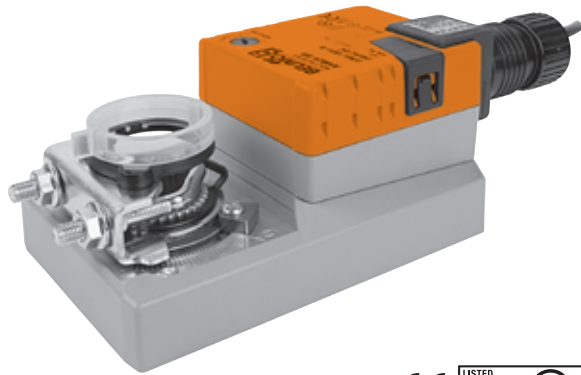


AMB(X)24-SR

Proportional Control, Non-Spring Return, Direct Coupled, 24V, for 2 to 10 VDC and 4 to 20 mA



| Technical Data | AMB(X)24-SR |
|-----------------------|---|
| Power Supply | 24 VAC \pm 20% 50/60 Hz 24 VDC \pm 10% |
| Power Consumption | 2.5 W (0.4 W) |
| Transformer Sizing | 5 VA (Class 2 power source) |
| Electrical Connection | 18 GA plenum rated cable 1/2" conduit connector Protected NEMA 2 (IP54) <input type="checkbox"/> 3 ft [1m] <input type="checkbox"/> 10 ft [3m] <input type="checkbox"/> 16 ft [5m] |
| Overload Protection | electronic throughout 0 to 95° rotation |
| Operating Range Y | 2 to 10 VDC, 4 to 20 mA |
| Input Impedance | 100 k Ω (0.1 mA), 500 Ω |
| Feedback Output U | 2 to 10 VDC (max 0.5 mA) |
| Angle of Rotation | max. 95°, adjust. with mechanical stop |
| Torque | 180 in-lb [20 Nm] |
| Direction of Rotation | reversible with / switch Actuator will move: =CCW with decreasing control signal (10 to 2V) =CW with decreasing control signal (10 to 2V) |
| Position Indication | reflective visual indicator (snap-on) |
| Manual Override | external push button |
| Running Time | <input type="checkbox"/> 300 <input type="checkbox"/> 150 <input type="checkbox"/> 95 seconds 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, CAN/CSA E60730-1:02, CE acc. to 2004/108/EEC and 2006/95/EC |
| Noise Level | <45dB(A) |
| Servicing | maintenance free |
| Quality Standard | ISO 9001 |
| Weight | 2.2 lbs [1000 Kg] |

AMB(X)24-SR-T

| | |
|-----------------------|---|
| Electrical connection | screw terminal (for 26 to 14 GA wire) <input type="checkbox"/> unprotected (NEMA 1/IP20) <input type="checkbox"/> protected (NEMA 2/IP20) |
|-----------------------|---|

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

Torque min. 180 in-lb for control of damper surfaces up to 45 sq ft.

Application

For proportional modulation 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 crankarm and several mounting brackets are available for applications where the actuator cannot be direct coupled to the damper shaft.

The actuator operates in response to a 2 to 10 VDC, or with the addition of a 500 Ω resistor, a 4 to 20 mA control input from an electronic controller or positioner. A 2 to 10 VDC feedback signal is provided for position indication or master-slave applications.

Operation

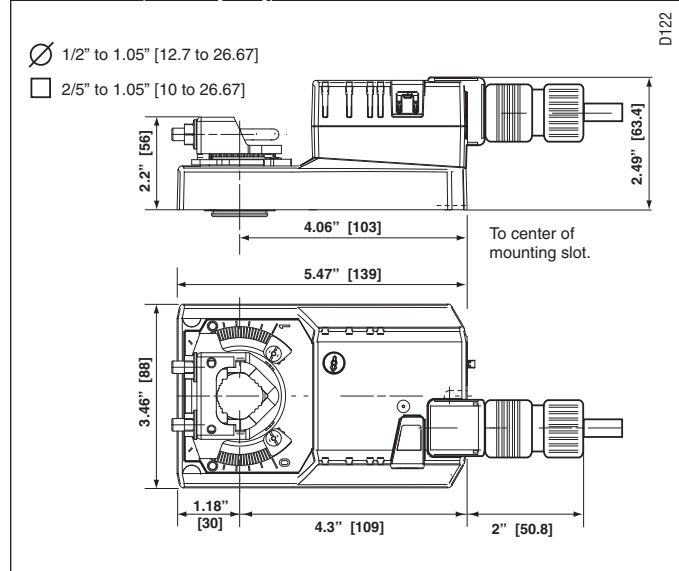
The actuator is not provided with and does not require any limit switches, but is electronically protected against overload. The anti-rotation strap supplied with the actuator will prevent lateral movement.

The AMB(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 AMB(X)24-SR... 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])



K20901 - 01/09 - Subject to change. © Belimo Aircontrols (USA), Inc.

Accessories

| | |
|-------------------|--|
| K-SA | Reversible Clamp |
| ZG-100 | Universal Mounting Bracket |
| ZG-101 | Universal Mounting Bracket |
| ZG-103 | Universal Mounting Bracket |
| ZG-104 | Universal Mounting Bracket |
| Z-SMA | AM/SM to AM Retrofit Mounting Bracket |
| ZG-NMA | Crankarm Adaptor Kit |
| AV8-25 | Universal Shaft Extension |
| ZG-JSA (-1, 2, 3) | Jackshaft Adaptors for Hollow Jackshafts |
| ZS-T | Terminal Cover NEMA 2 |
| 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 |
| S1A, S2A | Auxiliary Switch (es) |
| P370 | Shaft Mount Auxiliary Switch |
| P...A | Feedback Potentiometers |
| SGA24 | Min positioners in NEMA 4 housing |
| SGF24 | Min positioners for flush panel mounting |
| PTA-250 | Pulse Width Modulation Interface |
| IRM-100 | Input Rescaling Module |
| ADS-100 | Analog to Digital Switch |
| ZG-R01 | Resistor for 4 to 20 mA Conversion |
| NSV24 US | Battery Back-Up Module |
| ZG-X40 | Transformer |

NOTE: When using AMB(X)24-SR... actuators, only use accessories listed on this page.

Typical Specification

Proportional control damper actuators shall be electronic direct-coupled type, which require no crankarm and linkage and be capable of direct mounting to a shaft up to 1.05" diameter. Actuators must provide proportional damper control in response to a 2 to 10 VDC or, with the addition of a 500 Ω resistor, a 4 to 20 mA control input from an electronic controller or positioner. 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 (AMX24-SR-T). Run time shall be constant and independent of torque. A 2 to 10 VDC feedback signal shall be provided for position indication. 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.
- 2 **CAUTION Equipment damage!**
Actuators may be connected in parallel.
Power consumption and input impedance must be observed.
- 3 Actuators may also be powered by 24 VDC.
- 5 Only connect common to neg. (-) leg of control circuits.

APPLICATION NOTES

- The ZG-R01 500 Ω resistor converts the 4 to 20 mA control signal to 2 to 10 VDC, up to 2 actuators may be connected in parallel.

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.

