

# 59141 Miniature Flange Mount Sensor + 57141 Actuator



## Agency Approvals

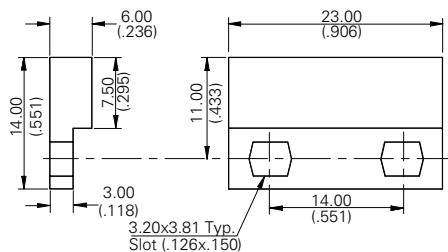
| Agency | Agency File Number |
|--------|--------------------|
|        | E61760             |

Note: Contact Littelfuse for specific agency approval ratings.

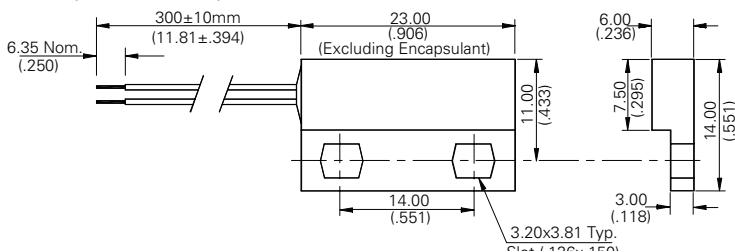
## Dimensions

Dimensions in mm (inch)

### Actuator

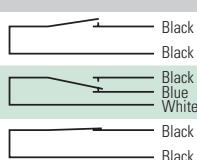


### Sensor (Two-wire version)



### Schematics

### Switch Type



1 and 2

3

4

## 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. It's case design enables screw or adhesive mounting and the wires exit from top left hand side. It is also available with left hand exit - see 59140 Series. It is capable of switching up to 265Vac/300Vdc at 10VA. The 59141 functions best with the matching actuator 57141-000.

**Note: The 57141 Actuator is sold separately.**

## Features

- Magnetically operated position sensor
- Customer defined sensitivity
- Choice of cable length and connector

## Benefits

- Hermetically sealed, magnetically operated contacts continue to operate long after optical and other technologies fail due to contamination
- No standby power requirement
- Operates through non-ferrous materials such as wood, plastic or aluminium
- Excellent for switching microcontroller logic level loads

## Applications

- Position and limit sensing
- Security system switch
- Linear actuators
- Door switch

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## 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><br>Breakdown <sup>3</sup> | Vdc - max.<br>Vac - max.<br>Vdc - min. | 200<br>140<br>250  | 300<br>265<br>400          | 175<br>120<br>200   | 175<br>120<br>200   |
| Current <sup>4</sup>        | Switching <sup>2</sup><br>Carry                  | Adc - max.<br>Aac - max.<br>Adc - max. | 0.5<br>0.35<br>1.2 | .40<br>0.30<br>1.4         | 0.25<br>0.18<br>1.5 | 0.25<br>0.18<br>1.5 |
| Resistance <sup>5</sup>     | Contact, Initial<br>Insulation                   | $\Omega$ - max.<br>$\Omega$ - min.     | 0.2<br>$10^{10}$   | 0.2<br>$10^{10}$           | 0.2<br>$10^9$       | 0.2<br>$10^9$       |
| 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         |

## 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:

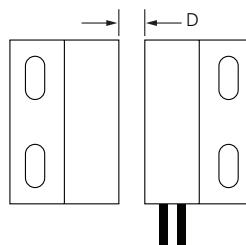
1. Contact rating - Product of the switching voltage and current should never exceed the wattage rating. Contact Littelfuse for additional load/life information.
2. When switching inductive and/or capacitive loads, the effects of transient voltages and/or currents should be considered. Refer to Application Notes AN108A and AN107 for details.
3. Breakdown Voltage - per MIL-STD-202, Method 301.
4. Electrical Load Life Expectancy - Contact Littelfuse with voltage, current values along with type of load.
5. This resistance value is for 11.81mm wire length. Resistance changes when wire lengthens.
6. Operate (including bounce)/Release Time - per EIA/NARM RS-421-A, diode suppressed coil (Coil II).
7. Shock and Vibration - per EIA/NARM RS-421-A and MIL-STD-202.
8. For custom modifications to the wire length or size, or adding a special connector, please contact Littelfuse.

## Sensitivity Options (Using 57141 Actuator)

| Select Option |                 | S                |   | T                |   | U                |   | V                |   |
|---------------|-----------------|------------------|---|------------------|---|------------------|---|------------------|---|
| Switch Type   |                 | Pull-In AT Range | Activate Distance - D mm (inch) Average | Pull-In AT Range | Activate Distance - D mm (inch) Average | Pull-In AT Range | Activate Distance - D mm (inch) Average | Pull-In AT Range | Activate Distance - D mm (inch) Average |
| 1             | Normally Open   | 12-18            | 10.4 (.410)                             | 17-23            | 8.4 (.330)                              | 22-28            | 7.2 (.283)                              | 27-33            | 6.3 (.248)                              |
| 2             | High Voltage    | —                | —                                       | 17-23            | 8.4 (.330)                              | 22-28            | 7.2 (.283)                              | 27-33            | 6.3 (.248)                              |
| 3             | Change Over     | 15-20            | 11.6 (.457)                             | 20-25            | 10.6 (.417)                             | 25-30            | 10.0 (.394)                             | —                | —                                       |
| 4             | Normally Closed | 15-20            | 11.6 (.457)                             | 20-25            | 10.6 (.417)                             | 25-30            | 10.0 (.394)                             | —                | —                                       |

Note:

1. Pull-In AT Range: These AT values are the bare reed switch AT before modification.
2. The activation distance is average value on the final sensor assembly.



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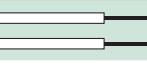
## Cable Length Specification

Cable Type: 24 AWG 7/32 PVC 105°C UL1430/UL1569

| Select Option | Cable Length<br>mm (inch) |
|---------------|---------------------------|
| 02            | 300 (11.81)               |

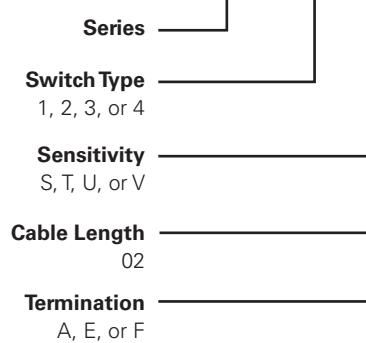
## Termination Specification

### Termination Options

| Select Option | Description<br>(Two-wire versions illustrated) |   |
|---------------|--|---|
| A             | Tinned leads (6.4±0.76)mm                      |  |
| F             | Untinned leads (6.4±0.76)mm                    |  |
| E             | JST type XHP 2.5mm pitch                       |  |

## Part Numbering System

Sensor: 59141 - X - X - XX - X



Actuator: 57141 - 000



Note: The 57141 Actuator is sold separately.

## Packaging

| Packaging Option | Packaging Specification | Quantity | Quantity & Packaging Code | Taping Width |
|------------------|-------------------------|----------|---------------------------|--------------|
| Bulk             | Bulk                    | 500      | N/A                       | N/A          |