BELIMO

Stainless Steel Ball and Stem

# Technical data sheet B6600S-400-250

5-year warranty

## Technical data

| | | |
|---|---|---|
| **Functional data** | 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 |
| | Cv Flow Rating | A-port: as stated in chart B-port: 70% of A – AB Cv |
| **Materials** | Valve body | Cast iron - GG 25 |
| | Spindle | stainless steel |
| | Spindle seal | EPDM (lubricated) |
| | Seat | PTFE |
| | Pipe connection | 250 lb flanged |
| | O-ring | EPDM (lubricated) |
| | Ball | stainless steel |
| **Suitable actuators** | Non-Spring | GRB(X) |
| | Electrical fail-safe | GKRB(X) |

## Safety notes

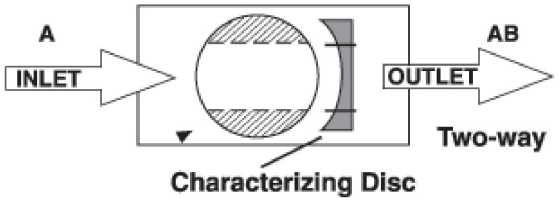
- WARNING: This product can expose you to lead which is known to the State of California to cause cancer and reproductive harm. For more information go to www.p65warnings.ca.gov

## Product features

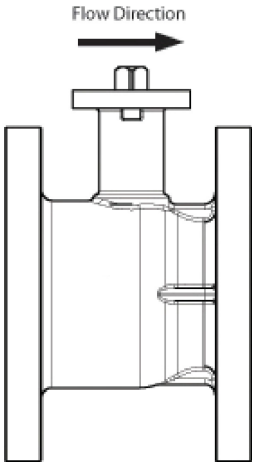
**Application**

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



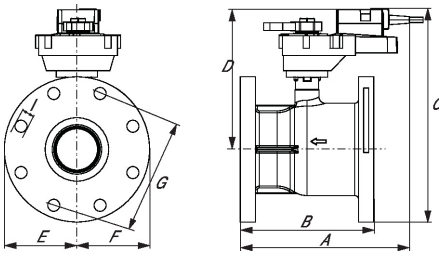

Upstream A
Downstream AB




## Dimensions

### Dimensional drawings

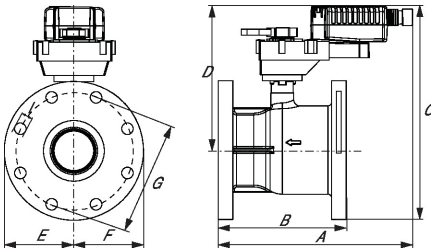
GRB, GRX




| Type | DN | Weight [kg] [kg] |
|---|---|---|
| B6600S-400-250 | 150 | 41 |

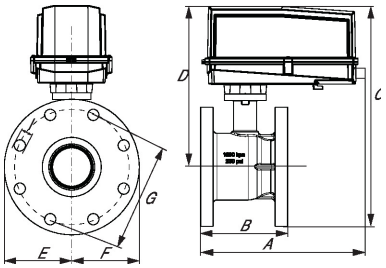
| A | B | C | D | E | F | G | I | Number of Bolt Holes |
|---|---|---|---|---|---|---|---|---|
| 15.3" [388] | 12.4" [315] | 15.4" [391] | 9.5" [241] | 6.3" [160] | 6.3" [160] | 10.6" [270] | 0.9" [22] | 12 |

GKRB, GKRX



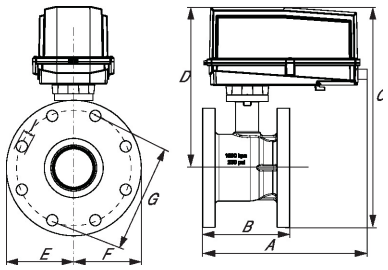

| A | B | C | D | E | F | G | I | Number of Bolt Holes |
|---|---|---|---|---|---|---|---|---|
| 15.3" [388] | 12.4" [315] | 15.8" [401] | 9.8" [248] | 6.3" [160] | 6.3" [160] | 10.6" [270] | 0.9" [22] | 12 |

GRX, GKRX




| 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 |

GRX, GKRX

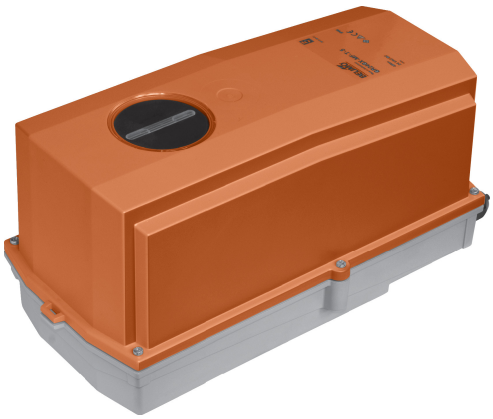



| A | B | C | D | E | F | G | I | Number of Bolt Holes |
|---|---|---|---|---|---|---|---|---|
| 19.0" [483] | 12.4" [315] | 18.5" [470] | 9.5" [241] | 6.3" [160] | 6.3" [160] | 10.6" [270] | 0.9" [22] | 12 |

BELIMO

Modulating, Electrical Fail-Safe, 24 V, for DC 2...10 V or 4...20 mA Control Signal

# Technical data sheet GKRX24-MFT N4



5-year warranty

## Technical data

| | | |
|---|---|---|
| **Electrical data** | Nominal voltage | AC/DC 24 V |
| | Nominal voltage frequency | 50/60 Hz |
| | Power consumption in operation | 12 W |
| | Power consumption in rest position | 3 W |
| | Transformer sizing | 21 VA (class 2 power source) / heater 21 VA |
| | Electrical Connection | 18 GA plenum cable, 3 ft [1 m], with 1/2" conduit connector |
| | Overload Protection | electronic thoughout 0...90° rotation |
| **Functional data** | Operating range Y | 2...10 V |
| | Operating range Y note | 4...20 mA w/ ZG-R01 (500 Ω, 1/4 W resistor) |
| | Input Impedance | 100 kΩ for 2...10 V (0.1 mA), 500 Ω for 4...20 mA, 1500 Ω for PWM, On/Off and Floating point |
| | 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 |
| | Bridging time (PF) | 2 s |
| | Bridging time (PF) variable | 0...10 s |
| | Pre-charging time | 5...20 s |
| | Direction of motion motor | selectable with switch 0/1 |
| | Direction of motion fail-safe | reversible with switch |
| | Manual override | under cover |
| | Angle of rotation | Max. 95° |
| | Angle of rotation note | adjustable with mechanical stop |
| | Running Time (Motor) | 150 s / 90° |
| | Running time motor variable | 90...150 s |
| | Running time fail-safe | <35 s |
| | Noise level, motor | 52 dB(A) |
| | Noise level, fail-safe | 61 dB(A) |
| | Position indication | Mechanically, 30...65 mm stroke |
| **Safety data** | Degree of protection IEC/EN | IP66/67 |
| | Degree of protection NEMA/UL | NEMA 4X |
| | Enclosure | UL Enclosure Type 4X |
| | Agency Listing | cULus acc. to UL60730-1A/-2-14, CAN/CSA E60730-1:02, CE acc. to 2014/30/EU and 2014/35/EU |
| | Quality Standard | ISO 9001 |

| | | |
|---|---|---|
| **Safety data** | Ambient temperature | -22...122°F [-30...50°C] |
| | Ambient temperature note | -40...50°C for actuator with integrated heating |
| | Storage temperature | -40...176°F [-40...80°C] |
| | Ambient humidity | Max. 100% RH |
| | Servicing | maintenance-free |
| **Materials** | Housing material | Die cast aluminium and plastic casing |

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

## Product features

**Bridging time**

Electrical interruptions can be bridged up to a maximum of 10 s.

In the event of a power failure, the actuator will remain stationary in accordance with the set bridging time. If the power failure is greater than the set bridging time, then the actuator will move into the selected fail-safe position.

The bridging time set ex-works is 2 s. This can be modified on site in operation with the use of the Belimo service tool MFT-P.

Settings: The rotary knob must not be set to the "PROG FAIL-SAFE" position!

For retroactive adjustments of the bridging time with the Belimo service tool MFT-P or with the ZTH EU adjustment and diagnostic device only the values need to be entered.

## Accessories

**Gateways**

| Description | Type |
|---|---|
| Gateway MP to BACnet MS/TP | UK24BAC |
| Gateway MP to Modbus RTU | UK24MOD |
| Gateway MP to LonWorks | UK24LON |

**Electrical accessories**

| Description | Type |
|---|---|
| Feedback potentiometer 140 Ω add-on, grey | P140A GR |
| Feedback potentiometer 500 Ω add-on, grey | P500A GR |
| Feedback potentiometer 1 kΩ add-on, grey | P1000A GR |
| Feedback potentiometer 2.8 kΩ add-on, grey | P2800A GR |
| Feedback potentiometer 5 kΩ add-on, grey | P5000A GR |
| Feedback potentiometer 10 kΩ add-on, grey | P10000A GR |
| Auxiliary switch 1 x SPDT add-on | S1A |
| Auxiliary switch 2 x SPDT add-on | S2A |
| Service Tool, with ZIP-USB function, for programmable and communicative Belimo actuators, VAV controller and HVAC performance devices | ZTH US |

**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**

A Actuators with appliance cables are numbered.

1 Provide overload protection and disconnect as required.

3 Actuators may also be powered by DC 24 V.

5 Only connect common to negative (-) leg of control circuits.

7 A 500 Ω resistor (ZG-R01) converts the 4...20 mA control signal to 2...10 V.

8 Control signal may be pulsed from either the Hot (Source) or Common (Sink) 24 V line.

10 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.

12 IN4004 or IN4007 diode. (IN4007 supplied, Belimo part number 40155).

16 Actuators are provided with a numbered screw terminal strip instead of a cable.

46 Actuators may be controlled in parallel. Current draw and input impedance must be observed.

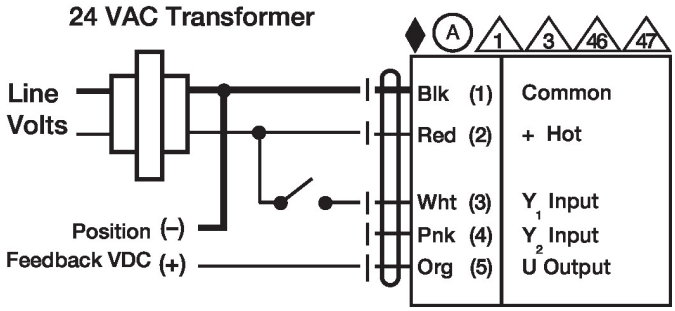
47 Master-Slave wiring required for piggy-back applications. Feedback from Master to control input(s) of Slave(s).

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

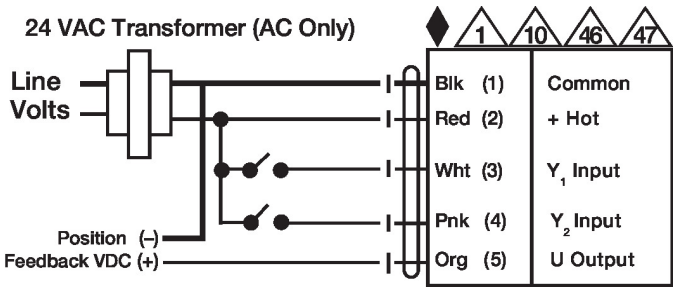
**Warning! Live electrical components!**
During installation, testing, servicing and troubleshooting of this product, it may be necessary to work with live electrical components. Have a qualified licensed electrician or other individual who has been properly trained in handling live electrical components 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

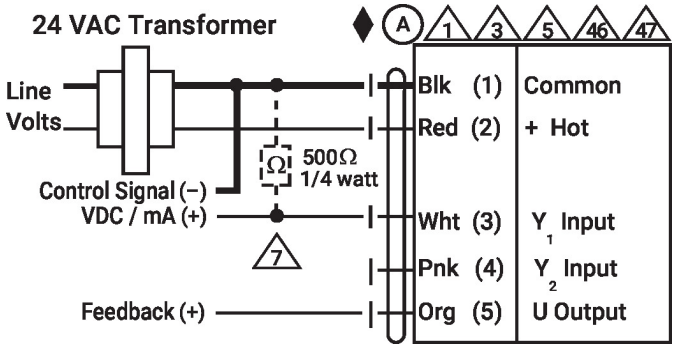
On/Off



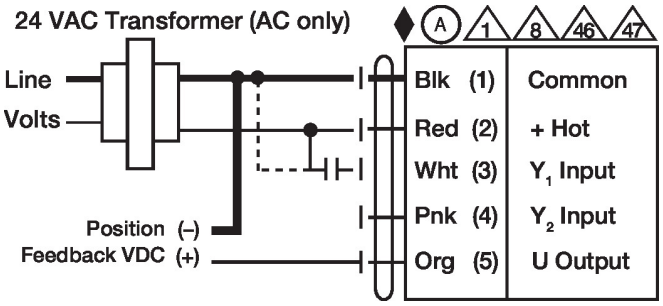

Floating Point



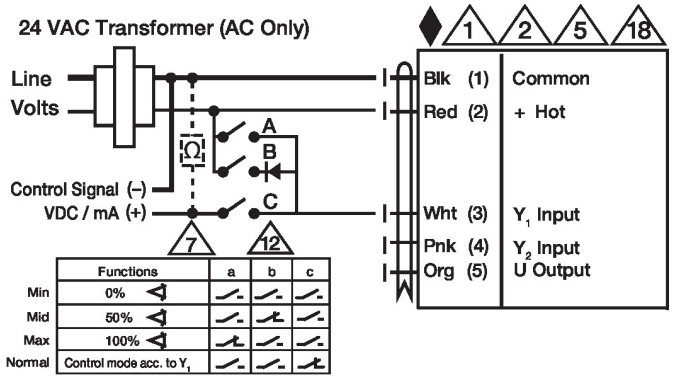

VDC/mA Control



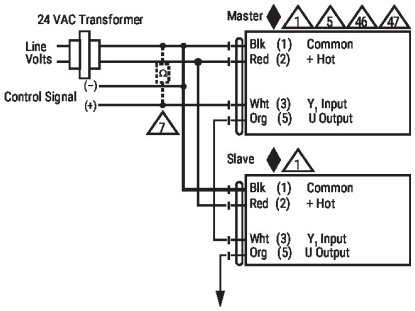

PWM Control



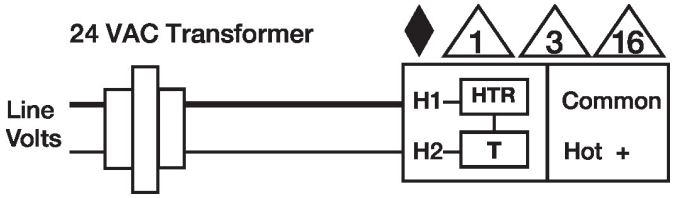

Override Control




Master - Slave




NEMA 4 Heater



## Dimensions