

# ACTUATORS & DAMPERS

## DIRECT COUPLED ACTUATORS FAIL-SAFE

### GK SERIES

#### DESCRIPTION

The **Belimo GK Series** fail-safe actuators provide 360 in-lb of torque for operation of dampers up to approximately 90 square feet. The direction of rotation is reversible, the fail-safe position is adjustable and a manual override button is standard. Add-on field mount auxiliary switches and feedback potentiometers are available.

#### FEATURES

- **Fail-safe operation upon power loss for positive damper or valve positioning**
- **360 in-lb is more power than spring return models**
- **LED Status Indication**
- **Visible position indicator**



GKX24-MFT

**BELIMO**



#### COMMON SPECIFICATIONS

<b>Supply Voltage</b>	24 VAC $\pm$ 20% 50/60 Hz	<b>Operating Humidity</b>	5 to 95% RH
<b>Control Signal</b>	Two-position, floating, Proportional 2-10 VDC, 4-20 mA	<b>Approvals</b>	UL, CE, cUL
		<b>Warranty</b>	5 years

#### INDIVIDUAL SPECIFICATIONS

MODEL	TORQUE	SUPPLY VA	CONTROL SIGNAL	FEEDBACK	AUXILIARY	DRIVE TIME
GKB24-3	360 in-lb (40 Nm)	21 VA	On/Off or Floating	None	S1A or S2A (optional)	150 seconds
GKB24-3-T N4	360 in-lb (40 Nm)	21 VA	On/Off or Floating	None	S1A or S2A (optional)	150 seconds
GKB24-3-T N4H	360 in-lb (40 Nm)	42 VA	On/Off or Floating	None	S1A or S2A (optional)	150 seconds
GKB24-MFT-T N4H	360 in-lb (40 Nm)	42 VA	Proportional (2 to 10 VDC default)	Variable (2 to 10 VDC default)	S1A or S2A (optional)	90 to 150 seconds
GKB24-SR	360 in-lb (40 Nm)	21 VA	Proportional 2 to 10 VDC (4 to 20 mA)	2 to 10 VDC	S1A or S2A (optional)	150 seconds
GKB24-SR-T N4	360 in-lb (40 Nm)	21 VA	Proportional 2 to 10 VDC (4 to 20 mA)	2 to 10 VDC	S1A or S2A (optional)	150 seconds
GKB24-SR-T N4H	360 in-lb (40 Nm)	42 VA	Proportional 2 to 10 VDC (4 to 20 mA)	2 to 10 VDC	S1A or S2A (optional)	150 seconds

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## DIRECT COUPLED ACTUATORS FAIL-SAFE GK SERIES

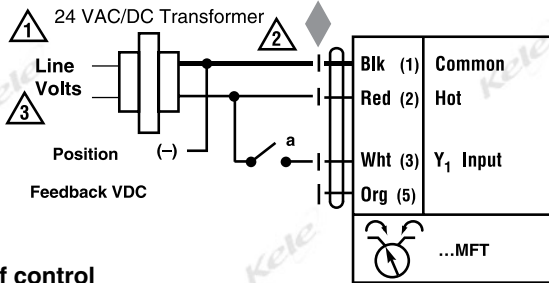


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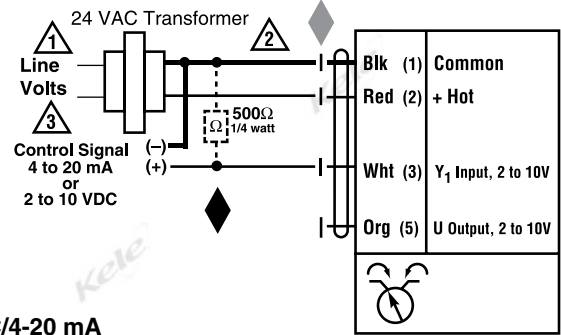
### WIRING

#### GKB-24-3 / GKX24-3 SERIES (Includes Nema 4)

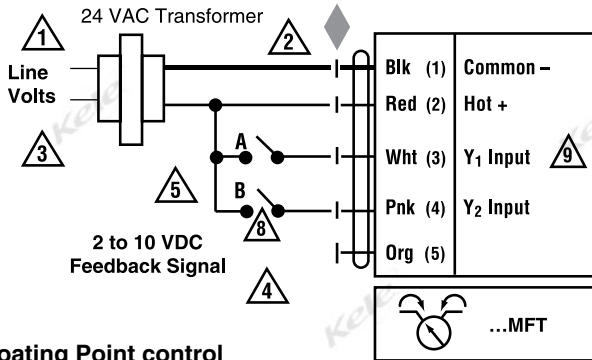


On/Off control

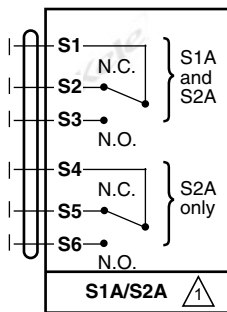
#### GKB-24-SR / GKX24-SR-T SERIES (Includes Nema 4)



VDC/4-20 mA



Floating Point control



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

**S1A/S2A**  
for GK and NK Motors (add-on auxiliary functions)  
SPDT 3A (0.5A inductive) @ 250 VAC

### INSTALLATION NOTES

- 1 Provide overload protection and disconnect as required.
- 2 **CAUTION EQUIPMENT DAMAGE!** Actuators may be connected in parallel if not mechanically mounted to the same shaft. Power consumption and input impedance must be observed.
- 3 Actuators may also be powered by 24 VDC.
- 4 Position feedback cannot be used with Triac sink controller. The actuator internal common reference is not compatible.
- 5 Control signal may be pulsed from either the Hot (source) or the Common (sink) 24 VAC line.
- 6 Contact closures A & B also can be triacs. A & B should both be closed for triac source and open for triac sink.
- 7 For triac sink the common connection from the actuator must be connected to the hot connection of the controller.

### APPLICATION NOTES

- Meets UL requirements without the need for an electrical ground connection.
- The ZG-R01 500Ω resistor may be used.
- 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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### GK SERIES

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DIMENSIONS						
MODEL	TORQUE	DIMENSIONS	MAXIMUM SHAFT DIAMETER	MINIMUM SHAFT LENGTH	ENCLOSURE RATING	WEIGHT
GKB24-3	360 in-lb (40 Nm)	3.4"H x 4.5"W x 8.3"L (8.6 x 11.43 x 21.08 cm)	1.05" (2.7 cm)	1.75" (4.5 cm)	NEMA 2	3.85 lb (1.75 kg)
GKB24-3-T N4	360 in-lb (40 Nm)	12.99"H x 6.77"W x 6.42"L (33 x 17.2 x 16.3 cm)	1.05" (2.7 cm)	1.75" (4.5 cm)	NEMA 4	8.95 lb (4.05 kg)
GKB24-3-T N4H	360 in-lb (40 Nm)	12.99"H x 6.77"W x 6.42"L (33 x 17.2 x 16.3 cm)	1.05" (2.7 cm)	1.75" (4.5 cm)	NEMA 4	9.45 lb (4.3 kg)
GKB24-MFT-T N4H	360 in-lb (40 Nm)	12.99"H x 6.77"W x 6.42"L (33 x 17.2 x 16.3 cm)	1.05" (2.7 cm)	1.75" (4.5 cm)	NEMA 2	3.85 lb (1.75 kg)
GKB24-SR	360 in-lb (40 Nm)	3.4"H x 4.5"W x 8.3"L (8.6 x 11.43 x 21.08 cm)	1.05" (2.7 cm)	1.75" (4.5 cm)	NEMA 2	3.85 lb (1.75 kg)
GKB24-SR-T N4	360 in-lb (40 Nm)	12.99"H x 6.77"W x 6.42"L (33 x 17.2 x 16.3 cm)	1.05" (2.7 cm)	1.75" (4.5 cm)	NEMA 4	8.95 lb (4.05 kg)
GKB24-SR-T N4H	360 in-lb (40 Nm)	12.99"H x 6.77"W x 6.42"L (33 x 17.2 x 16.3 cm)	1.05" (2.7 cm)	1.75" (4.5 cm)	NEMA 4	9.45 lb (4.3 kg)

### ORDERING INFORMATION

#### MODEL

**GKB24-3**

**GKB24-3-T N4**

**GKB24-3-T N4H**

**GKB24-MFT-T N4H**

**GKB24-SR**

**GKB24-SR-T N4**

**GKB24-SR-T N4H**

#### DESCRIPTION

Electronic fail-safe 360 in-lb 24 VAC/VDC on-off or floating control

Electronic fail-safe 360 in-lb 24 VAC/VDC on-off or floating control Nema 4

Electronic fail-safe 360 in-lb 24 VAC/VDC on-off or floating control Nema 4 w/heater

Electronic fail-safe 360 in-lb 24 VAC/VDC MFT proportional control Nema 4 w/heater

Electronic fail-safe 360 in-lb 24 VAC/VDC 2-10VDC proportional control

Electronic fail-safe 360 in-lb 24 VAC/VDC 2-10VDC proportional control Nema 4

Electronic fail-safe 360 in-lb 24 VAC/VDC 2-10VDC proportional control Nema 4 w/heater

**NOTES:** 1) For custom options replace "B" with "X" in the model number.

2) Choice of 10' or 16' cable with conduit connector.

3) 3' right angle cables for -3 models only.

4) Factory programming for run time, control signal, feedback.

**K-GM20**

**P370**

**S1A**

**S2A**

**ZG-102**

**ZG-GMA**

**ZS-100**

**ZS-150**

**ZS-260**

#### ACCESSORIES

0.75" (1.91 cm) shaft clamp

Shaft mount auxiliary switch

Optional SPDT auxiliary switch for LM, NM, AM, GM, GK, NK

Optional 2X SPDT auxiliary switch for LM, NM, AM, GM, GK, NK

Tandem actuator mounting bracket for AF/AFB/GMB actuators

Crank arm adapter kit

Galvanized weather shield for Belimo AFB/NFB/LF/TF/GMB/AMB/NMB/LMB

Polycarbonate weather shield for Belimo AFB/NFB/LF/TF/GMB/AMB/NMB/LMB

Explosion proof housing