



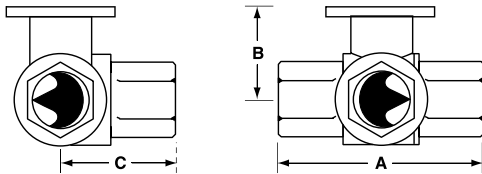
Application

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.

Technical Data	
Service	chilled or hot water, 60% glycol
Flow characteristic	A-port equal percentage B-port modified for constant common port flow
Action	90° rotation
Sizes	½", ¾", 1", 1¼", 1½", 2"
Type of end fitting	NPT female ends
Materials:	
Body	forged brass, nickel plated
Ball	stainless steel
Stem	stainless steel
Seats	PTFE
Characterizing disc	Tefzel®
Packing	2 EPDM O-rings, lubricated
Body Pressure rating	
600 psi*	½" - 1"
400 psi*	1¼" - 2"
Media temp. range	0°F to 212°F [-18°C to 100°C]
Close off pressure	
200 psi	½" - 2"
Maximum differential pressure (ΔP)	30 psi for typical applications
Leakage	0% for A to AB <2.0% for B to AB
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
*Per EN 12266-1:2003

Dimensions



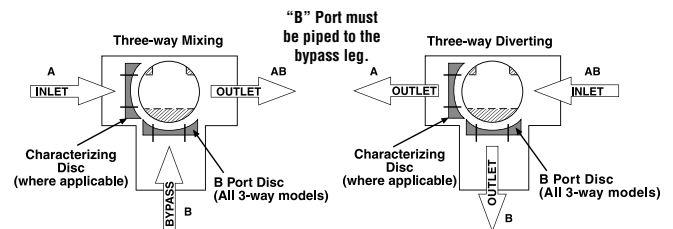
3Way/Valve-B307-B320

Valve Body	Valve Nominal Size		Dimensions (Inches [mm])		
	Inches	DN [mm]	A	B	C
B307-B311	½"	15	2.41" [61.1]	1.39" [35.2]	1.20" [30.6]
B312-B315	½"	15	2.38" [60.4]	1.72" [43.7]	1.26" [32.1]
B317-B320	¾"	20	2.73" [69.3]	1.81" [45.9]	1.45" [36.8]
B322-B325	1"	25	3.09" [78.4]	1.81" [45.9]	1.56" [39.8]
B329-B331	1¼"	32	3.96" [100.6]	2.21" [56.2]	2.14" [54.3]
B338-B341	1½"	40	4.39" [111.6]	2.45" [62.2]	2.33" [59.1]
B347-B352	2"	50	4.90" [124.5]	2.68" [68.0]	2.60" [66.0]

C _v	Valve Nominal Size		Type	Suitable Actuators				
	Inches	DN [mm]	3-Way NPT	Non-Spring	Spring			
0.3	½"	15	B307	TR Series	LR Series	NR...N4 Series		
0.46	½"	15	B308					
0.8	½"	15	B309					
1.2	½"	15	B310					
1.9	½"	15	B311					
3	½"	15	B312					
4.7	½"	15	B313					
10	½"	15	B315*					
4.7	¾"	20	B317				TF Series	LF Series
7.4	¾"	20	B318					
24	¾"	20	B320*					
7.4	1"	25	B322					
10	1"	25	B323					
30	1"	25	B325*					
10	1¼"	32	B329	AR Series	AR...N4 Series			
19	1¼"	32	B330					
25	1¼"	32	B331					
19	1½"	40	B338					
29	1½"	40	B339					
37	1½"	40	B340					
46	1½"	40	B341					
29	2"	50	B347			AF Series		
37	2"	50	B348					
46	2"	50	B349					
57	2"	50	B350					
68	2"	50	B351					
83	2"	50	B352					

*Models without characterizing disc

Flow Patterns



LF24-SR Actuators, Proportional



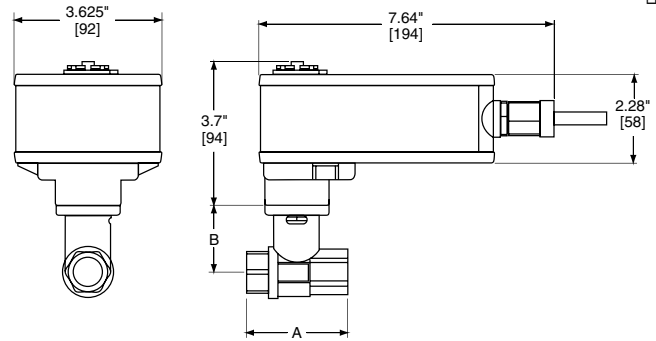
Models

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)	½" 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 kΩ
Angle of rotation	95°
Direction of rotation	spring reversible with CW/CCW mounting motor reversible with built-in ↻/↻ switch
Position indication	visual indicator
Running time	motor 150 sec. independent of load (proportional) spring <25 sec. @ -4°F to 122°F [-20°C to 50°C] <60 sec. @ -22°F [-30°C]
Ambient temperature	-22° F to 122° F [-30° C to 50° C]
Housing	NEMA 2
Agency listings	cULus according to UL 873 and CAN/CSA C22.2 No. 24-93
Noise level (max)	running <30 db(A) spring return 62 db(A)
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)

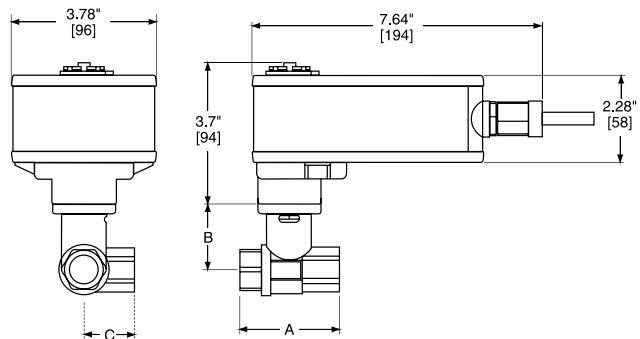
Dimensions with 2-Way Valve



D073

Valve Body	Valve Nominal Size		Dimensions (Inches [mm])	
	Inches	DN [mm]	A	B
B207(B)-B211(B)	½"	15	2.41" [61.1]	1.39" [35.2]
B212(B)-B215(B)	½"	15	2.38" [60.4]	1.72" [43.7]
B217(B)-B220(B)	¾"	20	2.73" [69.3]	1.81" [45.9]
B222-B225	1"	25	3.09" [78.4]	1.81" [45.9]
B229-B230	1¼"	32	3.72" [94.6]	1.81" [45.9]

Dimensions with 3-Way Valve



D026

Valve Body	Valve Nominal Size		Dimensions (Inches [mm])		
	Inches	DN [mm]	A	B	C
B307(B)-B311(B)	½"	15	2.41" [61.1]	1.39" [35.2]	1.20" [30.6]
B312(B)-B315(B)	½"	15	2.38" [60.4]	1.72" [43.7]	1.26" [32.1]
B317(B)-B320(B)	¾"	20	2.73" [69.3]	1.81" [45.9]	1.45" [36.8]
B322-B325	1"	25	3.09" [78.4]	1.81" [45.9]	1.56" [39.8]

L30034 - 07/09 - Subject to change. © Belimo Aircontrols (USA), Inc.

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 Ω resistor, a +2% shift of control signal may be required. Power consumption must be observed.
- ⚠️ Actuators may also be powered by 24 VDC.
- ⚠️ Actuators with plenum rated cable do not have numbers on wires; use color codes instead.
- ⚠️ Only connect common to neg. (-) leg of control circuits.
- ⚠️ For end position indication, interlock control, fan startup, etc., LF24-SR-S US incorporates one built-in auxiliary switch: 1 x SPDT, 6A (1.5A) @ 250 VAC, UL listed, adjustable 0° to 95°.
- ⚠️ 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.

