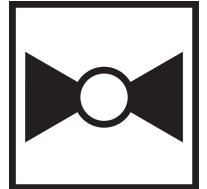


## Butterfly Valve with Grooved types

- Disc electroless nickel coated ductile iron
- Bubble tight shut-off
- Resilient seat
- Valve face-to-face dimensions comply with AWWA (c606) & MSS-SP-67
- Completely assembled and tested, ready for installation
- VIC-300 Masterseal is manufactured by the Victaulic Company.



5-year warranty



## Type overview

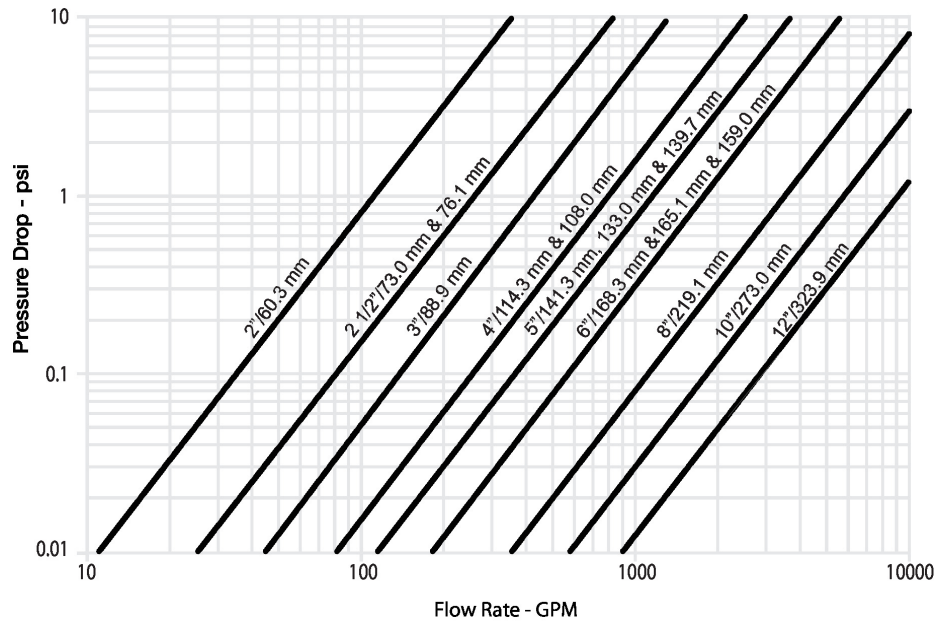
Type	DN
F650VIC	50

## Technical data

<b>Functional data</b>	Valve size [mm]	2" [50]
	Fluid	chilled or hot water, up to 60% glycol
	Fluid Temp Range (water)	-30...120°C [-22...250°F]
	Body Pressure Rating	ANSI Class Grooved AWWA, 300 psi
	Flow characteristic	modified equal percentage
	Leakage rate	0%
	Pipe connection	Grooved ANSI/AWWA (c606)
	Servicing	maintenance-free
	Flow Pattern	2-way
	Controllable flow range	90° rotation
	Cv	115
	Maximum Velocity	20 FPS
	<b>Materials</b>	Valve body
Body finish		black alkyd enamel
Stem		416 stainless steel
Stem seal		fiberglass with TFE lining
Seat		EPDM
Disc		electroless nickel coated ductile iron
<b>Suitable actuators</b>	Non Fail-Safe	AMB(X) GRB(X)
	Spring	AF

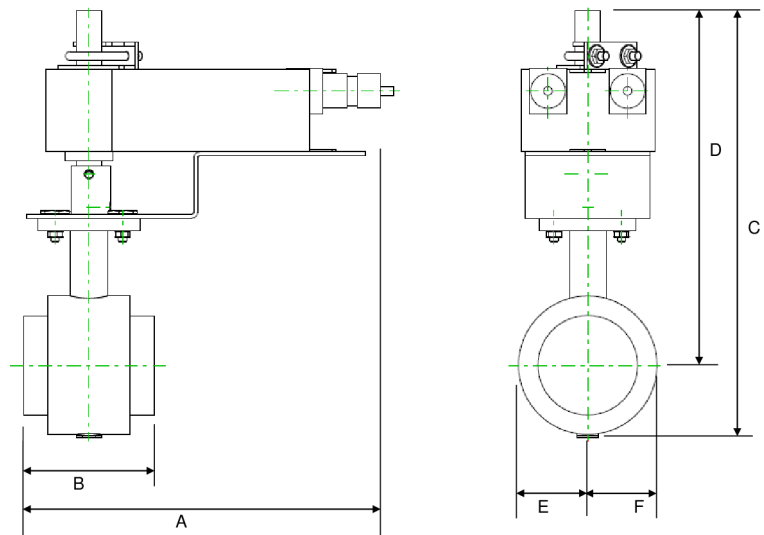
Product features

Flow/Mounting details



Dimensions

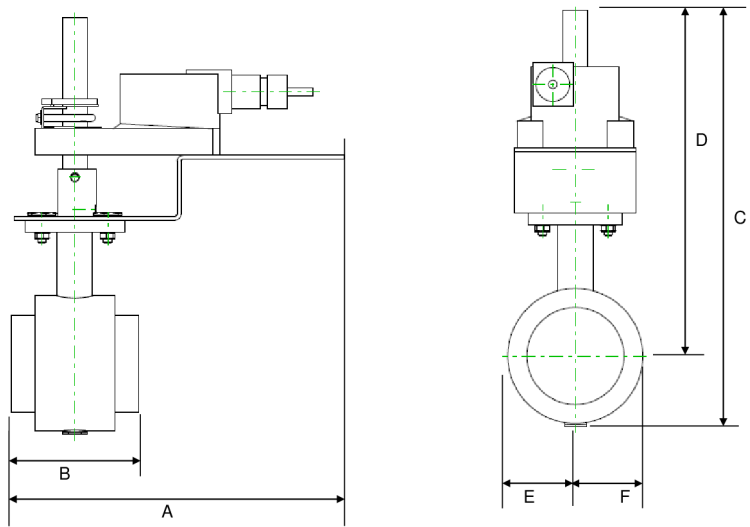
Type	DN	Weight
F650VIC	50	5.3 lb [2.4 kg]



AF

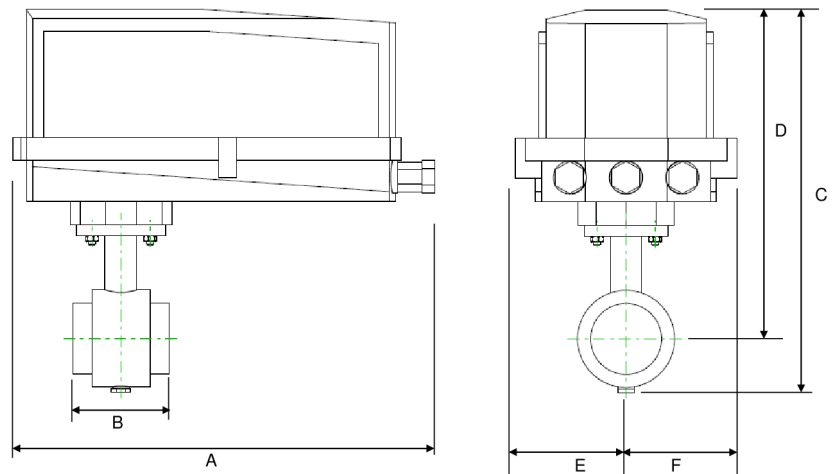
A	B	C	D	E	F
10.7" [273]	3.2" [82]	12.3" [312]	9.8" [248]	1.7" [44]	1.7" [44]

Dimensions



AM

A	B	C	D	E	F
9.8" [249]	3.2" [82]	12.3" [312]	9.8" [248]	1.7" [44]	1.7" [44]



GR N4

A	B	C	D	E	F
14.1" [358]	3.2" [82]	9.5" [241]	11.5" [292]	1.6" [40]	1.6" [40]

MFT/programmable, Spring return, 24 V



5-year warranty




## Technical data

<b>Electrical data</b>	Nominal voltage	AC/DC 24 V
	Nominal voltage frequency	50/60 Hz
	Nominal voltage range	AC 19.2...28.8 V / DC 21.6...28.8 V
	Power consumption in operation	7.5 W
	Power consumption in rest position	3 W
	Transformer sizing	10 VA
	Electrical Connection	18 GA appliance cable, 1 m, 3 m, or 5 m with 1/2" NPT conduit connector, degree of protection NEMA 2 / IP54
Overload Protection	electronic throughout 0...95° rotation	
<b>Functional data</b>	Torque motor	20 Nm
	Operating range Y	2...10 V
	Operating range Y note	4...20 mA w/ ZG-R01 (500 Ω, 1/4 W resistor)
	Operating range Y variable	Start point 0.5...30 V End point 2.5...32 V
	Operating modes optional	variable (VDC, PWM, on/off, floating point)
	Position feedback U	2...10 V
	Position feedback U note	Max. 0.5 mA
	Position feedback U variable	VDC variable
	Direction of motion motor	selectable with switch 0/1
	Direction of motion fail-safe	reversible with cw/ccw mounting
	Manual override	5 mm hex crank (3/16" Allen), supplied
	Angle of rotation	95°
	Angle of rotation note	adjustable with mechanical end stop, 35...95°
	Running Time (Motor)	150 s / 90°
	Running time motor variable	70...220 s
	Running time fail-safe	<20 s
	Override control	MIN (minimum position) = 0% MID (intermediate position) = 50% MAX (maximum position) = 100%
Noise level, motor	40 dB(A)	
Noise level, fail-safe	62 dB(A)	
Position indication	Mechanical	
<b>Safety data</b>	Power source UL	Class 2 Supply
	Degree of protection IEC/EN	IP54
	Degree of protection NEMA/UL	NEMA 2













**Technical data**

<b>Safety data</b>	Enclosure	UL Enclosure Type 2
	Agency Listing	cULus acc. to UL60730-1A/-2-14, CAN/CSA E60730-1:02, CE acc. to 2014/30/EU
	Quality Standard	ISO 9001
	UL 2043 Compliant	Suitable for use in air plenums per Section 300.22(C) of the NEC and Section 602 of the IMC
	Ambient humidity	Max. 95% RH, non-condensing
	Ambient temperature	-22...122°F [-30...50°C]
	Storage temperature	-40...176°F [-40...80°C]
	Servicing	maintenance-free
<b>Weight</b>	Weight	4.6 lb [2.1 kg]
<b>Materials</b>	Housing material	Galvanized steel and plastic housing
<b>Footnotes</b>	*Variable when configured with MFT options.	

**Accessories**

Electrical accessories	Description	Type
	Service tool, with ZIP-USB function, for programmable and communicative Belimo actuators, VAV controller and HVAC performance devices	ZTH US

**Electrical installation**

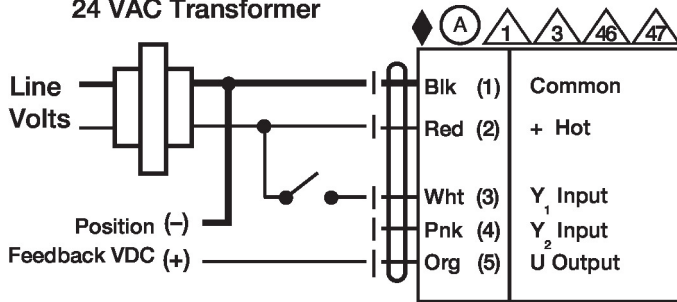
-  **Warning! Live electrical components!**  
During installation, testing, servicing and troubleshooting of this product, it may be necessary to work with live electrical components. Have a qualified licensed electrician or other individual who has been properly trained in handling live electrical components perform these tasks. Failure to follow all electrical safety precautions when exposed to live electrical components could result in death or serious injury.
-  Meets cULus requirements without the need of an electrical ground connection.
-  Actuators with appliance cables are numbered.
-  Provide overload protection and disconnect as required.
-  Actuators may also be powered by DC 24 V.
-  Only connect common to negative (-) leg of control circuits.
-  A 500 Ω resistor (ZG-R01) converts the 4...20 mA control signal to 2...10 V.
-  Control signal may be pulsed from either the Hot (Source) or Common (Sink) 24 V 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.
-  IN4004 or IN4007 diode. (IN4007 supplied, Belimo part number 40155).
-  Actuators may be controlled in parallel. Current draw and input impedance must be observed.
-  Master-Slave wiring required for piggy-back applications. Feedback from Master to control input(s) of Slave(s).

### Electrical installation

#### Wiring diagrams

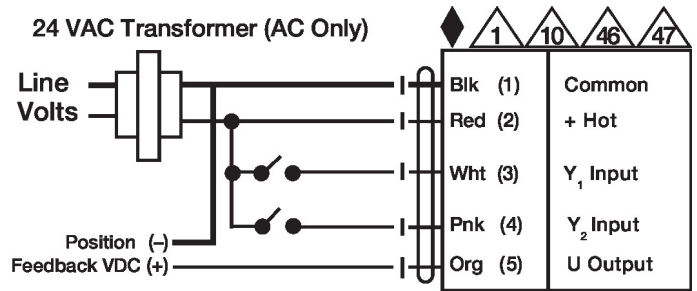
On/Off

24 VAC Transformer



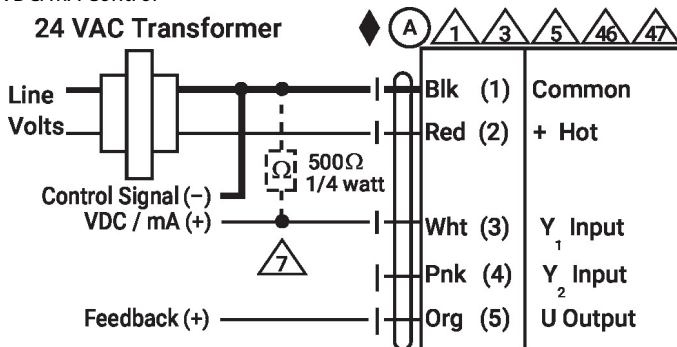
Floating Point

24 VAC Transformer (AC Only)



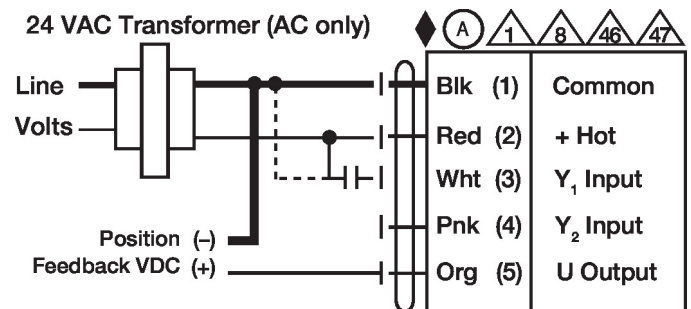
VDC/mA Control

24 VAC Transformer



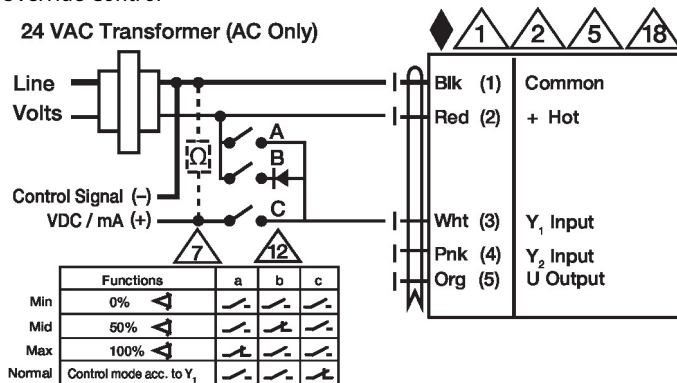
PWM Control

24 VAC Transformer (AC only)



Override Control

24 VAC Transformer (AC Only)



Primary - Secondary

