

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

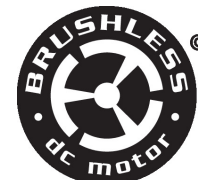
- Torque motor 18 in-lb [2 Nm]
- Nominal voltage AC/DC 24 V
- Control Modulating
- Position feedback 2...10 V



Picture may differ from product



5-year warranty



## Technical data

<b>Electrical data</b>	Nominal voltage	AC/DC 24 V
	Nominal voltage frequency	50/60 Hz
	Nominal voltage range	AC 19.2...28.8 V / DC 19.2...28.8 V
	Power consumption in operation	1.5 W
	Power consumption in rest position	0.5 W
	Transformer sizing	1.5 VA
	Electrical Connection	18 AWG plenum cable, 1 m, degree of protection NEMA 2 / IP54
	Overload Protection	electronic throughout full rotation
<b>Functional data</b>	Torque motor	18 in-lb [2 Nm]
	Operating range Y	2...10 V
	Operating range Y note	4...20 mA w/ ZG-R01 (500 Ω, 1/4 W resistor)
	Position feedback U	2...10 V
	Position feedback U note	Max. 0.5 mA
	Direction of motion motor	by electrical installation
	Manual override	disengage with magnet
	Angle of rotation	0...287.5°
	Angle of rotation note	Without limitation: endless With one end stop clip Z-ESCM: 315°
	Running Time (Motor)	35 s / 90°
	Running time motor note	constant, independent of load
	Noise level, motor	45 dB(A)
	Position indication	Mechanical, pluggable (with integrated magnet for gear train disengagement)
<b>Safety data</b>	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
	Ambient humidity	Max. 95% RH, non-condensing
	Ambient temperature	-22...122°F [-30...50°C]

## Technical data

<b>Safety data</b>	Storage temperature	-40...176°F [-40...80°C]
	Servicing	maintenance-free
<b>Weight</b>	Weight	0.59 lb [0.27 kg]
<b>Materials</b>	Housing material	UL94-5VA
<b>Footnotes</b>	†Rated Impulse Voltage 800V, Type of Action 1, Control Pollution Degree 2.	

## Product features

<b>Application</b>	<p>Damper actuator for operating air control dampers in ventilation and air-conditioning systems for building services installations.</p> <ul style="list-style-type: none"> <li>• For air control dampers up to approximately 4.5 sq ft</li> <li>• Torque 18 in-lb [2 Nm]</li> <li>• Nominal voltage AC/DC 24 V</li> <li>• Control: 2...10 V</li> <li>• Running time 35 s @ 90°</li> </ul>
<b>Operation</b>	<p>Simple direct mounting on the damper spindle with a universal spindle clamp or form fit, supplied with an anti-rotation bracket to prevent the actuator from rotating.</p> <p>Manual operation is possible with a magnet (the gearing latch remains disengaged as long as the magnet is in place).</p> <p>Adjustable angle of rotation with mechanical end stops, that requires no tools to move or remove.</p> <p>The actuator is overload-proof, requires no limit switches and automatically stops when the end stops is reached.</p> <p>The CMB24-SR (-R or -L) actuator uses a brushless DC motor, which is controlled by an Application Specific Integrated Circuit (ASIC). The ASIC monitors and controls the actuator's rotation sensing (DRS) function to prevent damage to the actuator in a stall condition. Power consumption is reduced in holding mode.</p> <p>Belimo's Halomo sensorless brushless DC motor spins by reversing the poles of stationary electromagnets housed inside rotational permanent magnets. The electromagnetic poles are switched by the an ASIC developed by Belimo. Unlike the conventional DC motor, there are no brushes to wear or commutators to foul. This means the brushless DC motor adds accuracy and reduces power consumption in a holding mode.</p>
<b>Typical specification</b>	<p>Proportional 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 from 1/4" to 1/2" diameter. Actuators must provide proportional damper control response to a 2 to 10 VDC or, with the addition of a 500Ω 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. Actuators shall have manual override on the cover. Run time shall be constant and independent of torque. Actuators shall be cULus listed, have a 5-year warranty, and be manufactured under ISO 9001 International Quality Control Standards. Actuators shall be as manufactured by Belimo.</p>

## Accessories

Tools	Description	Type
<b>Electrical accessories</b>	Gear train disengagement magnet, Multipack 20 pcs.	Z-MA
	Signal simulator, Power supply AC 120 V	PS-100
	Description	Type
	Connecting cable 16 ft [5 m], A: RJ11 6/4 LINK.10, B: 6-pin for connection to service socket	ZK1-GEN
	Connecting cable 16 ft [5 m], A: RJ11 6/4 LINK.10, B: free wire end for connection to MP/PP terminal	ZK2-GEN

**Accessories**
**Mechanical accessories**
**Description**

Service tool, with ZIP-USB function, for configurable and communicative Belimo actuators, VAV controller and HVAC performance devices

**Type**

ZTH US

**Description**

Position indicator, Multipack 20 pcs.

End stop clip, Multipack 20 pcs.

Anti-rotation clip, Multipack 20 pcs.

**Type**

Z-PICM

Z-ESCM

Z-ARCM

**Electrical installation**
**Wire colors:**

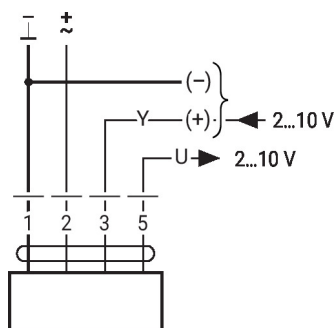
1 = black

2 = red

3 = white

5 = orange

AC/DC 24 V, modulating



1	2	3	
		2 V	
		10 V	

**Dimensions**

PC

