

Three models to fit your application —
Zero Speed • Adjustable Alarm Speed • Digital Set Alarm Speed

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, and provide a change of state, or alarm, when a variation in operating speed occurs. The RotoGuard® III may be direct coupled to another shaft or driven with a belt or chain.

The **RotoGuard® III** is designed with 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.

Features:

- Low cost solid state electronics
- Adjustable startup alarm delay (0-60 seconds)
- Models available with NEMA 4/5 Rating (weatherproof and dust tight) or NEMA 7/9 Rating (Explosion Proof [EP models cannot exceed 100 RPM.])
- All models are UL Listed



RotoGuard® III Models:

Zero Speed — Requires no speed adjustment. When the input shaft speed drops below 1 RPM, the RotoGuard® unit will alarm or provide a change of state. This model does not provide for field adjustments or calibration.

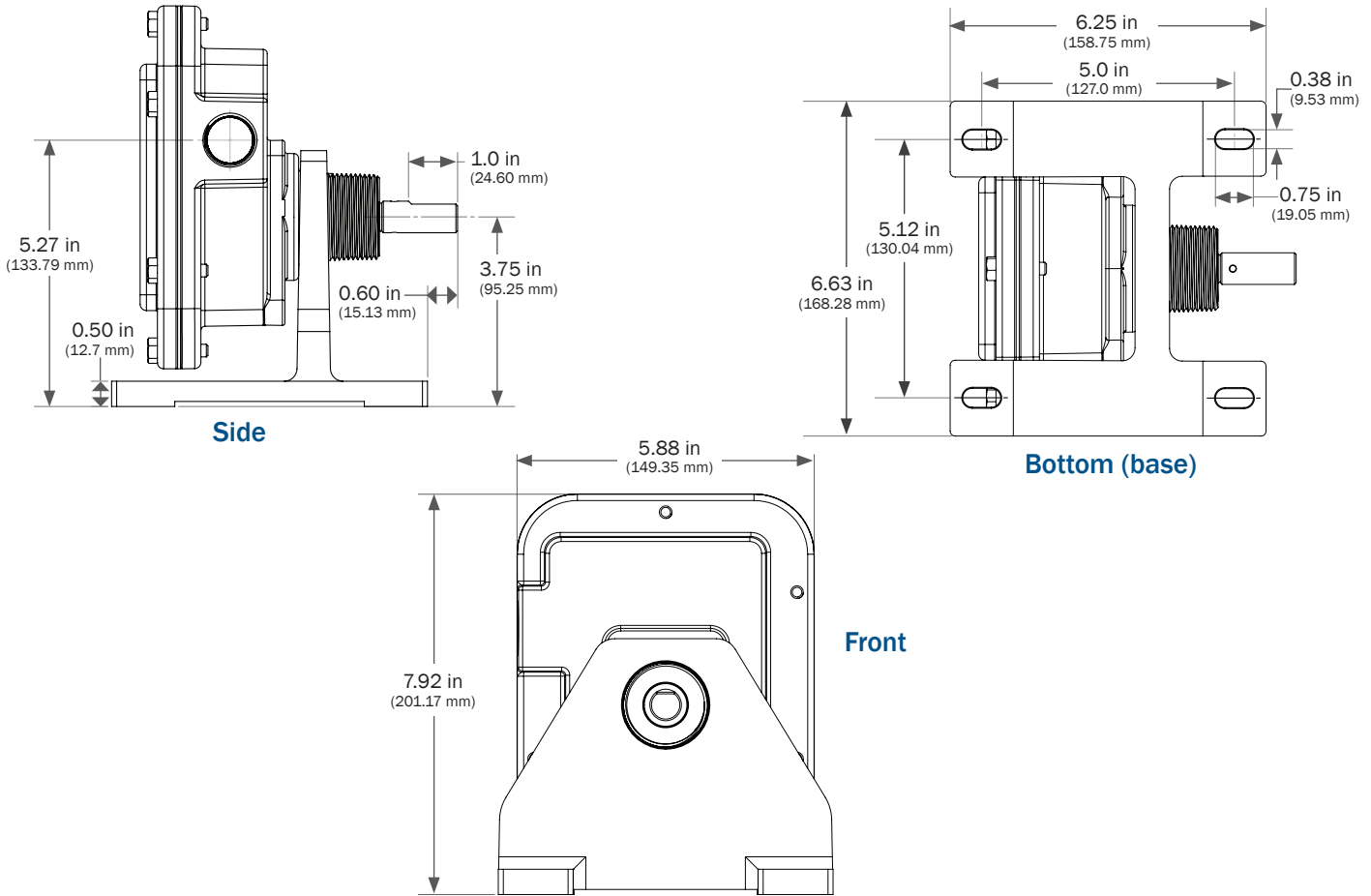
Adjustable Alarm Speed — Ideal for applications where an alarm is needed with a 15% or greater change in rotational speed. Adjustment is accomplished with a field selectable jumper and potentiometer. Order should specify if input range is between 1 and 2 RPM.

Digital Set Alarm Speed — Easy and precise alarm adjustment with as small as a 3% change in operating speed. Set the potentiometer to "lock in" the operating speed and then rotate the digital switches to indicate the exact percent of operating speed to trigger the alarm. For example, if an alarm is desired when speed falls to 90% of operating speed, rotate one switch to "9" and the other to "0".

ROTOGUARD® III	
Temperature Range	-40° to +160° F (-40° to +71° C)
Input Shaft Speed	1-300 RPM (Zero & Adjustable Speed models) 1-400 RPM (Digital models)
Input Voltage	120 VAC or 240 VAC at 50/60 Hz (Factory Set)
Output	Relay - 5 Amp, DPDT (Double Pole, Double Throw)
Power Consumption	3.5 Watt
Weight	7 lbs. (3.2 kg)

For specific model numbers, see next page.

RotoGuard® Dimensional Drawings



RotoGuard® III Electronic Speed Switch Models

Zero Speed

Alarm activates when the shaft speed drops below 1 RPM. This unit does not provide for field adjustments or calibration.

Model Number	Input Voltage	Mounting Frame
NEMA 4/5 – Weatherproof and dust tight		
SA3A1Z1	120 VAC	No
SA3B1Z1	120 VAC	Yes
SA3B2Z1	240 VAC	Yes
NEMA 7/9 – Explosion Proof*		
SX3A1Z1	120 VAC	No
SX3B1Z1	120 VAC	Yes
SX3B2Z1	240 VAC	Yes

*Explosion Proof models cannot exceed 100 RPM.

Adjustable Alarm Speed

Appropriate in applications where an alarm is needed with a 15% or greater change in rotational speed.

Model Number	Input Voltage	Mounting Frame
NEMA 4/5 – Weatherproof and dust tight		
SA3A1A1	120 VAC	No
SA3A2A1	240 VAC	No
SA3B1A1	120 VAC	Yes
SA3B2A1	240 VAC	Yes
NEMA 7/9 – Explosion Proof*		
SX3A1A1	120 VAC	No
SX3A2A1	240 VAC	No
SX3B1A1	120 VAC	Yes
SX3B2A1	240 VAC	Yes

Digital Set Alarm Speed

Easy and precise alarm adjustment with as small as 3% change in operating speed.

Model Number	Input Voltage	Mounting Frame
NEMA 4/5 – Weatherproof and dust tight		
SA3A1D1	120 VAC	No
SA3A2D1	240 VAC	No
SA3B1D1	120 VAC	Yes
SA3B2D1	240 VAC	Yes
NEMA 7/9 – Explosion Proof*		
SX3A1D1	120 VAC	No
SX3A2D1	240 VAC	No
SX3B1D1	120 VAC	Yes
SX3B2D1	240 VAC	Yes



Control Concepts, Inc.
 100 Park Street
 Putnam, CT 06260

E: Sales@ControlConceptsUSA.com
 P: 860-928-6551 • F: 860-928-9450
www.SpeedSwitch.com



Speed Switch devices coupled to a corresponding shaft, must be properly mounted and aligned to avoid putting extra load on motor bearings, which may cause premature failure. The use of installation accessories such as Mounting Brackets and K-Couplings provide a secure foundation and eliminate misalignment connection problems.

Mounting Bracket

When ordering Mounting Brackets, please specify **Model MB-2** for RotoGuard Electronic Speed Switches.



K-Couplings

The K-Coupling® is made of double-loop ELASTACAST® polyurethane elastomeric material assembled to zinc plated steel hubs, which mount to shafts using Allen screws. Motor noise and vibration will be dampened. Bearings will last longer and require less maintenance.

When ordering, make sure the torque requirement is within rating limits, and always include the bore size for *both ends* of the coupling, which may not be the same. Example: 5801 1/4" x 5/16"

Notes:

- Bore tolerances are AGMA Class 2 – 000 + .002
- All standard coupling hubs are zinc plated steel

Keyways may be obtained on Series 5803 and 5804 couplings for an additional cost.

Standard keyways are: 1/8" for 1/2" dia. shaft;
3/16" for 9/16" and 5/8" dia. shafts

K-Couplings



Available Bore Sizes	Series 5801	Series 5802	Series 5803	Series 5804
3/16" (4.76 mm)	✓			
1/4" (6.35 mm)	✓	✓		
5/16" (7.94 mm)	✓	✓		
3/8" (9.53 mm)	✓	✓	✓	
7/16" (11.11 mm)		✓	✓	
1/2" (12.70 mm)		✓	✓	✓
9/16" (14.29 mm)			✓	✓
5/8" (15.88 mm)			✓	✓
Torque Capacity	0.25 ft-lb (0.34 Nm)	1.0 ft-lb (1.36 Nm)	2.33 ft-lb (3.16 Nm)	3.33 ft-lb (4.51 Nm)
Maximum Misalignment	10° angular 3/32" parallel	15° angular 1/8" parallel	15° angular 3/16" parallel	15° angular 1/8" parallel

Stub Shaft

Part No.	Shaft Diameter (A)	Thread Size (B)
STSH-500	1/2" (12.70 mm)	1/2-13 UNC-2A
STSH-625	5/8" (15.88 mm)	5/8-11 UNC-2A



STSH-500
Stub Shaft

Stub Shaft includes one Jam Nut