

# GKX24-SR-T N4, GKB24-SR-T N4H

NEMA 4, Proportional Control, Electronic Fail-Safe, Direct Coupled, 24V, for 2 to 10 VDC and 4 to 20 mA



Technical Data	GKX24-SR-T N4, GKB24-SR-T N4H
Power supply	24 VAC $\pm$ 20% 50/60 Hz 24 VDC $\pm$ 10%
Power consumption	12 W (3 W) / heater 21 W
Transformer sizing	21 VA (Class 2 power source) / heater 21 VA
Electrical connection	screw terminal (for 22 to 12 GA wire) $\frac{1}{2}$ " conduit connector
Overload protection	electronic throughout 0 to 95° rotation
Operating range Y	2 to 10 VDC, 4 to 20 mA
Input impedance	100 k $\Omega$ (0.1 mA), 500 $\Omega$
Feedback output U	2 to 10 VDC (max 0.5 mA)
Angle of rotation	max. 95°, adjustable with mechanical stop
Torque	360 in-lb [40 Nm]
Direction of rotation	reversible with  switch
Fail-safe position	adjustable with dial, 0 to 1 in 10° increments
Position indication	dial
Running time	150 seconds
motor (fail-safe)	35 seconds
Humidity	max. 95% RH non-condensing
Ambient temperature	-22°F to 122°F [-30°C to 50°C]
with heater	-40°F to 122°F [-40°C to 50°C]
Storage temperature	-40°F to 176°F [-40°C to 80°C]
Housing	UL Type 4, NEMA 4, IP66
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 2004/108/EC
Noise level	<45dB(A)
Servicing	maintenance free
Quality standard	ISO 9001
Weight	8.95 lbs [4.05 kg]; 9.45 lbs [4.3 kg] with heater
Initial charge	5 to 20 seconds
Bridge time	2 second delay before fail-safe activates

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

Torque min. 360 in-lb for control of damper surfaces up to 90 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. The actuator operates in response to a 2 to 10 VDC, 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. Not to be used for a master-slave application.

## Operation

The GK..24-SR-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-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 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:

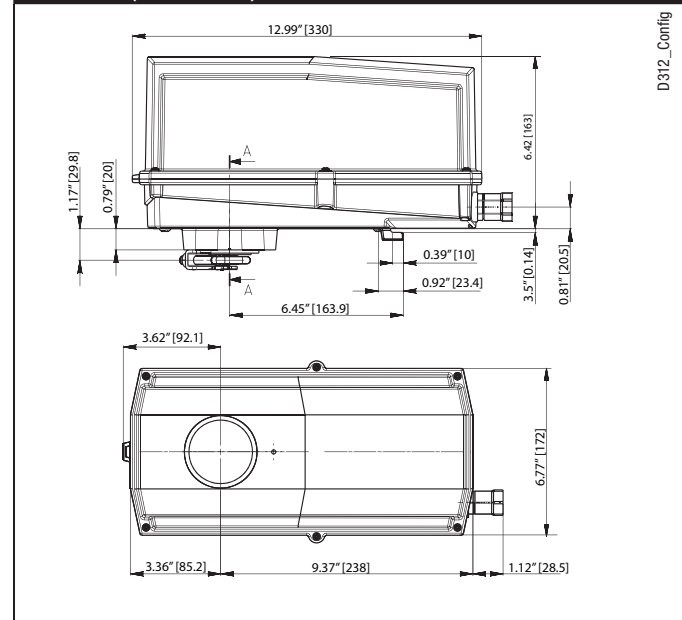
On: operation ok, no faults

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.

## Dimensions (inches [mm])



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Accessories	
S1A, S2A	Auxiliary Switch(es)
P...A	Feedback Potentiometers
SGA24	Min positioners for surface mounting
SGF24	Min positioners for flush panel mounting
IRM-100	Input Rescaling Module
ZG-R01	Resistor for 4 to 20 mA Conversion
ZG-X40	Transformer
43442-00001	Gland (needed for additional wires)
11097-00001	Gasket for Gland

**Note:** When using GKX(B)24-SR-T N4(H) actuators, only use accessories listed on this page.

### 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 1.05" 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. 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.

### Wiring Diagrams

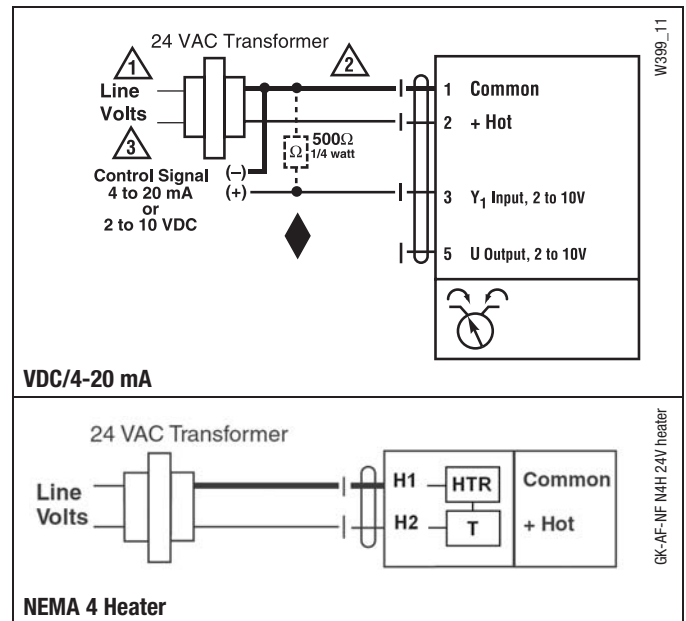
#### ✂️ INSTALLATION NOTES

- 1 Provide overload protection and disconnect as required.
- 2 **CAUTION Equipment Damage!**  
Actuators may be connected in parallel. Power consumption and input impedance must be observed.
- 3 Actuators may also be powered by 24 VDC.
- 5 Only connect common to neg. (-) leg of control circuits

#### 📄 APPLICATION NOTES

◆ The ZG-R01 500 Ω resistor converts the 4 to 20 mA control signal to 2 to 10 VDC, up to 2 actuators may be connected in parallel.

⚠️ **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.



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