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907 XP Hall Effect Shaft Speed Sensors

Key Features

- Square-wave pulse frequency output, NPN open-collector
- Zero speed operation with no signal loss
- 5-24 VDC powered
- Non-contact, large gap distance sensing
- Bidirectional (quadrature) option
- Works with Electro-Sensors magnetic pulser discs / wraps
- Optional Mounting Bracket Assembly and Mounting Magnet
- Class I, Div I (D) Class II, Div I (E, F, G) Class III



Description

907 XP Hall Effect sensors are used in applications requiring hazardous location ratings, or in applications where the sensor may be subject to abuse. It has a 1-inch NPT conduit opening for wiring, terminal strip for wiring, and is provided with a mounting bracket.

The quadrature (bidirectional) option has two sensors and is designed for applications requiring both speed and direction information. Specify vertical alignment when the magnets will pass vertically in front of the sensor face, and horizontal alignment when the magnets will pass horizontally in front of the sensor face.

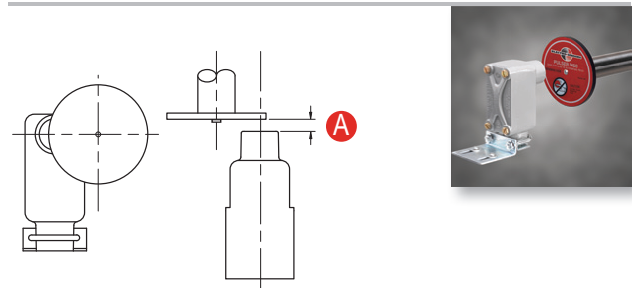
Principle of Operation

These speed sensors use magnet-sensing Hall Effect IC's to produce a digital pulse signal to interface with speed switches, tachometers, counters, signal conditioners, or PLC's. Hall Effect sensors provide true zero speed operation with square-wave output and immunity to electrical noise.

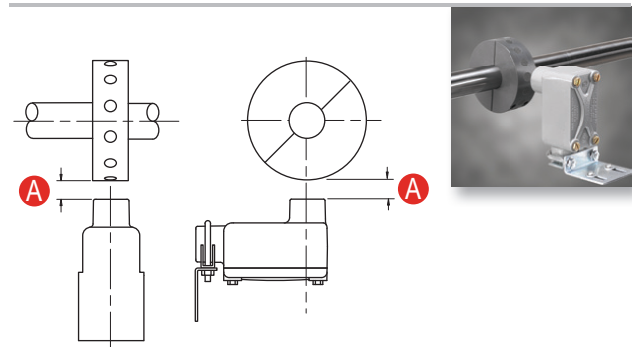
A pulser disc or split collar pulser wrap with embedded magnets is mounted on the monitored shaft. As the shaft rotates, the magnets pass in front of the sensor causing the sensor to switch high and low, thus producing a digital pulse output. The sensors provide a digital square

wave signal with a 50/50 duty cycle when used with pulse generators that have evenly spaced magnets of alternating polarity, such as the Electro-Sensors Model 255 Pulser Disc. The recommended gap distance between the sensor and pulse generator is 1/4 inch +/- 1/8 inch (Represented by **A** in the figures below). The gap flexibility makes the sensors tolerant of vibration, shaft run-out, misalignment, and industrial environments.

907 XP with Pulser Disc



907 XP with Pulser Wrap



907 XP Hall Effect Specifications

| Product | |
|--------------------------|---|
| Supply | 5-24 VDC @ 10 mA |
| Output Type | NPN Open Collector |
| Operating Frequency | 0 Hz to 20 KHz |
| Current Sink | 25 mA maximum |
| Operating Temperature | -40° F to +140° F -40° C to +60° C |
| Gap Distance | 3/8" ± 1/8" |
| Distance to Input Device | 1,500 feet maximum |
| Cable (22AWG) | 907 XP: 3-conductor shielded 906 XP Quadrature: 4-conductor shielded |
| Wiring Code | 907 XP: Red = Supply, Clear = Common, Black = Signal 907 XP Quadrature: Red = Supply, White = Common, Black = Signal A, Green = Signal B |
| Material | Cast Aluminum |

Specifications subject to change without notice.

Ordering

907 XP sensors come with a standard bracket for mounting

| Model | Part Number |
|---|-------------|
| 907 XP, 10' PVC Cable - Standard | 775-000600 |
| 907 XP-S ¹ , 10' PVC Cable | 775-000601 |
| 907 XP, 10' Teflon ² Cable | 775-000602 |
| 907 XP Vert ³ , Quadrature, 10' PVC Cable | 775-006100 |
| 907 XP Horiz ⁴ , Quadrature, 10' PVC Cable | 775-006101 |
| 907 XP Vert, Quadrature, 10' Teflon Cable | 775-006102 |
| 907 XP Vert, Quadrature, 50' PVC Cable | 775-006105 |
| 907 XP Vert, Quadrature, 100' PVC Cable | 775-006110 |

¹ Straight Body

² Teflon is a High Temperature Cable

³ Vertical Alignment (Magnet will pass vertically in front of the sensor)

⁴ Horizontal Alignment (Magnet will pass horizontally in front of the sensor)

907 XP Hall Effect Standard System

- Shaft Speed Pulse Generator

These are the most popular system components. Many other options are available.

| System Options | Part Number |
|---|-------------------------|
| Standard 255 Nylon Pulser Disc, 4" Diameter, 16 Magnets | 700-000200 |
| Split Collar Pulser Wrap (PVC, Aluminum, Stainless Steel) | Custom (See Website) |

| Other Options | Part Number |
|--|-------------|
| EZ-100 Bracket Assembly | 810-000001 |
| MM-2.00 Mounting Magnet (must use EZ-100 Bracket Assembly) | 810-000060 |
| Standard Disc Guard | 725-005300 |
| EZ-Mount Disc Guard | 725-005200 |
| EZ-Mount Lower Disc Guard | 725-005201 |



EZ-100 Mounting Option



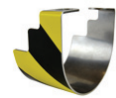
MM-2.00 Mounting Magnet Option
(must be used with EZ-100)



Standard Disc Guard



EZ-Mount Disc Guard



Lower EZ-Mount Guard

Customization

If one of our standard products does not meet your specifications, please call one of our applications specialists. Many of our products can be customized to fit specific needs.

Additional Information

See the 906 / 907 XP Hall Effect Sensors Installation and Operating Manual for complete details, specifications, and programming instructions.