

Ball Valve (VS), 1/2", 2-way, Cv 4



2-year warranty

## Type overview

Type	DN
B2050VS-04	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)	-30...138°C [-22...280°F]	
Body Pressure Rating	600 psig WOG	
Close-off pressure $\Delta$ ps	600 psi	
Flow characteristic	modified equal percentage	
Leakage rate	ANSI Class VI	
Pipe connection	Internal thread NPT (female)	
Max Differential Pressure (Steam)	35 psi	
Flow Pattern	2-way	
Controllable flow range	90° rotation	
Cv	4	
Maximum Inlet Pressure (Steam)	35 psi [241 kPa]	
Maximum Velocity	15 FPS	
Materials	Valve body	Bronze B584-C84400
	Housing seal	PTFE
	Stem	316 stainless steel
	Stem seal	RPTFE
	Seat	RPTFE
	Lock nut	stainless steel
	Retainer	B16 Brass
	Ball	316 stainless steel
Suitable actuators	Non Fail-Safe	LMB(X) GRCB(X) GRB(X)
	Spring	LF

## 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.

This valve is designed with MFT functionality which facilitates the use of various control input.

Up to 35 psi steam

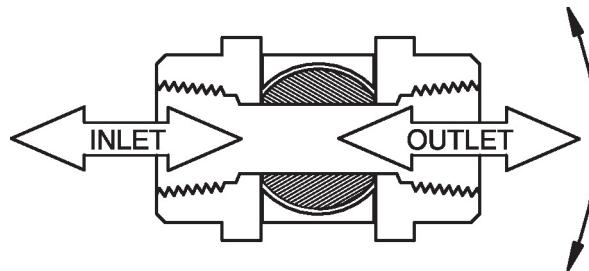
1/2" - 2" 600 PSIG WOG, Cold Non-Shock

Federal Specification: WW-V-35C, Type II

Composition: BZ

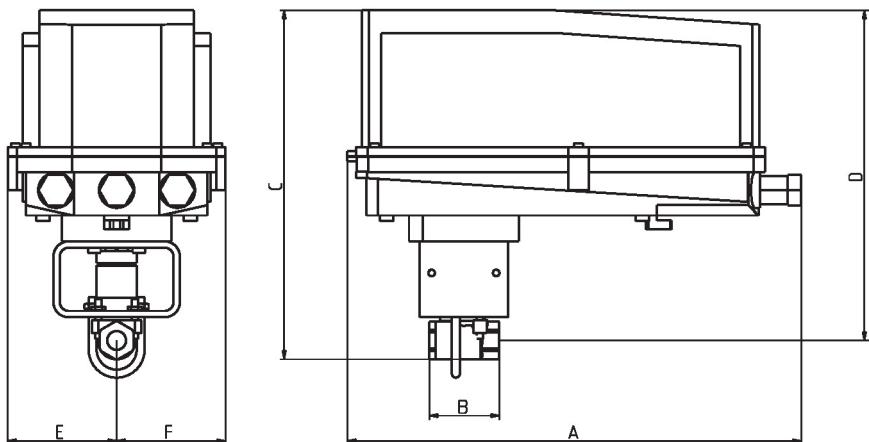
Style: 3

## Flow/Mounting details



## Dimensions

Type	DN	Weight
B2050VS-04	15	0.52 lb [0.24 kg]



B2050VS..+GRC..N4

A	B	C	D	E	F
14.1" [358]	2.2" [56]	10.9" [277]	10.3" [262]	3.4" [86]	3.4" [86]

MFT/programmable, Non fail-safe, 24 V



5-year warranty



## Technical data

Electrical data	Nominal voltage	AC/DC 24 V
	Nominal voltage frequency	50/60 Hz
	Nominal voltage range	AC 19.2...28.8 V / DC 21.6...28.8 V
	Power consumption in operation	8 W
	Power consumption in rest position	2.5 W
	Transformer sizing	11 VA
	Electrical Connection	Terminal blocks
	Overload Protection	electronic throughout 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	600 Ω
	Operating range Y variable	Start point 0.5...30 V End point 2.5...32 V
	Operating modes optional	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	under cover
	Angle of rotation	90°
	Angle of rotation note	adjustable with mechanical stop
	Running Time (Motor)	35 s / 90°
	Running time motor variable	35...150 s
	Noise level, motor	45 dB(A)
	Position indication	Mechanical, 5...20 mm stroke
Safety data	Power source UL	Class 2 Supply
	Degree of protection IEC/EN	IP66/67
	Degree of protection NEMA/UL	NEMA 4X
	Housing	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

<b>Safety data</b>	Quality Standard	ISO 9001
Ambient humidity	Max. 100% RH	
Ambient temperature	-22...122°F [-30...50°C]	
Ambient temperature note	-40...50°C [104...122°F] for actuator with integrated heating	
Storage temperature	-40...176°F [-40...80°C]	
Servicing	maintenance-free	
<b>Weight</b>	Weight	4.6 lb [2.1 kg]
<b>Materials</b>	Housing material	Die cast aluminium and plastic casing

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

## Accessories

<b>Gateways</b>	<b>Description</b>	<b>Type</b>
Gateway MP to BACnet MS/TP		UK24BAC
Gateway MP to Modbus RTU		UK24MOD
Gateway MP to LonWorks		UK24LON
<b>Electrical accessories</b>	<b>Description</b>	<b>Type</b>
Battery backup system, for non-spring return models		NSV24 US
Battery, 12 V, 1.2 Ah (two required)		NSV-BAT
Auxiliary switch 1x SPDT add-on		S1A
Auxiliary switch 2x SPDT add-on		S2A
Feedback potentiometer 140 Ω add-on, grey		P140A GR
Feedback potentiometer 1 kΩ add-on, grey		P1000A GR
Feedback potentiometer 10 kΩ add-on, grey		P10000A GR
Feedback potentiometer 2.8 kΩ add-on, grey		P2800A GR
Feedback potentiometer 500 Ω add-on, grey		P500A GR
Feedback potentiometer 5 kΩ add-on, grey		P5000A GR
<b>Tools</b>	<b>Description</b>	<b>Type</b>
Connecting 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 configurable and communicative Belimo actuators, VAV controller and HVAC performance devices		ZTH US
<b>Factory add-on option only</b>	<b>Description</b>	<b>Type</b>
Heater, with adjustable thermostat		ACT_PACK_H

## Electrical installation

### INSTALLATION NOTES

-  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.
-  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

### VDC/mA Control

