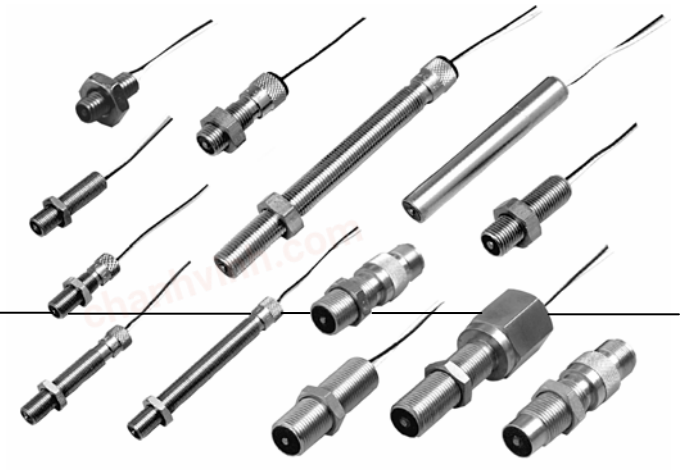
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Honeywell



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.

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.

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

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General Purpose

5/8 INCH (M16*) SENSORS (All dimensions for reference only. mm/[in])
*Contact Honeywell for availability of metric mounting thread versions.

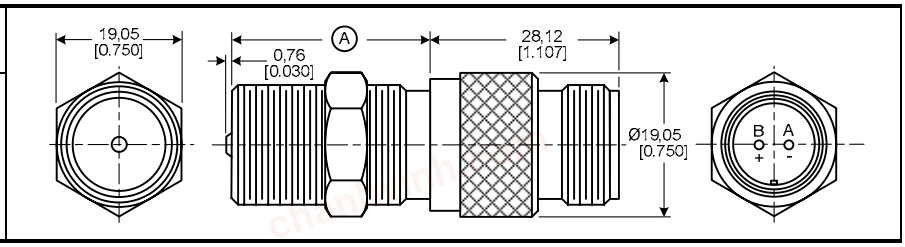
General Specifications

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 ºC to 120 ºC [-67 ºF to 250 ºF]	Vibration	Mil-Std 202F Method 204D
Mounting thread	5/8-18 UNF-2A	Termination	MS3106 connector

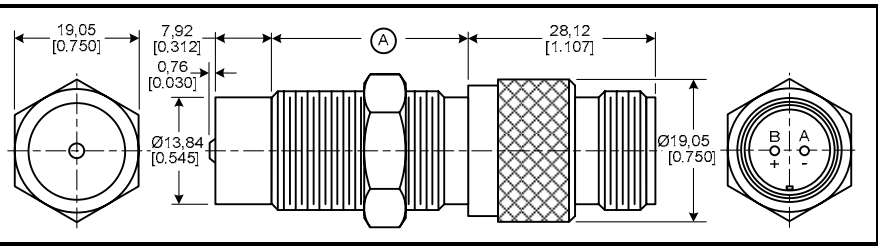
Test Condition Specifications

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]



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Industrial VRS Magnetic Speed Sensors

5/8 INCH (M16*) SENSORS CONTINUED (All dimensions for reference only. mm/[in])
*Contact Honeywell for availability of metric mounting thread versions.

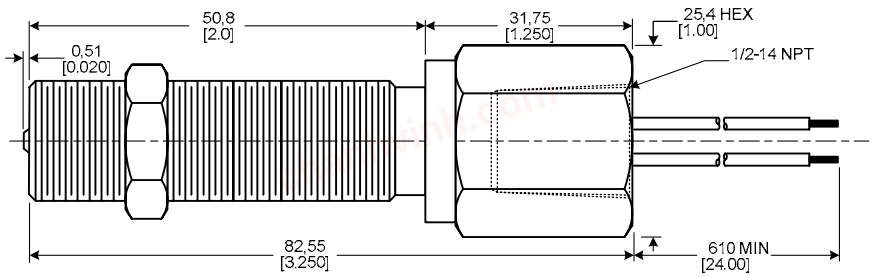
General Specifications

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 ºC to 120 ºC [-67 ºF to 250 ºF]	Vibration	Mil-Std 202F Method 204D
Mounting thread	5/8-18 UNF-2A	Termination	20 AWG Teflon-insulated leads

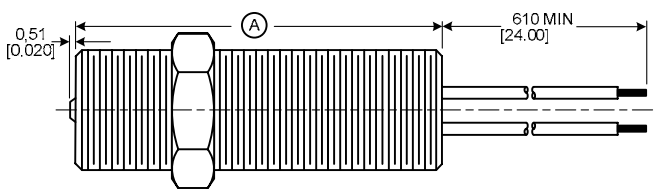
Test Condition Specifications

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	Weight
3010H20	140 g [5.0 oz]



Catalog Listing	Thread Length (A)	Weight
3010S20	50 mm [2.0 in]	70 g [2.5 oz]
3010S30	76 mm [3.0 in]	84 g [3.0 oz]



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General Purpose

3/8 INCH (M12*) SENSORS

*Contact Honeywell for availability of metric mounting thread versions.

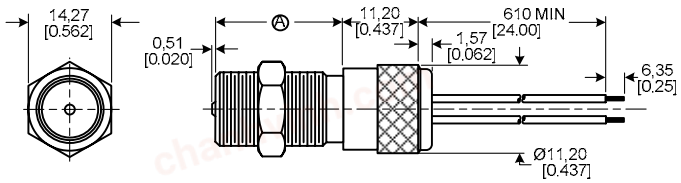
General Specifications

Parameter	Characteristic	Parameter	Characteristic
Min. output voltage	20 Vp-p	Inductance	15 mH max.
Coil resistance	45 Ohm to 65 Ohm	Gear pitch range	26 DP (module 0.98) or coarser
Pole piece diameter	2,36 mm [0.093 in]	Optimum actuator	24 DP (module 1.06) ferrous metal gear
Min. surface speed	0,50 m/s [20 in/s] typ.	Max. operating frequency	50 kHz typ.
Operating temp. range	-40 ºC to 107 ºC [-40 ºF to 225 ºF]	Vibration	Mil-Std 202F Method 204D
Mounting thread	3/8-24 UNF-2A	Termination	24 AWG vinyl-insulated leads

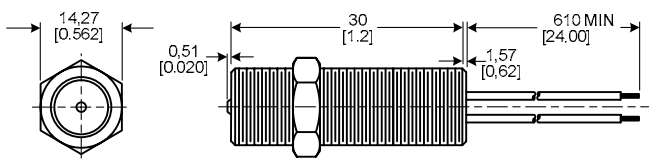
Test Condition Specifications

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

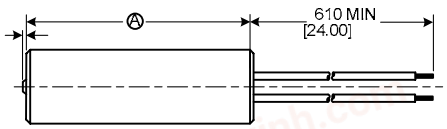
Catalog Listing	Thread Length (A)	Weight
3015A	20 mm [0.8 in]	28 g [1.0 oz]
3015A17	44 mm [1.7 in]	35 g [1.2 oz]
3015A35	88 mm [3.5 in]	42 g [1.5 oz]



Catalog Listing	Weight
3015S13	28 g [1.0 oz]



Catalog Listing	Thread Length (A)	Weight
3015SS13	30 mm [1.2 in]	28 g [1.0 oz]
3015SS25	63 mm [2.5 in]	42 g [152 oz]



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Industrial VRS Magnetic Speed Sensors

1/4 INCH (M8*) SENSORS (All dimensions for reference only. mm/[in])
*Contact Honeywell for availability of metric mounting thread versions.

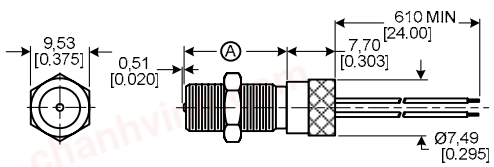
General Specifications

Parameter	Characteristic	Parameter	Characteristic
Min. output voltage	12 Vp-p	Inductance	16 mH max.
Coil resistance	190 Ohm max.	Gear pitch range	36 DP (module 0.70) or coarser
Pole piece diameter	1,00 mm [0.040 in]	Optimum actuator	28 DP (module 0.90) ferrous metal gear
Min. surface speed	0,75 m/s [30 in/s] typ.	Max. operating frequency	60 kHz typ.
Operating temp. range	-40 ºC to 107 ºC [-40 ºF to 225 ºF]	Vibration	Mil-Std 202F Method 204D
Mounting thread	1/4-40 UNS-2A	Termination	30 AWG vinyl-insulated leads

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

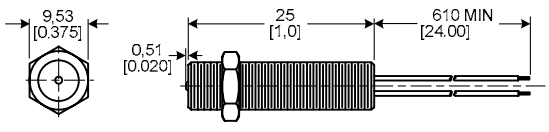
Catalog Listing	Thread Length (A)	Weight
3050	15 mm [0.6 in]	14 g [0.5 oz]
3050A13	30 mm [1.2 in]	14 g [0.5 oz]
3050A20	50 mm [2.0 in]	14 g [0.5 oz]



Parameter	Characteristic	Parameter	Characteristic
Min. output voltage	12 Vp-p	Inductance	16 mH max.
Coil resistance	190 Ohm max.	Gear pitch range	36 DP (module 0.70) or coarser
Pole piece diameter	1,00 mm [0.040 in]	Optimum actuator	28 DP (module 0.90) ferrous metal gear
Min. surface speed	0,75 m/s [30 in/s] typ.	Max. operating frequency	60 kHz typ.
Operating temp. range	-40 ºC to 107 ºC [-40 ºF to 225 ºF]	Vibration	Mil-Std 202F Method 204D
Mounting thread	1/4-40 UNS-2A	Termination	30 AWG PVC-insulated leads

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	Weight
3050S10	25 mm [1.0 in]	14 g [0.5 oz]



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General Purpose

10/32 INCH SENSORS (All dimensions for reference only. mm/[in])
(No metric available.)

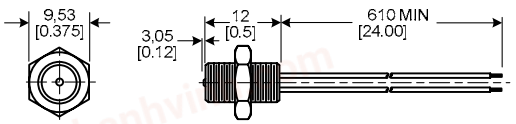
General Specifications

Parameter	Characteristic	Parameter	Characteristic
Min. output voltage	8 Vp-p	Inductance	14 mH max.
Coil resistance	155 Ohm	Gear pitch range	32 DP (module 0.80) or coarser
Pole piece diameter	1,5 mm [0.062 in]	Optimum actuator	26 DP (module 0.98) ferrous metal gear
Min. surface speed	0,75 m/s [30 in/s] typ.	Max. operating frequency	60 kHz (typ.)
Operating temp. range	-40 ºC to 107 ºC [-40 ºF to 225 ºF]	Vibration	Mil-Std 202F Method 204D
Mounting thread	10-32 UNF-2A	Termination	32 AWG Teflon-insulated leads

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	Weight
3080	12 mm [0.5 in]	8,5 g [0.3 oz]



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⚠ WARNING

PERSONAL INJURY

DO NOT USE these products as safety or emergency stop devices or in any other application where failure of the product could result in personal injury.

Failure to comply with these instructions could result in death or serious injury.

⚠ WARNING

MISUSE OF DOCUMENTATION

- The information presented in this product sheet is for reference only. Do not use this document as a product installation guide.
- Complete installation, operation, and maintenance information is provided in the instructions supplied with each product.

Failure to comply with these instructions could result in death or serious injury.

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