

# 59141 Miniature Flange Mount Sensor

## Flange Mounting Sensor



### Description

The 59141 is a miniature flange mounting reed sensor occupying only 3.22cm<sup>2</sup> (0.500”<sup>2</sup>) board space with a choice of normally open, normally open high voltage, normally closed or changeover contacts. The case design enables mounting with M3 screw with washer at 1 Nm torque maximum or adhesive mounting. The wires exit from the left-hand side, see Drawing 2. It is also available with right-hand exit - see 59140 Series. The 59141 series is capable of switching up to 265Vac/300Vdc at 10VA. It is well suited for use in a wide range of industrial, appliances, or IoT proximity sensing applications.

The 59141 functions best with the matching actuator 57141-000.

### Additional Information



Resources



Accessories



Samples

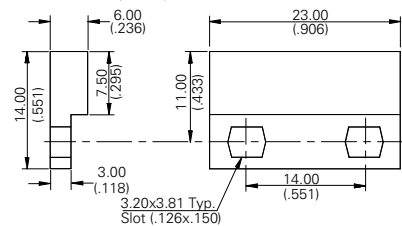
### Dimensions

Dimensions in mm (inch)

Tolerances are +/- 0.25 (0.010) unless otherwise noted.

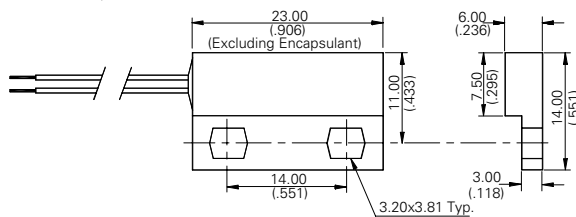
**Drawing 1**

Actuator (sold separately)



**Drawing 2**

Sensor (Two-wire version)



**Table 1**

| Schematics             | Switch Type |
|------------------------|-------------|
| Black<br>Black         | 1 and 2     |
| Black<br>Blue<br>White | 3           |
| Black<br>Black         | 4           |

### Features and Benefits

- Non-contact switching solution for wet & harsh environments
- Housing design for optimum adjustability
- Available in select sensitivities (operating distances)
- Standard cable configurations; customization options available
- Hermetically sealed, IP67 rated; UL and REACH compliant
- No leakage current in 'open' state—ideal for battery-powered IoT applications
- Can operate through non-ferrous materials (for example, wood, plastic or aluminium)
- Helps implement efficient proximity/access and energy management systems
- Compact size and easy installation and effective concealment in many applications
- 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

**Table 2**  
**Agency Approvals**

| Agency                | Agency File Number |
|-----------------------|--------------------|
| c <b>UL</b> <b>US</b> | E61760             |

**Note:** Contact Littelfuse for specific agency approval ratings.

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**Table 3**  
**Electrical Ratings**

| Contact Type                |                             |                | Normally Open    | Normally Open High Voltage | Change Over     | Normally Closed |
|-----------------------------|-----------------------------|----------------|------------------|----------------------------|-----------------|-----------------|
| Switch Type                 |                             |                | 1                | 2                          | 3               | 4               |
| Contact Rating <sup>1</sup> |                             | VA/Watt - max. | 10               | 10                         | 5               | 5               |
| Voltage <sup>4</sup>        | Switching <sup>2</sup>      | Vdc - max.     | 200              | 300                        | 175             | 175             |
|                             |                             | Vac - max.     | 140              | 265                        | 120             | 120             |
|                             | Breakdown <sup>3</sup>      | Vdc - min.     | 250              | 400                        | 200             | 200             |
| Current <sup>4</sup>        | Switching <sup>2</sup>      | Adc - max.     | 0.5              | 0.4                        | 0.25            | 0.25            |
|                             |                             | Aac - max.     | 0.35             | 0.30                       | 0.18            | 0.18            |
|                             | Carry                       | Adc - max.     | 1.2              | 1.4                        | 1.5             | 1.5             |
| Resistance <sup>5</sup>     | Contact, Initial Insulation | Ω - max.       | 0.2              | 0.2                        | 0.2             | 0.2             |
|                             |                             | Ω - min.       | 10 <sup>10</sup> | 10 <sup>10</sup>           | 10 <sup>9</sup> | 10 <sup>9</sup> |
| 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     |

**Table 4**

| Product Characteristics   |             |           |     |     |     |     |
|---------------------------|-------------|-----------|-----|-----|-----|-----|
| Operate Time <sup>6</sup> |             | ms - max. | 1.0 | 1.0 | 3.0 | 3.0 |
| Release Time <sup>6</sup> |             | ms - max. | 1.0 | 1.0 | 3.0 | 3.0 |
| Shock <sup>7</sup>        | 11ms ½ sine | G - max.  | 100 | 100 | 50  | 50  |
| Vibration <sup>7</sup>    | 50-2000 Hz  | G - max.  | 30  | 30  | 30  | 30  |

**Notes:**

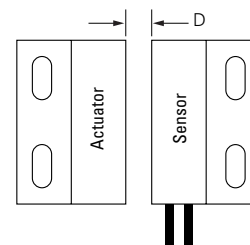
- Contact rating - Product of the switching voltage and current should never exceed the wattage rating. Contact Littelfuse for additional load/life information.
- When switching inductive and/or capacitive loads, the effects of transient voltages and/or currents should be considered. Refer to Application Notes AN108A and AN107 for details.
- Breakdown Voltage - per MIL-STD-202, Method 301.
- Electrical Load Life Expectancy - Contact Littelfuse with voltage, 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 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.

**Table 5**  
**Sensitivity Options (Using 57141 Actuator)**

| Select Option     | S                |                          |                            | T                |                          |                            | U                |                          |                            | V                |                          |                            |
|-------------------|------------------|--------------------------|----------------------------|------------------|--------------------------|----------------------------|------------------|--------------------------|----------------------------|------------------|--------------------------|----------------------------|
|                   | 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) | Pull-In AT Range | Activation Distance (mm) | Deactivation Distance (mm) |
| 1 Normally Open   | 12-18            | 9-16                     | 10-17                      | 17-23            | 7-15                     | 9-17                       | 22-28            | 6-13                     | 8-16                       | 27-33            | 5-12                     | 8-16                       |
| 2 High Voltage    | -                | -                        | -                          | 17-23            | 8-15                     | 9-17                       | 22-28            | 6-12                     | 9-16                       | 27-33            | 5-12                     | 7-16                       |
| 3 Change Over     | 15-20            | 7-14                     | 8-17                       | 20-25            | 6-13                     | 7-17                       | 25-30            | 5-12                     | 6-16                       | -                | -                        | -                          |
| 4 Normally Closed | 15-20            | 7-14                     | 8-17                       | 20-25            | 6-13                     | 7-17                       | 25-30            | 5-12                     | 6-16                       | -                | -                        | -                          |

**Notes:**

- 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.




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**Table 6**  
**Cable Length Specification**

| Cable Type: 24 AWG 7/32 PVC 105°C UL1430/UL1569 |                                |
|---|--------------------------------|
| Select Option                                   | Cable Length<br>mm (inch)      |
| 02  | 300 +/-10.00 (11.81 +/- 0.394) |
| 05  | 1000+/-10.00 (39.37+/- 0.394)  |

**Table 7**  
**Termination Specification**

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

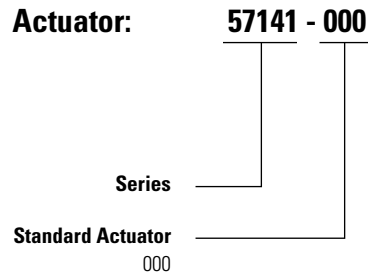
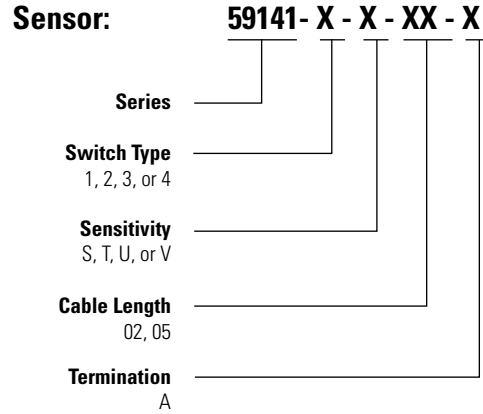
**Table 8**  
**Material Specification**

|                | Housing Material | Color | Sealing Component |
|----------------|------------------|-------|-------------------|
| 57141 Actuator | 20% GF PB.T      | Black | Epoxy             |
| 59141 Sensor   | 20% GF PB.T      | Black | Epoxy             |

**Table 9**  
**Packaging**

| Cable Length | Packaging Option | Quantity |
|--------------|------------------|----------|
| 02           | Bulk             | 500      |
| 05           | Bulk             | 500      |

**Part Numbering System**



**Note:** The 5714 Actuator is sold separately.

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