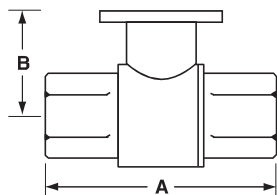




Technical Data	
Service	chilled or hot water, 60% glycol
Flow characteristic	A-port equal percentage
Controllable Flow Range	75°
Sizes	1/2", 3/4", 1", 1 1/4", 1 1/2", 2", 2 1/2", 3"
Type of end fitting	NPT female ends
Materials	
Body	forged brass, nickel plated
Bal	stainless steel
Stem	stainless steel
Seats	PTFE
Characterizing disc	Tefzel®
Packing	2 EPDM O-rings, lubricated
Body pressure rating	
600 psi	1/2" - 1 1/4" (B230)
400psi	1 1/4" (B231) - 3"
Media temp. range	0°F to 250°F [-18°C to 120°C]
Close off pressure	
200 psi	1/2" - 2" (B250)
100psi	2" (B251) - 3"
Maximum differential pressure (ΔP)	50 psi for typical applications
Leakage	0% for A to AB
External leakage	according to EN 12266-1:2003
C rating	A-port: see product chart for values
Tefze® is a registered trademark of DuPont	

Dimensions



2Way Valve-B207-B220

Valve Body	Valve Nominal Size		Dimensions (Inches [mm])	
	nches	DN [mm]	A	
B207-B211	1/2"	15	2.41" [61.1]	1.39" [35.2]
B212-B216	1/2"	15	2.38" [60.4]	1.78" [45.2]
B217-B221	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]
B231-B232	1 1/4"	32	3.72" [94.6]	2.04" [51.9]
B238-B240	1 1/2"	40	3.88" [98.5]	2.04" [51.9]
B248-B250	2"	50	4.21" [107.0]	2.27" [57.7]
B251-B254	2"	50	4.93" [125.2]	2.73" [69.5]
B261-B265	2 1/2"	65	5.55" [140.9]	2.73" [69.5]
B277-B280	3"	80	5.82" [147.9]	2.73" [69.5]

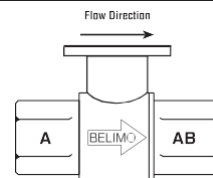
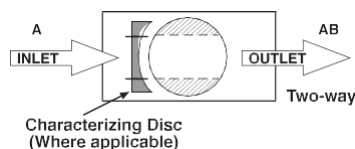
Application

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.

Valve Nominal Size				Type	Suitable Actuators	
Cv	Inches	DN [mm]	2-WayNPT		Non-Spring	Spring
0.3	1/2	15	B207	TR Series	LR Series	TF Series
0.46	1/2	15	B208			
0.8	1/2	15	B209			
1.2	1/2	15	B210			
1.9	1/2	15	B211			
3	1/2	15	B212			
4.7	1/2	15	B213			
7.4	1/2	15	B214			
10	1/2	15	B215			
14	1/2	15	B216			
4.7	3/4	20	B217	LR Series	NR...N4 Series	LF Series
7.4	3/4	20	B218			
10	3/4	20	B219			
14	3/4	20	B220			
24	3/4	20	B221*			
7.4	1	25	B222			
10	1	25	B223			
19	1	25	B224			
30	1	25	B225*			
10	1 1/4	32	B229	AR Series	AR...N4 Series	AF Series
19	1 1/4	32	B230*			
25	1 1/4	32	B231			
37	1 1/4	32	B232*			
19	1 1/2	40	B238			
29	1 1/2	40	B239			
37	1 1/2	40	B240*			
29	2	50	B248			
46	2	50	B249			
57	2	50	B250*			
65	2	50	B251	AR...N4 Series	AR...N4 Series	AF Series
85	2	50	B252			
120	2	50	B253			
240	2	50	B254*			
60	2 1/2	65	B261			
75	2 1/2	65	B262			
110	2 1/2	65	B263			
150	2 1/2	65	B264			
210	2 1/2	65	B265*			
70	3	80	B277			
130	3	80	B278			
170	3	80	B280*			

*Models without characterizing disc

Flow Patterns



AR...24-3 Actuators, On/Off, Floating Point



Models

ARB24-3	
ARB24-3-S	w/built-in Aux. Switch
ARX24-3	Flexible
ARX24-3-S	Flexible w/built-in Aux. Switch
ARB24-3-5-14	
ARX24-3-5-14	

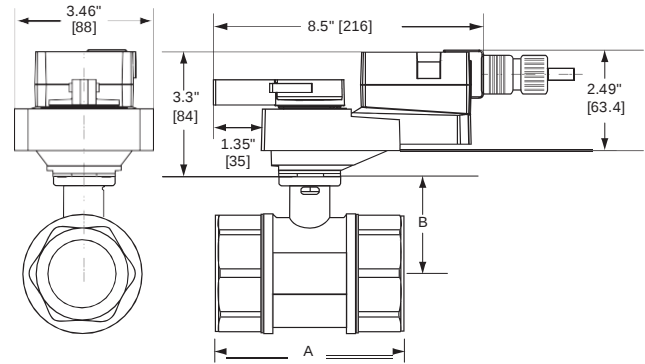
Technical Data	
Control	on/off, floating point
Power supply	24 VAC $\pm$ 20% 50/60 Hz 24 VDC $\pm$ 10%
Power consumption	running 2.5 W holding 0.2 W
Transformer sizing	5.5 VA (class 2 power source)
Electrical connection	1/2" conduit connector 18 GA plenum rated cable 3 ft. [1m] 3 ft. [1m] 10 ft. [3m] 16 ft. [5m]
Overload protection	electronic throughout 0° to 95° rotation
Input impedance	600 Ω
Angle of rotation	90°, adjustable with mechanical stop
Direction of rotation	reversible with protected
Position indication	handle
Manual override	external push button
Running time	ARB24-3... 90 seconds ARX24-3... 300, 150, 90 seconds, constant independent of load
Humidity	5 to 95% RH non-condensing (EN 60730-1)
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 2/IP54
Housing material	UL94-5VA
Agency listings†	cULus according to UL 60730-1A/-2-14, CAN/CSA E60730-1:02, CE according to 2004/108/EC and 2006/95/EC for line voltage and/or -S versions
Noise level	<45 dB(A)
Quality standard	ISO 9001

AR...24-3-S

Auxiliary switch (-S models)	1xSPDT, 3A(0.5A) @ 250VAC, ULL Listed, adjustable 0 to 90°
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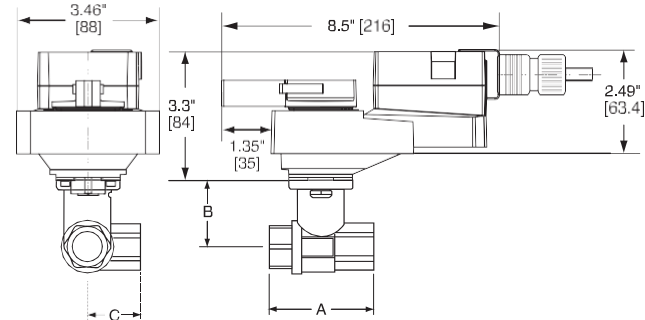
† Rated impulse voltage 800V, Control pollution degree 3, Type of action (1.B for -S models)

Dimensions with 2-Way Valve



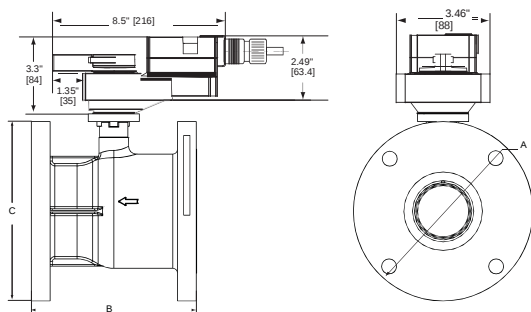
Valve Nominal Size		Dimensions (Inches [mm])		
Valve Body	Inches DN [mm]	A	B	C
B231-B232	1 1/4" 32	3.72" [94.6]	1.98" [50.4]	
B238-B240	1 1/2" 40	3.88" [98.5]	1.98" [50.4]	
B248-B250	2" 50	4.21" [107.0]	2.21" [56.2]	
B251-B254	2" 50	4.93" [125.2]	2.68" [68.0]	
B261-B265	2 1/2" 65	5.55" [140.9]	2.68" [68.0]	
B277-B280	3" 80	5.82" [147.9]	2.68" [68.0]	

Dimensions with 3-Way Valve



Valve Nominal Size		Dimensions (Inches [mm])		
Valve Body	Inches DN [mm]	A	B	C
B329-B331	1 1/4" 32	3.96" [100.6]	2.21" [56.2]	2.14" [54.3]
B338-B341	1 1/2" 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]

Dimensions



Valve Body	Nominal Pipe Size	Top Flange Design	Flange Diameter	Face-to-Face Length	Height
			A		C
B6250	2½" [65]	F05	7.50" [190.5]	5.50" [139.7]	8.10" [205.4]
B6300	3" [80]		8.00" [203.2]	6.60" [167.6]	8.40" [213.1]
B6400	4" [100]		9.00" [228.6]	8.30" [210.8]	9.30" [235.9]

Wiring Diagrams

INSTALLATION NOTES

- 2 **CAUTION Equipment damage!**
Actuators may be connected in parallel.
Power consumption and input impedance must be observed.
For end position indication, interlock control, etc., ARB24-3-S incorporates one built-in auxiliary switches: 1xSPDT, 3A (0.5A) @250 VAC, UL listed, adjustable 0° to 95°.
- 3
- 4 Actuators may also be powered by 24 VDC.

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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