

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

The **RotoGuard® IV** 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 running speed results in the output relay changing state. A startup alarm delay feature allows time for the monitored equipment to come up to speed before the unit will alarm. An adjustable alarm delay feature eliminates nuisance alarms during erratic motion

### Features:

- Solid state electronics
- Universal Voltage Input
- Startup delay (0-120 seconds)
- 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

Easy and precise alarm adjustment. With system running at normal operating speed, set the digital switches for the desired percent of operating speed to trigger the alarm.

For example, if an alarm indication is desired when speed falls to 90% of operating speed, rotate one switch to "9" and the other to "0".

Calibration requires a simply push and hold of the calibration button until the STATUS LED blinks. Release the button and the settings are stored internally for your specific application.

Calibration can be performed as low as 1 RPM with Alarm indication adjustable from 20% to 99% of full-speed, providing near zero-speed activation.



### RotoGuard® IV Models

Model Number	Input Voltage	Mounting Frame
<b>NEMA 4/5 – Weatherproof and dust tight</b>		
SA4A	120-240 VAC	No
SA4B	120-240 VAC	Yes
<b>NEMA 7/9 – Explosion Proof*</b>		
SX4A	120-240 VAC	No
SX4B	120-240 VAC	Yes



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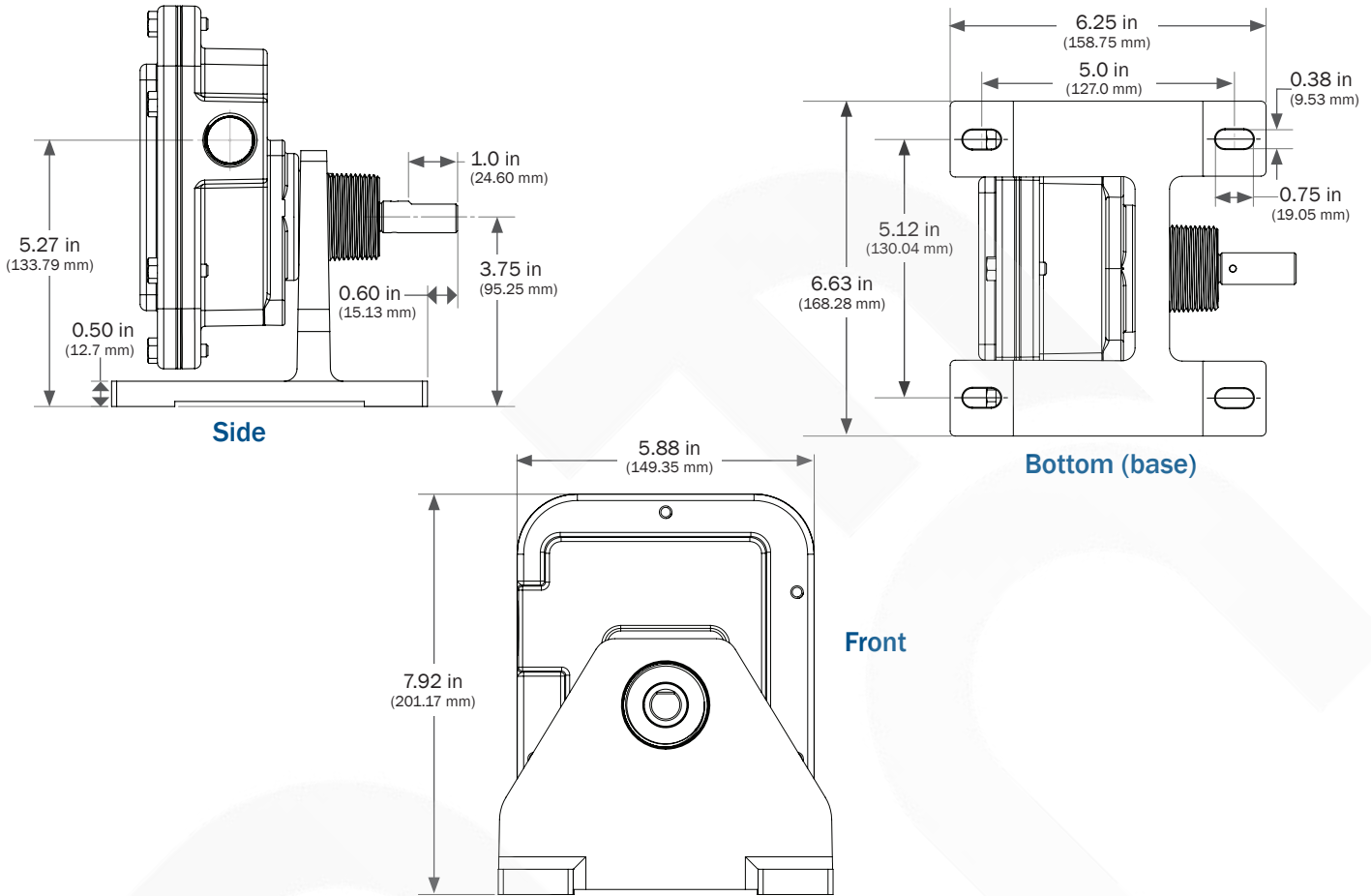
CONTACT US: 845/3-4 หมู่ 3 ถ.เทพารักษ์ ต.เทพารักษ์ อ.เมือง อ.สมุทรปราการ 10270

Tel. 02-384-6060 Email: info@factocomponents.co.th Website: www.factocomponents.co.th



LINE OA:  
@factocomps

# RotoGuard® IV Dimensional Drawings



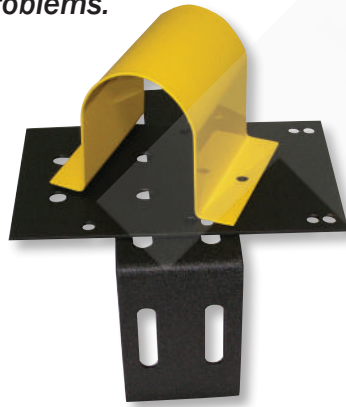
## RotoGuard® IV Specifications

<b>Housing</b>	Polyester Coated Aluminum Casting
<b>Input Shaft Speed</b>	1 - 400 RPM (20-tooth wheel)
<b>Input Voltage</b>	120 - 240 VAC at 50/60 Hz
<b>Calibration Range</b>	20% to 99% of running speed
<b>Output Relay</b>	DPDT (Double Pole, Double Throw) 5 Amp @ 240 VAC or 30 VDC / Resistive Load
<b>Temperature Range</b>	-40 °F to +160 °F (-40 °C to +71 °C)
<b>Power Consumption</b>	3.5 Watt
<b>Shaft Dimensions</b>	5/8" dia. with flat suitable for flexible K-coupling
<b>Conduit</b>	3/4" NPT opening
<b>NEMA Rating</b>	NEMA 4/5 Weatherproof and dust tight or NEMA 7/9 Explosion Proof available with specific models.
<b>Note: Input shaft speed must not exceed 100 RPM on NEMA 7/9 Explosion-Proof models</b>	
<b>Accuracy</b>	+/- 1% of calibrated set point
<b>Startup Delay (SDLY)</b>	0 to 2 Minutes
<b>Alarm Delay (ADLY)</b>	0 to 1 Minute

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