NFX24 N4 - Damper Actuator

NEMA 4, On/Off, Spring Return, 24 V

Torque min. 90 in-lb, for control of air dampers.

Application

For On/Off, fail-safe control of dampers in HVAC systems. Actuator sizing should be done in accordance with the damper manufacturer's specifications. Control is On/Off from an auxiliary contact or a manual switch. The actuator is mounted directly to a damper shaft up to 1.05" in diameter by means of its universal clamp.

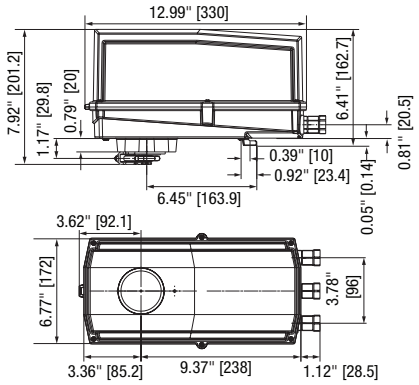
Operation

The NF..24 N4 series actuators provide true spring return operation for reliable fail-safe application and positive close off on air tight dampers. The spring return system provides constant torque to the damper with, and without, power applied to the actuator. The NF..24 N4 series provides 95° of rotation and is provided with a graduated position indicator showing 0° to 95°. The actuator may be stalled anywhere in its normal rotation without the need of mechanical end switches. The NF..24 N4 actuator is shipped at +5° (5° from full fail-safe) to provide automatic compression against damper gaskets for tight shut-off.

Technical Data	
Power Supply	24 VAC±20%, 50/60Hz, 24 VDC+20%/-10%
Power Consumption Running	6 W
Power Consumption Holding	2.5 W
Transformer Sizing	8.5 VA (class 2 power source)
Shaft Diameter	1/2" to 1.05" round, centers on 3/4" with insert, 1.05" without insert
Electrical Connection	3 ft [1 m], 10 ft [3 m] or 16 ft [5 m] 18 GA appliance cables, with 1/2" conduit connector
Overload Protection	electronic throughout 0° to 95° rotation
Electrical Protection	actuators are double insulated
Angle of Rotation	95° (adjustable with mechanical end stop, 35° to 95°)
Torque	90 in-lbs [10 Nm] minimum
Direction of Rotation (Motor)	reversible with CW/CCW mounting
Direction of Rotation (Fail-Safe)	reversible with CW/CCW mounting
Position Indication	dial
Manual Override	5 mm hex crank (3/16" Allen), supplied
Running Time (Motor)	<75 sec
Running Time (Fail-Safe)	20 sec @ -4°F to +122°F [-20°C to +50°C], < 60 sec @ -22°F [-30°C]
Humidity	100% condensing
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 4, IP66, UL enclosure type 4
Housing Material	polycarbonate
Agency Listings†	cULus acc. to UL60730-1A/-2-14, CAN/CSA E60730-1:02, CE acc. to 2004/108/EC
Noise Level (Motor)	≤50 dB (A)
Noise Level (Fail-Safe)	<62 dB (A)
Servicing	maintenance free
Quality Standard	ISO 9001
Weight	9.3 lb [4.2 kg]

†Rated Impulse Voltage 800V, Type of action 1.AA, Control Pollution Degree 4.

Dimensions (Inches[mm])



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Accessories	
AF-P	Anti-rotation bracket AF/NF.
KG10A	Ball joint for 3/8” diameter rod, zinc plated.
KH10	Univ. crankarm, slot 21/64” w, for 9/16” to 1” dia. shafts.
SH10	Push rod for KG10A ball joint (36” L, 3/8” diameter).
TOOL-06	8 mm and 10 mm wrench.
TOOL-07	13 mm wrench.
ZG-DC1	Damper clip for damper blade, 3.5” width.
ZG-DC2	Damper clip for damper blade, 6” width.
ZG-JSA-1	1” diameter jackshaft adaptor (11” L).
ZG-JSA-2	1-5/16” diameter jackshaft adaptor (12” L).
ZG-JSA-3	1.05” diameter jackshaft adaptor (12” L).
11097-00001	Gasket for cable gland (for NEMA 4 models).
43442-00001	Cable gland (for NEMA 4 models).
PS-100	Actuator power supply and control simulator.
ZG-X40	120 to 24 VAC, 40 VA transformer.

Typical Specification

On/Off spring return damper actuators shall be direct coupled type which require no crank arm and linkage and be capable of direct mounting to a jackshaft up to a 1.05” diameter. The actuators must be designed so that they may be used for either clockwise or counter clockwise fail-safe operation. Actuators shall be protected from overload at all angles of rotation. If required, two SPDT auxiliary switch shall be provided having the capability of one being adjustable. 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. Actuators shall be cULus listed and have a 5 year warranty, and be manufactured under ISO 9001 International Quality Control Standards. Actuators shall be as manufactured by Belimo.

Wiring Diagrams

WARNING! LIVE ELECTRICAL COMPONENTS!

During installation, testing, servicing and troubleshooting of this product, it may be necessary to work with live electrical components. Have a qualified licensed electrician or other individual who has been properly trained in handling live electrical components perform these tasks. Failure to follow all electrical safety precautions when exposed to live electrical components could result in death or serious injury.

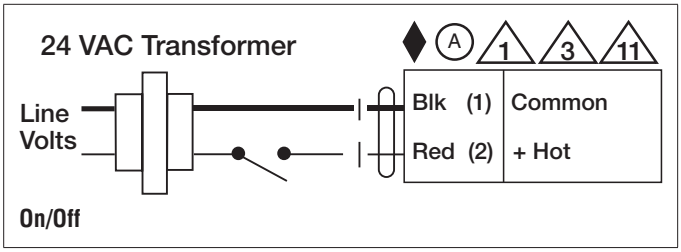
Meets cULus requirements without the need of an electrical ground connection.

Actuators with appliance cables are numbered.

Provide overload protection and disconnect as required.

Actuators may also be powered by 24 VDC.

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



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