59140 Miniature Flange Mount Sensor Flange Mounting Sensor





Additional Information







Samples

Resources

Accessories Dimensions

Dimensions in mm (inch)

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







Table 1

Schematics	Switch Type
Black Black	1 and 2
Black Blue White	3
Black	4

Description

The 59140 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 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.

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 batterypowered 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
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- Major appliances
- Small appliances
- Proximity and limit sensing

Table 2 Agency Approvals

Agency	Agency File Number
c FN 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 Breakdown ³	Vdc - max. Vac - max. Vdc - min.	200 140 250	300 265 400	175 120 200	175 120 200	
Current ⁴	Switching ² Carry	Adc - max. Aac - max. Adc - max.	0.5 0.35 1.2	0.4 0.30 1.4	0.25 0.18 1.5	0.25 0.18 1.5	
Resistance ⁵	Contact, Initial Insulation	Ω - max. Ω - min.	0.2 10 ¹⁰	0.2 10 ¹⁰	0.2 10 ⁹	0.2 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 1.0 1.0 3.0 3.0 ms - max. Release Time 6 1.0 1.0 3.0 3.0 ms - max. Shock 7 11ms 1/2 sine G - max. 100 100 50 50 G - max. 30 Vibration 7 50-2000 Hz 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.

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).

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.

Table 5 Sensitivity Options (Using 57140 Actuator)

	Select Option		S			т			U			v	
	Switch Type	Pull-In AT Range	Activation Distance (mm)	Deactivation Distance (mm)		Activation Distance (mm)	Deactivation Distance (mm)		Activation Distance (mm)	Deactivation Distance (mm)	۸T	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:

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.





Reed Sensors Datasheet

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Table 6 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)

Table 7Termination Specification

Termination Options						
Select Description Option (Two-wire versions illustrated)						
А	Tinned leads (6.4±0.76)mm					

Table 8 Material Specification

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

Table 9 Packaging

Cable Length	Packaging Option	Quantity
02	Bulk	500
05	Bulk	500

Part Numbering System



Actuator: <u>57140</u> - <u>000</u> Series

Standard Actuator ______

Note: The 57140 Actuator is sold separately.

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