

# Motion Switch



## Models MS100/MS200



### Standard Features:

- ▶ Simple and Easy to Install
- ▶ Low Cost
- ▶ .067 to 666.67 Hz Operating Frequency
- ▶ Socket Mount—Plug-In Housing
- ▶ Over/Under Speed Relay Actuation
- ▶ One or Two Relay Setpoints
- ▶ Setpoints are Field Adjustable
- ▶ Red and Green Relay Status LED's

### Description:

The MS100/MS200 Motion Switch is a socket mount device designed to provide a SPDT relay output if an undesired overspeed or underspeed condition occurs. It is recommended for use as an emergency shut down device on motor control systems or as a simple motion detector device which can interface with many types of digital output transducers.

The MS series is available with one or two SPDT, 5 Amp relay contacts which can be field adjustable to trip at frequencies between .067 to 666.67 Hz. A green LED indicator light will illuminate when the Setpoint 1 relay is energized and a red LED will illuminate when Setpoint 2 is energized. Some common transducers which can interface with the MS series include Inductive Proximity, Hall Effect, Rotary Shaft Encoder, and Photo-electric.

The MS series requires 115 Vac operating power for the standard unit. Optional voltage include 12 and 24 Vdc or 230 Vac. A 15 Vdc, 50 mA power supply for the transducer is also provided.

### Calibration:

The MS Series Motion Switch is calibrated using a 3 position DIP switch and a single turn potentiometer. Over or underspeed relay operation is selected by a 2 position slide switch.

Select the appropriate setpoint frequency range from the chart in figure 1 and set the three DIP switches accordingly. At this point, the single turn adjustment potentiometer is used to fine tune your setpoint setting. Use the following formula to determine your operating and setpoint frequencies.

$$\text{RPM} \times \frac{\# \text{ pulses/rev.}}{60} = \text{Frequency (Hz)}$$

### Setpoint Frequency Ranges:

S1	S2	S3	Frequency Range:
Off	On	On	.067 to .67 Hz
Off	Off	On	.67 to 6.67 Hz
Off	On	Off	6.67 to 66.67 Hz
Off	Off	Off	66.67 to 666.67 Hz

### Terminal Block Connections:

1. Earth ground
2. 115 Vac hot
3. 115 Vac neutral
4. Transducer input
5. Transducer supply (+15 Vdc)
6. Transducer ground
7. Normally open
8. Common Setpoint 1
9. Normally closed
10. Normally open
11. Common Setpoint 2
12. Normally closed (if applicable)

### Installation:

Mounting the "MS" Series Speed Switch requires detaching the base from the balance of the assembly. The base should then be secured to a panel using the appropriate hardware (screws, bolts, etc.). Mounting holes are provided to accommodate mounting hardware. All wiring must be performed prior to inserting the speed switch into the base.

**General Specifications:**

**Input Power:**

Voltage ..... 115 Vac +/- 10% standard  
 230 Vac, 12 or 24 Vdc optional  
 Frequency ..... 50-60 Hz  
 Wattage ..... 6 VA

**Transducer Input Signal:**

Type ..... Open Collector, NPN  
 Input Impedance ..... 2200 Ohms  
 Amplitude ..... 15 Volts Nom, 10 volts Min.  
 Frequency ..... .067 Hz minimum  
 666.67 Hz maximum  
 Transducer Supply ..... +15 Vdc, 50 mA

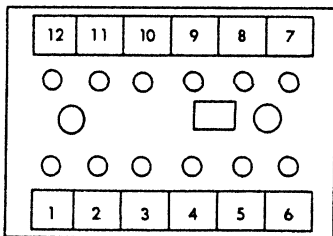
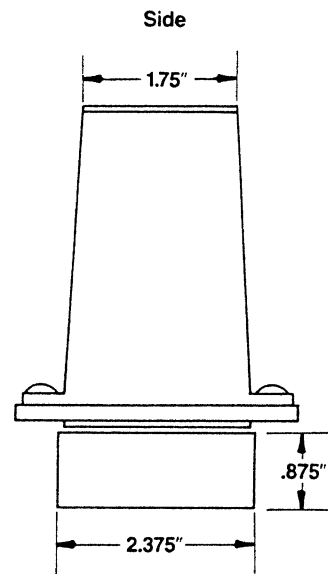
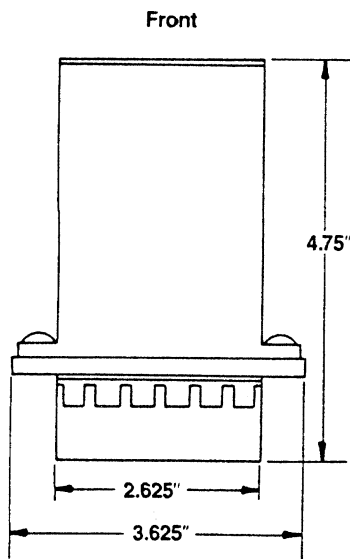
**Setpoint Data:**

Number available ..... 1 or 2  
 Speed Range ..... .067 to 666.67 Hz  
 Adjustment ..... Single turn (270°) potentiometer  
 Repeatability ..... 0.05%  
 Contact Configuration ..... 1 form C (SPDT) per relay  
 Contact rating ..... 5 Amp @ 115 Vac resistive  
 Indicator ..... Green LED (Setpoint 1)  
 Red LED (Setpoint 2)

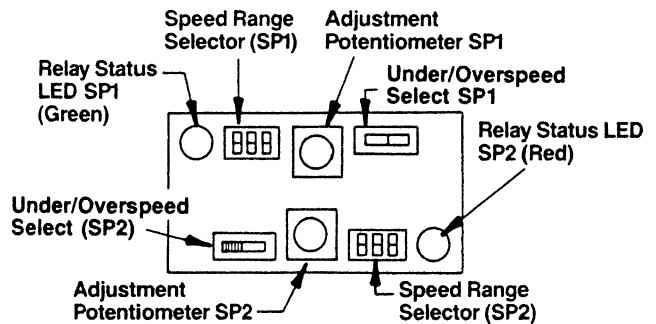
**Physical/Environmental:**

Housing Material ..... ABS plastic  
 Operating Temp. .... 0 to 70° C.

**Dimensional Drawings:  
 Dimensions in Inches**



Terminal Connections  
 (Base Only)  
 See Terminal Block Connection  
 for Proper Wiring



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