



5-year warranty


Type overview

| | |
|-------------|-----------|
| Type | DN |
| G250S-N | 50 |

Technical data

| | | |
|---------------------------|---------------------------------------|-----------------------------------------------|
| Functional data | Valve Size | 2" [50] |
| | Fluid | chilled or hot water, up to 60% glycol, steam |
| | Fluid Temp Range (water) | 20...338°F [-7...170°C] |
| | Fluid Temp Range (steam) | 32...338°F [0...170°C] |
| | Body Pressure Rating | ANSI Class 250, up to 400 psi below 150°F |
| | Flow characteristic | modified equal percentage |
| | Servicing | repack kits available |
| | Rangeability Sv | 100:1 |
| | Maximum differential pressure (water) | 50 psi [345 kPa] |
| | Max Differential Pressure (Steam) | 50 psi [345 kPa] |
| | Flow Pattern | 2-way |
| | Leakage rate | ANSI Class VI |
| | Controllable flow range | stem up - open A – AB |
| | Cv | 40 |
| | Maximum Inlet Pressure (Steam) | 100 psi [690 kPa] |
| | ANSI Class | 250 |
| Body pressure rating note | up to 400 psi below 150°F | |
| Materials | Valve body | Bronze |
| | Valve plug | 316 stainless steel |
| | Stem | 316 stainless steel |
| | Stem seal | EPDM O-ring |
| | Seat | Stainless steel AISI 316 |
| | Pipe connection | NPT female ends |
| Suitable actuators | Non-Spring | LVB(X) |
| | Electronic fail-safe | LVKB(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
- The valve has been designed for use in stationary heating, ventilation and air-conditioning systems and must not be used outside the specified field of application, especially in aircraft or in any other airborne means of transport.
- Only authorised specialists may carry out installation. All applicable legal or institutional installation regulations must be complied during installation.
- The valve does not contain any parts that can be replaced or repaired by the user.
- When determining the flow rate characteristic of controlled devices, the recognised directives must be observed.

Installation notes

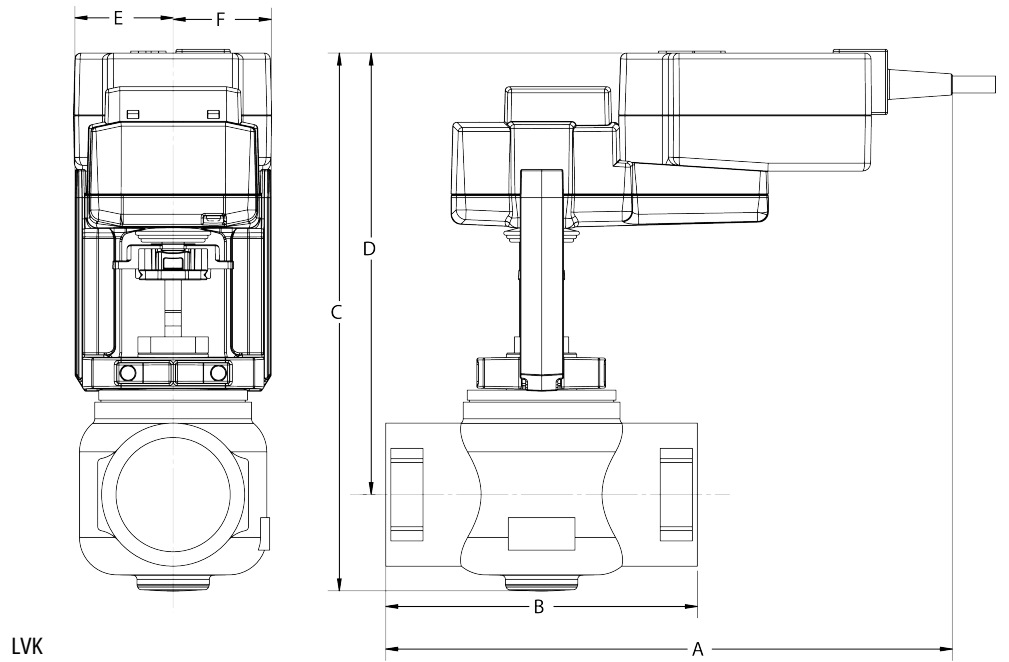
Flow direction The direction of flow, specified by an arrow on the housing, is to be complied with, since otherwise the valve could become damaged.



Dimensions

Dimensional drawings





| A | B | C | D | E | F |
|-------------|------------|-------------|------------|-----------|-----------|
| 11.0" [280] | 6.1" [156] | 10.5" [267] | 8.8" [224] | 1.9" [48] | 1.9" [48] |



| A | B | C | D | E | F |
|-------------|------------|-------------|-------------|-----------|------------|
| 10.9" [277] | 6.1" [156] | 12.4" [314] | 10.5" [267] | 1.8" [46] | 4.9" [125] |





5-year warranty



Technical data

| | | |
|------------------------|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Electrical data | Nominal voltage | AC/DC 24 V |
| | Nominal voltage frequency | 50/60 Hz |
| | Power consumption in operation | 6.5 W |
| | Power consumption in rest position | 3 W |
| | Transformer sizing | 9 VA (class 2 power source) |
| | Electrical Connection | 18 GA appliance cable, 3ft [1m] 10ft [3m] and 16ft [5m], with 1/2" conduit connector, degree of protection NEMA 2 / IP54 |
| | Overload Protection | electronic throughout 0...95° 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) |
| | Operating range Y variable | Start point 0.5...30 V End point 2.5...32 V |
| | Options positioning signal | variable (VDC, PWM, 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 |
| | Direction of motion fail-safe | reversible with cw/ccw mounting |
| | Manual override | 5 mm hex crank (3/16" Allen), supplied |
| | Angle of rotation | 95°, adjustable with mechanical end stop, 35...95° |
| | Angle of rotation note | adjustable with mechanical end stop, 35...95° |
| | Running Time (Motor) | default 150 s, variable 40...150 s, constant, independent of load |
| | Running time motor note | constant, independent of load |
| | Running time motor variable | 40...150 s |
| | Running time fail-safe | <20 s @ -4...122°F [-20...50°C], <60 s @ -22°F [-30°C] |
| | Override control | MIN (minimum position) = 0% MID (intermediate position) = 50% MAX (maximum position) = 100% |
| Noise level, motor | 50 dB(A) | |
| Noise level, fail-safe | 62 dB(A) | |
| Position indication | Mechanical | |
| Safety data | Degree of protection IEC/EN | IP54 |
| | Degree of protection NEMA/UL | NEMA 2 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% r.H., non-condensing |
| Servicing | maintenance-free |

| | | |
|---------------|--------|-----------------|
| Weight | Weight | 4.4 lb [2.0 kg] |
|---------------|--------|-----------------|

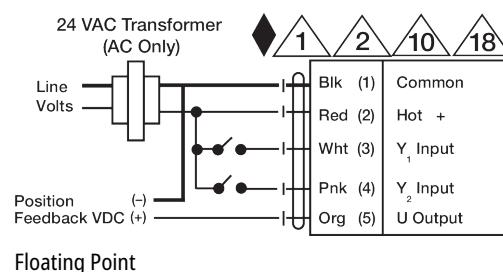
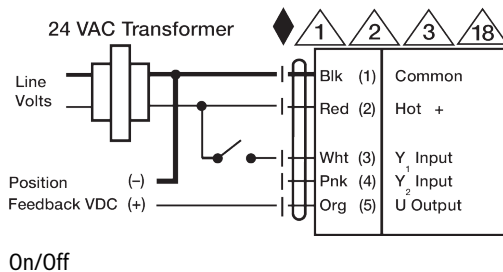
| | | |
|------------------|------------------|--------------------------------------|
| Materials | Housing material | Galvanized steel and plastic housing |
|------------------|------------------|--------------------------------------|

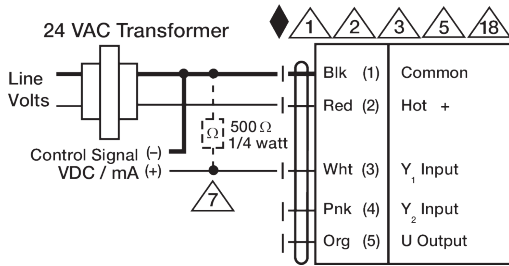
Safety notes


- PVC W/Shld for GV w/UGLK (AM)
- Classic GM to GMB(X) retrofit bracket.
- Battery Back Up System for SY(7-10)-110
- ZS-300 Mounting Bracket Set
- 120 to 24 VAC, 40 VA transformer.
- Cable for ZTH US to actuators w/o diagnostics socket.
- PC Tool computer programming interface, serial port.

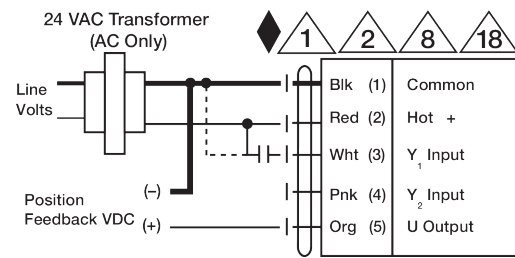
Electrical installation
✂ INSTALLATION NOTES

- Ⓐ Actuators with appliance cables are numbered.
- ⚠ Provide overload protection and disconnect as required.
- ⚠ Actuators may also be powered by 24 VDC.
- ⚠ 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.
- ⚠ Actuators may be connected in parallel if not mechanically linked. Power consumption and input impedance must be observed.
- ⚠ IN4004 or IN4007 diode. (IN4007 supplied, Belimo part number 40155).
- ◆ 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.

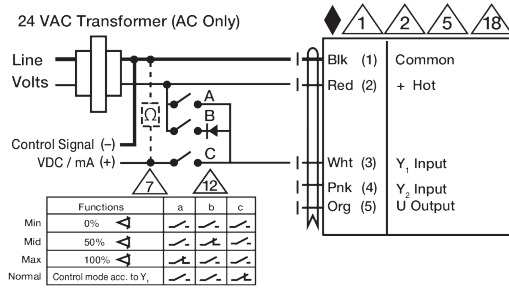




VDC/mA Control



PWM Control



Override Control