



Model ZS10, Zero Speed Switch Module

Features

- Sensor interface for over speed, under speed and zero speed measurement
- Compatible with various sensor types
- Universal AC and DC input voltages
- Isolated relay output
- Adjustable setpoint
- Frequency input
- Diagnostic LED's
- DIN Rail Mount

Benefits

- Prevents equipment damage and material spoilage
- Prevents multiple conveyor "domino effect" stalled condition
- Prompt alert for stalled over speed or zero speed conditions
- Easy interface to existing systems
- Reliable and effective

Overview

Simple On/Off Sensor + ZS10 Module = Zero Speed Switch

The ZS10 Zero Speed Switch Module is an interface between simple on/off sensors and control circuitry enabling over speed, under speed and zero speed measurement.

The ZS10 is particularly useful in applications where environmental conditions, such as high temperature, prohibit the use of certain electronics. In these cases, the sensor is installed in the prohibitive area and wired to the ZS10 Zero Speed Switch Module which is located out of the prohibitive area. Use for applications in locations classified as hazardous only when properly coupled with UL approved intrinsically safe barriers and sensors.

For high temperature sensors, see our Digital Output Hall Effect Sensors and Geartooth Sensors.

Detail

The Phares Electric Model ZS10 Zero Speed Switch System consists of the ZS10 Zero Speed Switch Module, Sensor and Sensor Target, all sold separately.

The Sensor Target can be a bolt head, gear tooth, key stock, magnet, reflector, or other target depending upon type of Sensor used. The ZS10 Zero Speed Switch Module supplies 12 VDC to an external Sensor. The Sensor must be 3 wire, sourcing (PNP) or sinking (NPN) signal. Sensor input signal is configured via two position selector switch located at the top right of the terminal strip. The ZS10 Zero Speed Switch Module uses frequency input from various types of sensors to determine the presence of motion or the lack thereof. Use the ZS10 for over speed, under speed, and zero speed applications.

Sensor types compatible with the ZS10:

- Hall Effect
- Photoeye
- Inductive
- Capacitive
- Encoder

The Sensor Target is installed/located at the point of measure. Motion is detected when the rotating Target triggers the Sensor. When motion is either detected or reaches setpoint, the relay energizes and the relay output changes state. It remains in this state until either under speed or zero speed condition occurs, depending upon the application.



Figure 1. Indicators and Terminal Block.

The ZS10 Zero Speed Switch Module has 3 diagnostic LED's. These LED's indicate Power, Pulses from Sensor input signal and Relay status. LED's are labeled Power, Pulse, and Relay. There is a trim pot which is used for adjusting the setpoint.



Zero Speed Switch Module Model ZS10

Specifications

Power Requirements

Part No. ZS10-A: 100-240 VAC, 50/60Hz

Part No. ZS10-D: 9-36 VDC

Circuit Protection

Internal ½ amp fuse (non-replaceable)

Sensor

12VDC, 3 wire, sourcing (PNP) or sinking (NPN)

Dimensions (in inches)

3-1/16 " Wide x 3-1/4" High* x 2-1/2" Deep

*including DIN Rail Mount and Terminal Block

Relay Output:

3 SPDT Form 'C' dry relay contacts (N.O./N.C.)

Contact Rating: 5A at 120VAC; 5A at 30VDC

ZS10 Part Numbers

Part Number	Input Voltage	Relay Output	Contact Rating	Load Type	Speed Switch Type	Setpoint
ZS10-A	100-240 VAC	N.O./N.C.	5 A	Control Circuit or Logic Input	External Sensor Required (Sold Separately)	Adjustable or Fixed Setpoint
ZS10-D	9-36 VDC	N.O./N.C.	5 A	Control Circuit or Logic Input	External Sensor Required (Sold Separately)	Adjustable or Fixed Setpoint

Accessories

The following examples of ZS10 Zero Speed Switch Systems consist of:

- ZS10 Zero Speed Switch Module
- Sensor (sold separately)
- Magnetic Disk Sensor Target (sold separately)
- Terminal Strip Assembly (TSA) Box (sold separately)

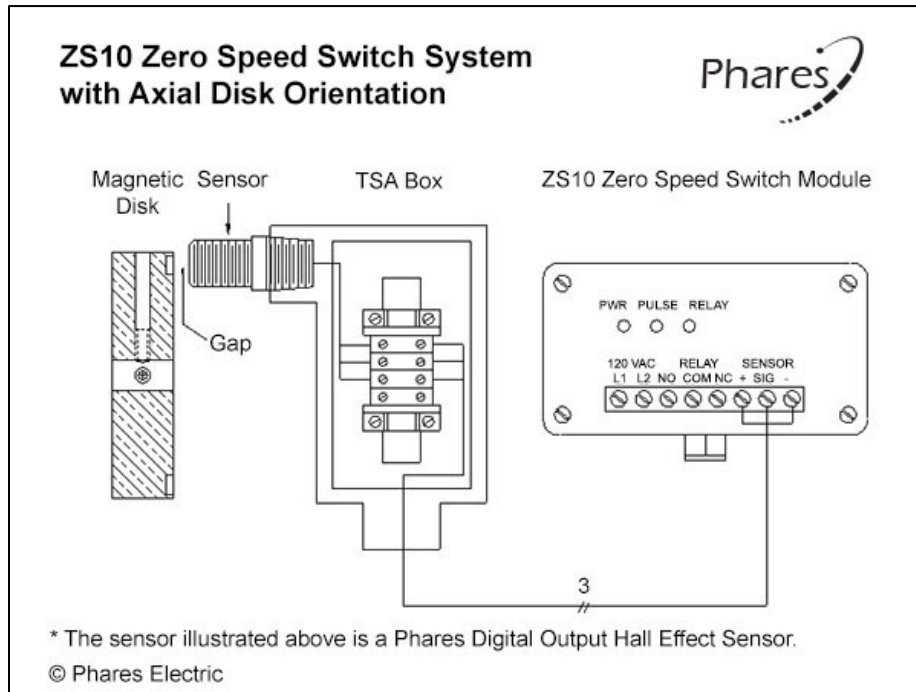


Figure 2. ZS10 Zero Speed Switch Module system utilizing an Axial magnetic disk.

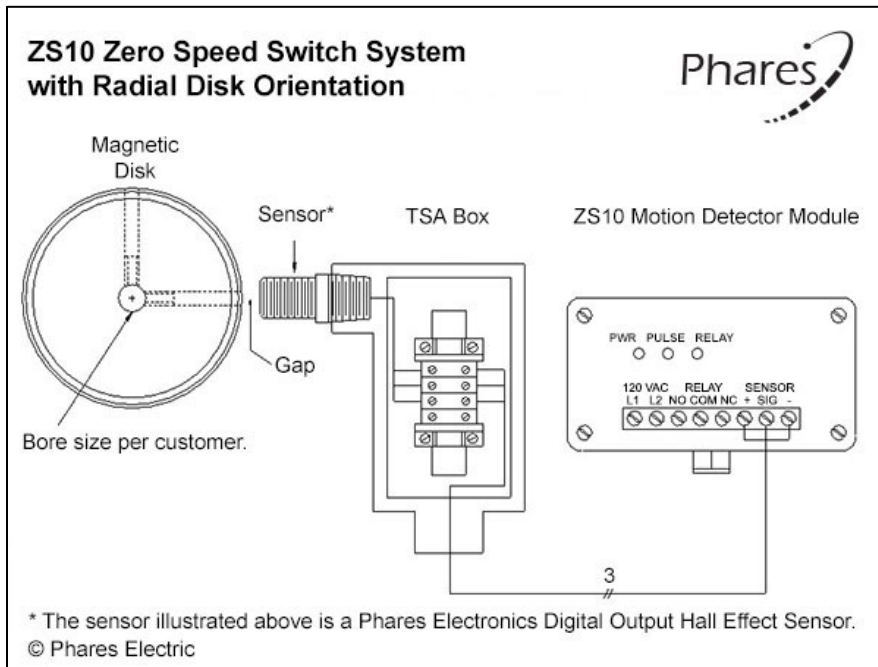


Figure 3. ZS10 Zero Speed Switch Module system utilizing a Radial magnetic disk.

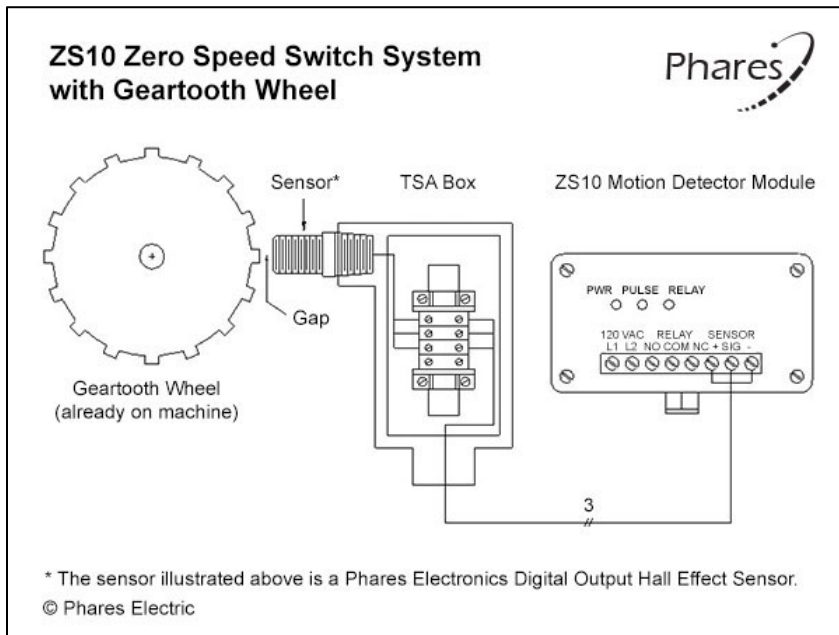


Figure 4. ZS10 Zero Speed Switch Module system utilizing a Geartooth Wheel.



Zero Speed Switch Module Model ZS10

Sensor Targets

The ZS10 Zero Speed Switch System needs a target for sensing and measuring speed. Sensor targets are sold separately.

Suitable targets are:

- Magnetic Disk
- Split Coupling
- Geartooth wheel, bolt head or key stock with high ferrous (iron) content

Sensors

Phares Electric Digital Output Hall Effect Sensors and Geartooth Sensors are simple on/off non-contact switching devices. Digital output signal is clean, fast and switched without bounce – an inherent problem with mechanical contact switches. They are magnetically activated switches that detect the motion, position, or change in field strength of an electromagnet, a permanent magnet, or a ferromagnetic material with an applied magnetic bias.

Phares Electric's Hall Effect Sensors and Geartooth Sensors are produced in a variety of sizes. Please refer to our website PharesSensors.com for part numbers, or contact us for assistance with choosing a sensor for your application.

Sensor Features

Hall Effect Sensor

- Non-contact switching
- Digital output signal
- Large operating temperature range from -40° F to 300° F
- Wide operating voltage range from 3.6 to 24 VDC
- Omnipolar sensing
- Use outdoors or in wash down areas
- Vibration tolerant
- RoHS compliant

Geartooth Sensor

- Non-contact switching
- Digital output signal
- Large operating temperature range from -40° F to 300° F
- Wide operating voltage range from 4.5 to 24 VDC
- Ferromagnetic target sensing
- Omnipolar magnetic target sensing
- Use outdoors or in wash down areas
- Vibration tolerant
- First-tooth detection
- Not rotation direction sensitive
- RoHS compliant

Terminal Strip Assembly Box

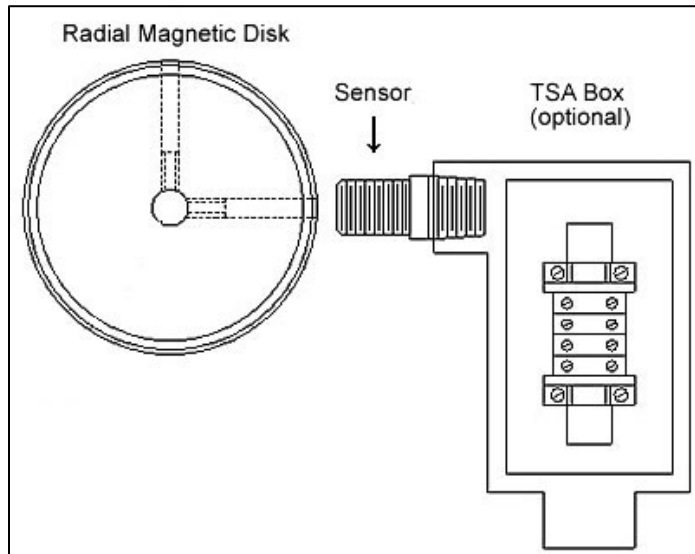


Figure 3. Sensor mounted with Terminal Strip Assembly (TSA) Box.

The TSA Box can be used to terminate sensor wiring for applications that require long cable runs. It can provide quick and convenient mounting for Phares Electric sensors.

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