

59021

Aluminium Cylindrical Reed Sensor + 57020 Actuator



Description

The 59021 Reed Sensor is a miniature cylindrical reed sensor with a robust aluminium body 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 59021 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 & 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



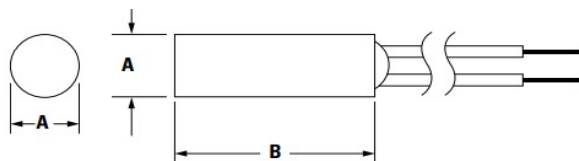
Accessories



Samples

Dimensions

Dimensions in mm[in]



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] |
| 59021 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 | 15% GF PBT | Black | Epoxy |
| 59021 Sensor | Aluminum | Black | Epoxy |

Applications

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

Agency Approvals

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

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Electrical Ratings

| Contact Type | | | Normally Open |
|-----------------------------|-----------------------------|----------------|-----------------|
| Switch Type | | | 1 |
| Contact Rating ¹ | | VA/Watt - max. | 10 |
| Voltage ⁴ | Switching ² | Vdc - max. | 170 |
| | Breakdown ³ | Vac - max. | 120 |
| | | Vdc - min. | 175 |
| Current ⁴ | Switching ² | Adc - max. | 0.25 |
| | Carry | Aac - max. | 0.18 |
| | | Adc - max. | 0.5 |
| Resistance ⁵ | Contact, Initial Insulation | Ω - max. | 0.2 |
| | | Ω - min. | 10 ⁹ |
| Capacitance | Contact | pF - typ. | 0.3 |
| Temperature | Operating | °C | -40 to +105 |

Product Characteristics

| | | | |
|---------------------------|-------------|-----------|-----|
| Operate Time ⁶ | | ms - max. | 0.5 |
| Release Time ⁶ | | ms - max. | 0.2 |
| Shock ⁷ | 11ms ½ sine | G - max. | 100 |
| Vibration ⁷ | 50-2000 Hz | G - max. | 30 |

Notes:

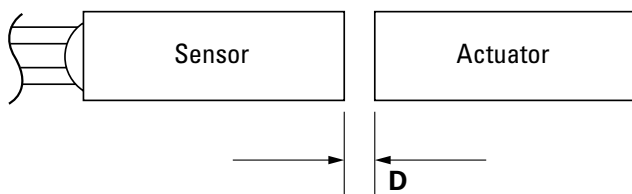
- Contact Rating - Product of the switching voltage and current should never exceed the wattage rating. Contact Littelfuse for additional load/life information.
- When switching inductive and/or capacitive loads, the effects of transient voltages and/or currents should be considered. Refer to Application 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 lengthens.
- Operate (including bounce)/Release Time - per diode suppressed coil (Coil).
- Shock and Vibration - per EIA/NARM RS-421-A and MIL-STD-202.

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 | 3-12 | 4-13 | 10-15 | 3-10 | 4-10 | 15-20 | 2-9 | 3-10 |

Notes:

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



| SCHEMATIC | SWITCH TYPE |
|-----------|-------------|
| | 1 |

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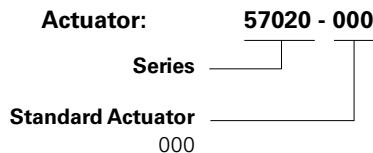
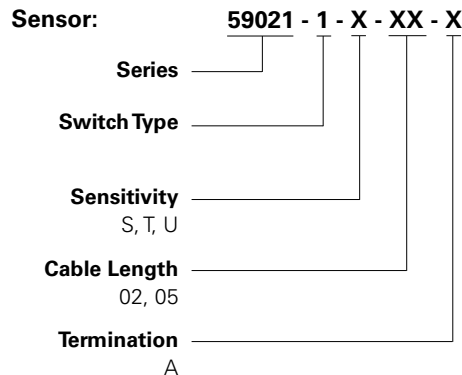
Cable Length Specification

| 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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