

# 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

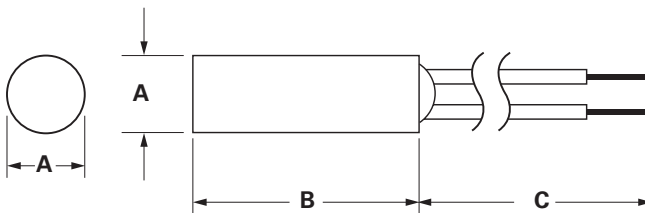
## Agency Approvals

Agency	Agency File Number
	E61760

Note: Contact Littelfuse for specific agency approval ratings.

## Dimensions

Dimensions in mm (inch)



	A Nom.	B Nom.	C Nom.
<b>57022 Actuator</b>	5.80 (.228)	25.40 (1.000)	—
<b>59022 Sensor</b>	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 <sup>1</sup>		VA/Watt - max.	10	5	5
Voltage <sup>4</sup>	Switching <sup>2</sup>	Vdc - max.	200	175	175
	Breakdown <sup>3</sup>	Vac - max.	140	120	120
		Vdc - min.	250	200	200
Current <sup>4</sup>	Switching <sup>2</sup>	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 <sup>5</sup>	Contact, Initial Insulation	Ω - max. Ω - min.	0.2 10 <sup>10</sup>	0.2 10 <sup>9</sup>	0.2 10 <sup>9</sup>
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 <sup>6</sup>		ms - max.	1.0	3.0	3.0
Release Time <sup>6</sup>		ms - max.	1.0	3.0	3.0
Shock <sup>7</sup>	11ms ½ sine	G - max.	100	50	50
Vibration <sup>7</sup>	50-2000 Hz	G - max.	30	30	30

### Notes:

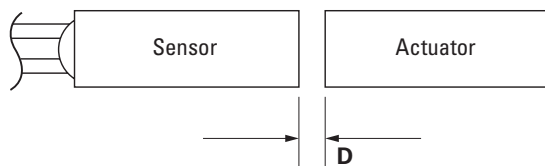
- Contact rating - Product of the switching voltage and current should never exceed the wattage rating. Contact Littelfuse for additional load/life information.
- When switching inductive and/or capacitive loads, the effects of transient voltages and/or currents should be considered. Refer to Application 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

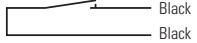
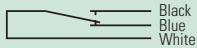
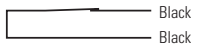
## Sensitivity Options (Using 57022 Actuator)

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