

Ball Valve (VS), DN 1 1/2" [40], 2-way, Cv 177



2-year warranty

Picture may differ from product

## Type overview

Type	DN
B240VS	1 1/2" [40]

## Technical data

Functional data	Valve size [mm]	1.5" [40]
Fluid	chilled or hot water, up to 60% glycol, steam	
Fluid Temp Range (water)	-22...280°F [-30...138°C]	
Body Pressure Rating	600 psig WOG psi	
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	177	
Maximum Inlet Pressure (Steam)	35 psi [241 kPa]	
Materials	Valve body	Bronze B584-C84400
	Housing seal	PTFE
	Stem	316 stainless steel
	Stem seal	RPTFE
	Seat	RPTFE
	Lock nut	stainless steel
	Retainer	B584-C84400 bronze
	Ball	316 stainless steel
Suitable actuators	Non Fail-Safe	GMB(X) SY1 PRB(X)
	Spring	AF
	Electronic fail-safe	PKRB(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)

## 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

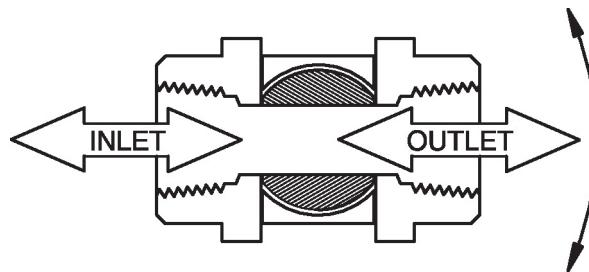
1/2" - 2" 600 PSIG WOG, Cold Non-Shock

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

Composition: BZ

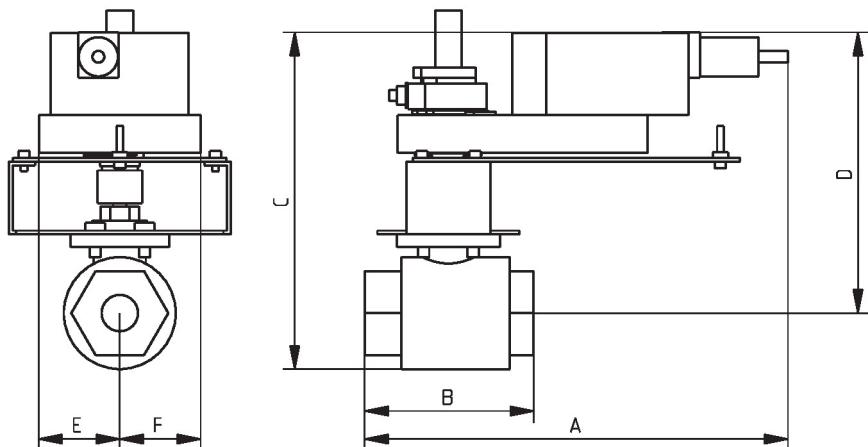
Style: 3

## Flow/Mounting details



## Dimensions

Type	DN	Weight
B240VS	1 1/2" [40]	6.2 lb [2.8 kg]



B240VS+GK..X1

A	B	C	D	E	F
11.9" [302.5]	4.8" [121]	10.1" [257]	7.9" [201]	2.3" [58]	2.3" [58]

MFT/programmable, Non fail-safe, 24...240 V



5-year warranty



## Technical data

<b>Electrical data</b>	Nominal voltage	AC 24...240 V / DC 24...125 V
	Nominal voltage frequency	50/60 Hz
	Nominal voltage range	AC 19.2...264 V / DC 19.2...137.5 V
	Power consumption in operation	24 W
	Power consumption in rest position	8 W
	Transformer sizing	with 24 V 24 VA / with 240 V 56 VA
	Auxiliary switch	2x SPDT, 1 mA...3 A (0.5 A inductive), DC 5 V...AC 250 V (II, reinforced insulation), 1x 10° / 1x 0...90° (default setting 85°)
	Switching capacity auxiliary switch	1 mA...3 A (0.5 A inductive), DC 5 V...AC 250 V (II, reinforced insulation)
	Electrical Connection	Terminal blocks, (PE) Ground-Screw
	Overload Protection	electronic throughout 0...90° rotation
<b>Data bus communication</b>	Communicative control	BACnet MS/TP Modbus RTU MP-Bus
<b>Functional data</b>	Operating range Y	2...10 V
	Operating range Y note	4...20 mA
	Input impedance	100 kΩ for 2...10 V (0.1 mA), 500 Ω for 4...20 mA, 1500 Ω for On/Off
	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	reversible with app
	Manual override	7 mm hex crank, supplied
	Angle of rotation	90°
	Running Time (Motor)	35 s / 90°
	Running time motor variable	30...120 s
	Noise level, motor	68 dB(A)
<b>Safety data</b>	Position indication	integral pointer
	Power source UL	Class 2 Supply
	Degree of protection NEMA/UL	NEMA 4X
	Housing	UL Enclosure Type 4X

## Technical data

<b>Safety data</b>	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	
Ambient humidity	Max. 100% RH	
Ambient temperature	-22...122°F [-30...50°C]	
Storage temperature	-40...176°F [-40...80°C]	
Servicing	maintenance-free	
<b>Weight</b>	Weight	13 lb [6.0 kg]
<b>Materials</b>	Housing material	Die cast aluminium and plastic casing

## Safety notes



- For maintenance work, the correct valve position must be set via the control signal. Additionally, the actuator must be disconnected from the power source. The hand crank and manual override shall not be used as a safety measure to maintain the valve position.

## Product features

<b>Application</b>	PR Series valve actuators are designed with an integrated linkage and visual position indicators. For outdoor applications, the installed valve must be mounted with the actuator at or above horizontal. For indoor applications the actuator can be in any location including directly under the valve.
<b>Operation</b>	<p>The PR series actuator provides 90° of rotation and a visual indicator shows the position of the valve. The PR Series actuator uses a low power consumption brushless DC motor and is electronically protected against overload. A universal power supply is furnished to connect supply voltage in the range of AC 24...240 V and DC 24...125 V. Included is a smart heater with thermostat to eliminate condensation. Two auxiliary switches are provided; one set at 10° open and the other is field adjustable. Running time is field adjustable from 30...120 seconds by using the Near Field Communication (NFC) app and a smart phone.</p> <p>†Use 60°C/75°C copper wire size range 12...28 AWG, stranded or solid. Use flexible metal conduit. Push the listed conduit fitting device over the actuator's cable to butt against the enclosure. Screw in conduit connector. Jacket the actuators input wiring with listed flexible conduit. Properly terminate the conduit in a suitable junction box. Rated impulse Voltage 4000 V. Type of action 1. Control pollution degree 3.</p>

## 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>
Service tool, with ZIP-USB function, for configurable and communicative Belimo actuators, VAV controller and HVAC performance devices	ZTH US	
<b>Mechanical accessories</b>	<b>Description</b>	<b>Type</b>
Hand crank for PR, PKR, PM		ZG-HND PR
<b>Tools</b>	<b>Description</b>	<b>Type</b>
Connecting cable 10 ft [3 m], A: RJ11 6/4 LINK.10, 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>Sensors</b>	<b>Description</b>	<b>Type</b>
Duct/Immersion sensor Temperature 6" [150 mm] x 0.24" [6 mm] Pt1000	01DT-5BN	

## Accessories

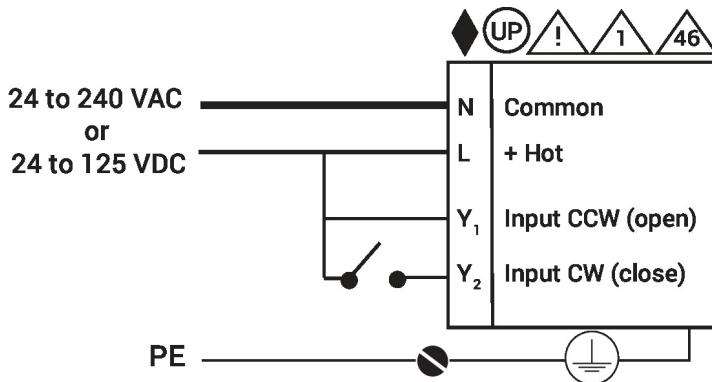
Description	Type
Duct/Immersion sensor Temperature 2" [50 mm] x 0.24" [6 mm] Pt1000	01DT-5BH
Duct/Immersion sensor Temperature 4" [100 mm] x 0.24" [6 mm] Pt1000	01DT-5BL
Duct/Immersion sensor Temperature 8" [200 mm] x 0.24" [6 mm] Pt1000	01DT-5BP
Duct/Immersion sensor Temperature 18" [450 mm] x 0.24" [6 mm] Pt1000	01DT-5BT
Duct/Immersion sensor Temperature 2" [50 mm] x 0.24" [6 mm] Ni1000 (JCI)	01DT-5EH
Duct/Immersion sensor Temperature 4" [100 mm] x 0.24" [6 mm] Ni1000 (JCI)	01DT-5EL
Duct/Immersion sensor Temperature 6" [150 mm] x 0.24" [6 mm] Ni1000 (JCI)	01DT-5EN
Duct/Immersion sensor Temperature 8" [200 mm] x 0.24" [6 mm] Ni1000 (JCI)	01DT-5EP
Duct/Immersion sensor Temperature 12" [300 mm] x 0.24" [6 mm] Pt1000	01DT-5BR
Duct/Immersion sensor Temperature 12" [300 mm] x 0.24" [6 mm] Ni1000 (JCI)	01DT-5ER
Duct/Immersion sensor Temperature 18" [450 mm] x 0.24" [6 mm] Ni1000 (JCI)	01DT-5ET

## Electrical installation

- ◆ Meets cULus requirements without the need of an electrical ground connection.
- ◆ (UP) Universal Power Supply (UP) models can be supplied with 24...240 V.
- ◆ Disconnect power.
- ◆ Provide overload protection and disconnect as required.
- ◆ Two built-in auxiliary switches (2x SPDT), for end position indication, interlock control, fan startup, etc.
- ◆ Only connect common to negative (-) leg of control circuits.
- ◆ Actuators may be controlled in parallel. Current draw and input impedance must be observed.
- ◆ **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

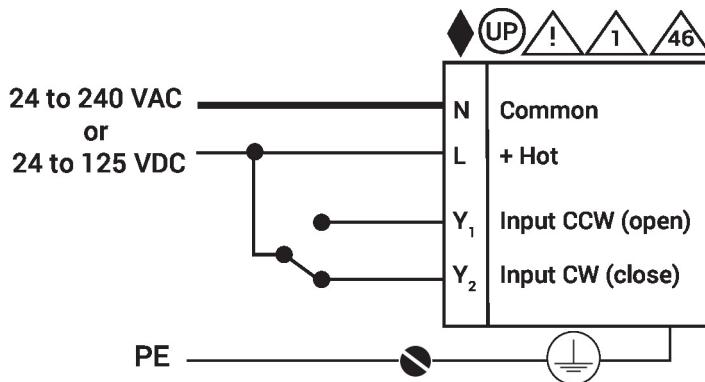
On/Off



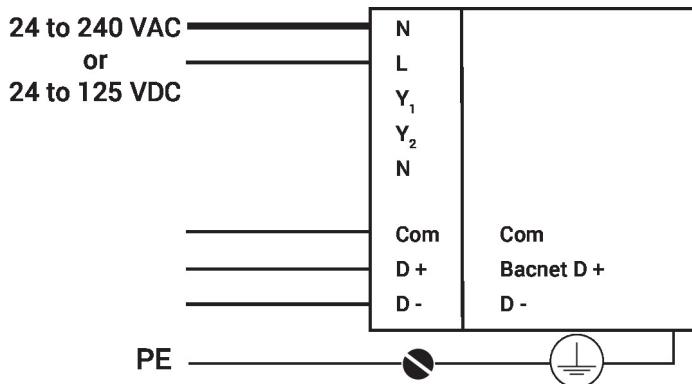
## Electrical installation

## Wiring diagrams

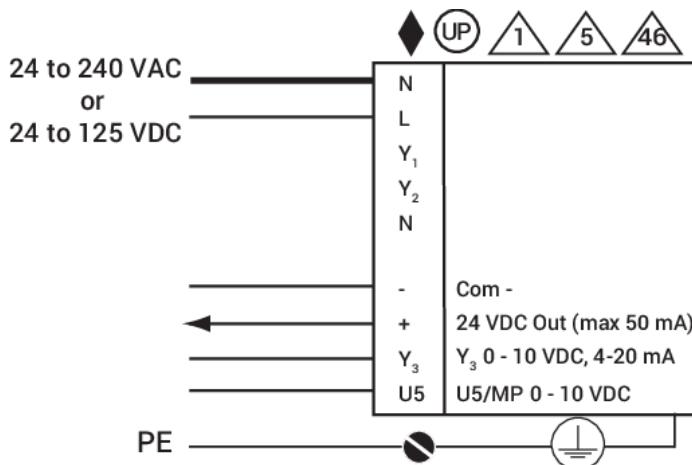
On/Off



BACnet



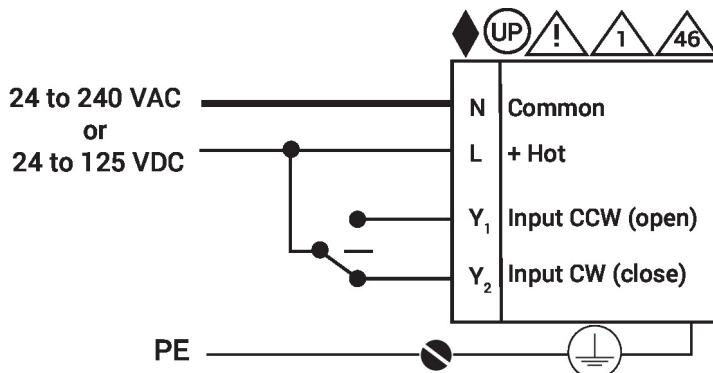
Modulating



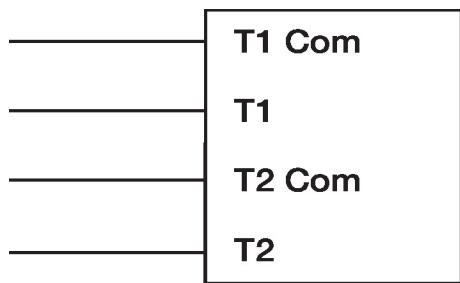
## Electrical installation

## Wiring diagrams

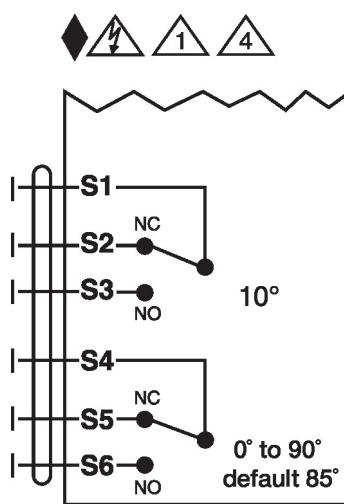
## Floating Point



## Temperature Sensors



## Auxiliary Switches



## Dimensions

