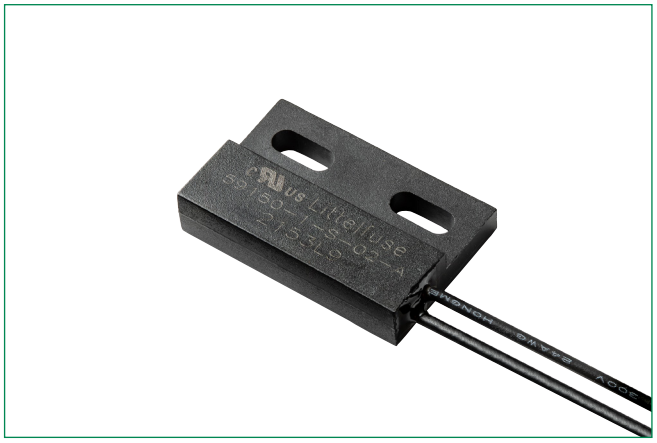
59150 Flange Mount Sensor

Flange Mounting Sensor



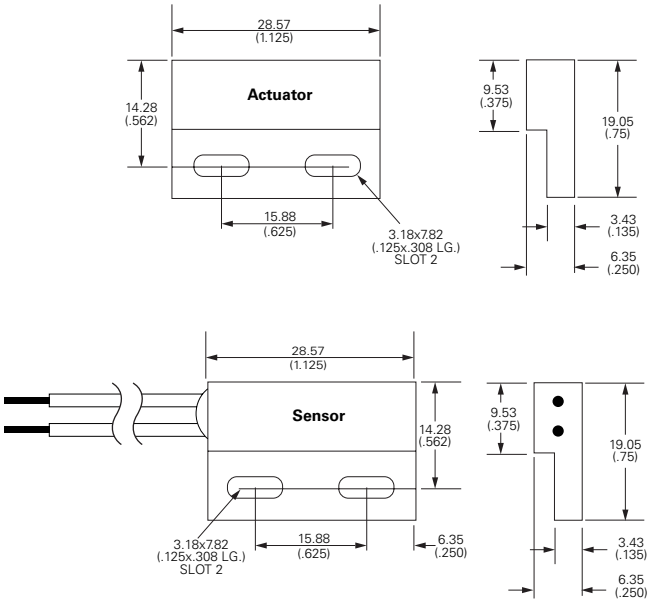
Additional Information

Resources | Accessories | Samples

Dimensions

Dimensions in mm (inch)

Tolerances are +/- 0.25 (0.010) Unless otherwise noted.
(Actuator sold separately)



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

Description

The 59150 is a 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 open high voltage, normally closed or changeover contacts. The wires exit from the left-hand side, see Drawing 2. It is also available with right-hand exit - see 59145 series. The 59150 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 59150 functions best with the matching actuator 57150-000.

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
- Major appliances
- Small appliances
- Proximity and limit sensing

Agency Approvals

Agency	Agency File Number
c UL us	E61760

Note: Contact Littelfuse for specific agency approval ratings.

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Electrical Ratings

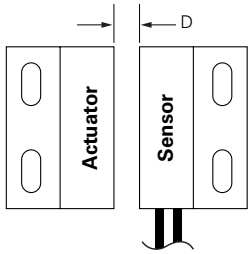
Contact Type			Normally Open	Normally Open High Voltage	Change Over	Normally Closed
Switch Type			1	2	3	4
Contact Rating [1]		VA/Watt - max.	10	10	5	5
Voltage [4]	Switching [2] Breakdown [3]	Vdc - max. Vac - max. Vdc - min.	200 140 250	300 265 400	175 120 200	175 120 200
Current [4]	Switching [2] Carry	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
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:
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 300 mm 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 57150 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	8.2	22.5	17-23	7.2	20.5	22-28	6.4	19.5	27-33	5.7	20.5
2	High Voltage	-	-	-	17-23	7.2	20.5	22-28	6.3	20.5	27-33	5.7	20.5
3	Change Over	15-20	7.5	18.5	20-25	6.3	17	-	-	-	-	-	-
4	Normally Closed	15-20	7.5	18.5	20-25	6.3	17	-	-	-	-	-	-

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 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 Specifications

	Housing Material	Color	Sealing Component
57150 Actuator	20% GF P.B.T	Black	Epoxy
59150 Sensor	20% GF P.B.T	Black	Epoxy

Packaging

Cable Length	Packaging Option	Quantity
02	Bulk	500
05	Bulk	500

Recommended Fastener for Sensor[1]

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 shuld be non-magnetic stainless steel or brass.

Part Numbering System

Sensor: **59150 - X - X - XX - X**

- **Series**
- **Switch Type** 1, 2, 3, or 4
- **Sensitivity** S, T, U, or V
- **Cable Length** 02, 05
- **Termination** A

Actuator: **57150 - 000**

- **Series**
- **Standard Actuator** 000

Note: The 57150 Actuator is sold separately.

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