

ROTOGUARD® III ELECTRONIC SPEED SWITCH

DESCRIPTION

The RotoGuard® III is an electronic Speed Switch device for sensing the reduction, increase, or loss in rotational motion associated with many types of moving equipment. The unit can detect changes in motion between 1 and 400 RPM, depending on the model selected. The RotoGuard® III may be direct coupled to another shaft or driven with a belt or chain. There are three basic models:

- ✓ **Zero Speed** models alarm when the shaft speed drops below 1 RPM. This unit does not provide for field adjustments or calibration.
- ✓ **Adjustable Alarm Speed** models are appropriate in applications where an alarm is needed with a 15% or greater change in rotational speed.
- ✓ **Digital Set Alarm Speed** models offer easy and precise alarm adjustment with as small as 3% change in operating speed.

OPERATING THEORY

The RotoGuard® III has been designed to provide a change of state, or alarm, when a variation in operating speed occurs. These Speed Switch sensors have an optical encoder and multi-toothed interrupter wheel to transform the rotation of the input shaft to voltage pulses. A change of input speed from the calibrated normal speed results in the output relay changing state. All models provide a startup alarm delay feature which allows time for the monitored equipment to come up to speed before the unit will alarm.

ADVANTAGES & SPECIFICATIONS

- Low Cost Solid State Electronics
- Adjustable Startup Alarm Delay (0-60 seconds)
- Factory set 120 / 240 input voltage at 50/60 Hz • 3.5 Watt power usage
- 5 Amp DP/DT Relay (Double Pole / Double Throw)
- 1-300 RPM Input Shaft Speed for Zero & Adjustable / 1-400 RPM for Digital
- Operating Temperature Range of -40°F to +160°F / -40°C to +71°C
- Weight is 7 pounds / 3.2 kg
- NEMA 4/5 Rating — Weatherproof and dust tight
NEMA 7/9 Rating — Explosion proof models cannot exceed 100 RPM
- All models are UL Listed



APPLICATION CONSIDERATIONS

ZERO SPEED

The Zero Speed model requires no speed adjustment. As long as the input shaft speed exceeds 1 RPM, the RotoGuard unit will remain in the un-alarm state.

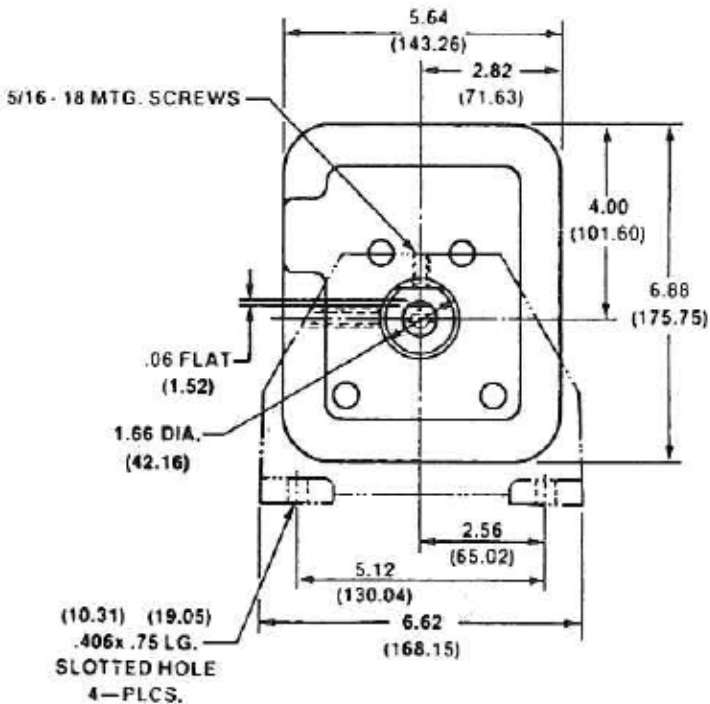
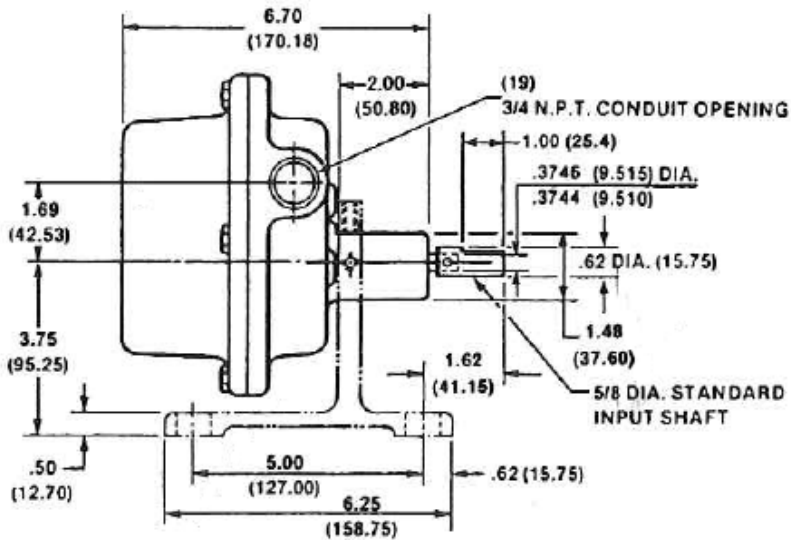
ADJUSTABLE ALARM SPEED

This model replaced the RotoGuard II unit. Adjustment is accomplished with a field selectable jumper and potentiometer. This very simple adjustment allows output alarms with approximately 15% change in input shaft speed. Order should specify if input range is between 1 and 2 RPM.

DIGITAL SET ALARM SPEED

This model offers the most precise adjustment available, by setting a potentiometer to “lock in” the operating speed, then rotating the digital switches to indicate the exact percent of operating speed alarm is to occur at. If the alarm is desired when speed falls to 90% of operating speed, rotate one switch to “9” and the other to “0”.

ROTOGUARD® III SPEED SWITCH



<u>MODEL</u>	<u>VAC</u>	<u>NEMA</u>	<u>BASE</u>
ZERO			
SA3A1Z1	120	4/5	NO
SA3B1Z1	120	4/5	YES
SA3B2Z1	240	4/5	YES
SX3A1Z1	120	7/9	NO
SX3B1Z1	120	7/9	YES
SX3B2Z1	240	7/9	YES
ADJUSTABLE			
SA3A1A1	120	4/5	NO
SA3A2A1	240	4/5	NO
SA3B1A1	120	4/5	YES
SA3B2A1	240	4/5	YES
SX3A1A1	120	7/9	NO
SX3A2A1	240	7/9	NO
SX3B1A1	120	7/9	YES
SX3B2A1	240	7/9	YES
DIGITAL			
SA3A1D1	120	4/5	NO
SA3A2D1	240	4/5	NO
SA3B1D1	120	4/5	YES
SA3B2D1	240	4/5	YES
SX3A1D1	120	7/9	NO
SX3A2D1	240	7/9	NO
SX3B1D1	120	7/9	YES
SX3B2D1	240	7/9	YES

Weatherproof = NEMA 4/5

Explosion Proof = NEMA 7/9

"No Base" = Mounting Frame Not Included

Dimensions in inches • Bracketed in millimeters