## 59022 Reed Sensor





### **Additional Information**







Resources

Accessories

Samples

### **Agency Approvals**

| Agency          | Agency File Number |
|-----------------|--------------------|
| c <b>FN</b> °us | E61760             |

Note: Contact Littelfuse for specific agency approval ratings.

### **Description**

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

The 59022 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 57022 actuator.

### **Features & Benefits**

- Non-contact switching solution for wet & harsh environments
- No leakage current in 'open' state-ideal for batterypowered 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; UL and 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
- UL Recognized per UL 508 and CSA C22.2 No. 14.

### **Applications**

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



# **59022 Reed Sensor**

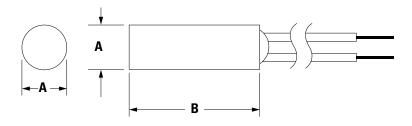
### **Package Dimensions**

Dimensions in mm (inch)

| Product        | A Nom. mm[in]                     | B Nom. mm[in]                     |
|----------------|-----------------------------------|-----------------------------------|
| 57022 Actuator | 5.8 +/- 0.25<br>[0.228 +/- 0.010] | 25.4 +/- 0.25<br>[1.00 +/- 0.010] |
| 59022 Sensor   | 5.8 +/- 0.25<br>[0.228 +/- 0.010] | 25.4 +/- 0.25<br>[1.00 +/- 0.010] |

### **Material Specifications**

| Product        | duct Housing Color Material |       | Sealing<br>Component |
|----------------|-----------------------------|-------|----------------------|
| 57022 Actuator | 20% GF P.B.T                | Black | Epoxy                |
| 59022 Sensor   | 20% GF P.B.T                | Black | Ероху                |



### **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 <sup>4</sup> | Switching <sup>2</sup> Breakdown <sup>3</sup> | Vdc - max.<br>Vac - max.<br>Vdc - min. | 200<br>140<br>250       | 175<br>120<br>200      | 175<br>120<br>200      |
| Current <sup>4</sup> | Switching <sup>2</sup> Carry                  | Adc - max.<br>Aac - max.<br>Adc - max. | 0.5<br>0.35<br>1.2      | 0.25<br>0.18<br>1.5    | 0.25<br>0.18<br>1.5    |
| Resistance 5         | Contact, Initial<br>Insulation                | $\Omega$ - max. $\Omega$ - min.        | 0.2<br>10 <sup>10</sup> | 0.2<br>10 <sup>9</sup> | 0.2<br>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 7                   | 11ms ½ sine | G - max.  | 100 | 50  | 50  |
| Vibration <sup>7</sup>    | 50-2000 Hz  | G - max.  | 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.
- 1. Contact rating Product of the switching voltage and current should never exceed the wattage rating.
  1. Contact rating Product of the switching voltage and current should never exceed the wattage rating.
  2. When switching inductive and/or capacitive loads, the effects of transient voltages and/or currents should 6. Operate (including bounce)/Release Time per EIA/NARM RS-421-A, diode suppressed coil (Coil II).
  2. When switching inductive and/or capacitive loads, the effects of transient voltages and/or currents should 6. Operate (including bounce)/Release Time per EIA/NARM RS-421-A, diode suppressed coil (Coil II).
  3. Shock and Vibration per EIA/NARM RS-421-A and MIL-STD-202. be considered. Refer to Application Notes AN108A and AN107 for details.

  3. Breakdown Voltage - per MIL-STD-202, Method 301. Leakage current is less than 0.1m A for 60 seconds.



## **59022 Reed Sensor**

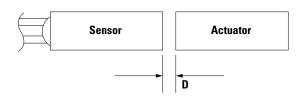
### **Sensitivity Options**

| Selec | ct Option       | on S                |                                | Т                                |                     | U                              |                                  |                     |                                |                                  |
|-------|-----------------|---------------------|--------------------------------|----------------------------------|---------------------|--------------------------------|----------------------------------|---------------------|--------------------------------|----------------------------------|
| Swi   | tch Type        | Pull-In AT<br>Range | Activation<br>Distance<br>(mm) | Deactivation<br>Distance<br>(mm) | Pull-In AT<br>Range | Activation<br>Distance<br>(mm) | Deactivation<br>Distance<br>(mm) | Pull-In AT<br>Range | Activation<br>Distance<br>(mm) | Deactivation<br>Distance<br>(mm) |
| 1     | Normally Open   | 12-18               | 5.1                            | 17                               | 17-23               | 3.8                            | 15.5                             | 22-28               | 2.5                            | 14                               |
| 3     | Change Over     | 15-20               | 5                              | 15.5                             | 20-25               | 4                              | 14                               | 25-30               | 3                              | 12                               |
| 4     | Normally Closed | 15-20               | 5                              | 15.5                             | 20-25               | 4                              | 14                               | 25-30               | 3                              | 12                               |

### Note:

- Measurments are from 57022 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 activate & deactivate distances will decrease significantly



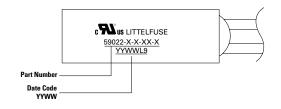
### **Cable Length Specification**

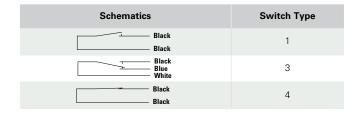
| Cable Type: 24 AWG 7/32 PVC 105°C UL1430/UL1569 |                                  |  |  |
|---|----------------------------------|--|--|
| Options   | Cable Length mm [inch]           |  |  |
| 02  | 300 +/- 10.00 [11.81 +/- 0.394]  |  |  |
| 05  | 1000 +/- 10.00 [39.37 +/- 0.394] |  |  |

## Packaging

| Cable Length | Packaging Specification | Quantity |
|--------------|-------------------------|----------|
| 02           | Bulk                    | 2000     |
| 05           | Bulk                    | 1500     |

### **Package Markings**

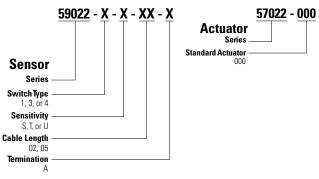




### **Termination Specification**

| Termination Options |  |  |  |  |
|---------------------|--|--|--|--|
| Select<br>Option    | Description<br>(Two-wire versions illustrated) |  |  |  |
| А                   | Tinned leads (6.4±0.76)mm                      |  |  |  |

### **Part Numbering System**



**Disclaimer Notice** - Information furnished is believed to be accurate and reliable. However, users should independently evaluate the suitability of and test each product selected for their own applications. Littelfuse products are not designed for, and may not be used in, all applications. Read complete Disclaimer Notice at <a href="http://www.littelfuse.com/disclaimer-electronics">http://www.littelfuse.com/disclaimer-electronics</a>.

