RIFE Sensors 52-1043 Hall Effect Speed Sensor Installation Guide

Contents

RIFE Sensors 52-1043 Hall Effect Speed Sensor

Product Specifications

Parameter	Min.	Typ.	Max.
Input Voltage (Vcc)	3.3 V	–	24 V
Supply Current	7 mA	–	12 mA
Output Voltage	Vcc	–	Vcc
Rise Time	10 uS	–	20 uS
Air Gap	0.030 in.	–	0.100 in.
Max. Speed	0 Hz	–	12,000 Hz
Weight	6.5 g	–	–
Length	1.125 in.	–	–
Width	0.500 in.	–	–
Height	0.600 in.	–	–

Product Usage Instructions

Installation Steps
To install the Hall Effect Speed Sensor, follow these steps:

1. Identify the mounting location ensuring proper alignment and clearance.
2. Securely mount the sensor using appropriate hardware.
3. Connect the sensor to the power supply within the specified voltage range (3.3V to 24V).
4. Adjust the air gap to be within the specified range of 0.030 to 0.100 inches for optimal performance.
5. Ensure proper wiring and connections are made as per the user manual.

Sensor Maintenance
Regularly check for any dirt or debris accumulation around the sensor and clean if necessary to maintain accurate readings.

Troubleshooting
If you encounter any issues with sensor functionality, refer to the user manual for troubleshooting tips or contact technical support for assistance.

Frequently Asked Questions (FAQ)
Q: What should I do if the sensor output voltage deviates from the expected value?
A: Check the power supply voltage and ensure it is within the specified range of 3.3V to 24V. Also, inspect the wiring connections for any faults or loose connections that may affect the output voltage.

Hall Effect Speed Sensor Installation

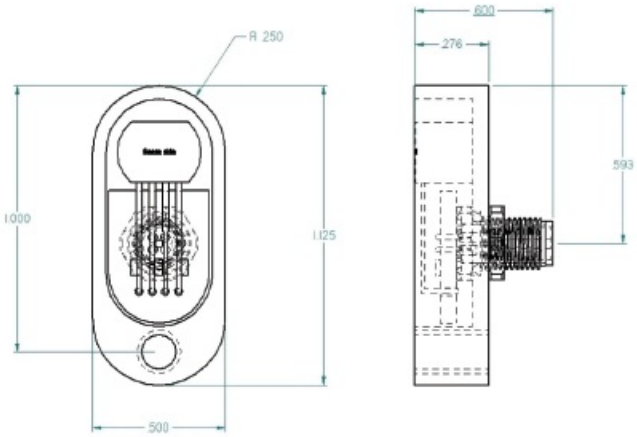
Part Number 52-1043

RIFE Sensors Hall Effect Speed Sensor is a true Zero-Speed, Low-Jitter, High-Accuracy sensor used for sensing ferrous targets, tone rings or gear teeth. Typical applications are wheel speed, driveshaft speed and position sensing. At the moment, we are not recommending it for crankshaft or camshaft signaling although those applications may be developed in the future. The IC is packaged, along with the necessary electronics, in a billet aluminum housing and sealed with epoxy. All of the signal conditioning is done within the Sensor Body itself and requires no external configuration. The connector is a sealed M5 3-pin connector, cables are available through RIFE Sensors in a variety of configurations and lengths.

RIFE Hall Effect Speed Sensor Specifications

	Min.	**Typ.**	**Max.**	
Input Voltage (Vcc)	3.3		24	V
Supply Current		7	12	mA
Output Voltage		Vcc		V
Rise Time		10	20	uS
Air Gap	0.030	0.060	0.100	in.
Max. Speed	0		12,000	Hz
Weight		6.5		g
Length		1.125		in.
Width		0.500		in.
Height		0.600		in.

Sensor Dimensions



Installation

The target wheel must sweep across the sensor face perpendicular to the long axis, it may work in the parallel axis, but accuracy will suffer. The Hall Effect elements (there are 2) within the exposed IC are aligned with the “dimples” on the edges, special care should be taken to align these dimples with the teeth of the target. The mounting bracket must have enough rigidity to hold the sensor stable, excessive vibration could show up as noise in the output signal. Runout: the sensor has been designed to accommodate the typical runout seen in racecar applications, however, care should be taken to keep it to a minimum. Any runout greater than .020” should be addressed. Additionally, any runout must not cause the air gap to exceed the maximums and minimums listed in the table above.

The output voltage of the square wave signal will equal the input voltage, please make sure that your ECU is compliant with this voltage level. Best practice is to use the voltage level supplied on your ECU’s sensor bus. Typically, this is 5V.

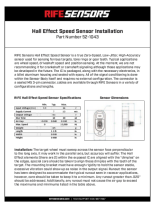
Pinout

1. Pin 1: Signal out – Brown Wire*
2. Pin 2: Power (Vcc) – Black Wire*
3. Pin 3: Sensor Ground – Blue Wire*

*Wire colors when using RIFE Sensors supplied cables.
Mounting: 8-32 UNF female thread
Questions? Email **customerservice@motionraceworks.com** or call **800-878-9274**

RIFESENSORS.COM

Documents / Resources

	**RIFE Sensors 52-1043 Hall Effect Speed Sensor** [pdf] Installation Guide 52-1043 Hall Effect Speed Sensor, 52-1043, Hall Effect Speed Sensor, Effect Speed Sensor, S peed Sensor, Sensor

References

- RIFE Sensors – Motion Raceworks
- User Manual