907 Digital Speed Sensor

Description

The 907 Digital Speed Sensor produces a digital pulse signal for use with speed switches, tachometers, counters, signal conditioners, or as direct pulse input into programmable controllers. As a pulser disc or shaft wrap mounted on the monitored shaft rotates, the target magnets pass in front of the sensor. The 907 Digital Speed Sensor output switches high and low as it is exposed to the alternating polarity of the magnets on the disc or wrap, which produces one pulse for every two magnets.

Model	Targets	Duty Cycle
907	2 Magnets = 1 Pulse	50/50

The 907 Sensor allows a gap distance up to 3/8 inch between the surface of the sensor and the target magnets. The gap flexibility makes the sensors tolerant of vibration, slight shaft run-out, and minor misalignment. The 907 Sensor is used in applications requiring hazardous location ratings, or in applications where the sensor may be subject to abuse.

The 907 Sensor is powered by 5-24 VDC and provides a NPN Open Collector digital output. The 907 Sensor has a XLB-3 enclosure with a 1 inch NPT conduit opening and is provided with a steel mounting bracket. The 907 Sensor is UL Listed for use in Class I Div 1, Group D and Class II, Div 1, Groups E, F, G locations.

Pulser Disc

The end of the shaft to be monitored must be center drilled to a depth of 1/2 inch with a No. 21 drill and tapped for 10-32 UNF. After applying Loctite® or a similar adhesive on the threads to keep the pulser disc tight, the pulser disc should be attached decal side out with the supplied 10-32 UNF machine screw and lock washer.

Pulser Wrap

Pulser Wraps are custom manufactured to fit the shaft they will be mounted on. When the wrap is shipped, four Allen-head cap screws hold the two halves of the wrap together. These screws must be removed so that the wrap is in two halves. Place the halves around the shaft, reinsert the screws and torque them to 5 foot-pounds.

Sensor Installation

The 907 Sensor is supplied with a slotted mounting bracket. The sensor should be installed so the center line of the magnets pass in front of the center of the sensor as the disc or wrap rotates. When using the pulser disc, the center of the magnetized area of the disc, shown as Dimension B in figure 1, is 1-3/4 inches from the center hole of the disc.

The recommended gap distance between the sensor and the disc or wrap, Dimension A in figure 1 and 2, is 1/4 inch +/- 1/8 inch using 1/2" magnets. To achieve the proper gap distance adjust the position of the sensor using the slots on its mounting bracket.

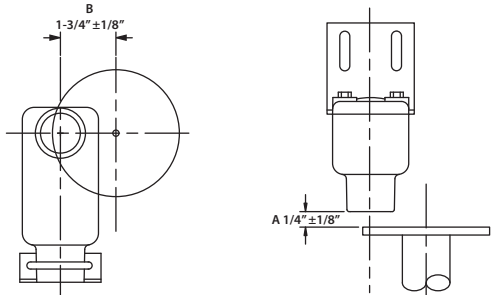

Figure 1: 907 and Pulser Disc

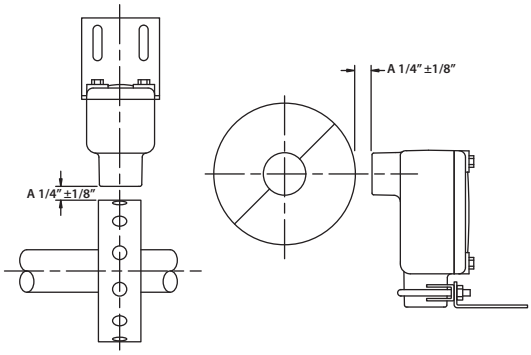

Figure 2: 907 and Pulser Wrap

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990-001601 Revision B

Electrical Connections

The 907 Sensor is designed for use with devices that have an internal pull-up resistor. If the device receiving the signal from the sensor does not have a pull-up resistor, a resistor must be placed between the sensor supply voltage and the sensor signal output.

Supply Voltage	Resistor Value 1/4 Watt	Resistor Max. Value
5V - 11V	1K	10K
12V - 15V	2.2K	10K
16V - 24V	4.7K	10K

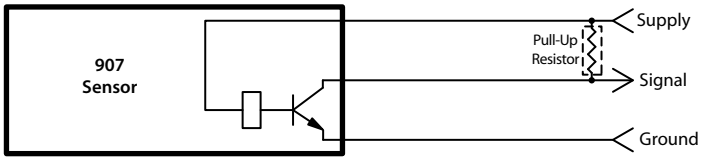

Figure 3: 907 Output Circuit

Note: *Exercise caution when wiring the sensor. Damage will occur if the* ***SIGNAL*** *and* ***SUPPLY*** *wires are shorted.*

Wiring Chart

New Color	Old Color	Connect To	Description
Brown	Red	Supply	Sensor Supply
Black	Black	Signal	Sensor Signal
Blue	White/Clear	Circuit Ground	Sensor Ground
Shield	Shield	Circuit Ground	Sensor Ground

907 Specifications

Supply	5-24 Vdc @ 10 mA
Output Type	NPN Open Collector
Current sink	25 mA Max
Max Frequency	20 kHz
Temp Range	-40º C to +60º C standard -40º C to +125º C optional
Gap Distance	1/4 inch +/- 1/8 inch w 1/2" Magnets
Max Cable Length	1500 feet
Body Material	Aluminum
Cable	3-Conductor, Shielded, PVC jacket 10' standard, other lengths optional
Mounting Bracket	Zinc Plated Steel, Included

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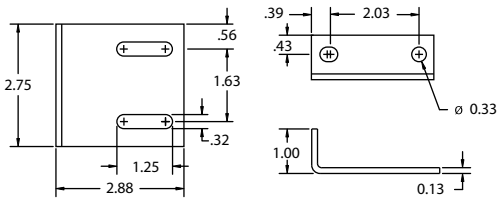
Class I, Div 1, Group D
Class II, Div 1, Groups E, F, G
UL File: E249019

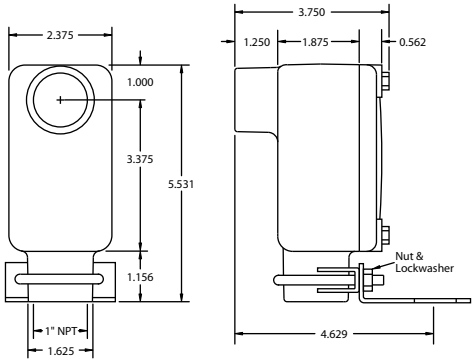
CE

Part Dimensions

907 Mounting Bracket



907 Sensor



Spare Parts List	Stock No.
907 XP HE Sensor w/10' PVC Cable	775-000600
907 XP HE Sensor w/50' PVC Cable	775-000620
907 XP HE Sensor w/100' PVC Cable	775-000621
907 XP HE HT Sensor w/10 Teflon Cable	775-000602