

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

- Torque motor 45 in-lb [5 Nm]
- Nominal voltage AC/DC 24 V
- Control On/Off, Floating point



5-year warranty



Picture may differ from product

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	1.5 W
	Power consumption in rest position	0.2 W
	Transformer sizing	2 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	45 in-lb [5 Nm]
	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)	95 s / 90°
	Running time motor note	constant, independent of load
	Sound power level, motor	35 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
	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	1.2 lb [0.55 kg]
Materials	Housing material	UL94-5VA

Technical data

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

Product features

Application	For On/Off and floating point control 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 from 1/4" up to 5/8" in diameter by means of its standard universal clamp. Shafts up to 3/4" diameter can be accommodated by an accessory clamp.
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 LMB series provides 95° of rotation and a visual indicator which indicates position of the actuator. When reaching the damper or actuator end position, the actuator automatically stops. The gears can be disengaged with manual release on the actuator cover. The LMB24-3.. 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. The LMB24-3-S version is provided with one built-in auxiliary switch. This SPDT switch is provided for safety interfacing or signaling, for example, for fan start-up. The switching function is adjustable 0 to 95°. The auxiliary switch is double insulated so an electrical ground connection is not necessary. Add-on auxiliary switches or feedback potentiometers are easily fastened directly onto the actuator body for signaling and switching functions.
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 5/8". Shafts up to 3/4" diameter can be accommodate with an accessory clamp. Actuators shall have brushless DC motor technology and be protected from overload at all angles of rotation. Actuators shall have reversing switch and manual override on the cover. If required, actuator will be provided with screw terminal strip for electrical connections [LMB(X)24-3-T]. If required, actuators shall be provided with one adjustable SPDT auxiliary switch. 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. 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.

Accessories

Tools	Description		Type
	Signal simulator, Power supply AC 120 V		PS-100
Electrical accessories		Description	Type
	Auxiliary switch 1x SPDT add-on		S1A
	Auxiliary switch 2x SPDT add-on		S2A
	Auxiliary switch, mercury-free		P475
	Auxiliary switch, mercury-free		P475-1
	Feedback potentiometer 140 Ω add-on, grey		P140A GR
	Feedback potentiometer 500 Ω add-on, grey		P500A GR
	Feedback potentiometer 1 kΩ add-on, grey		P1000A GR
	Feedback potentiometer 2.8 kΩ add-on, grey		P2800A GR
	Feedback potentiometer 5 kΩ add-on, grey		P5000A GR
	Feedback potentiometer 10 kΩ add-on, grey		P10000A GR
	Feedback potentiometer 15 kΩ gray		P15000A-F GR
	Transformer, AC 120 V to AC 24 V, 40 VA		ZG-X40
	Cable conduit connector 1/2"		TF-CC US

Accessories

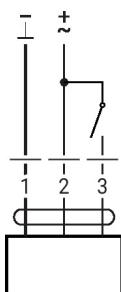
Mechanical accessories	Description	Type
Cable Gland (NEMA 4 models)		43442-00001
Damper crank arm Slot width 6.2 mm, clamping range ø10...18 mm	ZS-T	
Damper crank arm Slot width 8.2 mm, clamping range ø10...18 mm	KH6	
Damper crank arm Slot width 8.2 mm, clamping range ø14...25 mm	KH8	
Damper crank arm Slot width 8.2 mm, for ø1.05"	KH10	
Ball joint suitable for damper crank arm KH8	KH12	
Ball joint suitable for damper crank arm KH8	KG6	
Ball joint suitable for damper crank arm KH8	KG8	
Ball joint suitable for damper crank arm KH8 / KH10	KG10A	
Push rod for KG10A ball joint L 36", 3/8" diameter	SH8	
Push rod for KG10A ball joint L 36", 3/8" diameter	SH10	
Weather shield 13x8x6" [330x203x152 mm] (LxWxH)	ZG-DC1	
Baseplate, for ZS-100	ZG-DC2	
Weather shield 406x213x102 mm [16x8-3/8x4"] (LxWxH)	ZS-100	
Shaft extension 240 mm ø20 mm for damper shaft ø8...22.7 mm	ZS-101	
Shaft extension 240 mm ø20 mm for damper shaft ø8...22.7 mm	ZS-150	
Mounting bracket for AF..	AV8-25	
Mounting bracket	TF-P	
for AF / NF	ZG-100	
Wrench 0.32 in and 0.39 in [8 mm and 10 mm]	ZG-101	
Adapter for auxiliary switch and feedback potentiometer, Multipack 20 pcs.	TOOL-06	
Adapter for auxiliary switch and feedback potentiometer, Multipack 20 pcs.	Z-SPA	
Shaft extension 170 mm ø10 mm for damper shaft ø6...16 mm	K-LM10	
Shaft extension 170 mm ø10 mm for damper shaft ø6...16 mm	K-LM12	
Shaft extension 170 mm ø10 mm for damper shaft ø6...16 mm	K-LM16	
Shaft extension 170 mm ø10 mm for damper shaft ø6...16 mm	K-LM20	
Shaft extension 170 mm ø10 mm for damper shaft ø6...16 mm	ZG-LMSA	
Shaft extension 170 mm ø10 mm for damper shaft ø6...16 mm	ZG-LMSA-1	
Shaft extension 170 mm ø10 mm for damper shaft ø6...16 mm	ZG-LMSA-1/2-5	
Shaft extension 170 mm ø10 mm for damper shaft ø6...16 mm	AV6-20	

Electrical installation

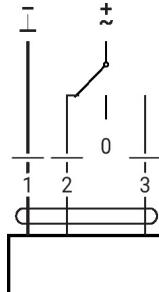
Wire colors:

1 = black
2 = red
3 = white

AC/DC 24 V, on/off



AC/DC 24 V, 3-point



1	2	3	0	0
—	—	—	—	—
—	—	—	—	—
—	—	—	—	—
—	—	—	stop	stop
—	—	—	—	—

Dimensions

PC

