BELIMO

NEMA 4, On/Off, Floating Point, Electrical Fail-Safe, 24 V

Technical data sheet GKX24-3-T N4

5-year warranty

Technical data

Electrical data	Nominal voltage	AC 24 V
	Nominal voltage frequency	50/60 Hz
	Power consumption in operation	11 W
	Power consumption in rest position	3 W
	Transformer sizing	21 VA (class 2 power source)
	Electrical Connection	Screw terminal (for 26 to 14 GA wire), 1/2" conduit connector
	Overload Protection	electronic throughout 0...95° rotation
	Electrical Protection	actuators are double insulated
Functional data	Torque motor	360 in-lb [40 Nm]
	Setting Fail-Safe Position	adjustable with dial 0...100% in 10% increments
	Bridging time (PF)	2 s
	Pre-charging time	5...20 s
	Direction of motion motor	selectable with switch 0/1
	Direction of motion fail-safe	reversible with switch
	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 or 150 s
	Running time fail-safe	<35 s
	Noise level, motor	52 dB(A)
	Noise level, fail-safe	61 dB(A)
	Shaft Diameter	1/2...1.05" round, centers on 3/4" with insert, 1.05" without insert
	Position indication	Mechanically, 5...20 mm stroke
Safety data	Degree of protection IEC/EN	IP66
	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
	Servicing	maintenance-free
Weight	Weight	7.6 lb [3.5 kg]

Materials	Housing material	Polycarbonate

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

Product features

Application

For On/Off and floating point, fail-safe control 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. The actuator is mounted directly to a damper shaft up to 1.05" in diameter by a universal clamp. Control is floating point from a triac or relay, or On/Off from an auxiliary contact from a fan motor contactor, controller or manual switch.

Operation

The GK..24-3-T N4 actuator provides 95° of rotation and a visual indicator shows the position of the actuator. When reaching the damper or actuator end position, the actuator automatically stops. The gears can be manually disengaged by pressing the button located on the actuator cover. The GK..24-3-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 a holding mode. The actuator is electronically protected against overload. The anti-rotation strap supplied with the actuator will prevent lateral movement. Add-on auxiliary switches or feedback potentiometers are easily fastened directly onto the actuator body for signaling and switching functions.

Fail-Safe Indication

Green LED status indicator light sequence:

On: operation ok, no faults

Blinking: fail-safe mechanism is active

Off: fault is detected or not in operation / capacitors charging

Installation Note: Use suitable flexible metallic conduit or its equivalent with the conduit fitting. Not suitable for plenum applications.

For low ambient temperatures, the optional supplemental (-H) Heater add-on is available.

Typical specification

Floating point, On/Off electrical fail-safe damper actuators shall be direct coupled type, which require no crank arm and linkage and be capable of direct mounting to a shaft up to 1.05" diameter. 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 of the actuator. If required, actuators needing auxiliary switches, can be provided as an add-on accessory. 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
Gasket for cable gland (NEMA 4 models)	11097-00001
Cable Gland (NEMA 4 models)	43442-00001
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
Auxiliary switch, mercury-free	P475
Auxiliary switch, mercury-free	P475-1
Feedback potentiometer 5 kΩ add-on, grey	P5000A GR
Feedback potentiometer 500 Ω add-on, grey	P500A GR
Auxiliary switch 1 x SPDT add-on	S1A
Auxiliary switch 2 x SPDT add-on	S2A
Transformer, AC 120 V to AC 24 V, 40 VA	ZG-X40

Mechanical accessories	Description	Type
	Shaft extension 240 mm Ø20 mm for damper shaft Ø 8...22.7 mm	AV8-25
	Wrench 0.512 in. [13 mm]	TOOL-07
	1" diameter jackshaft adaptor (11" L).	ZG-JSA-1
	1-5/16" diameter jackshaft adaptor (12" L).	ZG-JSA-2
	1.05" diameter jackshaft adaptor (12" L).	ZG-JSA-3
	Anti-rotation bracket EFB(X)/GKB(X)/GMB(X).	EF-P
	Jackshaft mounting bracket.	ZG-120

Service tools	Description	Type
	Signal simulator, Power supply AC 120 V	PS-100

Factory add-on option only	Description	Type
	Heater, with adjustable thermostat	N4 Heater Add-on 24V (-H)

Electrical installation

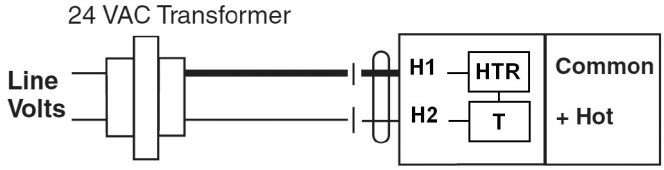
Warning! Live electrical components!
During installation, testing, servicing and troubleshooting of this product, it may be necessary to work with live electrical components. Have a qualified licensed electrician or other individual who has been properly trained in handling live electrical components 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.

1 Provide overload protection and disconnect as required.

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

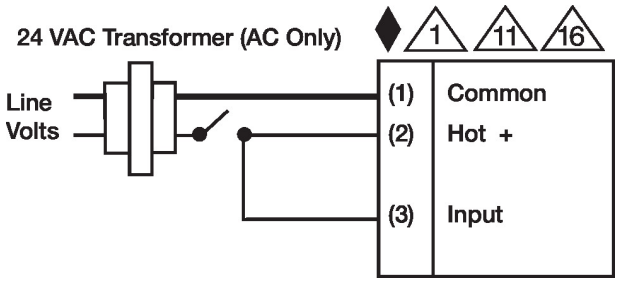
16 Actuators are provided with a numbered screw terminal strip instead of a cable.



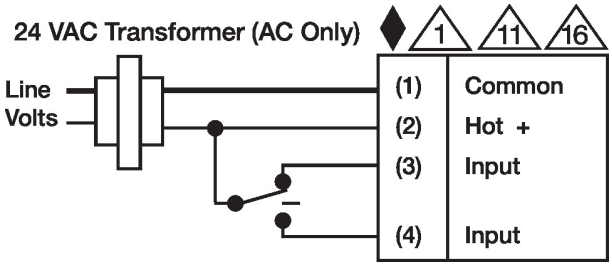
NEMA 4 Heater Option

Wiring diagrams

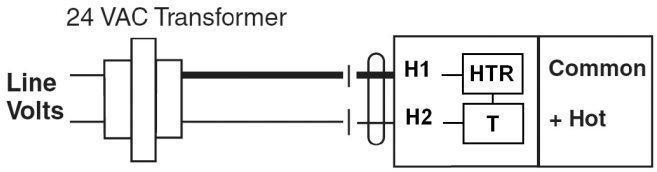
On/Off



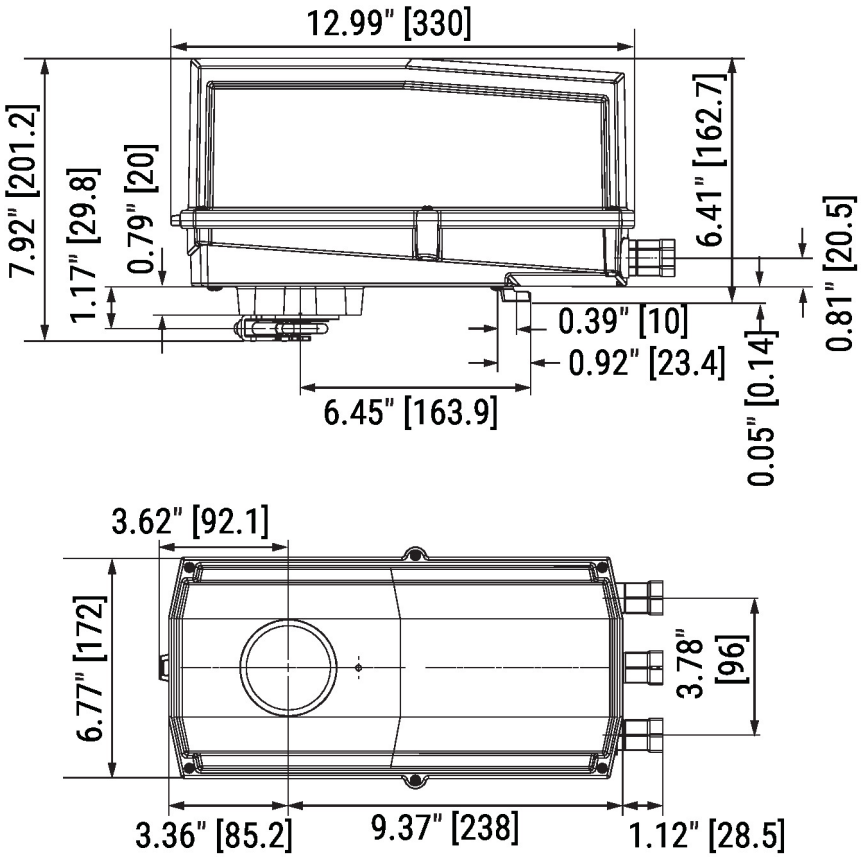
Floating Point



NEMA 4 Heater Option



Dimensions


12.99" [330]
7.92" [201.2]
1.17" [29.8]
0.79" [20]
6.41" [162.7]
0.81" [20.5]
0.39" [10]
0.92" [23.4]
0.05" [0.14]
6.45" [163.9]
3.62" [92.1]
6.77" [172]
3.78" [96]
3.36" [85.2]
9.37" [238]
1.12" [28.5]