

25 and 50 lb-in. Spring Return Direct Coupled Actuators

ML6175, ML6275, ML7275, ML8175, ML9175
ML6185, ML6285, ML7285, ML8185, ML9185

DIN EN
ISO 9001



The 25 and 50 lb-in. Spring Return Direct Coupled Actuators (DCA) are control motors that provide floating, proportioning or two-position control for valves and dampers. The floating and proportioning motors accept a current, voltage, or resistance signal from a controller to position a damper or valve at any chosen point between fully open and fully closed.

SPECIFICATIONS

Electrical Ratings:

- Power Input: 24 Vac \pm 20%, 50/60 Hz.
- Power Consumption: 12 VA maximum at 24 Vac.
- Auxiliary Switch Ratings: 120, 240 Vac: 3 AFL, 18 ALR, 1A pilot duty.
- Control Cable Nonplenum UL/CSA rated, 30V, 60°C, 20 gauge cable.
- Auxiliary Switch: UL/CSA rated 300V 90°C, 18 gauge cable.

Torque Ratings (at Rated Voltages):

	25 lb-in. DCA	50 lb-in. DCA
	lb-in. (Nm)	
<input type="checkbox"/> Lift and Hold	25 (3)	50 (6)
<input type="checkbox"/> Breakaway Minimum	25 (3)	50 (6)
<input type="checkbox"/> Stall Minimum	25 (3)	50 (6)
<input type="checkbox"/> Stall Maximum	100 (11.3)	130 (15)

Actuator Stroke:

- 95° Nominal \pm 2°, mechanically limited.
- Rotation: Clockwise (CW); counter clockwise (CCW) by reverse mount.

Device Weight:

- 4.0 lb (1.82 kg).

Noise Rating (Driving only):

- 45 dBA maximum at 1.0m. (3 feet)

Environmental Protection Ratings:

- NEMA1 standard with shaft in the horizontal position.

Actuator Timing At 90° Stroke:

- 88 \pm 2 seconds synchronous at 60 Hz from 0°F to 140°F.
- 106 \pm 2 seconds at 50 Hz.
- Spring Wind Timing (Upon Power Restoration Only): 100 seconds nominal at 60 Hz, 120 seconds at 50 Hz.
- Spring Return Timing:
 - 10 seconds minimum per 90° at 72°F no load;
 - 30 seconds maximum per 90° at 72°F at rated load;
 - 5 minutes maximum at -30° F at rated load.

Humidity:

- 5 to 90 percent RH, noncondensing.

SPECIFICATION DATA

FEATURES

- Mounts directly on horizontal 3/8 in., 1/2 in., 5/8 in., and 3/4 in. round and square damper shafts by using the appropriate insert.
- Magnetic coupling eliminates the need for mechanical stops.
- 95° stroke compresses gaskets commonly used on low leakage dampers.
- Removable splined output hub permits premounting of the hub on the damper shaft, providing installation flexibility.
- Reversible mounting allows actuator to be used for either clockwise (cw) or counterclockwise (ccw) spring rotation.
- Full spring force available at any hub position by use of separate dc brush motor.
- Designed for single-point and three-point mounting.
- Available with or without time-out feature.
- Standard one-meter cable with color-coded leadwires.
- Two integral 1/2 in. conduit connections.

Temperature:

- Ambient -30°F to +140°F (-35°C to +60°C).
- Storage -30°F to 150°F (-35°C to +65°C).

Mounting:

- Mounts directly on 3/8 in. to 3/4 in. (10 to 19 mm) round or square shaft.
- Minimum Shaft Length Required: (actuator between hub and damper housing) 3.5 in. (76 mm); (hub mounted on shaft before actuator installed) 0.65 in. (16 mm) .
- Actuators shipped with 1/2 in (13 mm) hub insert.
- Universal Mounting Bracket included.

Approvals:

- UL94-5V(Enclosure) Plenum flammability rating.
- UL873 (Line voltage auxiliary switches).
- UL Listed: File Number E4436, Guide Number XAPX.
- CSA: File Number LR95329-17

Position Indicator:

- Mounted on actuator hub.

Actuator Design Life:

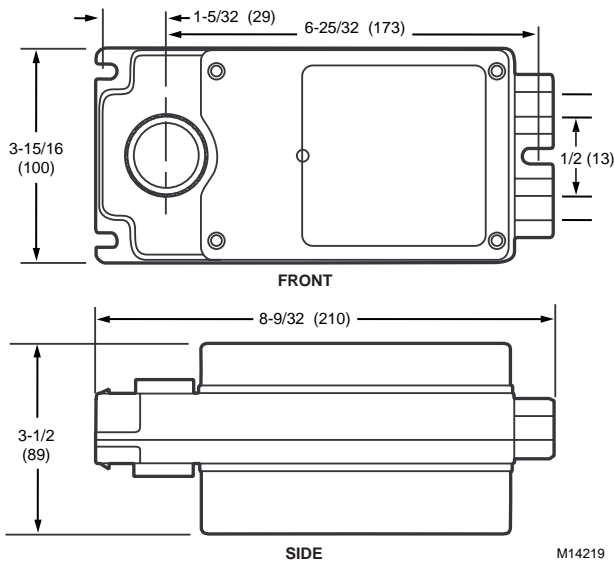
- Full Stroke Cycles: 60,000.
- Repositions: 1,500,000.
- Spring Return Cycles: 7,500.



Models:

ML	Motor Linkage
<input type="checkbox"/> 61	Floating Control
<input type="checkbox"/> 62	Floating Control w/resistance feedback
<input type="checkbox"/> 72	4-20 mA/2-10 Vdc Control w/2-10 Vdc feedback
<input type="checkbox"/> 81	2-position Control
<input type="checkbox"/> 91	Series 90 Control (Electronic and 135 ohm)
<input type="checkbox"/> 7	25 lb. in. (3 Nm)
<input type="checkbox"/> 8	50 lb. in. (6 Nm)
5	Spring Return
<input type="checkbox"/> A	Standard
<input type="checkbox"/> C	Includes 2 SPDT auxiliary switches
<input type="checkbox"/> D	Includes timeout
<input type="checkbox"/> F	Includes timeout and 2 SPDT auxiliary switches
ML	
5	
	XXXX Varies by Model

Dimensions:



TYPICAL SPECIFICATION

Power-fail return actuator shall be direct coupled type that requires neither crankarm nor linkage and be capable of direct mounting to a jackshaft of up to one inch diameter. The actuator shall connect to the square or round shaft using a removable output hub with inserts that match shaft type and size, and provide concentric mounting. Actuators shall have integral conduit connections. The actuator must provide two-position, floating, or proportional control.

Upon power failure the hub must return by a spring-type mechanism internal to the actuator. During normal (powered) operation the spring must be fully wound and spring force must be locked out of the gear train. This ensures that the spring not be wound and unwound during every actuator reposition. It also ensures full spring force availability at any hub position. The actuator design must be for use in either clockwise or counterclockwise fail-safe operation.

Actuators shall use a true synchronous ac stepper motor to drive the output hub and a second dc brush motor to wind the spring. Run time shall be constant and independent of load, temperature and supply voltage (within product-family specifications). Overload protection shall be provided at all angles of rotation by a magnetic clutch mechanism that provides an absolute limit to the output torque without a physical link between the motor and the gear train.

Actuators shall have a minimum performance of 60,000 full-stroke powered cycles, 7,500 spring-return cycles, and 1,500,000 repositions documented in the product data literature. Actuators shall be UL and CSA listed, manufactured under ISO 9001 International Quality Control Standards.

Accessories

- 205617 Hub Insert, 3/4 in. (19 mm).
- 205753 Hub Insert, 3/8 in. (10 mm).
- 205758 Hub Insert, 5/8 in. (16 mm).
- 205820A 3-Point Mounting Kit.
- 205830A Crank-Arm Accessory.
- 205840A Tandem Mounting Kit (Series 61,62 and 80 only).
- 205850B Adjustable Stroke Stop Kit.
- 205860 Remote Minimum Position Potentiometer.
- 205860A Remote Minimum Position Potentiometer (NEMA 4).
- 205870 Shaft Adapter, 1 in. (25 mm) with Crank-Arm.
- 205880 Shaft Adapter, 1 in. (25 mm).

