

ELECTRO•SENSORS

Superior • Systems • Solutions



Ideal for control cabinet mounting



SS110 DIN Rail Mount Slow-Speed Switch

- Single set point relay protection in overspeed or underspeed.
- 0.01 - 0.99 and 0.1 - 9.9 RPM set point ranges.
- Dial-in calibration via rotary switches does not require power.
- Fail-safe operation in underspeed mode.
- Completely field adjustable.
- 5-Year limited warranty on speed switches, sensors and ratemeters*

*Consult factory for more information.

Product Information

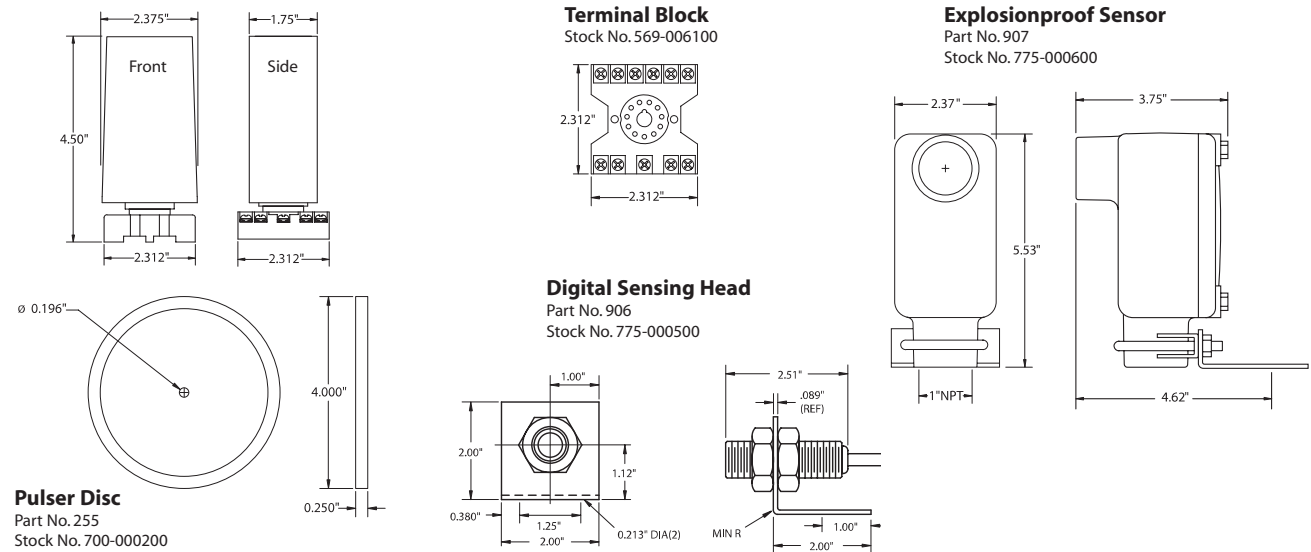
Description

The SS110 Switch is a complete system that has one adjustable set point for monitoring a single rotating shaft. The SS110 System is an efficient way to continuously track proper machine RPM, and provide a relay output upon detection of an unwanted change in speed or stoppage of the monitored shaft. Electro-Sensors Speed Switches bring efficiency and safety to your operations by preventing machine damage, product waste and costly downtime.

Principle of Operation

The SS110 Switch is supplied with a shaft-mounted pulser disc (or optional 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 SS110 decodes this frequency signal to determine shaft speed and compares this to its 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 SS110 Switch can be mounted on a DIN Rail, which is useful for applications where plant electrical controls are centrally located in a control cabinet. The SS110 is fail-safe in underspeed mode, any malfunction will de-energize the control circuit.

Dimensional Drawings • SS110



SS110 Slow-Speed Switch

Large-Gap Sensor Installation

The standard sensor is supplied with a mounting bracket and two jam nuts. 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 shown below) is $1/4" \pm 1/8"$. When using a standard 4" pulser disc, the center of the magnetized area of the disc (Dimension B shown below) is $1-3/4"$ from the center hole of the disc.

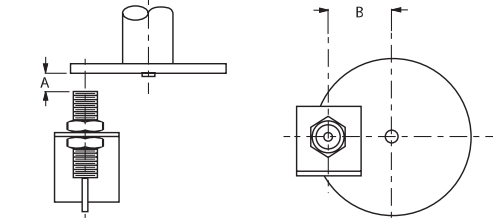
Available Options

- 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
- EZ100 Easy Mount Bracket Assembly for use with optional explosionproof sensor (shown below).
- NEMA 12, NEMA 4 or XP Enclosures available.

Consult factory for further options.

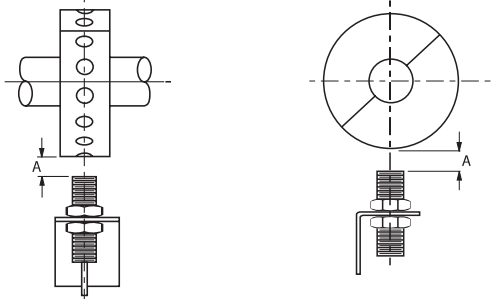
Standard 906 Sensor and Disc*

Figure 1



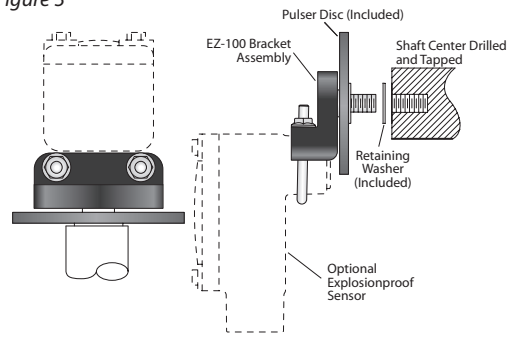
Standard 906 Sensor and Wrap

Figure 2



Optional EZ100 Easy Mount Bracket

Figure 3



SS110 Special Options

Special options are also available to modify the standard functions of SS110 Speed Switches, these include:

- Increased or decreased start delay interval
- No start delay
- Increased or decreased set point hysteresis

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

Specifications • SS110 Slow-Speed Switch

Input Power

Voltage..... 115Vac \pm 10 Vac Standard,
230 Vac, 12 Vdc, 24 Vdc optional

Sensor Input Signal

Type Open Collector/Logic
Amplitude 5V Pull-Up, 4.7K Ohms
Impedance 2,200 Ohms to 12V Unregulated
Maximum Frequency 20 KHZ
Minimum Pulse Width 1 msec.

Set Point Data

Number Available One
Actuation State..... Under or Over Speed
RPM Range..... 0.01 - 0.99 rpm, 0.1 - 9.9 rpm
Adjustment..... (2) Rotary Switches.
Set Point Accuracy 0.005% @ bottom of range
0.25% @ mid range
0.5% @ top range
Hysteresis 5%

Relay Contact Rating Isolated, 5A 115Vac Resistive
Contact Arrangement One Form C, S.P.D.T.
Start Delay 10 seconds (fixed)

General Specifications

Housing and Cover..... NEMA 1
Electrical ETL® Approved to UL 508 Standard
CSA C22.2 #14-95
Mounting DIN Rail Mount or Stand-Alone
906 Sensor..... Aluminum 3/4" - 16 UNF body with
10 ft of 3-conductor shielded cable.
907 Explosionproof Sensor..... Cast Aluminum, CSA Approved.
Meets UL Class I, Group D; Class II,
Groups 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-316 Rev C