

Customizable Non Fail-Safe modulating actuator for controlling dampers in typical commercial HVAC applications.

- Torque motor 90 in-lb [10 Nm]
- Nominal voltage AC/DC 24 V
- Control modulating
- Position feedback 2...10 V
- NEMA 4X



5-year warranty



Technical data

<b>Electrical data</b>	Nominal voltage	AC/DC 24 V	
	Nominal voltage frequency	50/60 Hz	
	Nominal voltage range	AC 19.2...28.8 V / DC 21.6...28.8 V	
	Power consumption in operation	2.5 W	
	Power consumption in rest position	0.4 W	
	Transformer sizing	5 VA	
	Electrical Connection	Screw terminal (for 26 to 14 GA wire), 1/2" conduit connector	
	Overload Protection	electronic throughout 0...95° rotation	
<b>Functional data</b>	Torque motor	90 in-lb [10 Nm]	
	Operating range Y	2...10 V	
	Operating range Y note	4...20 mA w/ ZG-R01 (500 Ω, 1/4 W resistor)	
	Input impedance	100 kΩ for 2...10 V (0.1 mA), 500 Ω for 4...20 mA	
	Position feedback U	2...10 V	
	Position feedback U note	Max. 0.5 mA	
	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)	
Position indication	pointer		
<b>Safety data</b>	Power source UL	Class 2 Supply	
	Degree of protection IEC/EN	IP66/67	
	Degree of protection NEMA/UL	NEMA 4X	
	Enclosure	UL Enclosure Type 4X	
	Agency Listing	cULus acc. to UL60730-1A/-2-14, CAN/CSA E60730-1:02, CE acc. to 2014/30/EU and 2014/35/EU	
	Quality Standard	ISO 9001	
	Ambient humidity	Max. 100% RH	
	Ambient temperature	-22...122°F [-30...50°C]	
	Ambient temperature note	-40...50°C for actuator with integrated heating	
	Storage temperature	-40...176°F [-40...80°C]	
	Servicing	maintenance-free	
	<b>Weight</b>	Weight	3.5 lb [1.6 kg]
		<b>Materials</b>	Housing material

**Footnotes** †Rated Impulse Voltage 800V, Type action 1, Control Pollution Degree 3.

**Product features**

- 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 3/4" in diameter by means of its universal clamp.
- The actuator operates in response to a 2 to 10 VDC, or with the addition of a 500 Ω 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 NMB24-SR-T N4 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 NMB24-SR-T N4 actuator uses 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.
- For low ambient temperatures, the optional supplemental (-H) Heater add-on is available.
- Typical specification** Proportional 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 from 1/4" to 5/8" diameter. Actuators must provide control in response to a control input from an electronic controller or positioner. 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. 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
	Auxiliary switch 1 x SPDT add-on	S1A
	Auxiliary switch 2x SPDT add-on	S2A
	Feedback potentiometer 10 kΩ add-on, grey	P10000A GR
	Feedback potentiometer 1 kΩ add-on, grey	P1000A GR
	Feedback potentiometer 140 Ω add-on, grey	P140A GR
	Feedback potentiometer 2.8 kΩ add-on, grey	P2800A GR
	Feedback potentiometer 5 kΩ add-on, grey	P5000A GR
	Feedback potentiometer 500 Ω add-on, grey	P500A GR
	Positioner for wall mounting	SGA24
	Convert Pulse Width Modulated Signal to a 2...10 V Signal for Belimo Proportional Actuators	PTA-250
	DC Voltage Input Rescaling Module	IRM-100
	Resistor, 500 Ω, 1/4" wire resistor with 6" pigtail wires	ZG-R01
	Battery backup system, for non-spring return models	NSV24 US
	Transformer, AC 120 V to AC 24 V, 40 VA	ZG-X40
Factory add-on option only	Description	Type
	Heater, with adjustable thermostat	N4 Heater Add-on 24V (-H)

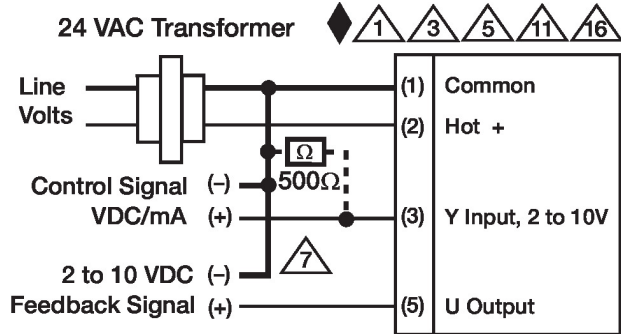
**Electrical installation**

 Provide overload protection and disconnect as required.

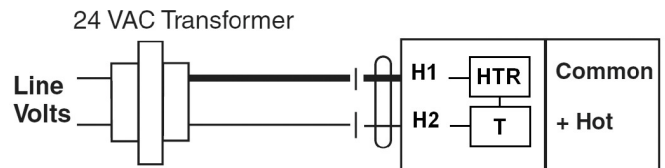
- ▲3 Actuators may also be powered by DC 24 V.
- ▲5 Only connect common to negative (-) leg of control circuits.
- ▲7 A 500 Ω resistor (ZG-R01) converts the 4...20 mA control signal to 2...10 V.
- ▲11 Actuators may be connected in parallel if not mechanically linked. Power consumption and input impedance must be observed.
- ▲16 Actuators are provided with a numbered screw terminal strip instead of a cable.

Wiring diagrams

2...10 V / 4...20 mA Control



NEMA 4 Heater Option



Dimensions

