

## Key Features

- Square-wave pulse frequency output, NPN open-collector
- Zero speed operation with no signal loss
- 5-24 VDC powered
- 1/2" NPT conduit port
- Non-contact, large gap distance sensing
- Works with Electro-Sensors magnetic pulser discs / wraps
- **931 XP** – UL Listed Class I, Div I (C, D) Class II, Div I (E, F, G) Class III



## Description

The 931 XP is mounted in a cast aluminum enclosure and is supplied with a mounting bracket and 10 feet of 3-conductor shielded cable. The conduit opening is 1/2 inch NPT.

- Class I, Div I (C, D) Class II, Div I (E, F, G) Class III
- XLB-1 enclosure

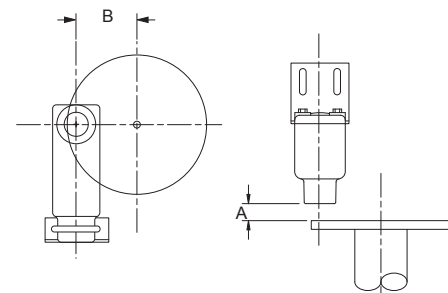
## Principle of Operation

931 XP Hall Effect 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.

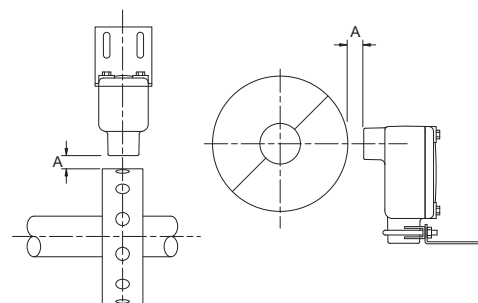
A pulser disc or split collar pulser wrap with embedded magnets is mounted on the monitored shaft. As the shaft rotates, the magnets pass in front of the sensor causing the sensor to switch high and low, thus producing a digital pulse output. The sensors provide a digital square wave signal with a 50/50 duty cycle when used with pulse generators that have evenly spaced magnets of alternating polarity, such as Electro-Sensors Model 255 Pulser Disc.

## Large Gap Sensor Installation

The 931 XP sensor is supplied with a slotted mounting bracket easily adjustable to achieve the proper gap distance. Sensors should be installed allowing the center of the magnets to pass in front of the center of the sensing head during rotation. The gap distance (A) is  $1/4" \pm 1/8"$ . When using a standard 4" Pulser Disc, the center of the magnetized area of the disc (B) is 1-3/4" from the center hole of the disc.



931 XP Sensor and Pulser Disc



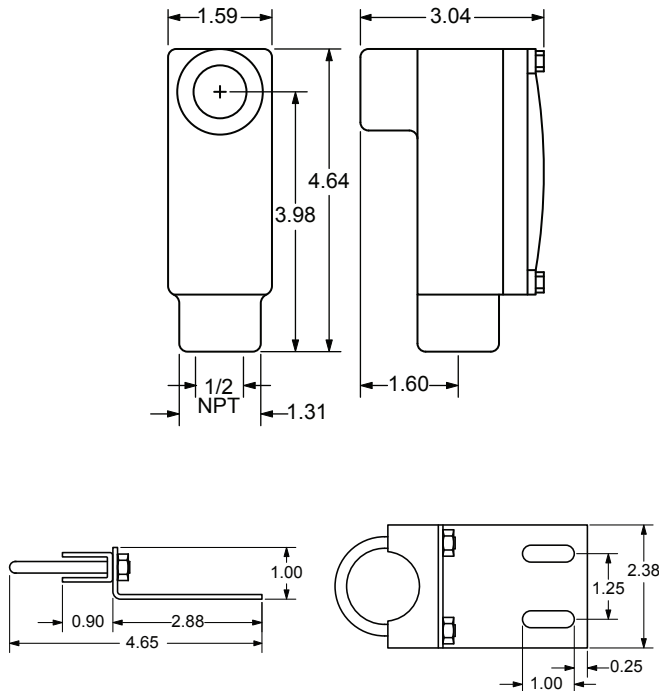
931 XP Sensor and Pulser Wrap

## 931 XP Hall Effect Specifications

|                          |   |
|--------------------------|---|
| Product                  |   |
| Supply                   | 6-24 VDC @ 10 mA  |
| Output Type              | NPN Open Collector  |
| Operating Frequency      | 0 Hz to 20 KHz  |
| Operating Temperature    | -40 °F to +140 °F (-40 °C to +60 °C)  |
| Gap Distance             | 1/4" ± 1/8"   |
| Distance to Input Device | 1,500 feet maximum  |
| Cable                    | 3-conductor shielded, 22 AWG  |
| Standard Cable Length    | 10 ft   |
| Wiring Code              | Red = Supply<br>Clear = Signal<br>Black = Common  |
| Material                 | Cast Aluminum Housing CSA approved<br>Meets UL Class I, Groups C, D; Class II,<br>Groups E, F, G; Class III |

Specifications subject to change without notice.

## Dimensions



931 XP and Bracket

## Ordering

| Model                            | Part Number |
|----------------------------------|-------------|
| 931 XP, 10' PVC Cable – Standard | 775-093100  |
| 931 XP, 10' Teflon Cable         | 775-093101  |
| 931 XP, 50' PVC Cable            | 775-093105  |
| 931 XP, 100' PVC Cable           | 775-093110  |

## 931 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 |
|-------------------------------|-------------|
| U-Bolt for 931 XP/933 XP      | 258-000300  |
| 931 XP Bracket Mounting XLB-1 | 260-000900  |
| 931 XP/933 XP Disc Guard      | 725-005400  |



931 XP/933 XP Disc 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 1101 / 931 XP Hall Effect Sensors Installation and Operating Manual for complete details, specifications, and programming instructions.