

# AMQB(X)24-1

On/Off, Non-Spring Return, 24 V



| Technical Data        | AMQB(X)24-1  |
|-----------------------|--|
| Power supply          | 24 VAC $\pm 20\%$ 50/60 Hz<br>24 VDC $\pm 10\%$  |
| Power consumption     | 15 W (1.5 W)   |
| Transformer sizing    | 26 VA (Class 2 power source)   |
| Electrical connection | 3 ft [1m] 10 ft [3m] 16 ft [5m]<br>18 GA plenum rated cable<br>protected NEMA 2 (IP54)             |
| Overload protection   | electronic throughout 0 to 95° rotation  |
| Control               | on/off   |
| Input impedance       | 1000 $\Omega$  |
| Angle of rotation     | min. 30°, max. 95°, adjust. with mechanical stop   |
| Torque                | 140 in-lb [16 Nm]  |
| Direction of rotation | reversible with  switch  |
| Position indication   | reflective visual indicator (snap-on)  |
| Manual override       | external push button   |
| Running time          | 7, 10, 15 or 20 seconds<br>constant independent of load  |
| Humidity              | 5 to 95% RH non-condensing (EN 60730-1)  |
| Ambient temperature   | -22°F to 122°F [-30°C to 50°C]   |
| Storage temperature   | -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 UL 60730-1A/-2-14,<br>CAN/CSA E60730-1:02,<br>CE acc. to 2004/108/EEC and 2006/95/EC |
| Noise level           | <52 dB(A)  |
| Servicing             | maintenance free   |
| Quality standard      | ISO 9001   |
| Weight                | 3.75 lbs [1.7 kg]  |

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

Torque min. 140 in-lb for control of damper surfaces up to 35 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, 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.

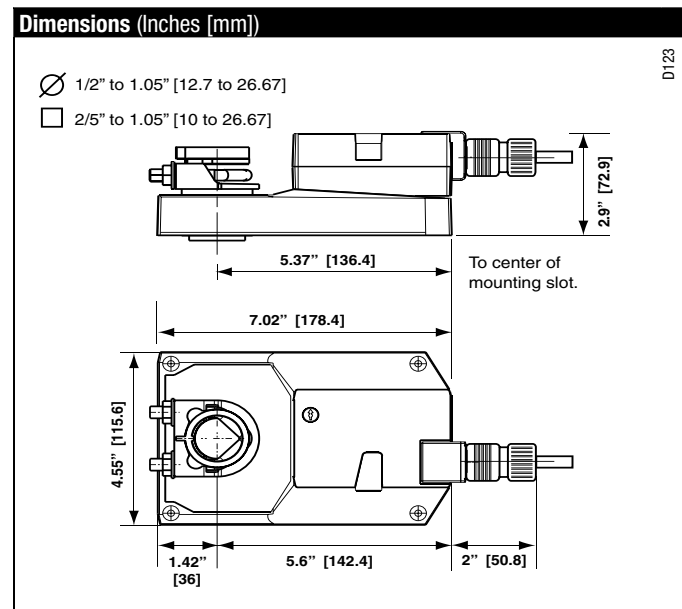
## Operation

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 AMQB(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 AMQB(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.



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| Accessories       |  |
|-------------------|--|
| K-GM20            | ½" -1.05" Shaft Clamp                    |
| ZG-100            | Universal Mounting Bracket               |
| ZG-102            | Universal Mounting Bracket               |
| Z-GMA             | Retrofit Mounting Bracket                |
| ZG-NMA            | Crank arm Adaptor Kit                    |
| AV8-25            | Universal Shaft Extension                |
| ZG-JSA (-1, 2, 3) | Jackshaft Adaptors for Hollow Jackshafts |
| ZS-100            | Weather Shield - Steel                   |
| ZS-150            | Weather Shield - Polycarbonate           |
| ZS-260            | Explosion Proof Housing                  |
| ZS-300 (-1) (-5)  | NEMA 4X Housing                          |
| Tool-06           | 8 mm & 10 mm Wrench                      |
| PS-100            | Actuator Power Supply Simulator          |
| S1A, S2A          | Auxiliary Switch (es)                    |
| P370              | Shaft Mount Auxiliary Switch             |
| P...A             | Feedback Potentiometers                  |

**NOTE:** When using AMQB(X)24-1 actuators, only use accessories listed on this page.

### 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 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 Diagram

#### INSTALLATION NOTES

- 1 Provide overload protection and disconnect as required.
- 3 Actuators may also be powered by 24 VDC.

#### APPLICATION NOTES

- Meets cULus or UL and CSA Standard requirements without the need of an electrical ground connection.

#### WARNING Live Electrical Components!

During installation, testing, servicing and troubleshooting of this product, it may be necessary to work with live electrical components. Have a qualified licensed electrician or other individual who has been properly trained in handling live electrical components perform these tasks. Failure to follow all electrical safety precautions when exposed to live electrical components could result in death or serious injury.

