

5-year warranty

**Type overview**

<b>Type</b>	<b>DN</b>
F7100-300SHP	100

**Technical data**

<b>Functional data</b>	Valve size [mm]	4" [100]
	Fluid	chilled or hot water, up to 60% glycol
	Fluid Temp Range (water)	-22...400°F [-30...204°C]
	Body Pressure Rating	ANSI Class 300
	Close-off pressure Δps	285 psi
	Flow characteristic	modified linear, unidirectional
	Servicing	maintenance-free
	Flow Pattern	3-way Mixing/Diverting
	Leakage rate	0%
	Controllable flow range	quarter turn, mechanically limited
	Cv	451
	Maximum Velocity	32 FPS
	Lug threads	3/4-10 UNC
<b>Materials</b>	Valve body	Carbon steel full lug (ASME B16.34)
	Stem	17-4 PH stainless steel
	Seat	RPTFE
	Pipe connection	ASME/ANSI class 300 flange
	Bearing	glass backed PTFE
	Disc	316 stainless steel
<b>Suitable actuators</b>	Non-Spring	(2*GMB(X)) PRB(X)
	Electrical fail-safe	(2*GKB(X)) PKRB(X)

**Safety notes**



- WARNING: This product can expose you to lead which is known to the State of California to cause cancer and reproductive harm. For more information go to [www.p65warnings.ca.gov](http://www.p65warnings.ca.gov)

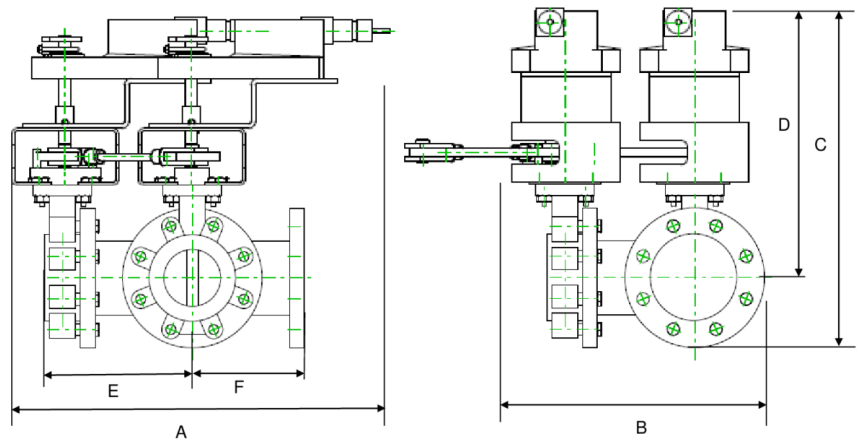
Product features

Flow/Mounting details

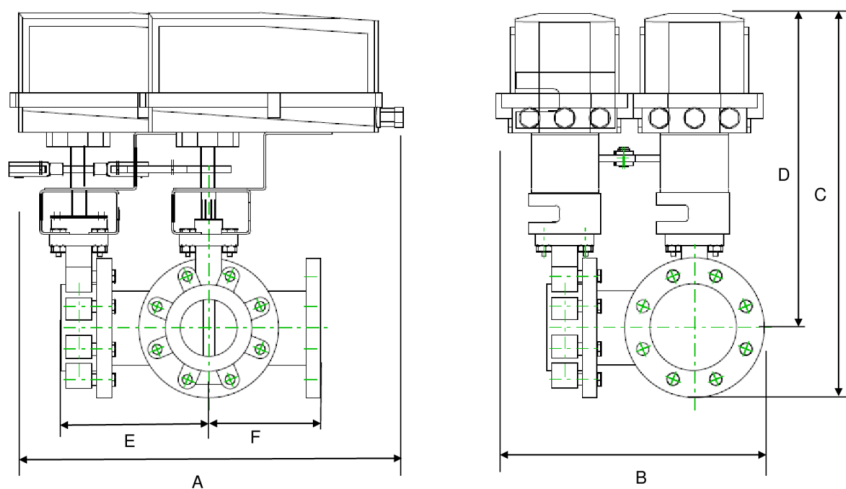


Dimensions

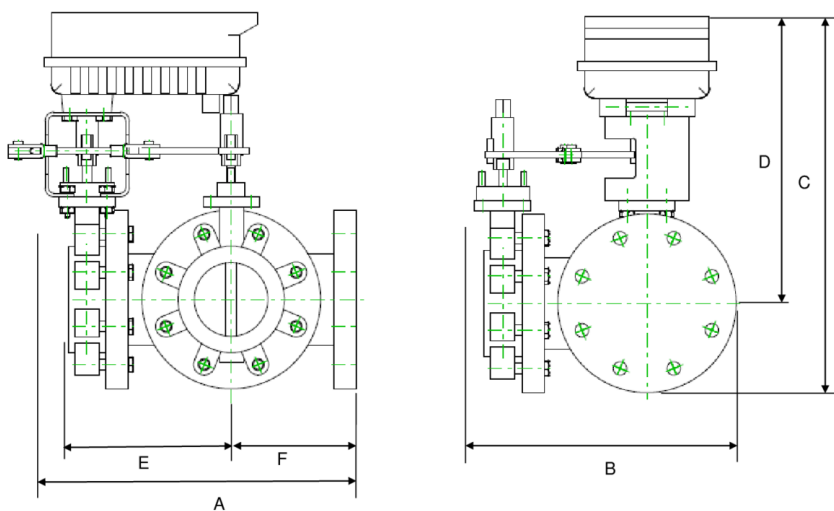
Type	DN	Weight
F7100-300SHP	100	147.7 lb [67 kg]



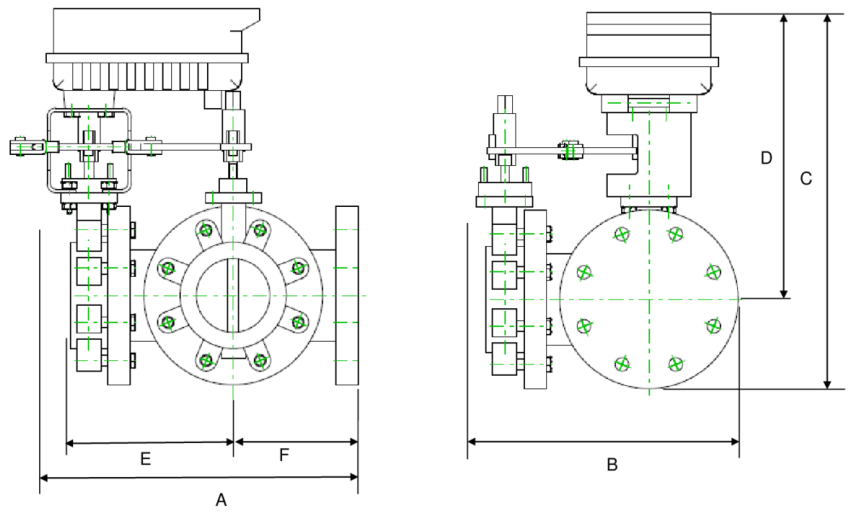
A	B	C	D	E	F	Number of Bolt Holes
18.9" [480]	13.1" [332]	19.0" [483]	14.0" [355]	8.6" [218]	6.5" [165]	8



A	B	C	D	E	F	Number of Bolt Holes
22.2" [564]	14.1" [359]	20.3" [515]	15.3" [388]	9.1" [232]	7.0" [178]	8



A	B	C	D	E	F	Number of Bolt Holes
20.1" [510]	14.1" [359]	18.3" [464]	13.3" [338]	9.1" [232]	7.0" [178]	8



A	B	C	D	E	F	Number of Bolt Holes
19.5" [495]	14.1" [359]	23.3" [591]	18.3" [464]	9.1" [232]	7.0" [178]	8
A	B	C	D	E	F	Number of Bolt Holes
19.5" [495]	14.1" [359]	21.0" [533]	16.0" [406]	9.1" [232]	7.0" [178]	8



2-year warranty



Technical data

<b>Electrical data</b>	Nominal voltage	AC/DC 24 V
	Nominal voltage frequency	50/60 Hz
	Power consumption in operation	8 W
	Power consumption in rest position	2.5 W
	Transformer sizing	22 VA (class 2 power source)
	Electrical Connection	Terminal blocks
	Overload Protection	electronic throughout 0...95° rotation
<b>Functional data</b>	Direction of motion motor	selectable with switch 0/1
	Manual override	external push button
	Angle of rotation	Max. 95°
	Angle of rotation note	adjustable with mechanical stop
	Running Time (Motor)	35 s / 90°
	Running time motor note	constant, independent of load
	Noise level, motor	45 dB(A)
Position indication	Mechanically, 5...20 mm stroke	
<b>Safety data</b>	Degree of protection IEC/EN	IP66
	Degree of protection NEMA/UL	NEMA 4X
	Enclosure	UL Enclosure Type 4X
	Agency Listing	cULus acc. to UL60730-1A/-2-14, CAN/CSA E60730-1:02, CE acc. to 2014/30/EU and 2014/35/EU
	Quality Standard	ISO 9001
	Ambient temperature	-22...122°F [-30...50°C]
	Ambient temperature note	-40...50°C for actuator with integrated heating
	Storage temperature	-40...176°F [-40...80°C]
	Ambient humidity	Max. 100% RH
Servicing	maintenance-free	
<b>Materials</b>	Housing material	Die cast aluminium and plastic casing
<b>Footnotes</b>	†Rated Impulse Voltage 800V, Type action 1, Control Pollution Degree 3.	

Accessories

Electrical accessories	Description	Type
	Battery backup system, for non-spring return models	NSV24 US
	Battery, 12 V, 1.2 Ah (two required)	NSV-BAT
	Auxiliary switch 1 x SPDT add-on	S1A
	Auxiliary switch 2 x SPDT add-on	S2A
	Feedback potentiometer 140 Ω add-on, grey	P140A GR
	Feedback potentiometer 1 kΩ add-on, grey	P1000A GR
	Feedback potentiometer 10 kΩ add-on, grey	P10000A GR
	Feedback potentiometer 2.8 kΩ add-on, grey	P2800A GR
	Feedback potentiometer 500 Ω add-on, grey	P500A GR
	Feedback potentiometer 5 kΩ add-on, grey	P5000A GR
Factory add-on option only	Description	Type
	Heater, with adjustable thermostat	N4 Heater Add-on 24V (-H)

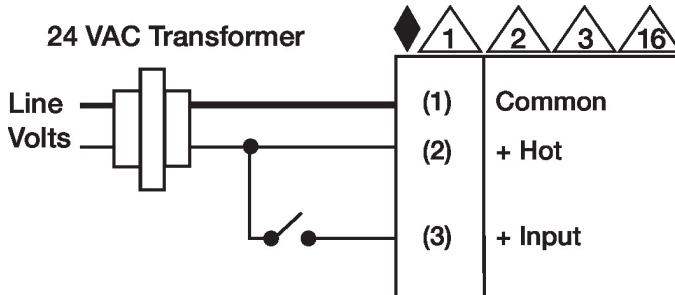
Electrical installation

**✂ INSTALLATION NOTES**

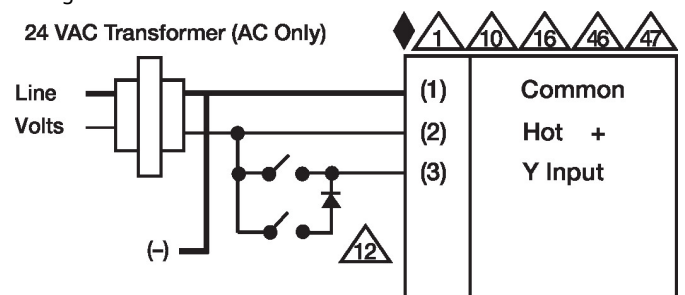
- (A)** Actuators with appliance cables are numbered.
- 1** Provide overload protection and disconnect as required.
- 3** Actuators may also be powered by DC 24 V.
- 6** Actuators Hot wire must be connected to the control board common. Only connect common to neg. (-) leg of control circuits. Terminal models (-T) have no-feedback.
- 10** 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.
- 11** Actuators may be connected in parallel if not mechanically linked. Power consumption and input impedance must be observed.
- 12** IN4004 or IN4007 diode. (IN4007 supplied, Belimo part number 40155).
- 16** Actuators are provided with a numbered screw terminal strip instead of a cable.
- 46** Actuators may be controlled in parallel. Current draw and input impedance must be observed.
- 47** Master-Slave wiring required for piggy-back applications. Feedback from Master to control input(s) of Slave(s).
- ◆** 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.

Wiring diagrams

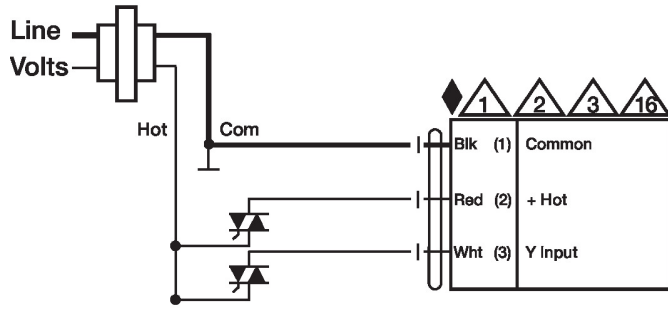
On/Off



Floating Point



Floating Point - Triac Source  
24 VAC Transformer



Floating Point - Triac Sink  
24 VAC Transformer

