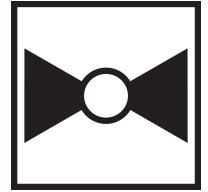




5-year warranty



Technical data

|                           |                                       |  |
|---------------------------|---------------------------------------|--|
| <b>Functional data</b>    | Valve Size                            | 6" [150]   |
|                           | Fluid                                 | chilled or hot water, up to 60% glycol                 |
|                           | Fluid Temp Range (water)              | 0...250°F [-18...120°C]                                |
|                           | Body Pressure Rating                  | ANSI Class 250, raised-face                            |
|                           | Close-off pressure Δps                | 310 psi  |
|                           | Flow characteristic                   | equal percentage                                       |
|                           | Servicing                             | maintenance-free                                       |
|                           | Maximum differential pressure (water) | 50 psi [345 kPa]                                       |
|                           | Flow Pattern                          | 2-way  |
|                           | Leakage rate                          | 0% for A – AB  |
|                           | Controllable flow range               | 75°  |
|                           | Cv                                    | 400  |
|                           | Body pressure rating note             | raised-face  |
|                           | Cv Flow Rating                        | A-port: as stated in chart B-port: 70% of A – AB<br>Cv |
| <b>Materials</b>          | Valve body                            | Cast iron - GG 25                                      |
|                           | Stem                                  | stainless steel  |
|                           | Stem seal                             | EPDM (lubricated)                                      |
|                           | Seat                                  | PTFE   |
|                           | Pipe connection                       | 250 lb flanged   |
|                           | O-ring                                | EPDM (lubricated)                                      |
|                           | Ball                                  | stainless steel  |
| <b>Suitable actuators</b> | Non-Spring                            | GRB(X)   |
|                           | Electronic fail-safe                  | GKRB(X)  |

Safety notes

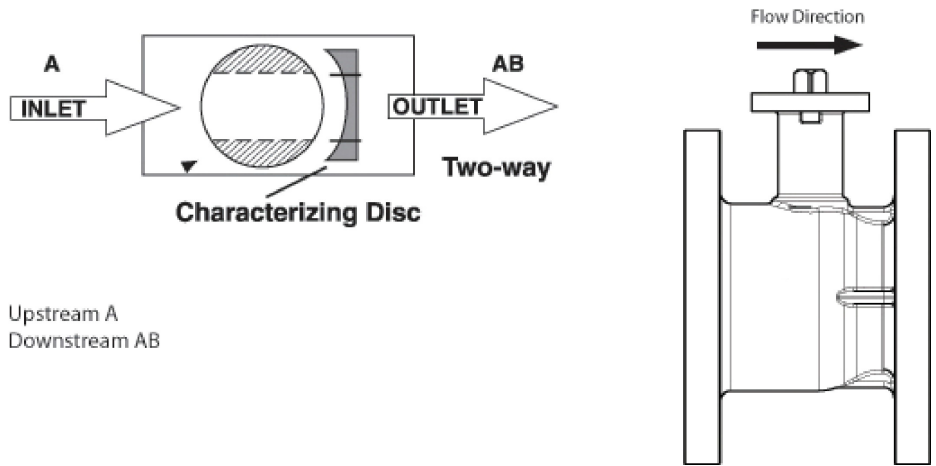


- WARNING: This product can expose you to lead which is known to the State of California to cause cancer and reproductive harm. For more information go to [www.p65warnings.ca.gov](http://www.p65warnings.ca.gov)

Product features

**Application** This valve is typically used in air handling units on heating or cooling coils, and fan coil unit heating or cooling coils. Some other common applications include Unit Ventilators, VAV box re-heat coils and bypass loops. This valve is suitable for use in a hydronic system with variable flow.

Flow/Mounting details



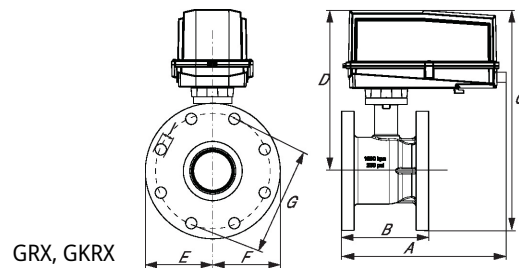
Dimensions

Dimensional drawings

|   |          |          |          |          |          |          |          |          |                             |
|---|----------|----------|----------|----------|----------|----------|----------|----------|-----------------------------|
| GRB, GRX  |          |          |          |          |          |          |          |          |                             |
|   | <b>A</b> | <b>B</b> | <b>C</b> | <b>D</b> | <b>E</b> | <b>F</b> | <b>G</b> | <b>I</b> | <b>Number of Bolt Holes</b> |
| 15.3" [388]12.4" [315]15.4" [391]9.5" [241]6.3" [160]6.3" [160]10.6" [270]0.9" [22] |          |          |          |          |          |          |          |          | 12                          |

|   |          |          |          |          |          |          |          |          |                             |
|---|----------|----------|----------|----------|----------|----------|----------|----------|-----------------------------|
| GKRB, GKRX  |          |          |          |          |          |          |          |          |                             |
|   | <b>A</b> | <b>B</b> | <b>C</b> | <b>D</b> | <b>E</b> | <b>F</b> | <b>G</b> | <b>I</b> | <b>Number of Bolt Holes</b> |
| 15.3" [388]12.4" [315]15.8" [401]9.8" [248]6.3" [160]6.3" [160]10.6" [270]0.9" [22] |          |          |          |          |          |          |          |          | 12                          |

|   |          |          |          |          |          |          |          |          |                             |
|---|----------|----------|----------|----------|----------|----------|----------|----------|-----------------------------|
| GRX, GKRX   |          |          |          |          |          |          |          |          |                             |
|   | <b>A</b> | <b>B</b> | <b>C</b> | <b>D</b> | <b>E</b> | <b>F</b> | <b>G</b> | <b>I</b> | <b>Number of Bolt Holes</b> |
| 19.0" [483]12.4" [315]18.5" [470]9.5" [241]6.3" [160]6.3" [160]10.6" [270]0.9" [22] |          |          |          |          |          |          |          |          | 12                          |



GRX, GKRX

| A           | B           | C           | D          | E          | F          | G           | I         | Number of Bolt Holes |
|-------------|-------------|-------------|------------|------------|------------|-------------|-----------|----------------------|
| 19.0" [483] | 12.4" [315] | 18.5" [470] | 9.5" [241] | 6.3" [160] | 6.3" [160] | 10.6" [270] | 0.9" [22] | 12                   |



5-year warranty



Technical data

|                        |                                    |  |
|------------------------|------------------------------------|--|
| <b>Electrical data</b> | Nominal voltage                    | AC/DC 24 V   |
|                        | Nominal voltage frequency          | 50/60 Hz   |
|                        | Power consumption in operation     | 8 W  |
|                        | Power consumption in rest position | 2.5 W  |
|                        | Transformer sizing                 | 11 VA (class 2 power source)   |
|                        | Electrical Connection              | 18 GA plenum cable with 1/2" conduit connector, degree of protection NEMA 2 / IP54, 3 ft [1 m] 10 ft [3 m] and 16ft [5 m]  |
|                        | Overload Protection                | electronic throughout 0...90° rotation   |
| <b>Functional data</b> | Operating range Y                  | 2...10 V   |
|                        | Operating range Y note             | 4...20 mA w/ ZG-R01 (500 Ω, 1/4 W resistor)  |
|                        | Input Impedance                    | 600 Ω  |
|                        | Operating range Y variable         | Start point 0.5...30 V<br>End point 2.5...32 V   |
|                        | Options positioning signal         | variable (VDC, on/off, floating point)   |
|                        | Position feedback U                | 2...10 V   |
|                        | Position feedback U note           | Max. 0.5 mA  |
|                        | Position feedback U variable       | VDC variable   |
|                        | Direction of motion motor          | selectable with switch 0/1   |
|                        | Manual override                    | external push button   |
|                        | Angle of rotation                  | 90°, adjustable with mechanical stop   |
|                        | Angle of rotation note             | adjustable with mechanical stop  |
|                        | Running Time (Motor)               | default 150 s, variable 90...150 s   |
|                        | Running time motor variable        | 90...150 s   |
|                        | Noise level, motor                 | 45 dB(A)   |
| Position indication    | Mechanically, 30...65 mm stroke    |  |
| <b>Safety data</b>     | Degree of protection IEC/EN        | IP54   |
|                        | Degree of protection NEMA/UL       | NEMA 2   |
|                        | Enclosure                          | UL Enclosure Type 2  |
|                        | Agency Listing                     | cULus acc. to UL60730-1A/-2-14, CAN/CSA E60730-1:02, CE acc. to 2014/30/EU and 2014/35/EU; Listed to UL 2043 - suitable for use in air plenums per Section 300.22(c) of the NEC and Section 602.2 of the IMC |
|                        | Quality Standard                   | ISO 9001   |
|                        | Ambient temperature                | -22...122°F [-30...50°C]   |
|                        | Storage temperature                | -40...176°F [-40...80°C]   |
|                        | Ambient humidity                   | max. 95% RH, non-condensing  |
|                        | Servicing                          | maintenance-free   |

**Weight**    Weight    2.7 lb [1.2 kg]

**Accessories**

| Gateways               | Description   | Type       |
|------------------------|---|------------|
|                        | Gateway MP to BACnet MS/TP  | UK24BAC    |
|                        | Gateway MP to LonWorks  | UK24LON    |
|                        | Gateway MP to Modbus RTU  | UK24MOD    |
| Electrical accessories | Description   | Type       |
|                        | Battery, 12 V, 1.2 Ah (two required)  | NSV-BAT    |
|                        | Battery backup system, for non-spring return models   | NSV24 US   |
|                        | Feedback potentiometer 10 kΩ add-on, grey   | P10000A GR |
|                        | Feedback potentiometer 1 kΩ add-on, grey  | P1000A GR  |
|                        | Feedback potentiometer 140 Ω add-on, grey   | P140A GR   |
|                        | Feedback potentiometer 2.8 kΩ add-on, grey  | P2800A GR  |
|                        | Feedback potentiometer 5 kΩ add-on, grey  | P5000A GR  |
|                        | Feedback potentiometer 500 Ω add-on, grey   | P500A GR   |
|                        | Auxiliary switch 1 x SPDT add-on  | S1A        |
|                        | Auxiliary switch 2 x SPDT add-on  | S2A        |
| Service tools          | Description   | Type       |
|                        | Connection cable 10 ft [3 m], A: RJ11 6/4 ZTH EU, B: 3-pin Weidmüller and supply connection   | ZK4-GEN    |
|                        | Service Tool, with ZIP-USB function, for programmable and communicative Belimo actuators, VAV controller and HVAC performance devices | ZTH US     |

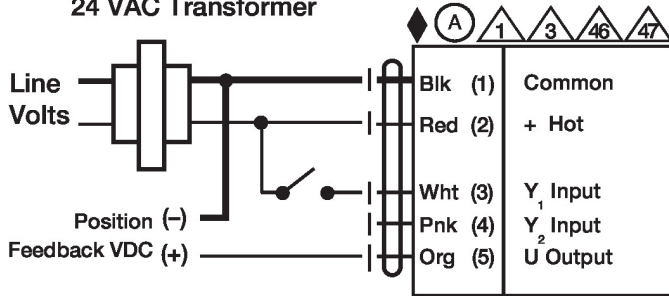
**Electrical installation**
**INSTALLATION NOTES**

- Actuators with appliance cables are numbered.
- Provide overload protection and disconnect as required.
- Actuators may also be powered by DC 24 V.
- Only connect common to negative (-) leg of control circuits.
- A 500 Ω resistor (ZG-R01) converts the 4...20 mA control signal to 2...10 V.
- Control signal may be pulsed from either the Hot (Source) or Common (Sink) 24 V line.
- 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 may be controlled in parallel. Current draw and input impedance must be observed.
- Master-Slave wiring required for piggy-back applications. Feedback from Master to control input(s) of Slave(s).
- 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.

### Wiring diagrams

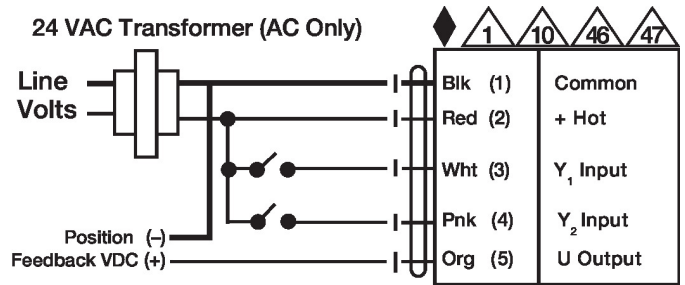
On/Off

24 VAC Transformer



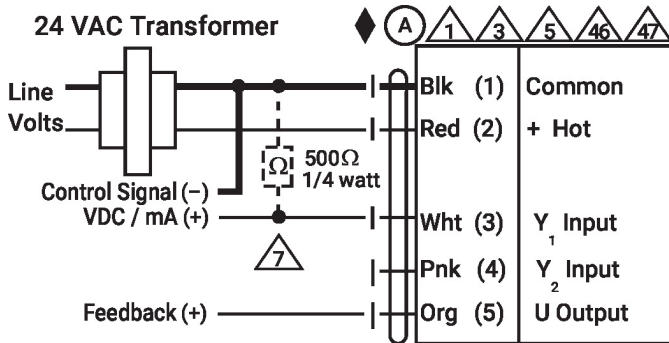
Floating Point

24 VAC Transformer (AC Only)



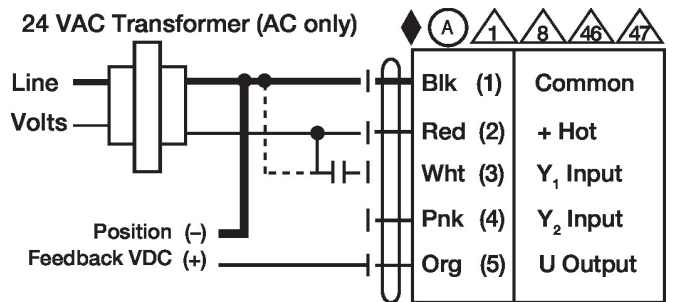
VDC/mA Control

24 VAC Transformer



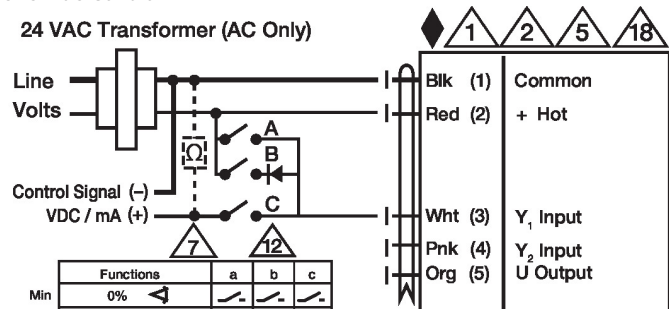
PWM Control

24 VAC Transformer (AC only)



Override Control

24 VAC Transformer (AC Only)



| Functions | a                                   | b                        | c                        |
|-----------|-------------------------------------|--------------------------|--------------------------|
| Min       | 0%                                  | <input type="checkbox"/> | <input type="checkbox"/> |
| Mid       | 50%                                 | <input type="checkbox"/> | <input type="checkbox"/> |
| Max       | 100%                                | <input type="checkbox"/> | <input type="checkbox"/> |
| Normal    | Control mode acc. to Y <sub>1</sub> | <input type="checkbox"/> | <input type="checkbox"/> |

Master - Slave

