

# NMX24-SR-T

Modulating, Non-Spring Return, 24 V, for 2 to 10 VDC or 4 to 20 mA



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

## Application

For proportional modulation 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, 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.

The actuator operates in response to a 2 to 10 VDC, or with the addition of a 500  $\Omega$  resistor, a 4 to 20 mA control input from an electronic controller or positioner. A 2 to 10 VDC feedback signal is provided for position indication or master-slave applications.

## 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-SR... 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.

| Technical Data                |   |
|-------------------------------|---|
| Power Supply                  | 24 VAC, $\pm 20\%$ , 50/60 Hz, 24 VDC, $\pm 10\%$   |
| Power Consumption Running     | 2.5 W   |
| Power Consumption Holding     | 0.4 W   |
| Transformer Sizing            | 5 VA (class 2 power source)   |
| Shaft Diameter                | 9/16" to 3/4" round   |
| Electrical Connection         | 18 GA plenum 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               | 100 k $\Omega$ (0.1 mA), 500 $\Omega$   |
| 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]   |

**Wiring Diagrams**

- Provide overload protection and disconnect as required.
- Actuators may also be powered by 24 VDC.
- Only connect common to negative (-) leg of control circuits.
- A 500 Ω resistor (ZG-R01) converts the 4 to 20 mA control signal to 2 to 10 VDC.
- Actuators may be connected in parallel if not mechanically linked. Power consumption and input impedance must be observed.
- Actuators are provided with a numbered screw terminal strip instead of a cable.

