

GKB24-3-T N4H - Damper Actuator

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



| Technical Data | |
|-----------------------------------|--|
| Power Supply | 24 VAC ± 20%, 50/60 Hz |
| Power Consumption Running | 11 W |
| Power Consumption Holding | 3 W |
| Transformer Sizing | 21 VA (class 2 power source) / heater 21 VA |
| Shaft Diameter | 1/2" to 1.05" round, centers on 3/4" with insert, 1.05" without insert |
| Electrical Connection | Screw terminal (for 26 to 14 GA wire), 1/2" conduit connector |
| Overload Protection | electronic throughout 0° to 95° rotation |
| Electrical Protection | actuators are double insulated |
| Operating Range Y | on/off, floating point |
| Input Impedance | 100 k Ω |
| Torque | 360 in-lbs [40 Nm] minimum |
| Direction of Rotation (Motor) | reversible with built-in switch |
| Direction of Rotation (Fail-Safe) | reversible with switch |
| Fail-Safe Position | adjustable with dial 0 to 95° in 10° increments |
| Position Indication | dial |
| Manual Override | external push button |
| Running Time (Motor) | 150 sec constant, independent of load |
| Running Time (Fail-Safe) | 35 sec |
| Bridge Time | 2 sec delay before fail-safe activates |
| Pre-charging Time | 5 to 20 seconds |
| Humidity | 100% condensing |
| Ambient Temperature Range | -40°F to 122°F [-40°C to 50°C] |
| Storage Temperature Range | -40°F to 176°F [-40°C to 80°C] |
| Housing | NEMA 4, IP66, UL enclosure type 4 |
| Housing Material | polycarbonate |
| Agency Listings† | cULus acc. to UL60730-1A/-2-14, CAN/CSA E60730-1, CSA C22.2 No 24-93, CE acc. to 89/336/EC |
| Noise Level (Motor) | ≤52 dB (A) |
| Noise Level (Fail-Safe) | ≤61 dB (A) |
| Servicing | maintenance free |
| Quality Standard | ISO 9001 |
| Weight | 9.45 lb [4.3 kg] |

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

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

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. Heater must remain powered at all times to ensure proper actuator operation at colder temperatures.

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:

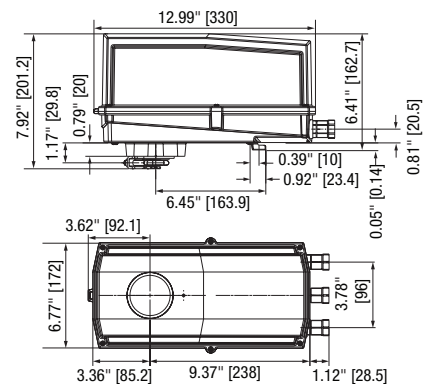
On: operation ok, no faults

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.

Dimensions (Inches[mm])



Date created, 01/17/2017 - Subject to change. © Belimo Aircontrols (USA), Inc.

| Accessories | |
|-------------|--|
| AV8-25 | 9.8" shaft extension for 5/16" to 1" diameter shafts. |
| TOOL-07 | 13 mm wrench. |
| ZG-JSA-1 | 1" diameter jackshaft adaptor (11" L). |
| ZG-JSA-2 | 1-5/16" diameter jackshaft adaptor (12" L). |
| ZG-JSA-3 | 1.05" diameter jackshaft adaptor (12" L). |
| EF-P | Anti-rotation bracket EFB(X)/GKB(X)/GMB(X). |
| ZG-120 | Jackshaft mounting bracket. |
| 11097-00001 | Gasket for cable gland (for NEMA 4 models). |
| 43442-00001 | Cable gland (for NEMA 4 models). |
| P10000A GR | Feedback potentiometer 10000Ω. |
| P1000A GR | Feedback potentiometer 1000Ω. |
| P140A GR | Feedback potentiometer 140Ω. |
| P2800A GR | Feedback potentiometer 2800Ω. |
| P5000A GR | Feedback potentiometer 5000Ω. |
| P500A GR | Feedback potentiometer 500Ω. |
| PS-100 | Actuator power supply and control simulator. |
| S1A | Auxiliary switch, 1x SPDT, 3A (0.5A inductive) @250 VAC max. |
| S2A | Auxiliary switch, 2x SPDT, 3A (0.5A inductive) @250 VAC max. |
| ZG-X40 | 120 to 24 VAC, 40 VA transformer. |

Typical Specification

Floating point, On/Off electronic 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.

Wiring Diagrams

- ⚠ 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.
 - 3 Actuators may also be powered by 24 VDC.
 - 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.

