

B2...HT... Two-way High Temperature Characterized Control Valve

Stainless Steel Ball and Stem



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.

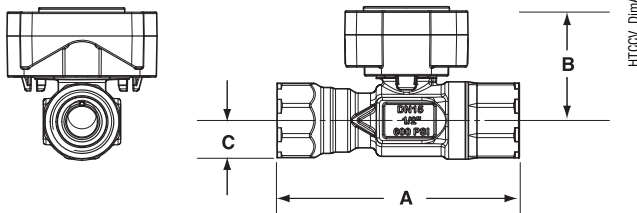
This valve is designed to fit in compact areas where on/off or floating point control is required using 24 VAC.

Technical Data	
Service	water/low pressure steam, 60% glycol
Flow characteristic	A-port equal percentage
Sizes	½", ¾", 1"
Type of end fitting	female, NPT
Materials:	
Body	brass (DZR) P-CuZn35Pb2
Ball	stainless steel
Stem	stainless steel
Seats	PTFE Teflon
Characterizing disc	PTFE Teflon
Packing	2 EPDM O-rings
Pressure rating	600 psi
Media temperature range	
Steam	250°F (15 psig)
Hot water	37°F - 266°F
Close off pressure	200 psi
Maximum differential pressure (ΔP)	116 psi full open ball 60 psi partially open ball
Leakage	bubble tight 0%

C _v	Valve Nominal Size		Type	Suitable Actuators	
	Inches	DN [mm]	2-way NPT	Spring	Non-Spring
0.29	½	15	B215HT029	TF Series	TR Series
0.46	½	15	B215HT046		
0.73	½	15	B215HT073		
1.16	½	15	B215HT116		
1.86	½	15	B215HT186		
2.90	½	15	B215HT290		
4.55	½	15	B215HT455*	LF Series	LR Series
1.86	¾	20	B220HT186		
2.90	¾	20	B220HT290		
4.64	¾	20	B220HT464		
7.31	¾	20	B220HT731		
9.28	¾	20	B220HT928		
13.20	¾	20	B220HT1320		
4.64	1	25	B225HT464		
7.31	1	25	B225HT731		
11.6	1	25	B225HT1160		
18.56	1	25	B225HT1856		
28.00	1	25	B225HT2800		

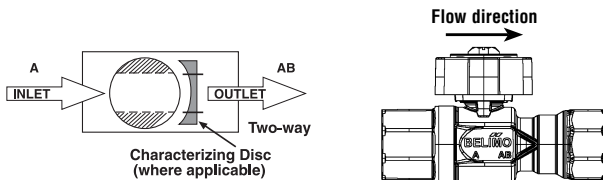
* modified equal percentage

Dimensions



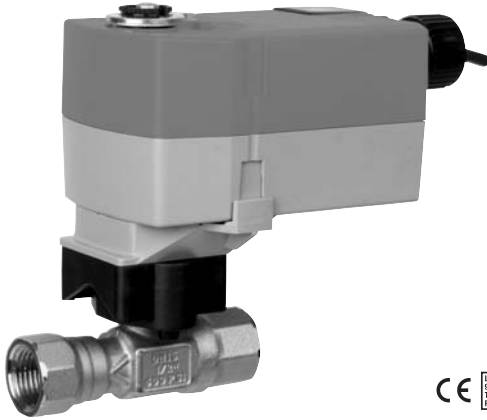
Valve Body	Valve Nominal Size		Dimensions (Inches [mm])		
	Inches	DN [mm]	A	B	C
B215HT	½"	15	3.33" [84.6]	2.09" [53.2]	0.53" [13.5]
B220HT	¾"	20	3.96" [100.6]	2.37" [60.1]	0.67" [17.0]
B225HT	1"	25	5.14" [130.6]	3.14" [79.8]	0.92" [23.25]

Flow Patterns

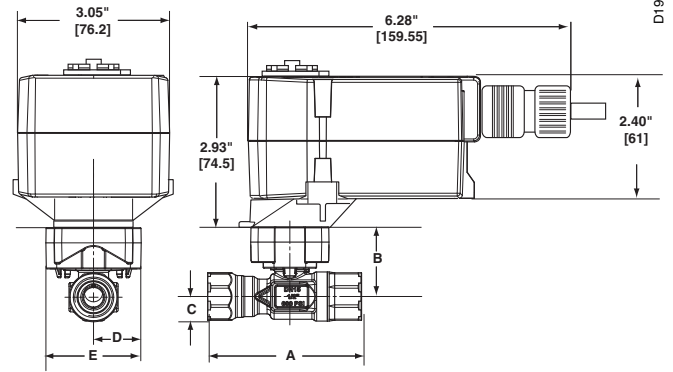


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TF24-SR US Actuators, Proportional



Dimensions with 2-Way Valve



Valve Body	Valve Nominal Size		Dimensions (Inches [mm])		
	Inches	DN [mm]	A	B	C
B215HT	1/2"	15	3.33" [84.6]	2.09" [53.2]	0.53" [13.5]

Models

- TF24-SR US
- TF24-SR-S US w/built-in Aux. Switch

Technical Data	
Control	Proportional
Power supply	24 VAC ± 20%, 50/60 Hz 24 VDC ± 10%
Power consumption	running 2.5 W holding 1.0 W
Transformer sizing	4 VA (class 2 power source)
Electrical connection	3 ft, 18 GA appliance cable (-S model has 2 cables) (6 ft, 10 ft cables optional) 1/2" conduit connector
Electrical protection	actuators are double insulated
Overload protection	electronic throughout 0° to 95° rotation
Operating range Y	2 to 10 VDC, 4 to 20 mA
Input impedance	100k Ω (0.1mA), 500 Ω
Angle of rotation	95°
Direction of rotation	spring reversible with CW/CCW mounting motor reversible with built-in switch
Position indication	visual indicator, 0° to 95°
Running time	motor 95 sec constant, independent of load spring < 25 sec @ -4°F to +122°F [-20°C to +50°C] < 60 sec @ -22°F [-30°C]
Humidity	5 to 95% RH non-condensing
Ambient temperature	-22°F to 122°F [-30°C to 50°C]
Storage temperature	-40°F to 176°F [-40°C to 80°C]
Housing	NEMA type 2/IP42
Housing material	UL94 - 5VA
Agency listings†	cULus acc. to UL 60730-1A/-2-14, CAN/CSA E60730-1, CSA C22.2 No. 24-93, CE acc. to 89/336/EEC (and 2006/95/EC for line voltage and/or -S versions)
Noise level (max)	running < 35 db (A) spring return < 62 db (A)
Quality standard	ISO 9001

TF24-SR-S US	
Auxiliary switch	1 x SPDT, 3A (0.5A) @ 250 VAC, UL Listed, adjustable 0° to 95°

† Rated impulse voltage 800V (4kV for 120V model), Control pollution degree 3, Type of action 1.AA (1.AA.B for -S models)

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Wiring Diagrams

✂ INSTALLATION NOTES

- ⚠ **CAUTION Equipment damage!**
Actuators may be connected in parallel.
Power consumption and input impedance must be observed.
- ⚠ Up to 4 actuators may be connected in parallel. With 4 actuators wired to one 500 Ω resistor, a +2% shift of control signal may be required.
Power consumption must be observed.
- ⚠ Actuators may also be powered by 24 VDC.
- ⚠ Only connect common to neg. (—) leg of control circuits.
- ⚠ Actuators with plenum rated cable do not have numbers on wires; use color codes instead.
- ⚠ For end position indication, interlock control, fan startup, etc., TF24-SR-S US incorporates one built-in auxiliary switch: 1 x SPDT, 3A (0.5A) @250 VAC, UL listed, adjustable 0° to 95°.

📄 APPLICATION NOTES

- ◆ Meets cULus or UL and CSA 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.

