

Butterfly Valve with

- 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



5-year warranty

Picture may differ from product

Type overview

Type	DN
F7100L	100

Technical data

Functional data	Valve size [mm]	
Fluid	4" [100]	
Fluid	Chilled and hot water, water with glycol up to max. 60% vol.	
Fluid temperature	-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	equal percentage	
Leakage rate	0% leakage	
Pipe connection	Flange for use with ASME/ANSI class 125/150	
Servicing	maintenance-free	
Flow Pattern	3-way	
Controllable flow range	90° rotation	
Cv	798	
Maximum Velocity	12 FPS	
Lug threads	5/8-11 UNC	
Materials		
Valve body	Ductile cast iron GGG40	
Valve plug	Stainless steel AISI 304 (CF-8, 1.4308)	
Stem	Stainless steel AISI 420 (1.4021)	
Stem seal	EPDM O-ring	
Stem bearing	Bronze, steel, PTFE	
Seat	EPDM	

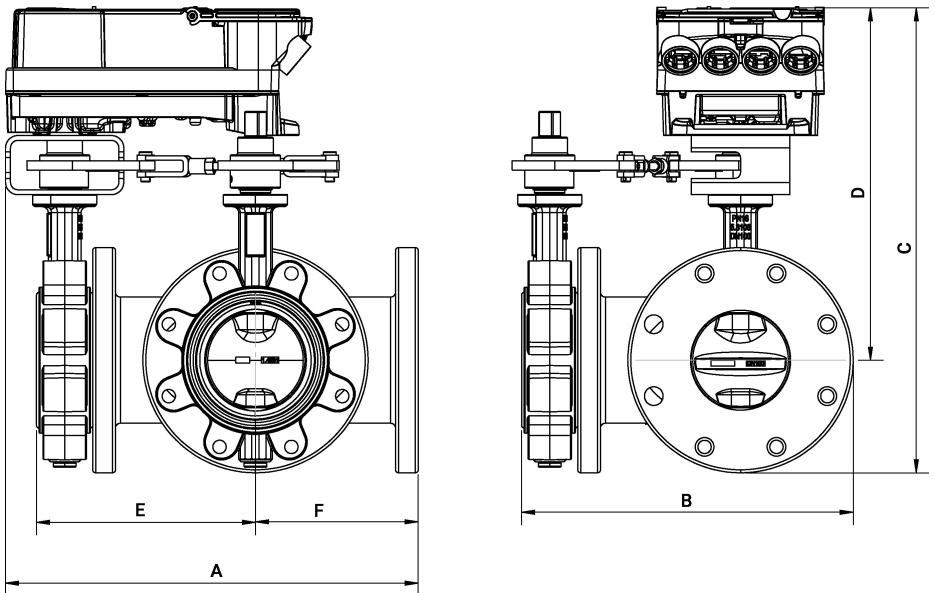
Accessories

Mechanical accessories	Description	Type
	Hand crank for JR actuator	ZJR20

Dimensions

Type	DN	Weight
F7100L	100	88.9 lb [40.3 kg]

Dimensions



A	B	C	D	E	F	Number of Bolt Holes
16.4" [416]	13.3" [337]	18.5" [470]	14.0" [355]	8.7" [221]	6.5" [165]	8

Further documentation

- The complete product range for water applications
- Data sheets for actuators
- Installation instructions for actuators and/or butterfly valves
- General notes for project planning

MFT/programmable, Electrical fail-safe,
24...240 V



5-year warranty



Technical data

Electrical data	Nominal voltage	AC 24...240 V / DC 24...125 V
	Nominal voltage frequency	50/60 Hz
	Nominal voltage range	AC 19.2...264 V / DC 19.2...137.5 V
	Power consumption in operation	52 W
	Power consumption in rest position	9 W
	Transformer sizing	with 24 V 54 VA / with 240 V 68 VA
	Auxiliary switch	2x SPDT, 1 mA...3 A (0.5 A inductive), DC 5 V...AC 250 V (II, reinforced insulation), 1x 10° / 1x 0...90° (default setting 85°)
	Switching capacity auxiliary switch	1 mA...3 A (0.5 A inductive), DC 5 V...AC 250 V (II, reinforced insulation)
	Electrical Connection	Terminal blocks, (PE) Ground-Screw
	Overload Protection	electronic throughout 0...90° rotation
Data bus communication	Communicative control	BACnet MS/TP Modbus RTU MP-Bus
Functional data	Operating range Y	2...10 V
	Operating range Y note	4...20 mA
	Input impedance	100 kΩ for 2...10 V (0.1 mA), 500 Ω for 4...20 mA, 1500 Ω for On/Off
	Operating range Y variable	Start point 0.5...30 V End point 2.5...32 V
	Operating modes optional	variable (VDC, on/off, floating point)
	Position feedback U	2...10 V
	Position feedback U note	Max. 0.5 mA
	Position feedback U variable	VDC variable
	Setting Fail-Safe Position	0...100%, adjustable with Belimo Assistant App (default setting 0%)
	Bridging time (PF)	2 s
	Bridging time (PF) variable	0...10 s
	Pre-charging time	5...20 s
	Direction of motion motor	reversible with app
	Direction of motion fail-safe	reversible with app
	Manual override	7 mm hex crank, supplied
	Angle of rotation	90°
	Running Time (Motor)	35 s / 90°
	Running time motor variable	30...120 s

Technical data

Functional data	Running time fail-safe	<30 s
	Noise level, motor	68 dB(A)
	Noise level, fail-safe	62 dB(A)
	Position indication	top mounted domed indicator
Safety data	Power source UL	Class 2 Supply
	Degree of protection IEC/EN	IP66/67
	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 humidity	Max. 100% RH
	Ambient temperature	-22...122°F [-30...50°C]
	Servicing	maintenance-free
Weight	Weight	15 lb [6.6 kg]
Materials	Housing material	Die cast aluminium and plastic casing

Product features

Default/Configuration	Default parameters for DC 2...10 V applications of the PKR..-MFT actuator are assigned during manufacturing. If required, different parameters of the actuator can be ordered. These parameters are variable and can be modified by factory pre-set, the handheld ZTH US or using the Belimo App on a smart phone with Near Field Communications (NFC) programming.
Application	PR Series valve actuators are designed with an integrated linkage and visual position indicators. For outdoor applications, the installed valve must be mounted with the actuator at or above horizontal. For indoor applications the actuator can be in any location including directly under the valve.
Operation	The PR series actuator provides 90° of rotation and a visual indicator shows the position of the valve. The PR Series actuator uses a low power consumption brushless DC motor and is electronically protected against overload. A universal power supply is furnished to connect supply voltage in the range of AC 24...240 V and DC 24...125 V. Included is a smart heater with thermostat to eliminate condensation. Two auxiliary switches are provided; one set at 10° open and the other is field adjustable. Running time is field adjustable from 30...120 seconds by using the Near Field Communication (NFC) app and a smart phone.
	†Use 60°C/75°C copper wire size range 12...28 AWG, stranded or solid. Use flexible metal conduit. Push the listed conduit fitting device over the actuator's cable to butt against the enclosure. Screw in conduit connector. Jacket the actuators input wiring with listed flexible conduit. Properly terminate the conduit in a suitable junction box. Rated impulse Voltage 4000 V. Type of action 1. Control pollution degree 3.
Bridging time	Power failures can be bridged up to a maximum of 10 s. In the event of a power failure, the actuator will remain stationary in accordance with the set bridging time. If the power failure is greater than the set bridging time, the actuator will move into the selected fail-safe position. The bridging time set at the factory is 2 s. It can be modified on site in operation by means of the Belimo service tool MFT-P. Settings: The rotary knob must not be set to the "PROG FAIL-SAFE" position! For retroactive adjustments of the bridging time with the Belimo service tool MFT-P or with the ZTH EU adjustment and diagnostic device only the values need to be entered.

Product features

Factory settings	Default parameters for DC 2...10 V applications of the PKR..-MFT actuator are assigned during manufacturing. If required, different parameters of the actuator can be ordered. These parameters are variable and can be modified by factory pre-set, the handheld ZTH US or using the Belimo App on a smart phone with Near Field Communications (NFC) programming.
-------------------------	---

Accessories

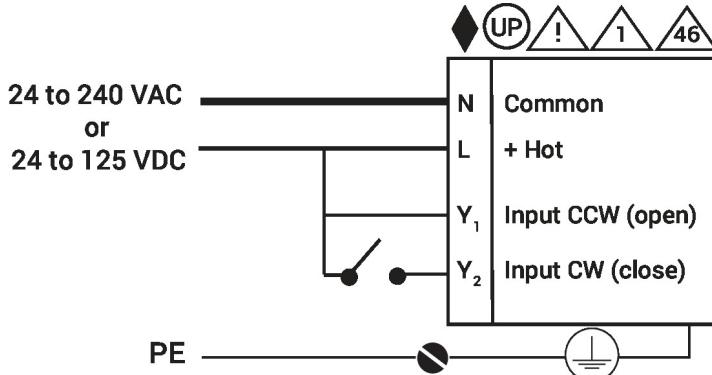
	Description	Type
Gateways	Gateway MP to BACnet MS/TP Gateway MP to Modbus RTU Gateway MP to LonWorks	UK24BAC UK24MOD UK24LON
Electrical accessories	Description	Type
	Service tool, with ZIP-USB function, for programmable and communicative Belimo actuators, VAV controller and HVAC performance devices	ZTH US
Mechanical accessories	Description	Type
	Hand crank for PR, PKR, PM	ZG-HND PR
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

- ◆ Meets cULus requirements without the need of an electrical ground connection.
- ◆ (UP) Universal Power Supply (UP) models can be supplied with 24...240 V.
- ◆ Disconnect power.
- ◆ Provide overload protection and disconnect as required.
- ◆ 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.
- ◆ Actuators may be controlled in parallel. Current draw and input impedance must be observed.
- ◆ **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.

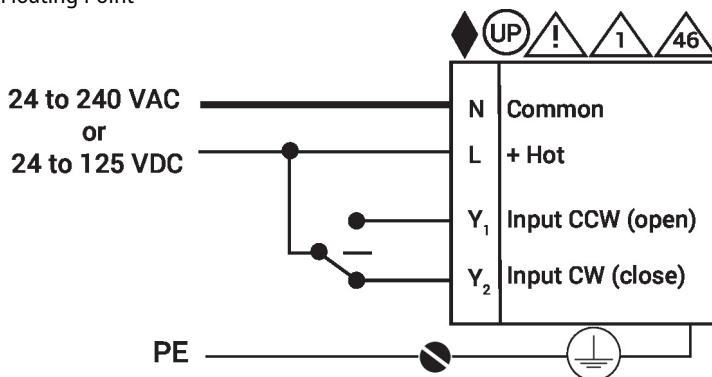
Wiring diagrams

On/Off

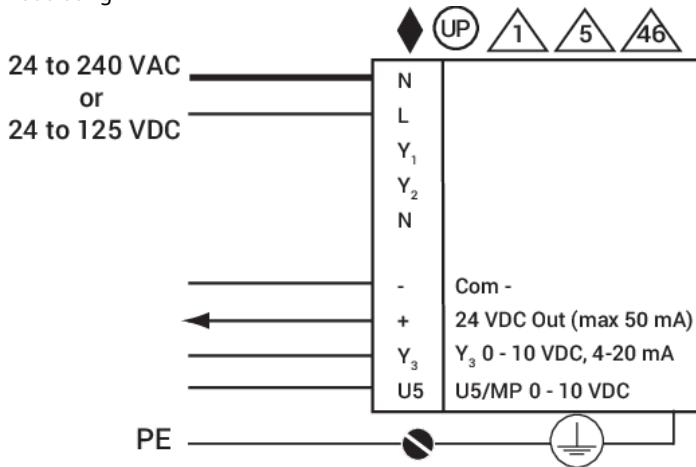


Wiring diagrams

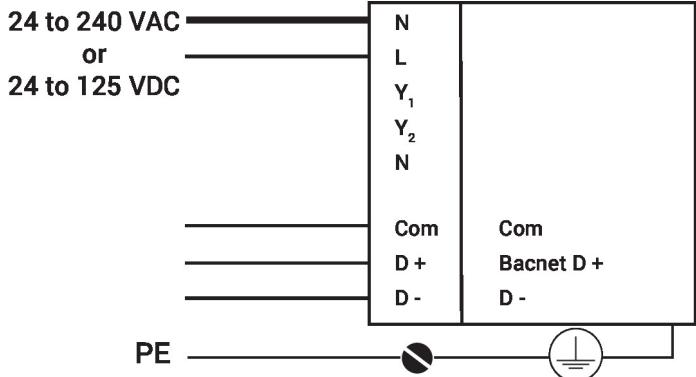
Floating Point



Modulating



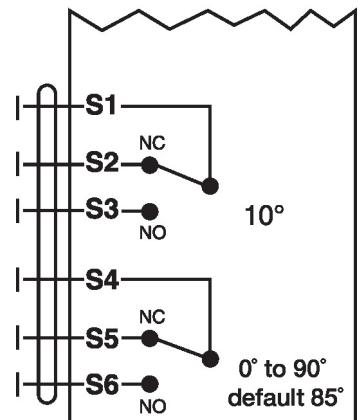
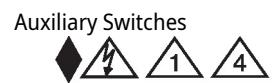
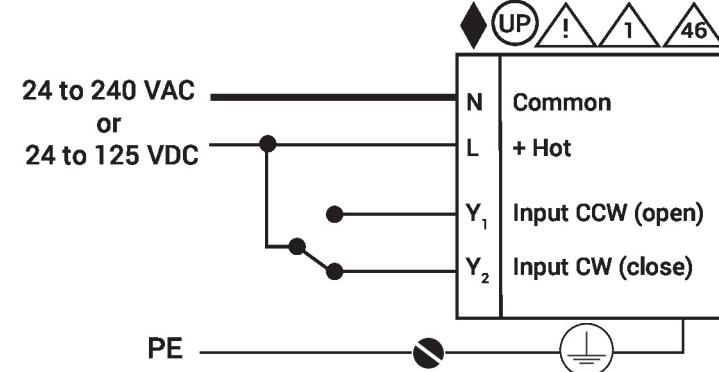
BACnet



Electrical installation

Wiring diagrams

On/Off



Temperature Sensors

