



5-year warranty

**Technical data**

|                           |                      |                            |
|---------------------------|----------------------|----------------------------|
| <b>Functional data</b>    | Mounting Position    | 90° to 180°                |
|                           | <hr/>                |                            |
| <b>Safety data</b>        | Ambient temperature  | -22...122°F [-30...50°C]   |
|                           | Storage temperature  | -40...176°F [-40...80°C]   |
| <b>Materials</b>          | Housing material     | galvanized steel           |
|                           | Stem                 | steel                      |
|                           | Frame, plate, base   | galvanized steel           |
|                           | Bearing              | GF Delrin                  |
| <b>Suitable actuators</b> | Non-Spring           | AMB(X)<br>GMB(X)<br>NMB(X) |
|                           | Electronic fail-safe | NKQB(X)                    |

\* ZG-121 adapter must be used with EF. \*\* GM/GK not for use with 1/2" shafts. \*\*\* K6-1 clamp must be used with LF. For close-off pressure reference Select Pro or Retrofit Technical Documentation.  
For close-off pressure reference Select Pro or retrofit technical documentation.

**Product features**

- Default/Configuration** The ZG-JSL linkage can also be configured by moving the anti-rotation plate 90° for space-saving applications. See mounting configurations below. The ZG-JSLA will have a factory mounted actuator on the linkage in the vertical position only.
- Application** The ZG-JSL jackshaft linkage is designed to easily attach to any part of a jackshaft and allow easy installation of select Belimo actuators. The unique open ended design and clamp insert allows the ZG-JSL to be used with any jackshaft from 1/2" to 3/4" in diameter. Removal of the insert will allow the linkage to attach to a maximum shaft diameter of 1.05". Changing the antirotation plate will allow various actuators to be mounted.
- Operation** The 3/4" diameter built-in steel shaft allows direct coupling to the Belimo series actuators in the chart below. There is a torque reduction when using the ZG-JSL linkage. Verify application requirements before use.

**Flow/Mounting details**



**Dimensions**

## Dimensional drawings





5-year warranty



Technical data

|                        |                                    |  |
|------------------------|------------------------------------|--|
| <b>Electrical data</b> | Nominal voltage                    | AC 24...240 V / DC 24...125 V  |
|                        | Nominal voltage frequency          | 50/60 Hz   |
|                        | Power consumption in operation     | 6 W  |
|                        | Power consumption in rest position | 2.5 W  |
|                        | Transformer sizing                 | 6 VA @ AC 24 V (class 2 power source), 6.5 VA @ AC 120 V, 9.5 VA @ AC 240 V                          |
|                        | Electrical Connection              | 18 GA appliance cable, 3 ft [1 m], 10 ft [3 m] or 16ft [5 m], with or without 1/2" conduit connector |
|                        | Overload Protection                | electronic throughout 0...95° rotation   |
|                        | Electrical Protection              | actuators are double insulated   |
| <b>Functional data</b> | Torque motor                       | 90 in-lb [10 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°, adjustable with mechanical end stop, 35...95°   |
|                        | Angle of rotation note             | adjustable with mechanical end stop, 35...95°  |
|                        | Running Time (Motor)               | 75 s   |
|                        | 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)   |
| <b>Safety data</b>     | Shaft Diameter                     | 1/2...1.05" round, centers on 1/2" and 3/4" with insert, 1.05" without insert                        |
|                        | Position indication                | Mechanical   |
|                        | Degree of protection IEC/EN        | IP54   |
|                        | Degree of protection NEMA/UL       | NEMA 2 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            |
|                        | Quality Standard                   | ISO 9001   |
|                        | Ambient temperature                | -22...122°F [-30...50°C]   |
|                        | Storage temperature                | -40...176°F [-40...80°C]   |
|                        | Ambient humidity                   | max. 95% r.H., non-condensing  |
|                        | Servicing                          | maintenance-free   |
| <b>Weight</b>          | Weight                             | 3.7 lb [1.7 kg]  |
| <b>Materials</b>       | Housing material                   | Galvanized steel and plastic housing   |

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. A crank arm and several mounting brackets are available for applications where the actuator cannot be direct coupled to the damper shaft.
- Operation** The NF..UP series actuators provide true spring return operation for reliable failsafe 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 NF..UP 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 NF..UP actuator is shipped at 5° (5° from full fail-safe) to provide automatic compression against damper gaskets for tight shut-off.
- 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      |
|------------------------|--|-----------|
|                        | Auxiliary switch, mercury-free   | P475      |
|                        | Auxiliary switch, mercury-free   | P475-1    |
|                        | Signal Simulator, Power supply AC 230 V  | PS-100    |
|                        | Cable Conduit Connector 1/2"   | TF-CC US  |
| Mechanical accessories | Description  | Type      |
|                        | Anti-rotation bracket, for AF / NF   | AF-P      |
|                        | Shaft extension 240 mm Ø20 mm for damper shaft Ø 8...22.7 mm                           | AV8-25    |
|                        | End stop indicator   | IND-AFB   |
|                        | Shaft clamp reversible, for central mounting, for damper shafts Ø12.7 / 19.0 / 25.4 mm | K7-2      |
|                        | Ball joint suitable for damper crank arm KH8 / KH10                                    | KG10A     |
|                        | Ball joint suitable for damper crank arm KH8   | KG8       |
|                        | Actuator arm, for 3/4" shafts, clamping range Ø10...22 mm, Slot width 8.2 mm           | KH-AFB    |
|                        | Damper crank arm Slot width 8.2 mm, clamping range Ø14...25 mm                         | KH10      |
|                        | Damper crank arm Slot width 8.2 mm, for Ø1.05"   | KH12      |
|                        | Damper crank arm Slot width 8.2 mm, clamping range Ø10...18 mm                         | KH8       |
|                        | Push rod for KG10A ball joint (36" L, 3/8" diameter).                                  | SH10      |
|                        | Push rod for KG6 & KG8 ball joints (36" L, 5/16" diameter).                            | SH8       |
|                        | Wrench 8 mm and 10 mm  | TOOL-06   |
|                        | Retrofit clip  | Z-AF      |
|                        | Base plate extension   | Z-SF      |
|                        | 17" Mounting Bracket for AF,NF,GM,AM,SM  | ZG-100    |
|                        | Mounting Bracket: AF,NF,LF,GM,AM,NM,SM   | ZG-101    |
|                        | Mounting Bracket: ZS-260 Right Angle   | ZG-109    |
|                        | Linkage kit  | ZG-110    |
|                        | Mounting bracket for AF / NF   | ZG-118    |
|                        | Jackshaft mounting bracket.  | ZG-120    |
|                        | Mounting kit for linkage operation for flat and side installation                      | ZG-AFB    |
|                        | Mounting kit for foot mount installation   | ZG-AFB118 |
|                        | 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  |
|                        | Weather shield 13x8x6" [330x203x152 mm] (LxWxH)  | ZS-100    |
|                        | Base Plate, for ZS-100   | ZS-101    |
|                        | Weather shield 16x8-3/8x4" [406x213x102 mm] (LxWxH)                                    | ZS-150    |

|   |           |
|---|-----------|
| Explosion Proof Housing 16x10x6.435" [406x254x164 mm] (LxWxH), UL and CSA, Class I, Zone 1&2, Groups B, C, D, (NEMA 7), Class III, Hazardous (classified) | ZS-260    |
| Locations   |           |
| Weather shield 17-1/4x8-3/4x5-1/2" [438x222x140 mm] (LxWxH), NEMA 4X, with mounting brackets  | ZS-300    |
| Weather shield 17-1/4x8-3/4x5-1/2" [438x222x140 mm] (LxWxH), NEMA 4X, with mounting brackets  | ZS-300-5  |
| Shaft extension 1/2"  | ZS-300-C1 |
| Shaft extension 3/4"  | ZS-300-C2 |
| Shaft extension 1"  | ZS-300-C3 |

**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.

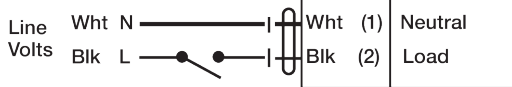
◆ Meets cULus requirements without the need of an electrical ground connection.

Ⓐ 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.

24 to 240 VAC



On/Off

**Dimensions**
**Dimensional drawings**
