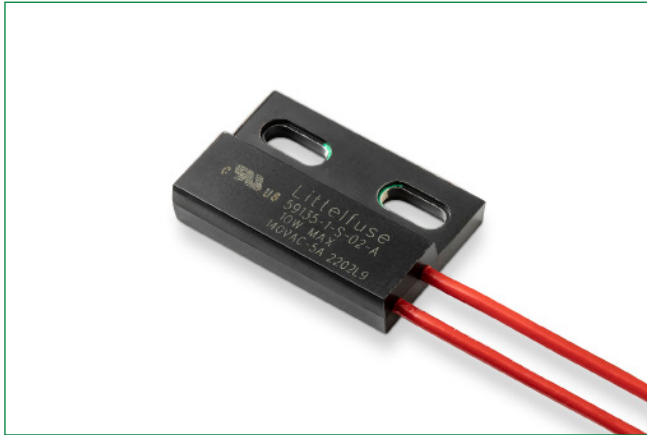


# 59135 Series

## High Temperature Flange Mount Sensor



### Additional Information



Resources



Accessories



Samples

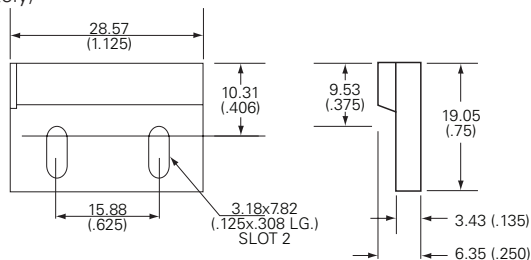
### Dimensions

Dimensions in mm (inch)

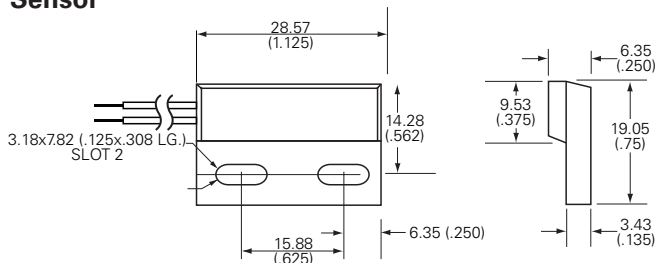
Tolerances are +/- 0.25 (0.010) unless otherwise noted.

#### Actuator

(sold separately)



#### Sensor



### Description

The 59135 is a high temperature flange mounting reed sensor 28.57mm x 19.05mm x 6.35mm (1.125" x 0.750" x 0.250") with a choice of normally open, normally closed or change-over contacts. It is rated for operation up to 150°C and capable of switching up to 265Vac/300Vdc at 10VA.

The 59135 series is well suited for use in a wide range of industrial, appliances, or IoT proximity sensing applications.

**Note:** The 59135 series functions best with the matching actuator 57135-000.

### Features & Benefits

- Non-contact switching solution for wet & harsh environments
- Rated up to 150C operating temperature
- Housing design for optimum adjustability
- Available in select sensitivities (operating distances)
- Standard Teflon insulated cable configurations; customization options available
- Thermoset overmold material
- 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

### Agency Approvals

| Agency | Agency File Number |
|--------|--------------------|
|        | E61760             |

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

| Schematics | Switch Type |
|------------|-------------|
|            | 1 and 2     |
|            | 3           |
|            | 4           |

# 59135 Series

## High Temperature Flange Mount Sensor

### 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              | 200                        | 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 +150      | -20 to +150                | -40 to +150     | -40 to +150     |

| 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:

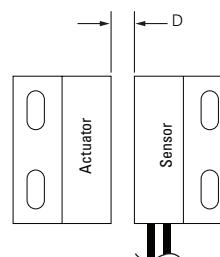
- Contact rating - Product of the switching voltage and current should never exceed the wattage rating. Contact Littelfuse for additional load/life information.
- When switching inductive and/or capacitive loads, the effects of transient voltages and/or currents should be considered. Refer to Application 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.

### Sensitivity Options (Using 57135 Actuator)

| Select Option     | S                |                               |                                 | T                |                               |                                 | U                |                               |                                 | V                |                               |                                 |
|-------------------|------------------|-------------------------------|---------------------------------|------------------|-------------------------------|---------------------------------|------------------|-------------------------------|---------------------------------|------------------|-------------------------------|---------------------------------|
| Switch Type       | Pull-In AT Range | Activation Distance (mm) Min. | Deactivation Distance (mm) Max. | Pull-In AT Range | Activation Distance (mm) Min. | Deactivation Distance (mm) Max. | Pull-In AT Range | Activation Distance (mm) Min. | Deactivation Distance (mm) Max. | Pull-In AT Range | Activation Distance (mm) Min. | Deactivation Distance (mm) Max. |
| 1 Normally Open   | 12-18            | 12.5                          | 28.51                           | 17-23            | 12                            | 27.51                           | 22-28            | 10.5                          | 24                              | 27-33            | 9.5                           | 22.5                            |
| 2 High Voltage    | -                | -                             | -                               | 17-23            | 12                            | 27.51                           | 22-28            | 10.5                          | 24                              | 27-33            | 9.5                           | 22.5                            |
| 3 Change Over     | 15-20            | 10                            | 26                              | 20-25            | 9                             | 25                              | 25-30            | 7.49                          | 22.5                            | -                | -                             | -                               |
| 4 Normally Closed | 15-20            | 10                            | 26                              | 20-25            | 8.99                          | 25                              | 25-30            | 7.49                          | 22.5                            | -                | -                             | -                               |

#### 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.



# 59135 Series

## High Temperature Flange Mount Sensor

### Lead Length & Specification

| Wire Leads: 20 AWG 19/32 FEP UL1130/UL1332 |                                |
|--------------------------------------------|--------------------------------|
| Select Option                              | Cable Length<br>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<br>(Two-wire versions illustrated) |                                                                                   |
| A                   | Tinned leads (6.4±0.76)mm                      |  |

### Material Specification

|                | Housing Material | Color | Sealing Component |
|----------------|------------------|-------|-------------------|
| 57135 Actuator | Thermoset Epoxy  | Black | Epoxy             |
| 59135 Sensor   | Thermoset Epoxy  | Black | Epoxy             |

### Packaging

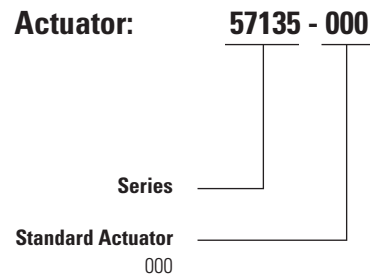
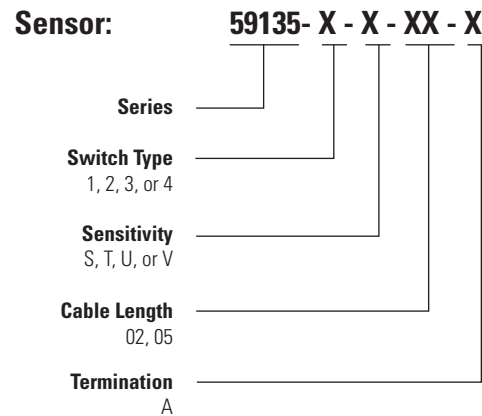
| Cable Length | Packaging Option | Quantity |
|--------------|------------------|----------|
| 02           | Bulk             | 500      |
| 05           | Bulk             | 500      |

### Recommended Fastener for Sensor<sup>1</sup>

| Series   | Fastener   | Type              | Torque      |
|----------|------------|-------------------|-------------|
| Metric   | M3         | Screw with washer | 1.0 N-m     |
| Standard | #4 (7/64") | Screw with washer | 8.85 in-lbf |

**Note: 1.** Sensor Housing may be secured using mechanical fasteners, M3 or #4 Screws (Torque to 1 N-m (8.9 in-lbf)), or suitable adhesive tape material. Please note that you must use a suitable washer with the mechanical fastener. Fastener material should be non-magnetic stainless steel or brass.

### Part Numbering System



**Note:** The 57135 Actuator is sold separately.