

Superior • Systems • Solutions

DR1000 Digital Speed Switch



- Easy installation and calibration
- Rugged system is dirt, dust, and grease proof
- Adjustable set point range of 0.5 to 5,000 RPM
- UL and CSA approved to applicable standards
- Explosionproof, NEMA 4X cast aluminum housing
- Fail-safe operation
- Replaces R-Series Speed Switches
- 5-Year Limited warranty on speed switches, sensors and ratemeters.*

* Contact factory for more information.



Product Information

Description

The DR1000 Digital Speed Switch is a shaft rotation monitoring system engineered to detect unwanted slowdown or stoppage of pumps, drive trains, screw conveyors, tail pulleys, fans/blowers, crushers, and more. In the event of rotational failure, the DR1000's DPDT relay can be used for equipment shutdown or to provide an alarm. The standard DR1000 system includes the DR1000 Speed Switch, 906 Sensing Head, and a 255 Pulser Disc (shown above). Electro-Sensors' Speed Switches bring efficiency and safety to your operations by preventing machine damage, product waste, and costly downtime.

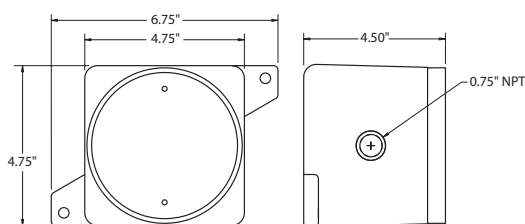
Principle of Operation

The DR1000 is supplied with a shaft-end mounted Pulser Disc (or optional Split Collar Pulser Wrap) which generates an alternating magnetic field that is picked up by the large gap non-contact sensor. The sensor transmits this speed signal as a digital pulse (frequency) to the switch via a 3-conductor shielded cable. The DR1000 decodes this frequency signal to determine shaft speed and compares this to the pre-adjusted set point. The relay output can then be used for equipment shutdown or to provide an alarm, assuring machine protection and process integrity. The DR1000 is fail-safe; any malfunction during operation will de-energize the control circuit.

Dimensional Drawings • DR 1000 Digital Speed Switch

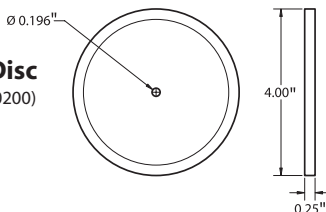
Explosionproof DR1000 Enclosure

(Stock No. 305-000600)



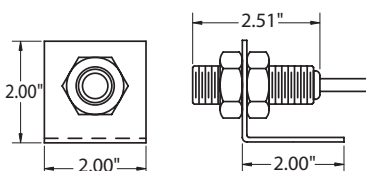
255 Pulser Disc

(Stock No. 700-000200)



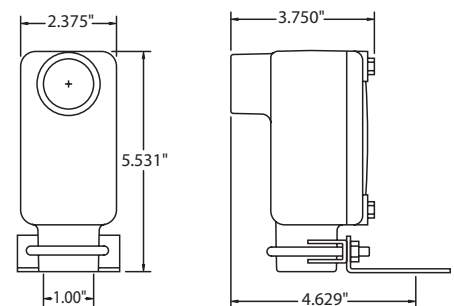
906 Digital Sensor*

(Stock No. 775-000500)



907 Explosionproof Sensor*

(Stock No. 775-000600)



* When replacing R-Series switches, use 916A or 917A XP Sensor.

DR1000 Speed Switch

Large-Gap Sensor Installation

The standard sensor is supplied with a mounting bracket and two jam nuts, and is easily adjustable to achieve the proper gap distance. The optional explosionproof sensor is supplied with a slotted mounting bracket, also easily adjustable.

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 between the sensor and disc or wrap (dimension A in figures 1 & 2) is $1/4" \pm 1/8"$. When using a standard 4" Pulser Disc, the center of the magnetized area of the disc (dimension B in figure 1) is $1-3/4"$ from the center hole of the disc.

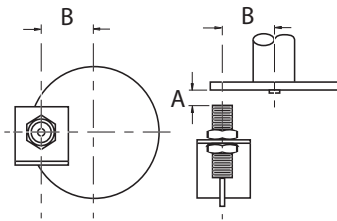
Available Options

- Explosionproof 907 sensing head.
- Split collar Pulser Wrap for when end of shaft is inaccessible. Wraps available in the following materials:
 - PVC
 - Aluminum
 - Stainless steel
- Stainless Steel Disc-Guard.
- EZ100 Easy Mount Bracket Assembly for use with optional explosionproof sensor (figure 3 below).
- 916A or 917A XP Sensing Head when replacing R-Series Speed Switch.

(Consult factory for further options.)

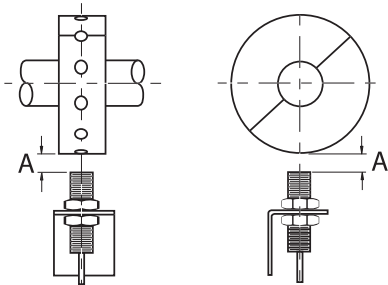
Standard 906 Standard Sensor and Disc*

Figure 1



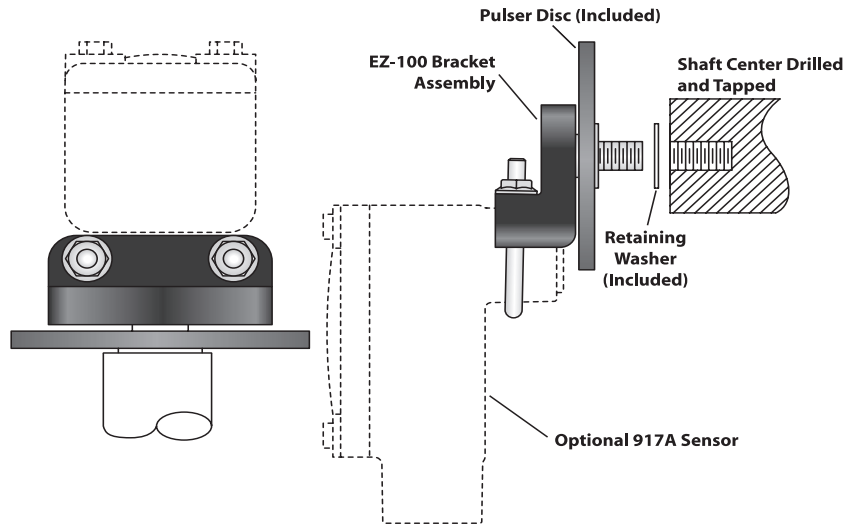
Standard 906 Standard Sensor and Wrap*

Figure 2



Optional EZ-100 Easy Mount Bracket

Figure 3



* 907 Series Explosionproof Sensing Head is also compatible with discs and wraps.

DR1000 Specifications (Replaces R-Series Speed Switches)

Input Power

Voltage 115 Vac, 60 Hz std; 230 Vac,
12 Vdc or 24 Vdc optional

Sensor Input Signal

Type NPN open collector
Frequency Range 0-666.67 Hz
Set point relay DPDT isolated, 5 Amp,
115 Vac resistive
Set point adjustment *Single-turn (270°)
potentiometer

* Optional 25-turn potentiometer available.

General Specifications

Housing and cover Cast aluminum, CSA approved,
UL Rated: Class I - Group C, D;
Class II - Group E, F, G; Class III;
NEMA 4X
906 Sensor Aluminum 3/4"-16 UNF body
with 10' of 3-conductor
shielded cable
907 Sensor Cast aluminum, CSA approved,
UL rated: Class I - Group D;
Class II - Group E, F, G; Class III
255 Pulser Disc Nylon® 12, 4" diameter,
16 magnetic poles
Gap distance $1/4" \pm 1/8"$
Operating Temperature -40°C to +60°C*

*Contact factory for higher temperature ranges. Specifications subject to change without notice.

ES-308 Rev.K