



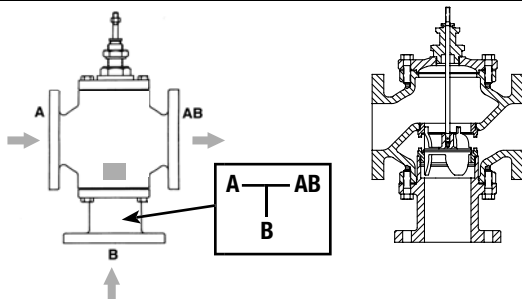
**5**  
YEAR  
WARRANTY

### Technical Data

	G7...-250	G7...S-250
Service	chilled or hot water, 60% glycol	chilled or hot water, 60% glycol
Flow characteristic	linear	
Action	stem up - open A to AB	
Sizes	2½" to 6"	
End fitting	250 lb. flanged	
Materials		
Body	iron	iron
Seat	bronze	stainless steel
Stem	stainless steel	stainless steel
Plug	bronze	stainless steel
Packing	NLP (no lip packing)	TFE V-ring
ANSI class	ANSI 250	
Leakage	Class III	
Max inlet		
Water	250 psi (1724kPa) @ 350°F	250 psi (1724kPa) @ 350°F
Media temperature		
Water	32°F to 350°F (0°C to 176°C)	32°F to 350°F (0°C to 176°C)
Maximum ΔP*		
Water	25 psi (172kPa)	50 psi (340kPa)
Rangeability	50:1	
Valve weights	G765(S)-250 G780(S)-250 G7100(S)-250 G7125(S)-250 G7150(S)-250	73 lbs 94 lbs 157 lbs 211 lbs 283 lbs

\* (50% or more open)

### G7...(S)-250 3-way Flow Patterns



Flow Pattern is marked on valve.

Stem Up = Open B to AB

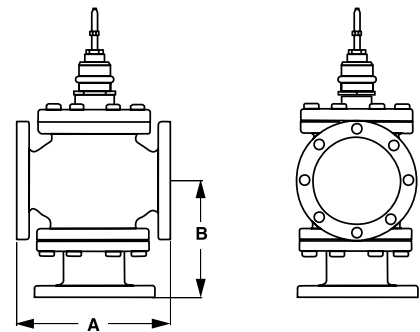
### Application

This valve is typically used in Large Air Handling Units on heating or cooling coils. This valve is suitable for use in a hydronic system with variable flow.

Valves are designed for ANSI 250 piping systems.

C <sub>v</sub>	Valve Nominal Size		Type				Suitable Actuators		
	Inches	3-way Flanged	Non-Spring	Spring	Electronic Fail-Safe				
68	2½	G765(S)-250	NVG	GM Series	AF	AFX Series	GK Series		
91	3	G780(S)-250							
190	4	G7100(S)-250							
280	5	G7125(S)-250							
340	6	G7150(S)-250							

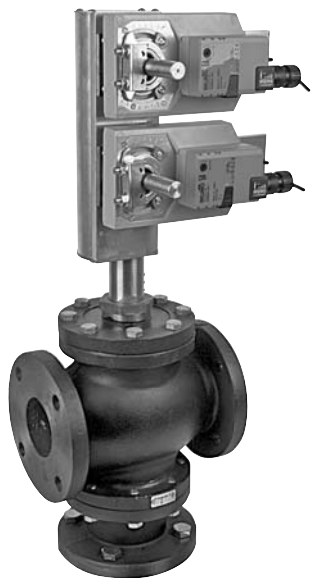
### Dimensions



Valve Body	Valve Nominal Size		Dimensions (Inches [mm])	
	Inches	DN [mm]	A	B
G765(S)-250	2½"	[65]	9.63" [245]	7.38" [188]
G780(S)-250	3"	[80]	10.75" [273]	8.38" [213]
G7100(S)-250	4"	[100]	13.63" [346]	10.25" [260]
G7125(S)-250	5"	[125]	16.63" [422]	10.38" [264]
G7150(S)-250	6"	[150]	18.63" [473]	11.00" [279]

### Piping

The valves 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. For the NV Series, allow 6" for cover removal and 12" for complete actuator removal. The G6/G7 preferred mounting position of the valve is with the valve stem vertical above the valve body, for maximum life. However, the assemblies can be mounted with valve stem vertical above the valve or up to 45 degrees in relation to the horizontal 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.

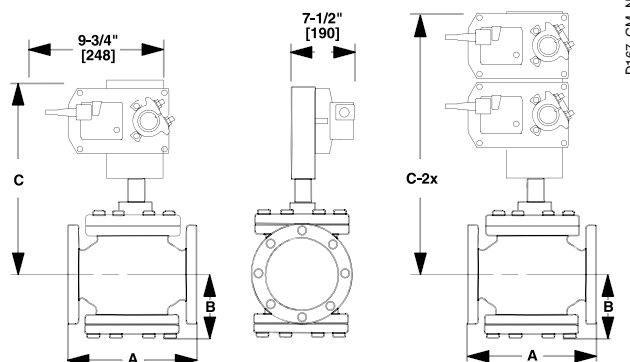


### Models

GMX24-MFT-X1  
2\*GMX24-MFT-X1

Technical Data	
Control	MFT
Control signal	2 to 10 VDC, floating point, on/off, PWM, 0-135 Ω (MFT95)
Power supply	24 VAC ± 20% 50/60 Hz 24 VDC ± 10%
Power consumption	running 4.5 W holding 3 W
Transformer sizing	7 VA (Class 2 power source)
Electrical connection	3 ft [1m] 18 GA plenum rated cable ½" conduit connector
Overload protection	electronic throughout stroke
Input impedance	100 kΩ for 2 to 10 VDC (0.1 mA) 500 Ω for 4 to 20 mA 750 Ω for PWM 1500 Ω for on/off and floating point
Feedback	2 to 10 VDC, 0.5 mA max VDC variable
Angle of rotation	95°
Direction of rotation	reversible with  switch
Position indication	reflective visual indicator (snap-on)
Running time	150 seconds, constant independent of load
Humidity	5 to 95% RH non-condensing
Ambient temperature	-22°F to 122°F [-30°C to 50°C]
Housing	NEMA 2/IP54 with cable entry down
Housing material	UL94-5V (flammability rating)
Agency listings	cULus acc. to UL 60730-1A/-2-14, CAN/CSA E60730-1, CSA C22.2 No. 24-93, CE acc. to 89/336/EEC
Noise level	<45 dB(A)
Quality standard	ISO 9001

### Dimensions with G6/G6C ANSI 125 and G6/G6C ANSI 250 Series 2-Way Valve



D167\_GM\_LNG

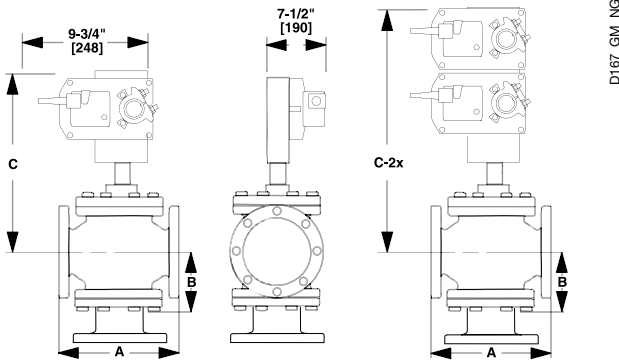
### Valve Nominal Size

Valve Body	Valve Nominal Size		Dimensions (Inches [mm])		
	Inches	DN [mm]	A	B	C
G6 ANSI 125	2½"	65	9.00" [229]	4.75" [121]	13.50" [343]
G6 ANSI 125	3"	80	10.00" [254]	5.37" [136]	13.93" [355]
G6 ANSI 125	4"	100	13.00" [330]	6.37" [162]	16.00" [406]
G6 ANSI 250	2½"	65	9.62" [244]	4.75" [121]	13.50" [343]
G6 ANSI 250	3"	80	10.75" [273]	5.37" [136]	13.93" [355]
G6 ANSI 250	4"	100	13.62" [346]	6.37" [162]	16.00" [406]
G6C ANSI 125	4"	100	13.00" [330.2]	6.87" [175]	15.50" [394]
G6C ANSI 125	5"	125	15.75" [400]	7.87" [200]	16.12" [410]
G6C ANSI 125	6"	150	17.75" [451]	8.50" [216]	16.75" [425]
G6C ANSI 250	4"	100	13.62" [346]	6.87" [175]	15.50" [394]
G6C ANSI 250	5"	125	16.62" [422]	7.87" [200]	16.12" [410]
G6C ANSI 250	6"	150	18.62" [473]	8.50" [216]	16.75" [425]

### Valve Nominal Size

Valve Body	Valve Nominal Size		Dimensions (Inches [mm])		
	Inches	DN [mm]	A	B	C-2x
G6 ANSI 125	2½"	65	9.00" [229]	4.75" [121]	18.25" [464]
G6 ANSI 125	3"	80	10.00" [254]	5.37" [136]	19.18" [487]
G6 ANSI 250	2½"	65	9.62" [244]	4.75" [121]	18.25" [464]
G6 ANSI 250	3"	80	10.75" [273]	5.37" [136]	19.18" [487]

## Dimensions with G7 and G7D ANSI 125/250 Series 3-Way Valve



Valve Nominal Size Dimensions (Inches [mm])

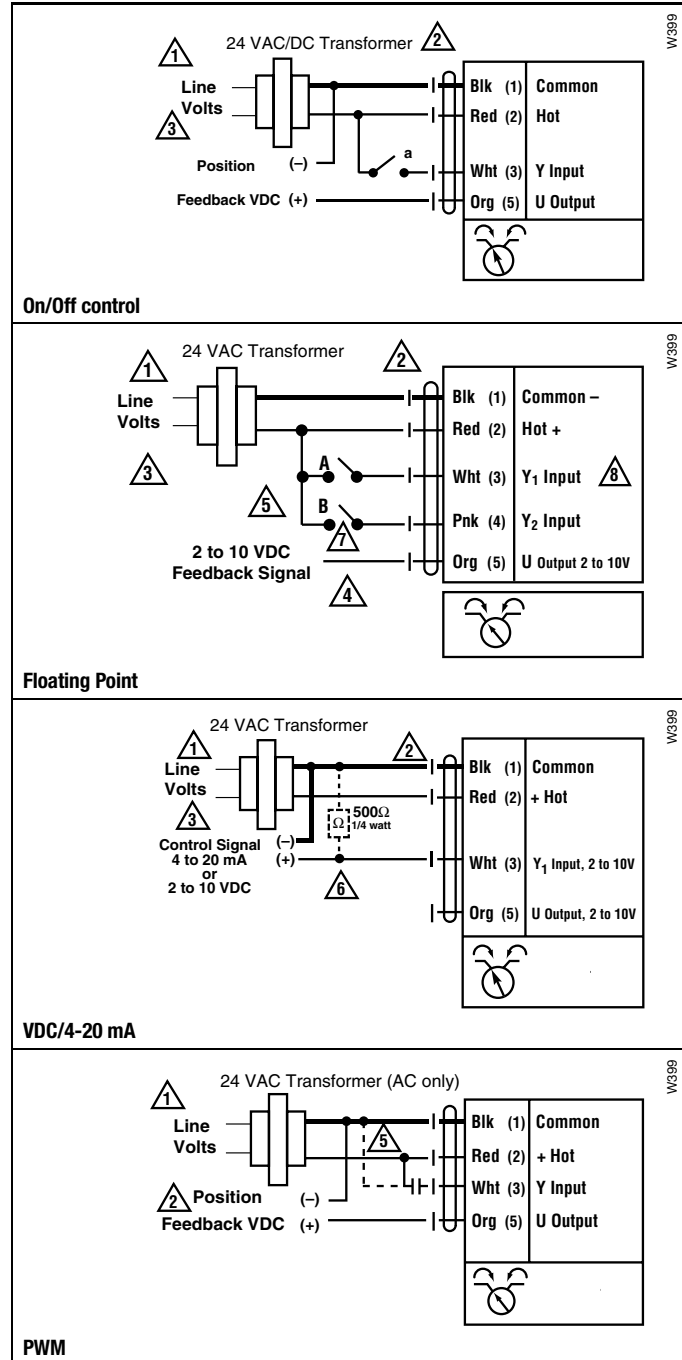
Valve Body	Inches	DN [mm]	A	B	C
G7 & G7D ANSI 125	2½"	[65]	9.00" [229]	7.12" [181]	13.87" [352]
G7 & G7D ANSI 125	3"	[80]	10.00" [254]	8.00" [203]	14.43" [367]
G7 & G7D ANSI 125	4"	[100]	13.00" [330.2]	9.87" [251]	15.50" [394]
G7D ANSI 125	5"	[125]	12.00" [305]	10.50" [267]	14.12" [359]
G7D ANSI 125	6"	[150]	14.12" [359]	11.12" [282]	15.12" [505]
G7 & G7D ANSI 250	2½"	[65]	9.62" [244]	7.37" [187]	13.87" [352]
G7 & G7D ANSI 250	3"	[80]	10.75" [273]	8.37" [213]	14.43" [367]
G7 & G7D ANSI 250	4"	[100]	13.62" [346]	10.25" [260]	15.50" [394]
G7D ANSI 250	5"	[125]	12.87" [327]	11.00" [279]	14.12" [359]
G7D ANSI 250	6"	[150]	14.50" [368]	11.50" [292]	15.12" [505]

Valve Nominal Size Dimensions (Inches [mm])

Valve Body	Inches	DN [mm]	A	B	C-2x
G7 ANSI 125	2½"	[65]	9.00" [229]	7.12" [181]	18.58" [473]
G7 ANSI 125	3"	[80]	10.00" [254]	8.00" [203]	19.18" [487]
G7 ANSI 125	4"	[100]	13.00" [330.2]	9.87" [251]	20.25" [514]
G7 ANSI 125	5"	[125]	15.75" [400]	9.25" [235]	18.87" [480]
G7 ANSI 125	6"	[150]	17.75" [451]	9.87" [251]	19.87" [505]
G7 ANSI 250	2½"	[65]	9.62" [244]	7.37" [187]	18.75" [476]
G7 ANSI 250	3"	[80]	10.75" [273]	8.37" [213]	19.37" [492]
G7 ANSI 250	4"	[100]	13.62" [346]	10.25" [260]	20.37" [517]
G7 ANSI 250	5"	[125]	16.62" [422]	10.37" [264]	19.25" [489]
G7 ANSI 250	6"	[150]	18.62" [473]	11.00" [279]	19.75" [502]

## Wiring Diagrams

- 1 Provide overload protection and disconnect as required.
- 2 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.
- 6 ZG-R01 may be used.
- 7 Contact closures A & B also can be triacs.
- 8 For triac sink the common connection from the actuator must be connected to the hot connection of the controller.



### Wiring Diagrams for Multiple MFT Actuators

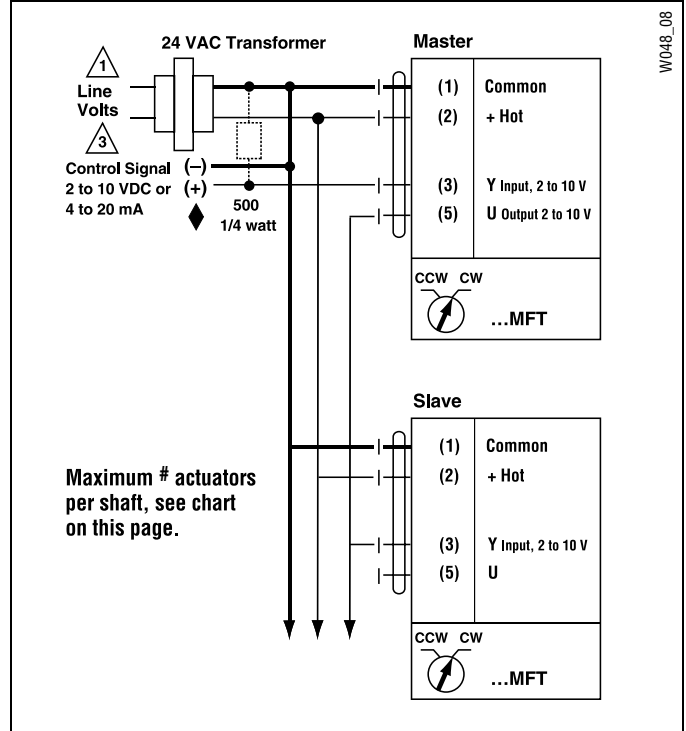
- 1 Provide overload protection and disconnect as required.
- 3 Actuators may also be powered by 24 VDC.
- 5 Control signal may be pulsed from either the Hot (source) or the Common (sink) 24 VAC line.

### APPLICATION NOTES

- ◆ 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.



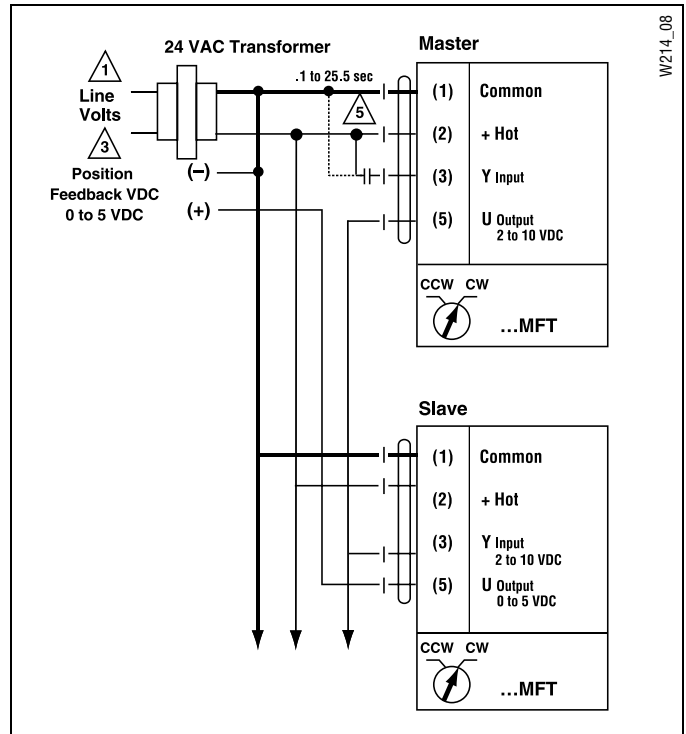
Wiring multiple ...MFT actuators to one shaft.

All MFT actuators are wired in master-slave configuration.

Wiring of multiple ...MFT actuators on valves must be master-slave (wires 3-5).

MFT actuator configurations should also co-ordinate with each other.

Meaning the master input = controller's output. Master output = slave input. Slave output = controller input.



Controller Output	Master Feedback	Slave Input	Slave Feedback
0.1 to 25.5 sec	2 to 10 VDC	2 to 10 VDC	0 to 5 VDC

	Non-Spring Return				Spring Return					Electronic Fail-Safe
	NV	NVG	GM	2 x GM	NVF	AF	2x AF	AFX	2 x AFX	GK
<b>2-way ANSI 125</b>										
G665, G665S		62	113	150		36	59	51	82	113
G680, G680S		42	78	121		24	40	34	56	78
G6100, G6100S			19							19
<b>2-way Pressure Comp ANSI 125</b>										
G665C, G665CS, G665LCS	150				150	150		150		
G680C, G680CS, G680LCS	150				136	150		150		
G6100C, G6100CS, G6100LCS			150				132		150	150
G6125C, G6125CS, G6125LCS			150				87		150	150
G6150C, G6150CS, G6150LCS			150				50		150	150
<b>2-way Pressure Comp ANSI 250</b>										
G665C-250, G665CS-250								250		
G680C-250, G680CS-250								250		
G6100C-250, G6100CS-250			250						212	250
G6125C-250, G6125CS-250			239						152	239
G6150C-250, G6150CS-250			178						105	178
<b>2-way ANSI 250</b>										
G665-250, G665S-250		62	113	176		36	59	51	82	113
G680-250, G680S-250		42	78	121		24	40	34	56	78
G6100-250, G6100S-250			19							19
<b>3-way ANSI 125 Mixing</b>										
G765, G765S		62	113	150		36	59	51	82	114
G780, G780S		42	78	121		24	40	34	56	78
G7100, G7100S			19	31					13	19
G7125, G7125S				19						
G7150, G7150S				13						
<b>3-way ANSI 250 Mixing</b>										
G765-250, G765S-250		62	113	176		35	58	40	114	114
G780-250, G780S-250		42	78	121		23	40	25	77	78
G7100-250, G7100S-250				31					24	19
G7125-250, G7125S-250				19						
G7150-250, G7150S-250				13						
<b>3-way ANSI 125/250 Diverting</b>										
G765D, G765DS, G765DS-250		100	100			100		100		100
G780D, G780DS, G780DS-250		100	100			100		100		100
G7100D, G7100DS, G100DS-250		100	100			100		100		100
G7125D, G7125DS, G7125DS-250			100				100		100	100
G7150D, G7150DS, G7150DS-250			100				100		100	100