

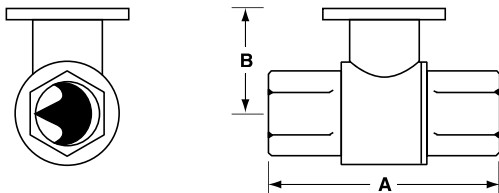
B2 Series, 2-Way, Characterized Control Valve Stainless Steel Ball and Stem



Technical Data	
Service	chilled or hot water, 60% glycol
Flow characteristic	A-port equal percentage
Action	90° rotation
Sizes	½", ¾", 1", 1¼", 1½", 2", 2½", 3"
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" - 1¼" (B230)
400 psi*	1¼" (B231) - 3"
Media temp. range	0°F to 212°F [-18°C to 100°C]
Close off pressure	
200 psi	½" - 2" (B250)
100 psi	2" (B251) - 3"
Maximum differential pressure (ΔP)	30 psi for typical applications
Leakage	0% for A to AB
C _v rating	A-port: see product chart for values

Tefzel® is a registered trademark of DuPont
*Per EN 12266-1:2003

Dimensions



2WayValve-B207-B220

Valve Body	Valve Nominal Size		Dimensions (Inches [mm])	
	Inches	DN [mm]	A	B
B207-B211	½"	15	2.41" [61.1]	1.39" [35.2]
B212-B215	½"	15	2.38" [60.4]	1.72" [43.7]
B217-B220	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]
B231-B232	1¼"	32	3.72" [94.6]	1.98" [50.4]
B238-B240	1½"	40	3.88" [98.5]	1.98" [50.4]
B248-B250	2"	50	4.21" [107.0]	2.21" [56.2]
B251-B254	2"	50	4.93" [125.2]	2.68" [68.0]
B261-B265	2½"	65	5.55" [140.9]	2.68" [68.0]
B277-B280	3"	80	5.82" [147.9]	2.68" [68.0]

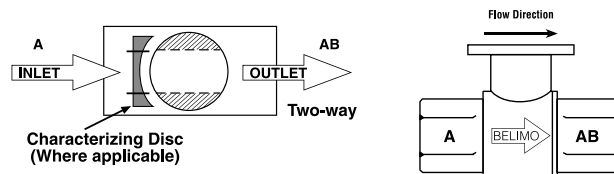
Application

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.

C _v	Valve Nominal Size		Type	Suitable Actuators				
	Inches	DN [mm]	2-Way NPT	Non-Spring	Spring			
0.3	½"	15	B207	TR Series	LR Series	NR...M4 Series	TF Series	LF Series
0.46	½"	15	B208					
0.8	½"	15	B209					
1.2	½"	15	B210					
1.9	½"	15	B211					
3	½"	15	B212					
4.7	½"	15	B213					
7.4	½"	15	B214					
10	½"	15	B215*					
4.7	¾"	20	B217					
7.4	¾"	20	B218					
10	¾"	20	B219					
24	¾"	20	B220*					
7.4	1"	25	B222					
10	1"	25	B223					
19	1"	25	B224					
30	1"	25	B225*					
10	1¼"	32	B229					
19	1¼"	32	B230*					
25	1¼"	32	B231					
37	1¼"	32	B232*					
19	1½"	40	B238					
29	1½"	40	B239					
37	1½"	40	B240*					
29	2"	50	B248					
46	2"	50	B249					
57	2"	50	B250*					
65	2"	50	B251					
85	2"	50	B252					
120	2"	50	B253					
240	2"	50	B254*					
60	2½"	65	B261					
75	2½"	65	B262					
110	2½"	65	B263					
150	2½"	65	B264					
210	2½"	65	B265*					
70	3"	80	B277					
130	3"	80	B278					
170	3"	80	B280*					

*Models without characterizing disc

Flow Patterns



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LF24-3 Actuators, Floating Point



Models

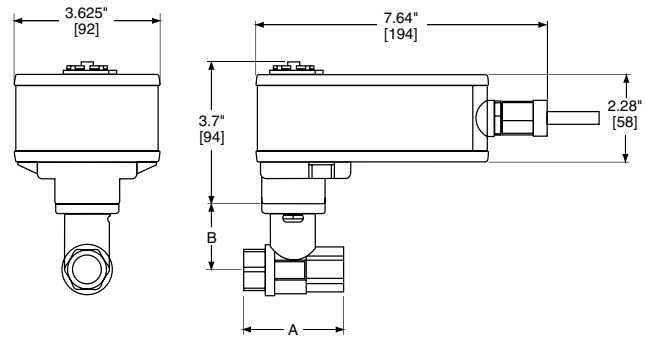
LF24-3 US
LF24-3-S US w/built-in Aux. Switch

Technical Data		
Power supply		24 VAC ± 20% 50/60 Hz 24 VDC ± 10%
Power consumption	running	2.5 W
	holding	1W
Transformer sizing		5 VA (class 2 power source)
Electrical connection		½" conduit connector
		(-S models have 2 cables) 3 ft [1m], 18 GA appliance cable
Overload protection		electronic throughout 0° to 95° rotation
Input impedance		1000 Ω (0.6w) control inputs
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 90°
Running time	motor	150 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/IP54
Housing material		zinc coated metal
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)
Servicing		maintenance free
Quality standard		ISO 9001

LF24-3-S US

Auxiliary switch 1 x SPDT, 6A (1.5A) @ 250 VAC, UL Listed, adjustable 0° to 95° (double insulated)

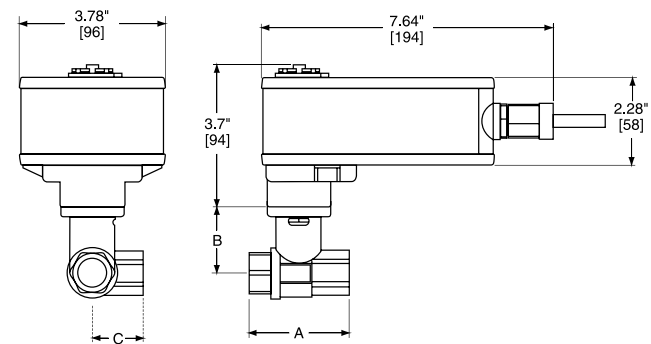
Dimensions with 2-Way Valve



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]

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Wiring Diagrams

INSTALLATION NOTES

- CAUTION Equipment damage!**
- 2 Actuators may be connected in parallel. Power consumption must be observed.
- 3 Actuators may also be powered by 24 VDC.
- 4 The common connection from the actuator must be connected to the Hot connection of the controller.
- 5 The actuator Hot must be connected to the control board common.
- 6 For end position indication, interlock control, fan startup, etc., LF24-3-S US incorporates one built-in auxiliary switch: 1 x SPDT, 6A (1.5A) @ 250 VAC, UL listed, adjustable 0° to 95°.
- 8 Actuators with plenum rated cable do not have numbers on wires; use color coded instead. Actuators with appliance rated cable use numbers.

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.

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