



M100T and M5000T Miniature Speed Switch Series

- Compact, self-contained system with sensor and switch
- Terminal block for easy wiring
- Easy installation and calibration
- Rugged system is dust, dirt and greaseproof
- Cast aluminum housing is explosionproof and waterproof
- Fail-safe operation
- 5-Year limited warranty on speed switches, sensors and ratemeters*

*Consult factory for more information.

Product Information

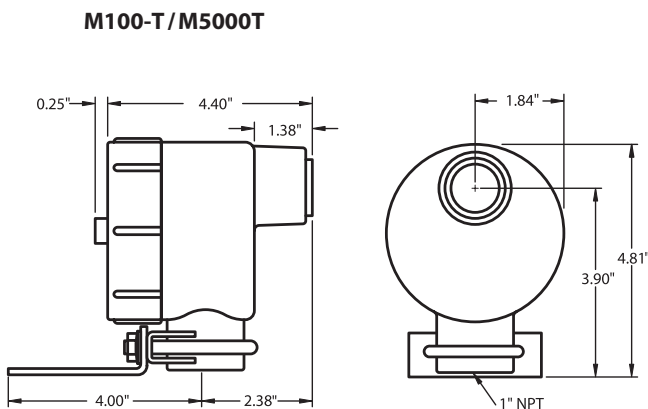
Description

M100T and M5000T Miniature Speed Switches are self-contained rotation monitoring systems that are ideal for detecting the unwanted slowdown of process equipment. These systems are commonly used to monitor drive trains, power-driven components, crushers, exhaust fans, screw conveyors, or tail pulleys on belt conveyors and elevators. The standard system includes either an M100T or M5000T switch and a 255 Pulser disc. Electro Sensors' speed switches bring efficiency and safety to your operations by preventing machine damage, product waste and costly downtime.

Principle of Operation

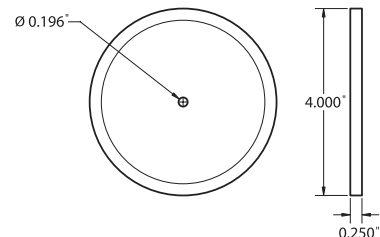
Miniature Speed Switches contain a sensor and switching electronics in a heavy duty, explosionproof and waterproof cast aluminum housing. Each switch is supplied with a shaft-end mounted Pulser Disc (or optional Split Collar Pulser Wrap) which generates an alternating magnetic field that is picked up by the speed switch. The switch decodes this frequency signal to determine shaft speed and compares this to the pre-adjusted set point, easily calibrated via a single-turn potentiometer. In the event of rotational failure, such as a broken drive, belt slippage, product overloads or clogs, the relay can be used to provide an alarm or equipment shutdown, assuring machine protection and process integrity. The Miniature Speed Switch Series is fail-safe; any malfunction during operation will de-energize the control circuit.

Dimensional Drawings • M100T / M5000T



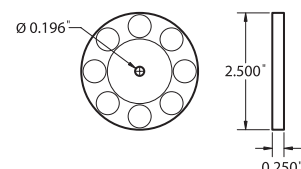
255 Pulser Disc (M100T)

Stock No. 700-000200



256 Pulser Disc (M5000T)

Stock No. 700-000300



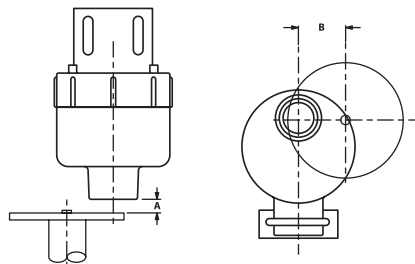
M100T & M5000T Miniature Speed Switch

Large-Gap Switch Installation

M-Series Speed Switches are supplied with a slotted mounting bracket, which is easily adjustable to achieve the proper gap distance. Care should be taken when installing these switches to ensure the proper gap distance is achieved. All switches should be installed allowing the center of the magnets to pass in front of the center of the sensing head during rotation (dimension B in figures 1 and 2). The gap distance between the sensor and disc or wrap (dimension A in figures 1 and 2) is $1/4" \pm 1/8"$.

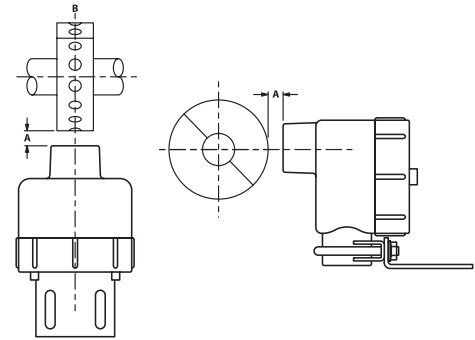
Speed Switch and Disc

Figure 1



Speed Switch and Wrap

Figure 2



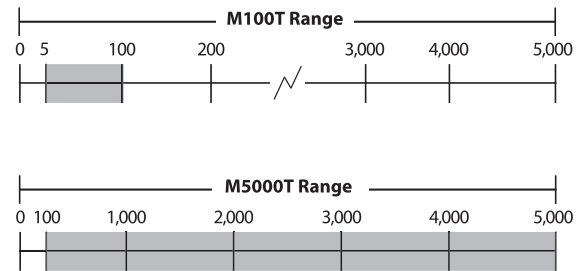
Switch Selection Guide

Refer to the Switch Selection Chart to determine which model is appropriate for your application. The primary difference between the M100T and the M5000T is the set point range.

The actual operating speed of the monitored shaft is not the critical factor when selecting which model to use, it is the desired set point speed at which the relay is to energize and de-energize.

The M100T can be adjusted to trip from 5 to 100 rpm. The M5000T can be adjusted to trip from 100 to 5000 rpm. For more assistance in selecting a switch consult an Electro-Sensors Application Specialist.

Switch Selection Chart

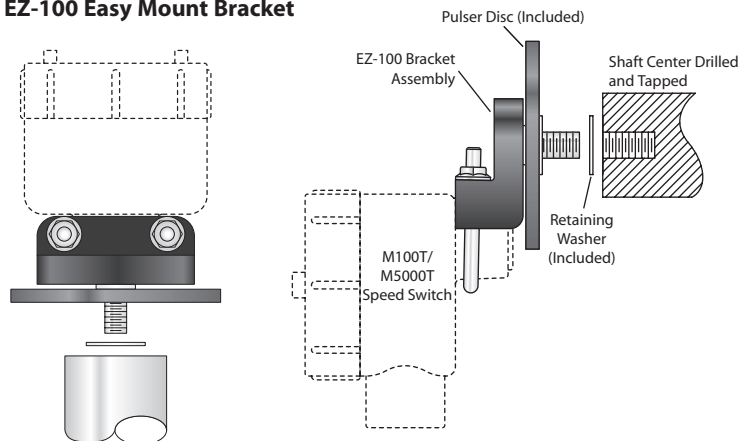


Available Options

- Split Collar Pulser Wrap for when end of shaft is inaccessible. Wraps available in the following materials:
 - PVC
 - Aluminum
 - Stainless Steel
- EZ-100 Easy Mount Bracket Assembly for use with M-Series switches (See figure 3)
- Stainless steel disc guards available.

Optional EZ-100 Easy Mount Bracket

Figure 3



Miniature Speed Switch Specifications

Input Power

Voltage 115Vac, 60 Hz standard
230 Vac, 12 Vdc, 24 Vdc

Sensor Input Signal

Type NPN Open Collector
Set Point Relay 1 SPDT, Isolated,
Relay Contact Rating 5 Amp@30 Vdc or 230 Vac resistive
Sensing Head Integral
Electrical Connections 5 pos Terminal Strip, de-pluggable
Set Point Range..... M100T: 5 to 100 RPM
M5000T: 100 to 5000 RPM
Set Point Accuracy $\pm 0.5\%$
Set Point Adjustment 1-turn (270°) Potentiometer

General Specifications

Housing & Cover Cast Aluminum, Class 1 Group C, D;
Class II, Groups E, F, G;
Gasket Provided for waterproofing
Enclosure Dimensions See dimensional drawing - page 1
Operating Temperature -40°C to $+60^{\circ}\text{C}$
Mounting Bracket Zinc Plated Steel
255 Pulser Disc Nylon® 12, 4" diameter,
16 magnetic poles (use with M100T)
256 Pulser disc PVC 2-1/2" diameter, 8 magnetic
poles (use with M5000T)
Gap Distance $1/4" \pm 1/8"$

Specifications subject to change without notice.

ES-315 Rev B