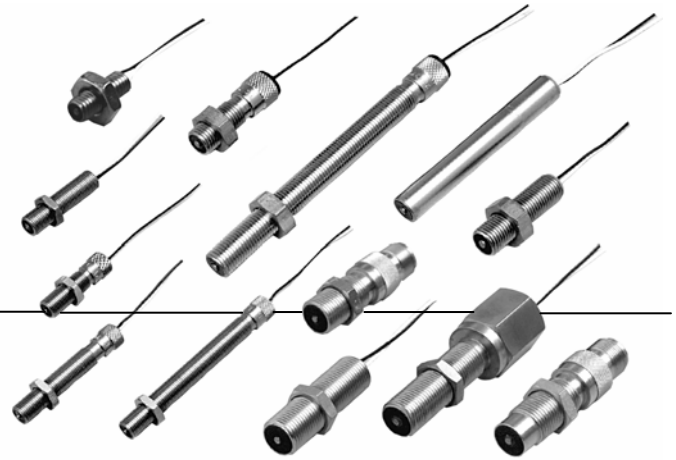


General Purpose Industrial VRS Magnetic Speed Sensors



DESCRIPTION

General Purpose VRS sensors are designed for use in applications with medium to high speeds or in electrically noisy environments with relatively small air gaps.

Passive VRS (Variable Reluctance Speed) Magnetic Speed sensors are simple, rugged devices that do not require an external voltage source for operation.

A permanent magnet in the sensor establishes a fixed magnetic field. The approach and passing of a ferrous metal target near the sensor's pole piece (sensing area) changes the flux of the magnetic field, dynamically changing its strength. This change in magnetic field strength induces a current into a coil winding which is attached to the output terminals.

FEATURES

- Self-powered operation
- Direct conversion of actuator speed to output frequency
- Simple installation
- No moving parts
- Designed for use over a wide range of speeds
- Adaptable to a wide variety of configurations
- Customized VRS products for unique speed sensing applications
- Housing diameters: 5/8 in (M16), 3/8 in (M12) mm, 1/4 in (M8), 10/32 in
- Housing materials/styles: stainless steel threaded or smooth
- Terminations: MS3106 connector, preleaded
- Output voltages: 8 Vp-p to 40 Vp-p

The output signal of a VRS sensor is an ac voltage that varies in amplitude and wave frequency as the speed of the monitored device changes, and is usually expressed in peak to peak voltage (Vp-p).

One complete waveform (cycle) occurs as each target passes the sensor's pole piece. If a standard gear were used as a target, this output signal would resemble a sine wave if viewed on an oscilloscope.

Honeywell also offers VRS sensors for high output, power output, high resolution, high temperature and hazardous location applications, as well as low-cost molded versions.

POTENTIAL APPLICATIONS

- Engine RPM (revolutions per minute) measurement on aircraft, automobiles, boats, buses, trucks and rail vehicles
- Motor RPM measurement on drills, grinders, lathes and automatic screw machines
- Motor RPM measurement on precision camera, tape recording and motion picture equipment
- Process speed measurement on food, textile, paper, woodworking, printing, tobacco and pharmaceutical industry machinery
- Motor speed measurement of electrical generating equipment
- Speed measurement of pumps, blowers, mixers, exhaust and ventilating fans
- Flow measurement on turbine meters
- Wheel-slip measurement on autos and locomotives
- Gear speed measurement

General Purpose

5/8 INCH (M16*) SENSORS (All dimensions for reference only. mm/[in])

*Contact Honeywell for availability of metric mounting thread versions.

General Specifications

Parameter	Characteristic	Parameter	Characteristic
Min. output voltage	40 Vp-p	Inductance	25 mH max.
Coil resistance	45 Ohm to 85 Ohm	Gear pitch range	24 DP (module 1.06) or coarser
Pole piece diameter	2,69 mm [0.106 in]	Optimum actuator	20 DP (module 1.27) ferrous metal gear
Min. surface speed	0,50 m/s [20 in/s] typ.	Max. operating frequency	50 kHz typ.
Operating temp. range	-55 °C to 120 °C [-67 °F to 250 °F]	Vibration	Mil-Std 202F Method 204D
Mounting thread	5/8-18 UNF-2A	Termination	MS3106 connector

Test Condition Specifications

Parameter	Characteristic
Surface speed	25 m/s [1000 in/s]
Gear	20 DP (module 1.27)
Air gap	0,127 mm [0.005 in]
Load resistance	100 kOhm

Catalog Listing	Thread Length (A)	Weight	
3010AN	28 mm [1.1 in]	70 g [2.5 oz]	
3010AN25	63 mm [2.5 in]	84 g [3.0 oz]	
3010AN30	76 mm [3.0 in]	84 g [3.0 oz]	
3010AN40	101 mm [4.0 in]	98 g [3.5 oz]	
3010AN50	127 mm [5.0 in]	128 g [4.5 oz]	

Catalog Listing	Thread Length (A)	Weight	
3010A	35 mm [1.4 in]	70 g [2.5 oz]	
3010A25	63 mm [2.5 in]	84 g [3.0 oz]	