



5-year warranty



Technical data

| | | |
|------------------------|------------------------------------|--|
| Electrical data | Nominal voltage | AC/DC 24 V |
| | Nominal voltage frequency | 50/60 Hz |
| | Power consumption in operation | 1.5 W |
| | Power consumption in rest position | 0.5 W |
| | Power consumption for wire sizing | 3 VA |
| | Transformer sizing | 3 VA (class 2 power source) |
| | Electrical Connection | 18 GA plenum cable, 3 ft [1 m], with 1/2" conduit connector |
| | Overload Protection | electronic throughout full stroke |
| Functional data | Actuating force motor | 150 N [35 lbf] |
| | Operating range Y | 2...10 V |
| | Operating range Y note | 4...20 mA w/ ZG-R01 (500 Ω, 1/4 W resistor) |
| | Input Impedance | 100 kΩ for 2...10 V (0.1 mA), 500 Ω for 4...20 mA |
| | Position feedback U | 2...10 V |
| | Position feedback U note | Max. 0.5 mA |
| | Direction of motion motor | reversible with switch |
| | Manual override | external push button |
| | Stroke | 4" [100 mm] |
| | Running Time (Motor) | 150 s / 100 mm |
| Noise level, motor | 35 dB(A) | |
| Safety data | Degree of protection IEC/EN | IP54 |
| | Degree of protection NEMA/UL | NEMA 2 |
| | Enclosure | UL Enclosure Type 2 |
| | Agency Listing | cULus acc. to UL60730-1A/-2-14, CAN/CSA E60730-1:02, CE acc. to 2014/30/EU and 2014/35/EU; Listed to UL 2043 - suitable for use in air plenums per Section 300.22(c) of the NEC and Section 602.2 of the IMC |
| | Quality Standard | ISO 9001 |
| | Ambient temperature | -22...122°F [-30...50°C] |
| | Storage temperature | -40...176°F [-40...80°C] |
| | Ambient humidity | Max. 95% RH, non-condensing |
| | Servicing | maintenance-free |
| | Materials | Housing material |

Footnotes †Rated Impulse Voltage 800V, Type of Action 1, Control Pollution Degree 2.

Product features

Application For proportional modulation of dampers in HVAC systems. Actuator sizing should be done in accordance with the damper manufacturer's specifications. The actuator operates in response to a 2...10 V, or with the addition of a 500 Ω resistor, a 4...20 mA control input from an electronic controller or positioner.

A 2...10 V 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 actuator provides 4" [100 mm] of linear stroke. The stroke of the gear rack can be adjusted on both sides in increments of 0.8 in [20 mm] by means of the mechanical end stops. 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 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.






Typical specification Proportional 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 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.

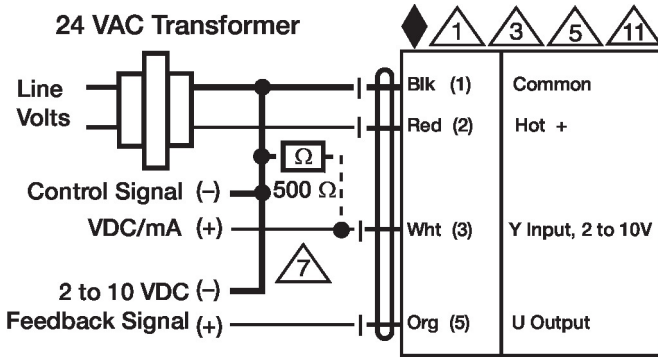
Actuators shall have brushless DC motor technology and be protected from overload at all angles of rotation. Actuators shall have reversing switch and manual override on the cover of the actuator. Run time shall be constant and independent of torque. Actuators shall be cULus listed, have a 5-year warranty, and be manufactured under ISO 9001 International Quality Control Standards. Actuators shall be as manufactured by Belimo.

Accessories

| Electrical accessories | Description | Type |
|------------------------|--|----------|
| | <p>DC Voltage Input Rescaling Module</p> | IRM-100 |
| | Signal simulator, Power supply AC 120 V | PS-100 |
| | <p>Convert Pulse Width Modulated Signal to a 2...10 V Signal for Belimo Proportional Actuators</p> | PTA-250 |
| | Positioner for wall mounting | SGA24 |
| | Positioner for front-panel mounting | SGF24 |
| | Cable conduit connector 1/2" | TF-CC US |
| | Resistor, 500 Ω, 1/4" wire resistor with 6" pigtail wires | ZG-R01 |
| | Resistor kit, 50% voltage divider | ZG-R02 |
| | Transformer, AC 120 V to AC 24 V, 40 VA | ZG-X40 |
| | Battery backup system, for non-spring return models | NSV24 US |
| | Battery, 12 V, 1.2 Ah (two required) | NSV-BAT |
| Mechanical accessories | Description | Type |
| | Ball joint suitable for damper crank arm KH8 / KH10, Multipack 10 pcs. | KG10A |
| | Ball joint suitable for damper crank arm KH8, Multipack 10 pcs. | KG6 |
| | Ball joint suitable for damper crank arm KH8, Multipack 10 pcs. | KG8 |
| | Push rod for KG6 & KG8 ball joints (36" L, 5/16" diameter). | SH8 |
| | Rotary support, for linear actuator, for compensation of transverse forces | Z-DS1 |
| | 3/8"-16 shaft clevis for AHK/AH. | Z-KSC |
| | Bracket for AHK/AH/LH linear actuators. | ZG-119 |

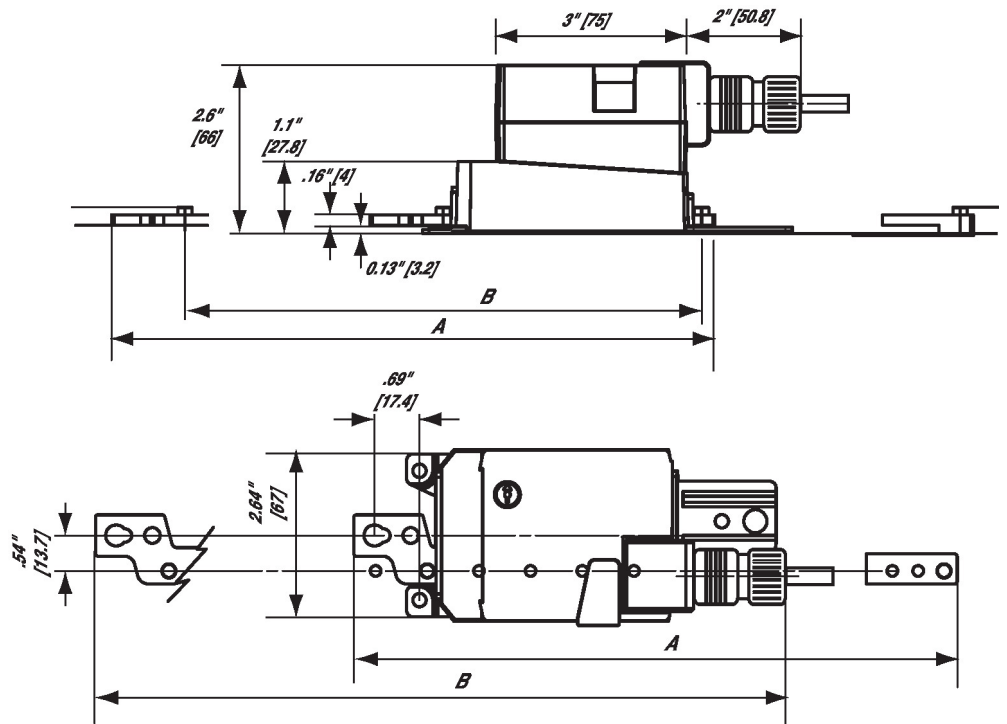
Electrical installation

-  Provide overload protection and disconnect as required.
-  Actuators may also be powered by DC 24 V.
-  Only connect common to negative (-) leg of control circuits.
-  A 500 Ω resistor (ZG-R01) converts the 4...20 mA control signal to 2...10 V.
-  Actuators may be connected in parallel if not mechanically linked. Power consumption and input impedance must be observed.



2...10 V / 4...20 mA Control

Dimensions



| <i>Stroke</i> | <i>A</i> | <i>B</i> |
|------------------|----------------------|----------------------|
| <i>4" [100]</i> | <i>9.2" [233.5]</i> | <i>10.4" [264.2]</i> |
| <i>8" [200]</i> | <i>13.1" [333.5]</i> | <i>14.3" [364.2]</i> |
| <i>12" [300]</i> | <i>17.1" [433.5]</i> | <i>18.3" [464.2]</i> |