



5-year warranty



**MFT**

Technical data

<b>Electrical data</b>	Nominal voltage	AC/DC 24 V	
	Nominal voltage frequency	50/60 Hz	
	Power consumption in operation	3.5 W	
	Power consumption in rest position	1.25 W	
	Transformer sizing	6 VA (class 2 power source)	
	Electrical Connection	Screw terminal (for 26 to 14 GA wire [heater 15 GA wire]), 1/2" conduit connector	
	Overload Protection	electronic throughout 0...95° rotation	
<b>Functional data</b>	Torque motor	180 in-lb [20 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, 1500 Ω for PWM, On/Off and Floating point	
	Operating range Y variable	Start point	0.5...30 V
		End point	2.5...32 V
	Options positioning signal	variable (VDC, on/off, floating point)	
	Position feedback U	2...10 V	
	Position feedback U note	Max. 0.5 mA	
	Position feedback U variable	VDC variable	
	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)	150 s / 90°	
	Running time motor variable	90...350 s	
	Noise level, motor	45 dB(A)	
Shaft Diameter	9/16...3/4" round		
Position indication	pointer		
<b>Safety data</b>	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, CSA C22.2 No 24-93, CE acc. to 89/336/EC	
	Quality Standard	ISO 9001	
	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]		
Ambient humidity	Max. 100% RH		

<b>Safety data</b>	Servicing	maintenance-free
<b>Weight</b>	Weight	3.7 lb [1.7 kg]
<b>Materials</b>	Housing material	UL94-5VA

**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 default parameters for 2...10 V applications of the ..MFT actuator are assigned during manufacturing. If necessary, custom versions of the actuators can be ordered. The parameters can be changed by two means: pre-set and custom configurations from Belimo or on-site configurations using the Belimo PC-Tool software.

**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 AMX24-MFT-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 AMX24-MFT-T N4 actuator uses a 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 up to 3/4" diameter. Actuators must provide proportional damper control 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. 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. If required, actuator will be provided with screw terminal strip for electrical connections (AMX24-SR-T and NMX24-SR-T). Run time shall be constant and independent of torque. A 2 to 10 VDC feedback signal shall be provided for position indication. 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

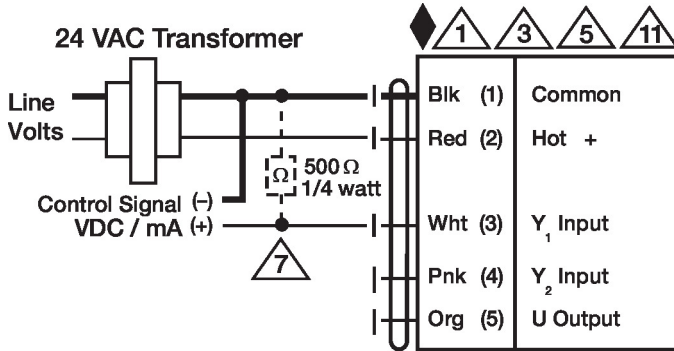
Electrical accessories	Description	Type
	Battery backup system, for non-spring return models	NSV24 US
	Battery, 12 V, 1.2 Ah (two required)	NSV-BAT
	Auxiliary switch 2 x SPDT add-on	S2A
	Service Tool, with ZIP-USB function, for programmable and communicative Belimo actuators, VAV controller and HVAC performance devices	ZTH US
Factory add-on option only	Description	Type
	Heater, with adjustable thermostat	N4 Heater Add-on 24V (-H)

## Electrical installation

 Actuators with appliance cables are numbered.

 Provide overload protection and disconnect as required.

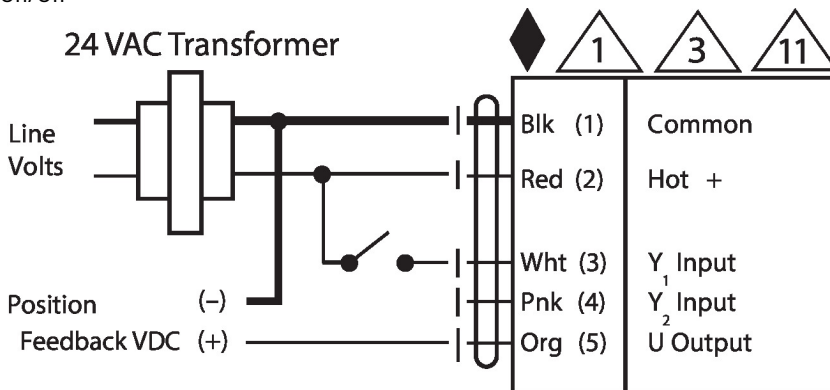
-  Actuators may also be powered by DC 24 V.
-  Only connect common to negative (-) leg of control circuits.
-  A 500 Ω resistor (ZG-R01) converts the 4...20 mA control signal to 2...10 V.
-  Control signal may be pulsed from either the Hot (Source) or Common (Sink) 24 V line.
-  For triac sink the Common connection from the actuator must be connected to the Hot connection of the controller. Position feedback cannot be used with a triac sink controller; the actuator internal common reference is not compatible.
-  Actuators may be connected in parallel if not mechanically linked. Power consumption and input impedance must be observed.
-  IN4004 or IN4007 diode. (IN4007 supplied, Belimo part number 40155).



VDC/mA Control

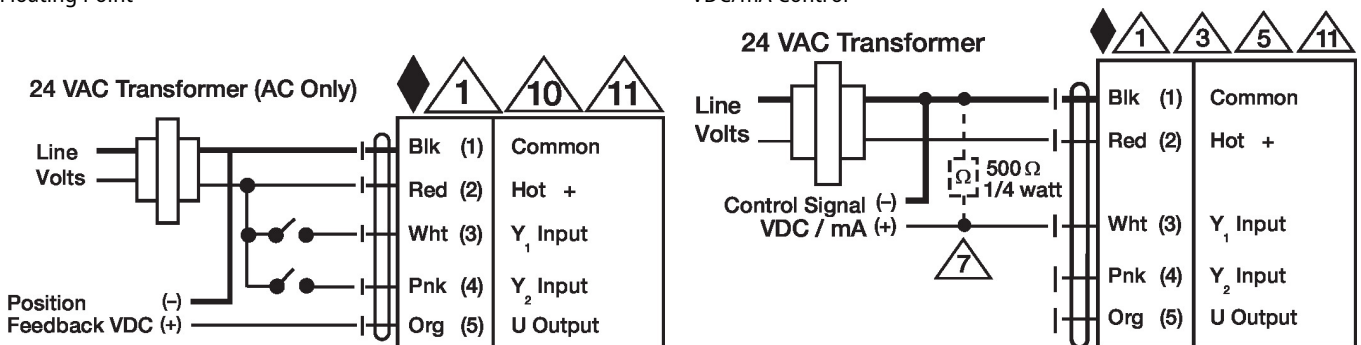
**Wiring diagrams**

On/Off

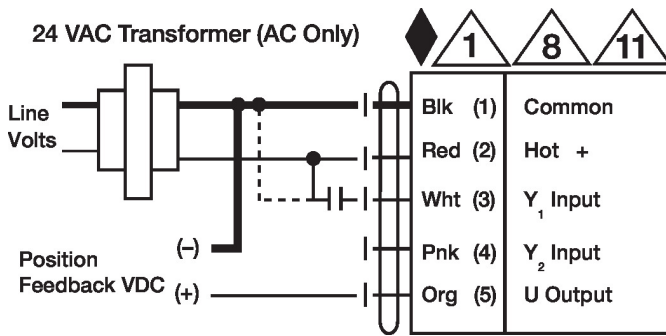


Floating Point

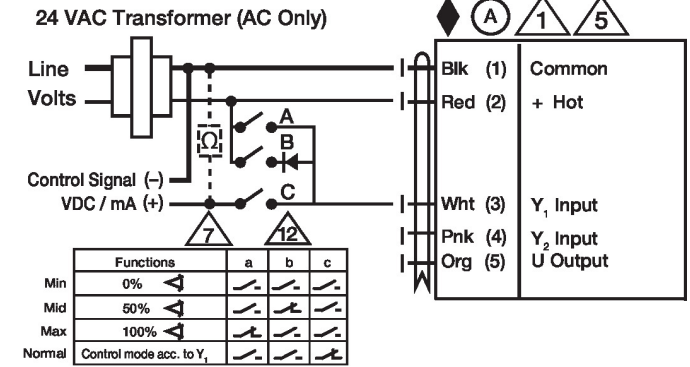
VDC/mA Control



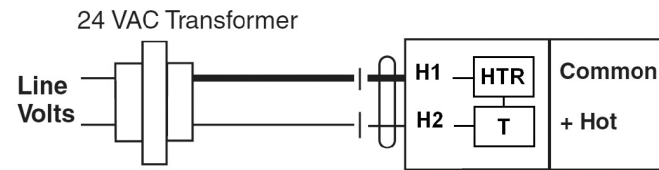
### PWM Control



### Override Control



### NEMA 4 Heater Option



### Dimensions

