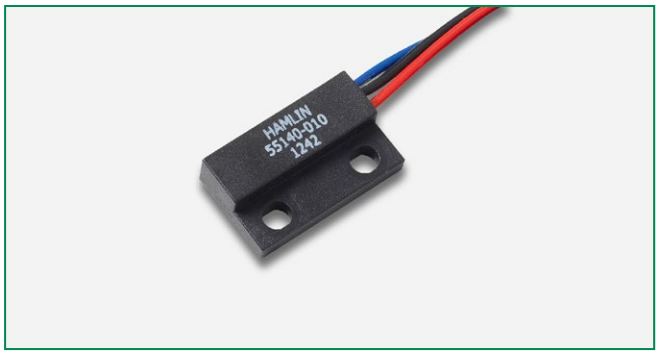
55140 Miniature Flange Mounting Sensor

RoHS



Description

The 55140 is a small flange mounting hall effect sensor occupying only 3.22cm² (0.500"²) board space with a choice of digital, or programmable analogue outputs. It is available as three-wire (voltage output) or two-wire (current output) versions. Its case design enables screw or adhesive mounting and the sensor is capable of switching up to 28Vdc and 20mA. It comes with a range of sensitivity, cable length and connector options.

Features

- Magnetically operated position sensor
- Digital,latching or programmable analog types available
- Medium, high or programmable sensitivities
- Three-wire (voltage output) or two-wire (current output) versions
- Vibration 50g max. @ 50-2,000Hz
- Shock 150g max. @ 11ms ½ Sine
- EMC to DIN 40839 (Consult Littelfuse)
- Reverse/Over voltage protection
- Built in temperature compensation
- Open Drain Output

Benefits

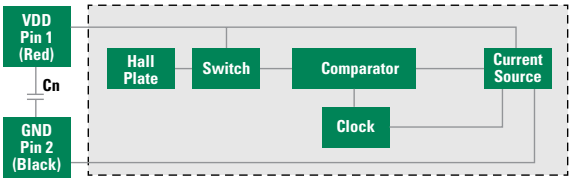
- High switching speed up to 10kHz
- Long life; up to 20 billion operations
- Operates in static or dynamic magnetic field
- Unaffected by harsh environment
- Customer selection of cable length and connector type

Applications

- Position and limit sensing
- RPM measurement
- Commutation of brushless DC motors
- Flow metering
- Angle sensing
- Magnetic encoders

Block Diagram

Two-wire Version

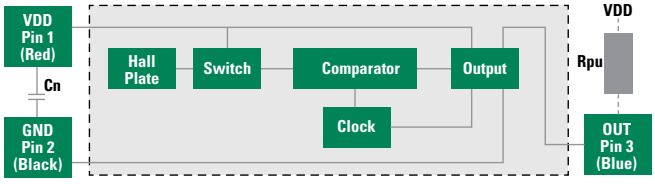


Notes:

1. Add capacitor **Cn** as shown, close for the sensors for transient suppression if required.
2. Add pull-up resistor **Rpu** as shown for sinking output. The Rpu value should be calculated using your supply voltage while keeping the ON state current at a level below the maximum. Rpu = VDD/Io;

   Rpu = 12Vdc/10mA = 1.2

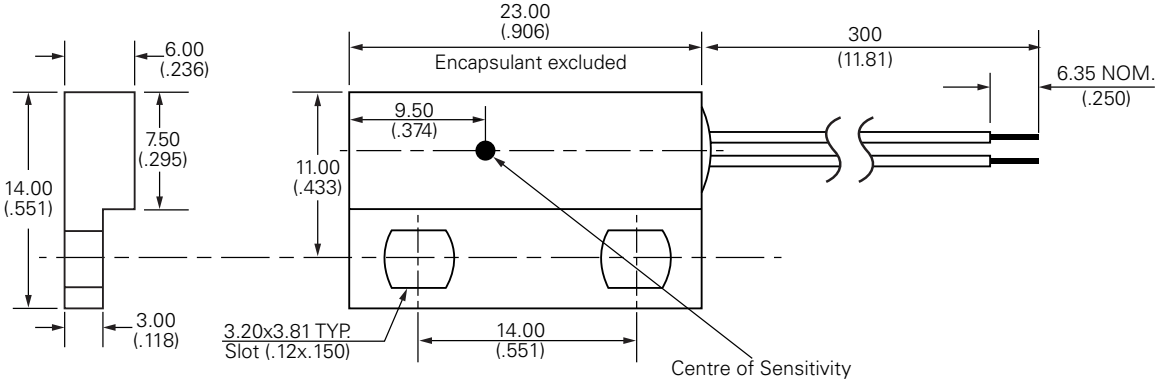
Three-wire Version



Dimensions

Dimensions in mm (inch)

Two-wire version illustrated.



General Tol.: ±(.005) 0.13

 Revised: 02/08/19

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Electrical Ratings

Hall Type				Digital Switch Three-Wire (Voltage Output)	Digital Switch Two-Wire (Current Output)	A - Analogue (Programmable Only) [2]
Supply Voltage [1]	Absolute Ratings Operate Overvoltage Protection		Vdc Vdc Vdc - max.	-15 to +28 +3.8 to +24 32	-15 to +28 +3.75 to +24 32	8.5 4.5 - 5.5 19.5
Output High Voltage			Vdc - min.	Sinking output	N/A	4.65
Output Low Voltage			Vdc - max.	0.4 @ 20mA	N/A	0.35
Output Current (continuously on)			mA - max.	20	N/A	-1.0 to +1.0
Current Consumption Over Temperature Range		Low High	mA - min. mA - max.	1.6 - 5.2 1.6 - 5.2	5.0 - 6.9 12.0 - 17.0	2.0 - 10.0 2.0 - 10.0
Switching Speed			kHz	10	10	2
Temperature	Operating		°C	-40 to +100	-40 to +100	-40 to +100

Notes:

1. As long as Tj (Junction Temperature) is not exceeded. It is recommended to operate within the normal Operate Supply Voltage of +24Vdc maximum. Operating beyond Absolute Ratings may cause permanent damage to the Hall IC.
2. Preprogrammed by Littelfuse or Customer pending agreement.
3. For custom modifications to the wire length or size, or adding a special connector, please contact Littelfuse.

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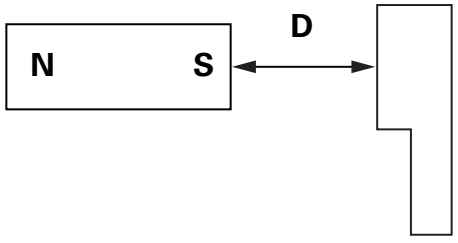
Hall Options

Select Option	Hall Type	Sensitivity Gauss (typ.)	Activate - D mm (inch)
2M	2 Wire Switch	120	13.5 (.531)
2H	2 Wire Switch	57	18.5 (.728)
3M	3 Wire Switch	130	12.5 (.492)
3H	3 Wire Switch	59	18.0 (709)
AP	Analog	Programmable	Consult Littelfuse

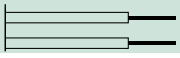
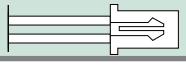


Note: Active distances are approximate using NEFEB Magnet 21 x 7 x 4.7 (.827L x .276W x .185H) LITTELFUSE P/N H-58

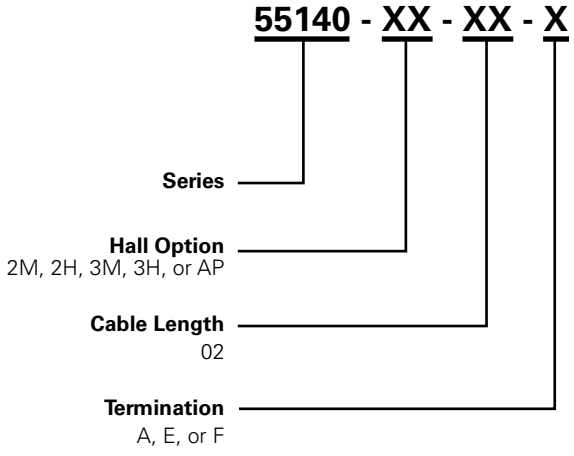
Cable Length Options

Cable Type: 24AWG 7/32 PVC 105°C UL 1430/UL1569	
Select Option	**Cable Length mm (inch)**
02	300 (11.81)

Termination Specification

Termination Options		
Select Option	**Description (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



Packaging

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

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