

Customizable Non Fail-Safe modulating actuator for controlling dampers in typical commercial HVAC applications.

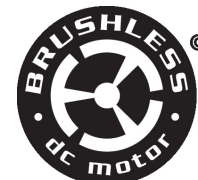
- Torque motor 180 in-lb [20 Nm]
- Nominal voltage AC/DC 24 V
- Control Modulating
- Position feedback 2...10 V



Picture may differ from product



5-year warranty



Technical data

Electrical data	Nominal voltage	AC/DC 24 V
	Nominal voltage frequency	50/60 Hz
	Nominal voltage range	AC 19.2...28.8 V / DC 21.6...28.8 V
	Power consumption in operation	2.5 W
	Power consumption in rest position	0.4 W
	Transformer sizing	5 VA
	Electrical Connection	18 AWG plenum cable with 1/2" NPT conduit connector, degree of protection NEMA 2 / IP54, 1 m, 3 m, and 5 m
	Overload Protection	electronic throughout 0...95° rotation
Functional data	Torque motor	180 in-lb [20 Nm]
	Operating range Y	2...10 V
	Operating range Y note	4...20 mA w/ ZG-R01 (500 Ω, 1/4 W resistor)
	Input impedance	100 kΩ for 2...10 V (0.1 mA), 500 Ω for 4...20 mA
	Position feedback U	2...10 V
	Position feedback U note	Max. 0.5 mA
	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)	90 s / 90°
	Running time motor note	constant, independent of load
	Running time motor variable	90 or 150 s
	Noise level, motor	45 dB(A)
	Position indication	Mechanical, 30...65 mm stroke
Safety data	Power source UL	Class 2 Supply
	Degree of protection NEMA/UL	NEMA 2
	Housing	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
	UL 2043 Compliant	Suitable for use in air plenums per Section 300.22(C) of the NEC and Section 602 of the IMC

Technical data

Safety data	Ambient humidity	Max. 95% RH, non-condensing
	Ambient temperature	-22...122°F [-30...50°C]
	Storage temperature	-40...176°F [-40...80°C]
	Servicing	maintenance-free
Weight	Weight	2.1 lb [0.93 kg]
Materials	Housing material	UL94-5VA

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

Product features

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 using its universal clamp, 1/2" self-centered default. It is imperative that standard trade practices are upheld to ensure connecting components and bracketing remain square and true, maintaining geometry and proper product performance. 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 primary and secondary applications.
Operation	The actuator is not provided with and does not require any limit switches but is electronically protected against overload. When properly installed, bracketing should allow for some actuator float. The AMB(X) series provides 95° of rotation, and a visual indicator indicates the 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 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.
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.

Accessories

Electrical accessories	Description	Type
	Auxiliary switch 2x SPDT add-on	S2A
	Terminal-strip cover for NEMA 2 rating (-T models).	ZS-T
Mechanical accessories	Description	Type
	Clamp NM/AM 1/2", 3/4", 1"	K-AM25
	Shaft clamp reversible, clamping range $\varnothing$ 10...20 mm	K-SA
	Mounting bracket for AF..	ZG-100
	Mounting bracket for AF / NF	ZG-101
	Mounting bracket	ZG-103
	Mounting bracket	ZG-104

Accessories

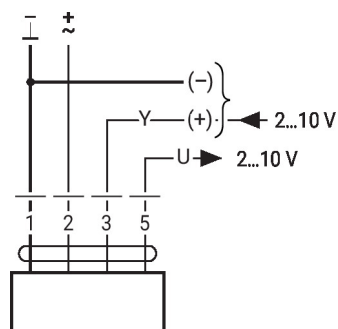
Description	Type
Mounting kit for linkage operation for flat installation	ZG-NMA
1" diameter jackshaft adaptor (11" L).	ZG-JSA-1
1-5/16" diameter jackshaft adaptor (12" L).	ZG-JSA-2
1.05" diameter jackshaft adaptor (12" L).	ZG-JSA-3
Baseplate extension for SM...A to SM.../AM.../SMD24R	Z-SMA
Weather shield 13x8x6" [330x203x152 mm] (LxWxH)	ZS-100
Weather shield 406x213x102 mm [16x8-3/8x4"] (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) Locations	ZS-260
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
Terminal-strip cover for NEMA 2 rating (-T models).	ZS-T
Shaft extension 240 mm ø20 mm for damper shaft ø8...22.7 mm	AV8-25
Actuator arm for standard shaft clamp	AH-GMA
Wrench 0.32 in and 0.39 in [8 mm and 10 mm]	TOOL-06
Linkage kit	ZG-JSL
Jackshaft RetroFIT+ Linkage with Belimo Rotary Actuators	

Electrical installation

Wire colors:

- 1 = black
- 2 = red
- 3 = white
- 5 = orange

AC/DC 24 V, modulating



1	2	3		
		2 V		
		10 V		

Dimensions

PC

