

NMX120-3

On/Off, Floating Point, Non-Spring Return, 100 to 240 VAC



Technical Data

Power Supply	100...240 VAC, -15% / +10%, 50/60 Hz
Power Consumption Running	3.5 W
Power Consumption Holding	0.6 W
Transformer Sizing	5.5 VA (class 2 power source)
Shaft Diameter	1/2" to 1.05" round, centers on 1/2" and 3/4" with insert, 1.05" without insert
Electrical Connection	18 GA appliance rated cable with 1/2" conduit connector protected NEMA 2 (IP54) 3ft [1m] 10ft [3m] and 16ft [5m]
Overload Protection	electronic throughout 0° to 95° rotation
Input Impedance	600 Ω
Angle of Rotation	Max. 95°, adjustable with mechanical stop
Torque motor	Min. 90 in-lbs [10 Nm]
Direction of Rotation (Motor)	reversible with built-in switch
Position Indication	reflective visual indicator (snap on)
Manual Override	external push button
Running Time (Motor)	95 sec
Ambient Humidity	5 to 95% RH non condensing (EN 60730-1)
Ambient Temperature Range	-22°F to 122°F [-30°C to 50°C]
Storage Temperature Range	-40°F to 176°F [-40°C to 80°C]
Housing	NEMA 2, IP54, UL Enclosure Type 2
Housing Material	UL94-5VA
Agency Listings†	cULus acc. to UL60730-1A/-2-14, CAN/CSA E60730-1:02, CE acc. to 2004/108/EC and 2006/95/EC
Noise Level (Motor)	<45 dB (A)
Servicing	maintenance free
Quality Standard	ISO 9001
Weight	1.8 lb [0.8 kg]

†Rated Impulse Voltage 4kV, Type of action 1, Control Pollution Degree 3.

Torque min. 90 in-lb, for control of damper surfaces up to 22 sq. ft.

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" diameter by means of its universal clamp, 1/2" self-centered default. A crank arm and several mounting brackets are available for applications where the actuator cannot be direct coupled to the damper shaft.

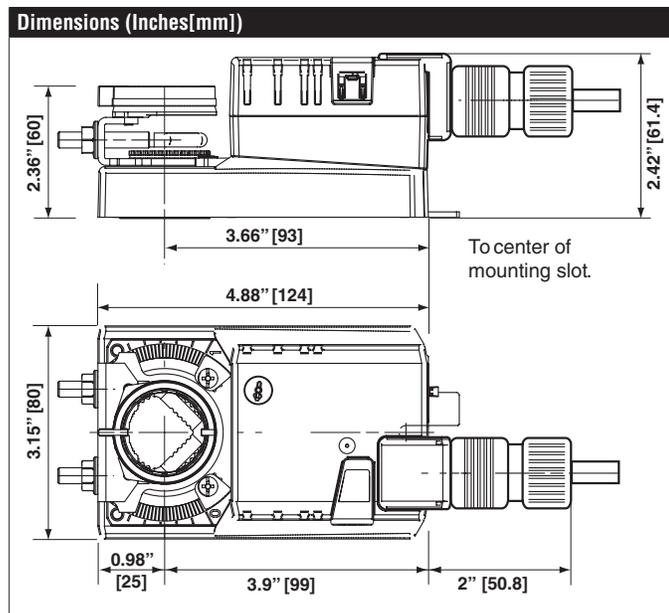
Operation

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 NMX 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 NMX120-3... 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.



Accessories

K-NA	Reversible NMB(X) Clamp (1/2" to 3/4").
ZG-100	Univ. right angle bracket (17" H x 11-1/8" W x 6" base).
ZG-101	Univ. right angle bracket (13" H x 11" W x 7-7/16" base).
ZG-103	Univ. right angle bracket (7-1/2" H x 11" W x 2-3/4" base).
ZG-104	Univ. right angle bracket (13-5/8" H x 7-1/2" W x 4" base).
ZG-NMA	AMB(X), NMB(X), NKQB(X) crankarm adaptor kit.
AV8-25	9.8" shaft extension for 5/16" to 1" diameter shafts.
ZG-NMSA-1	Shaft extension for 1/2" diameter shafts (3.8" L).
ZS-100	Weather shield - galvaneal (13" L x 8" W x 6" D).
ZS-150	Weather shield - PC w/ foam seal (16" L x 8-3/8" W x 4" D).
TOOL-06	8 mm and 10 mm wrench.
S1A	Auxiliary switch, 1x SPDT, 3A (0.5A inductive) @250 VAC max.
S2A	Auxiliary switch, 2x SPDT, 3A (0.5A inductive) @250 VAC max.
P370	Shaft mount auxiliary switch, 1/2" shaft.
P10000A GR	Feedback potentiometer 10000Ω.
P1000A GR	Feedback potentiometer 1000Ω.
P140A GR	Feedback potentiometer 140Ω.
P2800A GR	Feedback potentiometer 2800Ω.
P5000A GR	Feedback potentiometer 5000Ω.
P500A GR	Feedback potentiometer 500Ω.

Typical Specification

Floating point, on/off control damper actuators shall be electronic type, with integrated linear stroking arm. Actuators shall have brushless DC motor technology and be protected from overload at all positions of linear stroke. Actuators shall have reversing switch and manual override on the cover. Run time shall be constant and independent of torque. Actuators shall be cUL listed, have a 5-year warranty, and be manufactured under ISO 9001 International Quality Control Standards. Actuators shall be as manufactured by Belimo.

Wiring Diagrams

- Actuator with appliance cables are numbered.
- Provide overload protection and disconnect as required.
- Actuators may be connected in parallel if not mechanically linked. Power consumption and input impedance must be observed.

