

FGVL Flanged Globe Valve Linkage

For Use with AVK and EV and RV Series Actuators



Technical Data	
Service	chilled or hot water and steam
Applicable Valve Size	2-1/2" [64], 3" [80], 4" [101], 5" [127], 6" [152]
Stem	316 stainless steel
Frame, plate, base	aluminum, steel (fits competitor bonnets up to 2.3" dia.)
Collar	aluminum
Coupling	GF Nylon supplied
Housing Material	Aluminum die cast and plastic casing
Stem Adaptor	steel/Aluminum
Stroke	1.25" [32 mm] AVK, 2" [50 mm] EV/RV
Mounting Position	360°
Media Temperature Range (Water)	20°F to 250°F [-7°C to 120°C]
Media Temperature Range (Steam)	32°F to 338°F [0°C to 170°C]
Weight	9 lb [4.1 kg]

For close-off pressure reference Select Pro or Retrofit Technical Documentation.

Application

The FGVL retrofit kit is designed to easily attach AVK, EV and RV series actuators to select Flanged globe valves requiring larger stem travels and higher forces. Its casted base and lower locking clamp allow the FGVL to be mounted on 2-1/2" to 6" two-way or three-way valves in both normally open and normally closed configurations.

Operation

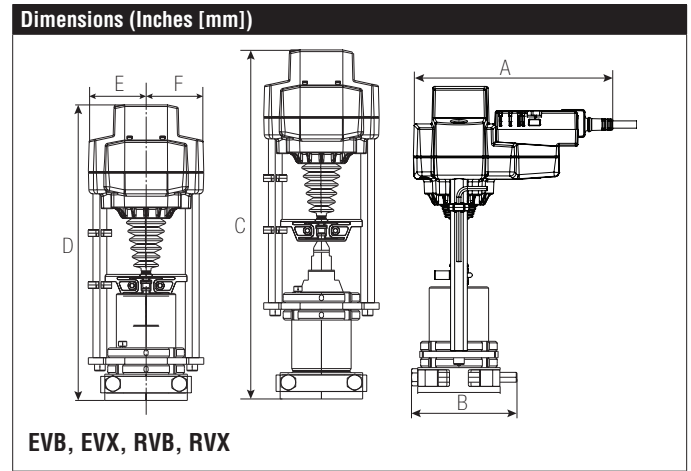
The FGVL linkage with actuator will provide up to 2" [50 mm] of linear travel to accommodate a wide range of valve sizes.

Default/Configuration

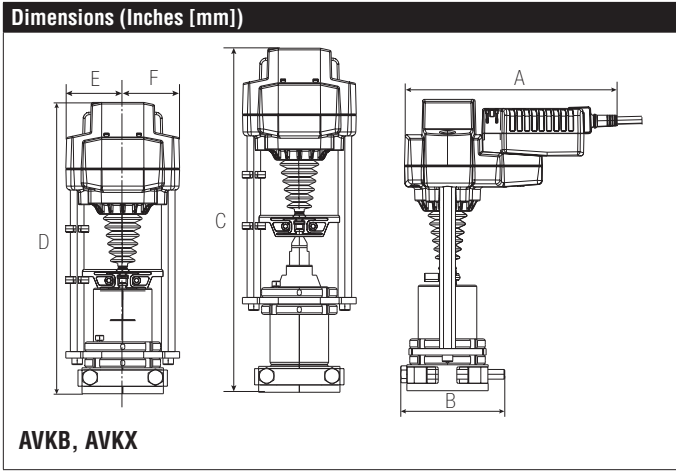
The default set up for a FGVL linkage will be factory installed along with an AVK or EV, RV series actuator. Included in the kit will be all the necessary hardware to facilitate mounting to the valve.

Suitable Actuators

	Non-Spring	Electronic Fail-Safe
FGVL	EVB(X), RVB(X)	AVKB(X)



A	B	C	D	E	F
9.2" [234]	5.00" [127.0]	16.73" [425]	14.00" [356]	2.78" [71]	



A	B	C	D	E	F
10.25" [260]	5.00" [127.0]	16.73" [425]	14.00" [356]	2.78" [71]	

AVKX24-MFT

Modulating, Fail-Safe Operation, Linear, 24 V, Multi-Function Technology®



Technical Data	
Power Supply	24 VAC ± 20%, 50/60 Hz, 24 VDC ± 10%
Power Consumption Running	5 W
Power Consumption Holding	2 W
Transformer Sizing	9.5 VA (class 2 power source)
Electrical Connection	3 ft, 18 GA plenum rated cable with 1/2" conduit connector protected NEMA 2 (IP54)
Overload Protection	electronic throughout full stroke
Electrical Protection	actuators are double insulated
Operating Range Y	2 to 10 VDC, 4 to 20 mA w/ ZG-R01 (500 Ω, 1/4 W resistor), variable (VDC, PWM, floating point, on/off)
Input Impedance	100 k Ω for 2 to 10 VDC (0.1 mA), 500 Ω for 4 to 20 mA, 1500 Ω for PWM, floating point and On/Off
Feedback Output U	2 to 10 VDC
Stroke	1.25" [32 mm]
Linear Force	450 lbf [2000 N force]
Direction of Rotation (Motor)	reversible with switch
Direction of Rotation (Fail-Safe)	reversible with switch
Position Indication	stroke indicator on bracket
Manual Override	5 mm hex crank (3/16" Allen), supplied
Running Time (Motor)	90 sec (default), Optional (90 or 150 sec)
Running Time (Fail-Safe)	35 sec
Bridge Time	2 sec delay before fail-safe activates
Pre-charging Time	5 to 20 seconds
Humidity	5 to 95% RH non-condensing
Ambient Temperature Range	-22°F to +122°F [-30°C to +50°C]
Storage Temperature Range	-40°F to +176°F [-40°C TO +80°C]
Housing	NEMA 2, IP54, UL enclosure type 2
Housing Material	Aluminum die cast and plastic casing
Agency Listings†	cULus acc. to UL60730-1A/-2-14, CAN/CSA E60730-1:02, CE acc. to 2004/108/EC and 2006/95/EC
Noise Level (Motor)	<60 dB (A)
Noise Level (Fail-Safe)	<60 dB (A)
Servicing	maintenance free
Quality Standard	ISO 9001
Weight	6.4 lb [2.9 kg]

† Use flexible metal conduit. Push the listed conduit fitting device over the actuator's cable to butt against the enclosure. Screw in conduit connector. Jacket the actuators input wiring with listed flexible conduit. Properly terminate the conduit in a suitable junction box. Rated impulse Voltage 800V. Type of action 1. Control pollution degree 3.

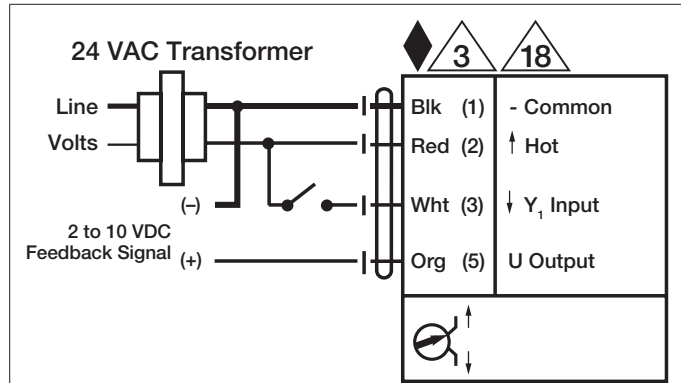
Date created, 08/12/2016 - Subject to change. © Belimo Aircontrols (USA), Inc.

Wiring Diagrams

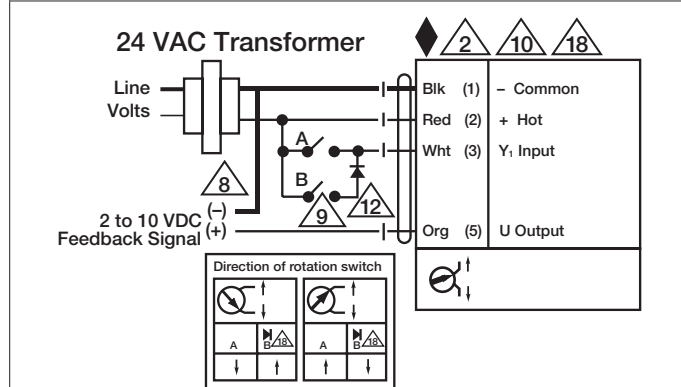
INSTALLATION NOTES

- Actuators may be connected in parallel. Power consumption and input impedance must be observed.
- Actuators may also be powered by 24 VDC.
- A 500 Ω resistor (ZG-R01) converts the 4 to 20 mA control signal to 2 to 10 VDC.
- Control signal may be pulsed from either the Hot (Source) or Common (Sink) 24 VAC line.
- For triac sink the common connection from the actuator must be connected to the hot connection of the controller. Contact closures A & B also can be triacs. A & B should both be closed for the triac source and open for triac sink.
- For triac sink the Common connection from the actuator must be connected to the Hot connection of the controller. Position feedback cannot be used with a triac sink controller; the actuator internal common reference is not compatible.
- IN4004 or IN4007 diode. (IN4007 supplied, Belimo part number 40155).
- Actuators with plenum cable do not have numbers; use color codes instead.
- Meets cULus requirements without the need of an electrical ground connection.

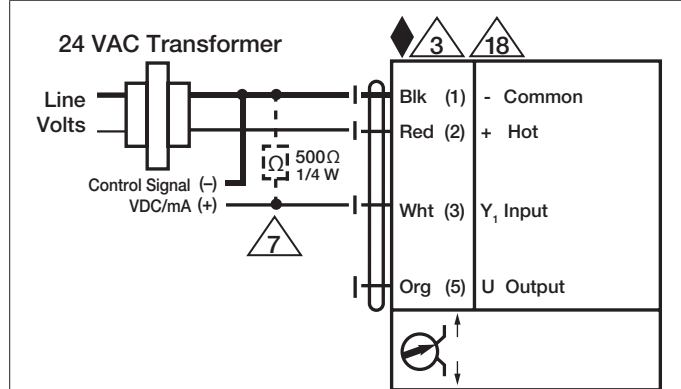
WARNING! LIVE ELECTRICAL COMPONENTS!
During installation, testing, servicing and troubleshooting of this product, it may be necessary to work with live electrical components. Have a qualified licensed electrician or other individual who has been properly trained in handling live electrical components perform these tasks. Failure to follow all electrical safety precautions when exposed to live electrical components could result in death or serious injury.



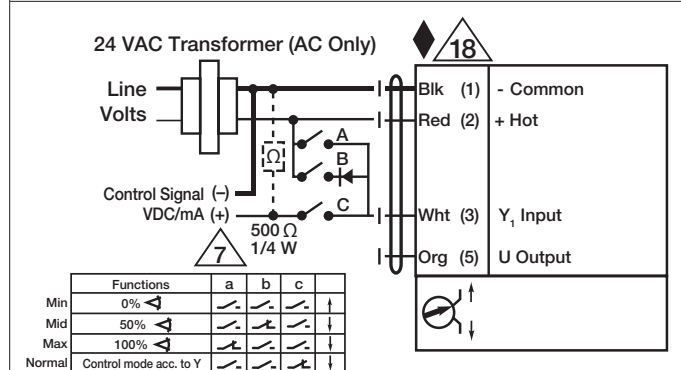
On/Off



Floating Point



VDC / 4 to 20 mA



Override Control Min, Mid, Max Positions

Functions	a	b	c
Min	0% ←	↘	↘
Mid	50% ←	↘	↘
Max	100% ←	↘	↘
Normal	Control mode acc. to Y	↘	↘