

59022 Firecracker Reed Sensor + 57022 Actuator



Description

The 59022 Firecracker Reed Sensor is a small cylindrical reed sensor, 25.4mm (L) x 5.80mm (Dia.) (1.00" x 0.228"), with a choice of normally open, normally closed or change-over contacts. It is capable of switching up to 200Vdc at 10W.

The 59022 Firecracker Reed Sensor is available with a range of sensitivity and cable length options. It functions best with the 57022 actuator.

Note: The 57022 Actuator is sold separately.

Features

- Magnetically-operated proximity sensor
- Hermetically sealed contacts
- Operates through non-ferrous materials such as wood, plastic or aluminum
- Options of normally open, normally closed or single-pole-double-throw
- Customer-defined sensitivity option
- Custom cable length and connector options available

Agency Approvals

| Agency | Agency File Number |
|--------|--------------------|
| | E61760 |

Note: Contact Littelfuse for specific agency approval ratings.

Dimensions

Dimensions in mm (inch)



| | A Nom. | B Nom. | C Nom. |
|-----------------------|-------------|---------------|-------------|
| 57022 Actuator | 5.80 (.228) | 25.40 (1.000) | — |
| 59022 Sensor | 5.80 (.228) | 25.40 (1.000) | 300 (11.81) |

Benefits

- Fits nicely into small confined spaces
- Quick and easy to install
- Well suited for usage in high-moisture and contaminated environments
- Non-contact solution, aesthetically more appealing than push-button or lever mechanical-type switches
- 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

Applications

- Position and limit sensing
- Security
- Level sensing
- Linear actuators

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Electrical Ratings

| Contact Type | | | Normally Open | Change Over | Normally Closed |
|-----------------------------|-----------------------------|----------------------|-------------------------|------------------------|------------------------|
| Switch Type | | | 1 | 3 | 4 |
| Contact Rating ¹ | | VA/Watt - max. | 10 | 5 | 5 |
| Voltage ⁴ | Switching ² | Vdc - max. | 200 | 175 | 175 |
| | Breakdown ³ | Vac - max. | 140 | 120 | 120 |
| | | Vdc - min. | 250 | 200 | 200 |
| Current ⁴ | Switching ² | Adc - max. | 0.5 | 0.25 | 0.25 |
| | Carry | Aac - max. | 0.35 | 0.18 | 0.18 |
| | | Adc - max. | 1.2 | 1.5 | 1.5 |
| Resistance ⁵ | Contact, Initial Insulation | Ω - max. Ω - min. | 0.2 10 ¹⁰ | 0.2 10 ⁹ | 0.2 10 ⁹ |
| Capacitance | Contact | pF - typ. | 0.3 | 0.3 | 0.3 |
| Temperature | Operating | °C | -40 to +105 | -40 to +105 | -40 to +105 |

Product Characteristics

| | | | | | |
|---------------------------|-------------|-----------|-----|-----|-----|
| Operate Time ⁶ | | ms - max. | 1.0 | 3.0 | 3.0 |
| Release Time ⁶ | | ms - max. | 1.0 | 3.0 | 3.0 |
| Shock ⁷ | 11ms ½ sine | G - max. | 100 | 50 | 50 |
| Vibration ⁷ | 50-2000 Hz | G - max. | 30 | 30 | 30 |

Notes:

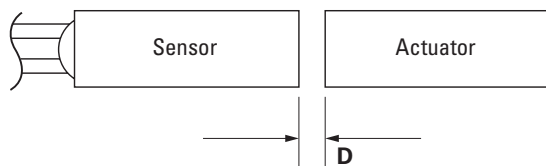
- Contact rating - Product of the switching voltage and current should never exceed the wattage rating. Contact Littelfuse for additional load/life information.
- When switching inductive and/or capacitive loads, the effects of transient voltages and/or currents should be considered. Refer to Application Notes AN108A and AN107 for details.
- Breakdown Voltage - per MIL-STD-202, Method 301. Leakage current is less than 0.1mA for 60 seconds.
- 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.
- Custom sensitivities and a high voltage switch are options

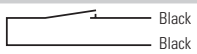


Sensitivity Options (Using 57022 Actuator)

| Select Option | | S | | T | | U | |
|---------------|-----------------|------------------|-------------------------------------|------------------|-------------------------------------|------------------|-------------------------------------|
| Switch Type | | Pull-In AT Range | Activate Distance mm (inch) Average | Pull-In AT Range | Activate Distance mm (inch) Average | Pull-In AT Range | Activate Distance mm (inch) Average |
| 1 | Normally Open | 12-18 | 9.6 (.377) | 17-23 | 7.0 (.275) | 22-28 | 5.0 (.197) |
| 3 | Change Over | 15-20 | 9.3 (.367) | 20-25 | 7.5 (.295) | 25-30 | 6.5 (.256) |
| 4 | Normally Closed | 15-20 | 9.3 (.367) | 20-25 | 7.5 (.295) | 25-30 | 6.5 (.256) |

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



| Schematics | Switch Type |
|--|-------------|
|  | 1 |
|  | 3 |
|  | 4 |

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Cable Length Specification

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

Termination Specification

| Termination Options | | |
|---------------------|--|---|
| Select Option | Description (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 57022 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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