BELIMO

NEMA 4X, On/Off, Floating Point Control, Non-Spring Return, 24 V

Technical data sheet GMX24-3-T N4

5-year warranty

Technical data

Electrical data	Nominal voltage	AC/DC 24 V
	Nominal voltage frequency	50/60 Hz
	Power consumption in operation	4 W
	Power consumption in rest position	2 W
	Transformer sizing	6 VA (class 2 power source)
	Electrical Connection	Screw terminal (for 26 to 14 GA wire), 1/2" conduit connector
	Overload Protection	electronic throughout 0...95° rotation
Functional data	Torque motor	360 in-lb [40 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)	150 s / 90°
	Running time motor note	constant, independent of load
	Noise level, motor	45 dB(A)
	Shaft Diameter	1/2...1.05" round, centers on 1/2" and 3/4" with insert, 1.05" without insert
	Position indication	Mechanically, 5...20 mm stroke
Safety data	Degree of protection IEC/EN	IP66
	Degree of protection NEMA/UL	NEMA 4X
	Enclosure	UL Enclosure Type 4X
	Agency Listing	cULus acc. to UL60730-1A/-2-14, CAN/CSA E60730-1, CSA C22.2 No 24-93, CE acc. to 89/336/EC
	Quality Standard	ISO 9001
	Ambient temperature	-22...122°F [-30...50°C]
	Ambient temperature note	-40...50°C for actuator with integrated heating
	Storage temperature	-40...176°F [-40...80°C]
	Ambient humidity	Max. 100% RH
	Servicing	maintenance-free
Weight	Weight	7.1 lb [3.2 kg]
Materials	Housing material	Polycarbonate

Footnotes †Rated Impulse Voltage 800V, Type action 1, 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 up to 1.05" in diameter by means of its universal 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 GMB24-3-T N4 provides 95° of rotation and a visual indicator indicates 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 after the cover is removed.

The GMB24-3-T N4 actuator uses a sensorless brushless DC motor, which is controlled by an Application Specifi c 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.

For low ambient temperatures, the optional supplemental (-H) Heater add-on is available.

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 up to 1.05" diameter. 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. 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
Gasket for cable gland (NEMA 4 models)	11097-00001
Cable Gland (NEMA 4 models)	43442-00001
Battery backup system, for non-spring return models	NSV24 US
Battery, 12 V, 1.2 Ah (two required)	NSV-BAT
Feedback potentiometer 1 kΩ add-on, grey	P1000A GR
Auxiliary switch 1 x SPDT add-on	S1A
Auxiliary switch 2 x SPDT add-on	S2A
Cable conduit connector 1/2"	TF-CC US

Mechanical accessories	Description	Type
	Actuator arm for standard shaft clamp	AH-GMA
	Shaft extension 240 mm Ø20 mm for damper shaft Ø 8...22.7 mm	AV8-25
	Ball joint suitable for damper crank arm KH8, Multipack 10 pcs.	KG8
	Standard GK/GM clamp (1/2" to 1.05").	K-GM20
	Push rod for KG10A ball joint 36" L, 3/8" diameter	SH10
	Push rod for KG6 & KG8 ball joints (36" L, 5/16" diameter).	SH8
	Wrench 0.512 in. [13 mm]	TOOL-07
	17" Mounting Bracket for AF,NF,GM,AM,SM	ZG-100
	Mounting Bracket: AF,NF,LF,GM,AM,NM,SM	ZG-101
	Dual actuator mounting bracket.	ZG-102
	Mounting Bracket: GM,AM,SM	ZG-103
	Mounting Bracket: GM,AM,SM	ZG-104
	Mounting Bracket: ZS-260 Right Angle	ZG-109
	Linkage kit	ZG-110
	Damper clip for damper blade, 3.5" width.	ZG-DC1
	Damper clip for damper blade, 6" width.	ZG-DC2
	Mounting kit for linkage operation for flat installation	ZG-GMA
	Base plate extension for GM..A to GM..	Z-GMA
	Weather shield 330x203x152 mm [13x8x6"] (LxBxH)	ZS-100
	Base plate, for ZS-100	ZS-101
	Weather shield 406x213x102 mm [16x8-3/8x4"] (LxWxH)	ZS-150
	Explosion proof housing 406x254x164 mm [16x10x6.435"] (LxBxH), UL and CSA, Class I, Zone 1&2, Groups B, C, D, (NEMA 7), Class III, Hazardous (classified) Locations	ZS-260
	Weather shield 438x222x140 mm [17-1/4x8-3/4x5-1/2"] (LxBxH), NEMA 4X, with mounting brackets	ZS-300
	Weather shield 438x222x140 mm [17-1/4x8-3/4x5-1/2"] (LxBxH), 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

Service tools	Description	Type
	Belimo PC-Tool, Software for adjustments and diagnostics	MFT-P
	Connection cable 16 ft [5 m], A: RJ11 6/4 ZTH EU, B: 6-pin for connection to service socket	ZK1-GEN
	Connection cable 16 ft [5 m], A: RJ11 6/4 ZTH EU, B: free wire end for connection to MP/PP terminal	ZK2-GEN
	Connection cable 16 ft [5 m], A+B: RJ12 6/6	ZK6-GEN

Factory add-on option only	Description	Type
	Heater, with adjustable thermostat	N4 Heater Add-on 24V (-H)

Electrical installation

A Actuators with appliance cables are numbered.

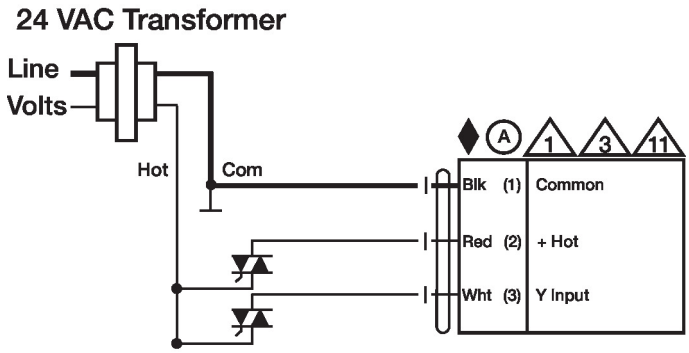
1 Provide overload protection and disconnect as required.

3 Actuators may also be powered by DC 24 V.

6 Actuators Hot wire must be connected to the control board common. Only connect common to neg. (-) leg of control circuits. Terminal models (-T) have no-feedback.

11 Actuators may be connected in parallel if not mechanically linked. Power consumption and input impedance must be observed.

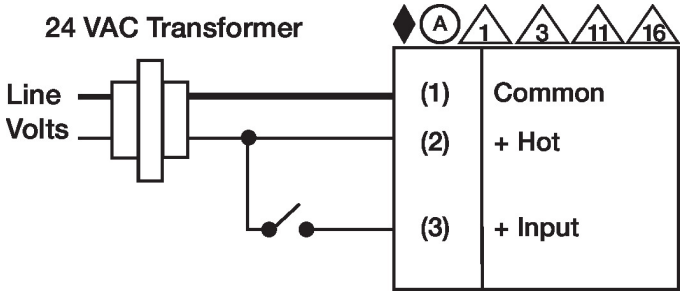
16 Actuators are provided with a numbered screw terminal strip instead of a cable.



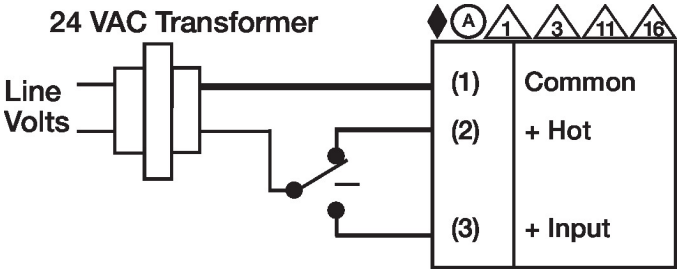
Floating Point - Triac Source

Wiring diagrams

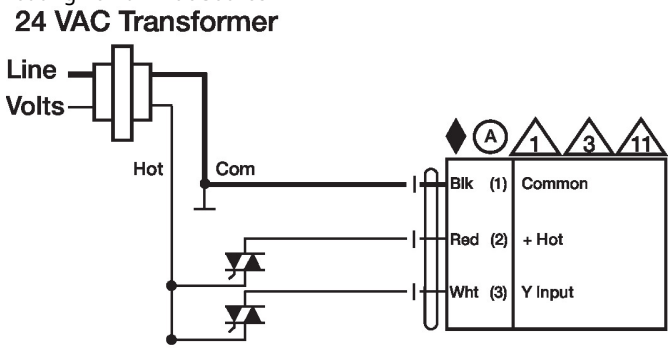
On/Off



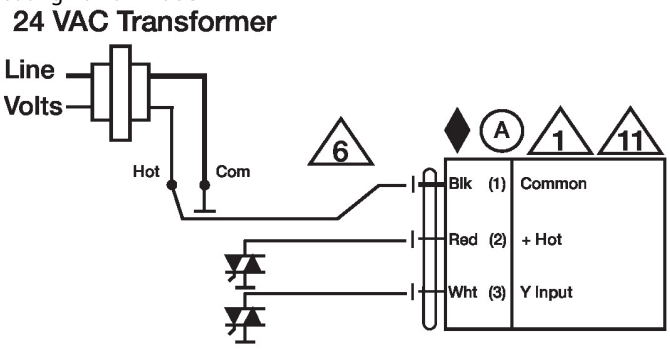
Floating Point



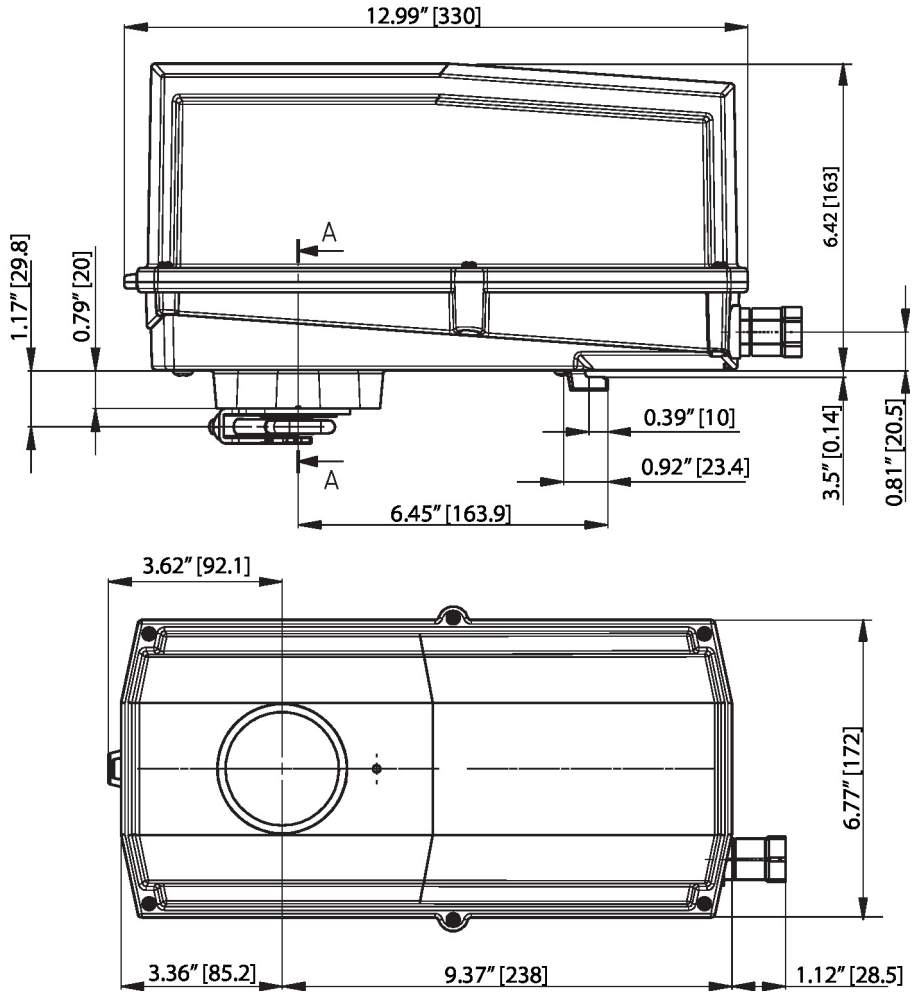
Floating Point - Triac Source



Floating Point - Triac Sink



Dimensions


12.99″ [330]
6.42 [163]
A
1.17″ [29.8]
0.79″ [20]
0.39″ [10]
0.92″ [23.4]
3.5″ [0.14]
0.81″ [20.5]
A
6.45″ [163.9]
3.62″ [92.1]
6.77″ [172]
3.36″ [85.2]
9.37″ [238]
1.12″ [28.5]