B250, 2-Way, 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.

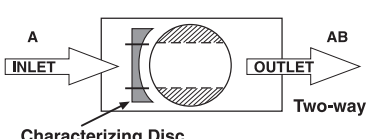
Suitable Actuators

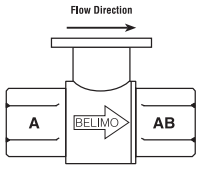
	Non-Spring	Spring
B250	ARB(X)	AFRB(X)

Technical Data

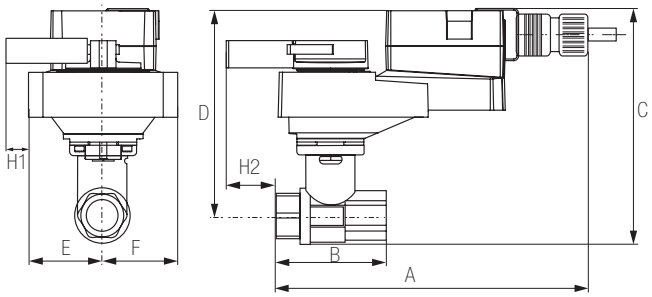
Service	chilled, hot water, up to 60% glycol
Flow Characteristic	equal percentage
Controllable Flow Range	75°
Size [mm]	2" [50]
End Fitting	NPT female ends
Body	forged brass, nickel plated
Ball	stainless steel
Stem	stainless steel
Stem Packing	EPDM (lubricated)
Seat	Teflon® PTFE
Seat O-ring	EPDM (lubricated)
Characterized Disc	No Disc (full flow)
Body Pressure Rating [psi]	400
Media Temperature Range (Water)	0°F to 250°F [-18°C to 120°C]
Max Differential Pressure (Water)	50 psi (345 kPa)
Close-Off Pressure	200 psi
Cv	57
Weight	2.9 lb [1.3 kg]
Leakage	0% for A to AB
Servicing	maintenance free

Flow Pattern





Dimensions (Inches [mm])



ARB, ARX

A	B	C	D	E	F	H1	H2
10" [254]	4.21" [107]	6.84" [174]	5.51" [140]	1.73" [44]		1.18" [30]	0.5" [15]

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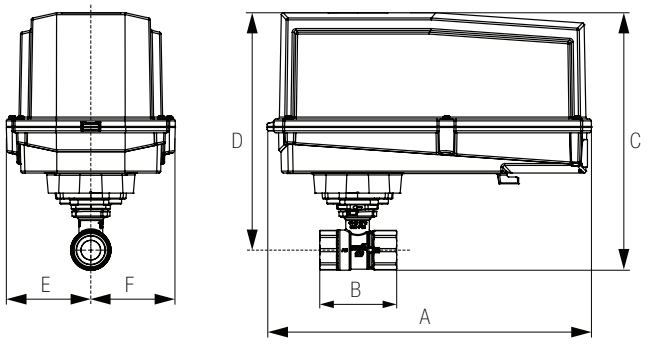
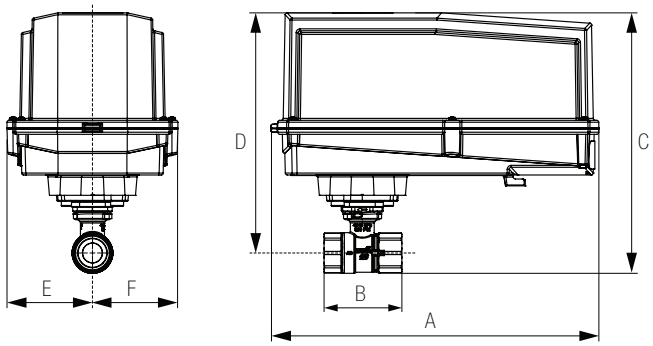
Dimensions (Inches [mm])



ARB N4, ARX N4, NRB N4, NRX N4

A	B	C	D	E	F
11.36" [289]	4.21" [107]	9.8" [249]	7.55" [192]	3.15" [80]	

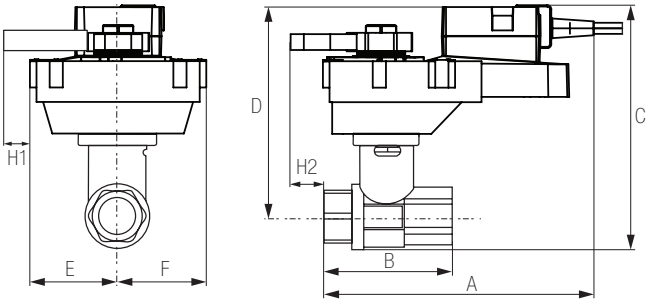
Dimensions (Inches [mm])



AFRB N4, AFRX N4

A	B	C	D	E	F
12.98" [330]	4.93" [125]	10.29" [261]	9.24" [235]	3.39" [86]	

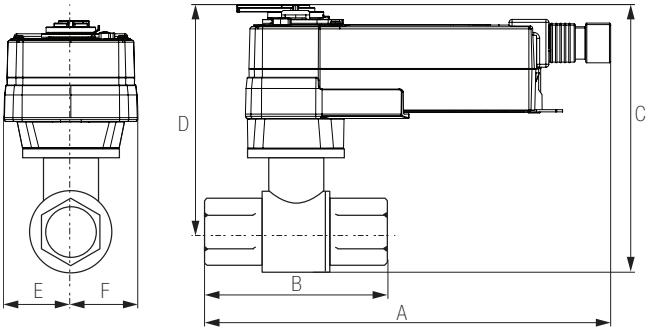
Dimensions (Inches [mm])



ARQB, ARQX

A	B	C	D	E	F	H1	H2
9.9" [251]	4.21" [107]	7.45" [190]	6.11" [155]	2.28" [58]		0.75" [20]	0.5" [15]

Dimensions (Inches [mm])



AFRB, AFRX

A	B	C	D	E	F
10.82" [275]	4.21" [107]	9.47" [241]	8.14" [207]	2.02" [51]	

AFRX24 N4

NEMA 4, On/Off, Spring Return, 24 V

Technical Data	
Power Supply	24 VAC, ±20%, 50/60 Hz, 24 VDC, ±10%
Power consumption in operation	5 W
Power consumption in rest position	2.5 W
Transformer sizing	7.5 VA (class 2 power source)
Electrical Connection	3ft [1m], 18 GA appliance cable with 1/2" conduit connector
Overload Protection	electronic throughout 0° to 95° rotation
Angle of rotation	90°
direction of rotation motor	reversible with CW/CCW mounting
direction of rotation spring-return	reversible with CW/CCW mounting
Position indication	visual indicator, 0° to 95° (0° is full spring return position)
Manual override	5 mm hex crank (3/16" Allen), supplied
Running time motor	<75 sec
Running time emergency control position	<20 sec
Ambient humidity	5 to 95% RH non condensing (EN 60730-1)
Ambient temperature	-22...122 °F [-30...50 °C]
Non-operating temperature	-40...176 °F [-40...80 °C]
Degree of Protection	IP66, NEMA 4X, UL Enclosure Type 4X
Agency Listing	cULus acc. to UL60730-1A/-2-14, CAN/CSA E60730-1:02, CE acc. to 2004/108/EC and 2006/95/EC
Noise level, motor	<45 dB (A)
Noise Level (Fail-Safe)	<62 dB (A)
Maintenance	maintenance free
Quality Standard	ISO 9001
Weight	9.7 lbs (4.4 kg); 10 lbs (4.5 kg) with switches

†Rated Impulse Voltage 800V, Type of action 1.AA, Control Pollution Degree 3

Wiring Diagrams

INSTALLATION NOTES

A Actuators with appliance cables are numbered.

1 Provide overload protection and disconnect as required.

3 Actuators may also be powered by 24 VDC.

45 Actuators may be powered in parallel. Power consumption must be observed.

48 Parallel wiring required for piggy-back applications.

◆ Meets cULus 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.