

## GENERAL DESCRIPTION

The SM-3300 (rotary) and LA-3300 (linear) are spring return actuators designed to fail to either the full extend (full CW) or full retract (full CCW) position on loss of input power. Offering continuous modulating duty, these actuators may be used to position valves, dampers and other control devices, with spring-powered failsafe operation.

The SM/LA-3300 Series can provide closed-loop positioning from an analog input signal, or they may be operated by switched line voltage inputs for ON/OFF control.

All SM/LA-3300 Series actuators are also available with an internal amplifier. These amplifiers are all full-featured ac switching devices designed to work seamlessly with the actuator for closed loop control.

## FEATURES

- Permanently lubricated for any position mounting
- End of travel position limit switches
- Anti-condensation heater and thermostat
- Position indicator providing final output shaft position
- Internal or remote-mounted amplifier
- Wide ambient temperature range
- High strength, corrosion resistant, cast aluminum enclosure rated for indoor/outdoor and hazardous dust installations
- Full one year warranty

## AMPLIFIER FEATURES

- Isolated, two-wire, 4-20mA feedback
- Customer-adjustable zero and span
- Adjustable deadband
- Accepts either voltage or current command inputs
- Selectable options for Loss-of-Signal action:
  - Lock in place
  - Run to preset
- AC triac switching of AC motors



## POPULAR OPTIONS *(See Pages 197-206)*

- Auxilliary position limit switches
- Custom mounting and interface hardware
- Local Auto/Manual toggle switches in close coupled enclosure
- Various enclosure coatings

## SPECIFICATIONS

### Speed:

*Full rotation or stroke under AC power conditions:*  
12 sec.

*Full rotation or stroke on loss of AC power:* 3 to 6 sec.

**Modulation Rate:** 2000 starts/hr (minimum position change of 1%)

**Temperature:** -40° F to 150° F (-40° C to 65° C)  
*Maximum torque drops to 750 in. lbs. (85 Nm) when operating at temperature below 32° F (0° C).  
Maximum thrust drops to 600 lbs. (2669 N) when operating at temperature below 32° F (0° C).*

**Environmental Rating:** NEMA Type 4 (IP65) indoor/outdoor, or hazardous locations for Class I, Div. 1, Groups C and D and Class II, Div. 1, Groups E, F, and G

**Field Wiring:** To barrier terminal blocks

**SM-3300 rotation:** 90° maximum

**SM-3300 Torque:** 1000 in.lbs. (113 Nm)

**Approximate Weight:** 110 lbs. (50 kg) (without valve and mounting hardware)

**Fail Mode on Loss of Power:** Full CW or CCW

**LA-3300 stroke:** 2 in. (50.8 mm) maximum

**LA-3300 thrust:** 800 lbf (3558 N)

**Approximate Weight:** 85 lbs. (39 kg) (without valve and mounting hardware)

### Fail Mode on Loss of Power:

LA-3300: Full extend (valve stem down)

LA-3300: Full retract (valve stem up)

# ACTUATOR/AMPLIFIER SPECIFICATIONS

	<b>SM-3330-D, SM-3350-D, LA-3330-D &amp; LA-3350-D</b>
<b>Position Accuracy</b>	1.0 % of full travel
<b>Repeatability</b>	0.5 % of full travel
<b>Hysteresis</b>	0.5 % of full travel
<b>Linearity</b>	+/-1 % of full travel
<b>Deadband</b>	0.75 % of full travel
<b>Resolution</b>	0.75 % of full travel

REMOTE AMPLIFIER		
Actuator	Remote Mounted Amplifier	Catalog Page
SM-3330-N, SM-3350-N, LA-3330-N & LA-3350-N	AD-8240	173

## SM-3300 SELECTION CHART

				Selection
1	Basic Model	<b>SM-3330-N</b>	90° rotary actuator, 1000 inch-pounds (113 Nm), spring return CW or CCW	
		<b>SM-3330-D</b>	SM-3330 above with built-in digital amplifier	
		<b>SM-3350-N</b>	90° rotary actuator, 1000 inch-pounds (113 Nm), spring return CW or CCW	
		<b>SM-3350-D</b>	SM-3350 above with built-in digital amplifier	
2	Input Voltage	1: 120 Vac, 1 Phase, 50/60 Hz (SM-3330-N & SM-3330-D) 2: 240 Vac, 1 Phase, 50/60 Hz (SM-3350-N & SM-3350-D)		
3	Speed, sec. (a)	12/1000 (113) <i>Maximum torque drops to 750 (85) when operating at temperature below 32° F (0° C)</i>		
4	Torque, in. lbs. (Nm)			
5	Rotation	Specify output rotation - minimum 8.7° - maximum 90°		

(a) Speed is shift time for 90° rotation.

## LA-3300 SELECTION CHART

				Selection
1	Basic Model	<b>LA-3330-N</b>	2-inch stroke linear actuator, 800 pounds thrust (363 N)	
		<b>LA-3330-D</b>	LA-3330 above with built-in digital amplifier	
		<b>LA-3350-N</b>	2-inch stroke linear actuator, 800 pounds thrust (363 N)	
		<b>LA-3350-D</b>	LA-3350 above with built-in digital amplifier	
2	Input Voltage	1: 120 Vac, 1 Phase, 50/60 Hz (LA-3330-N & LA-3330-D) 2: 240 Vac, 1 Phase, 50/60 Hz (LA-3350-N & LA-3350-D)		
3	Speed, sec. (a)	12/800 (3558) <i>Maximum thrust drops to 600 (2669) when operating at temperature below 32° F (0° C)</i>		
4	Thrust, lbs. (N)			
5	Linear Travel	Specify output stroke - minimum 0.19 inches (4.8 mm) - maximum 2.0 inches (50.8 mm)		
6	Mechanical Failsafe	E: Spring to extend		
	Direction	R: Spring to retract		

(a) Speed is shift time for full 2 inch stroke.

# SM/LA-3300 STANDARD OPTIONS

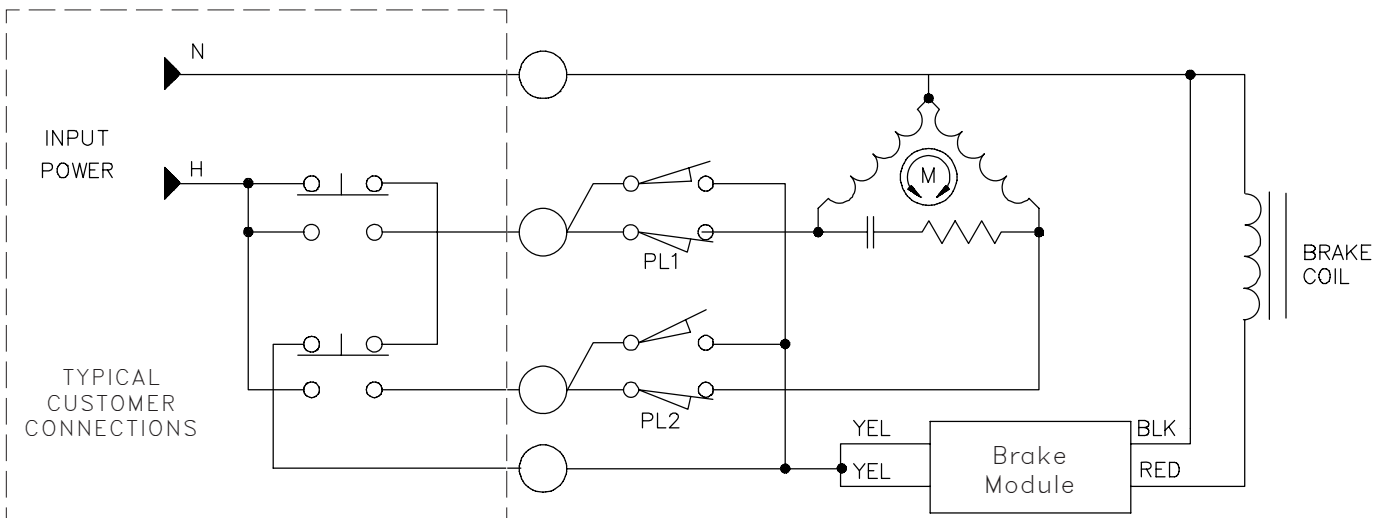
Code	Description	Selection
<b>Toggles, Lights</b>		
A008	Local Auto/Manual INC/OFF/DEC (Close Coupled Enclosure)	
A015	ON/OFF Toggle Power Switch (Close Coupled Enclosure)	
<b>Position Feedback</b>		
F001	Potentiometer, 1000 ohms	
F002	Tandem Potentiometer, 1000 ohms each (not available for units with internal amplifiers)	
F003	Potentiometer, 5000 ohms (not available for units with internal amplifiers)	
F004	Potentiometer, 10,000 ohms (not available for units with internal amplifiers)	
F005	Transmitter, 4-20 mA output	
F006	One Potentiometer, 1000 ohms plus 4-20 mA Transmitter (not available for units with internal amplifiers)	
F012	Tandem Potentiometers, 5000 ohms (not available for units with internal amplifiers)	
F013	Tandem Potentiometers, 10,000 ohms (not available for units with internal amplifiers)	
F999	Special Potentiometer (consult factory)	

Code	Description	Selection
<b>Identification/Certifications</b>		
J001	CE Marking (AC input only)	
J002	Stainless Steel Tags	
J004	One year extended warranty	
J005	Two year extended warranty	
<b>Auxiliary Switches</b>		
S005	Aluminum Cam	
S006	Aluminum Feedback Frame	
S009	Two Adjustable Position Switches, SPDT, 10 Amp, 120/240 Vac	
S010	Two Adjustable Position Switches, DPDT, 10 Amp, 120/240 Vac	
S013	Two nonadjustable end of travel position switches, SPDT, 00 Amp, 120/240 Vac	
<b>Painting/Coating</b>		
W001	JCI Standard Polyurethane Blue	
W002	Two Part Epoxy	
<b>Special Mechanical Options</b>		
Y017	SM-3300 metric mounting holes, 6mm	
Y018	LA-3300 metric mounting holes, 8mm	

For a full description of options, go to the Complete Listing of Options starting on page 197.

## TYPICAL WIRING DIAGRAM

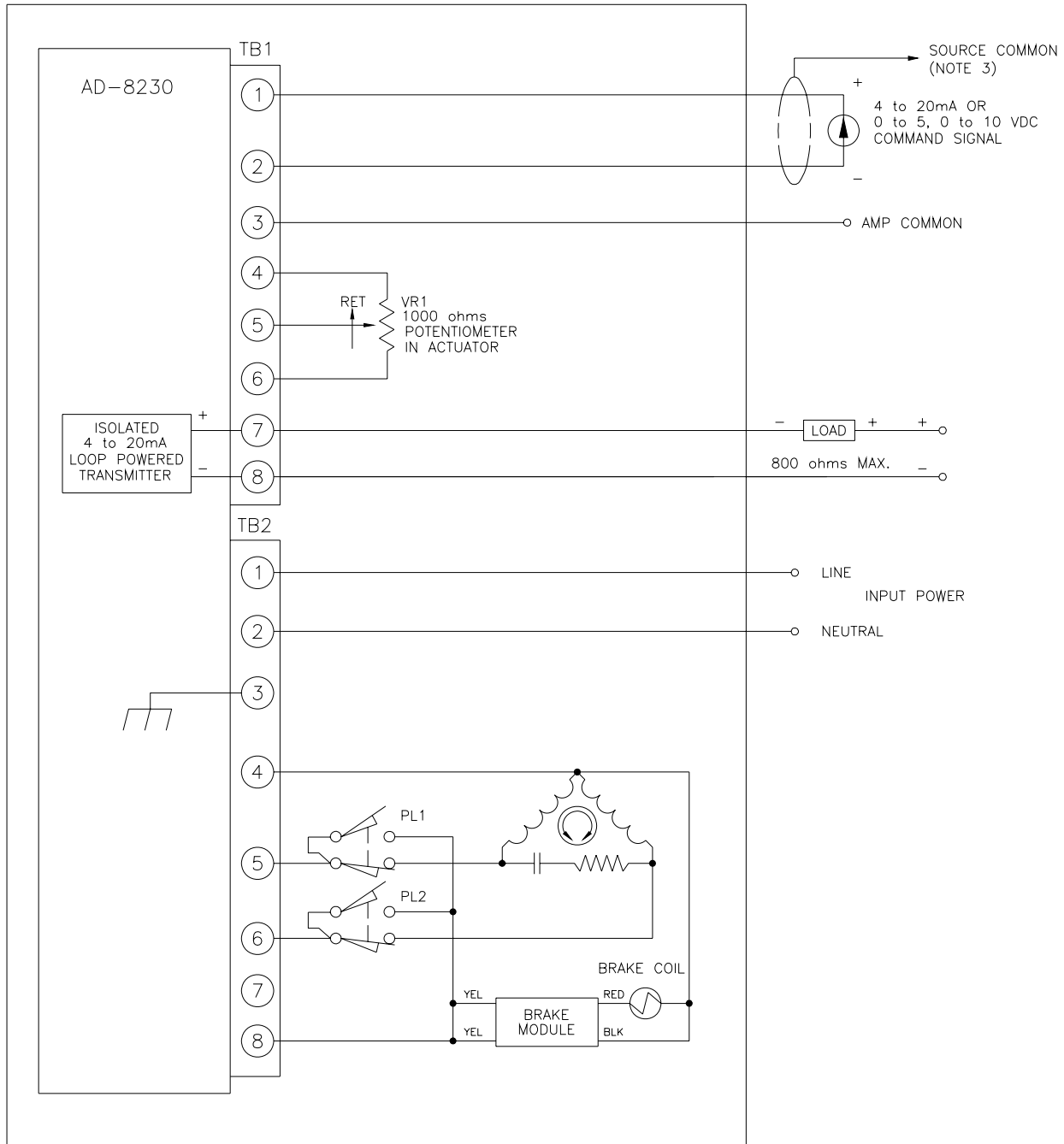
SM-3330-N, SM-3350-N, LA-3330-N & LA-3350-N



These dimensions and specifications are subject to change without notice.  
Current drawings and specifications are available upon request.

# TYPICAL WIRING DIAGRAM

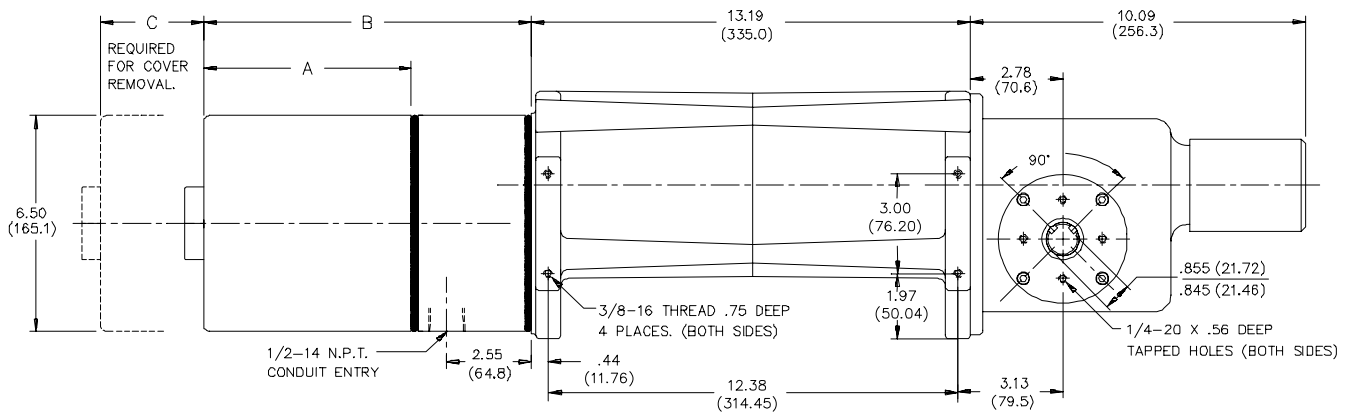
SM-3330-A, SM-3350-A, LA-3330-A & LA-3350-A



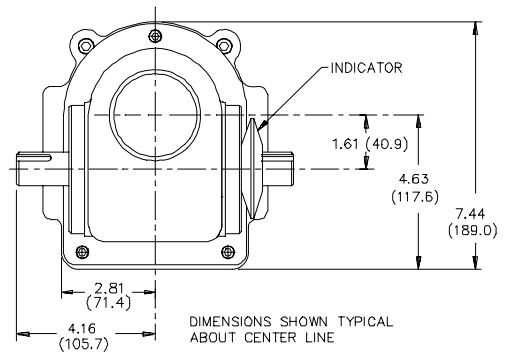
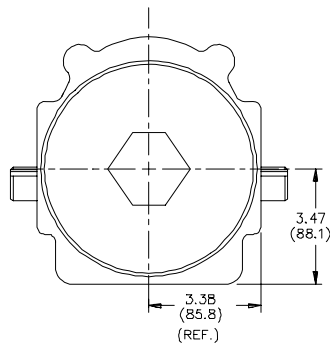
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# SM-3300 MAJOR DIMENSIONS

INCHES  
(MILLIMETERS)

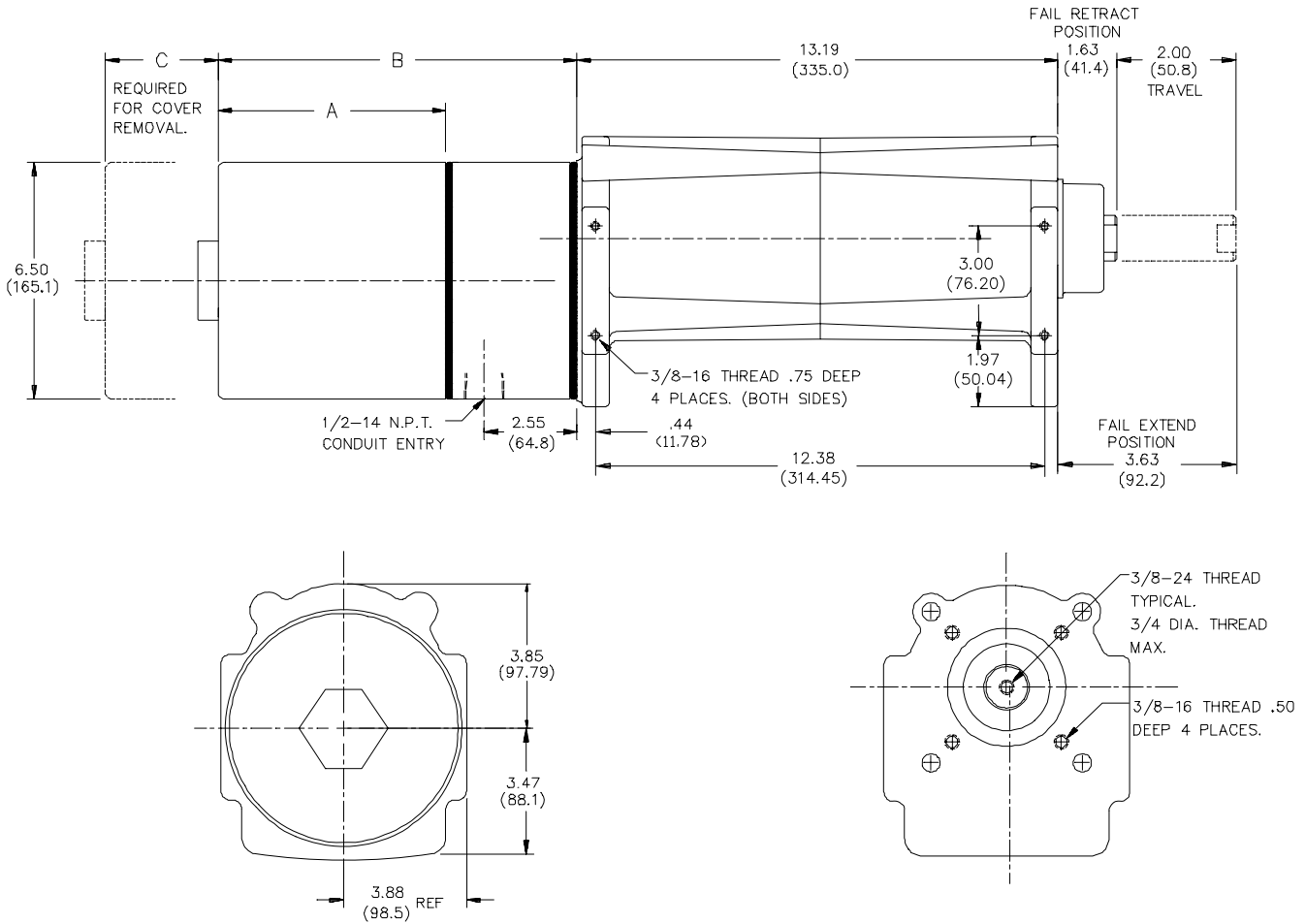


NOTE:  
KEYWAY LOCATION CORRESPONDS TO FAIL CW POSITION.  
OUTPUT SHAFT: 1.000/.998 (25.4/25.34) DIA.  
KEYWAY: .251/.253 WIDE



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# LA-3300 MAJOR DIMENSIONS



	A	B	C
Without Amplifier	6.88 (174.7)	9.86 (250.4)	7.00 (177.8)
With Amplifier	10.00 (254)	12.98 (329.7)	10.13 (257.3)

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