

LMQX24-1 Technical Data Sheet

On/Off, Non-Spring Return, 24 V



Technical Data

Power Supply	24 VAC, $\pm 20\%$, 50/60 Hz, 24 VDC, $\pm 10\%$
Power consumption in operation	13 W
Power consumption in rest position	1.5 W
Transformer sizing	23 VA (class 2 power source) (I _{max} 20A @ 5ms)
Shaft Diameter	1/2...1.05" round, centers on 1/2" and 3/4" with insert, 1.05" without insert
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...95° rotation
Input Impedance	1000 Ω
Angle of rotation	adjustable with mechanical end stop, 30...95°
Torque motor	35 in-lb [4 Nm]
Direction of motion motor	selectable with switch 0/1
Position indication	Mechanically, 30...65 mm stroke
Manual override	external push button
Running Time (Motor)	default 2.5 s, variable 5 or 10 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 2014/30/EU and 2014/35/EU
Noise level, motor	52 dB(A)
Servicing	maintenance-free
Quality Standard	ISO 9001
Weight	1.4 lb [0.65 kg]

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

Torque min. 35 in-lb, for control of damper surfaces up to 11 sq. ft.

Application

For On/Off 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 1/2" up to 1.05" in diameter by means of its standard universal clamp.

Operation

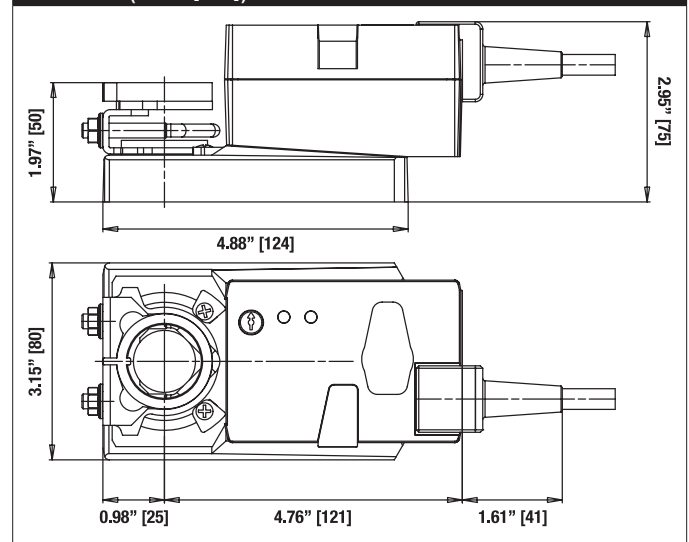
The actuator is not provided with and does not require any limit switches, but is electronically protected against overload. The anti-rotation strap supplied with the actuator will prevent lateral movement.

The LMQB(X) 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 LMQB(X)24-1 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.

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

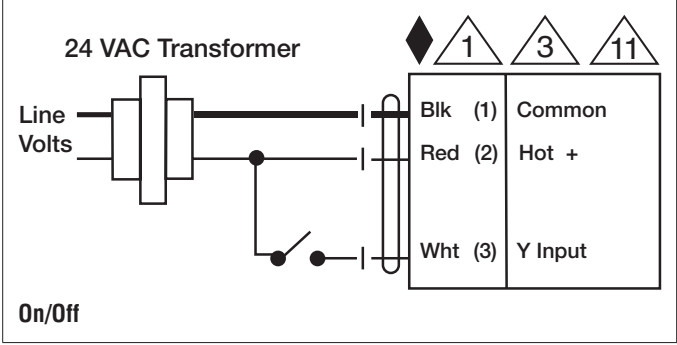
Dimensions (Inches[mm])



Typical Specification

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 ½" to 1.05". 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. 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



- 1 Provide overload protection and disconnect as required.
- 3 Actuators may also be powered by 24 VDC.
- 11 Actuators may be connected in parallel if not mechanically linked. Power consumption and input impedance must be observed.