



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

### Application

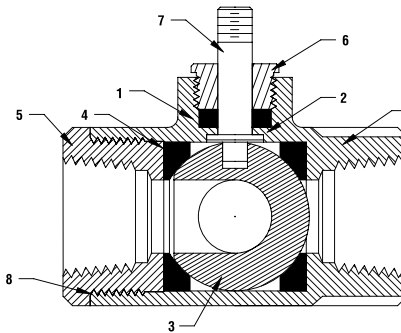
These threaded valves are designed to provide modulating or two position control of hot or chilled water and saturated steam systems under 50 psi.

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

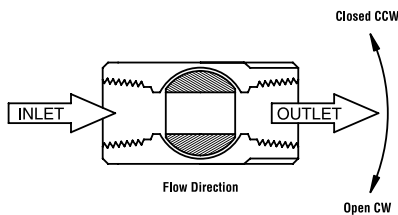
Technical Data	
Media	Chilled or hot water, glycol, 50# steam
Flow Characteristic	Modified equal percentage
Action	90° rotation valve open CW, valve closed CCW
Sizes	1/2", 3/4", 1", 1 1/4", 1 1/2", 2", 2 1/2"
Type of end fitting	SAE NPT (Female Connections)
<b>Materials:</b>	
1 Stem Packing	Reinforced 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]		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

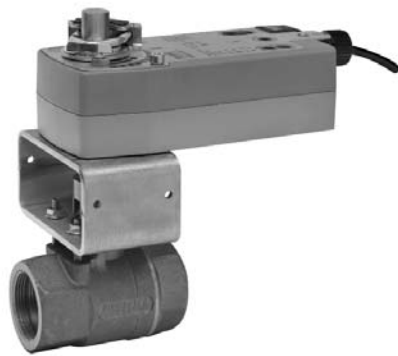


Pressure rating	2000 psig WOG (1/2" - 1")
Media temp. range	-22°F to 298°F (-30°C to 148°C)
Close-off pressure	600 psig @ 100°F
Maximum differential pressure (ΔP)	<600 psig

### Flow Patterns



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**MFT**

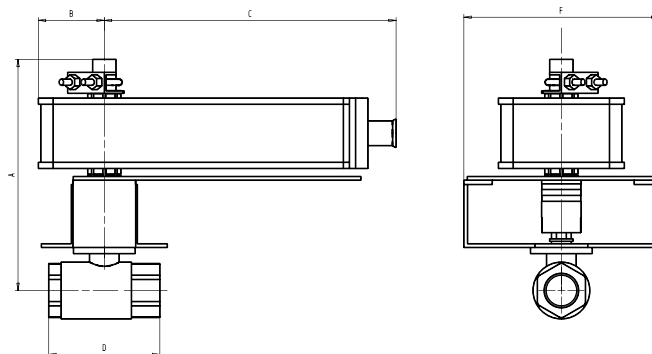


## Models

NFX24-MFT-X1  
NFX24-MFT-S-X1

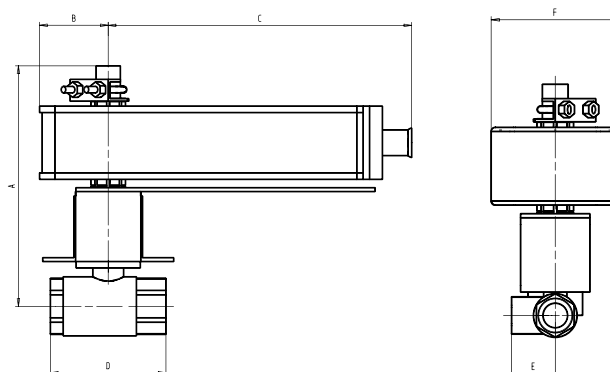
Technical Data	
Control	MFT
Control signal	2 to 10 VDC, (4 to 20 mA with 500 Ω resistor)
Power supply	24 VAC ± 20% 50/60 Hz 24 VDC ± 20% / -10%
Power consumption	running 6.5 W holding 3 W
Transformer sizing	9 VA, (class 2 power source)
Electrical connection	½" conduit connector 3 ft [1m], 18 GA appliance cable
Overload protection	electronic throughout 0 to 95° rotation
Input impedance	100 kΩ for 2 to 10 VDC (0.1 mA) 500 Ω for 4 to 20 mA 1500 Ω for on/off and floating point
Feedback output	2 to 10 VDC, 0.5 mA max
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 95°
Running time	motor 150 seconds (default), variable (40 to 220 seconds) spring <20 sec @ -4°F to 122°F [-20°C to 50°C]; <60 sec @ -22°F [-30°F]
Ambient temperature	-22° F to 122° F [-30° C to 50° C]
Housing	NEMA 2 / IP54, Enclosure Type 2
Agency listings	cULus acc. to UL60730-1A/ -2-14, CAN/CSA E60730-1:02, CE acc. to 2004/108/EC & 2006/95/EC
Noise level	<40 dB(A) motor @ 150 seconds, run time dependent <62 dB(A) spring return
<b>NFX24-MFT-S-X1</b>	
Auxiliary switch	2 x SPDT, 3A (0.5A) @ 250 VAC, UL Approved one set at +10°, one adjustable 10° to 90°

## Dimensions with 2-Way Valve



Valve Body	COP	Valve Nominal Size		Dimensions (Inches)				
		Inches	DN [mm]	A	B	C	D	F
B219VS	400	¾	20	7.00	2.00	8.00	3.37	6.25
B220VS	200	¾	20	7.00	2.00	8.00	3.37	6.25

## Dimensions with 3-Way Valve



Valve Body	COP	Valve Nominal Size		Dimensions (Inches)					
		Inches	DN [mm]	A	B	C	D	E	F
B320VS	75	¾	20	7.00	2.00	8.00	3.56	1.88	3.86

### Wiring Diagrams

#### INSTALLATION NOTES

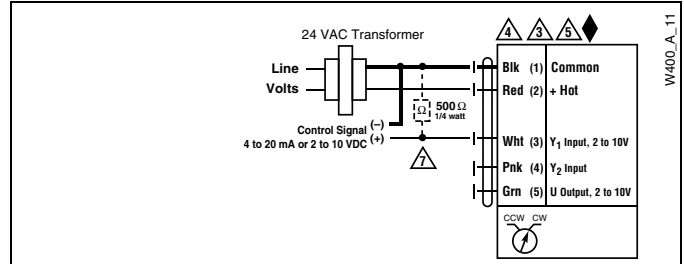
- 2 **CAUTION Equipment damage!**  
Actuators may be connected in parallel if not mechanically mounted to the same shaft. Power consumption and input impedance must be observed.
- 3 Actuators may also be powered by 24 VDC.
- 4 IN4004 or IN4007 diode (IN4007 supplied, Belimo part number 40155).
- 5 Triac A and B can also be contact closures.
- 6 Control signal may be pulsed from either the Hot (Source) or Common (Sink) 24 VAC line.
- 7 Position feedback cannot be used with Triac sink controller. The actuators internal common reference is not compatible.

#### APPLICATION NOTES

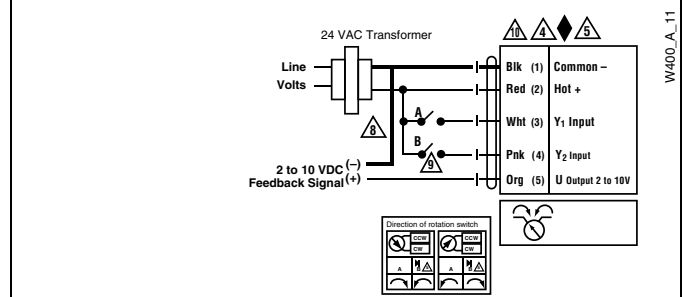
- ◆ The ZG-R01 500 Ω resistor converts the 4 to 20 mA control signal to 2 to 10 VDC, up to 2 actuators may be connected in parallel.
- ◆ Meets cULus or UL and CSA requirements without the need of an electrical ground connection.

**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.

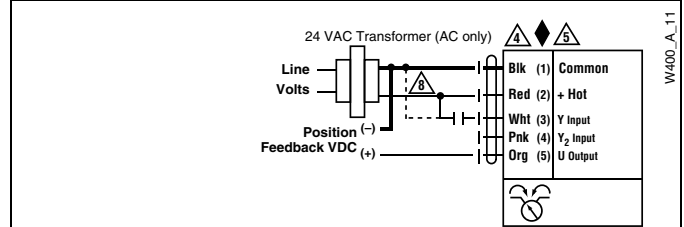
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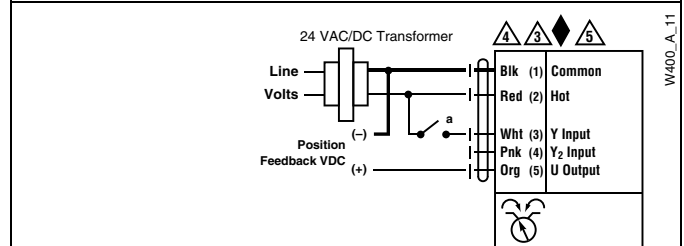
VDC/4-20 mA



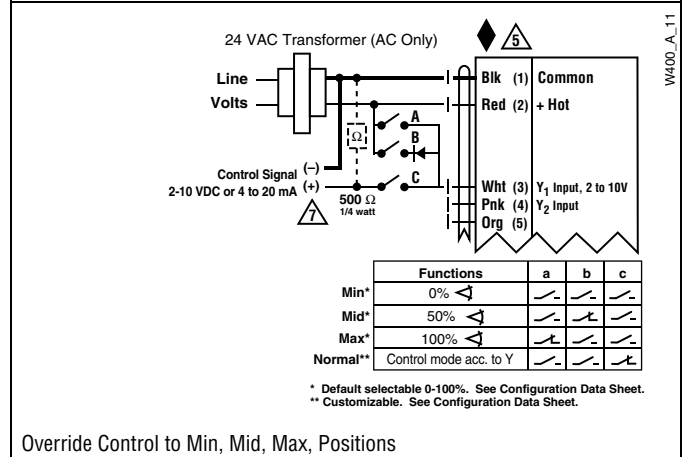
Floating Point



PWM



Two Position



Override Control to Min, Mid, Max, Positions