



Valve Specifications

Service	chilled or hot water, 50% glycol
Flow characteristic	Two-way on/off Three-way on/off, diverting
Sizes	1/2", 3/4" and 1"
Type of end fitting	female, NPT or Sweat
Materials:	
Body	forged brass
Stem	stainless steel
Seals	EPDM
Pressure rating	300 psi
Media temp. range	32°F to 212°F [0°C to 100°C]
Close off pressure	20 – 75 psi
Leakage	Class III 0.1%
Cv rating	1.0 – 8.0
U.S. & Foreign Patent Pending	

Actuator Specifications

Control	On/off
Nominal voltage	24 VAC 50/60 Hz ± 10% 120 VAC 50/60 Hz ± 10% 230 VAC 50/60 Hz ± 10%
Power Consumption	6.5 W
Transformer Sizing	7VA (Class 2 power source)
Electrical Connection	Wire lead length, 120V 6" 230V 6" 24V 18"
Position Indication	Integrated into lever (NC only)
Running Time	Motor: 20-40 seconds Spring: 5 seconds
Humidity	5 to 95% non-condensing
Ambient Temperature	32°F to 104°F (0°C to + 40°C)
Storage Temperature	-40°F to 176°F (-40°C to +80°C)
Housing Rating	UL94-5V(B)
Agency Listing	cULus
Noise Level	max. 35 db (A)
Quality Standard	ISO 9001
Built-in Auxiliary Switch (optional)	1 x SPST, .4A resistive (.4A inductive) @ 24 VAC 1 x SPST, 5A resistive (5A inductive) @ 120 VAC 1 x SPST, 5A resistive (5A inductive) @ 230 VAC

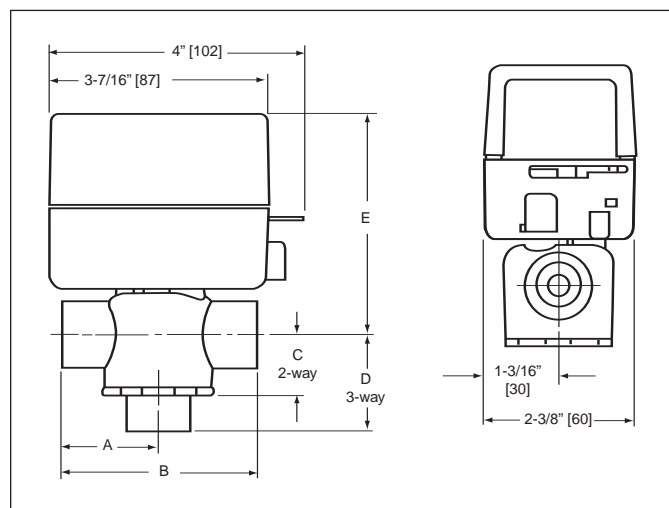


Application

This valve is typically used on fan coil units, baseboards or other hydronic applications where fail safe operation or 2-wire control is required. This valve is suitable for use in a hydronic system with variable or constant flow.

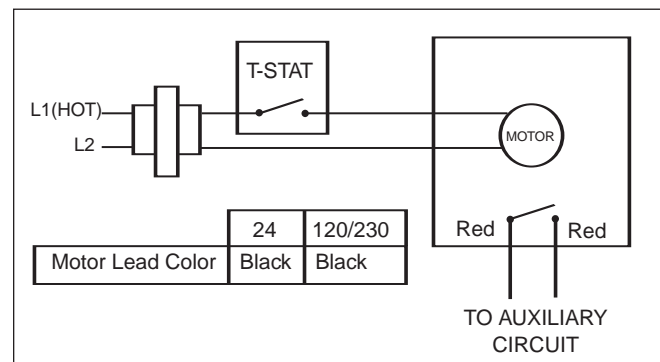
This valve is designed to fit in compact areas where on/off control is required using 24 VAC, 120 VAC or 230 VAC.

Dimensions



Connection Size and type	A in. (mm)	B in. (mm)	C in. (mm)	D in. (mm)	E in. (mm)
1/2" sweat	1-5/16" [34]	2-5/8" [38]	15/16" [24]	1-5/16" [34]	3-1/2" [89]
3/4" sweat	1-3/8" [35]	2-3/4" [70]	15/16" [24]	1-1/2" [38]	3-1/2" [89]
1" sweat	1-11/16" [43]	3-3/8" [86]	15/16" [24]	1-9/16" [39]	3-11/16" [93]
1/2" NPT	1-7/16" [36]	2-7/8" [72]	15/16" [24]	1-1/4" [32]	3-1/2" [89]
3/4" NPT	1-9/16" [39]	3-1/16" [92]	15/16" [24]	1-1/4" [43]	3-11/16" [93]
1" NPT	1-13/16" [46]	3-5/8" [92]	15/16" [24]	1-11/16" [43]	3-11/16" [93]

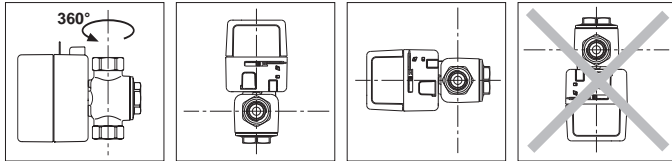
Wiring



Built-in auxiliary switch (optional) (-S models)

Installation

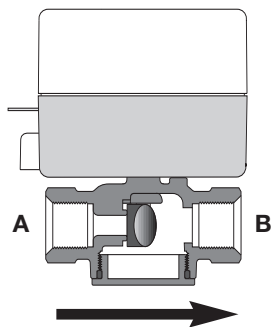
The valve can be installed vertically or horizontally, but not turned upside down.



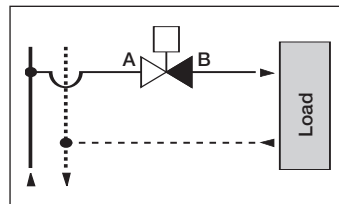
– A 3-way valve cannot be transformed into a 2-way valve and visa versa.

– The flow is from A to B (see diagram below) and must be installed so the paddle closes against the direction of flow as indicated in the following diagrams.

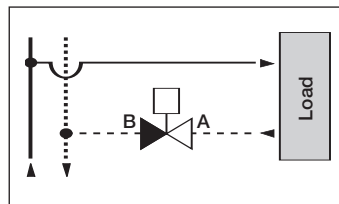
– The 2-way valves can be installed on the supply or on the return; for correct installation it is necessary to respect the direction of flow indicated from the arrow on the body valve.



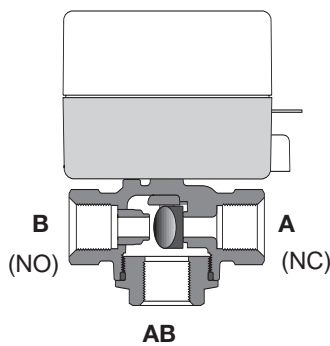
2-way valve normally closed actuator



2-way installed on the supply



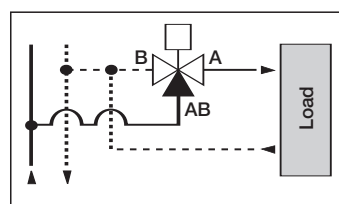
2-way installed on the return



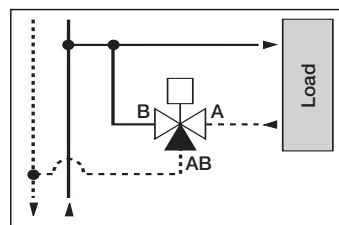
3-way valve normally closed actuator

3-way Zone valves can be fitted with NC actuators only.

Note! Rotate 180° the valve body for NO applications



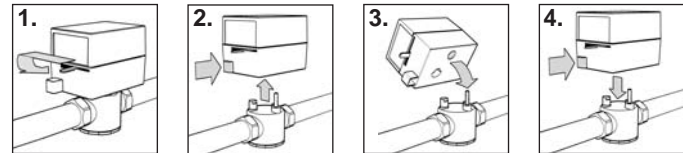
3-way installed on the supply in diverting configuration



3-way installed on the return

Note: An approximate 30 second delay is possible in valve movement after being powered on. For heating applications, it is important to cycle the N/O valves periodically during the off season or power them down to reduce the chance of the valve sticking in the up coming heating season.

	2-way	3-way
N.C. without power	Port "A" closed	Port "A" closed Port "B" open Port "AB" open
N.C. open with power	Port "A" open	Port "A" open Port "B" closed Port "AB" open
N.C. manually open	Port "A" open	Port "A" open Port "B" open Port "AB" open



Manual Open

1. The manual opening is achieved by moving the manual opening lever to the locked position. When power is applied, the manual lever unlocks automatically.

Removing the Actuator

1. Move the manual open lever to the lock open position.
2. Press the push button in and pull the actuator up.

Installing the Actuator

1. Move the manual open lever to the lock open position.
3. Align valve stem to the mating actuator hole. Move stem if required for proper alignment.
4. Press the push button in and slide the actuator onto the valve body, release the push button.



SAFETY INSTRUCTION

This safety alert symbol will be used in this manual to draw attention to safety related instructions. When used, the safety alert symbol means **ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED! FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN A SAFETY HAZARD.**



CAUTION: All work must be performed by qualified personnel trained in the proper application, installation, and maintenance of systems in accordance with all applicable codes and ordinances.



CAUTION: Over-tightening and breakage can occur with the use of Teflon pipe joint compounds. Teflon provides lubricity so that care must be exercised not to over-tighten joints. Failure to follow these instructions could result in property damage and /or personal injury.



WARNING: System fluids are under pressure or temperature can be hazardous. Be sure the pressure has been reduced to zero and the system temperature is below 100°F (38°C). Failure to follow these instructions could result in property damage and/or personal injury.

Zone Valves: Quality and performance that hits the mark.



Flexible and Reliable

For high rise and commercial applications where higher close off is required; Belimo zone valves control the flow of hot water and chilled water through coils and heat exchangers. This zone valve series offers a variety of models to handle all water system control needs.

Installation of the Belimo zone valve actuator is a snap with an easy, one-handed removal or engagement of the actuator to a 2- or 3-way valve body—push the button and lift. Available in 24 or 120 volt, normally open (NO) or normally closed (NC) versions. The actuator has a synchronous motor that winds the return spring and moves the valve paddle to the desired position. When power is removed the actuator spring returns the valve paddle to the initial position. The economical operation allows for low current draw and multiple valves per transformer, helping you to achieve your ultimate control target.

Belimo Advantages

The Zone Valve combines the proven performance of a synchronous motor technology with “enhanced motion” gear action which reduces motor wear while providing smooth, quiet (no water hammer), and constant close off. The crafted brass forged body is rated at 300 psi, and the high temperature paddle design assures years of trouble free operation. Precision formed components and an exclusive spring calibration process ensure uniform spring return and long valve life.

- Compact in design, fits inside fin tube casing and fan coils
- Wide service range, rated from 32°F to 212°F medium with up to a 50% glycol mix
- Up to 75 psi ΔP close off

**BELIMO**[®]

Belimo Zone Valves.

A compact, cost-effective solution.



Product Range / Technical Data			
Valve Body		Actuator	
Material:	- body: forged brass - seat: machine brass - stem: stainless steel - two o-ring seals: EPDM - paddle: EPDM	Material:	- base and cover: polycarbonate - base plate: aluminum
Flow:	from 1 to 8 C _v	Motor:	- AC voltage: 24 V, 120 V; 50/60 Hz
Medium:	water and glycol	Wire lead length:	6" [15 cm] 120 V 18" [45 cm] 24 V
Maximum percent of glycol:	50%	Power requirements:	6.5 W, 7 VA
Temperature range:	32 to 212°F (0 - 100°C)	Ambient temperature range:	32 to 104°F [0 to 40°C]
Connection: - sweat:	1/2", 3/4" and 1"	Micro switch:	5 A, 250 V
- NPT:	1/2", 3/4" and 1"	Humidity:	95% non-condensing
PSI:	300 psi static pressure	Approvals:	UL, cUL Listed and CE
		Housing:	Corrosion and oxidation resistant enclosure



- Engineered with 21:1 gear train ratio and transmission disengagement upon valve seating ensure long life.
- Superior close off pressure (close off ≥ 30 psi at 3.5 C_v).
- Easily removable actuator without tools or linkage.
- Valve serviceable in the pipe.
- Designed specifically for high boiler feed and open system applications.

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