

Butterfly Valve with Lug types

- Disc 304 stainless steel
- Bubble tight shut-off
- Resilient seat
- Valve face-to-face dimensions comply with API 609 & MSS-SP-67
- Completely assembled and tested, ready for installation



2-year warranty

Type overview

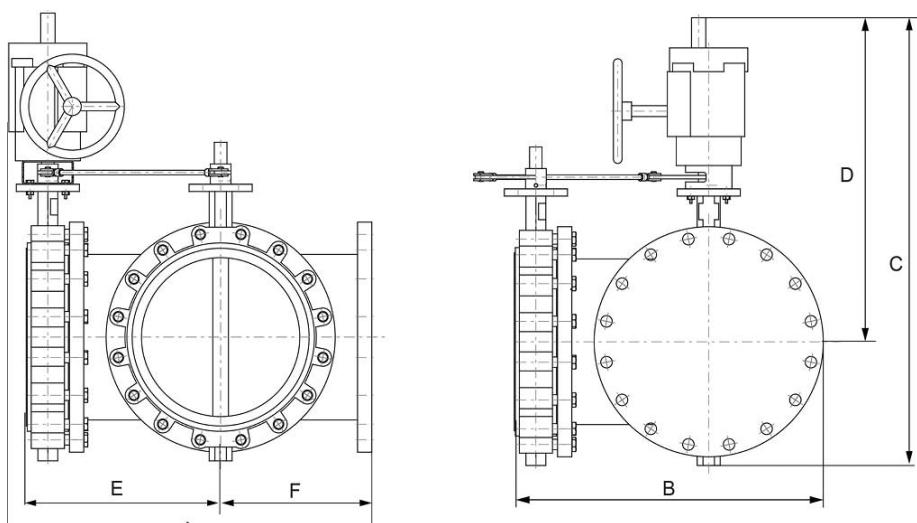
Type	DN
F7450HD	450

Technical data

Functional data	
Valve size [mm]	18" [450]
Fluid	chilled or hot water, up to 60% glycol
Fluid Temp Range (water)	-22...250°F [-30...120°C]
Body Pressure Rating	ANSI Class Consistent with 125, 232 psi CWP
Close-off pressure Δps	200 psi
Flow characteristic	modified linear
Servicing	maintenance-free
Flow Pattern	3-way Mixing/Diverting
Leakage rate	0%
Controllable flow range	90° rotation
Cv	21705
Maximum Velocity	12 FPS
Lug threads	1-8 UNC
Materials	
Valve body	Ductile cast iron ASTM A536
Body finish	epoxy powder coating (blue RAL 5002)
Stem	416 stainless steel
Seat	EPDM
Pipe connection	for use with ANSI class 125/150 flanges
Bearing	RPTFE
Disc	304 stainless steel
Gear operator materials	Gears - hardened steel
Suitable actuators	
Non-Spring	SY8

Dimensions

Type	DN	Weight
F7450HD	450	1080.3 lb [490 kg]



Valve with SY8 Actuator

A	B	C	D	E	F	J	Number of Bolt Holes
39.9" [1013]	33.6" [854]	47.7" [1212]	35.6" [903]	21.3" [540]	16.5" [419]	8.9" [225]	16

MFT/programmable, Non fail-safe, 230 V



2-year warranty

Technical data

	Electrical data	
Nominal voltage	AC 230 V	
Nominal voltage frequency	50/60 Hz	
Nominal voltage range	AC 207...253 V	
Transformer sizing	368 VA	
Current consumption	1.6 A	
Auxiliary switch	2x SPDT, 1 mA...5 A (3 A inductive), DC 5 V...AC 250 V, 1 x 3° / 1 x 87°	
Switching capacity auxiliary switch	1 mA...5 A (3 A inductive), DC 5 V...AC 250 V	
Electrical Connection	Terminal blocks	
Overload Protection	thermally protected 135°C cut-out	
Internal Humidity Control	resistive heating element	
	Functional data	
Torque motor	1500 Nm	
Operating range Y	2...10 V	
Input impedance	100 kΩ	
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	
Manual override	hand wheel	
Angle of rotation	90°	
Running Time (Motor)	79 s	
Duty cycle value	75%	
Noise level, motor	45 dB(A)	
Position indication	top mounted domed indicator	
	Safety data	
Degree of protection IEC/EN	IP66/67	
Degree of protection NEMA/UL	NEMA 4X	
Enclosure	UL Enclosure Type 4X	
Agency Listing	ISO, CE, cCSAus	
Quality Standard	ISO 9001	
Ambient humidity	Max. 100% RH	
Ambient temperature	-22...149°F [-30...65°C]	
Storage temperature	-40...176°F [-40...80°C]	
Servicing	maintenance-free	
	Weight	
Weight	77 lb [35 kg]	

Technical data

Materials	Housing material	die cast aluminium
	Gear train	high alloy steel gear sets, self locking

Product features

Application	SY Series actuators are fractional horsepower devices, and utilize full-wave power supplies. Observe wire sizing and transformer sizing requirements. Proportional models CANNOT be connected to Belimo direct coupled (AF, AM, GM...etc) actuator power supplies or any type of half-wave device. You MUST use a separate, dedicated transformer or power supply to power the SY actuator. Please do not connect other automation equipment to the dedicated SY supply source. You MUST use four wires (plus a ground) to control a proportional control SY actuator (See SY Wiring Section).
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Accessories

	Gateways	Description	Type
	Gateway MP to BACnet MS/TP		UK24BAC
	Gateway MP to Modbus RTU		UK24MOD
	Gateway MP to LonWorks		UK24LON
	Electrical accessories	Description	Type
	Local electric disconnect for SY4...12 series actuator, AC 120 V, MFT		HOA-120VMFT
	Service tool, with ZIP-USB function, for programmable and communicative Belimo actuators, VAV controller and HVAC performance devices		ZTH US
	Battery backup system for SY7...12 series actuator, AC 120 V, on/off		EXT-NSV-B05-120
	Tools	Description	Type
	Connecting cable 10 ft [3 m], A: RJ11 6/4 ZTH EU, B: 3-pin Weidmüller and supply connection		ZK4-GEN
	Service tool, with ZIP-USB function, for programmable and communicative Belimo actuators, VAV controller and HVAC performance devices		ZTH US

Electrical installation

 **INSTALLATION NOTES**

-  Do not change sensitivity or dip switch setting with power applied.
-  Power supply Common/Neutral and Control Signal "-"wiring to a common is prohibited. Terminals 4 and 6 need to be wired separately.
-  Isolation relays must be used in parallel connection of multiple actuators using a common control signal inputs. The relays should be DPDT.
-  Isolation relays are required in parallel applications. The reason parallel applications need isolation relays is that the motor uses two sets of windings, one for each direction. When one is energized to turn the actuator in a specific direction a voltage is generated in the other due to the magnetic field created from the first. It's called back EMF. This is not an issue with one actuator because the voltage generated in the second winding isn't connected to anything so there is no flow. On parallel applications without isolation, this EMF voltage energizes the winding it is connected to on the other actuators in the system, the actuators are trying to turn in both directions at once. The EMF voltage is always less than the supply voltage due to the resistance of the windings, so while the actuator still turns in the commanded direction, the drag from the other reduces the torque output and causes overheating.

 **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.

Electrical installation

Failure to follow all electrical safety precautions when exposed to live electrical components could result in death or serious injury.

Wiring diagrams

