

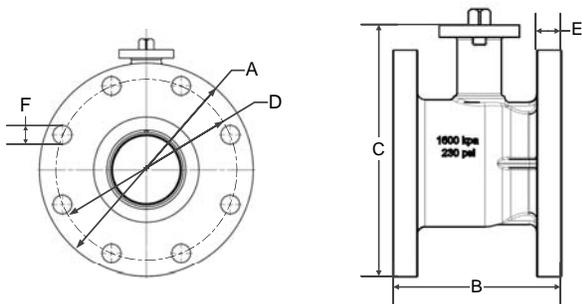


## Application

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 or constant flow.

Technical Data	
Service	chilled or hot water, 60% glycol
Flow characteristic	A-port equal percentage
Action	90° rotation
Sizes	2½", 3", 4", 5", 6"
Type of end fitting	pattern to mate with ANSI 125 flange
Materials:	
Body	cast iron - GG25
Ball	stainless steel
Stem	stainless steel
Seats	PTFE
Characterizing disc	stainless steel
Packing	2 EPDM O rings, lubricated
Body pressure rating	according to ANSI 125, standard class B
Media temp. range	0°F to 248°F [-18°C to +120°C]
Close off pressure	100 psi
Maximum differential pressure (ΔP)	50 psi
Leakage	0% for A to AB
Cv rating	A-port: see product chart for values

## Dimensions



Valve Body	Nominal Pipe Size	Top Flange Design	Flange Diameter	Face-to-Face Length	Height
			A	B	C
B6250S	2½" [65]	F05	7.50" [190.5]	5.50" [139.7]	8.10" [205.4]
B6300S	3" [80]		8.00" [203.2]	6.60" [167.6]	8.40" [213.1]
B6400S	4" [100]		9.00" [228.6]	8.30" [210.8]	9.30" [235.9]
B6500S	5" [125]		10.00" [254.0]	10.30" [261.6]	10.50" [266.4]
B6600S	6" [150]		11.00" [279.4]	12.50" [317.5]	11.70" [296.9]

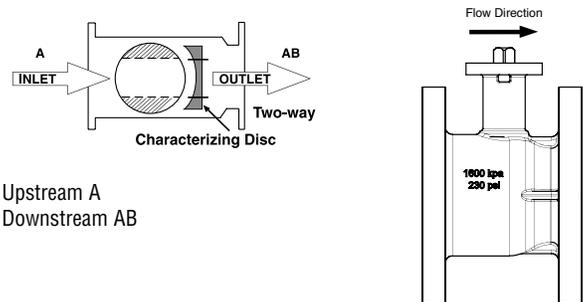
### NOTES:

- 1) Flange bolt pattern matches ANSI class 125 flanges (not ANSI/ASME rated)
- 2) Maximum allowable working pressure: 100 PSIG
- 3) It is not recommended to connect raised-face flanges to flat-faced flanges

Valve Nominal Size			Type	Suitable Actuators		
Cv	Inches	DN [mm]	2-way Flange	Non-Spring	Spring	Electronic Fail-Safe
70	2½"	65	B6250S-070	AR Series	AFR Series	
110	2½"	65	B6250S-110			
110	3"	80	B6300S-110			
186	4"	100	B6400S-186			
290	5"	125	B6500S-290	GR		GKR Series
400	6"	150	B6600S-400			

## Flow Pattern

### 2-way B6250 to B6600 Characterized Control Valves™



Upstream A  
Downstream AB

Bolt Circle Diameter	Flange Thickness Minimum	Bolt Hole Diameter	Number of Bolt Holes
D	E	F	
5.50" [139.7]	0.75" [19.05]	0.75" [19.05]	4
6.00" [152.4]	0.75" [19.05]	0.75" [19.05]	4
7.50" [190.5]	0.94" [23.88]	0.75" [19.05]	8
8.50" [215.9]	0.94" [23.88]	0.88" [22.35]	8
9.50" [241.3]	1.00" [25.40]	0.88" [22.35]	8



**MFT**



## Models

- AFRX24-MFT
- AFRX24-MFT-S
- AFRX24-MFT-5-14
- AFRX24-MFT-S-5-14

Technical Data	
Control	MFT
Control signal	2 to 10 VDC, 4 to 20 mA (default) variable (VDC, PWM, floating point, on/off)
Power supply	24 VAC, +/- 20%, 50/60 Hz 24 VDC, +20% / -10%
Power consumption†	running 7.5 W holding 3 W
Transformer sizing†	10 VA (Class 2 power source)
Electrical connection	3 ft. [1m], 10 ft. [3m] or 16 ft. [5m] 18 GA appliance or plenum cables, with or without 1/2" conduit connector -S models: two 3 ft. [1m], 10 ft. [3m] or 16 ft. [5m] appliance cables with or without 1/2" conduit connectors
Overload protection	electronic throughout 0 to 90° rotation
Feedback output*	2 to 10 VDC, 0.5 mA max (variable)
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
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° (0° is spring return position)
Manual override	5 mm hex crank (3/16" Allen), supplied
Running time	motor* 150 seconds (default), variable (70 to 220 seconds) spring <20 sec @ -4°F to 122°F [-20°C to 50°C]
Ambient temperature	-22° F to 122° F [-30° C to 50° C]
Housing	NEMA 2, IP54, Enclosure Type 2
Agency listings	cULus according. To UL60730-1A/-2-14, CAN/CSA E60730- 1:02, CE according. To 2004/108/EC & 2006/95/EC
Noise level	≤40dB(A) motor @ 150 seconds, run time dependent ≤62dB(A) spring return
Quality standard	ISO 9001

† Programmed for 70 sec motor runtime. At 150 sec motor run time, transformer sizing is 8.5 VA and power consumption is 6 W running/3 W holding.

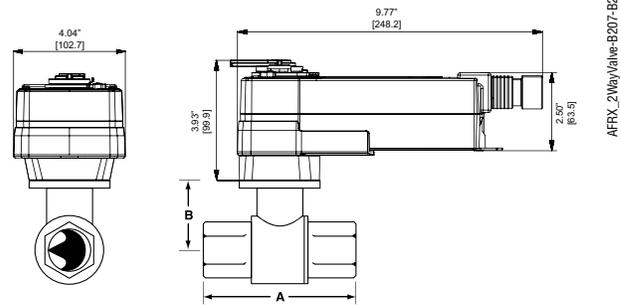
\* Variable when configured with MFT options

‡ Rated Impulse Voltage 800V, Type of action 1.AA (1.AA.B for -S version), Control Pollution Degree 3.

## AFRX24-MFT-S, AFRX24-MFT-S-5-14

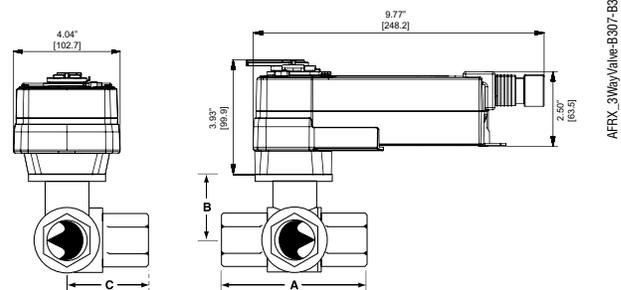
Auxiliary switches	2 x SPDT 3A (0.5A) @ 250 VAC, UL approved one set at +10° to 90°
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## Dimensions



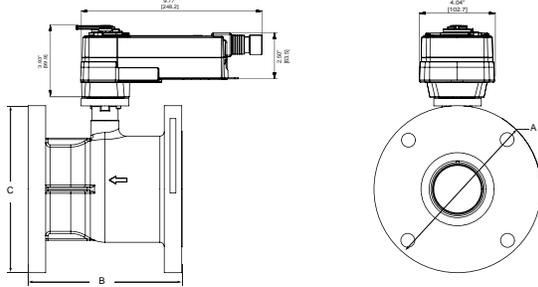
Valve Body	Valve Nominal Size		Dimensions (Inches [mm])	
	Inches	DN [mm]	A	B
B212-B215	1/2"	15	2.38" [60.4]	1.72" [43.7]
B217-B220	3/4"	20	2.73" [69.3]	1.81" [45.9]
B222-B225	1"	25	3.09" [78.4]	1.81" [45.9]
B229-B230	1 1/4"	32	3.72" [94.6]	1.81" [45.9]
B231-B232	1 1/4"	32	3.72" [94.6]	1.98" [50.4]
B238-B240	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



Valve Body	Valve Nominal Size		Dimensions (Inches [mm])		
	Inches	DN [mm]	A	B	C
B312-B315	1/2"	15	2.38" [60.4]	1.72" [43.7]	1.26" [32.1]
B317-B320	3/4"	20	2.73" [69.3]	1.81" [45.9]	1.45" [36.8]
B322-B325	1"	25	3.09" [78.4]	1.81" [45.9]	1.56" [39.8]
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



AFR\_L66CV

Valve Body	Nominal Pipe Size	Top Flange Design	Flange Diameter	Face-to-Face Length	Height
			A	B	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

- 1 Provide overload protection and disconnect as required.
- 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 Position feedback cannot be used with Triac sink controller. The actuator internal common reference is not compatible.
- 5 Control signal may be pulsed from either the Hot (source) or the Common (sink) 24 VAC line.
- 8 Contact closures A & B also can be triacs.
- 8 A & B should both be closed for triac source and open for triac sink.
- 9 For triac sink the common connection from the actuator must be connected to the hot connection of the controller.

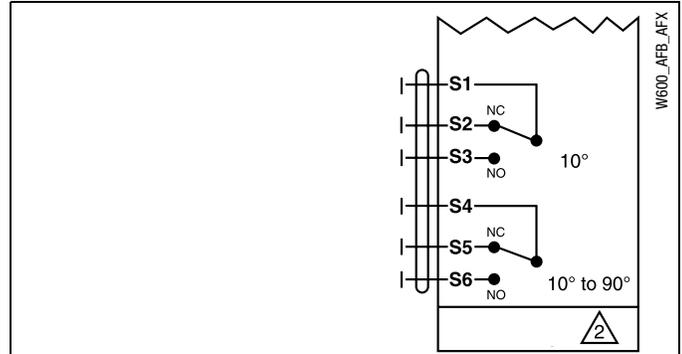
#### APPLICATION NOTES

- ◆ Meets UL requirements without the need of an electrical ground connection.
- ◆ The ZG-R01 500 Ω resistor may be used.

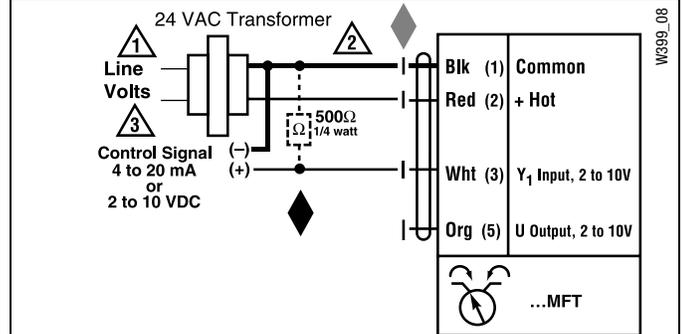
#### WARNING Live Electrical Components!

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.

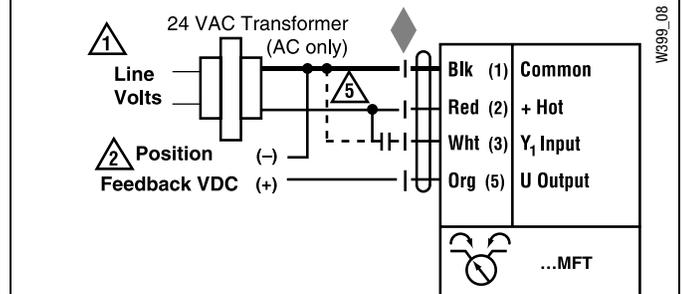
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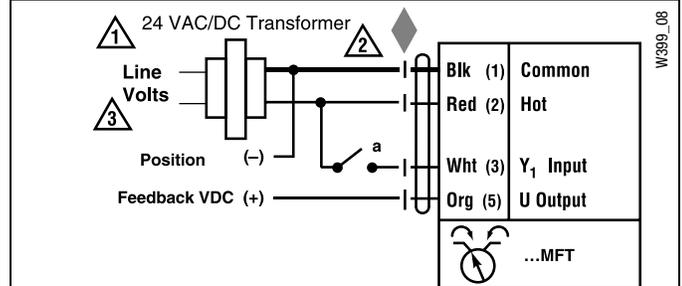
### Auxiliary Switches for AFRX24-MFT



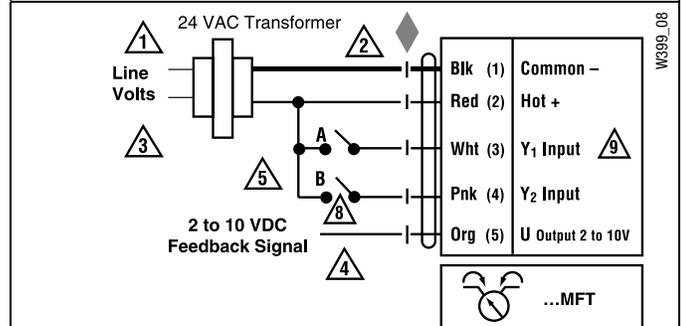
### VDC/4-20 mA



### PWM



### On/Off control



### Floating Point control