



**THE DATASHEET OF**  
**59020-1-S-02-A**



# 59020

## Miniature Cylindrical Reed Sensor + 57020 Actuator



### Description

The 59020 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 120 Vac/170 Vdc at 10 VA. The 59020 Reed Sensor is available with a range of sensitivity and cable length options. It is well suited for use in a wide range of industrial, appliances, or IoT proximity sensing applications. It functions best with the 57020-000 actuator.

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

### Features and Benefits

- Non-contact switching solution for wet & harsh environments
- No leakage current in 'open' state—ideal for battery-powered IoT applications
- Helps implement efficient proximity/access and energy management systems
- Compact size and easy installation and effective concealment in many applications
- Hermetically sealed, IP67 rated; REACH compliant
- Can operate through non-ferrous materials (for example, wood, plastic, or aluminum)
- Available in select sensitivities (operating distances)
- Standard cable configurations; customization options available
- ATEX certified for use in European explosive atmospheres: II 3 G Ex nC IIC Gc

### Additional Information



Resources



Accessories



Samples

### Agency Approvals

Agency	Agency File/Certificate Number
	DEMKO 14 ATEX 1393U* Ⓜ II 3 G Ex nC IIC Gc

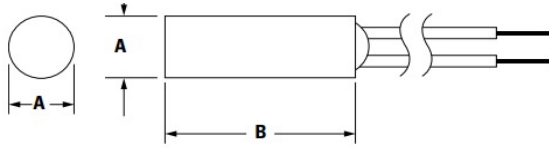
### Applications

- Security and access control
- Factory automation
- Process equipment
- Major appliances
- Small appliances
- Proximity and limit sensing

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## Miniature Cylindrical Reed Sensor + 57020 Actuator

### Dimensions (Dimensions in mm (inch))



### Package Dimensions (Dimensions in mm[in])

Product	A Nom. Mm[in]	B Nom. Mm[in]
57020 Actuator	5.10 +/- 0.25 [0.201 +/- 0.010]	15.24 +/- 0.25 [0.600 +/- 0.010]
59020 Sensor	5.10 +/- 0.25 [0.201 +/- 0.010]	15.24 +/- 0.25 [0.600 +/- 0.010]

### Material Specifications

Product	Housing Material	Color	Sealing Component
57020 Actuator	30% GF PBT	Black	Epoxy
59020 Sensor	30% GF PBT	Black	Epoxy

### 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>	Vdc - max.	170
	Breakdown <sup>3</sup>	Vac - max. Vdc - min.	120 175
Current <sup>4</sup>	Switching <sup>2</sup>	Adc - max.	0.25
		Aac - max.	0.18
	Carry	Adc - max.	0.5
Resistance <sup>5</sup>	Contact, Initial	Ω - max.	0.2
	Insulation	Ω - min.	10 <sup>9</sup>
Capacitance	Contact	pF - typ.	0.3
Temperature	Operating	°C	-40 to +105

### Product Characteristics

Operate Time <sup>6</sup>		ms - max.	0.5
Release Time <sup>6</sup>		ms - max.	0.2
Shock <sup>7</sup>	11ms ½ sine	G - max.	100
Vibration <sup>7</sup>	50-2000 Hz	G - max.	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, and current values, along with type of load.
- This resistance value is for 300 mm wire length. Resistance changes when wire lengths.
- Operate (including bounce)/Release Time - per diode suppressed coil (Coil).
- Shock and Vibration - per EIA/NARM RS-421-A and MIL-STD-202.

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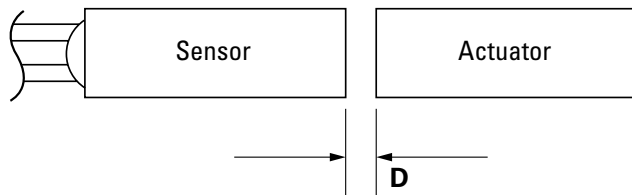
## Miniature Cylindrical Reed Sensor + 57020 Actuator

### Sensitivity Options (Using 57020 Actuator)

Select Option		S			T			U		
Switch Type		Pull-In AT Range	Activation Distance (mm)	Deactivation Distance (mm)	Pull-In AT Range	Activation Distance (mm)	Deactivation Distance (mm)	Pull-In AT Range	Activation Distance (mm)	Deactivation Distance (mm)
1	Normally Open	6-10	4.5	12.5	10-15	3.5	9.5	15-20	2.5	9.5

**Notes:**

1. Measurements are from 57020 Nominal Actuator
2. Pull-In AT Range: These AT values are the bare reed switch AT before modification
3. Not recommended to be mounted within/near ferrous materials if doing so these activation & deactivation distances will decrease significantly



SCHEMATIC	SWITCH TYPE
BLACK BLACK	1

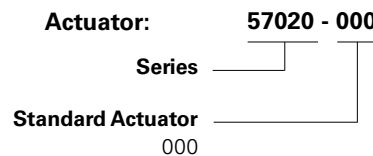
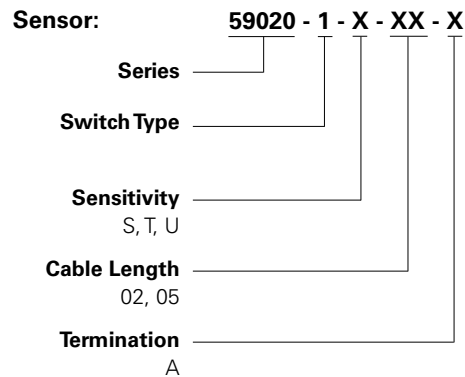
### Cable Length Specification

Cable Type: 24 AWG 7/32 PVC 105°C UL1430/UL1569	
Options	Cable Length mm [inch]
02	300 +/- 10.00 [11.81 +/- 0.394]
05	1000 +/- 10.00 [39.37 +/- 0.394]

### Termination Specification

Termination Options	
Select Option	Description (Two-wire versions illustrated)
A	Tinned leads (6.4±0.76) mm

### 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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-  Shortage Management
-  Alternative Solution
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