59030 Miniature Firecracker Reed Sensor + 57030 Actuator

RoHS

Description

The 59030 is a miniature cylindrical reed sensor 38.1mm (L) x 6.22mm (Dia) (1.50" x 0.245") with a choice of normally open, normally closed, and change -over contacts. It is capable of switching up to 265Vac/300Vdc at 10VA. It functions best with the 57030-000 actuator.

Note: The 57030 Actuator is sold separately.

Features

- Two-part magnetically operated proximity sensor
- Hermetically sealed contacts
- Operates through non-ferrous materials such as wood, plastic or aluminum
- Customer defined sensitivity option
- Choice of cable length and connector

Agency Approvals

Agency	Agency File Number
c UL us	E61760

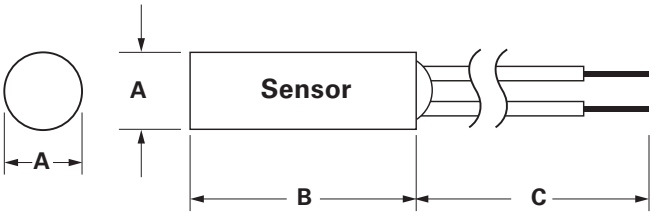
Note: Contact Littelfuse for specific agency approval ratings.

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
- 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)



Applications

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

	A Nom. mm(inch)	B Nom. mm(inch)	C Nom. mm(inch)
57030 Actuator	6.22 (.245)	38.10 (1.50)	--
59030 Sensor	6.22 (.245)	38.10 (1.50)	Cable Length ± 10.00 (.393)

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Specifications are subject to change without notice.

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Electrical Ratings

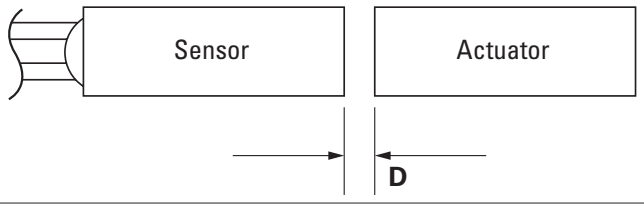
Contact Type			Normally Open	Normally Open HighVoltage	Change Over	Normally Closed
Switch Type			1	2	3	4
Contact Rating [1]		VA/Watt - max.	10	10	5	5
Voltage [4]	Switching [2] Breakdown [3]	Vdc - max. Vac - max. Vdc - min.	200 140 250	300 265 400	175 120 200	175 120 200
Current [4]	Switching [2] Carry	Adc - max. Aac - max. Adc - max.	0.5 0.35 1.2	0.4 0.30 1.4	0.25 0.18 1.5	0.25 0.18 1.5
Resistance [5]	Contact, Initial Insulation	Ω - max. Ω - min.	0.2 10^{10}	0.2 10^{10}	0.2 10^{9}	0.2 10^{9}
Capacitance	Contact	pF - typ.	0.3	0.2	0.3	0.3
Temperature	Operating	°C	-40 to +105	-20 to +105	-40 to +105	-40 to +105
Product Characteristics						
Operate Time [6]		ms - max.	1.0	1.0	3.0	3.0
Release Time [6]		ms - max.	1.0	1.0	3.0	3.0
Shock [7]	11ms ½ sine	G - max.	100	100	50	50
Vibration [7]	50-2000 Hz	G - max.	30	30	30	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 57030 Actuator)

Select Option		S		T		U		V	
Switch Type		Pull-In AT Range	Activate Distance–D mm (inch) Average	Pull-In AT Range	Activate Distance–D mm (inch) Average	Pull-In AT Range	Activate Distance–D mm (inch) Average	Pull-In AT Range	Activate Distance–D mm (inch) Average
1	Normally Open	12-18	8.4 (.330)	17-23	6.6 (.260)	22-28	5.1 (.200)	27-33	4.0 (.157)
2	High Voltage	–	–	17-23	6.6 (.260)	22-28	5.1 (.200)	27-33	4.0 (.157)
3	Change Over	15-20	6.5 (.255)	20-25	4.9 (.193)	25-30	3.7 (.146)	–	–
4	Normally Closed	15-20	6.5 (.255)	20-25	4.9 (.193)	25-30	3.7 (.146)	–	–

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.



Schematics	Switch Type
Black Black	1 and 2
Black Blue White	3
Black Black	4

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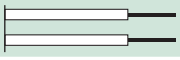
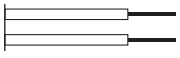
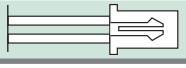
Cable Length Specification

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

Sensor: 59030 - 1 - X - XX - X

- **Series**
- **Switch Type** 01, 02, 03, or 04
- **Sensitivity** S,T, U, or V
- **Cable Length** 02
- **Termination** A, E, or F

Actuator: 57030 - 000

- **Series**
- **Standard Actuator** 000

Note: The 57030 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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Mouser Electronics

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Littelfuse:

59030-020 59030-010 59030-030