



5-year warranty



Technical data

<b>Electrical data</b>	Nominal voltage	AC/DC 24 V
	Nominal voltage frequency	50/60 Hz
	Power consumption in operation	2 W
	Power consumption in rest position	0.2 W
	Transformer sizing	4 VA (class 2 power source)
	Overload Protection	electronic throughout 0...95° rotation
<b>Functional data</b>	Torque motor	90 in-lb [10 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
	Noise level, motor	45 dB(A)
	Shaft Diameter	9/16...3/4" round
Position indication	Mechanically, 30...65 mm stroke	
<b>Safety data</b>	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; Listed to UL 2043 - suitable for use in air plenums per Section 300.22(c) of the NEC and Section 602.2 of the IMC
	Quality Standard	ISO 9001
	Ambient temperature	-22...122°F [-30...50°C]
	Storage temperature	-40...176°F [-40...80°C]
	Ambient humidity	Max. 95% RH, non-condensing
	Servicing	maintenance-free
	<b>Weight</b>	Weight
<b>Materials</b>	Housing material	UL94-5VA

**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. A crank arm and several mounting brackets are available for applications where the actuator cannot be direct coupled to the damper shaft.
- 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 NMB(X) series 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 cover.  
The NMB(X)24-3... 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.  
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 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. If required, actuators will be provided with a screw terminal strip for electrical connections (NMX24-3-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 International Quality Control Standards. Actuators shall be as manufactured by Belimo.

**Accessories**

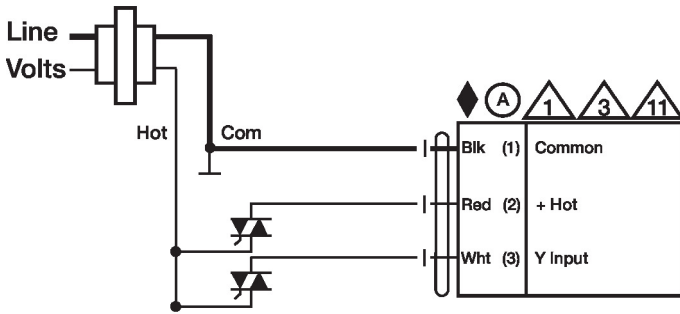
Electrical accessories	Description	Type
	Battery backup system, for non-spring return models	NSV24 US
	Battery, 12 V, 1.2 Ah (two required)	NSV-BAT
	Auxiliary switch 1 x SPDT add-on	S1A
	Auxiliary switch 2 x SPDT add-on	S2A
	Feedback potentiometer 140 Ω add-on, grey	P140A GR
	Feedback potentiometer 1 kΩ add-on, grey	P1000A GR
	Feedback potentiometer 10 kΩ add-on, grey	P10000A GR
	Feedback potentiometer 2.8 kΩ add-on, grey	P2800A GR
	Feedback potentiometer 500 Ω add-on, grey	P500A GR
	Feedback potentiometer 5 kΩ add-on, grey	P5000A GR
Mechanical accessories	Description	Type
	Shaft clamp reversible, clamping range Ø8...20 mm	K-NA
	<p>17" Mounting Bracket for AF,NF,GM,AM,SM</p>	ZG-100
	<p>Mounting Bracket: AF,NF,LF,GM,AM,NM,SM</p>	ZG-101
	<p>Mounting Bracket: GM,AM,SM</p>	ZG-103
	<p>Mounting Bracket: GM,AM,SM</p>	ZG-104
	Mounting kit for linkage operation for flat installation	ZG-NMA
	Shaft extension 240 mm Ø20 mm for damper shaft Ø 8...22.7 mm	AV8-25
	Shaft extension for 1/2" diameter shafts (3.8" L).	ZG-NMSA-1
	Weather shield 330x203x152 mm [13x8x6"] (LxBxH)	ZS-100
	Weather shield 406x213x102 mm [16x8-3/8x4"] (LxWxH)	ZS-150
	Wrench 0.32 in and 0.39 in [8 mm and 10 mm]	TOOL-06
		ZG-JSL

**Electrical installation**

- Actuators with appliance cables are numbered.
- Provide overload protection and disconnect as required.
- Actuators may also be powered by DC 24 V.

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

**24 VAC Transformer**

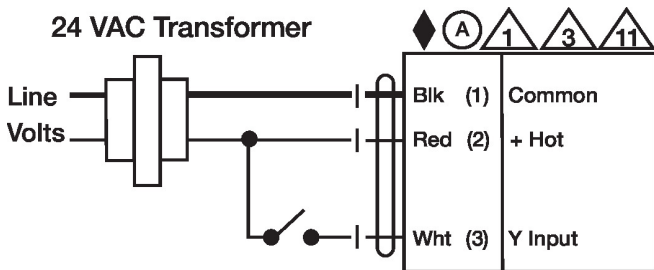


Floating Point - Triac Source

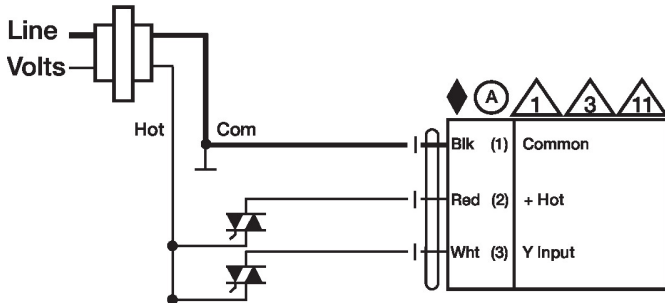
**Wiring diagrams**

On/Off

**24 VAC Transformer**

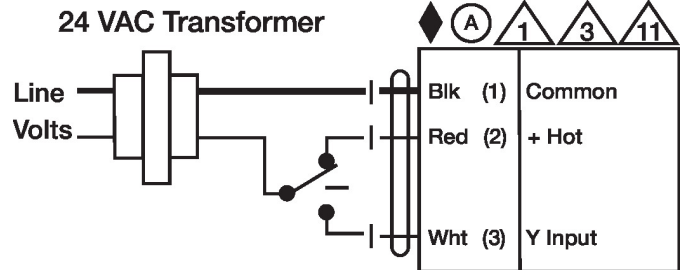


Floating Point - Triac Source  
**24 VAC Transformer**

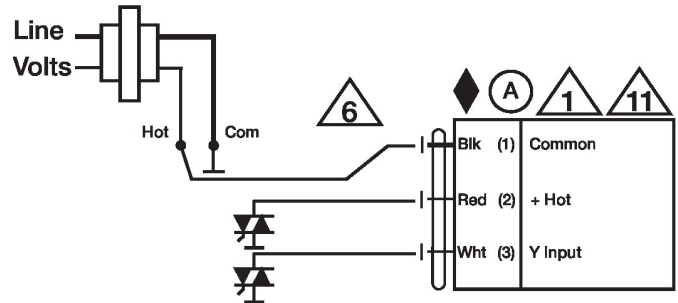


Floating Point

**24 VAC Transformer**



Floating Point - Triac Sink  
**24 VAC Transformer**



## Dimensions

