BELIMO

Technical data sheet CMB24-3

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

- **Torque motor 18 in-lb [2 Nm]**
- **Nominal voltage AC/DC 24 V**
- **Control On/Off, Floating point**



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 19.2...28.8 V
	Power consumption in operation	1 W
	Power consumption in rest position	0.2 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
Functional data	Torque motor	18 in-lb [2 Nm]
	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
	Sound power level, motor	45 dB(A)
	Position indication	Mechanical, pluggable (with integrated magnet for gear train disengagement)
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
	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	0.45 lb [0.21 kg]

Technical data

Materials	Housing material	UL94-5VA

Footnotes †Rated Impulse Voltage 800V, Type of Action 1, Control Pollution Degree 2.

Product features

Application

Damper actuator for operating air control dampers in ventilation and air-conditioning systems for building services installations.

- For air control dampers up to approximately 4.5 sq ft
- Torque 18 in-lb [2 Nm]
- Nominal voltage AC/DC 24 V
- Control: Open-close or 3-point
- Running time 35 s @ 90°

Operation

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. Manual operation is possible with a magnet (the gear latch remains disengaged as long as the magnet is in place). Adjustable angle of rotation with mechanical end stops, that requires no tools to move or remove. The actuator is overload-proof, requires no limit switches and automatically stops when the end stops is reached. The 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. 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.

Typical specification

Floating point, on/off 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". 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. If required, actuators will be provided with screw terminal strip for electrical connections (CMB24-3-T). 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 Internation Quality Control Standards. Actuators shall be as manufactured by Belimo.

Accessories

Tools

Description	Type
Gear train disengagement magnet, Multipack 20 pcs.	Z-MA
Signal simulator, Power supply AC 120 V	PS-100

Mechanical accessories

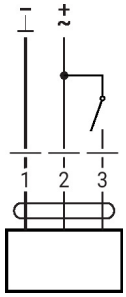
Description	Type
Position indicator, Multipack 20 pcs.	Z-PICM
End stop clip, Multipack 20 pcs.	Z-ESCM
Anti-rotation clip, Multipack 20 pcs.	Z-ARCM

Electrical installation

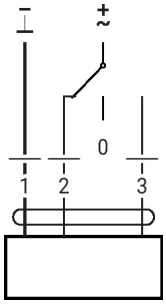
Wire colors:
1 = black
2 = red
3 = white

Electrical installation

AC/DC 24 V, on/off



AC/DC 24 V, 3-point



1	2	3		
			stop	stop

Dimensions

PC

