



Technical data

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|------------------------|------------------------------------|--|
| Electrical data | Nominal voltage | AC/DC 24 V |
| | Nominal voltage frequency | 50/60 Hz |
| | Power consumption in operation | 4 W |
| | Power consumption in rest position | 2 W |
| | Power consumption for wire sizing | 6 VA |
| | Transformer sizing | 6 VA (class 2 power source) |
| | 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 |
| Functional data | Torque motor | 360 in-lb [40 Nm] |
| | Direction of motion motor | selectable with switch 0/1 |
| | Manual override | external push button |
| | Angle of rotation | Max. 95° |
| | Angle of rotation note | adjustable with mechanical stop |
| | Running Time (Motor) | 150 s / 90° |
| | Running time motor note | constant, independent of load |
| | Noise level, motor | 45 dB(A) |
| | Shaft Diameter | 1/2...1.05" round, centers on 1/2" and 3/4" with insert, 1.05" without insert |
| | Position indication | Mechanically, 30...65 mm stroke |
| 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 |
| Weight | Weight | 4.1 lb [1.9 kg] |
| Materials | Housing material | UL94-5VA |

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

Product features

- Application** For on/off and floating point 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. 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 actuator 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 actuators use a 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.
- For low ambient temperatures, the optional supplemental (-H) Heater add-on is available.
- Typical specification** Floating point, 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.

Accessories

| Electrical accessories | Description | Type |
|------------------------|---|------------|
| | Battery backup system, for non-spring return models | NSV24 US |
| | Battery, 12 V, 1.2 Ah (two required) | NSV-BAT |
| | Feedback potentiometer 140 Ω add-on, grey | P140A GR |
| | Feedback potentiometer 500 Ω add-on, grey | P500A GR |
| | Feedback potentiometer 1 kΩ add-on, grey | P1000A GR |
| | Feedback potentiometer 2.8 kΩ add-on, grey | P2800A GR |
| | Feedback potentiometer 5 kΩ add-on, grey | P5000A GR |
| | Feedback potentiometer 10 kΩ add-on, grey | P10000A GR |
| | Auxiliary switch 1 x SPDT add-on | S1A |
| | Auxiliary switch 2 x SPDT add-on | S2A |
| Mechanical accessories | Description | Type |
| | Dual actuator mounting bracket. | ZG-102 |
| | Base plate extension for GM..A to GM.. | Z-GMA |
| | Mounting kit for linkage operation for flat installation | ZG-GMA |
| | 1" diameter jackshaft adaptor (11" L). | ZG-JSA-1 |
| | Weather shield 330x203x152 mm [13x8x6"] (LxBxH) | ZS-100 |
| | Weather shield 406x213x102 mm [16x8-3/8x4"] (LxWxH) | ZS-150 |
| | Explosion proof housing 406x254x164 mm [16x10x6.435"] (LxBxH), UL and CSA, Class I, Zone 1&2, Groups B, C, D, (NEMA 7), Class III, Hazardous (classified) Locations | ZS-260 |
| | Weather shield 438x222x140 mm [17-1/4x8-3/4x5-1/2"] (LxBxH), NEMA 4X, with mounting brackets | ZS-300 |
| | Wrench 0.512 in. [13 mm] | TOOL-07 |
| | Standard GK/GM clamp (1/2" to 1.05"). | K-GM20 |

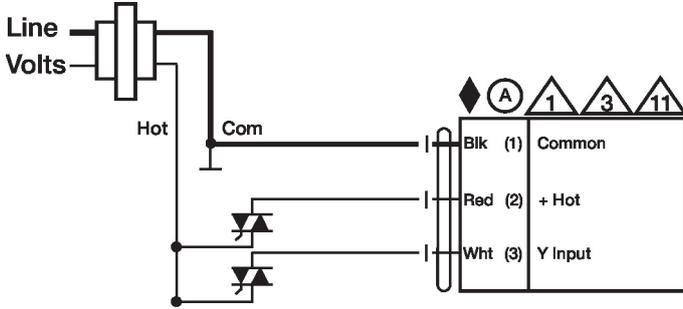
Electrical installation


Actuators with appliance cables are numbered.

Provide overload protection and disconnect as required.

-  Actuators may also be powered by DC 24 V.
-  Actuators Hot wire must be connected to the control board common. Only connect common to neg. (-) leg of control circuits. Terminal models (-T) have no-feedback.
-  Actuators may be connected in parallel if not mechanically linked. Power consumption and input impedance must be observed.

24 VAC Transformer

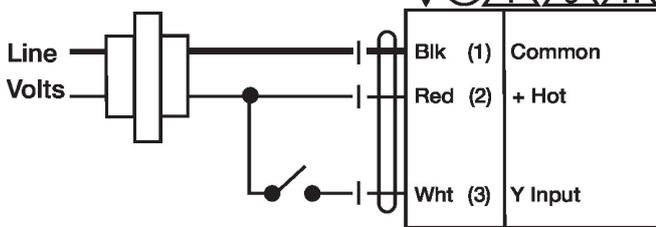


Floating Point - Triac Source

Wiring diagrams

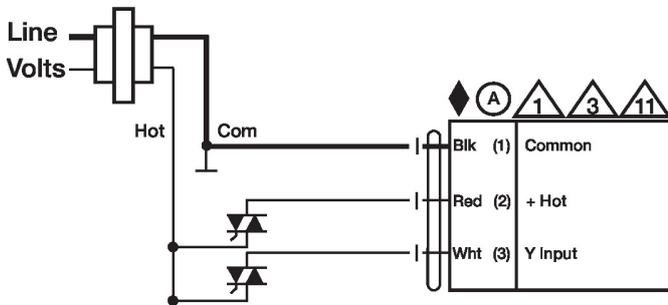
On/Off

24 VAC Transformer



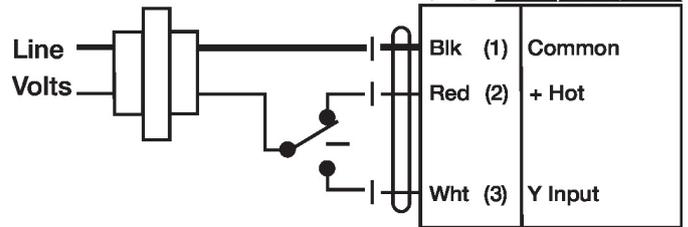
Floating Point - Triac Source

24 VAC Transformer



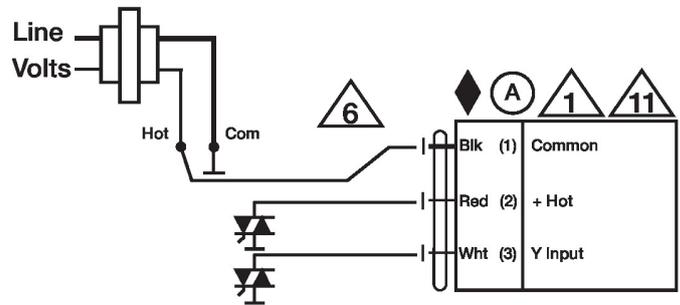
Floating Point

24 VAC Transformer



Floating Point - Triac Sink

24 VAC Transformer



Dimensions

∅ 1/2" to 1.05" [12.7 to 26.67]

□ 2/5" to 1.05" [10 to 26.67]

