



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 Δps	200 psi
	Flow characteristic	A-port equal percentage
	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
	Pipe connection	NPT
	O-ring	EPDM (lubricated)
Suitable actuators	Ball	stainless steel
	Non-Spring	LRB(X)
	Spring	LF

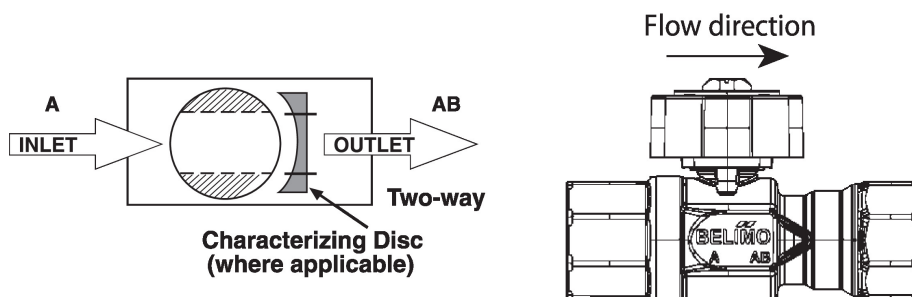
## Safety notes



- 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](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 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	0.88 lb [0.40 kg]

LRB, LRX

A	B	C	D	E	F	H1	H2
8.3" [211]	4.0" [101]	6.1" [154]	5.6" [142]	1.3" [33]	1.3" [33]	1.2" [30]	0.6" [15]

The image displays two technical views of a valve assembly, labeled 'LF' on the left. The front view (left) shows a vertical assembly with a cylindrical body and a flanged base. Dimensions E and F are indicated at the base. The side view (right) shows the same assembly from the side, highlighting a horizontal mounting bracket and a threaded rod. Dimensions A, B, C, and D are indicated in this view. Dimension A is the total width, B is the width of the base, C is the height of the side bracket, and D is the total height. The 'LF' label is positioned to the left of the front view.

A	B	C	D	E	F
8.7" [221]	4.0" [101]	6.8" [172]	6.1" [155]	1.9" [48]	1.9" [48]



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## Technical data

<b>Electrical data</b>	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	5 W
	Power consumption in rest position	2.5 W
	Transformer sizing	7 VA
	Auxiliary switch	1 x SPDT, 3 A resistive (0.5 A inductive) @ AC 250 V, adjustable 0...95°
	Switching capacity auxiliary switch	3 A resistive (0.5 A inductive) @ AC 250 V
	Electrical Connection	(2) 18 GA appliance cables, 1 m, with 1/2" conduit connectors
<b>Functional data</b>	Overload Protection	electronic throughout 0...95° rotation
	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)	75 s / 90°
	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
<b>Safety data</b>	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
<b>Weight</b>	Weight	3.4 lb [1.6 kg]
<b>Materials</b>	Housing material	galvanized steel

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

**Electrical installation**
**✂ INSTALLATION NOTES**

- Ⓐ Actuators with appliance cables are numbered.
- ⚠ Provide overload protection and disconnect as required.
- ⚠ 3 Actuators may also be powered by DC 24 V.
- ⚠ 11 Actuators may be connected in parallel if not mechanically linked. Power consumption and input impedance must be observed.
- ⚠ 44 One built-in auxiliary switch (1x SPDT), for end position indication, interlock control, fan startup, etc.
- ⚠ Apply only AC line voltage or only UL-Class 2 voltage to the terminals of auxiliary switches. Mixed or combined operation of line voltage/safety extra low voltage is not allowed.
- ◆ 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

