2FGB.B

PN16 Two-way Balanced Plug Valves

MODEL	DN [mm]	MAX FLUID TEMP. [°C]	STROKE [mm]
2FGB65B	65	150	25
2FGB80B	80	150	45
2FGB100B	100	150	45
2FGB125B	125	150	45
2FGB150B	150	150	45



APPLICATION AND USE

2FGB.B balanced valve bodies are designed for use in air-conditioning, thermoventilation and heating systems and in industrial process systems; they cannot be used as safety valves. They can be employed to control fluids belonging to group 2 according to the article 13 of 2014/68/UE directive (PED).
Group 2 includes water, overheated water, steam. For fluids belonging to group 2 differing from the ones listed above, please contact our Sales Support.
The peculiar characteristic of such valves is they can operate under high close off pressures and wherever low leakage is required. This makes them particularly suitable in applications with high pressure and high DT, such as overheated water (i.e. district heating, boiler supply) and steam.

MANUFACTURING CHARACTERISTICS

CHARACTERISTICS	DESCRIPTION
Valve body and seat	EN-GJS-250 EN 1561 grey cast iron
Plug	CB491K bronze
Balancing gasket	Viton O-ring + Teflon ring
Stem packing	EPDM

TECHNICAL CHARACTERISTICS

CHARACTERISTICS		DESCRIPTION
Construction		PN16
Connections		PN16 flanges with ANSI bolt holes are available on request
Control characteristic		equal percentage
Leakage (Kvs %)		0,03
Allowed fluids	Water	min. temperature -10°C(1), glycole added 60%
	Overheated water	max temperature 150°C(2)
	Steam	max pressure 200 kPa, max temperature 150°C;
Storage temperature		-20°C to 60°C

The performances stated in this sheet can be modified without any prior notice.

CHARACTERISTICS	DESCRIPTION
Reference standards	Control valves for hot water heating plants: UNI 9753 Flow characteristics: IEC 534-2-4 Leakage: leakage is measured according to the EN1349 standard

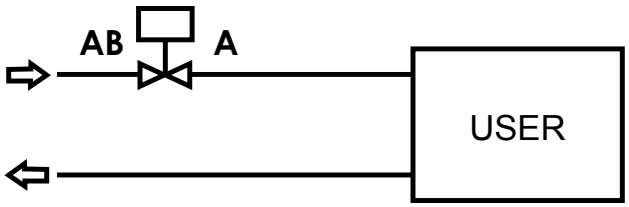
(1) See 248 accessory.
(2) Temperature/pressure ratio according to the following standards: UNI1092-2 and UNI12516-4.

INSTALLATION

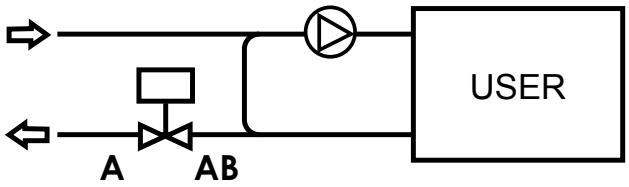
Hydraulic connections

Respect the fluid directions: inlet is labelled by AB and outlet by A.

Valve with variable flow to the user



Valve with constant flow to the user



Valve mounting

Before mounting the valve, make sure pipes are clean, free from welding slags. The pipes must be perfectly aligned with the valve body and not subjected to vibrations.

For installations on plants with high temperature fluids (steam, overheated water) use expansion joints to avoid the dilatation of pipes to stress the valve body.
In any case, avoid installing the valve in plants which are considered aggressive and/or corrosive for valve materials.
Please contact our Sales Support in order to define, which potentially aggressive or polluting substances can be used.
We disclaim all responsibility in case of valve failure due to external fortuitous events (fire, earthquakes etc.).
The valve can be mounted in any position included in the 180° from vertical.
Mount the valves with the actuator in vertical position with fluid temperature up to 120°C. For higher temperatures, the valves must be mounted horizontally, otherwise the use of the MVHT accessory is required.

OPERATION

With stem up the valve is in closed position, with stem down the valve is open.

ACTUATORS TECHNICAL CHARACTERISTICS, WIRING DIAGRAM AND INSTALLATION

See actuators data sheets and mounting instructions.

MOTORIZED VALVES OPTIONS

A125-2 Flanges with ANSI 125 bolt holes
2FGB.BPS89 Grooved valves PN16 to which it is possible to add the relating joint not supplied with the product. General dimensions remain the same. Joint and pipe dimensions are shown in the “Dimensions” paragraph.

ACCESSORIES

248 Stem heater for applications with possible ice formation on stem and packing with MVH and MVE actuators.
MVHT Valve body actuator spacer to reduce the direct exposure of the actuator when installed on a valve with high temperature fluids. Dimensions: Ø 120 mm; h = actuator height + 102 mm
GVB65 Thermal insulation for 2FGB65B DN65 valves
GVB80 Thermal insulation for 2FGB80B DN80 valves
GVB100 Thermal insulation for 2FGB100B DN100 valves
GVB125 Thermal insulation for 2FGB125B DN125 valves
GVB150 Thermal insulation for 2FGB150B DN150 valves

MAX DIFFERENTIAL AND CLOSE-OFF PRESSURE [kPa]

MODEL	DN	KVS	MVH	MVHE.A/C*	MVE.06	MVE.10	MVE.15	MVE.22
			A-AB	A-AB	A-AB	A-AB	A-AB	A-AB
2FGB.B	65	63	1600	1400	1080	1600	1600	1600
	80	100	1600	1060	800	1600	1600	1600
	100	130	1600	740	530	1390	1600	1600
	125	200	1600	510	350	1040	1600	1600
	150	300	1294	350	210	780	1500	1600
2FGB.BPS89	65	63	1600	1400	1080	1600	1600	1600
	80	100	1600	1060	800	1600	1600	1600
	100	130	1600	740	530	1390	1600	1600
	125	200	1600	510	350	1040	1600	1600

100 kPa = 1 bar = 10 m_{H_2O}

Kvs is the flow rate expressed in m3/h of water at a temperature between 5°C and 40°C passing through a valve, open at nominal stroke, having a 100 kPa (1 bar) differential pressure.

* MVHE.A in emergency closes the valve, MVHE.C opens the valve.

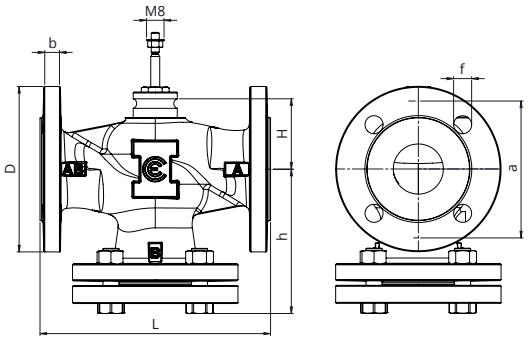
MAX REGULATION DIFFERENTIAL PRESSURE [kPa]

The max regulation differential pressure, it means the pressure which can be used during the stroke, is conditioned by wear between seat and plug and by the performance guaranteed by the actuator for the evaluated valve. So we recommend not to overcome the differential pressure whose value corresponds to the minimum between 200 kPa (maximum admitted value not to cause wear) and the one shown in the previous table (max close-off differential pressure).

Note: The max operating pressures at different temperatures for various PN classes must correspond to the following standards: UNI 1092-02 and UNI 12516-1.

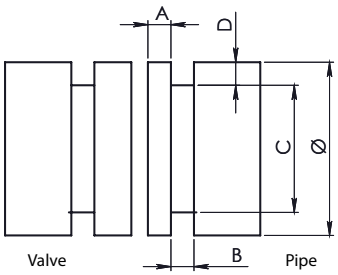
DIMENSIONS [mm]

MODEL	DN	L	H	h	D	B	A	F	HOLES N°	WEIGHT [kg]	STROKE [mm]
2FGB.B (PN16)	65	290	84	175	185	20	145	18	4	18	25
	80	310	94	186	200	22	160	18	8	28	45
	100	350	105	206	220	24	180	18	8	32	45
	125	400	128	255	250	26	210	22	8	45	45
	150	480	146	275	285	26	240	25	8	60	45



PS89 models (PN16)

VALVE DN	GROOVED JOINT DN	DIAMETER			A	B	C		D
		EXTERNAL PIPE Ø			GASKET SEAT	GROOVE WIDTH	GROOVE Ø		GROOVE DEPTH (REF.)
		BASE	MAX.	MIN.	± 0.76*	± 0.76*	MAX.	MIN.	
65	80	88,90	89,80	88,10	15,88	7,95	84,90	84,50	1,98
80	100	114,30	115,40	113,50	15,88	9,53	110,10	109,60	2,11
100	125	139,70	141,10	138,90	15,88	9,53	135,50	135	2,11
125	150	168,30	169,90	167,50	15,88	9,53	164	163,40	2,16



* ± 0,76 for grooved joint DN < 100
  ± 1,14 for grooved joint DN ≥ 100

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