B231, 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.

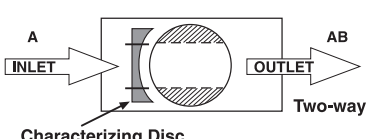
Suitable Actuators

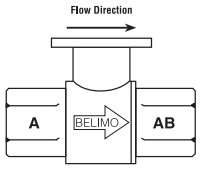
	Non-Spring	Spring
B231	ARB(X), NRQB(X)	AFRB(X)

Technical Data

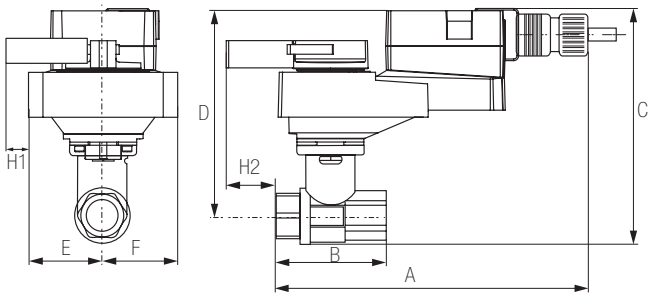
Service	chilled, hot water, up to 60% glycol
Flow Characteristic	equal percentage
Controllable Flow Range	75°
Size [mm]	1.25" [32]
End Fitting	NPT female ends
Body	forged brass, nickel plated
Ball	stainless steel
Stem	stainless steel
Stem Packing	EPDM (lubricated)
Seat	Teflon® PTFE
Seat O-ring	EPDM (lubricated)
Characterized Disc	TEFZEL®
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	25
Weight	1.5 lb [0.7 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
11" [279]	3.72" [95]	6.28" [160]	5.91" [150]	1.73" [44]		1.18" [30]	0.75" [20]

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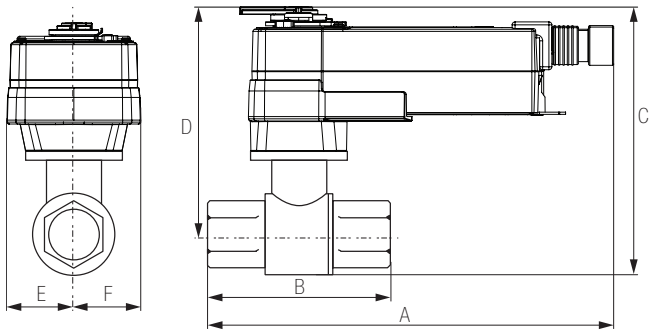
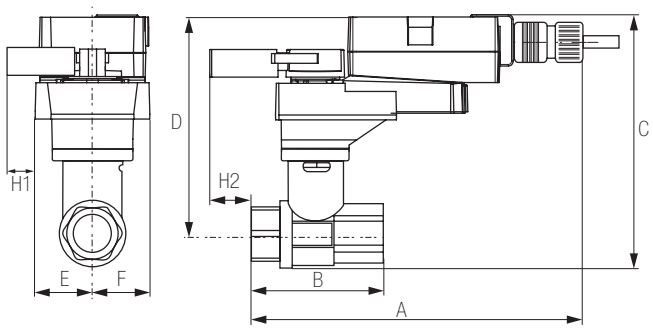
Dimensions (Inches [mm])



AFRB, AFRX

A	B	C	D	E	F
10.52" [267]	3.72" [95]	6.28" [160]	5.28" [134]	2.05" [52]	

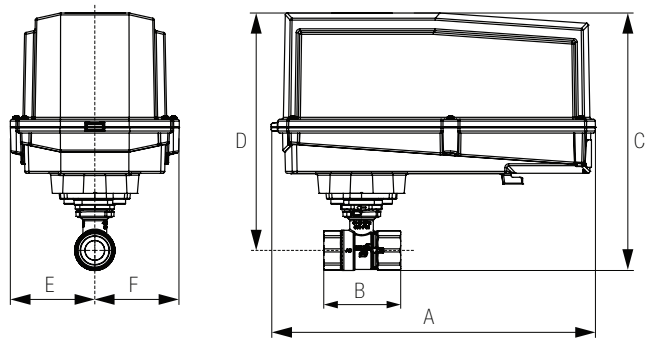
Dimensions (Inches [mm])



NRQB, NRQX

A	B	C	D	E	F
11" [279]	3.72" [95]	6.28" [160]	5.91" [150]	1.73" [44]	

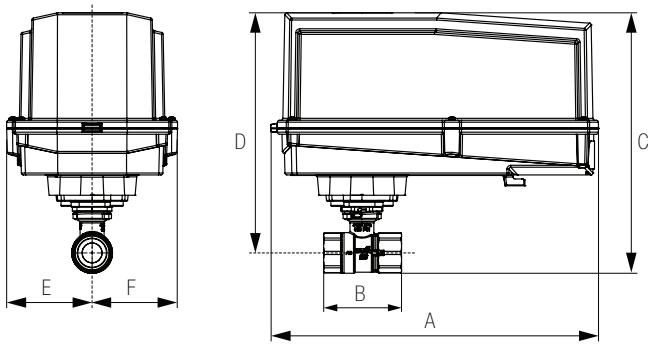
Dimensions (Inches [mm])



ARB N4, ARX N4, NRB N4, NRX N4

A	B	C	D	E	F
11.36" [289]	3.72" [95]	8.32" [211]	7.32" [186]	3.15" [80]	

Dimensions (Inches [mm])



AFRB N4, AFRX N4

A	B	C	D	E	F
12.98" [330]	3.72" [95]	10.29" [261]	8.35" [212]	3.39" [86]	

ARX24-SR-T N4

NEMA 4X, Modulating Control, Non-Spring Return, 24 V, for 2 to 10 VDC or 4 to 20 mA

Technical Data	
Power Supply	24 VAC, ±20%, 50/60 Hz, 24 VDC, ±10%
Power consumption in operation	2.5 W
Power consumption in rest position	0.4 W
Transformer sizing	5 VA (class 2 power source)
Electrical Connection	terminal blocks
Overload Protection	electronic thoughout 0° to 90° rotation
Operating Range	DC 2...10 V, 4 to 20 mA w/ ZG-R01 (500 Ω, 1/4 W resistor)
Input Impedance	100 kΩ for 2 to 10 VDC (0.1 mA), 500 Ω for 4 to 20 mA
Position Feedback	DC 2...10 V
Angle of rotation	90°
direction of rotation motor	reversible with built-in switch
Position indication	pointer
Manual override	under cover
Running time motor	default 90 sec, variable 90 or 150 sec
Ambient humidity	5 to 95% RH non-condensing
Ambient temperature	-22...122 °F [-30...50 °C]
Non-operating temperature	-40...176 °F [-40...80 °C]
Degree of Protection	IP66/67, 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
Noise level, motor	<45 dB (A)
Maintenance	maintenance free
Quality Standard	ISO 9001
Weight	3.3 lbs (1.50 kg)

†Rated Impulse Voltage 800V, Type of action 1, Control Pollution Degree 4.

ARX24-SR-T N4

NEMA 4X, Modulating Control, Non-Spring Return, 24 V, for 2 to 10 VDC or 4 to 20 mA

Wiring Diagrams

INSTALLATION NOTES

1 Provide overload protection and disconnect as required.

2 Actuators may be connected in parallel. Power consumption and input impedance must be observed.

3 Actuators may also be powered by 24 VDC.

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

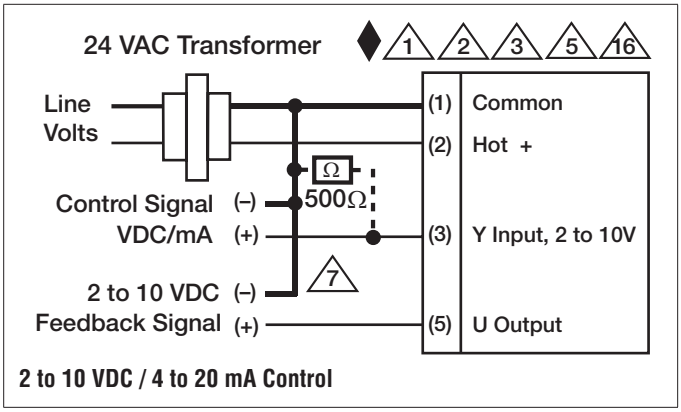
7 A 500 Ω resistor (ZG-R01) converts the 4 to 10 mA control signal to 2 to 10 VDC.

16 Actuators are provided with a numbered screw terminal strip instead of a cable.

◆ 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.



2 to 10 VDC / 4 to 20 mA Control