

# 59156 Series

## Subminiature Flange Mount Sensor

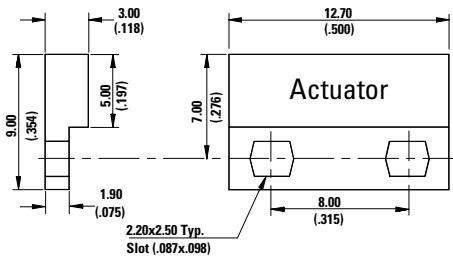


### Dimensions

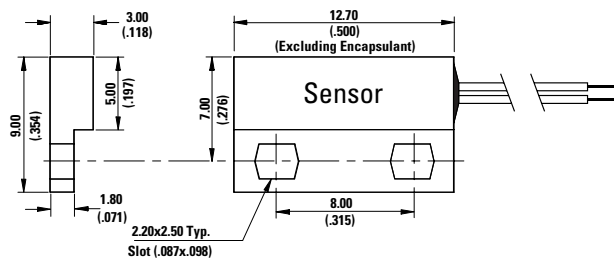
Dimensions in mm (inch)

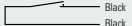
Tolerances are +/- 0.25 (0.010) unless otherwise noted.

**Actuator** (sold separately)



**Sensor** (Two-wire version)



| Schematics                                                                          | Switch Type |
|-------------------------------------------------------------------------------------|-------------|
|  | 1           |

### Description

The 59156 is a subminiature flange mounting reed sensor 12.70mm x 9.00mm x 3.00mm ( 0.500" x 0.354" x 0.118") with normally open contacts. The case design enables mounting with non-magnetic M2 screw at 0.1 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 59155 series. The 59156 is capable of switching up to 120Vac/170Vdc at 10VA. It is well suited for use in a wide range of industrial, appliances, or IoT proximity sensing applications.

The 59156 series functions best with the matching actuator 57155-000.

### Features and Benefits

- Smallest flange mount type reed sensor in the market
- 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
- 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
- Easy installation and effective concealment in many applications
- UL Recognized per UL 508 and CSA C22.2 No. 14
- Hermetically sealed, IP67 rated; REACH compliant
- ATEX certified for use in European explosive atmospheres: II 3 G Ex nC IIC Gc

### Applications

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

### Agency Approvals

| Agency                                                                              | Agency File Number   |
|-------------------------------------------------------------------------------------|----------------------|
|  | E61760               |
|  | DEMKO 14 ATEX 1393U* |
|                                                                                     | II 3 G Ex nC IIC Gc  |

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

# 59156 Series

## Subminiature Flange Mount Sensor

### 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              |
|                             |                        | Vac - max.      | 120              |
|                             | Breakdown <sup>3</sup> | Vdc - min.      | 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       | $\Omega$ - max. | 0.15             |
|                             | Insulation             | $\Omega$ - min. | 10 <sup>12</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:

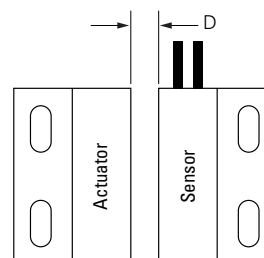
- Contact rating - Product of the switching voltage and current should never exceed the wattage rating. Contact Littelfuse for additional load/life information.
- When switching inductive and/or capacitive loads, the effects of transient voltages and/or currents should be considered. Refer to Application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

### Sensitivity Options (Using 57155 Actuator)

| Select Option |               | S                |                          |                            | T                |                          |                            |
|---------------|---------------|------------------|--------------------------|----------------------------|------------------|--------------------------|----------------------------|
| Switch Type   |               | 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             | 2.0-4.2                  | 2.2-4.7                    | 10-15            | 1.5-4.0                  | 1.8-4.4                    |

#### 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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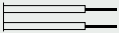
## Subminiature Flange Mount Sensor

### Cable Length Specification

| Cable Type: 26 AWG PVC 105°C UL1569 |                                |
|-------------------------------------|--------------------------------|
| Select Option                       | Cable Length<br>mm (inch)      |
| 02                                  | 300 +/-10.00 (11.81 +/- 0.394) |
| 05                                  | 1000+/-10.00 (39.37+/- 0.394)  |

**Note:** Please contact Littelfuse for cable length customizations.

### Termination Specification

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

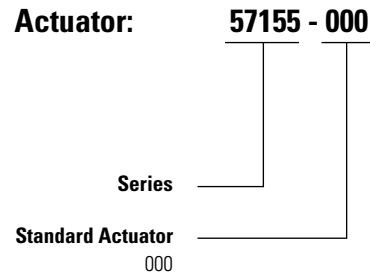
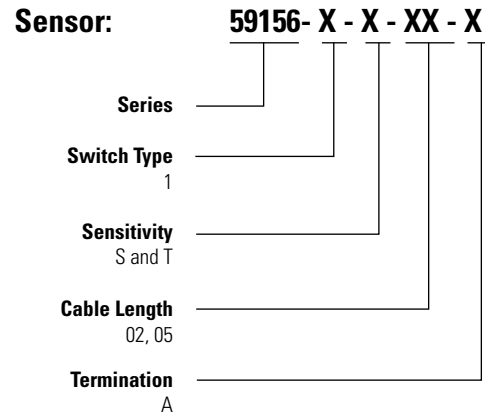
### Material Specification

|                | Housing Material | Color | Sealing Component |
|----------------|------------------|-------|-------------------|
| 57155 Actuator | 20% GF P.B.T     | Black | Epoxy             |
| 59156 Sensor   | 20% GF P.B.T     | Black | Epoxy             |

### Packaging

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

### Part Numbering System



**Note:** The 57140 Actuator is sold separately.

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