



5-year warranty



Technical data

| | | | |
|------------------------|------------------------------------|---|------------------|
| Electrical data | Nominal voltage | AC 24...240 V / DC 24...125 V | |
| | Nominal voltage frequency | 50/60 Hz | |
| | Nominal voltage range | AC 19.2...264 V / DC 21.6...137.5 V | |
| | Power consumption in operation | 7 W | |
| | Power consumption in rest position | 3.5 W | |
| | Electrical Connection | 18 GA appliance cables, 1 m, 3 m or 5 m, with 1/2" conduit connector | |
| | Overload Protection | electronic throughout 0...95° rotation | |
| | Electrical Protection | actuators are double insulated | |
| Functional data | Torque motor | 180 in-lb [20 Nm] | |
| | Direction of motion motor | selectable by ccw/cw mounting | |
| | Direction of motion fail-safe | reversible with cw/ccw mounting | |
| | Manual override | 5 mm hex crank (3/16" Allen), supplied | |
| | Angle of rotation | 95° | |
| | Angle of rotation note | adjustable with mechanical end stop, 35...95° | |
| | Running Time (Motor) | 75 s / 90° | |
| | Running time fail-safe | <20 s @ -4...122°F [-20...50°C], <60 s @ -22°F [-30°C] | |
| | Noise level, motor | 50 dB(A) | |
| | Noise level, fail-safe | 62 dB(A) | |
| Position indication | Mechanically, 5...20 mm stroke | | |
| Safety data | Power source UL | Class 2 Supply | |
| | Degree of protection IEC/EN | IP66 | |
| | Degree of protection NEMA/UL | NEMA 4X | |
| | Enclosure | UL Enclosure Type 4X | |
| | Agency Listing | cULus acc. to UL60730-1A/-2-14, CAN/CSA E60730-1:02, CE acc. to 2014/30/EU and 2014/35/EU | |
| | Quality Standard | ISO 9001 | |
| | Ambient humidity | Max. 100% RH | |
| | Ambient temperature | -22...122°F [-30...50°C] | |
| | Ambient temperature note | -40...50°C for actuator with integrated heating | |
| | Storage temperature | -40...176°F [-40...80°C] | |
| | Servicing | maintenance-free | |
| | Weight | Weight | 6.3 lb [2.9 kg] |
| | | Materials | Housing material |

Footnotes †Rated Impulse Voltage 4kV, Type of action 1.AA, Control Pollution Degree 4.

Product features

Application For On/Off, fail-safe control of dampers in HVAC systems. Actuator sizing should be done in accordance with the damper manufacturer's specifications. Control is On/Off from an auxiliary contact or a manual switch. The actuator is mounted directly to a damper shaft up to 1.05" in diameter by means of its universal clamp. Maximum of two AF's can be piggybacked for torque loads of up to 266 in-lbs. Minimum 3/4" diameter shaft and parallel wiring.

Operation The AF..UP N4 series actuators provide true spring return operation for reliable fail-safe application and positive close off on air tight dampers. The spring return system provides constant torque to the damper with, and without, power applied to the actuator. The AF..UP N4 series provides 95° of rotation and is provided with a graduated position indicator showing 0° to 95°. The actuator may be stalled anywhere in its normal rotation without the need of mechanical end switches. The AF..UP N4 actuator is shipped at 5° (5° from full fail-safe) to provide automatic compression against damper gaskets for tight shut-off.

Installation Note: Use suitable flexible metallic conduit or its equivalent with the conduit fitting. Not suitable for plenum applications.

For low ambient temperatures, the optional supplemental (-Y) Heater add-on is available.

Typical specification On/Off spring return damper actuators shall be direct coupled type which require no crank arm and linkage and be capable of direct mounting to a jackshaft up to a 1.05" diameter. The actuators must be designed so that they may be used for either clockwise or counter clockwise fail-safe operation. Actuators shall be protected from overload at all angles of rotation. If required, two SPDT auxiliary switch shall be provided having the capability of one being adjustable. Actuators with auxiliary switches must be constructed to meet the requirements for Double Insulation so an electrical ground is not required to meet agency listings. Actuators shall be cULus listed and 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 |
|----------------------------|--|----------------------------|
| | Gasket for cable gland (NEMA 4 models) | 11097-00001 |
| | Cable Gland (NEMA 4 models) | 43442-00001 |
| | Auxiliary switch, mercury-free | P475 |
| | Auxiliary switch, mercury-free | P475-1 |
| Mechanical accessories | Description | Type |
| | Anti-rotation bracket, for AF / NF | AF-P |
| | Ball joint suitable for damper crank arm KH8 / KH10, Multipack 10 pcs. | KG10A |
| | Damper crank arm Slot width 8.2 mm, clamping range Ø14...25 mm | KH10 |
| | Push rod for KG10A ball joint 36" L, 3/8" diameter | SH10 |
| | Wrench 0.32 in and 0.39 in [8 mm and 10 mm] | TOOL-06 |
| | Wrench 0.512 in. [13 mm] | TOOL-07 |
| | Damper clip for damper blade, 3.5" width. | ZG-DC1 |
| | Damper clip for damper blade, 6" width. | ZG-DC2 |
| | 1" diameter jackshaft adaptor (11" L). | ZG-JSA-1 |
| | 1-5/16" diameter jackshaft adaptor (12" L). | ZG-JSA-2 |
| | 1.05" diameter jackshaft adaptor (12" L). | ZG-JSA-3 |
| Tools | Description | Type |
| | Signal simulator, Power supply AC 120 V | PS-100 |
| Factory add-on option only | Description | Type |
| | Heater, with adjustable thermostat | N4 Heater Add-on 24V (-H) |
| | Heater, with adjustable thermostat | N4 Heater Add-on 230V (-Y) |

Electrical installation

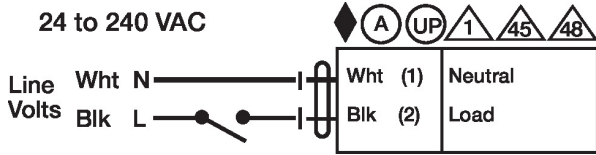
Warning! Live electrical components!

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.

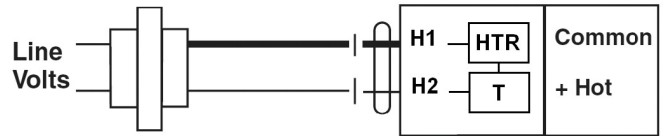
- ◆ Meets cULus requirements without the need of an electrical ground connection.
- Ⓐ Actuators with appliance cables are numbered.
- ⓈUP Universal Power Supply (UP) models can be supplied with 24 VAC up to 240 VAC, or 24 VDC up to 125 VDC.
- ⚠ Provide overload protection and disconnect as required.
- ⚠₄₅ Actuators may be powered in parallel. Power consumption must be observed.
- ⚠₄₈ Parallel wiring required for piggy-back applications.

Wiring diagrams

On/Off



NEMA 4 Heater Option
24 VAC Transformer



Dimensions

