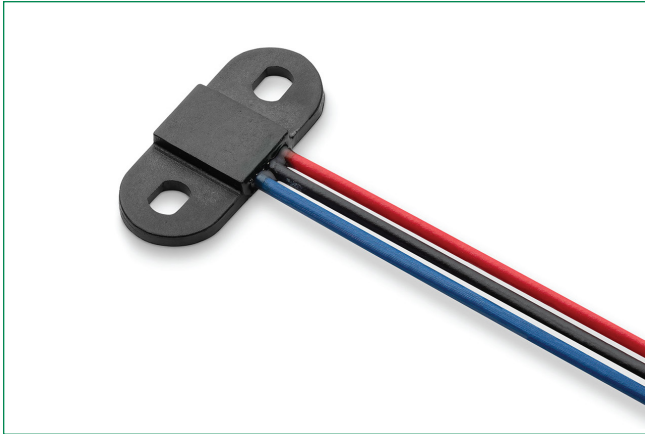


54100 Sensor

Miniature Flange Mounting Proximity

RoHS



Description

The 54100 is a miniature flange-mounting Omnipolar TMR sensor measuring 25.5mm x 11.00mm x 3.00mm. The case design allows either screw or adhesive mounting of the sensor. This is a 3-Wire sensor (Power - Ground - Output), and is capable of switching up to 5.5 Vdc and 3.0 mA output current. The sensor leads may be used as supplied or will allow modifications for a variety of connections, with two lead lengths offered.

Customization may be supported for high volume long running production needs, contact Littelfuse for options

Features & Benefits

- Magnetically operated position sensor
- Operation with North or South Pole
- Digital switching
- High Sensitivity
- 3-Wire (voltage output)
- Push-Pull output
- Ultra-low power consumption at 1.5uA
- Operates in a static or dynamic magnetic field
- Built-in temperature compensation
- Excellent thermal stability
- High switching speed up to 1 kHz
- Vibration 50g max. @ 50-2,000 Hz
- Shock 150g max. @ 11 ms 1/2 Sine
- Long Life - up to 20 billion operations
- RoHS compliant
- IP67 rated

Additional Information



Resources



Accessories



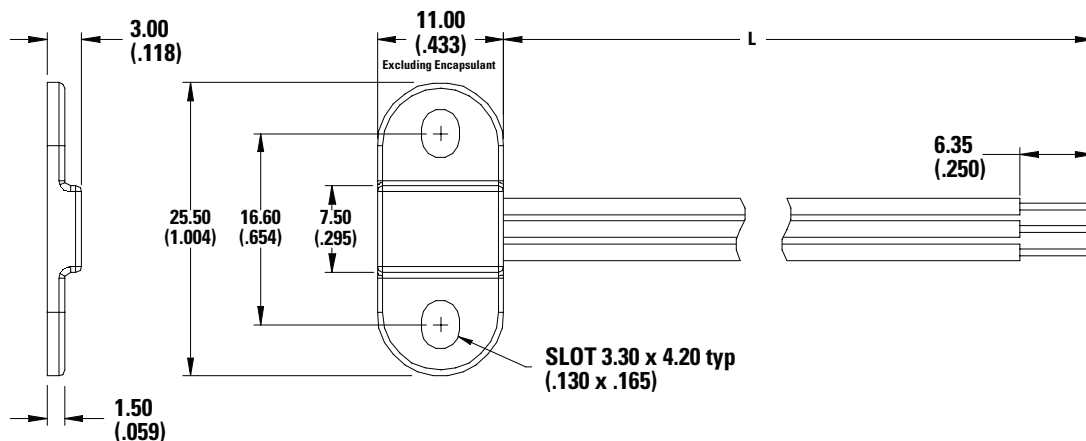
Samples

Applications

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

Dimensions

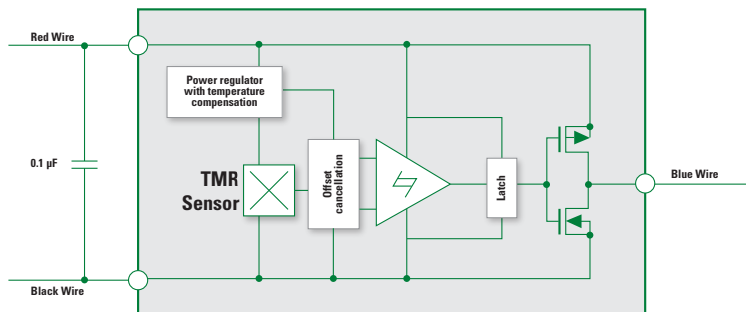
mm (inch)



54100 Sensor

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Block Diagram



Notes:

1. Add capacitor C_n as shown, close to the sensor, for transient suppression if required.
2. Add pull-up resistor R_{pu} as shown for sinking output. The R_{pu} value should be calculated using your supply voltage while keeping the ON state current at a level below the maximum.
 $R_{pu} = V_{DD}/I_o$; $R_{pu} = 12\text{ Vdc}/10\text{ mA} = 1.2\text{ k}\Omega$

Electrical Ratings

3-Wire TMR Switch

TMR Type			Digital Switch 3 - Wire (Voltage Output)
Supply Voltage ¹	Absolute Ratings	Vdc	7
	Operate	Vdc	1.8 to 5.5
	Overvoltage Protection	Vdc - max	7
Output High Voltage	Min	Vdc	$V_{cc} - 0.3$
Output Low Voltage	Max	Vdc	0,2
Output Current (continuously on)	Max	mA	9.0
Current Consumption (from 3.3 Vdc Supply)	Typical w/Output Off	uA	1,5
Switching Speed		kHz	1
Temperature	Operating	°C	-40 to 125
ESD ²	HBM	kV	4

Notes:

1. As long as T_J (Junction Temperature) of 125°C is not exceeded. It is recommended to operate within the normal Operate Supply Voltage.
2. HBM = Human Body Model per JEDEC EIA/JESD22-A114
3. For custom modifications to the wire length or size, or adding a special connector, please contact Littelfuse

54100 Sensor

Miniature Flange Mounting Proximity

TMR Sensitivity Options

Sensing Device Activation			
Sensitivity Option	TMR Type	Sensitivity (Gauss)	Activate - D ¹ mm (inch)
17X	3-Wire Switch	17 ^(see Note 2)	29.5 (1.16)
35X	3-Wire Switch	35 ^(see Note 3)	23.5 (0.92)

Notes:

1. Activation distance is minimum using NeFeB Magnet Littelfuse P/N H-58-Magnet
2. Bops +17G / -17G, Brps +10 Gauss / -10 Gauss, BH = 7G
3. Bops +35G / -35G, Brps +22 Gauss / -22 Gauss, BH = 13G

Lead Length & Specification

Wire Leads: 24 AWG 7/32 PVC 105 °C UL1569			
Select Option		Lead Length mm (inch)	
02	Wire Lead	300 ± 10.00 (11.81 ± 0.394)	
05	Wire Lead	1000 ± 20.00 (39.37 ± 0.787)	

Material Specification

	Housing Material	Color	Sealing Component
54100 Sensor	PBT 20% GF	Black	Epoxy

Notes:

1. Sensor Housing may be secured using mechanical fasteners, see Recommended Fastener Table

Recommended Fastener for Sensor¹

Series	Fastener	Type	Torque
Metric	M3	Screw with washer	1.0 N-m
Standard	#4 (7/64")	Screw with washer	8.85 in-lbf

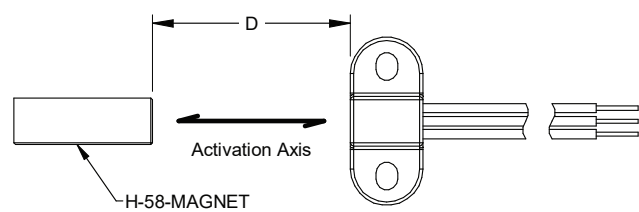
Notes:

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 should be non-magnetic stainless steel or brass

Packaging Detail

Cable Length	Packaging Option	Quantity
02	Bulk	500
05	Bulk	500

Activation Detail



Termination Detail

Select Option	Description (Three-wire version)
A	Tinned Leads 6.4 ± 0.75 (0.25 ± 0.030)

Part Numbering System

