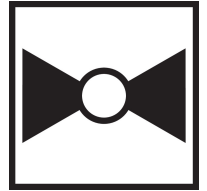




2-year warranty



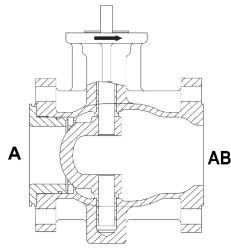
Technical data

Functional data	Valve Size	3" [80]
	Fluid	chilled or hot water, up to 60% glycol, steam
	Fluid Temp Range (water)	-22...380°F [-30...193°C]
	Fluid Temp Range (steam)	-22...365°F [-30...185°C]
	Body Pressure Rating	ANSI Class 150
	Close-off pressure Δps	250 psi
	Flow characteristic	equal percentage
	Servicing	repack/rebuild kits available
	Rangeability Sv	300:1
	Maximum differential pressure (water)	150 psi
	Max Differential Pressure (Steam)	100 psi
	Close-Off Pressure (Steam)	150 psi
	Flow Pattern	2-way
	Leakage rate	ANSI Class IV
	Controllable flow range	75°
	Cv	207
Maximum Inlet Pressure (Steam)	150 psi	
Materials	Valve body	WCC grade carbon steel
	Body finish	matt black body finish
	Stem	stainless steel
	Stem seal	PTFE V-ring
	Seat	PTFE
	Pipe connection	125/150 lb flanged, ASME/ANSI b16.1/b16.5
	Ball	stainless steel
Suitable actuators	Non-Spring	SY1
		AMB(X)
		PRB(X)
	Spring	AF
Electronic fail-safe	GKB(X)	
	PKRB(X)	

Product features

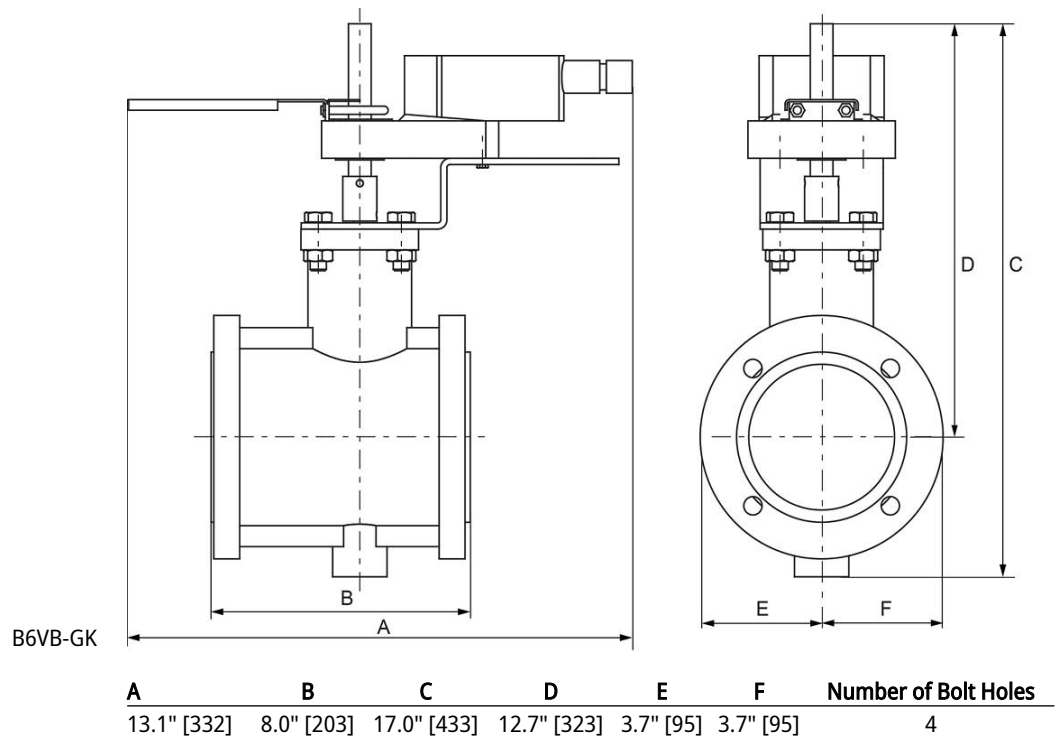
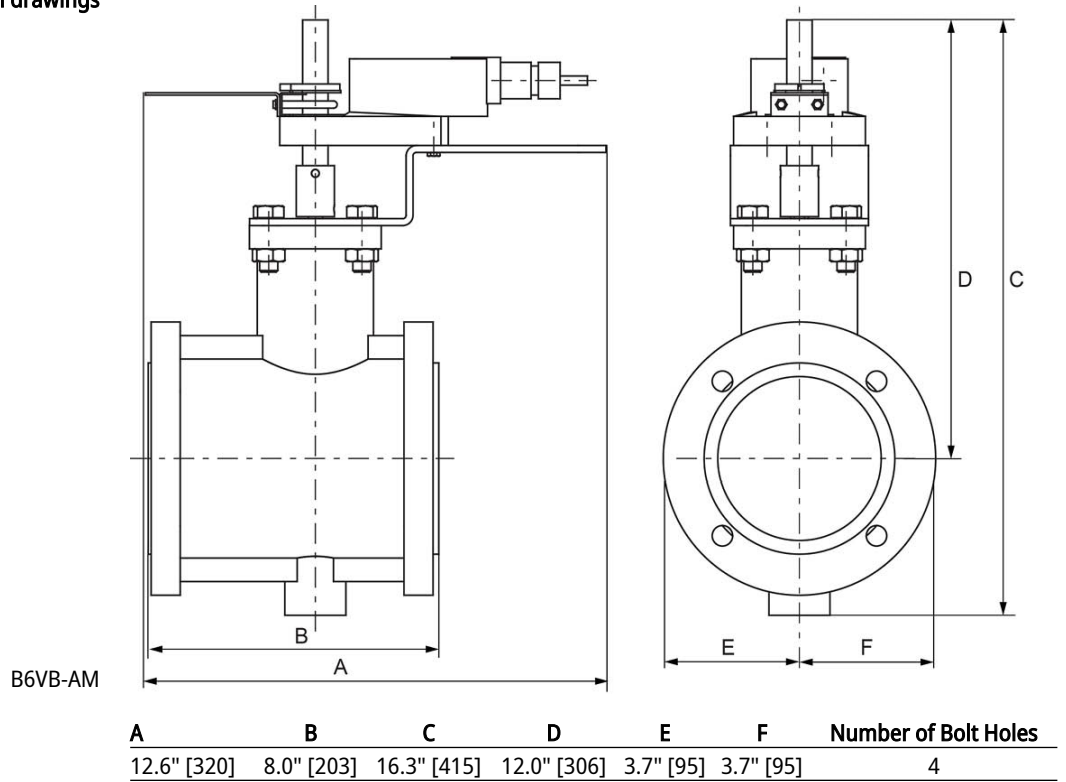
- Product features** Fast quarter turn open or closed operation, stainless-steel ball and stem, positive isolation, two-piece body construction
- Application** This valve is typically used in air handling units on heating or cooling coils, and fan coil unit heating or cooling coils. Some other common 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.

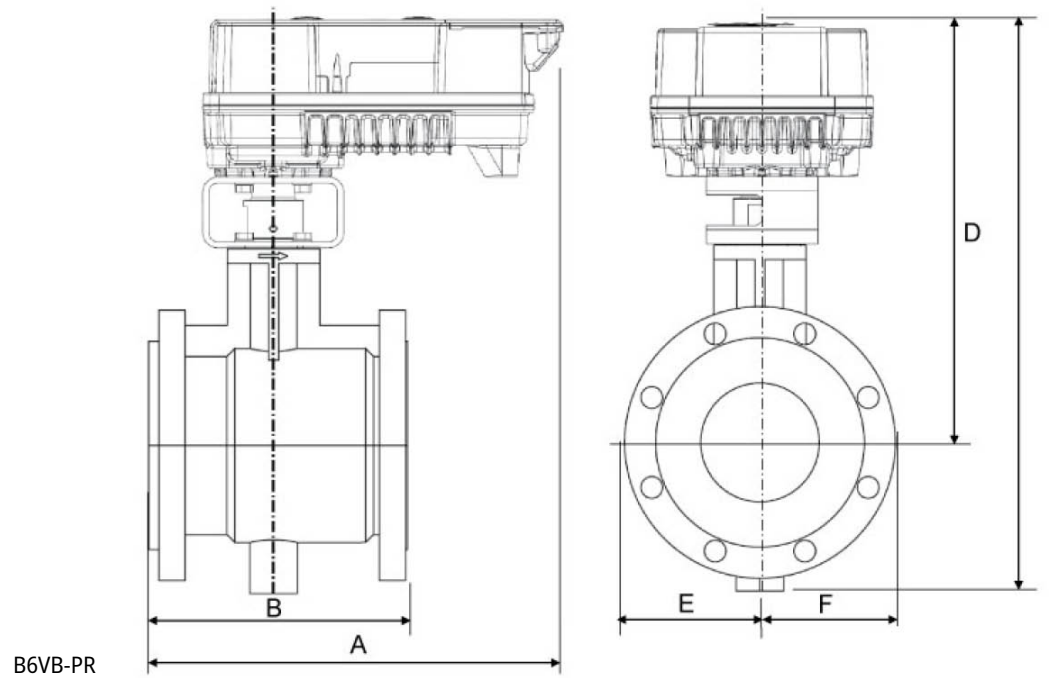
Flow/Mounting details



Dimensions

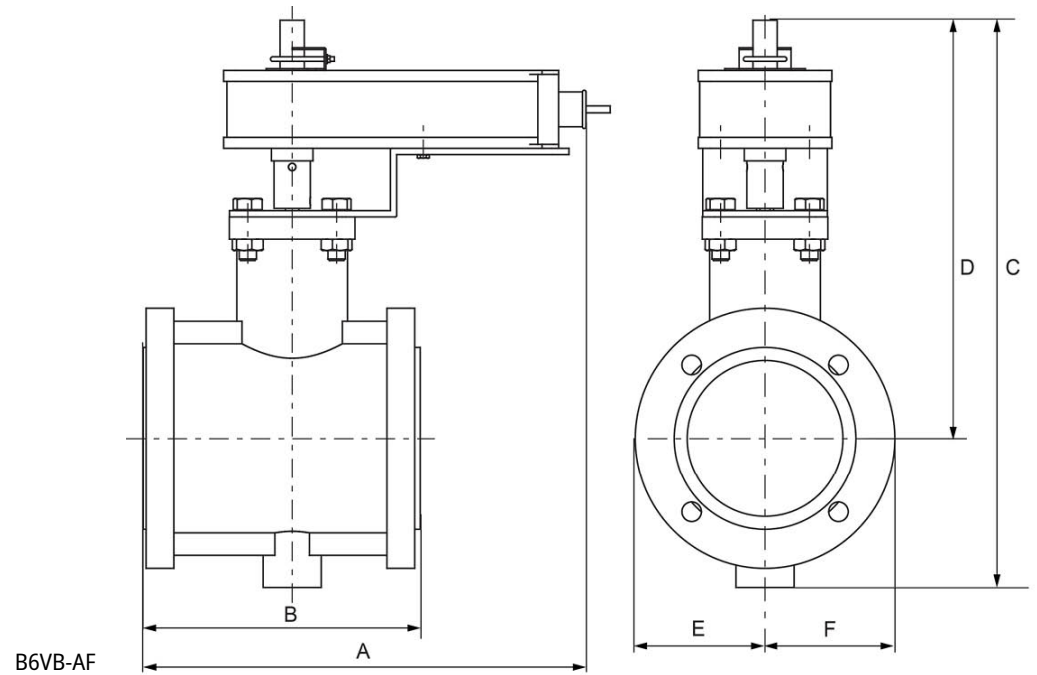
Dimensional drawings





B6VB-PR

A	B	C	D	E	F	Number of Bolt Holes
11.8" [299]	8.0" [203]	18.9" [480]	14.6" [371]	3.9" [100]	3.9" [100]	4



B6VB-AF

A	B	C	D	E	F	Number of Bolt Holes
12.7" [323]	8.0" [203]	16.4" [416]	12.0" [306]	3.7" [95]	3.7" [95]	4



5-year warranty



Technical data

Electrical data	Nominal voltage	AC/DC 24 V
	Nominal voltage frequency	50/60 Hz
	Power consumption in operation	7.5 W
	Power consumption in rest position	3 W
	Transformer sizing	10 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 70...220 s
	Running time motor variable	70...220 s
	Running time fail-safe	<20 s
	Override control	MIN (minimum position) = 0% MID (intermediate position) = 50% MAX (maximum position) = 100%
	Noise level, motor	40 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
	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 Listed to UL 2043 - suitable for use in air plenums per Section 300.22(C) of the NEC and Section 602 of the IMC

Safety data	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	4.6 lb [2.1 kg]
Materials	Housing material	Galvanized steel and plastic housing

Accessories

Electrical accessories	Description	Type
	Service Tool, with ZIP-USB function, for programmable and communicative Belimo actuators, VAV controller and HVAC performance devices	ZTH US

Electrical installation
⚠ 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.

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

Ⓐ 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.

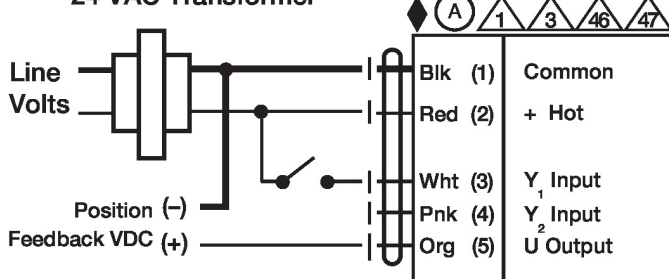
12 IN4004 or IN4007 diode. (IN4007 supplied, Belimo part number 40155).

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

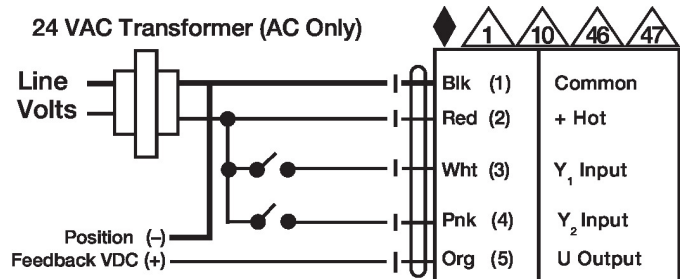
47 Master-Slave wiring required for piggy-back applications. Feedback from Master to control input(s) of Slave(s).

Wiring diagrams

On/Off

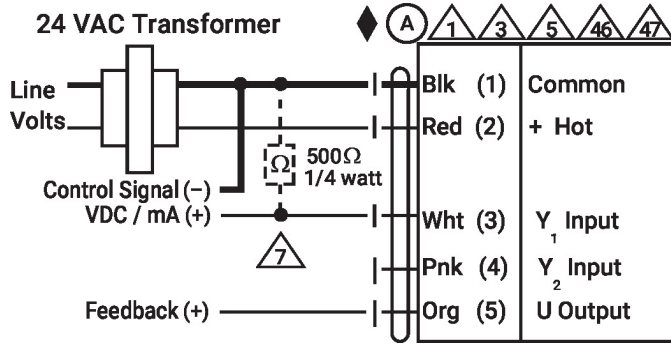
24 VAC Transformer


Floating Point

24 VAC Transformer (AC Only)


VDC/mA Control

24 VAC Transformer



PWM Control

24 VAC Transformer (AC only)

