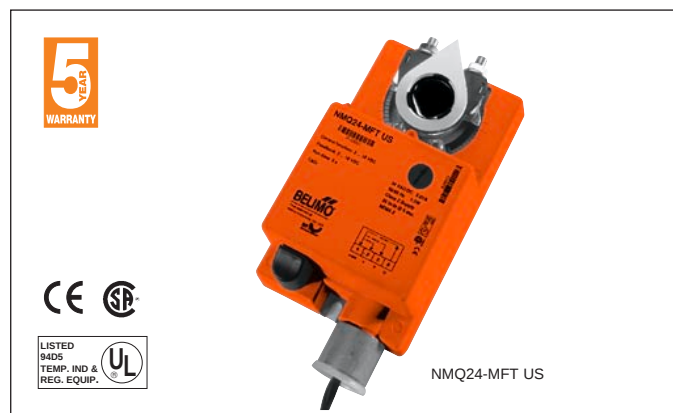


NMQ24-MFT US

Fast acting, proportional damper actuator, non-spring return, Multi-Function Technology®



- Torque min. 35 in-lb
- Running time 5.0 to 8.0 seconds (5 sec. DEFAULT)
- Control 2 to 10 VDC (DEFAULT)
- Feedback 2 to 10 VDC (DEFAULT)

Application

For proportional modulation of dampers in HVAC systems with fast running requirements, or some Laboratory fume hoods. The NMQ24-MFT US is a non-spring return type actuator. When supply power is removed the actuator will maintain its last position.

Default/Configuration

The default parameters for 2 to 10 VDC applications of the NMQ24-MFT US actuator are assigned during manufacturing. If necessary, custom versions of the actuators can be ordered. The parameters noted in the Technical Data table are variable.

These parameters can only be changed by pre-set configurations from Belimo.

Operation

The NMQ24-MFT US actuator provides 95° of rotation and is provided with a position indicator. Upon installation and wiring the manual override push button must be pressed twice, so the actuator will perform an adaptation and use the new mechanical points for zero position during normal control operations.

The actuator uses a brushless DC motor which is controlled by an Application Specific Integrated Circuit (ASIC) and a microprocessor. The microprocessor provides the intelligence to the ASIC to provide a constant rotation rate and to know the actuator's exact position. The ASIC monitors and controls the brushless DC motor's rotation and provides a Digital Rotation Sensing (DRS) function to prevent damage to the actuator in a stall condition. The position feedback signal is generated without the need for mechanical feedback potentiometers using DRS. The actuator may be stalled anywhere in its normal rotation without the need of mechanical end switches.

Installation

The NMQ24-MFT US is mounted directly to control shafts up to 3/4" diameter by means of its universal clamp and anti-rotation bracket. The actuator provides constant torque to the application with and without power applied to the actuator. The NMQ24-MFT US actuator is shipped in a Mid position, compression against seats or gaskets for tight shut-off is accomplished manually.

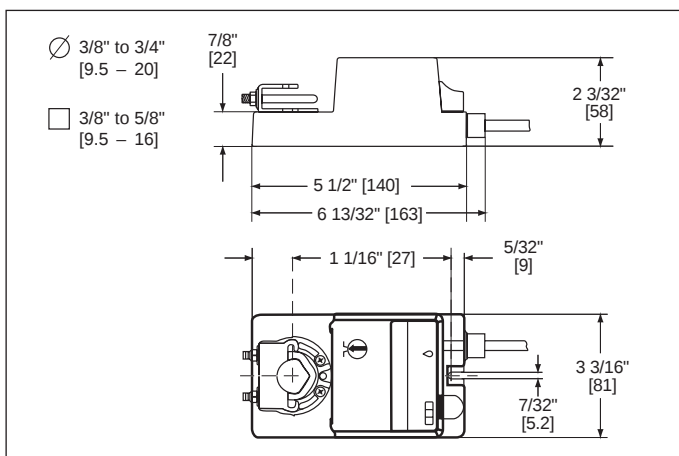
After mounting and completing electrical installation the NMQ24-MFT US must have the adaptation function initiated. This is accomplished by pressing the manual override consecutively two times within four seconds.

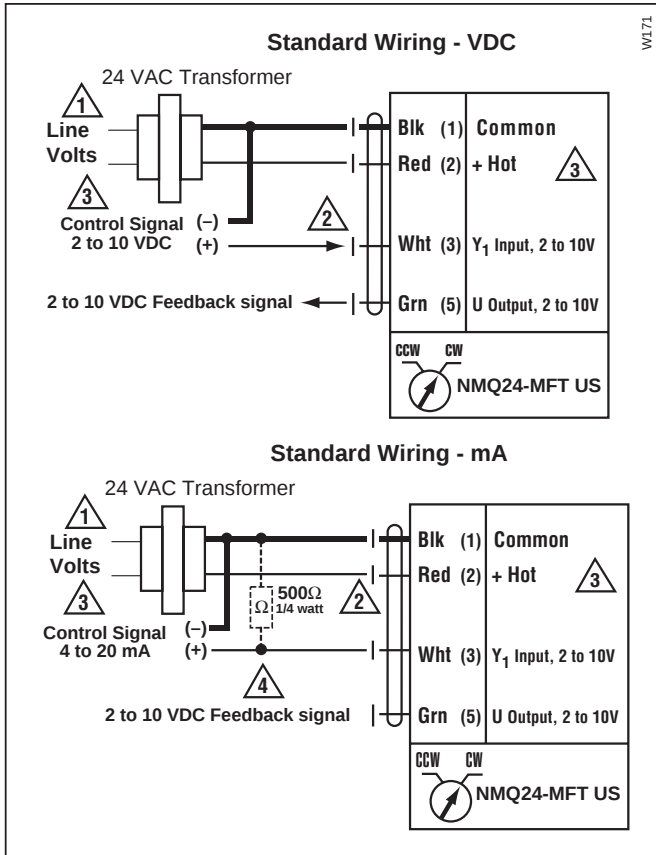
Technical Data	NMQ24-MFT US
Power supply	24 VAC, $\pm 5\%$, 50/60 Hz 24 VDC, $\pm 5\%$
Power consumption	running: 9 W; holding: 1.2 W
Transformer sizing	12 VA (Class 2 power source)
Electrical connection	3 ft, 18 GA, plenum cable, 1/2" conduit connector
Overload protection	electronic throughout 0 to 95° rotation
Operating range Y*†	2 to 10 VDC, 4 to 20 mA (w/500 Ω , 1/4 W resistor) ZG-R01
Control resolution	Response sensitivity, 80 mV Reverse sensitivity, 80 mV Sensitivity when driving off mechanical position, 140 mV
Input impedance	100k Ω for 2 to 10 VDC (0.1 mA) 500 Ω for 4 to 20 mA
Feedback output U*	2 to 10 VDC, 0.5 mA max
Torque*	min 35 in-lb (4 Nm)
Direction of rotation*	reversible with switch L/R L=CW with increase in signal R=CCW with a increase in signal
Angle of rotation*	0 to 95°, adjust with mechanical stops
Running time*	5.0 seconds constant for 95° rotation
Angle of Rotation Adaptation*	On-manual (Default) when less than 95% angle
Manual override	Manual push button
Position indication	clip on indicator
Humidity	5 to 95% RH, non-condensing
Ambient temperature	-4 to +122° F (-20 to +50° C)
Storage temperature	-40 to +176° F (-40 to +80° C)
Housing	NEMA 2, IP54
Housing material	UL 94-5VB (flammability rating)
Noise level	less than 52 dB (A)
Agency listings	UL 873 listed, CE, CSA C22.2 No .24 certified
Quality standard	ISO 9001
Servicing	maintenance free
Weight	1.8 lbs. (0.8kg.)

* Variable when configured with MFT options

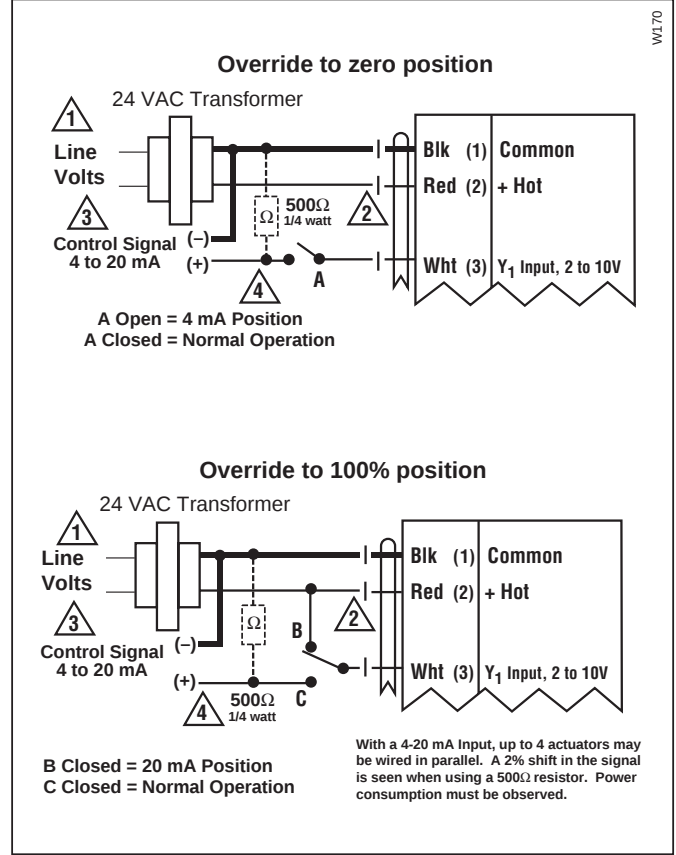
† Only VDC proportional control signal is available, and variable (eg: 0-10 VDC)

Dimensions [All numbers in brackets are in millimeters.]



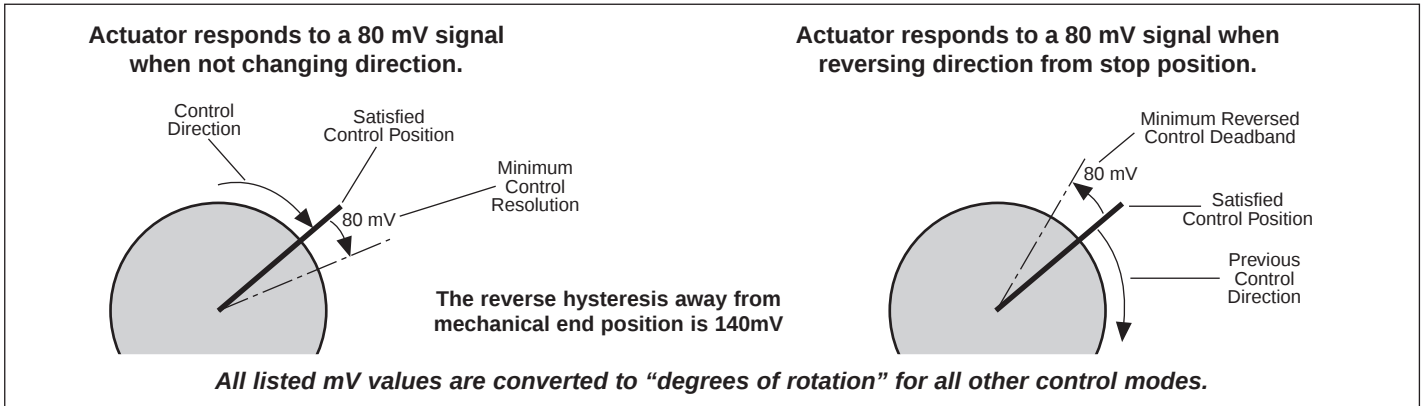


2 to 10 VDC and 4 to 20 mA Control



Override to open or closed position

Response sensitivity and reverse hysteresis, for VDC applications



Available configurations for the NMQ24-MFT US

Configuration	Control		Motion	
	Input range	Position feedback	Running time	Torque
P-11001	2-10 VDC	2-10 VDC	5.0 sec	35 in-lbs
P-11002	0-10 VDC	0-10 VDC	5.0 sec	35 in-lbs
P-11003	2-10 VDC	2-10 VDC	6.0 sec	44 in-lbs
P-11004	2-10 VDC	2-10 VDC	7.0 sec	53 in-lbs
P-11005	2-10 VDC	2-10 VDC	8.0 sec	58 in-lbs
Run times available up to 60 sec. @ 58 in-lbs				

Start point span adjustable control input is available. Please consult Belimo for the proper configuration code.
PWM and Floating point control inputs are not available with this actuator.

Notes

- 1 Provide overload protection and disconnect as required.
- 2 Actuators may be connected in parallel if not mechanically mounted to the same shaft. Power consumption and input impedance must be observed.
- 3 Actuator may also be powered by 24 VDC.
- 4 ZG-R01 may be used.