

# 59020 Miniature Firecracker Reed Sensor + 57020 Actuator

RoHS



## Description

The 59020 Firecracker Reed Sensor is a miniature cylindrical reed sensor 15.24mm x 5.10mm (0.600" x 0.201") with a normally open contact. It is capable of switching up to 170Vdc at 10W. It has a variety of cable lengths and connector options. It functions best with the 57020-000 actuator.

**Note: The 57020 Actuator is sold separately.**

## Features

- Magnetically operated proximity sensor
- Normally open contact
- Customer defined sensitivity option
- Choice of cable length and connector

## Benefits

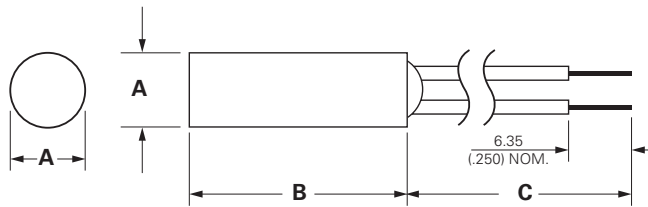
- Hermetically sealed, magnetically operated contacts continue to operate long after optical and other technologies fail due to contamination
- Quick and easy to install
- No standby power requirement
- Operates through non-ferrous materials such as wood, plastic or aluminium

## Applications

- Position and Limit Sensing
- Security Systems
- Level Sensing
- Linear Actuators

## Dimensions

Dimensions in mm (inch)



|                       | A<br>Nom.   | B<br>Nom.    | C<br>Nom.                    |
|-----------------------|-------------|--------------|------------------------------|
| <b>57020 Actuator</b> | 5.10 (.201) | 15.24 (.600) | —                            |
| <b>59020 Sensor</b>   | 5.10 (.201) | 15.24 (.600) | 300 (11.81)±<br>10.00 (.393) |

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## Electrical Ratings

| Contact Type                |                                                  |                          | Normally Open           |
|-----------------------------|--------------------------------------------------|--------------------------|-------------------------|
| Switch Type                 |                                                  |                          | 1                       |
| Contact Rating <sup>1</sup> |                                                  | VA/Watt - max.           | 10                      |
| Voltage <sup>4</sup>        | Switching <sup>2</sup><br>Breakdown <sup>3</sup> | Vdc - max.<br>Vdc - min. | 170<br>175              |
| Current <sup>4</sup>        | Switching <sup>2</sup><br>Carry                  | Adc - max.<br>Adc - max. | 0.25<br>0.5             |
| Resistance <sup>5</sup>     | Contact, Initial<br>Insulation                   | Ω - max.<br>Ω - min.     | 0.2<br>10 <sup>10</sup> |
| Capacitance                 | Contact                                          | pF - typ.                | 0.2                     |
| Temperature                 | Operating                                        | °C                       | -40 to +105             |

| Product Characteristics   |             |           |     |
|---------------------------|-------------|-----------|-----|
| Operate Time <sup>6</sup> |             | ms - max. | 1.0 |
| Release Time <sup>6</sup> |             | ms - max. | 1.0 |
| Shock <sup>7</sup>        | 11ms ½ sine | G - max.  | 100 |
| Vibration <sup>7</sup>    | 50-2000 Hz  | G - max.  | 30  |

**Notes:**

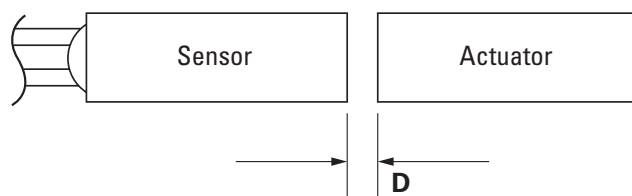
1. Contact rating - Product of the switching voltage and current should never exceed the wattage rating. Contact Littelfuse for additional load/life information.
2. When switching inductive and/or capacitive loads, the effects of transient voltages and/or currents should be considered. Refer to Application Notes AN108A and AN107 for details.
3. Breakdown Voltage - per MIL-STD-202, Method 301.
4. Electrical Load Life Expectancy - Contact Littelfuse with voltage, current values along with type of load.
5. This resistance value is for 11.81mm wire length. Resistance changes when wire lengthens.
6. Operate (including bounce)/Release Time - per EIA/NARM RS-421-A, diode suppressed coil (Coil II).
7. Shock and Vibration - per EIA/NARM RS-421-A and MIL-STD-202.
8. For custom modifications to the wire length or size, or adding a special connector, please contact Littelfuse.

## Sensitivity Options (Using 57020 Actuator)

| Select Option |               | S                |                                               |
|---------------|---------------|------------------|-----------------------------------------------|
| Switch Type   |               | Pull-In AT Range | Activate Distance – D<br>mm (inch)<br>Average |
| 1             | Normally Open | 6-10             | 6.0 (.236)                                    |

**Note:**

1. Pull-In AT Range: These AT values are the bare reed switch AT before modification.
2. The activation distance is average value on the final sensor assembly.

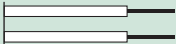
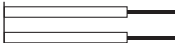
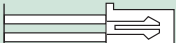


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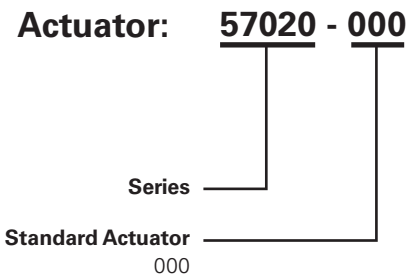
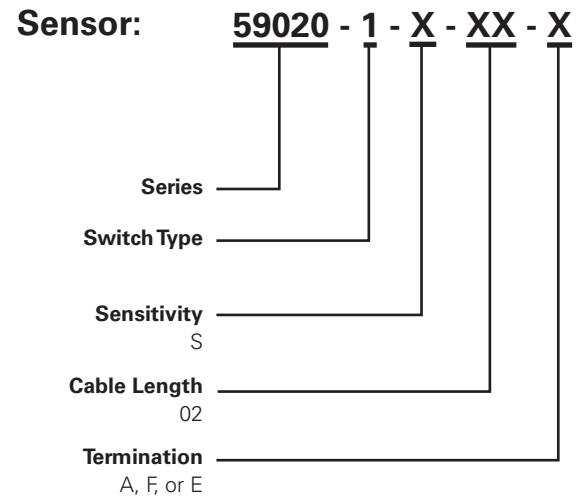
## Cable Length Specification

| Cable Type: 24 AWG 7/32 PVC 105°C UL1430/UL1569 |                           |
|-------------------------------------------------|---------------------------|
| Select Option                                   | Cable Length<br>mm (inch) |
| 02                                              | 300 (11.81)               |

## Termination Specification

| Termination Options |                                                |                                                                                   |
|---------------------|------------------------------------------------|-----------------------------------------------------------------------------------|
| Select Option       | Description<br>(Two-wire versions illustrated) |                                                                                   |
| A                   | Tinned leads (6.4±0.76)mm                      |  |
| F                   | Untinned leads (6.4±0.76)mm                    |  |
| E                   | JST type XHP 2.5mm pitch                       |  |

## Part Numbering System



Note: The 57020 Actuator is sold separately.

## Packaging

| Packaging Option | Packaging Specification | Quantity | Quantity & Packaging Code | Taping Width |
|------------------|-------------------------|----------|---------------------------|--------------|
| Bulk             | Bulk                    | 500      | N/A                       | N/A          |