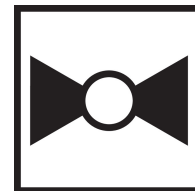




5-year warranty

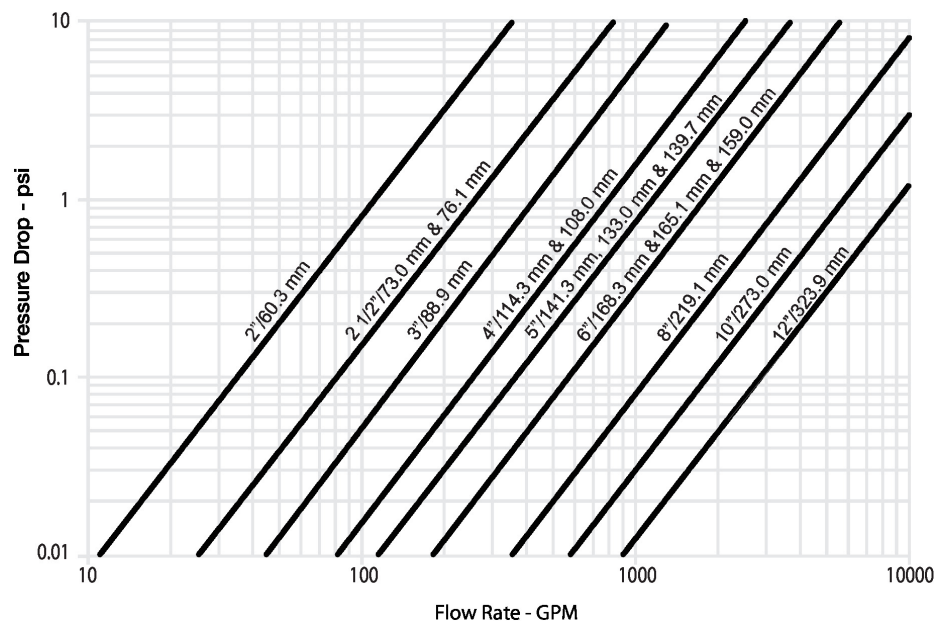


Type overview

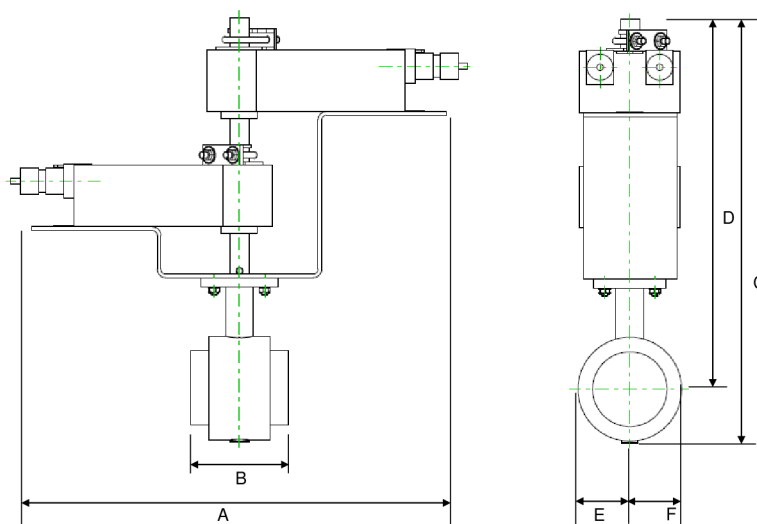
Type	DN
F665VIC	65

Technical data

Functional data	Valve size [mm]	2.5" [65]
	Fluid	chilled or hot water, up to 60% glycol
	Fluid Temp Range (water)	-22...250°F [-30...120°C]
	Body Pressure Rating	ANSI Class Grooved AWWA, 300 psi
	Flow characteristic	modified equal percentage
	Servicing	maintenance-free
	Flow Pattern	2-way
	Leakage rate	0%
	Controllable flow range	90° rotation
	Cv	260
	Maximum Velocity	20 FPS
Materials	Valve body	Ductile cast iron ASTM A536
	Body finish	black alkyd enamel
	Stem	416 stainless steel
	Stem seal	fiberglass with TFE lining
	Seat	EPDM
	Pipe connection	grooved ANSI/AWWA (c606)
	Disc	electroless nickel coated ductile iron
Suitable actuators	Non-Spring	AMB(X) GRCB(X) GMB(X)
	Spring	AFB(X)

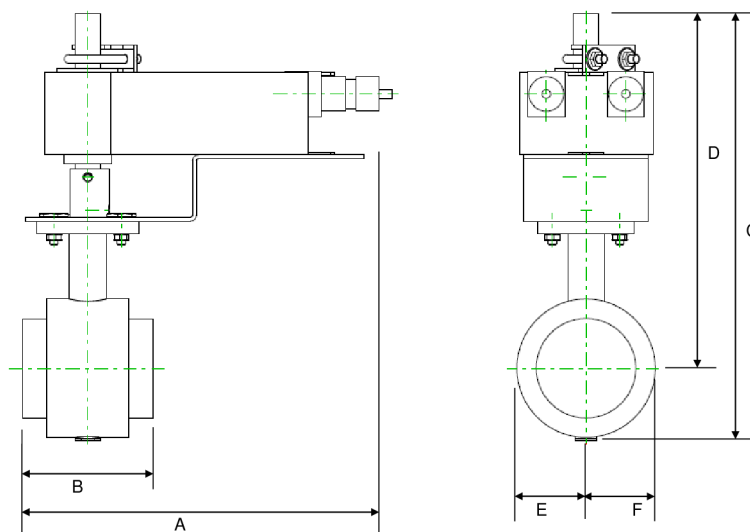
Product features
Flow/Mounting details

Dimensions

Type	DN	Weight
F665VIC	65	4.9 lb [2.2 kg]



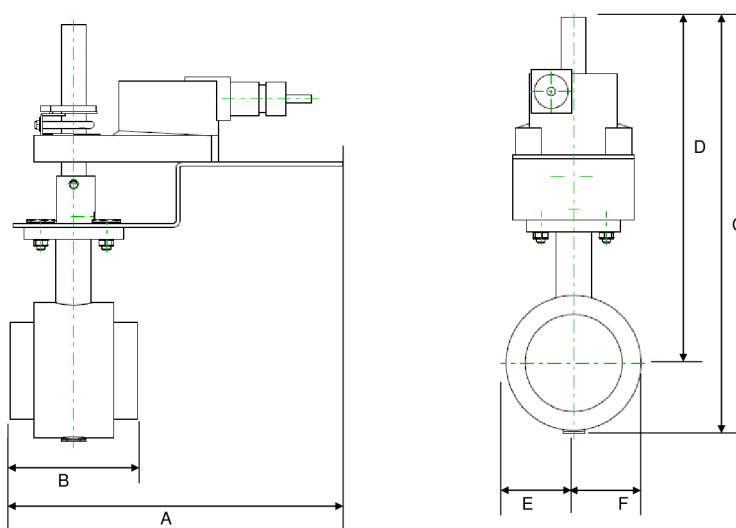
2*AF

A	B	C	D	E	F
17.6" [448]	3.8" [97]	16.4" [416]	14.3" [363]	2.1" [54]	2.1" [54]



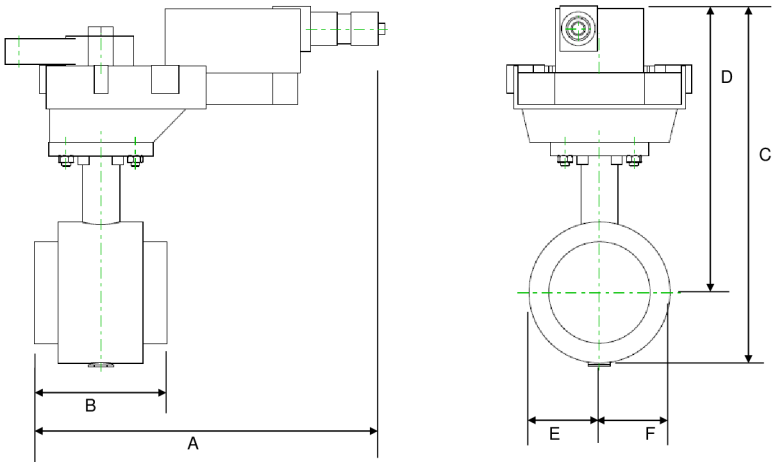
AF

A	B	C	D	E	F
10.7" [273]	3.8" [97]	12.3" [312]	10.2" [260]	2.1" [54]	2.1" [54]



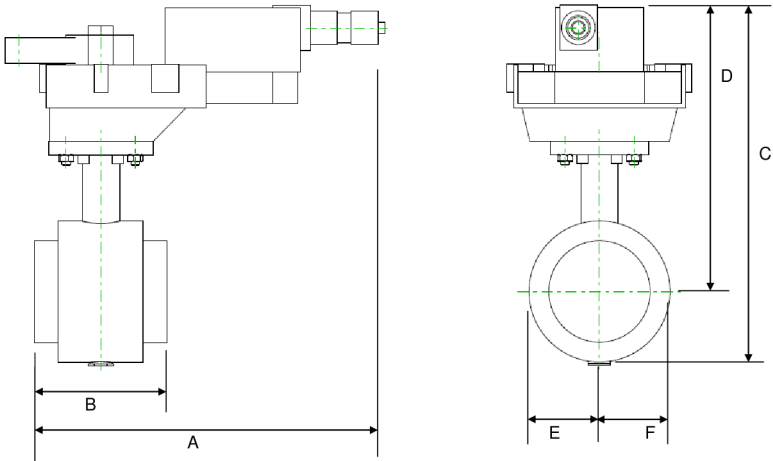
AM

A	B	C	D	E	F
9.9" [251]	3.8" [97]	12.3" [312]	10.2" [260]	2.1" [54]	2.1" [54]



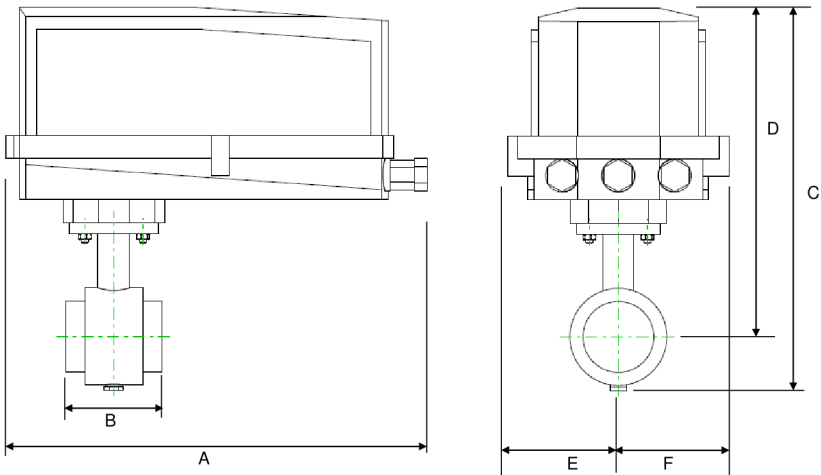
GM

A	B	C	D	E	F
9.9" [251]	3.8" [97]	12.3" [312]	10.2" [260]	2.1" [54]	2.1" [54]



GR

A	B	C	D	E	F
10.8" [275]	3.8" [97]	10.2" [260]	8.1" [206]	2.1" [54]	2.1" [54]



GR N4

A	B	C	D	E	F
14.1" [358]	3.8" [97]	13.6" [345]	11.5" [292]	2.1" [54]	2.1" [54]



5-year warranty


MFT

Technical data

Electrical data	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
	Auxiliary switch	2x SPDT, 1 mA...3 A (0.5 A inductive), DC 5 V...AC 250 V, one set at 10°, one adjustable 10...90°
	Switching capacity auxiliary switch	1 mA...3 A (0.5 A inductive), DC 5 V...AC 250 V
	Electrical Connection	(2) 18 GA appliance cables, 1 m, 3 m or 5 m, with or without 1/2" NPT conduit connectors
Functional data	Overload Protection	electronic throughout 0...95° rotation
	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
Safety data	Power source UL	Class 2 Supply
	Degree of protection IEC/EN	IP54
	Degree of protection NEMA/UL	NEMA 2
	Enclosure	UL Enclosure Type 2

Safety data	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
Weight	Weight	5.0 lb [2.3 kg]
Materials	Housing material	Galvanized steel and plastic housing

Footnotes *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

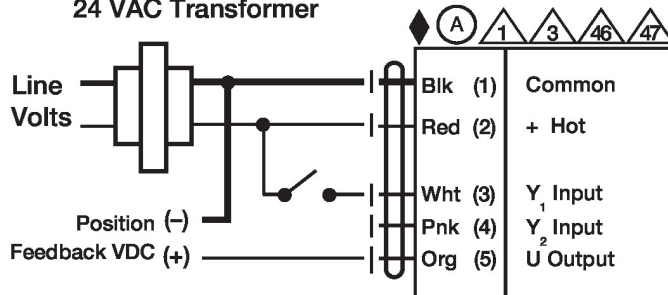
Electrical installation

-  **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.
-  Apply only AC line voltage or only UL-Class 2 voltage to the terminals of auxiliary switches. Mixed or combined operation of line voltage/safety extra low voltage is not allowed.
-  Provide overload protection and disconnect as required.
-  Actuators may also be powered by DC 24 V.
-  Two built-in auxiliary switches (2x SPDT), for end position indication, interlock control, fan startup, etc.
-  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).

Wiring diagrams

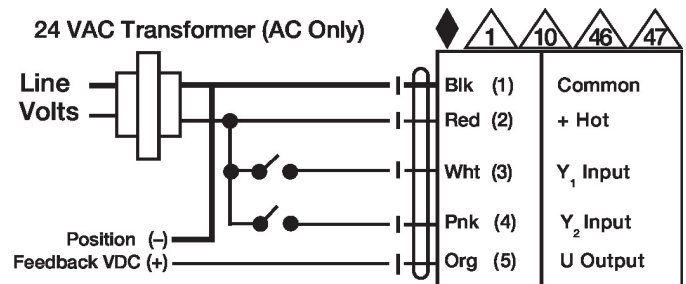
On/Off

24 VAC Transformer



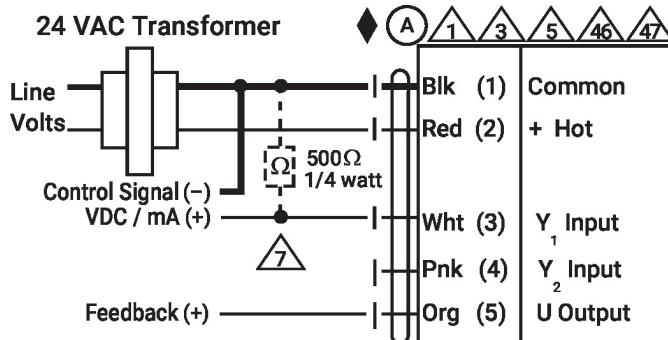
Floating Point

24 VAC Transformer (AC Only)



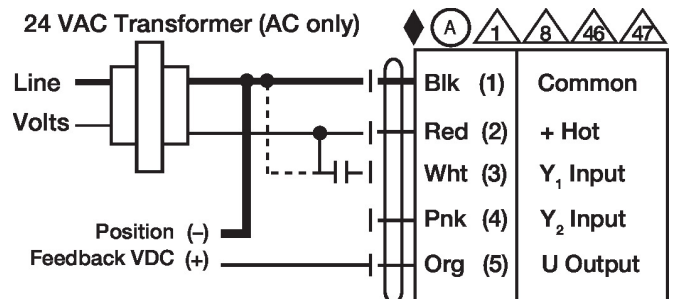
VDC/mA Control

24 VAC Transformer



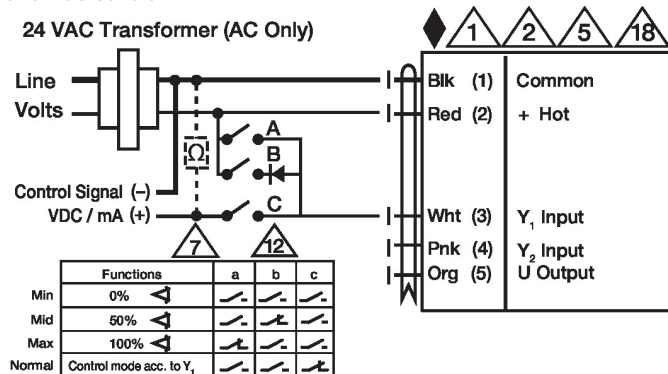
PWM Control

24 VAC Transformer (AC only)

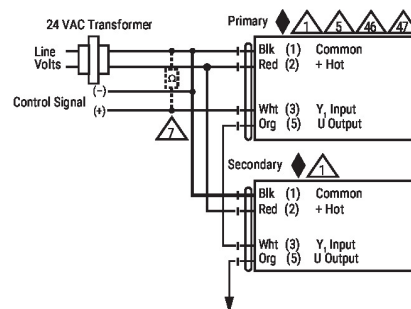


Override Control

24 VAC Transformer (AC Only)



Primary - Secondary



PWM Control

24 VAC Transformer (AC only)

