## Applications

- Reed Relays
- Security
- Limit Switching
- Office Equipment
- Light Inductive Loads
- European Mains Voltage 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

| Sensitivity <sup>6</sup>    |                        |                    | 17-23                                                | 22+         |
|-----------------------------|------------------------|--------------------|------------------------------------------------------|-------------|
| Contact Rating <sup>1</sup> |                        | W/VA - max.        | 20W for 100-265 VAC loads<br>10W for all other loads |             |
| Voltage <sup>3</sup>        | Switching <sup>2</sup> | Vdc - max.         | 200                                                  | 200         |
|                             |                        | Vac - max.         | 265 rms                                              | 265 rms     |
|                             | Breakdown <sup>4</sup> | Vdc - min.         | 400                                                  | 450         |
| Current <sup>3</sup>        | Switching <sup>2</sup> | Adc - max.         | 0.40                                                 | 0.50        |
|                             |                        | Aac - max.         | 0.30                                                 | 0.35        |
|                             | Carry                  | Adc - max.         | 1.4                                                  | 1.5         |
| Resistance                  | Contact, Initial       | $\Omega$ - max.    | 0.100                                                | 0.100       |
|                             | Insulation             | $\Omega$ - min.    | $10^{10}$                                            | $10^{10}$   |
| Capacitance                 | Contact                | pF - typ.          | 0.2                                                  | 0.2         |
| Temperature                 | Operating              | $^{\circ}\text{C}$ | -20 to +125                                          | -20 to +125 |
|                             | Storage <sup>5</sup>   | $^{\circ}\text{C}$ | -65 to +125                                          | -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 and 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 lead.
6. Rating Sensitivity - The value at which contact ratings and operating characteristics are determined. Derating may be required for lower values.

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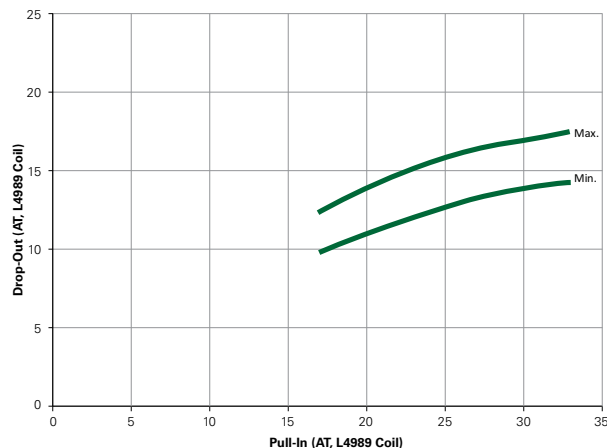
### Product Characteristics

| Operating Characteristics       |                     |               |
|---------------------------------|---------------------|---------------|
| Operate Time <sup>1</sup>       |                     | 0.6ms - 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              |                     | 4.0kHz - typ. |
| Magnetic Characteristics        |                     |               |
| Pull-In Range <sup>3</sup>      | Ampere Turns        | 17-33         |
| Rating Sensitivity <sup>4</sup> | Ampere Turns        | 17 and 23     |
| Test Coil                       |                     | L4989         |
| Drop-Out                        | Ampere-Turns - min. | 5             |

#### Notes:

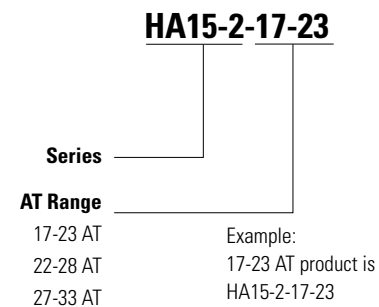
1. Operate (including bounce)/Release Time - per EIA/NARM RS-421-A, diode suppressed coil (Coil II).
2. Shock and Vibration - per EIA/NARM RS-421-A and MIL-STD-202.
3. Pull-In Range - Contact Littelfuse for narrower AT ranges available.
4. Rating Sensitivity - The value at which contact ratings and operating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