

2-way, Characterized Control Valve, Stainless Steel Ball and Stem



5-year warranty

Type overview

Type	DN
B220HT290	20

Technical data

Functional data	Valve size [mm]	0.75" [20]
Fluid	high temperature hot water/low pressure steam, up to 60% glycol	
Fluid Temp Range (water)	60...266°F [16...130°C]	
Fluid Temp Range (steam)	250°F [120°C]	
Body Pressure Rating	600 psi	
Close-off pressure Δ ps	200 psi	
Flow characteristic	equal percentage	
Pipe connection	Internal thread NPT (female)	
Servicing	maintenance-free	
Max Differential Pressure (Steam)	15 psi	
Flow Pattern	2-way	
Leakage rate	0%	
Controllable flow range	75°	
Cv	2.9	
Maximum Inlet Pressure (Steam)	15 psi	
Materials	Valve body	Nickel-plated brass (DZR) P-CuZn35Pb2
Stem	stainless steel	
Stem seal	Viton O-ring	
Seat	ETFE	
Characterized disc	ETFE	
O-ring	EPDM (lubricated)	
Ball	stainless steel	
Suitable actuators	Non Fail-Safe	LRB(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

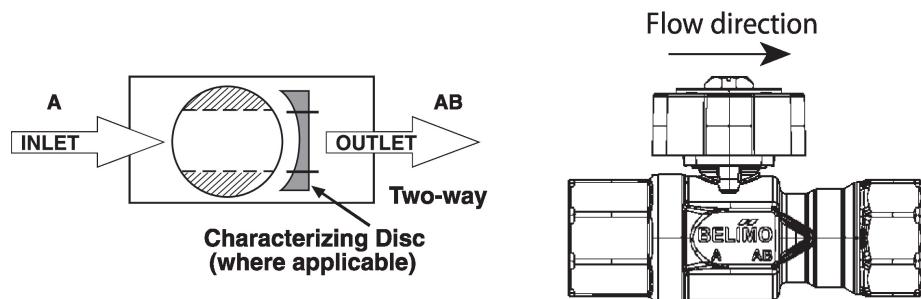


Product features

Application

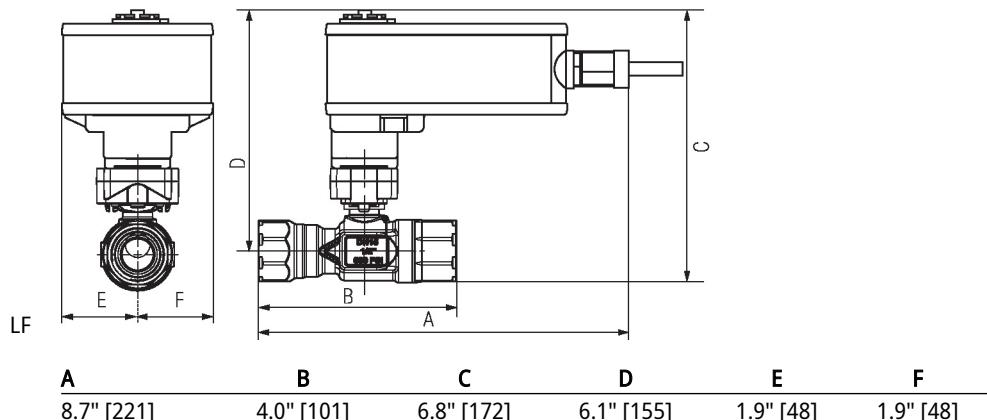
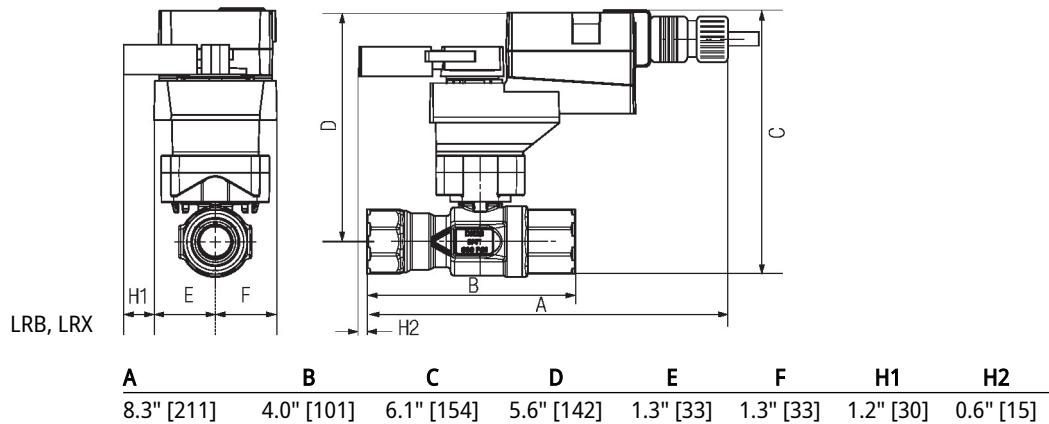
This valve is typically used in air handling units on heating or cooling coils, and fan coil unit heating or cooling coils. Some other common applications include unit ventilators, VAV box reheat coils and bypass loops. This valve is suitable for use in a hydronic system with variable flow. This valve is designed to fit in compact areas where on/off, floating point and modulating control is required using 24 VAC.

Flow/Mounting details



Dimensions

Type	DN	Weight
B220HT290	20	0.93 lb [0.42 kg]





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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	2.5 W
	Power consumption in rest position	1 W
	Transformer sizing	5 VA
	Electrical Connection	18 GA plenum cable, 1 m, with 1/2" NPT conduit connector
	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)
	Input impedance	100 kΩ for 2...10 V (0.1 mA), 500 Ω for 4...20 mA
	Position feedback U	2...10 V
	Position feedback U note	Max. 0.7 mA
	Direction of motion motor	selectable with switch 0/1
	Direction of motion fail-safe	reversible with cw/ccw mounting
	Angle of rotation	90°
	Running Time (Motor)	150 s / 90°
	Running time motor note	constant, independent of load
	Running time fail-safe	<25 s @ -4...122°F [-20...50°C], <60 s @ -22°F [-30°C]
	Noise level, motor	50 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 UL 873 and CAN/CSA C22.2 No. 24-93
	Quality Standard	ISO 9001
	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

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

Electrical installation

INSTALLATION NOTES

-  A 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.
-  11 Actuators may be connected in parallel if not mechanically linked. Power consumption and input impedance must be observed.
-  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

2...10 V / 4...20 mA Control

