

RotoGuard® III – Digital Set Alarm Models

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

Model Number	Input Voltage	Mounting Frame
NEMA 7/9 – Explosion Proof*		
SX3A1D1	120 VAC	No
SX3A2D1	240 VAC	No
SX3B1D1	120 VAC	Yes
SX3B2D1	240 VAC	Yes

CALIBRATION

1. Move the **Cal/Run Jumper** to the "Cal" position. This is the plastic jumper located directly behind the terminal block near the terminal marked **C1**. Move the jumper toward the outside edge of the circuit board.
2. Rotate the **Alarm Delay Trimmer** fully counterclockwise. This is the potentiometer labeled **R10** and has a large adjustment knob.
3. Rotate the **Speed Adjustment Potentiometer** (the blue potentiometer labeled **R6**) counterclockwise approximately 25 turns or until a click is heard while rotating.
4. Determine the **Percent of Full Speed** that the alarm speed will be.

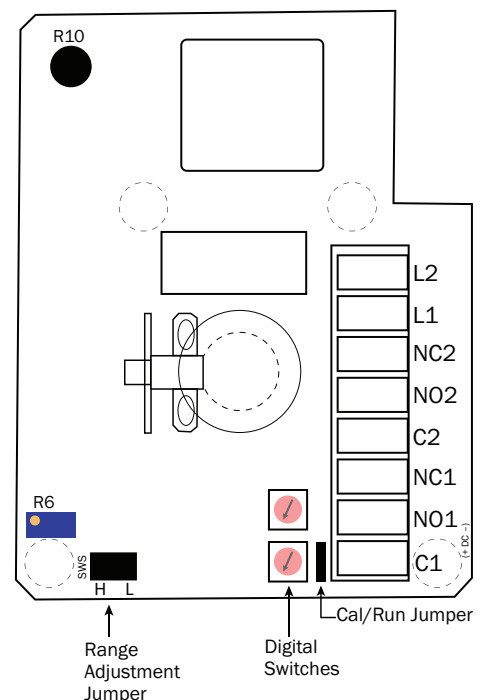
Example 1: An alarm is desired if there is a 10% slow down. The **Percent of Full Speed** would be 90%. ($100 - 10 = 90$)

Example 2: If the normal operating speed is 250 rpm and an alarm is desired at 200 rpm, the **Percentage of Full Speed** is 80%. ($200 \div 250 = 0.80$)

5. Adjust the **Digital Switches** to the number determined in Step 4. These are the two switches with red pointers located next to the **Cal/Run Jumper**. The switch located nearest the outside edge of the circuit boards is the "tens" digit. The switch toward the center of the circuit board is the "ones" digit.

Example: If a setting of 85% is desired, rotate pointer of the switch at the edge (the tens) to 8. Rotate the pointer of the inside switch (the ones) to 5.

6. Move the **Speed Range Jumper** to the proper position. This is the blue plastic jumper labeled **SWS** and is located near the **Speed Adjustment Potentiometer**. If the alarm speed will be in the 2 to 40 rpm range, position the jumper in the position marked "L". If the alarm speed will be in the 20 to 400 rpm range, position the jumper in the position marked "H".
7. Apply power to the RotoGuard unit, and with input shaft running at normal speed, slowly rotate the **Speed Adjustment Potentiometer** (see Step 3) clockwise until the green LED just turns off.
8. Reposition the **Cal/Run Jumper** (see Step 1) to the "Run" position – toward the center of the circuit board.



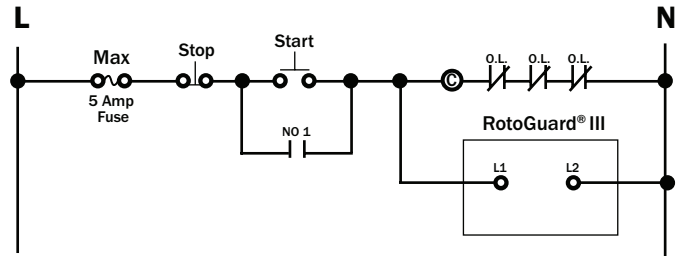
Start-up Alarm Adjustment on next page.

START-UP ALARM ADJUSTMENT

The startup alarm delay feature allows time for conveyors, etc. to come up to speed before the RotoGuard III's output alarms. Adjustment from 0 to 60 seconds is possible from the R10 trimmer. This delay occurs only after initial power up of the RotoGuard III. The RotoGuard III must be unpowered approximately 10 seconds for reset of the startup delay.

Adjust R10 fully counterclockwise for zero delay, and fully clockwise for 60 second delay. A 1/4 turn is approximately 20 seconds.

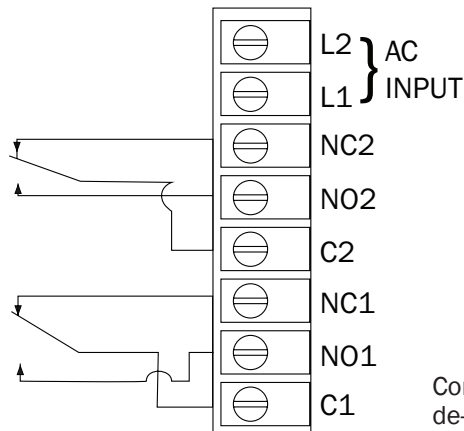
Example of wiring for Startup Alarm Delay



Wiring – Relay Output

Note: Use copper conductors only with 60/75 °C (140/167 °F) insulation rating.

Torque power connections to 7 lb-in.



Contact shown with relay de-energized. (Alarm State)

RotoGuard® Digital Set Alarm Speed Specifications:

Housing	Polyester Coated Aluminum Casting
Input Shaft Speed	1-400 RPM
Input Voltage	120 VAC or 240 VAC at 50/60 Hz (Factory Selectable)
Output Relay	DPDT (Double Pole, Double Throw) 5 Amp @ 120 VAC, 240 VAC or 24 VDC
Temperature	-40 °F to 160 °F (-40 °C to 71 °C)
Power Consumption	3 Watt
Shaft Dimensions	5/8" dia. with flat suitable for flexible K-coupling
Conduit	3/4" NPT opening
NEMA Rating	NEMA 4/5 Weatherproof and dust tight or NEMA 7/9 Explosion Proof available with specific models.
Note: Input shaft speed must not exceed 100 RPM on NEMA 7/9 Explosion-Proof models	
Accuracy	3% of operating speed
Startup Delay	0-60 Seconds

