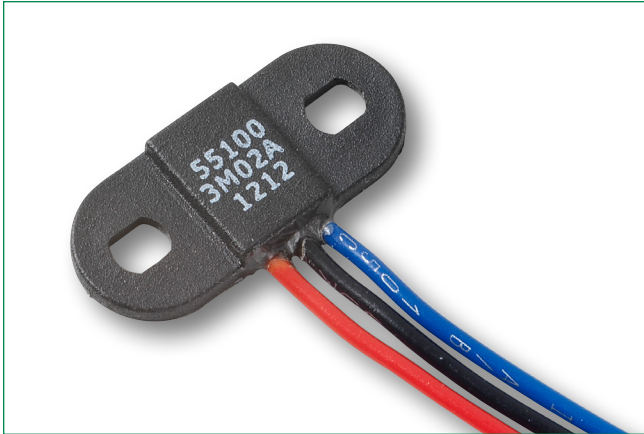


# 55100 Sensor

## Miniature Flange Mounting Proximity

RoHS



### Description

The 55100 is a miniature flange mounting hall effect sensor 25.5mm (1.004") x 11.00mm (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
- 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

### Additional Information



Resources



Accessories



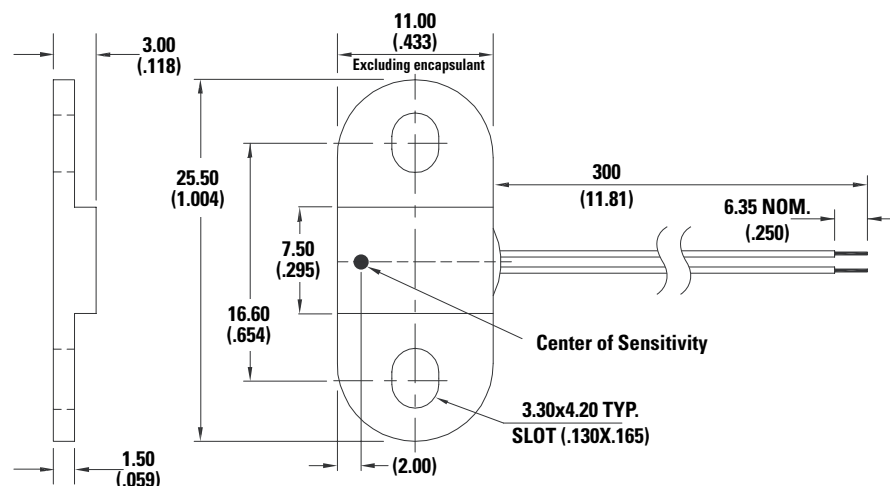
Samples

### Applications

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

### Dimensions

mm (inch)



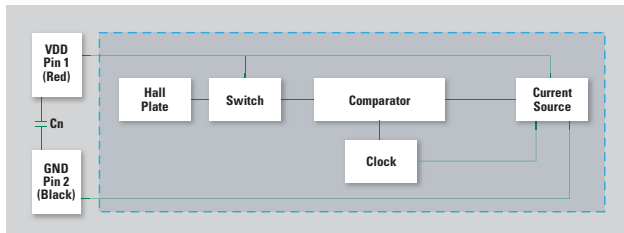
**Note:** Two-wire version illustrated

# 55100 Sensor

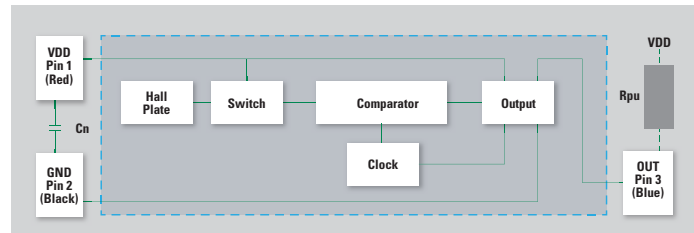
## Miniature Flange Mounting Proximity

### Block Diagram

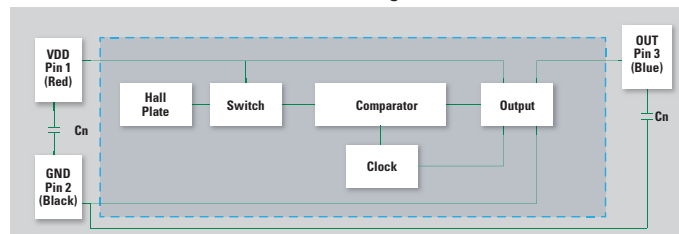
#### Two-wire Version



#### Three-wire Version



#### Three-wire Analog Version



#### Notes:

1. Add capacitor Cn as shown, close to the sensor, 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.  
 $R_{pu} = V_{DD}/I_o$ ;  $R_{pu} = 12V_{dc}/10mA = 1.2k\Omega$

### T1 - Electrical Ratings

2-Wire Hall Switch (2M)

| Hall Type                   |                          |           | Digital Switch 2-Wire (Current Output) |
|-----------------------------|--------------------------|-----------|--|
| Supply Voltage <sup>1</sup> | Absolute Ratings         | Vdc       | -18 to +28                             |
|                             | Operate                  | Vdc       | +3 to +24                              |
|                             | Overtolerance 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                | C         | -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) <sup>2</sup> |
|-----------------------------------|--------------------------|-----------|--|--|
| Supply Voltage <sup>1</sup>       | Absolute Ratings         | Vdc       | -18 to +28                               | 8.5  |
|                                   | Operate                  | Vdc       | 2.7 to 24                                | 4.5 - 5.5                                    |
|                                   | Overtolerance 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                | C         | -40 to +100                              | -40 to +100                                  |

#### Notes:

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