

Honeywell Sensing and Control



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MA3055S10

Passive Speed Sensors

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High Temperature VRS Sensor, Sealed Front-End, 6,4 mm [0.250 in] diameter, 5.2 Vp-p, -73 °C to 230 °C [-100 °F to 450 °F], 36 DP (module 0.70) or coarser, 70 kHz, 25 mm [1.00 in] approx. length

Actual product appearance may vary.

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Overview Specs Documentation Application Notes

High Temperature VRS sensors are designed for use in applications where the sensor is exposed to temperatures up to 260 °C [450 °F]. Sealed Front-End versions are available for applications where the sensor is exposed to fluids, lubricants or adverse environmental conditions. 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. 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 general purpose, high output, power output, high resolution and hazardous location applications, as well as low-cost molded OEM versions.

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), 1/4 in (8M)
- Housing material/style: stainless steel threaded
- Terminations: MS3106 connector, preleaded
- Output voltages: 4.7 Vp-p to 125 Vp-p

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

Product Specifications

Diameter	6,4 mm [0.250 in]
Test Condition Specifications	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
Output Voltage (Peak to Peak) Min.	5.2 Vp-p
Pole Piece Shape and Size	Round; 1,02 mm [0.040 in] Diameter
Operating Temperature	-73 °C to 230 °C [-100 °F to 450 °F]
Gear Pitch Range	36 DP (Module 0.70) or Coarser
Operating Frequency	70 kHz
Inductance	85 mH
Coil Resistance	20 Ohm to 45 Ohm
Surface Speed	0,89 m/s [35 in/s]
Optimum Actuator	28 DP (Module 0.90) Ferrous Metal Gear
Mounting Thread	1/4-40 UNS-2A
Vibration	MIL-STD 202F, Method 204D
Material	Stainless Steel Threaded
Housing Length	25 mm [1.00 in]
Termination	28 AWG PTFE-Insulated Leads, 1220 mm [48 in]
Weight	28 g [1.0 oz]
Series Name	High Temperature
None Available	

 Application Note Library