

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

- Torque motor 180 in-lb [20 Nm]
- Nominal voltage AC/DC 24 V
- Control Modulating, Communicative, Hybrid
- Position feedback



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	3.5 W
	Power consumption in rest position	1.3 W
	Transformer sizing	6 VA
	Electrical Connection	18 GA 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
Data bus communication	Communicative control	LON (FTT-10A)
Functional data	Torque motor	180 in-lb [20 Nm]
	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)	150 s / 90°
	Noise level, motor	45 dB(A)
Position indication	Mechanical, 30...65 mm stroke	
Safety data	Power source UL	Class 2 Supply
	Degree of protection IEC/EN	IP54
	Degree of protection NEMA/UL	NEMA 2
	Enclosure	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	2.2 lb [1.0 kg]
Materials	Housing material	UL94-5VA

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

Product features

Typical specification 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.

Accessories

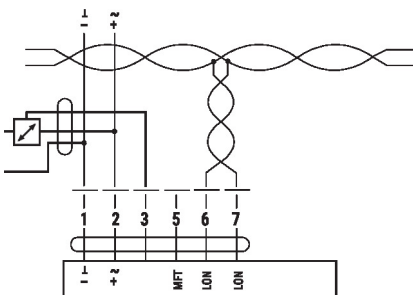
Electrical accessories	Description	Type
	Auxiliary switch 1x SPDT add-on	S1A
	Auxiliary switch 2x SPDT add-on	S2A
	Auxiliary switch, mercury-free	P475
	Auxiliary switch, mercury-free	P475-1
	Feedback potentiometer 140 Ω add-on, grey	P140A GR
	Feedback potentiometer 500 Ω add-on, grey	P500A GR
	Feedback 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
	Battery backup system, for non-spring return models	NSV24 US
	Battery, 12 V, 1.2 Ah (two required)	NSV-BAT
	Transformer, AC 120 V to AC 24 V, 40 VA	ZG-X40
	Cable conduit connector 1/2"	TF-CC US
	Cable Gland (NEMA 4 models)	43442-00001

Mechanical accessories
Description
Type

Damper crank arm Slot width 6.2 mm, clamping range \varnothing 10...18 mm	KH6
Damper crank arm Slot width 8.2 mm, clamping range \varnothing 10...18 mm	KH8
Damper crank arm Slot width 8.2 mm, clamping range \varnothing 14...25 mm	KH10
Damper crank arm Slot width 8.2 mm, for \varnothing 1.05"	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 KG6 & KG8 ball joints (36" L, 5/16" diameter).	SH8
Push rod for KG10A ball joint 36" L, 3/8" diameter	SH10
Damper clip for damper blade, 3.5" width.	ZG-DC1
Damper clip for damper blade, 6" width.	ZG-DC2
Weather shield 13x8x6" [330x203x152 mm] (LxWxH)	ZS-100
Baseplate, for ZS-100	ZS-101
Weather shield 406x213x102 mm [16x8-3/8x4"] (LxWxH)	ZS-150
Shaft extension 240 mm \varnothing 20 mm for damper shaft \varnothing 8...22.7 mm	AV8-25
Anti-rotation bracket TF/NKQ/AM/NM/LM.	TF-P
Mounting bracket for AF..	ZG-100
Mounting bracket	ZG-101
Wrench 0.32 in and 0.39 in [8 mm and 10 mm]	TOOL-06
Adapter for auxiliary switch and feedback potentiometer	Z-SPA
Actuator arm for standard shaft clamp (one-sided)	AH-25
Clamp NM/AM 1/2", 3/4", 1"	K-AM25
Shaft clamp reversible, clamping range \varnothing 10...20 mm	K-SA
Mounting bracket	ZG-109
Linkage kit	ZG-110
Mounting bracket for LF..	ZG-112
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
Mounting kit for linkage operation for flat installation	ZG-NMA
Linkage kit	ZG-JSL
Jackshaft Retrofit Linkage with Belimo Rotary Actuators	
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
Shaft extension 1/2"	ZS-300-C1
Shaft extension 3/4"	ZS-300-C2
Shaft extension 1"	ZS-300-C3
Baseplate extension for SM..A to SM../AM../SMD24R	Z-SMA

Tools
Description
Type

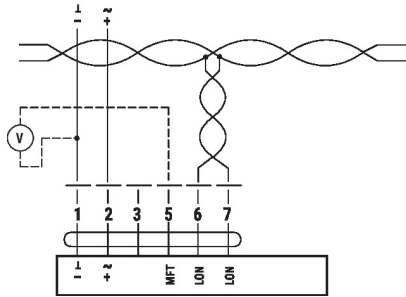
Signal simulator, Power supply AC 120 V	PS-100
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Electrical installation


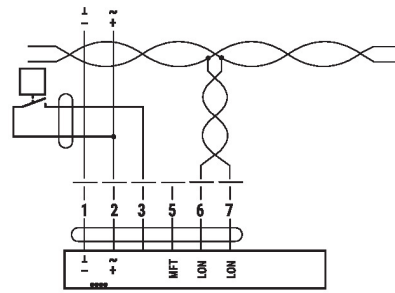
Connection with Active Sensor, e.g. 0...10 V @ 0...50°C

Wiring diagrams

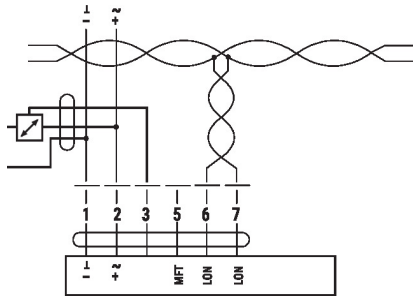
Connection without Sensor



Connection with Switching Contact, e.g. p-monitor



Connection with Active Sensor, e.g. 0...10 V @ 0...50°C



Dimensions

∅ 1/2" to 1.05" [12.7 to 26.67]

□ 2 5/8" to 1.05" [10 to 26.67]

