

59141 Miniature Flange Mount Sensor

Flange Mounting Sensor



Description

The 59141 is a miniature flange mounting reed sensor occupying only 3.22cm² (0.500”²) 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

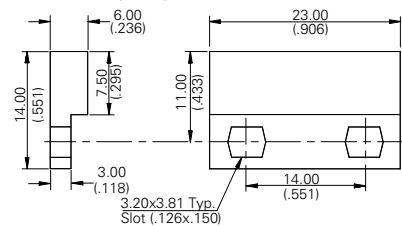
Dimensions

Dimensions in mm (inch)

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

Drawing 1

Actuator (sold separately)



Drawing 2

Sensor (Two-wire version)

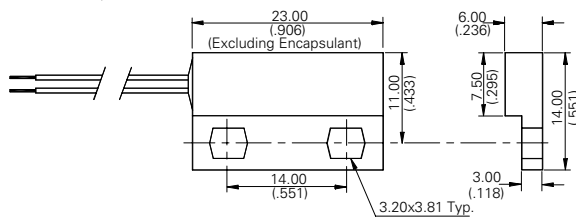


Table 1

| Schematics | Switch Type |
|------------------------|-------------|
| Black Black | 1 and 2 |
| Black Blue White | 3 |
| Black 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 UL US | 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 ¹ | | VA/Watt - max. | 10 | 10 | 5 | 5 |
| Voltage ⁴ | Switching ² | Vdc - max. | 200 | 300 | 175 | 175 |
| | | Vac - max. | 140 | 265 | 120 | 120 |
| | Breakdown ³ | Vdc - min. | 250 | 400 | 200 | 200 |
| Current ⁴ | Switching ² | 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 ⁵ | Contact, Initial Insulation | Ω - max. | 0.2 | 0.2 | 0.2 | 0.2 |
| | | Ω - min. | 10 ¹⁰ | 10 ¹⁰ | 10 ⁹ | 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 |

Table 4

| Product Characteristics | | | | | | |
|---------------------------|-------------|-----------|-----|-----|-----|-----|
| Operate Time ⁶ | | ms - max. | 1.0 | 1.0 | 3.0 | 3.0 |
| Release Time ⁶ | | ms - max. | 1.0 | 1.0 | 3.0 | 3.0 |
| Shock ⁷ | 11ms ½ sine | G - max. | 100 | 100 | 50 | 50 |
| Vibration ⁷ | 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.

