

# NMQB24-1

## On/Off, Non-Spring Return, 24 V



Technical Data	
Power Supply	24 VAC $\pm$ 20%, 50/60 Hz, 24 VDC $\pm$ 10%
Power Consumption Running	13 W
Power Consumption Holding	1.5 W
Transformer Sizing	23 VA (class 2 power source) (I max 20A@5ms)
Electrical Connection	18 GA plenum rated cable with 1/2" conduit connector protected NEMA 2 (IP54) 3ft [1m] 10ft [3m] and 16ft [5m]
Overload Protection	electronic throughout 0° to 95° rotation
Input Impedance	1000 $\Omega$
Angle of Rotation	adjustable with mechanical end stop, 30° to 95°
Torque	70 in-lbs [8 Nm] minimum
Direction of Rotation (Motor)	reversible with switch
Position Indication	reflective visual indicator (snap on)
Manual Override	external push button
Running Time (Motor)	4 sec constant, independent of load
Humidity	5 to 95% RH non condensing (EN 60730-1)
Ambient Temperature Range	-22°F to 122°F [-30°C to 50°C]
Storage Temperature Range	-40°F to 176°F [-40°C to 80°C]
Housing	NEMA 2, IP54, UL enclosure type 2
Housing Material	UL94-5VA
Agency Listings†	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)	max. 45 dB (A)
Servicing	maintenance free
Quality Standard	ISO 9001
Weight	2 lb [0.9 kg]

†Rated Impulse Voltage 800V, Type action 1, Control Pollution Degree 3.

**Torque min. 70 in-lb, for control of damper surfaces up to 17 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 up to 1.05" in diameter by means of its universal clamp, 1/2" self-centered default. A crank arm and several mounting brackets are available for applications where the actuator cannot be direct coupled to the damper shaft.

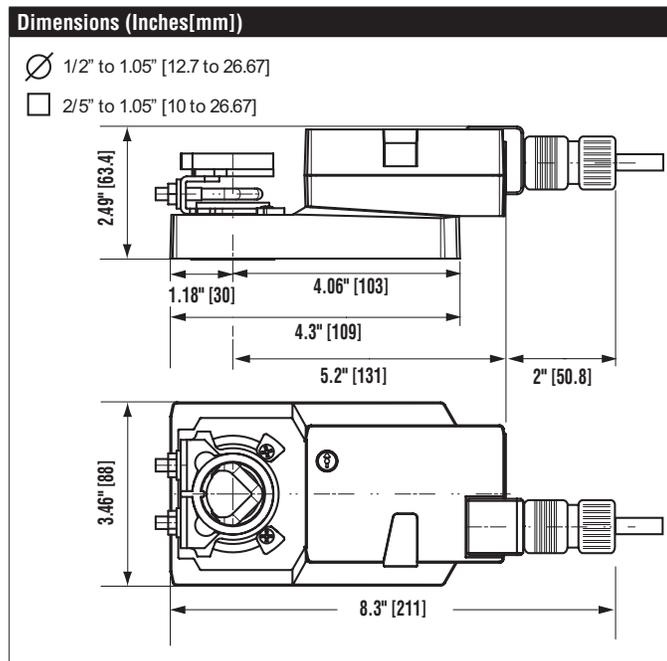
### Operation

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 NMQB(X) series provides 95° of rotation and a visual indicator indicates position of the actuator. When reaching the damper or actuator end position, the actuator automatically stops. The gears can be manually disengaged with a button on the actuator cover.

The NMQB(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.



**Typical Specification**

On/Off electronic fail-safe damper actuators shall be electronic direct-coupled type, which require no crank arm and linkage and be capable of direct mounting to a shaft up to 1.05" diameter. 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. 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**

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

