

ZG-JSL, ZG-JSLA Jackshaft Retrofit Linkage

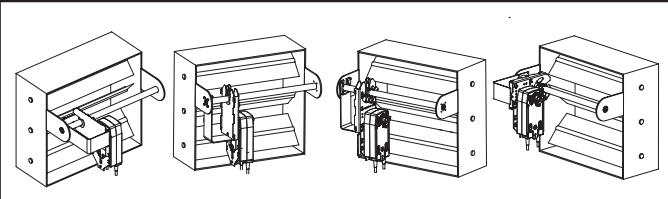
For Use with Belimo Rotary Actuators



Technical Data	
Stem	steel
Frame, plate, base	galvanized steel
Housing material	galvanized steel
Bearing	GF Delrin
Mounting Position	90° to 180°
Ambient temperature	-22...122°F [-30...50°C]
Storage temperature	-40...176°F [-40...80°C]
Weight	5.2 lb [2.4 kg]

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



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.

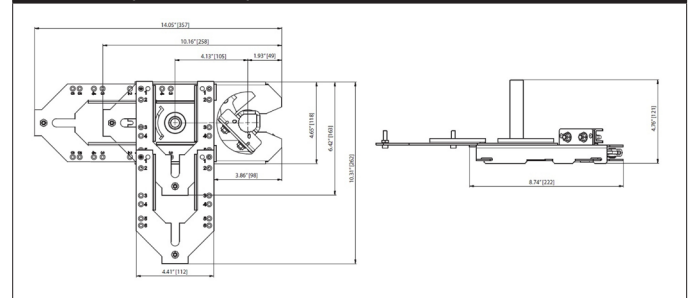
Default/Configuration

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.

Suitable Actuators

	Non-Spring	Spring	Electronic fail-safe
ZG-JSL	AMB(X), GMB(X), NMB(X)	AF, EFB(X), LF, NF	NKQB(X)

Dimensions (Inches [mm])



AMX24-SR Technical Data Sheet

Modulating, Non-Spring Return, 24 V, for DC 2...10 V or 4...20 mA



Technical Data	
Power Supply	24 VAC, ±20%, 50/60 Hz, 24 VDC, ±10%
Power consumption in operation	2.5 W
Power consumption in rest position	0.4 W
Transformer sizing	5 VA (class 2 power source)
Shaft Diameter	1/2...1.05" round, centers on 1/2" and 3/4" with insert, 1.05" without insert
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
Operating Range	DC 2...10 V, 4...20 mA w/ ZG-R01 (500 Ω, 1/4 W resistor)
Input Impedance	100 kΩ for DC 2...10 V (0.1 mA), 500 Ω for 4...20 mA
Position Feedback	DC 2...10 V, Max. 0.5 mA
Angle of rotation	Max. 95°, adjustable with mechanical stop
Torque motor	180 in-lb [20 Nm]
Direction of rotation motor	reversible with built-in switch
Position indication	Mechanically, 30...65 mm stroke
Manual override	external push button
Running Time (Motor)	90 s, constant, independent of load
Ambient humidity	max. 95% r.H., non-condensing
Ambient temperature	-22...122°F [-30...50°C]
Storage temperature	-40...176°F [-40...80°C]
Degree of Protection	IP54, NEMA 2, UL Enclosure Type 2
Housing material	UL94-5VA
Agency Listing	cULus acc. to UL60730-1A/-2-14, CAN/CSA E60730-1:02, CE acc. to 2004/108/EC and 2006/95/EC
Noise level, motor	45 dB(A)
Maintenance	maintenance-free
Quality Standard	ISO 9001
Weight	1.4 lb [0.64 kg]

†Rated Impulse Voltage 800V, Type 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 crank arm 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.

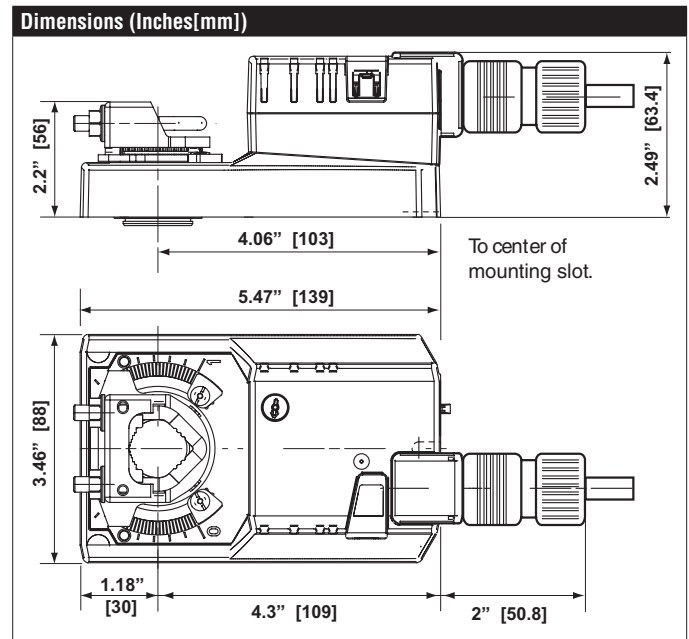
Operation

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.



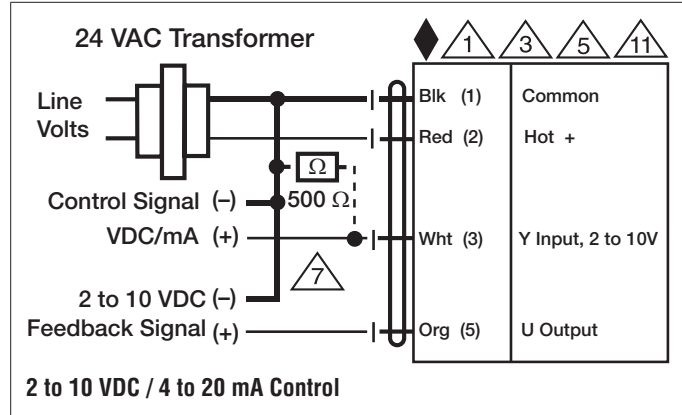
Safety Notes






WARNING: For Belimo products sold in California: these products do or may contain chemicals which are known to the State of California to cause cancer and or birth defects or other reproductive harms. For more information see www.p65warnings.ca.gov.

Typical Specification

Modulating 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 3/4" 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. 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, NEMA 4X, have a 5-year warranty, and be manufactured under ISO 9001 International Quality Control Standards. Actuators shall be as manufactured by Belimo.

Wiring Diagrams



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