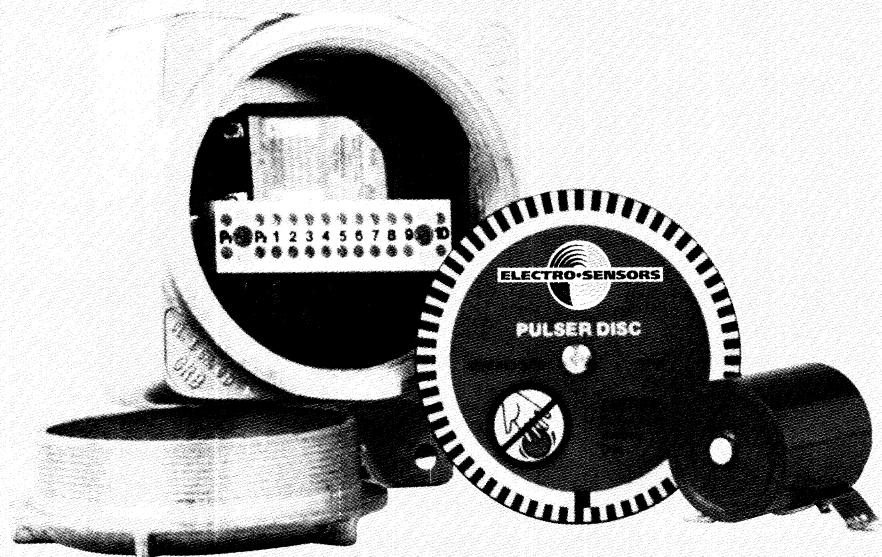


Shaft Speed Switch



R100/R5000, R100SP/R5000SP



Features:

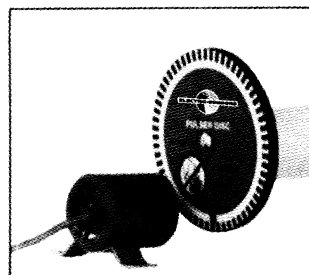
- ▶ Easy Installation
- ▶ Dust, Dirt, Grease Proof
- ▶ Cast Aluminum Housing, FM, UL, CSA Rated
- ▶ Fail-Safe Wiring
- ▶ Optional Explosion-Proof Sensor
- ▶ Optional Split Collar Pulser Wrap

The R100/R5000 Shaft Speed Switch and R100SP/R5000SP set-point slow down switch are rotation monitoring systems. These complete systems are ideal for detecting the unwanted slow down or stoppage of process equipment. The systems are commonly applied to: drive trains, power driven components, tail pulleys, screw conveyors, exhaust fans, crushers, etc. In the event of rotational failure, such as broken drives, belt slippage, overloads, clogs and jams, the DPDT control relay can be used to provide equipment shutdown and/or alarm. This helps to prevent equipment damage, product waste and excess downtime. Electro-Sensors switches are the simple way to detect problems and trouble early.

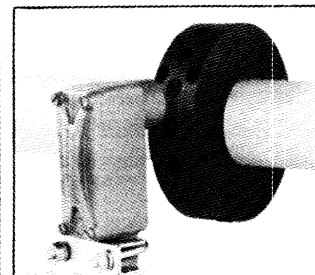
Principle of operation

While the monitored shaft is rotating, the pulser disc or wrap mounted on the shaft generates a control signal which is picked up by the sensor. A shielded cable carries the signal to the remote heavy duty relay housing.

The Double-pole double-throw (DPDT) relay contacts, rated for 10 amps at 115Vac, resistive, can be used for controlling motors and/or alarms.



Transducer and Pulser Disc



Optional Explosion-Proof Transducer and Pulser Wrap

When the shaft stops rotating or drops below the gross set-point on the SP models, the control signal de-energizes the relay. The switch is fail-safe; any malfunction during operation will de-energize the control circuit.

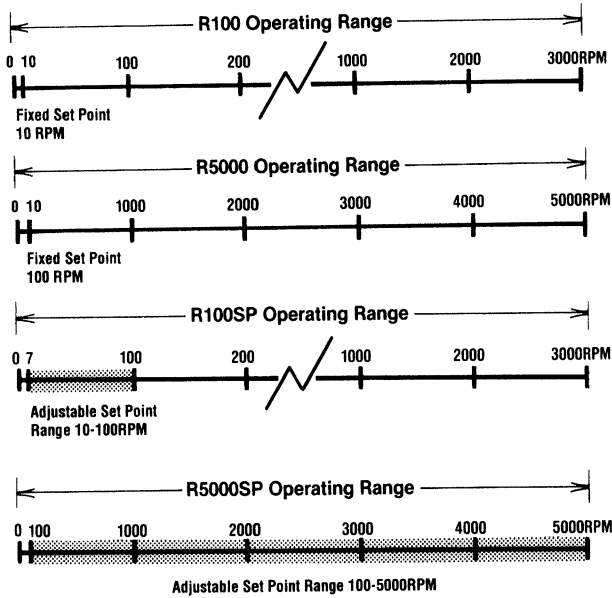
Pulser disc

The end of the shaft to be monitored must be center drilled to a depth of 1/2" with a No. 21 drill and tapped for 10-32UNF. 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 a 10-32UNF machine screw.

Pulser wrap (optional)

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 and screw together so the wrap fits the shaft tightly. Wraps are custom made to fit a specific diameter.

Switch Selection Table



Switch Selection Guide

Refer to the Switch Selection Table to determine which model is appropriate for your application and speed range.

Sensing head installation

The standard sensing head is shown in figure 1. Optional heavy duty sensing head is shown in figure 2. Both heads are mounted the same distance from the pulser disc or pulser wrap as specified in the Sensing Head Distance Table. Complete dimensions for mounting the heads are on the last page of this sheet. Ten feet of shielded cable is the standard length for both heads.

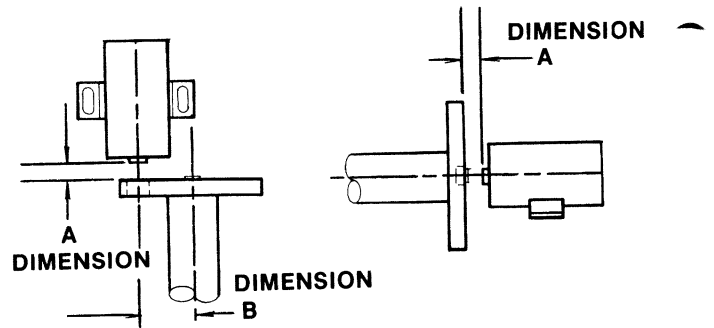
Operation of the R100 and R5000 is affected by the distance between the sensing head and the magnets, shown as dimension "A" in figure 1 with the disc and in figure 2 with the wrap. The table below gives the best operating distance for dimension "A" based on the speed of the shaft to be monitored.

Note that the pulser disc supplied with the R100/R100SP switches has 16 magnetic poles and the R5000/R5000SP switches are equipped with an 8 magnetic pole disc. This is to provide the appropriate number of pulses per revolution for your operating speed range. If the shaft speed is not known, it should be checked with a hand held tachometer.

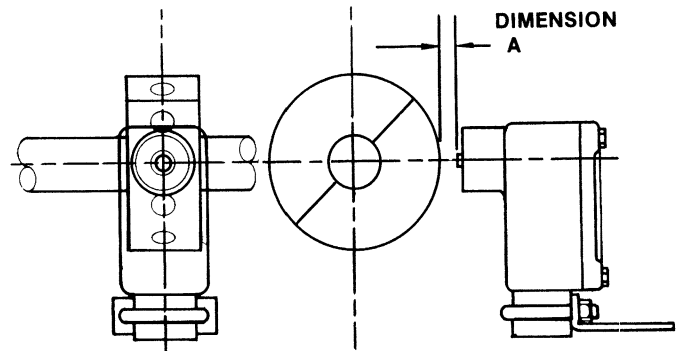
Sensing Head Distance Table

MODEL NO.	DISC	WRAP*	SHAFT RPM	DIMENSION "A"	DIMENSION "B"
R100	4" disc with 16 magnets	wrap with magnets	10-50	1/8"	1 3/4"
R5000	2 1/2" disc with 8 magnets	wrap with magnets	100-2000	1/4"	7/8"
R5000			2000-5000	1/2"	7/8"

*The number of magnets varies with the outside diameter of the wrap.



Sensing head and disc (figure 1)



Sensing head and wrap (figure 2)

Mounting the switch housing

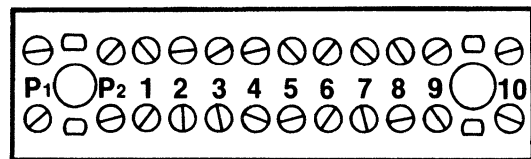
The housing can be mounted either horizontally or vertically with two 1/4" bolts. Keeping the housing entries away from water and making the terminal strip inside accessible should be considered in locating and positioning the housing.

Ten feet shielded cable is supplied. However the switch housing can be removed up to 1500 feet from the sensing head. The shielded cable can be included with other wiring in conduit. The conduit entrance is tapped 3/4" NPT.

Wiring connections

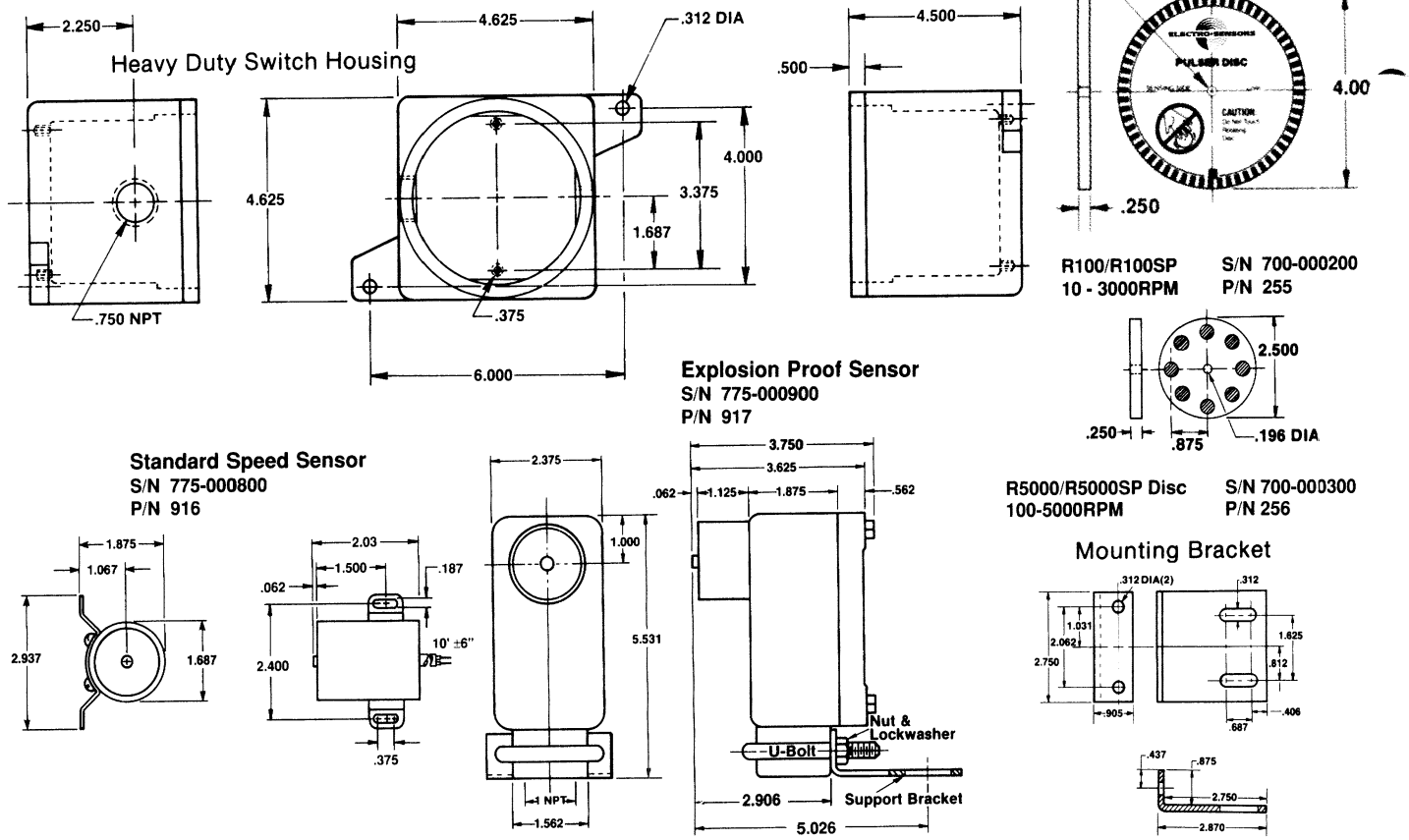
The sensing head is connected to the terminal block by attaching the black lead to terminal 7, the clear lead to terminal 8, and the shield to terminal 9. Apply 115Vac power to the terminal block by connecting the hot lead to terminal P1 and the neutral lead to terminal P2.

Terminal block designations



- P1 Hot
 - P2 Neutral
 - 1 NC contact
 - 2 NO contact
 - 3 Common contact
 - 4 NC contact
 - 5 NO contact
 - 6 Common contact
 - 7 Black
 - 8 Clear
 - 9 Shield
 - 10 Blank
- 115Vac Input
- Sensing Head Connection

R100/R5000, R100SP/R5000SP Dimensional Drawings
Dimensions in inches



R100/R5000, R100SP/R5000SP Specifications

Power Required	115Vac, 60Hz
Nominal Current Draw . . .	20mA
Peak Current Draw	32mA
Electrical Connections . . .	Terminal Strip
Housing and Cover	Cast Aluminum, C.S.A. approved. U.L. rated: Class I Group C,D. Class II Group E,F,G. Class III
R100(SP) Speed Range . . .	10 - 3000RPM
R5000(SP) Speed Range . . .	100 - 5000RPM
Set Point Accuracy	±20%
Set Point Adjustment*	1 turn potentiometer
Set Point Relay	DPDT isolated, 10 amp, 115Vac resistive
Mounting	Bolt Holes
Pulsar Disc	4" diameter (R100) 16 magnet poles 2.5" diameter (R5000) 8 magnet poles
Sensing Head	Machined PVC (explosion proof optional)
Sensing Cable	2 Wire, Shielded, 10' Supplied

Spare Parts List

	Part No.	Model No.
Pulsar Disc (R100, R100SP)	700-000200	255
Pulsar Disc (R5000, R5000SP)	700-000300	256
Standard Sensing Head	775-000800	916
Explosion Proof Sensing Head	775-000900	917
2 Conductor Cable	610-000100	213
Water Proof Gasket for XP Sensing Head	295-000500	-
XP Switch Housing w/Cover Water Proof Gasket for XP Switch Housing	305-000600	-
Internal Electronics (R100) . .	862-000200	250
Internal Electronics (R5000) . .	863-000200	251
Internal Electronics (R100SP)	862-000300	250SP
Internal Electronics (R5000SP)	863-000400	251SP
Pulsar Wraps		Consult Factory

* Applies to Adjustable Set Point (SP) Models Only.

Specifications Subject to Change Without Notice

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