

F650VIC Technical Data Sheet

Pressure Enhanced Rubber Seat



Technical Data	
Fluid	chilled, hot water, up to 60% glycol
Flow characteristic	modified equal percentage
Controllable flow range	90° rotation
Valve Size [mm]	2" [50]
Pipe connection	grooved ANSI/AWWA (c606)
Housing	Ductile cast iron ASTM A536
Body finish	black alkyd enamel
Stem	416 stainless steel
Spindle bearing	fiberglass with TFE lining
Seat	EPDM
Disc	electroless nickel coated ductile iron
Body Pressure Rating	ANSI Class Grooved AWWA, 300 psi
ANSI Class	Grooved AWWA
Rangeability Sv	100:1
Maximum Velocity	20 FPS
Cv	115
Weight	3.3 lb [1.5 kg]
Fluid Temp Range (water)	-22...250°F [-30...120°C]
Leakage rate	0%
Maintenance	maintenance-free

Close-off pressures are variable and actuator dependent, consult Select Pro and/or Price Guide for specifics.



Application

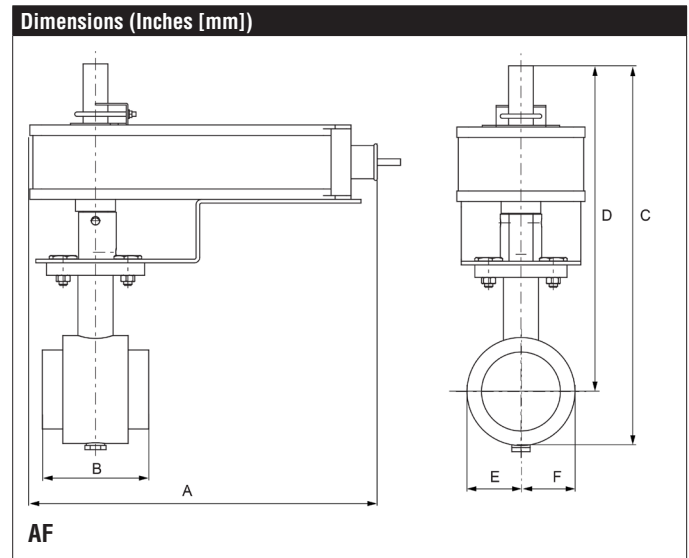
These valves are designed to meet the needs of HVAC and commercial applications requiring bubble tight shut-off for liquids. Typical applications include chiller isolation, cooling tower isolation, change-over systems, large air handler coil control, bypass and process control applications. The large Cv values provide for an economical control valve solution for larger flow applications. Designed for use in Victaulic® piping systems.

Jobsite Note

Valve assembly should be stored in a weather protected area prior to installation. Reference the butterfly valve installation instruction for additional information.

Flow/Cv					
Cv 30°	Cv 40°	Cv 50°	Cv 60°	Cv 70°	Cv 90°
7	14	23	36	60	115

Suitable Actuators		
	Non-Spring	Spring
F650VIC	AMB(X), GRB(X)	AF

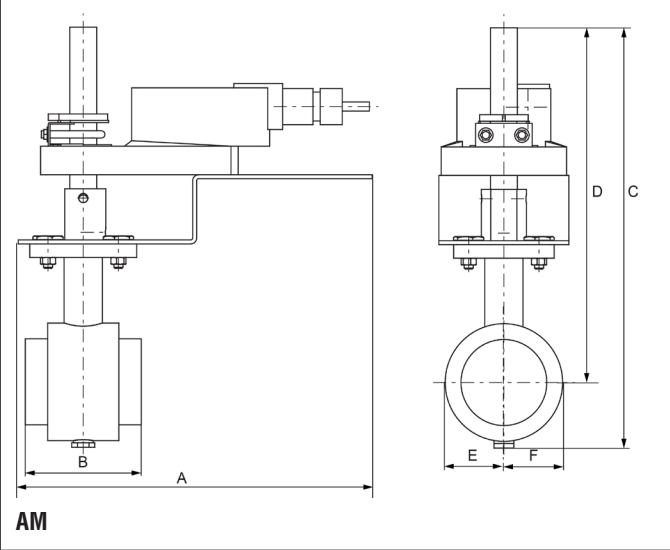


A	B	C	D	E	F
10.5" [267]	3.2" [82]	11.6" [294]	9.8" [248]	1.6" [40]	

Safety Notes

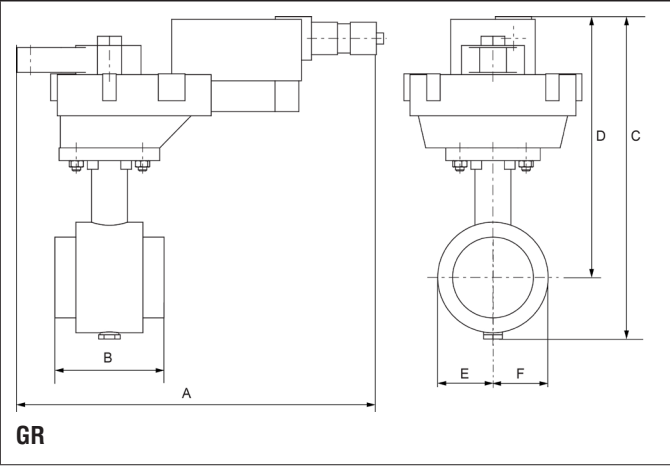
WARNING: For Belimo products sold in California: these products do or may contain chemicals which are known to the State of California to cause cancer and or birth defects or other reproductive harms. For more information see www.p65warnings.ca.gov.

Dimensions (Inches [mm])



A	B	C	D	E	F
9.8" [249]	3.2" [82]	11.6" [294]	9.8" [248]	1.6" [40]	

Dimensions (Inches [mm])



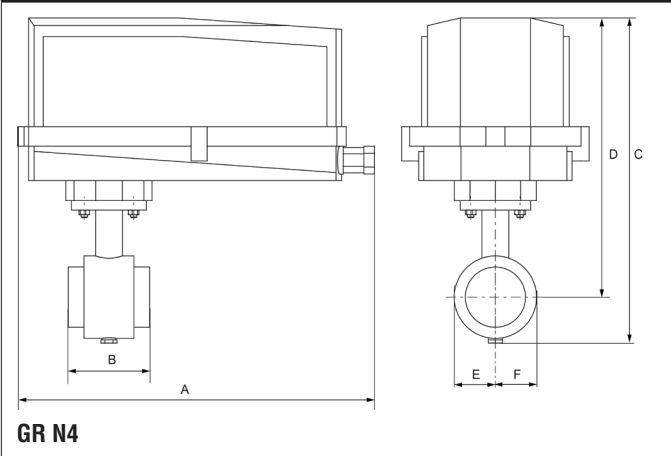
A	B	C	D	E	F
10.8" [275]	3.2" [82]	9.5" [241]	7.7" [196]	1.6" [40]	

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F650VIC Technical Data Sheet

Pressure Enhanced Rubber Seat

Dimensions (Inches [mm])



GR N4

A	B	C	D	E	F
14.1" [358]	3.2" [82]	12.8" [325]	11.0" [279]	1.6" [40]	

AMX24-MFT-X1 Technical Data Sheet

Modulating, Non-Spring Return, 24 V, Multi-Function Technology®



5-year warranty



Technical Data

Power Supply	24 VAC, ±20%, 50/60 Hz, 24 VDC, ±10%
Power consumption in operation	3.5 W
Power consumption in rest position	1.3 W
Transformer sizing	6 VA
Electrical Connection	18 GA plenum cable, 3 ft [1 m], with 1/2" conduit connector (10 ft [3 m] and 15 ft [5 m] available)
Overload Protection	electronic throughout 0...95° rotation
Operating Range	DC 2...10 V (default), 4...20 mA w/ ZG-R01 (500 Ω, 1/4 W resistor), variable (VDC, PWM, on/off, floating point)
Operating range Y variable	Start point DC 0.5...30 V End point DC 2.5...32 V
Input Impedance	100 kΩ for DC 2...10 V (0.1 mA), 500 Ω for 4...20 mA, 1500 Ω for PWM, On/Off and Floating point
Position Feedback	DC 2...10 V, Max. 0.5 mA, VDC variable
Angle of rotation	Max. 95°, adjustable with mechanical stop
Direction of rotation motor	reversible with built-in switch
Position indication	Mechanically, integrated, two-section
Manual override	external push button
Running Time (Motor)	default 150 s, variable 90...350 s
Ambient humidity	max. 95% r.H., non-condensing
Ambient temperature	-22...150°F [-30...65°C]
Storage temperature	-40...176°F [-40...80°C]
Degree of Protection	IP54, NEMA 2, UL Enclosure Type 2
Housing material	UL94-5VA
Agency Listing	cULus acc. to UL60730-1A/-2-14, CAN/CSA E60730-1:02, CE acc. to 2004/108/EC and 2006/95/EC
Noise level, motor	45 dB(A)
Maintenance	maintenance-free
Quality Standard	ISO 9001
Weight	4.9 lb [2.0 kg]

†Rated Impulse Voltage 800V, Type action 1, Control Pollution Degree 3.

Safety Notes

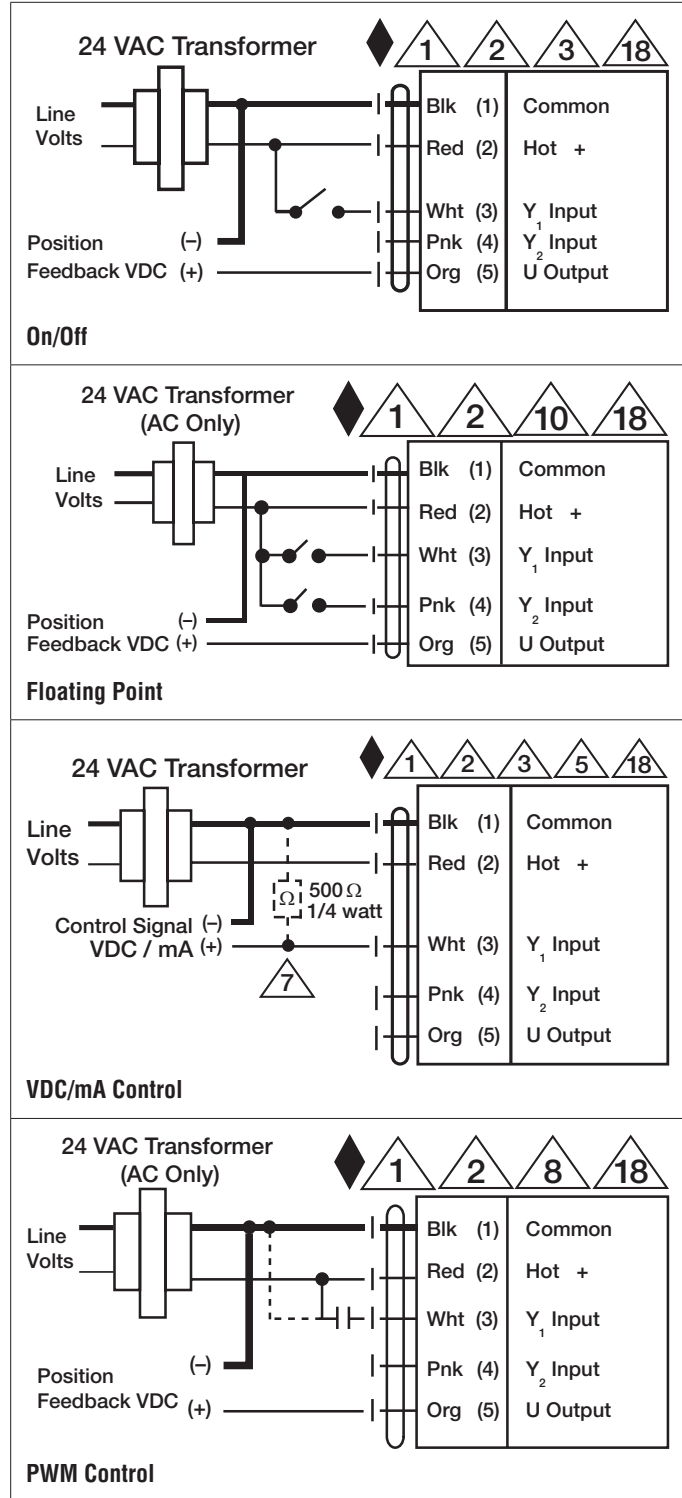
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Wiring Diagrams

INSTALLATION NOTES

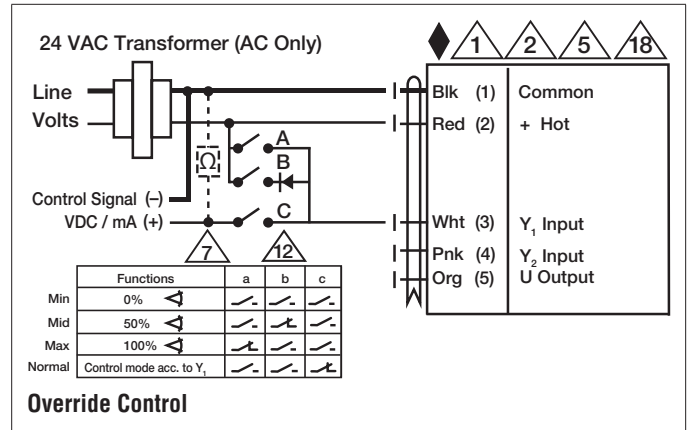
- Actuators with appliance cables are numbered.
- Provide overload protection and disconnect as required.
- Actuators may also be powered by 24 VDC.
- Only connect common to negative (-) leg of control circuits.
- A 500 Ω resistor (ZG-R01) converts the 4 to 20 mA control signal to 2 to 10 VDC.
- Control signal may be pulsed from either the Hot (Source) or Common (Sink) 24 VAC line.
- For triac sink the Common connection from the actuator must be connected to the Hot connection of the controller. Position feedback cannot be used with a triac sink controller; the actuator internal common reference is not compatible.
- Actuators may be connected in parallel if not mechanically linked. Power consumption and input impedance must be observed.
- IN4004 or IN4007 diode. (IN4007 supplied, Belimo part number 40155).
- 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.



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