

Ball Valve (VS), 2", 2-way, Cv 108



2-year warranty

Type overview

Type	DN
B249VS	50

Technical data

Functional data	Valve size [mm]	2" [50]
	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 Δps	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	108
	Maximum Inlet Pressure (Steam)	35 psi [241 kPa]
	Maximum Velocity	15 FPS
	Materials	Valve body
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) PRB(X) SY1
	Spring	AF
	Electrical fail-safe	GMB(X) 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

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

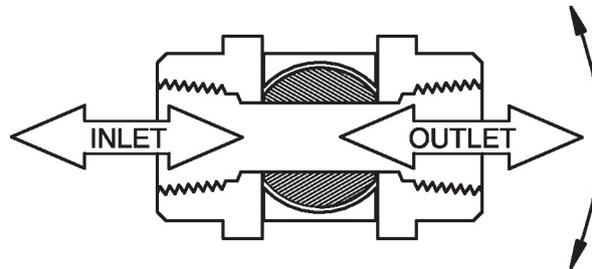
1/2" - 2" 600 PSIG WOG, Cold Non-Shock

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

Composition: BZ

Style: 3

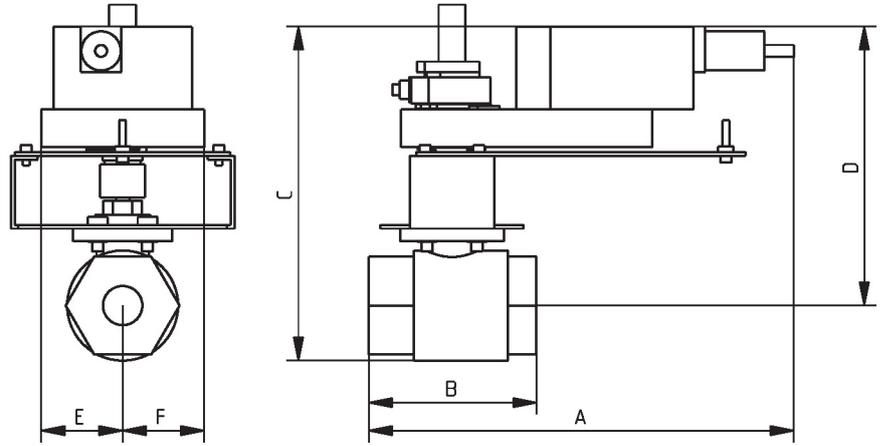
Flow/Mounting details



Dimensions

Type	DN	Weight
B249VS	50	6.2 lb [2.8 kg]

Dimensions



B249VS+GK..X1

A	B	C	D	E	F
11.9" [302]	4.7" [119]	10.0" [254]	7.9" [200]	2.3" [58]	2.3" [58]

MFT/programmable, Spring return, 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	7.5 W
	Power consumption in rest position	3 W
	Transformer sizing	20 VA
	Electrical Connection	18 GA appliance cable, 1 m, 3 m, or 5 m with 1/2" NPT conduit connector, degree of protection NEMA 2 / IP54
	Overload Protection	electronic throughout 0...95° rotation
Functional data	Operating range Y	0...135 Ω
	Operating range Y note	Honeywell Electronic Series 90, input 0...135 Ω
	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°
	Angle of rotation note	adjustable with mechanical end stop, 35...95°
	Running Time (Motor)	150 s / 90°
	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	Power source UL	Class 2 Supply
	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
	Quality Standard	ISO 9001

Technical data

Safety data	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]
	Servicing	maintenance-free
Weight	Weight	□
Materials	Housing material	Galvanized steel and plastic housing
Footnotes	*Variable when configured with MFT options.	

Accessories

Gateways	Description	Type
	Gateway MP to BACnet MS/TP	UK24BAC
	Gateway MP to Modbus RTU	UK24MOD
	Gateway MP to LonWorks	UK24LON
Electrical accessories	Description	Type
	Service tool, with ZIP-USB function, for programmable and communicative Belimo actuators, VAV controller and HVAC performance devices	ZTH US
Tools	Description	Type
	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 programmable and communicative Belimo actuators, VAV controller and HVAC performance devices	ZTH US

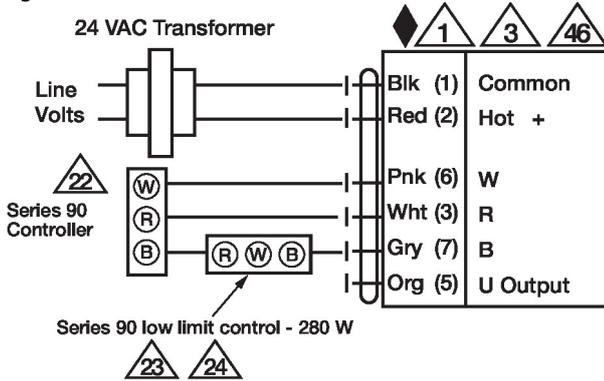
Electrical installation

- ◆ Meets cULus requirements without the need of an electrical ground connection.
- ▲₁ Provide overload protection and disconnect as required.
- ▲₃ Actuators may also be powered by DC 24 V.
- ▲₂₂ Actuators and controller must have separate transformers.
- ▲₂₃ Consult controller instruction data for more detailed information.
- ▲₂₄ Resistor value depends on the type of controller and the number of actuators. No resistor is used for one actuator. Honeywell® resistor kits may also be used.
- ▲₂₅ To reverse control rotation, use the reversing switch.
- ▲₄₆ Actuators may be controlled in parallel. Current draw and input impedance must be observed.

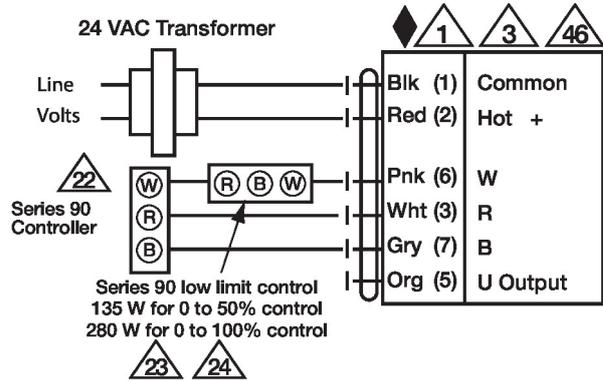
Electrical installation

Wiring diagrams

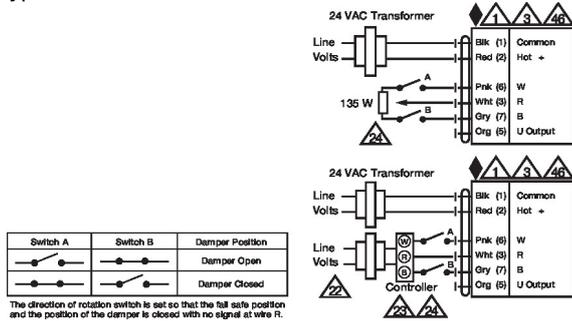
High Limit Control



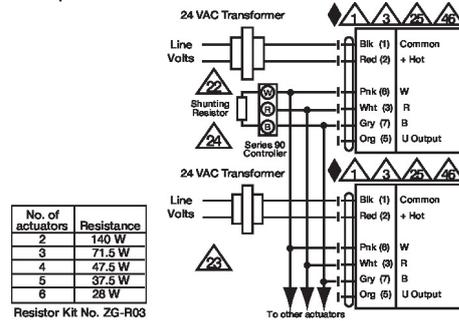
Low Limit Control



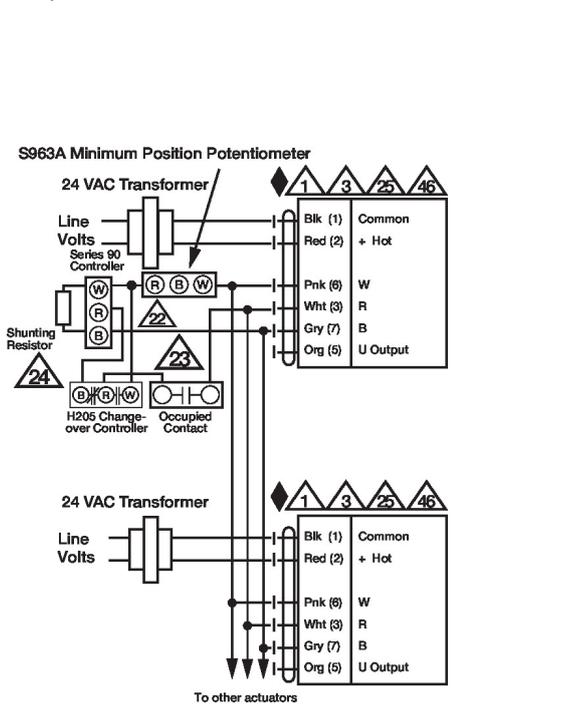
Typical and Override Control



Multiple Actuators



Multiple Actuators with Minimum Position Potentiometer



Multiple Actuators Used with W973, W7100 and T775

