

RLH-24, RLH-24-S, RLH-120, RLH-120-S Spring Return Direct Coupled Actuators



RLH-24, RLH-24-S, RLH-120, RLH-120-S Spring Return Direct Coupled Actuators (DCA) are used within heating, ventilating, and air-conditioning (HVAC) systems.

Applications include:

- Volume control dampers, mounted directly to the drive shaft or remotely (with the use of accessory hardware).

SPECIFICATIONS

Torque Ratings:

- Typical Holding, Driving, Spring Return: 175 lb-in. (20 N·m).
- Stall Maximum (fully open at 75°F): 350 lb-in. (39.6 N·m).

Electrical Ratings:

- See Table 1.

Electrical Connections:

- Field wiring 14 to 22 AWG (2.0 to 0.344 mm sq) to screw terminals, located under the removable access cover.

Stroke:

- 95° ±3°, mechanically limited.

Controller Type:

- Two-position: on/off.

Timing (At Rated Torque and Voltage):

- Drive Open (typical): 45 seconds ±5 seconds.
- Spring Close: 20 seconds typical.

Temperature Ratings:

- Ambient: -40°F to 140°F (-40°C to 60°C).
- Shipping and Storage: -40°F to 158°F (-40°C to 70°C).

Humidity Ratings:

- 5% to 95% RH noncondensing.

Design Life (at Rated Voltage):

- 50,000 full stroke cycles; 50,000 full stroke spring returns.

End Switches (Two SPDT):

- Settings (fixed): 7° nominal stroke, 85° nominal stroke.
- Ratings (maximum load):
 - Low-Voltage Models: 250 Vac, 5A resistive, 3A inductive.
 - Line-Voltage Models: 250 Vac, 5A resistive.

Dimensions:

- See Fig. 1.

Device Weight:

- 7 lb (3.2 kg).

SPECIFICATION DATA

FEATURES

- Brush DC submotor with electronic stall protection for 2-position models.
- Self-centering shaft adapter (shaft coupling) for wide range of shaft sizes.
- Models available with line-voltage internal end switches (RLH-24-S and RLH-120-S).
- Access cover to facilitate connectivity.
- Metal housing with built-in mechanical end limits.
- Spring return direction field-selectable.
- Shaft position indicator and scale.
- Manual winding capability with locking function.
- UL (cUL) listed and CE compliant.
- All Models are plenum-rated per UL873.

Mounting:

- Self-centering shaft adapter (shaft coupling).
 - Round Damper Shafts: 0.375 to 1.06 in. (10 to 27 mm).
 - Square Damper Shafts: 1/2 to 3/4 in. (13 to 19 mm).
 - Actuator can be mounted with shaft in any position.

Minimum Damper Shaft Length:

- 1 in. (25 mm); 3 in. (76 mm) recommended.

Noise Rating at 1m (Maximum):

- Holding: 20 dBA (no audible noise).
- Driving: 50 dBA.
- Spring Return: 65 dBA.

Environmental Protection Ratings:

- NEMA2 when mounted on horizontal shaft with access cover below the shaft.

Approvals:

- UL/cUL.
- UL873 Plenum Rating, File No. E4436; Guide No. XAPX.
- CE.
- C-TICK.

Accessories:

- 32000085-001 Water-tight Cable Gland/Strain-relief Fitting (10 pack).
- 32003036-001 Weather Enclosure.
- 50005859-001 NEMA 4/4X Enclosure.



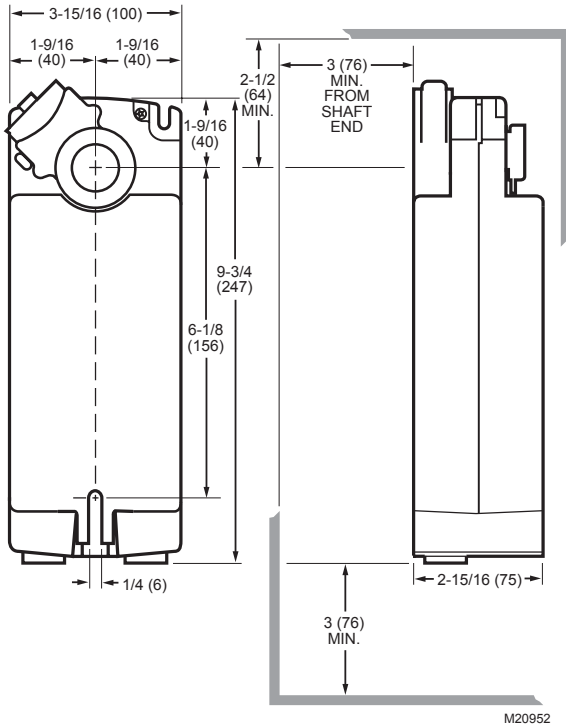


Fig. 1. Dimensional drawing of actuator in in. (mm).

Table 1. Electrical Ratings.

Model(s)	Power Input		Power Consumption (VA)	
	Voltage	Frequency	Driving	Holding
RLH-24, RLH-24-S	24 Vac ±20% (Class 2), 24 Vdc	50/60 Hz.	40	8
RLH-120, RLH-120-S	100-250 Vac	50/60 Hz.	60	13

TYPICAL SPECIFICATION

Spring return actuators shall be direct coupled type requiring neither crankarm nor linkage and be capable of direct mounting to a jackshaft of up to 1.05 in. diameter. The actuator shall connect to the shaft using a removable output hub with a self-centering shaft coupling. This coupling shall provide concentric mounting and include an integral adjustable range-stop mechanism.

The actuator shall provide two-position control. Actuators shall provide wiring terminals located within an integral access cover with conduit connections. Two-position actuators shall use a brush DC submotor with a microprocessor control protected from overload at all angles of rotation.

All spring return actuators must be designed for either clockwise or counterclockwise fail-safe operation with a continuously engaged mechanical return spring. This spring must return the actuator to a fail-safe position within 20 seconds of power loss. All actuators shall provide a means of manually positioning the output hub in the absence of power. All actuators shall be designed for a minimum of 50,000 full-stroke cycles at actuator rated torque and temperature, 50,000 spring-return cycles and 1,500,000 repositions as documented in the product literature. Run time shall be constant and independent of: load, temperature, and supply voltage (within specifications). All actuators shall be UL873 and cUL (CSA22.2) listed, have a five year warranty, and be manufactured under ISO 9001 International Quality Control Standards.

Ruskin Company

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Spring Return Direct Coupled Actuators

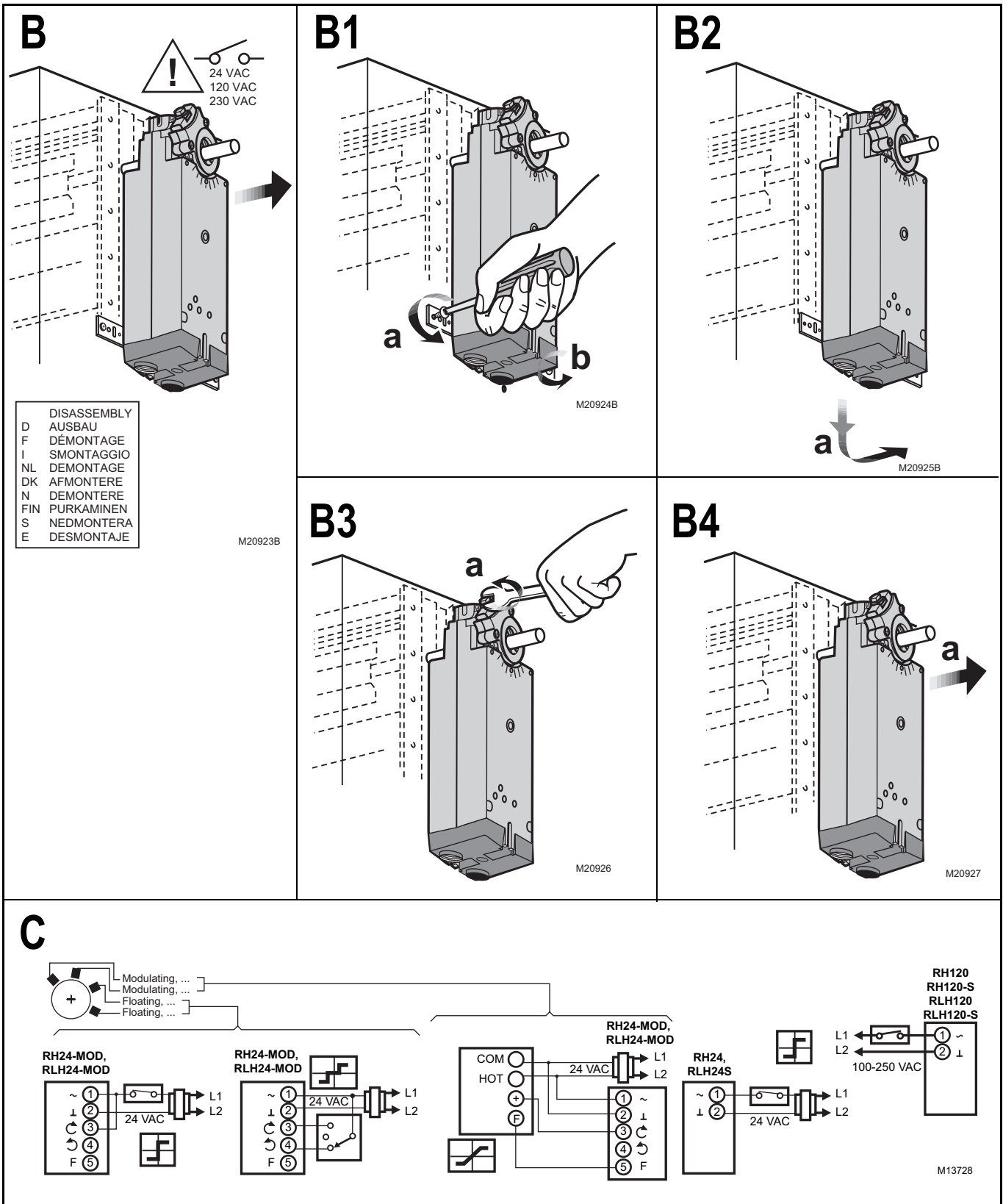
RH24, RH24-S, RH24-MOD, RH120, RH120-S, RLH24, RLH24-S, RLH24-MOD, RLH120, AND RLH120-S

INSTALLATION INSTRUCTIONS

<p>A</p> <p> ! 24 VAC 120 VAC 230 VAC </p> <p> ASSEMBLY D EINBAU F MONTAGE I MONTAGGIO NL MONTAGE DK MONTERE N MONTERING FIN ASENTAMINEN S MONTERA E MONTAJE </p> <p>M20918B</p>	<p>A1, A4</p> <p>M20919B</p>	<p>A2</p> <p>M20920B</p>
<p>A3</p> <p>M12030</p>	<p>A5</p> <p>M20921B</p>	<p>A6</p> <p>M20922B</p>



SPRING RETURN DIRECT COUPLED ACTUATORS



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Printed in U.S.A. on recycled paper containing at least 10% post-consumer paper fibers.