

B3 Series, 3-Way, Characterized Control Valve

Chrome Plated Brass Ball and Brass Stem

BELIMO

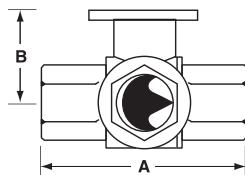
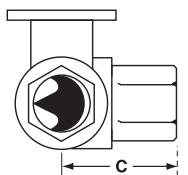


Technical Data

Service	chilled or hot water, 60% glycol
Flow characteristic	A-port equal percentage B-port modified for constant common port flow
Controllable Flow Range	75°
Sizes	1/2", 3/4"
Type of end fitting	NPT female ends
Materials:	
Body	forged brass, nickel plated
Ball	chrome plated brass
Stem	nickel plated brass
Seats	PTFE
Characterizing disc	Tefzel®
Packing	2 EPDM O-rings, lubricated
Body pressure rating	600 psi
Media temp. range	0°F to 250°F [-18°C to 120°C]
Close off pressure	200 psi
Maximum differential pressure (ΔP)	50 psi for typical applications
Leakage	0% for A to AB <2.0% for B to AB
External leakage	according to EN 12266-1:2003
C_v rating	A-port: see product chart for values B-port: 70% of A to AB C_v

Tefzel® is a registered trademark of DuPont

Dimensions



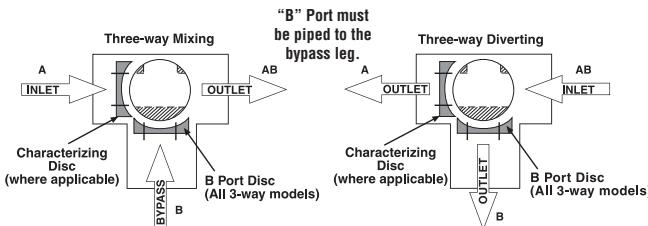
3WayValve-B307-B320

Valve Nominal Size

Dimensions (Inches [mm])

Valve Body	Inches	DN [mm]	A	B	C
B307B-B311B	1/2"	15	2.41" [61.1]	1.39" [35.2]	1.20" [30.6]
B312B-B316B	1/2"	15	2.38" [60.4]	1.78" [45.2]	1.29" [32.8]
B317B-B321B	3/4"	20	2.73" [69.3]	1.87" [47.4]	1.47" [37.3]

Flow Patterns



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 or constant flow.

* (Not for use in change over applications)

C_v	Inches	DN [mm]	3-way NPT	Suitable Actuators	
				Non-Spring	Spring
0.3	1/2	15	B307B		
0.46	1/2	15	B308B		
0.8	1/2	15	B309B		
1.2	1/2	15	B310B		
1.9	1/2	15	B311B		
3	1/2	15	B312B		
4.7	1/2	15	B313B		
10	1/2	15	B315B	TR Series	
16	1/2	15	B316B	LR Series	
4.7	3/4	20	B317B		TF Series
7.4	3/4	20	B318B		
14	3/4	20	B320B		
24	3/4	20	B321B		

*Models without characterizing disc

LF24-SR Actuators, Proportional

BELIMO



Models

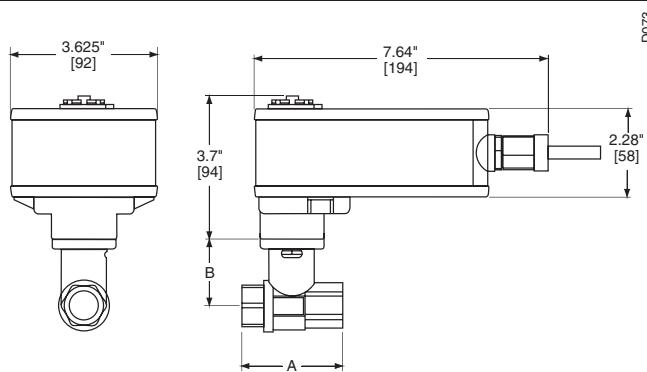
LF24-SR US
LF24-SR-S US
w/built-in Aux. Switch

Technical Data	
Control	proportional
Control signal	2 to 10 VDC 4 to 20 mA (with 500 Ω resistor)
Power consumption	running 2.5 W holding 1 W
Transformer sizing	5 VA, class 2 power
Electrical connection (-S models have 2 cables)	1/2" conduit connector 3 ft [1m], 18 GA appliance cable
Overload protection	electronic throughout 0° to 95° rotation
Feedback output	2 to 10 VDC
Input impedance	100 k Ω
Angle of rotation	95°
Direction of rotation	spring motor
Position indication	reversible with CW/CCW mounting reversible with built-in $\curvearrowright/\curvearrowleft$ switch
Running time	motor spring
Ambient temperature	150 sec. independent of load (proportional)
Housing	<25 seconds @ -4°F to 122°F [-20°C to 50°C]
Agency listings	<60 seconds @ -22°F [-30°C]
Noise level (max)	-22°F to 122°F [-30°C to 50°C]
Quality standard	ISO 9001

LF24-SR-S US

Auxiliary switch	1 x SPDT, 6A (1.5A) @ 250 VAC, UL Listed, adjustable 0° to 95° (double insulated)
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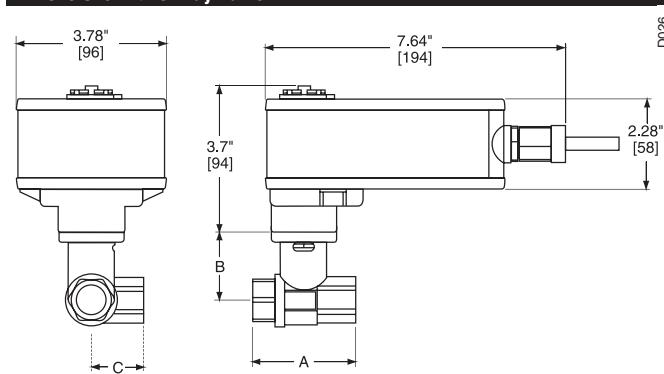
Dimensions with 2-Way Valve



Valve Nominal Size Dimensions (Inches [mm])

Valve Body	Inches	DN [mm]	A	B
B207(B)-B211(B)	1/2"	15	2.41" [61.1]	1.39" [35.2]
B212(B)-B215(B)	1/2"	15	2.38" [60.4]	1.78" [45.2]
B217(B)-B220(B)	3/4"	20	2.73" [69.3]	1.87" [47.4]
B222-B225	1"	25	3.09" [78.4]	1.87" [47.4]
B229-B230	1 1/4"	32	3.72" [94.6]	1.87" [47.4]

Dimensions with 3-Way Valve



Valve Nominal Size Dimensions (Inches [mm])

Valve Body	Inches	DN [mm]	A	B	C
B307(B)-B311(B)	1/2"	15	2.41" [61.1]	1.39" [35.2]	1.20" [30.6]
B312(B)-B315(B)	1/2"	15	2.38" [60.4]	1.78" [45.2]	1.29" [32.8]
B317(B)-B320(B)	3/4"	20	2.73" [69.3]	1.87" [47.4]	1.47" [37.3]
B322-B325	1"	25	3.09" [78.4]	1.87" [47.4]	1.59" [40.3]

Wiring Diagrams

 INSTALLATION NOTES

⚠ **CAUTION** Equipment damage!

Actuators may be connected in parallel. Up to 4 actuators may be connected in parallel. With 4 actuators wired to one $500\ \Omega$ resistor, a $\pm 2\%$ shift of control signal may be required. Power consumption must be observed.

3 Actuators may also be powered by 24 VDC.

 **4** Actuators with plenum rated cable do not have numbers on wires; use color codes instead.

5 Only connect common to neg. (-) leg of control circuits.

6 For end position indication, interlock control, fan startup, etc., LF24-SR-S US incorporates one built-in auxiliary switch: 1 x SP (1.5A) @ 250 VAC, UL listed, adjustable 0° to 95°.

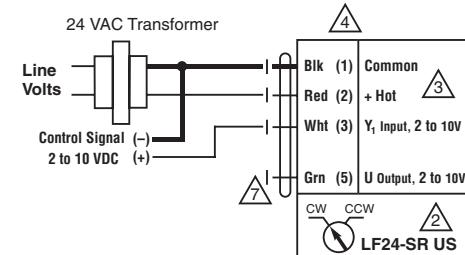
7 The LF24-SR-S US wire 5 is white.

APPLICATION NOTES

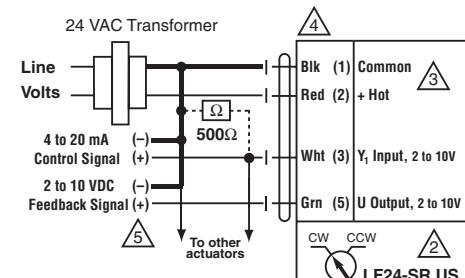
- ◆ The ZG-R01 500 Ω resistor converts the 4 to 20 mA control signal to 2 to 10 VDC, up to 2 actuators may be connected in parallel.
- ◆ Meets cULus or UL and CSA requirements without the need of an electrical ground connection.

⚠️ *WARNING* Live Electrical Components!

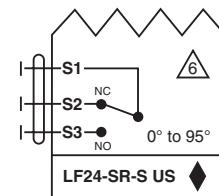
 During installation, testing, servicing and troubleshooting of this product, it may be necessary to work with live electrical components. Have a qualified licensed electrician or other individual who has been properly trained in handling live electrical components perform these tasks. Failure to follow all electrical safety precautions when exposed to live electrical components could result in death or serious injury.



2 to 10 VDC control



4 to 20 mA control



Auxiliary switch