Hall Effect Sensor Datasheet

RoHS

55100 Sensor Miniature Flange Mounting Proximity



Additional Information





Resources

Accessories

Samples

Description

The 55100 is a miniature flange mounting hall effect sensor 25.5mm (1.004") x 11.00m (0.433") and only 3.00mm (0.118") high with a choice of digital or programmable analog outputs. It is available as three-wire (voltage output) or two-wire (current output) versions. It's case design enables screw or adhesive mounting and capable of switching up to 24Vdc and 20mA. It comes with a range of sensitivity and cable length options.

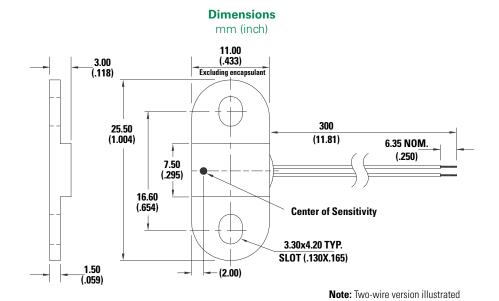
Features & Benefits

- Magnetically operated position sensor
- Digital or programmable analog types available
- Medium, high or programmable sensitivities
- Three-wire (voltage output) or two-wire (current output) versions
- Reverse/Over voltage protection
- Built in temperature compensation

Applications

- Position and limit sensing
- RPM measurement
- Flow metering

- Vibration 50g max. @ 50-2,000Hz
- Shock 150g max. @ 11ms ½ Sine
- High switching speed up to 12kHz
- Long life up to 20 billion operations
- Operates in static or dynamic magnetic field
- RoHS compliant
- Commutation of brushless DC motors
- Angle sensing
- Magnetic encoders



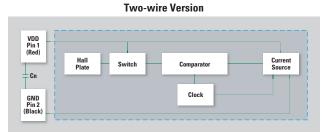


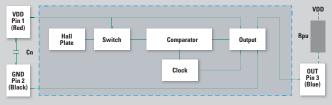
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Block Diagram

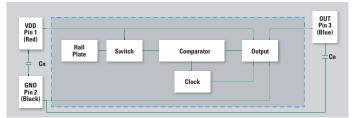


Three-wire Version





Three-wire Analog Version



Notes:

Add capcitor Cn as shown, close to the sensor, for transient suppression if required.
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/lo; Rpu = 12Vdc/10mA = 1.2kOhm

T1 - Electrical Ratings 2-Wire Hall Switch (2M)

	Digital Switch 2-Wire (Current Output)		
Supply Voltage ¹	Absolute Ratings	Vdc	-18 to +28
	Operate	Vdc	+3 to +24
	Overvoltage Protection	Vdc - max	32
Current Consumption	Hall OFF	mA	5.0 to 6.9
	Hall ON	mA	12.0 to 17.0
Switching Speed	-	kHz	12
Temperature	Operating	С	-40 to + 100

Notes:

1. It is assumed the product will operate within the normal Supply Voltage of +24Vdc maximum.

T2 - Electrical Ratings 3-Wire Hall Switch & Analog Programmable (3H, 3M, & AP)

Hall Type			Digital Switch 3 - Wire (Voltage Output)	AP - Analog (Programmable Only) ²
Supply Voltage ¹	Absolute Ratings	Vdc	-18 to +28	8.5
	Operate	Vdc	2.7 to 24	4.5 - 5.5
	Overvoltage Protection	Vdc - max	32	16.0
Output High Voltage	Min	Vdc	Sinking Output	0.2
Output Low Voltage	Max	Vdc	0.4 @ 20mA	4.80
Output Current (continuously on)	Max	mA	25	-1.0 to + 1.0
Current Consumption (from Supply)	-	mA	1.1 to 2.4	5.0 to 10.0
Switching Speed	-	kHz	12	2
Temperature	Operating	С	-40 to +100	-40 to +100

Notes:

It is assumed the product will operate within the normal Supply Voltage of +24Vdc maximum.
Sensor Voltage Output can be reprogrammed to best fit customer application (see LF Application Note)

