

# NPT-Threaded Globe Valves

- chilled or hot water, up to 60% glycol, steam
- ANSI Class 250, up to 400 psi below 150°F
- repack kits available
- ANSI Class VI



5-year warranty

Picture may differ from product

## Type overview

Type	DN
G215S-C	1/2" [15]

## Technical data

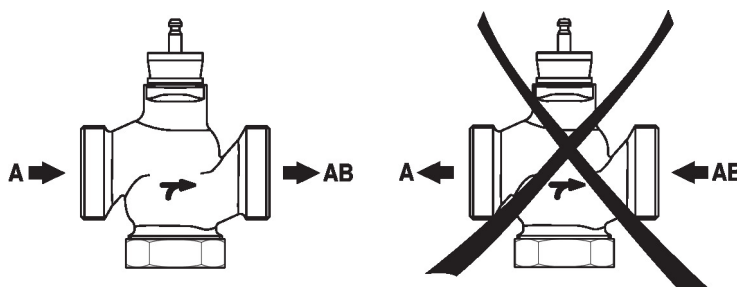
Functional data	Valve size [mm]	0.5" [15]
	Fluid	chilled or hot water, up to 60% glycol, steam
	Fluid Temp Range (water)	20...338°F [-7...170°C]
	Fluid Temp Range (steam)	32...338°F [0...170°C]
	Body Pressure Rating	ANSI Class 250, up to 400 psi below 150°F
	Flow characteristic	modified equal percentage
	Leakage rate	ANSI Class VI
	Pipe connection	Internal thread NPT (female)
	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
	Controllable flow range	stem up - open A – AB
	Cv	0.4
	Maximum Inlet Pressure (Steam)	100 psi [690 kPa]
Materials	Valve body	Bronze
	Valve plug	Stainless steel AISI 316
	Stem	316 stainless steel
	Stem seal	EPDM O-ring
	Seat	Stainless steel AISI 316
Suitable actuators	Non Fail-Safe	LVB(X)
	Spring	LF
	Electronic fail-safe	LVKB(X)

**Safety notes**

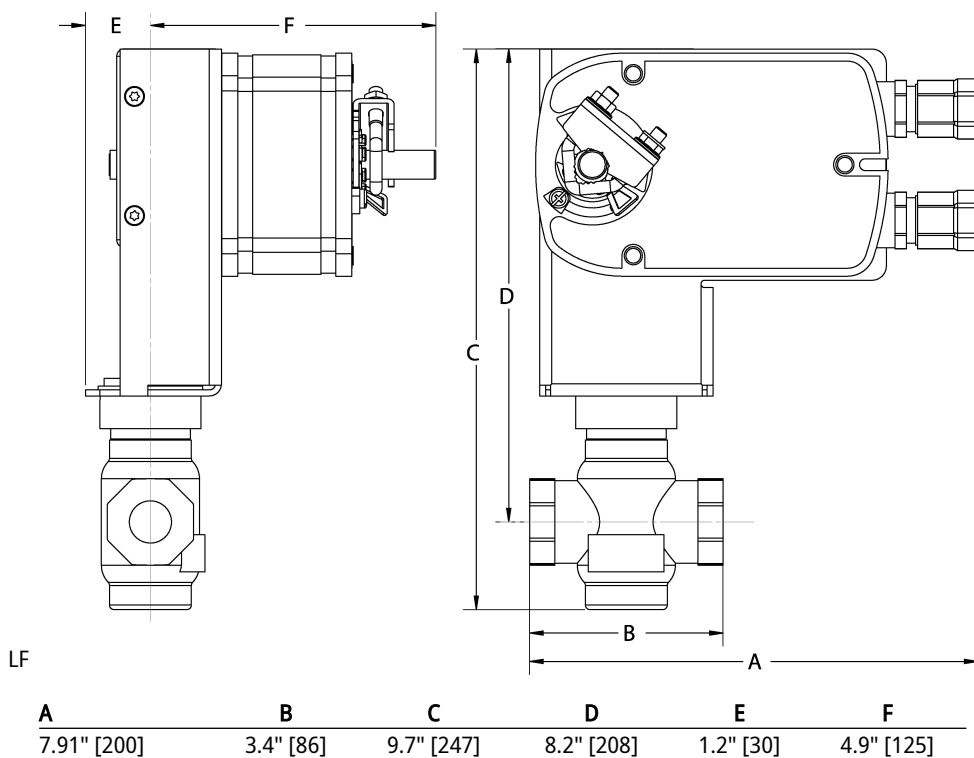

- **WARNING:** This product can expose you to lead which is known to the State of California to cause cancer and reproductive harm. For more information go to [www.p65warnings.ca.gov](http://www.p65warnings.ca.gov)
- The valve has been designed for use in stationary heating, ventilation and air-conditioning systems and must not be used outside the specified field of application, especially in aircraft or in any other airborne means of transport.
- Only authorized specialists may carry out installation. All applicable legal or institutional installation regulations must be complied with 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**

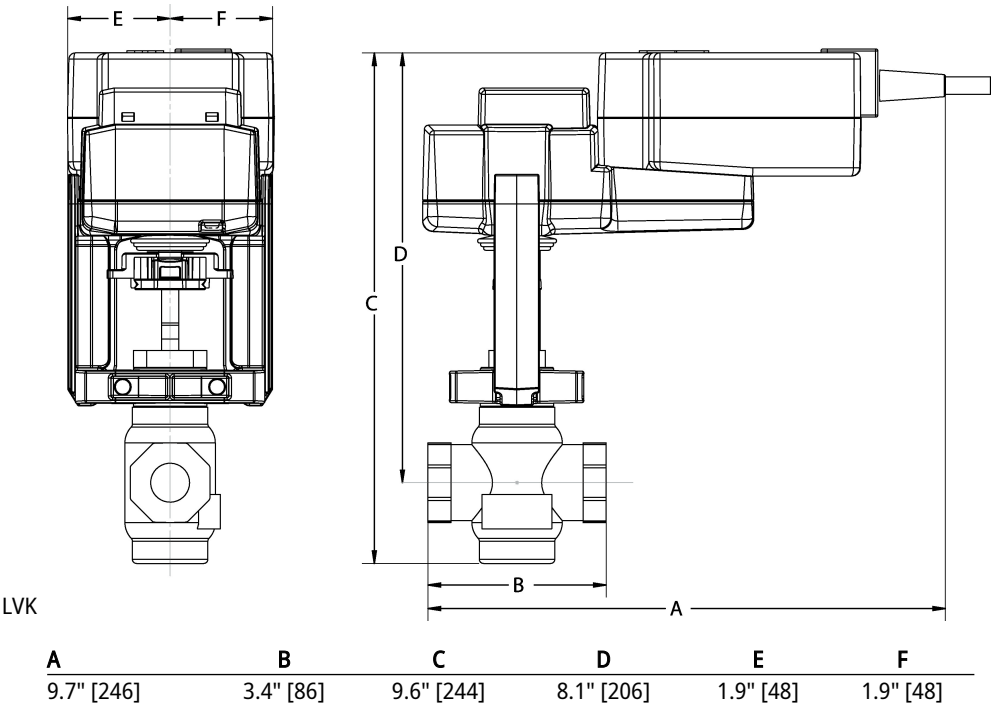
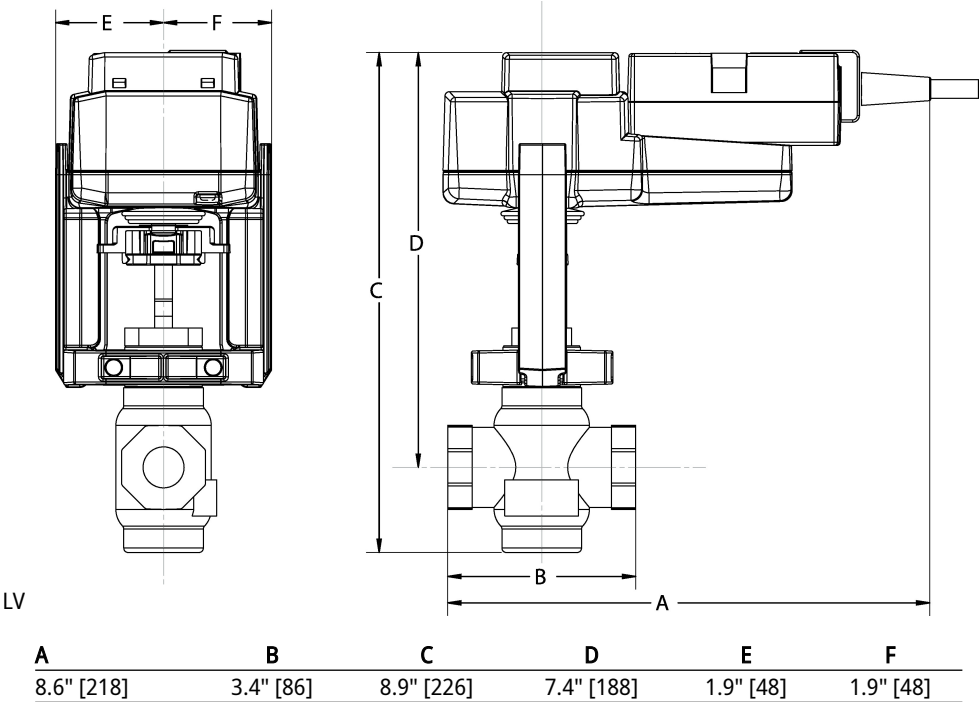
**Flow direction** The direction of flow, specified by an arrow on the housing, is to be complied with, since otherwise the valve could become damaged.

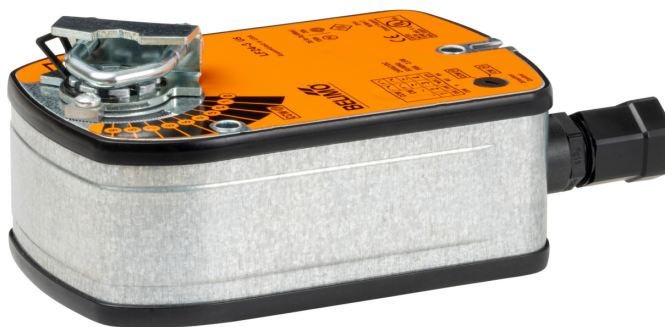

**Dimensions**

Type	DN	Weight
G215S-C	1/2" [15]	2.1 lb [0.97 kg]



Dimensions





Picture may differ from product

## Technical data

<b>Electrical data</b>	Nominal voltage	AC/DC 24 V
	Nominal voltage frequency	50/60 Hz
	Nominal voltage range	AC 19.2...28.8 V / DC 21.6...35.0 V
	Power consumption in operation	2 W
	Power consumption in rest position	0.8 W
	Transformer sizing	3.5 VA
	Connection supply/control	cable 3 ft. [1 m], 4x 0.75 mm <sup>2</sup>
	Parallel operation	Yes (note the performance data)
<b>Data bus communication</b>	Communicative control	MP-Bus
	Number of nodes	MP-Bus max. 16
<b>Functional data</b>	Torque motor	35 in-lb [4 Nm]
	Torque Fail-Safe	4 Nm
	Operating range Y	2...10 V
	Input impedance	100 kΩ
	Operating range Y variable	Start point 0.5...30 V End point 2.5...32 V
	Operating modes optional	variable (VDC, on/off)
	Position feedback U	2...10 V
	Position feedback U note	Max. 1 mA
	Position feedback U variable	Start point 0.5...8 V End point 2.5...10 V
	Position accuracy	±5%
	Direction of motion motor	selectable with switch L/R
	Direction of motion variable	electronically reversible
	Direction of motion fail-safe	selectable by mounting L/R
	Manual override	No
	Angle of rotation	Max. 95°
	Angle of rotation note	Adjustable 37...100% with integrated mechanical limitation
	Running Time (Motor)	150 s / 90°
	Running time motor variable	75...300 s
	Running time fail-safe	<20 s @ -20...50°C, <60 s @ -30°C
	Sound power level, motor	36 dB(A)
	Adaptation Setting Range	with Belimo Assistant 2
	Override control	MIN (minimum position) = 0% MID (intermediate position, AC only) = 50% MAX (maximum position) = 100%
	Override control variable	MIN = 0%...(MAX - 32%) MID = MIN...MAX MAX = (MIN + 32%)...100%

## Technical data

<b>Functional data</b>	Mechanical interface	Universal shaft clamp 8...16 mm
	Position indication	Mechanical
	Service life	Min. 60'000 fail-safe positions
<b>Safety data</b>	Power source UL	Class 2 Supply
	Degree of protection NEMA/UL	NEMA 2
	Housing	UL Enclosure Type 2
	Agency Listing	cULus acc. To UL 873 and CAN/CSA C22.2 No. 24-93
	Quality Standard	ISO 9001
	UL 2043 Compliant	Suitable for use in air plenums per Section 300.22(C) of the NEC and Section 602 of the IMC
	Ambient humidity	Max. 95% RH, non-condensing
	Ambient temperature	-22...122°F [-30...50°C]
	Storage temperature	-40...176°F [-40...80°C]
<b>Weight</b>	Servicing	maintenance-free
	Weight	3.2 lb [1.5 kg]

## Product features

<b>Operating mode</b>	<p>Conventional operation:</p> <p>The actuator is connected with an analog control signal Y (note the operating range) and drives to the position defined.</p> <p>The actuator moves the valve to the operating position at the same time as tensioning the return spring. The damper is turned back to the fail-safe position by spring force when the supply voltage is interrupted.</p> <p>Operation on Bus:</p> <p>The actuator receives its digital control signal from the higher level controller via the MP-Bus and drives to the position defined. Connection U serves as communication interface and does not supply an analogue measuring voltage.</p>
<b>Converter for sensors</b>	<p>Connection option for an active sensor. The actuator serves as an analog/digital converter for the transmission of the sensor signal via MP-Bus to the higher-level system.</p> <p>Additional material may be required for the sensor connection. See "Electrical accessories".</p>
<b>Configurable Device</b>	<p>The factory settings cover the most common applications. Single parameters can be modified with the Belimo Assistant 2 or ZTH US.</p>
<b>Adjustable angle of rotation</b>	<p>Adjustable angle of rotation with mechanical end stops.</p>
<b>High functional reliability</b>	<p>The actuator is overload protected, requires no limit switches and automatically stops when the end stop is reached.</p>
<b>Innovative motorization</b>	<p>The actuator uses the powerful Belimo M600 microchip in combination with the INFORM method. It provides the full starting torque from a standstill with high precision (sensorless INFORM-Drive by Prof. Schrödl).</p>
<b>Home position</b>	<p>The first time the supply voltage is switched on, i.e. at the time of commissioning, the actuator carries out a synchronization. The synchronization is in the home position (0%).</p> <p>The actuator then moves into the position defined by the control signal.</p>
<b>Adaptation</b>	<p>An adaptation can be triggered manually by switching the direction-of-rotation switch from the left to the right twice within 5 s or with Belimo Assistant 2. Both mechanical end stops are detected during the adaptation (entire setting range).</p> <p>The actuator then moves into the position defined by the control signal.</p> <p>A range of settings can be made using the Belimo Assistant 2.</p>

### Accessories

Tools	Description	Type
	Service tool for wired and wireless setup, on-site operation and troubleshooting.	Belimo Assistant 2
	Connecting cable 16 ft [5 m], A: RJ11 6/4 LINK.10, B: free wire end for connection to MP/PP terminal	ZK2-GEN
	Belimo Assistant Link Bluetooth and USB to NFC and MP-Bus converter for configurable and communicative devices	LINK.10

### Electrical installation



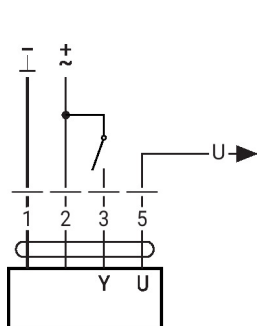
Supply from isolating transformer.

Parallel connection of other actuators possible. Observe the performance data.

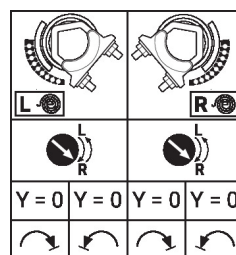
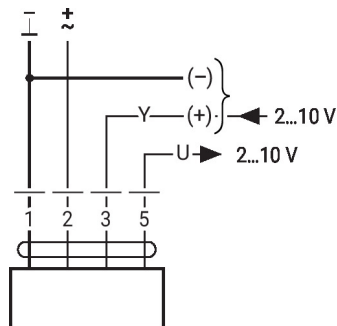
#### Wire colors:

- 1 = black
- 2 = red
- 3 = white
- 5 = white

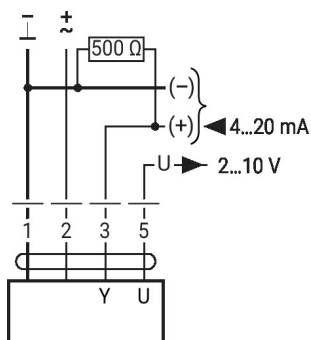
#### Control on/off



#### AC/DC 24 V, modulating



#### Control with 4...20 mA via external resistor



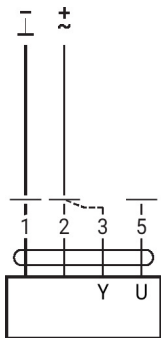
#### Caution:

The operating range must be set to DC 2...10 V.  
The 500 Ohm resistor converts the 4...20 mA current signal to a voltage signal DC 2...10 V.

## Further electrical installations

### Functions with basic values (conventional mode)

#### Functional check



#### Procedure

1. Connect 24 V to connections 1 and 2
2. Disconnect connection 3:
  - With direction of rotation 0: Actuator rotates to the left
  - With direction of rotation 1: Actuator rotates to the right
3. Short-circuit connections 2 and 3:
  - Actuator runs in opposite direction

### Functions with basic values (conventional mode)

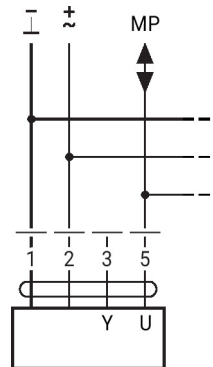
#### MP-Bus network topology



There are no restrictions regarding the network topology (bus, star, ring or mixed forms are permitted). Supply and communication in one and the same 3-wire cable

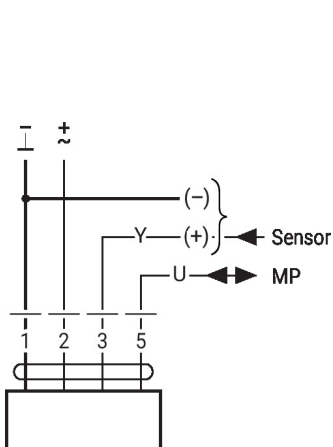
- no shielding or twisting necessary
- no terminating resistors required

#### Connection on the MP-Bus

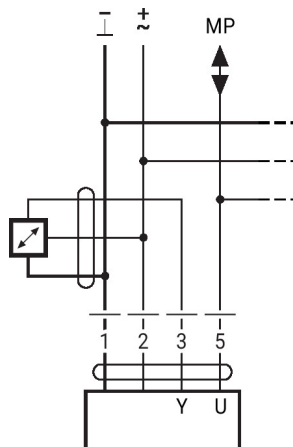


Max. 8 MP-Bus nodes

#### MP-Bus

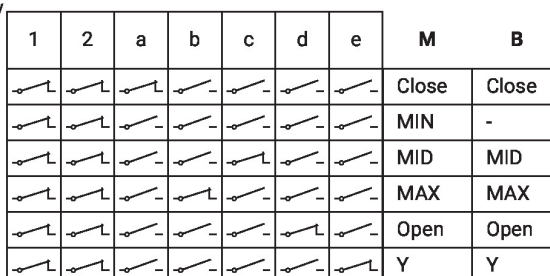


#### Connection of active sensors



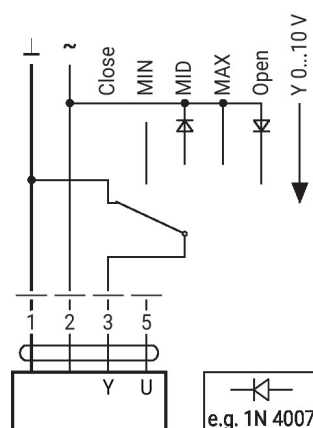
- Supply AC/DC 24 V
- Output signal 0...10 V (max. 0...32 V)
- Resolution 30 mV

### Override control and limiting with AC 24 V with relay contacts



M = modulating  
B = Bus

### Override control and limiting with AC 24 V with rotary switch



**Caution:**  
The "Close" function is only guaranteed if the start point of the operating range is defined as min. 0.5 V.

### 1 MP addressing

Move direction of rotation switch in opposite position and backwards (within 4 seconds)



## Service

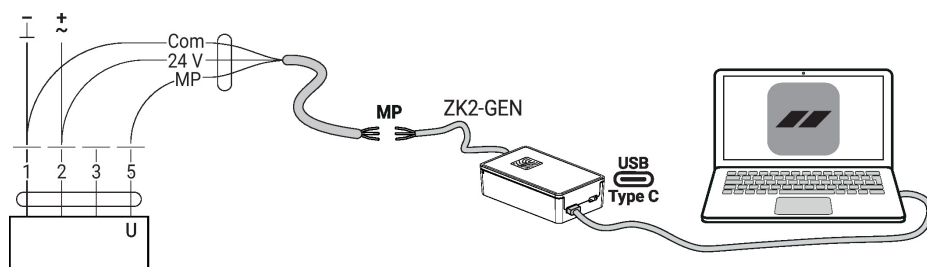
Using Belimo Assistant 2, device parameters can be modified. Belimo Assistant 2 can operate on a smartphone, tablet, or PC. The available connection options vary depending on the hardware on which Belimo Assistant 2 is installed.

For more information about Belimo Assistant 2, refer to the Quick Guide – Belimo Assistant 2.

## Wired connection

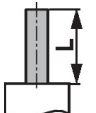
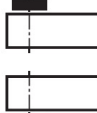
Alternatively, the Belimo devices can be accessed by connecting Belimo Assistant Link to the USB port on a PC or laptop and to the MP-Bus wire on the device.

Belimo Assistant 2 acts as MP client. Therefore, no other MP client shall be connected to the device.





## Dimensions

## Shaft length

	Min. 84
	Min. 0.75" [20 mm]

## Clamping range

	
8...16	8...16

## Further documentation

- Overview MP Cooperation Partners
- Tool connections
- Introduction to MP-Bus Technology
- Quick Guide – Belimo Assistant 2