Torque min. 180 in-lb, for control of air dampers.

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 directly coupled to the damper shaft. 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..24-S 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..24-S 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..24-S versions are provided with two built-in auxiliary switches. These SPDT switches are provided for safety interfacing or signaling, for example, for fan start-up. The switching function at the fail-safe position is fixed at 10°, the other switch function is adjustable between 10° to 90°. The AF..24-S actuator is shipped at 5° (5° from full fail-safe) to provide automatic compression against damper gaskets for tight shut-off.

Dimensions (Inches[mm])

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.

1Rated Impulse Voltage 800V, Type of Action 1.AA.B, Control Pollution Degree 3.
Accessories

AF-P  Anti-rotation bracket AF/NF.
AV8-25  Shaft extension
IND-AFB  End stop indicator
K7-2  Shaft clamp reversible
K60A  Ball joint
K86  Ball joint
KH10  Damper crank arm
KH8  Damper crank arm
KH-AFB  Actuator arm
SH10  Push rod for KG10A ball joint (36”L, 3/8” diameter).
SH8  Push rod for KG6 & KG8 ball joints (36”L, 5/16” diameter).
TOOL-06  8 mm and 10 mm wrench.
ZG-100  Univ. right angle bracket 17” x 11-1/8” x 6” (HxWxbase).
ZG-101  Univ. right angle bracket 13” x 11” x 7-7/16” (HxWxbase).
ZG-102  Dual actuator mounting bracket.
ZG-109  Right angle bracket for ZS-260.
ZG-110  Stand-off bracket for ZS-260.
ZG-118  AFB(X)/NFB(X) U bracket 5-7/8” x 5-1/2” x 2-19/32” (HxWxD).
ZG-120  Jackshaft mounting bracket.
ZG-AFB  Mounting and linkage kit
ZG-AFB118  AFB(X)/NFB(X) crankarm adaptor kit.
ZG-DC1  Damper clip for damper blade, 3.5” width.
ZG-DC2  Damper clip for damper blade, 6” width.
ZG-JSA-1  1” diameter jackshaft adaptor (11”L).
ZG-JSA-2  1-5/16” diameter jackshaft adaptor (12”L).
ZG-JSA-3  1.05” diameter jackshaft adaptor (12”L).
ZS-100  Weather shield - galvaneal 13” x 8” x 6” (LxWxD).
ZS-101  Base plate for ZS-100.
ZS-150  Weather shield - PC w/ foam seal 16” x 8-3/8” x 4” (LxWxD).
ZS-260  Explosion proof housing.
ZS-300  NEMA 4X, 304 stainless steel enclosure.
ZS-300-5  NEMA 4X, 316L stainless steel enclosure.
ZS-300-C1  1/2” shaft adaptor, standard with ZS-300(-5).
ZS-300-C2  3/4” shaft adaptor for ZS-300(-5).
ZS-300-C3  1” shaft adaptor for ZS-300(-5).
Z-SF  Base plate extension
P475  Shaft mount, non-Mercury aux. switch for 1/2“ dia. shafts.
P475-1  Shaft mount, non-Mercury aux. switch for 1“ dia. shafts.
PS-100  Actuator power supply and control simulator.
TF-CC US  Cable conduit connector, 1/2”.
ZG-X40  120 to 24 VAC, 40 VA transformer.

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.
Wiring Diagrams

**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.
- Apply only AC line voltage or only UL-Class 2 voltage to the terminals of auxiliary switches. Mixed or combined operation of line voltage/safety extra low voltage is not allowed.
- Actuators with appliance cables are numbered.
- Provide overload protection and disconnect as required.
- Actuators may also be powered by 24 VDC.
- Two built-in auxiliary switches (2x SPDT), for end position indication, interlock control, fan startup, etc.
- Actuators may be powered in parallel. Power consumption must be observed.
- Parallel wiring required for piggy-back applications.