

LMB24-3-S

On/Off, Floating Point, Non-Spring Return, 24 V



Technical Data

Power Supply	24 VAC, $\pm 20\%$, 50/60 Hz, 24 VDC, $\pm 10\%$
Power consumption in operation	1.5 W
Power consumption in rest position	0.2 W
Transformer sizing	2.5 VA (class 2 power source)
Shaft Diameter	1/4" to 5/8" round, centers on 5/8", 3/4" clamp available
Electrical Connection	18 GA plenum cable with 1/2" conduit connector, degree of protection NEMA 2 / IP54, 3 ft [1 m] 10 ft [3 m] and 16ft [5 m]
Overload Protection	electronic throughout 0° to 95° rotation
Input Impedance	600 Ω
Angle of rotation	Max. 95°, adjustable with mechanical stop
Torque motor	45 in-lb [5 Nm]
Direction of rotation motor	reversible with built-in switch
Position indication	Mechanically, 30...65 mm stroke
Manual override	external push button
Running Time (Motor)	default 95 s, variable 35, 45, 60, 150 s, constant, independent of load
Ambient humidity	max. 95% r.H., non-condensing
Ambient temperature	-22...122°F [-30...50°C]
Storage temperature	-40...176°F [-40...80°C]
Degree of Protection	IP54, NEMA 2, UL Enclosure Type 2
Housing material	UL94-5VA
Agency Listing	cULus acc. to UL60730-1A/-2-14, CAN/CSA E60730-1:02, CE acc. to 2004/108/EC and 2006/95/EC
Noise level, motor	35 dB(A)
Maintenance	maintenance-free
Quality Standard	ISO 9001
Weight	1.4 lb [0.65 kg]
Auxiliary switch	1 x SPDT, 3 A resistive (0.5 A inductive) @ AC 250 V, adjustable 0...100%

†Rated Impulse Voltage 800V, Type of Action 1.AA.B, Control Pollution Degree 3.

Torque min. 45 in-lb, for control of damper surfaces up to 11 sq. ft.

Application

For On/Off and floating point control of dampers in HVAC systems. Actuator sizing should be done in accordance with the damper manufacturer's specifications.

The actuator is mounted directly to a damper shaft from 1/4" up to 5/8" in diameter by means of its standard universal clamp. Shafts up to 3/4" diameter can be accommodated by an accessory clamp.

Operation

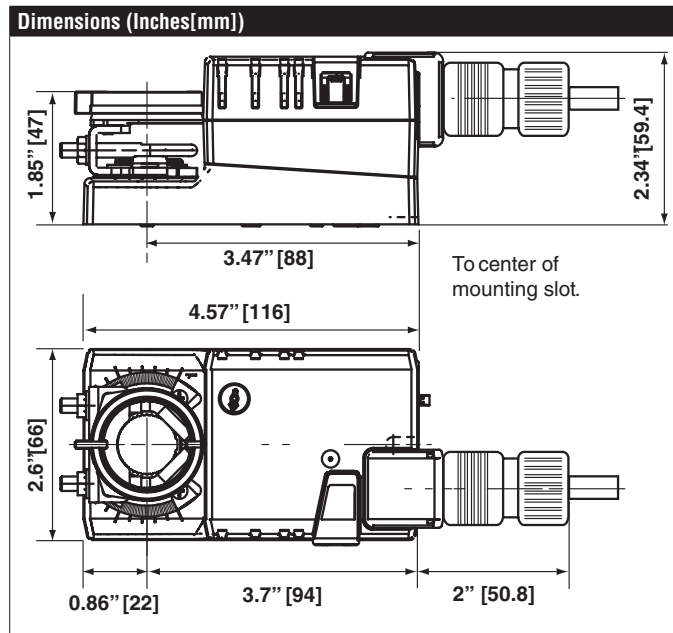
The actuator is not provided with and does not require any limit switches, but is electronically protected against overload. The anti-rotation strap supplied with the actuator will prevent lateral movement.

The LMB series provides 95° of rotation and a visual indicator which indicates position of the actuator. When reaching the damper or actuator end position, the actuator automatically stops. The gears can be disengaged with manual release on the actuator cover.

The LMB24-3... actuators use a sensorless brushless DC motor, which is controlled by an Application Specific Integrated Circuit (ASIC). The ASIC monitors and controls the actuator's rotation and provides a digital rotation sensing (DRS) function to prevent damage to the actuator in a stall condition. Power consumption is reduced in holding mode.

The LMB24-3-S version is provided with one built-in auxiliary switch. This SPDT switch is provided for safety interfacing or signaling, for example, for fan start-up. The switching function is adjustable 0 to 95°. The auxiliary switch is double insulated so an electrical ground connection is not necessary.

Add-on auxiliary switches or feedback potentiometers are easily fastened directly onto the actuator body for signaling and switching functions.




Safety Notes

WARNING: For Belimo products sold in California: these products do or may contain chemicals which are known to the State of California to cause cancer and or birth defects or other reproductive harms. For more information see www.p65warnings.ca.gov.

Typical Specification

Floating point, on/off control damper actuators shall be electronic direct-coupled type, which require no crank arm and linkage and be capable of direct mounting to a shaft from 1/4" to 5/8". Shafts up to 3/4" diameter can be accommodate with an accessory clamp. Actuators shall have brushless DC motor technology and be protected from overload at all angles of rotation. Actuators shall have reversing switch and manual override on the cover. If required, actuator will be provided with screw terminal strip for electrical connections [LMB(X)24-3-T]. If required, actuators shall be provided with one adjustable SPDT auxiliary switch. Actuators with auxiliary switches must be constructed to meet the requirements for double insulation so an electrical ground is not required to meet agency listings. Run time shall be constant and independent of torque. Actuators shall be cULus listed, have a 5-year warranty, and be manufactured under ISO 9001 International Quality Control Standards. Actuators shall be as manufactured by Belimo.


Wiring Diagrams


 Apply only AC line voltage or only UL-Class 2 voltage to the terminals of auxiliary switches. Mixed or combined operation of line voltage/safety extra low voltage is not allowed.


 Actuators with appliance cables are numbered.

 Provide overload protection and disconnect as required.

 Actuators may also be powered by 24 VDC.

 Actuators Hot wire must be connected to the control board common. Only connect common to neg. (-) leg of control circuits. Terminal models (-T) have no-feedback.

 Actuators may be connected in parallel if not mechanically linked. Power consumption and input impedance must be observed.

 One built-in auxiliary switch (1x SPDT), for end position indication, interlock control, fan startup, etc.

