

# 59140 Miniature Flange Mount Sensor

## Flange Mounting Sensor



### Description

The 59140 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 screw or adhesive mounting. The wires exit from the right-hand side, see Drawing 2. It is also available with left-hand exit, see 59141 series. The 59140 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 59140 series functions best with the matching actuator 57140-000.

### Additional Information



Resources



Accessories



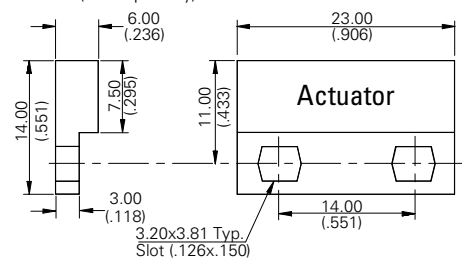
Samples

### Dimensions

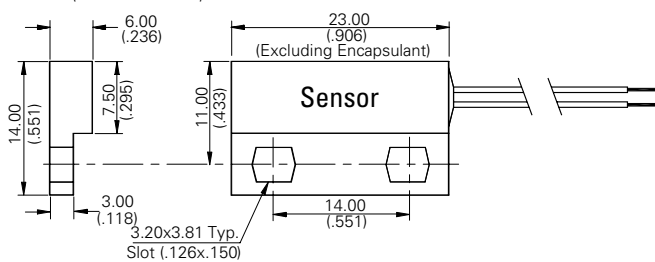
Dimensions in mm (inch)

Tolerances are +/-0.010 (.25) unless otherwise noted.  
Max Torque 1 Nm using M3 screw and washer.

**Actuator** (sold separately)



**Sensor** (Two-wire version)



### 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

### Agency Approvals

Agency	Agency File Number
	E61760

Note: Contact Littelfuse for specific agency approval ratings.

Schematics	Switch Type
	1 and 2
	3
	4

# 59140 Miniature Flange Mount Sensor

## Flange Mounting 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	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

### 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:

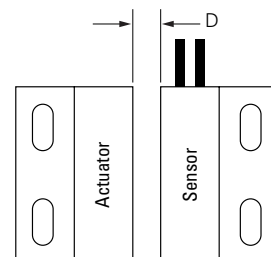
- Contact rating - Product of the switching voltage and current should never exceed the wattage rating. Contact Littelfuse for additional load/life information.
- When switching inductive and/or capacitive loads, the effects of transient voltages and/or currents should be considered. Refer to Application 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 57140 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.




# 59140 Miniature Flange Mount Sensor

## Flange Mounting Sensor

### Cable Length Specification

Cable Type: 24 AWG 7/32 PVC 105°C UL1430/UL1569	
Select Option	Cable Length 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 (Two-wire versions illustrated)
A	Tinned leads (6.4±0.76)mm 

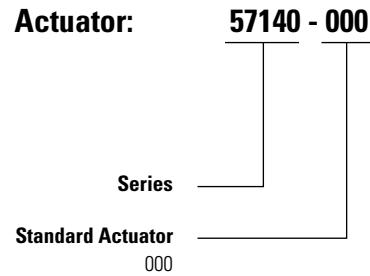
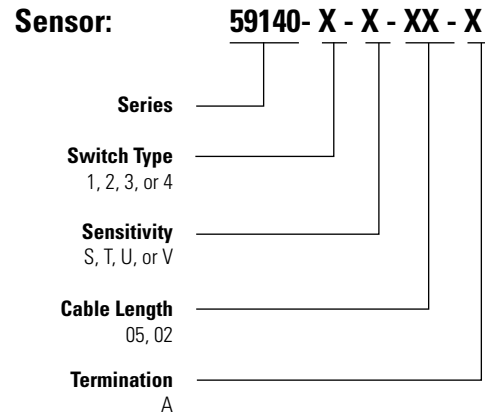
### Material Specification

	Housing Material	Color	Sealing Component
57140 Actuator	20% GF PB.T	Black	Epoxy
59140 Sensor	20% GF PB.T	Black	Epoxy

### Packaging

Cable Length	Packaging Option	Quantity
02	Bulk	2000
05	Bulk	1500

### Part Numbering System



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

**Disclaimer Notice** - Information furnished is believed to be accurate and reliable. However, users should independently evaluate the suitability of and test each product selected for their own applications. Littelfuse products are not designed for, and may not be used in, all applications. Read complete Disclaimer Notice at <http://www.littelfuse.com/disclaimer-electronics>.