



- Live-load packing set
- Stainless steel ball & stem
- Blow-out proof stem design

### Application

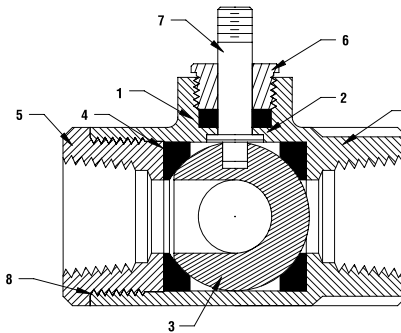
These threaded valves are designed to provide modulating or two position control of hot or chilled water and saturated steam systems under 50 psi.

Typical applications include reheat coils, vav terminal control, unit ventilators, and air handlers, especially in areas which have minimum profile requirements.

- Up to 50 psi steam
- 1/2" - 2000 PSIG WOG, Cold Non-Shock.
- Federal Specification: WW-V-35C, Type II,  
Composition: SS  
Style: 3

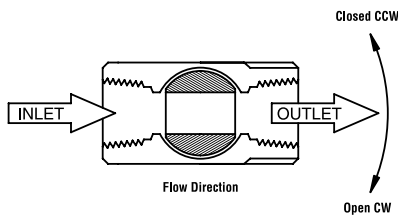
Technical Data	
Media	Chilled or hot water, glycol, 50# steam
Flow Characteristic	Modified equal percentage
Action	90° rotation valve open CW, valve closed CCW
Sizes	1/2", 3/4", 1", 1 1/4", 1 1/2", 2", 2 1/2"
Type of end fitting	SAE NPT (Female Connections)
<b>Materials:</b>	
1 Stem Packing	Reinforced PTFE
2 Stem Bearing	Reinforced PTFE
3 Ball	316 Stainless Steel
4 Seat (x2)	Reinforced PTFE w/ Durafill
5 Retainer	B16 (3/4" - 1") Brass B584 (1 1/4" - 3") Brass
6 Gland	A276-316
7 Stem	316 Stainless Steel
8 Jam Nut	Stainless Steel
9 Body Seal	PTFE (1 1/4" to 3")
10 Body	A351-CF8M 316 Stainless Steel

C <sub>v</sub>	Valve Nominal Size		Type	Suitable Return Actuators	
	Inches	DN [mm]	2-way NPT	Spring	Non-Spring
15	1/2	15	B2050VSS-15	LF Series	NM Series
30	3/4	20	B219VSS		
43	1	25	B224VSS	AF Series	AM Series
48	1 1/4	32	B232VSS		
84	1 1/2	40	B239VSS		
108	2	50	B249VSS		
503	2 1/2	65	B265VSS	GM Series	SY Series



Pressure rating	2000 psig WOG (1/2" - 1")
Media temp. range	-22°F to 298°F (-30°C to 148°C)
Close-off pressure	600 psig @ 100°F
Maximum differential pressure (ΔP)	<600 psig

### Flow Patterns



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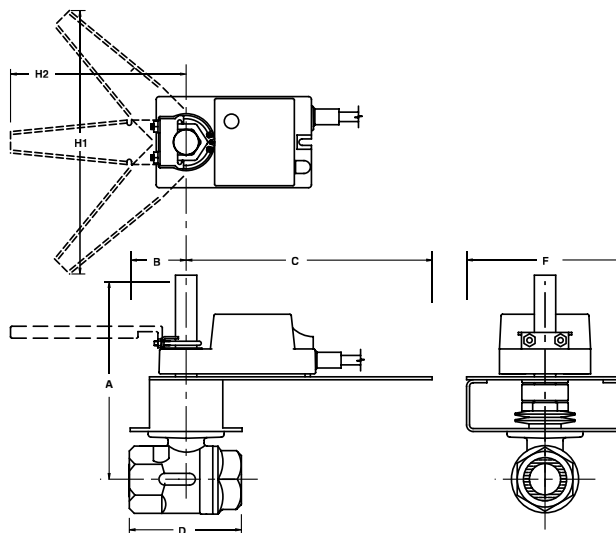


### Models

NMB24-3-X1  
NMX24-3-X1

Technical Data	
Control	On/Off, Floating Point
Power supply	24 VAC ± 20% 50/60 Hz 24 VDC ± 10%
Power consumption	running 2.0 W
	holding 0.2 W
Transformer sizing	4 VA (class 2 power source)
Electrical connection	3 ft, 18 GA plenum rated cable
NMB24-3-X1	½" conduit connector
Overload protection	electronic throughout 0° to 95° rotation
Input Impedance	600 Ω
Angle of rotation	max 95°, adjustable with mechanical stop
Torque	90 in-lb [10 Nm]
Direction of rotation	reversible with  switch
	=CCW with decreasing control signal (10-2V)
	=CW with decreasing control signal (10-2V)
Position indication	reflective visual indicator (snap-on)
Manual override	external push button
Running time	95 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 type 2/IP54
Housing material	UL94-5VA
Agency listings	cULus acc. to UL 60730-1/-2-14, CAN/CSA C22.2 No. 24 certified, CE acc. to 73/23/EEC
Noise level	<45 db(A)
Servicing	maintenance free
Quality standard	ISO 9001

### Dimensions with 2-Way Valve

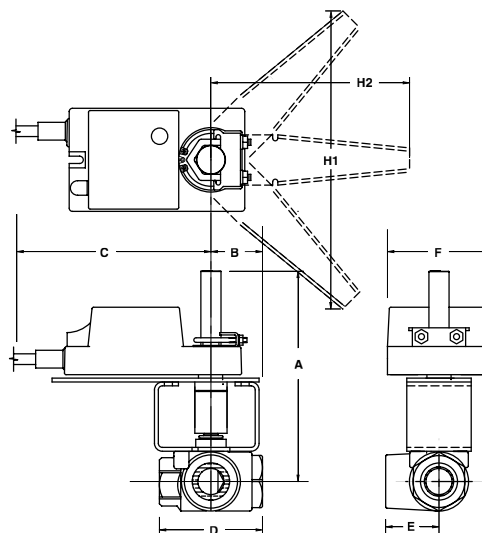


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Valve Nominal Size Dimensions (Inches)

Valve Body	COP	Inches	DN [mm]	A	B	C	D	F	H1	H2
B219VS	400	¾	20	6.70	2.00	8.00	3.00	6.25	9.75	8.50
B220VS	400	¾	20	6.70	2.00	8.00	3.12	6.25	9.75	8.50
B2050VSS-15	1000	½	15	6.70	2.00	8.00	2.25	6.25	9.75	8.50
B219VSS	1000	¾	20	6.70	2.00	8.00	3.00	6.25	9.75	8.50

### Dimensions with 3-Way Valve



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Valve Nominal Size Dimensions (Inches)

Valve Body	COP	Inches	DN [mm]	A	B	C	D	E	F	H1	H2
B320VS	75	¾	20	6.70	1.50	6.88	2.82	1.62	3.15	9.75	8.50
B325VS	75	1	25	7.00	1.50	6.88	3.56	1.88	3.15	9.75	8.50

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## Wiring Diagrams

### INSTALLATION NOTES

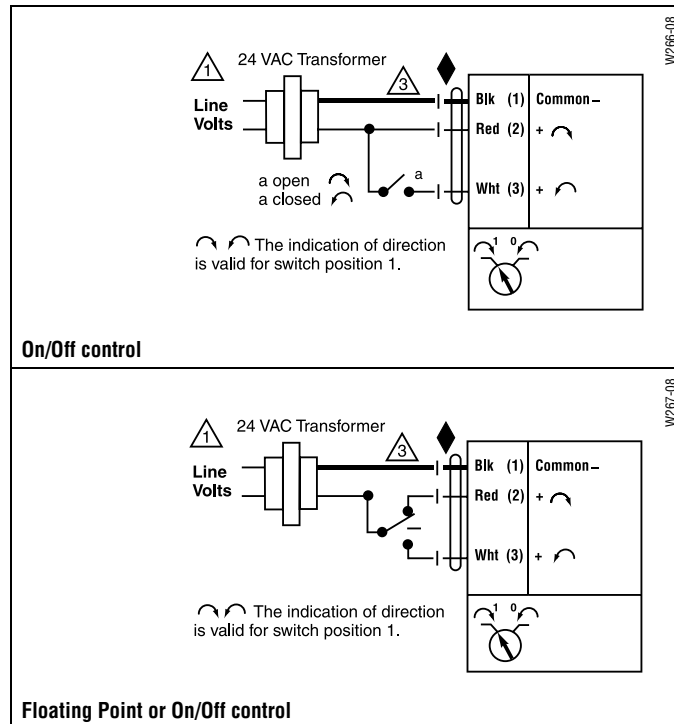
- 1 Provide overload protection and disconnect as required.
- 3 Actuators may also be powered by 24 VDC.

### 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.



### Piping

The valve should be mounted in a weather-protected area in a location that is within the ambient limits of the actuator. Allow sufficient room for valve with actuator and for service. Allow 6" for cover removal and 12" for complete actuator removal. The assembly can be mounted with the actuator vertical or horizontal in relation to the pipe. The actuators should never be mounted underneath the valve, as condensation can build up and result in a failure of the actuators. Do not reverse flow direction.