

Pressure Independent Flow limiting valve, 2-way, Internal thread NPT (female)

- For closed water systems
- For water-side On/Off control of the fan coil and of chilled ceilings



Picture may differ from product

Type overview

Type	DN	V'nom [l/s]	V'nom [l/h]	V'nom [m³/h]	PN
Z2050QFL-C	1/2" [15]	0.81	290	0.29	25
Z2050QFL-D	1/2" [15]	0.13	470	0.47	25
Z2050QFL-E	1/2" [15]	0.18	650	0.65	25
Z2050QFL-F0	1/2" [15]	0.26	940	0.94	25
Z2050QFL-F	1/2" [15]	0.36	1300	1.3	25
Z2075QFL-F6	3/4" [20]	0.33	1200	1.2	25
Z2075QFL-G0	3/4" [20]	0.42	1500	1.5	25
Z2075QFL-G	3/4" [20]	0.52	1900	1.9	25
Z2075QFL-H0	3/4" [20]	0.65	2350	2.35	25
Z2100QFL-H	1" [25]	0.81	2900	2.9	25
Z2100QFL-J	1" [25]	1.00	3600	3.6	25

Technical data

Functional data	Fluid	Water
	Fluid temperature	36...176°F [2...80°C]
	Differential pressure	20...280 kPa
	Close-off pressure Δp_s	520 kPa
	Differential pressure Δp_{max}	280 kPa
	Differential pressure note	50 kPa for low-noise operation
	Pressure stability	±5% (with a pressure value of 100...280 kPa)
	Leakage rate	0% leakage, leakage rate A (EN 12266-1)
	Flow setting	See installation instruction
	Angle of rotation	90°
	Pipe connection	Internal thread NPT (female)
	Installation orientation	upright to horizontal (in relation to the spindle)
	Servicing	maintenance-free
Materials	Valve body	forged brass
	Valve plug	chrome-plated brass
	Stem	brass
	Stem seal	EPDM O-ring
	Seat	PTFE, O-Ring EPDM
	Pipe connection	NPT female ends
Terms	Abbreviations	V'nom = nominal flow with valve completely opened

Safety notes



- The valve has been designed for use in stationary heating, ventilation and air-conditioning systems and must not be used outside the specified field of application, especially in aircraft or in any other airborne means of transport.
- Only authorized specialists may carry out installation. All applicable legal or institutional installation regulations must be complied with during installation.
- The valve does not contain any parts that can be replaced or repaired by the user.
- When back flushing the valve, the differential pressure should not exceed 150 kPa.
- The valve may not be disposed of as household refuse. All locally valid regulations and requirements must be observed.
- When determining the flow rate characteristic of controlled devices, the recognised directives must be observed.

Product features

Operating mode The on/off ball valve is adjusted by a rotary actuator. The actuator is controlled by an on/off signal. The ball valve opens counterclockwise and closes clockwise.

Constant flow volume With a differential pressure of 20...280 kPa, a constant flow volume is achieved thanks to the integrated flow limiter. Even with pressure variations, the flow rate remains constant when open to an angle of 90° and ensures a steady control.

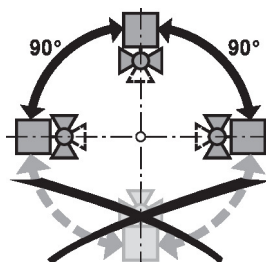


Accessories

Mechanical accessories	Description	Type
	Stem extension CQ	ZCQ-E

Installation notes

Permissible installation orientation The ball valve can be installed upright to horizontal. The ball valve may not be installed in a hanging position, i.e. with the stem pointing downwards.



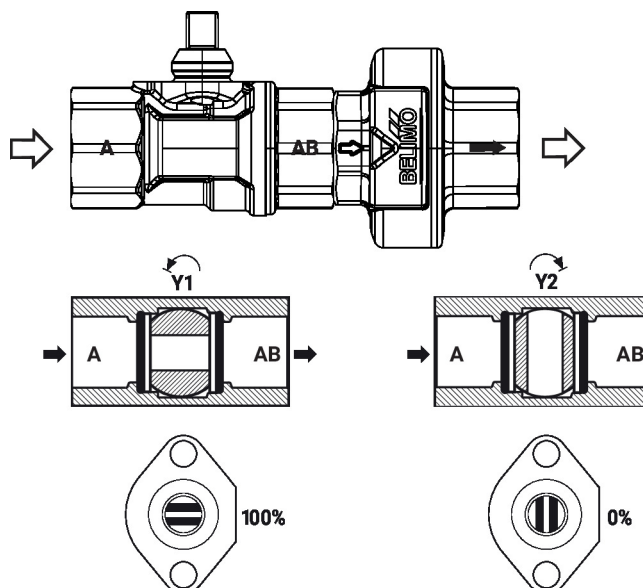
Installation in return Installation in the return is recommended.

Water quality requirements The water quality requirements specified in VDI 2035 must be adhered to.
Belimo valves are regulating devices. For the valves to function correctly in the long term, they must be kept free from particle debris (e.g. welding beads during installation work). The installation of a suitable strainer is recommended.

Servicing Ball valves and rotary actuators are maintenance-free.
Before any service work on the control element is carried out, it is essential to isolate the rotary actuator from the power supply (by unplugging the electrical cable if necessary). Any pumps in the part of the piping system concerned must also be switched off and the appropriate slide valves closed (allow all components to cool down first if necessary and always reduce the system pressure to ambient pressure level).
The system must not be returned to service until the ball valve and the rotary actuator have been correctly reassembled in accordance with the instructions and the pipeline has been refilled by professionally trained personnel.

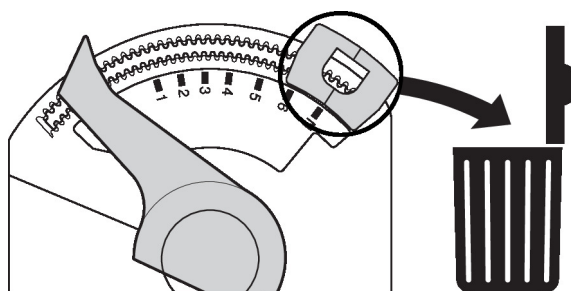
Installation notes

Flow direction The direction of flow, specified by an arrow on the housing, is to be complied with, since otherwise the ball valve could become damaged. Please ensure that the ball is in the correct position (marking on the stem).



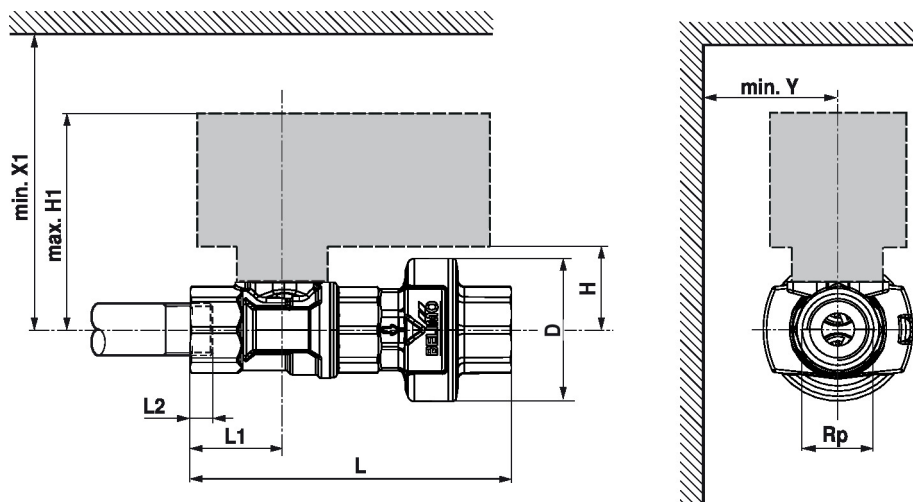
Flow setting At the CQ-actuator the end stop clip has to be removed. This in order to get the angle of rotation of 90°, which is needed for the on/off functionality.

Remove end stop clip



Dimensions

Dimensional drawings

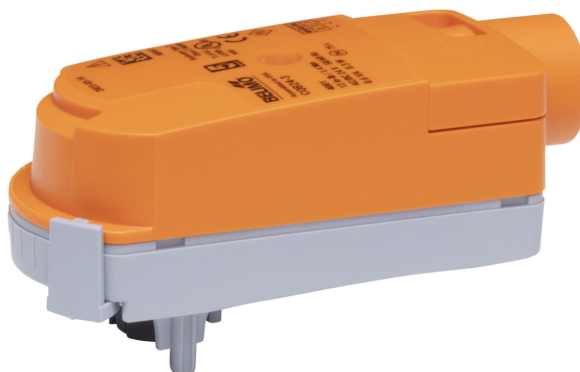


L2: Maximum screwing depth.

Type	DN	L [mm]	L1 [mm]	L2 [mm]	H [mm]	H1 [mm]	D [mm]	X1 [mm]	Y [mm]	Weight
Z2050QFL-C	1/2" [15]	95	29	13	26	69	44	110	35	0.77 lb [0.35 kg]
Z2050QFL-D	1/2" [15]	95	29	13	26	69	44	110	35	0.77 lb [0.35 kg]
Z2050QFL-E	1/2" [15]	95	29	13	26	69	44	110	35	0.77 lb [0.35 kg]
Z2050QFL-F0	1/2" [15]	95	29	13	26	69	44	110	35	0.77 lb [0.35 kg]
Z2050QFL-F	1/2" [15]	95	29	13	26	69	44	110	35	0.77 lb [0.35 kg]
Z2075QFL-F6	3/4" [20]	106	35	14	27	71	46	110	35	0.99 lb [0.45 kg]
Z2075QFL-G0	3/4" [20]	106	35	14	27	71	46	110	35	0.99 lb [0.45 kg]
Z2075QFL-G	3/4" [20]	106	35	14	27	71	46	110	35	0.99 lb [0.45 kg]
Z2075QFL-H0	3/4" [20]	106	35	14	27	71	46	110	35	0.99 lb [0.45 kg]
Z2100QFL-H	1" [25]	119	44	16	28	130	49	200	75	1.15 lb [0.52 kg]
Z2100QFL-J	1" [25]	119	44	16	28	130	49	200	75	1.15 lb [0.52 kg]

On/Off, Floating point, Non fail-safe, 100...240 V

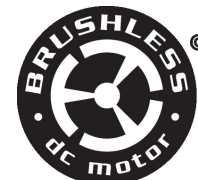
- Nominal voltage AC 100...240 V
- Control On/Off, Floating point



Picture may differ from product



5-year warranty



Technical data

Electrical data	Nominal voltage	AC 100...240 V
	Nominal voltage frequency	50/60 Hz
	Nominal voltage range	AC 85...265 V
	Power consumption in operation	1 W
	Power consumption in rest position	0.7 W
	Transformer sizing	2 VA
	Electrical Connection	19 AWG appliance cable, 1 m, with 1/2" NPT conduit connector
	Overload Protection	electronic throughout 0...90° rotation
	Electrical Protection	actuators are double insulated
Functional data	Angle of rotation	90°
	Angle of rotation note	adjustable with mechanical stop
	Running Time (Motor)	75 s / 90°
	Sound power level, motor	35 dB(A)
	Position indication	pointer
Safety data	Power source UL	Class 2 Supply
	Degree of protection NEMA/UL	NEMA 2
	Housing	UL Enclosure Type 2
	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
	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	35...104°F [2...40°C]
	Storage temperature	-40...176°F [-40...80°C]
	Servicing	maintenance-free
Weight	Weight	0.48 lb [0.22 kg]
Materials	Housing material	UL94-5VA

Product features

Application Non-Fail Safe On/Off/Floating Point ZoneTight actuator.

Valve selection should be done in accordance with the flow parameters and system specifications.

The actuator is mounted directly to the valve without the need for tools or additional linkage.

The actuator operates in response to AC 100...240 V. Angle of rotation is adjustable with the integrated mechanical stop.

Electrical installation

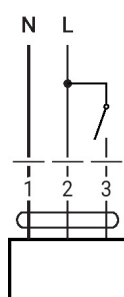
Wire colors:

1 = blue

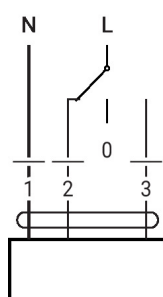
2 = brown

3 = white

AC 230 V, on/off



AC 230 V, 3-point



1	2	3	
			
			A - AB = 0%
			A - AB = 100%
			stop
			A - AB = 100%