



### 3010S20



**General Purpose VRS Sensor, 15,9 mm [0.625 in] M16 diameter, 40 Vp-p, -55 °C to 120 °C [-67 °F to 250 °F], 24 DP (module 1.06) or coarser, 50 kHz, 51 mm [2.00 in] approx. length**

*Actual product appearance may vary.*

#### 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

#### 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 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. 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.**

Product Specifications	
Diameter	15,9 mm [0.625 in]
Available Metric Thread	M16
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
Min. Output Voltage (Peak to Peak)	40 Vp-p
Pole Piece Shape and Size	Round; 2,69 mm [0.106 in] diameter
Typ. Operating Temperature Range	-55 °C to 120 °C [-67 °F to 250 °F]
Gear Pitch Range	24 DP (module 1.06) or coarser
Typ. Operating Frequency	50 kHz
Max. Inductance	25 mH
Coil Resistance	45 Ohm to 85 Ohm
Min. Surface Speed	0,50 m/s [20 in/s]
Optimum Actuator	20 DP (module 1.27) ferrous metal gear
Mounting Thread	5/8-18 UNF-2A
Vibration	Mil-Std 202F, Method 204D
Material	Stainless steel threaded
Approximate Housing Length	51 mm [2.00 in]
Termination	20 AWG Teflon-insulated leads, 610 mm [24 in]
Weight	70 g [2.5 oz]
Series Name	General Purpose