

# 59010 Sub-Miniature Firecracker Reed Sensor + 57020 Actuator

RoHS



## Description

The 59010 Firecracker Reed Sensor is a sub-miniature cylindrical reed sensor 9.0mm L x 3.0mm Dia. (0.354" x 0.118") with a normally open contact. It is capable of switching up to 170Vdc at 10W and has cable length and connector options. It functions best with the 57020-000 actuator.

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

## Features

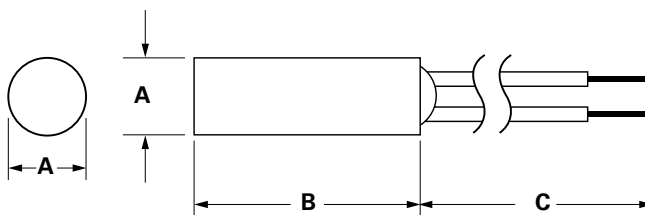
- Magnetically operated proximity sensor
- Compact size requires only 3mm diameter hole
- Hermetically sealed contacts
- Custom cable length and connector options available

## Benefits

- Well suited for usage in high-moisture and contaminated environments
- Non-contact solution, aesthetically more appealing than push-button or lever mechanical-type switches
- Simple installation and adjustment
- No standby power requirement
- Ideal for battery-powered applications as the contacts do not draw power when in the non-activated state
- Reed contacts last for millions of operating cycles under micro-controller logic-level loads

## Dimensions

Dimensions in mm (inch)



|                       | <b>A</b><br>Nom.<br>mm(in) | <b>B</b><br>Nom.<br>mm(in) | <b>C</b><br>Nom.<br>mm(in)    |
|-----------------------|----------------------------|----------------------------|-------------------------------|
| <b>57020 Actuator</b> | 5.10 (.201)                | 15.24 (.600)               | —                             |
| <b>59010 Sensor</b>   | 3.00 (.118)                | 9.00 (.354)                | Cable Length<br>±10.00 (.393) |

## Applications

- Position and Limit Sensing
- Security System Switch
- Level Sensing
- Linear Actuators

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## Electrical Ratings

| Contact Type                |                                |                 | Normally Open    |
|-----------------------------|--------------------------------|-----------------|------------------|
| Switch Type                 |                                |                 | 1                |
| Contact Rating <sup>1</sup> |                                | VA/Watt - max.  | 5                |
| Voltage <sup>4</sup>        | Switching <sup>2</sup>         | Vdc - max.      | 175              |
|                             |                                | Vac - max.      | 140              |
|                             | Breakdown <sup>3</sup>         | Vdc - min.      | 200              |
| Current <sup>4</sup>        | Switching <sup>2</sup>         | Adc - max.      | 0.35             |
|                             |                                | Aac - max       | 0.25             |
|                             | Carry                          | Adc - max.      | 0.50             |
| Resistance <sup>5</sup>     | Contact, Initial<br>Insulation | $\Omega$ - max. | 0.550            |
|                             |                                | $\Omega$ - min. | 10 <sup>12</sup> |
| Capacitance                 | Contact                        | pF - typ.       | 0.45             |
| Temperature                 | Operating                      | °C              | -40 to +85       |

## Product Characteristics

|                           |             |           |      |
|---------------------------|-------------|-----------|------|
| Operate Time <sup>6</sup> |             | ms - max. | 0.35 |
| Release Time <sup>6</sup> |             | ms - max. | 0.03 |
| Shock <sup>7</sup>        | 11ms ½ sine | G - max.  | 50   |
| Vibration <sup>7</sup>    | 10-2000 Hz  | G - max.  | 10   |

### Notes:

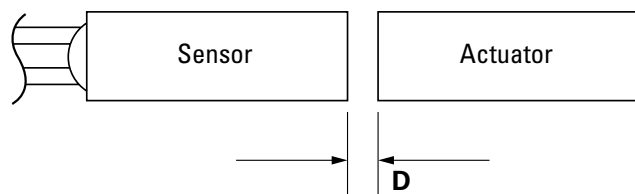
- Contact rating - Product of the switching voltage and current should never exceed the wattage rating. Contact Littelfuse for additional load/life information.
- When switching inductive and/or capacitive loads, the effects of transient voltages and/or currents should be considered. Refer to Application Notes AN108A and AN107 for details.
- Breakdown Voltage - per MIL-STD-202, Method 301.
- Electrical Load Life Expectancy - Contact Littelfuse with voltage, current values along with type of load.
- This resistance value is for 11.81mm wire length. Resistance changes when wire lengthens.
- 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.
- 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                |                                               | T                |                                               |
|---------------|---------------|------------------|-----------------------------------------------|------------------|-----------------------------------------------|
| Switch Type   |               | Pull-In AT Range | Activate Distance - D<br>mm (inch)<br>Average | Pull-In AT Range | Activate Distance - D<br>mm (inch)<br>Average |
| 1             | Normally Open | 6-10             | 6.3 (.248)                                    | 10-15            | 4.9 (.193)                                    |

### Note:

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



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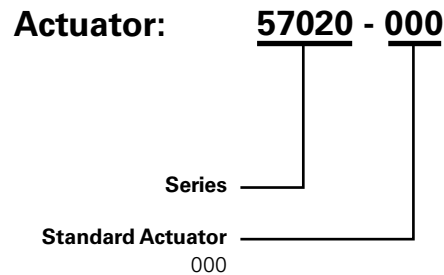
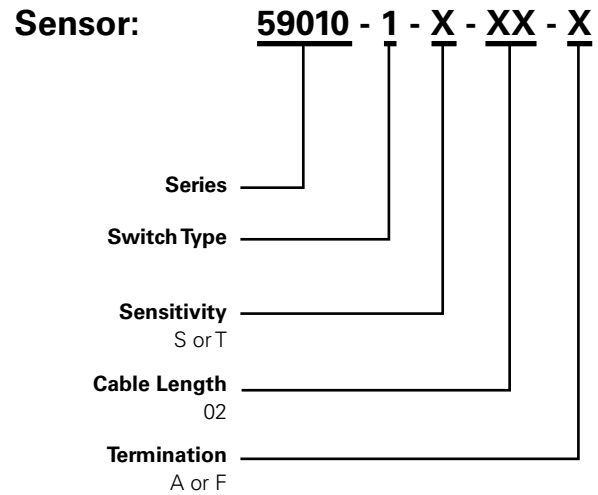
## Cable Length Specification

| (Cable Type 30 AWG 7/38 PTFE 200°C MIL-W-16878/6) |                           |
|---------------------------------------------------|---------------------------|
| Select Option                                     | Cable Length<br>mm (inch) |
| 02                                                | 300 (11.81)               |

## Termination Options

| Select Option | Description    |                                                                                   |
|---------------|----------------|-----------------------------------------------------------------------------------|
| A             | Tinned Leads   |  |
| F             | Untinned Leads |  |

## 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          |

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