

GKB24-3-T N4

NEMA 4, On/Off, Floating Point Control, Electronic Fail-Safe, Direct Coupled, 24V



Technical Data	GKB24-3-T N4
Power supply	24VAC ±20% 50/60Hz 24VDC ±10%
Power consumption	12W (3W)
Transformer sizing	21VA (class 2 power source)
Electrical connection	screw terminal (for 26 to 14 GA wire) ½" conduit connector
Overload protection	electronic throughout 0 to 95° rotation
Control	on/off, floating point
Input impedance	100kΩ
Angle of rotation	max. 95°, adjustable with mechanical stop
Torque	360 in-lb [40 Nm]
Direction of rotation	reversible with switch
Position indication	dial
Running time	150 seconds constant independent of load
Motor fail-safe	35 seconds
Humidity	5 to 100% RH (UL Type 4)
Ambient temperature	-22°F to +122°F [-30°C to +50°C]
Storage temperature	-40°F to +176°F [-40°C to +80°C]
Housing	UL Type 4, NEMA 4, IP66/67
Housing material	polycarbonate
Agency listings†	cULus acc. to UL 60730-1A/-2-14 CAN/CSA E60730-1, CSA C22.2 No. 24-93, CE acc. to 89/336/EEC
Noise level	<45dB(A)
Servicing	maintenance free
Quality standard	ISO 9001
Weight	10.4 lbs [4.71 kg]

Torque min. 360 in-lb for control of damper surfaces up to 90 sq ft.

Application

For on/off and floating point 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 a universal clamp, self-centered default.

Operation

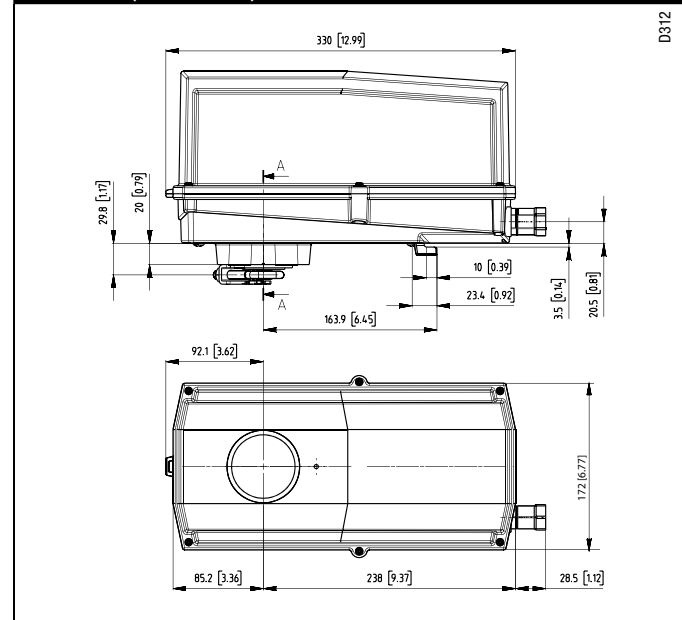
The actuator is electronically protected against overload. The anti-rotation strap supplied with the actuator will prevent lateral movement.

The GKB24-3-T N4 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 GKB24-3-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.

Add-on auxiliary switches or feedback potentiometers are easily fastened directly onto the actuator body for signaling and switching functions.

Dimensions (inches [mm])



M40024 - 05/10 - Subject to change. © Belimo Aircontrols (USA), Inc.

Accessories

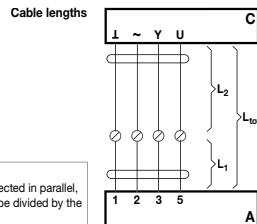
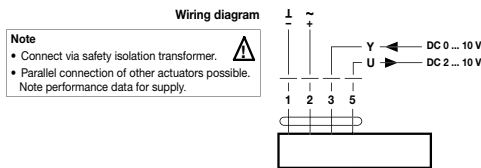
PS-100	Actuator Power Supply Simulator
S1A, S2A	Auxiliary Switch(es)
P...A	Feedback Potentiometers
43442-00001	Gland (needed for additional wires)
11097-00001	Gasket for Gland

Note: When using GKB24-3-T N4 actuators, only use accessories listed on this page.

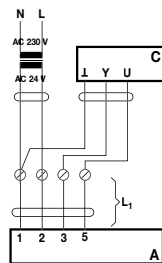
Typical Specification

On/off, floating point control damper actuators shall be electronic direct-coupled type, which require no crank arm and linkage and be capable of direct mounting to shaft up to 3/4" 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. If required, actuators needing auxiliary switches, can be provided as an add-on accessory. Actuators with auxiliary switches must be constructed to meet the requirements for double insulation so an electrical ground is not required to meet agency listings. 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.

Electrical Installation



Note
When several actuators are connected in parallel, the maximum cable length must be divided by the number of actuators.



Note
There are no special restrictions on installation if the supply and data cable are routed separately.

Cable colors:
1 = black
2 = red
3 = white
5 = orange

A = Actuator
C = Control unit
L₁ = Belimo connecting cable, 1 m (4 x 0.75 mm²)
L₂ = Customer cable
L_{tot} = Maximum cable length

Cross section L ₂ I / ~	Max. cable length L _{tot} = L ₁ + L ₂		Example for DC
	AC	DC	
0.75 mm ²	≤30 m	≤5 m	1 m (L ₁) + 4 m (L ₂)
1.00 mm ²	≤40 m	≤8 m	1 m (L ₁) + 7 m (L ₂)
1.50 mm ²	≤70 m	≤12 m	1 m (L ₁) + 11 m (L ₂)
2.50 mm ²	≤100 m	≤20 m	1 m (L ₁) + 19 m (L ₂)

A = Actuator
C = Control unit
L₁ = Belimo connecting cable, 1 m (4 x 0.75 mm²)

Wiring Diagrams

INSTALLATION NOTES

1 Provide overload protection and disconnect as required.

APPLICATION NOTES

Meets cULus or UL and CSA requirements without the need of an electrical ground connection.

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.

