9605

DZR brass ON/OFF Differential Pressure Control Valve (DPCV)

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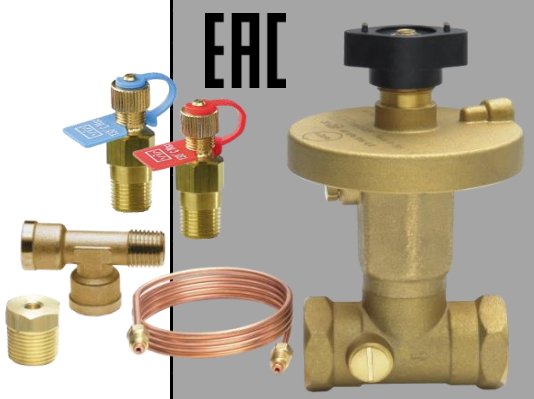
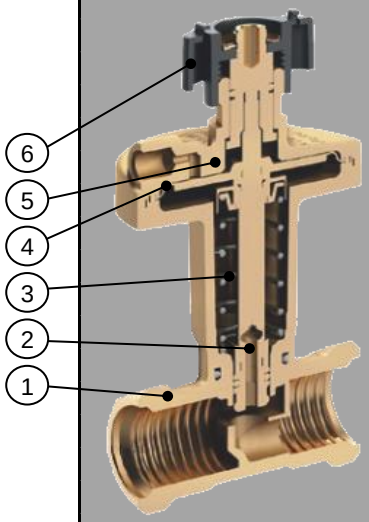
DZR brass ON/OFF differential pressure control valve (DPCV)
Threaded F/F (ISO 7/1 Rp)
Max differential pressure between inlet/outlet of the valve 250kPa
Different regulating ΔP ranges available, tolerance on nominal ΔP ±25%
With copper capillary tube (length 1m) and test points included
TR CU 010 compliant

PN25 (max 20Bar above 110°C)
Free of CE marking (cat. according to Art. 4.3 Dir. 2014/68/EU)

Working conditions

- Suitable for: water-20°C to +120°C
  below 0°C only for water with added antifreeze fluids
  over 100°C only for water with added anti-boiling fluids
  (ethylene glycol or propylene glycol mixtures up to 50% may be used)
- Not suitable for: gases group 1 & 2, liquids group 1 (Dir. 2014/68/EU)





PARTLIST

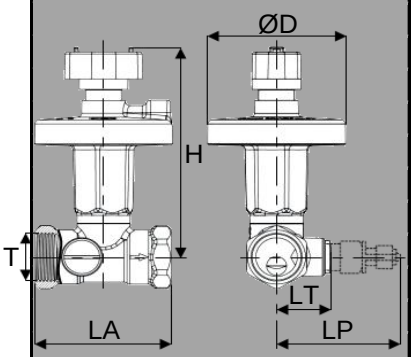
N.	Part	Material	Norm
1	Body/cap	DZR brass[1]	CW602N
2	Regulating group	DZR brass	CW602N
3	Spring	Stainless steel	-
4	O-ring/diaphragm	EPDM	-
5	Plate bonnet	DZR brass[2]	CW602N
6	ON/OFF handle	PPS	-

[1]Body in cast iron GG25 for DN50
[2]Plate in two cast iron GG25 parts for DN40 and DN50

DIMENSIONS

DN	T	LA [mm]	LT [mm]	LP [mm]	H [mm]	ØD [mm]	ΔP [kPa]	Flow range [l/s]	$K_{v100\%}$[1] [m^3/h]	Wgt [g]
L 015	½"	61	29	61	70	62	5-25	0,005-0,222	1,6	650
015	½"	61	29	61	70	62	20-40	0,010-0,281	1,6	650
H 015	½"	61	29	61	70	62	20-65	0,010-0,360	1,6	650
L 020	¾"	71	30	62	85	62	5-25	0,007-0,347	2,5	700
020	¾"	71	30	62	85	62	20-40	0,016-0,439	2,5	700
H 020	¾"	71	30	62	85	62	20-65	0,016-0,560	2,5	700
L 025	1"	84	33	65	100	96	5-25	0,013-0,556	4,0	1650
025	1"	84	33	65	100	96	20-40	0,025-0,703	4,0	1650
H 025	1"	84	33	65	100	96	20-65	0,025-0,896	4,0	1650
L 032	1¼"	96	37	69	91	96	5-25	0,019-0,875	6,3	1850
032	1¼"	96	37	69	91	96	20-40	0,039-1,11	6,3	1850
H 032	1¼"	96	37	69	91	96	20-65	0,039-1,41	6,3	1850
L 040	1½"	100	41	73	129	138	5-25	0,031-1,39	10	3150
040	1½"	100	41	73	155	138	20-40	0,062-1,76	10	3400
H 040	1½"	100	41	73	170	138	35-75	0,082-2,41	10	3500
U 050	2"	135	45	77	130	138	5-25	0,062-2,78	20	4000
L 050	2"	135	45	77	156	138	20-40	0,124-3,51	20	4200
050	2"	135	45	77	171	138	35-75	0,164-4,81	20	4400
H 050	2"	135	45	77	210	138	60-100	0,215-5,56	20	4700

[1]Max K_v for valve completely open, the actual K_v of the valve is variable with the working conditions



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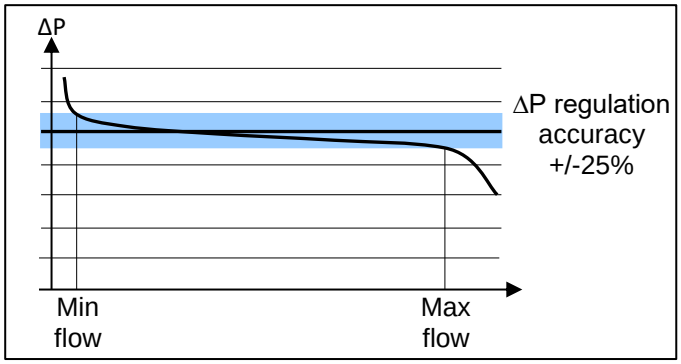
WORKING RANGE

The differential pressure maintained by the valve changes slightly with the flow on the line. The flow must remain within the working range, as indicated in the table below, in order for the valve to work correctly and maintain the 25% ΔP regulation accuracy.



ΔP	Flow[1] [l/s]					
[kPa]	015	020	025	032	040	050
5	0,005-0,099	0,008-0,155	0,013-0,248	0,019-0,392	0,031-0,622	0,062-1,24
10	0,007-0,141	0,011-0,220	0,018-0,353	0,028-0,553	0,044-0,878	0,088-1,76
15	0,009-0,172	0,013-0,269	0,021-0,431	0,034-0,678	0,054-1,08	0,108-2,15
20	0,010-0,199	0,016-0,311	0,025-0,497	0,039-0,783	0,062-1,24	0,124-2,48
25	0,011-0,222	0,018-0,347	0,028-0,556	0,044-0,875	0,069-1,39	0,139-2,78
30	0,012-0,243	0,019-0,381	0,031-0,608	0,048-0,958	0,076-1,52	0,152-3,04
35	0,013-0,263	0,021-0,411	0,033-0,657	0,052-1,03	0,082-1,64	0,164-3,29
40	0,014-0,281	0,022-0,439	0,035-0,703	0,055-1,11	0,088-1,76	0,176-3,51
45	-	-	-	-	0,093-1,86	0,186-3,73
50	0,016-0,314	0,024-0,491	0,039-0,786	0,062-1,24	-	-
55	-	-	-	-	0,103-2,06	0,206-4,12
60	-	-	-	-	-	0,215-4,30
65	0,018-0,358	0,028-0,560	0,045-0,896	0,071-1,41	0,112-2,24	0,224-4,48
70	-	-	-	-	-	0,233-4,65
75	-	-	-	-	0,120-2,41	0,241-4,81
80	-	-	-	-	-	0,248-4,97
90	-	-	-	-	-	0,264-5,27
100	-	-	-	-	-	0,278-5,56

[1]Indications for each diameter valid for all its versions of regulating ΔP range (valve has anyway to be used within the working ΔP range)

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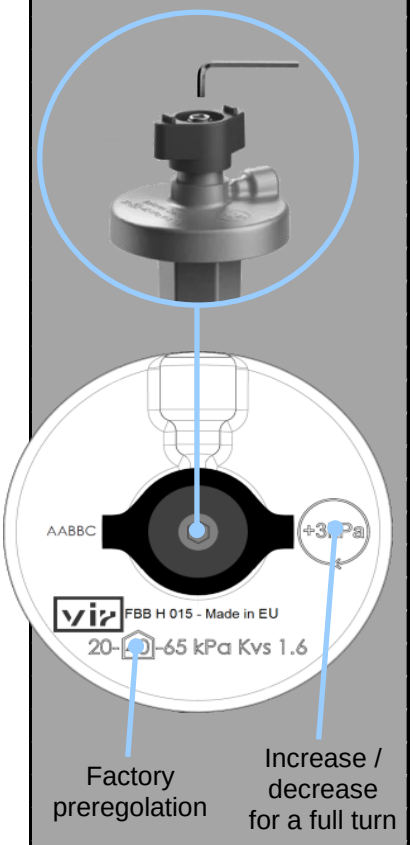
PRESETTING

The valve is provided already preset to a regulated differential pressure clearly indicated on the plate bonnet. It's possible to modify such value by using a 4mm Allen key on the stem in the center of the ON/OFF handle (check that the valve is open by operating counterclockwise the ON/OFF handle). Each full turn of the Allen key corresponds to a increase/decrease of the regulated differential pressure equal to the value also indicated on the plate bonnet.
Alternatively it's possible to define an initial regulating position to set on the valve defined by using the table below. To set the valve at such a value, verify that it is open and then turn the Allen key counterclockwise to the end (position 0). It's then possible to preset the valve by turning the Allen key clockwise for a number of full turns equal to the regulating position defined by using the table.

ΔP [kPa]	Regulating position									
	L 015 L 020	015 020	H 015 H 020	L 025 L 032	025 032	H 025 H 032	L 040 U 050	040 L 050	H 040 050	H 050
5	0,0	-	-	0,0	-	-	0,0	-	-	-
10	5,0	-	-	5,0	-	-	5,0	-	-	-
15	10,0	-	-	10,0	-	-	10,0	-	-	-
20	15,0	0,0	2,0	15,0	0,0	2,0	15,0	0,0	-	-
25	20,0	4,0	3,7	20,0	2,5	3,7	20,0	5,0	-	-
30	-	8,0	5,3	-	5,0	5,3	-	10,0	-	-
35	-	12,0	7,0	-	7,5	7,0	-	15,0	0,0	-
40	-	16,0	8,7	-	10,0	8,7	-	20,0	2,5	-
45	-	-	10,3	-	-	10,3	-	-	5,0	-
50	-	-	12,0	-	-	12,0	-	-	7,5	-
55	-	-	13,7	-	-	13,7	-	-	10,0	-
60	-	-	15,3	-	-	15,3	-	-	12,5	0,0
65	-	-	17,0	-	-	17,0	-	-	15,0	2,5
70	-	-	-	-	-	-	-	-	17,5	5,0
75	-	-	-	-	-	-	-	-	20,0	7,5
80	-	-	-	-	-	-	-	-	-	10,0
85	-	-	-	-	-	-	-	-	-	12.5
90	-	-	-	-	-	-	-	-	-	15,0
95	-	-	-	-	-	-	-	-	-	17,5
100	-	-	-	-	-	-	-	-	-	20,0

A precise regulation of the valve also takes into consideration the flow passing through it during its normal operation. This regulation has to be performed while the system is working, **by measuring with a manometer the actual differential pressure regulated by the valve and at the same time adjusting the regulating position accordingly** until the desired differential pressure is obtained.



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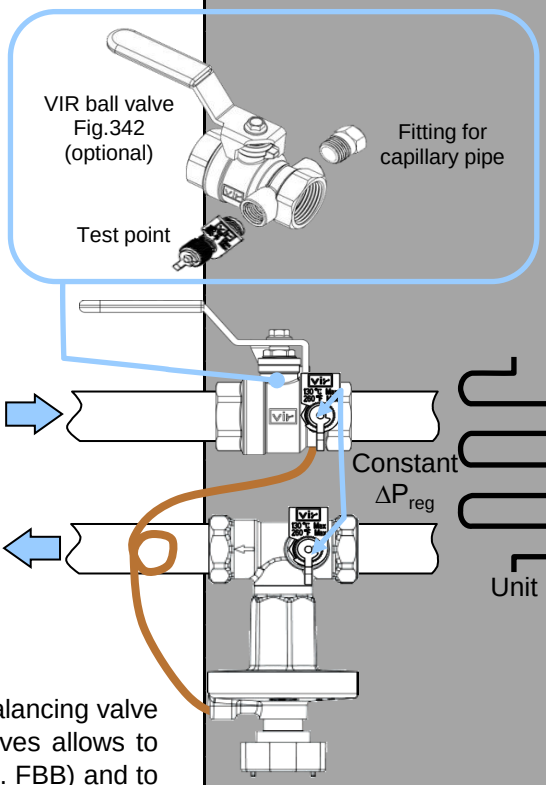
INSTALLATION

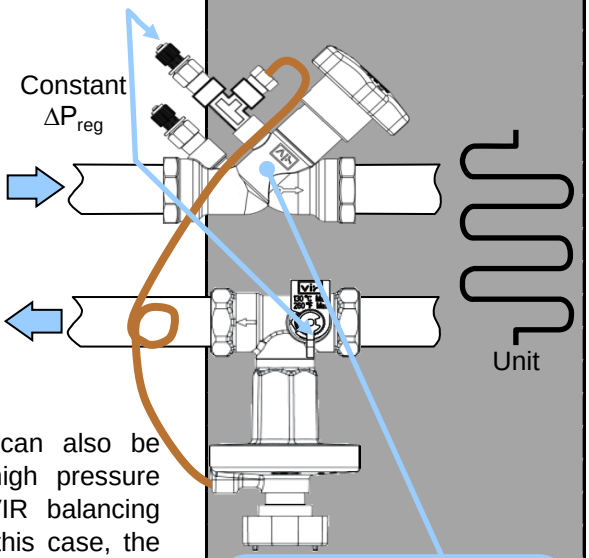
We recommend the installation of VIR Fig. FBB valve on the system's output line. The valve is provided with a connection kit comprising of a capillary pipe 1m long, a threaded M fitting (¼" ISO 7/1 R) to connect it to the system's input line or to the service valve, and two test points. The kit also includes a T fitting threaded M/F/F (¼" ISO 7/1R) that may be used to connect simultaneously the capillary pipe and the test point.

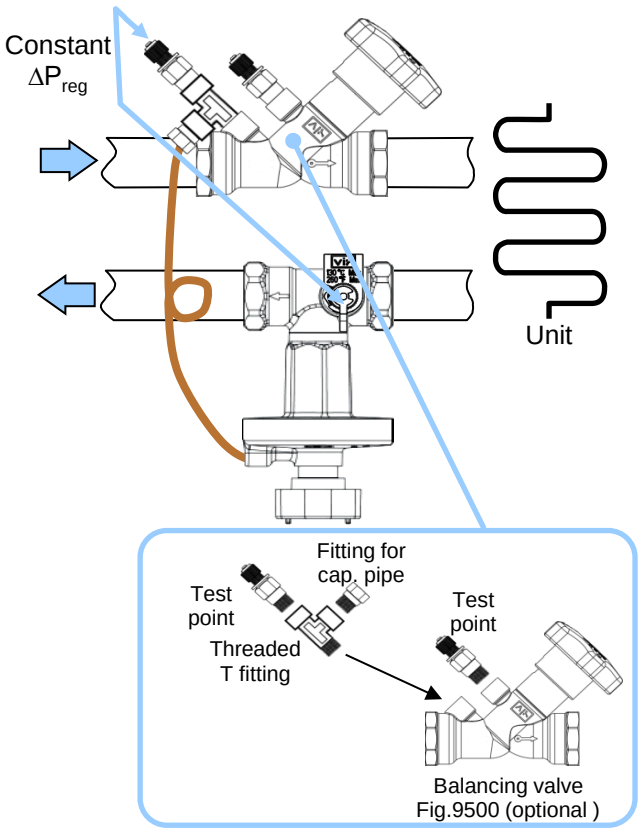


It's possible to use the VIR Fig. FBB valve by simply installing it onto the system's output line and connecting the capillary pipe to the input line by using the threaded M fitting. By using VIR valve Fig. 342 as a service valve, it will also be possible to mount the test points which will allow to directly measure the pressure regulated by the valve whilst in working condition. The valve will keep the differential pressure constant on the unit/units (for example fan coils or radiators) as indicated in the figure.

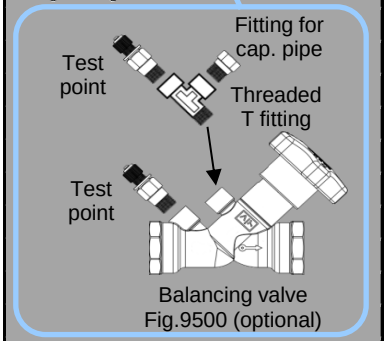
It's possible to use VIR Fig. FBB valve in combination with VIR static balancing valve Fig. 9500 used as a service valve. The combined use of the two valves allows to contemporarily regulate the differential pressure (through VIR valve Fig. FBB) and to balance the system and measure the flow on the line (through the VIR valve Fig. 9500).

The capillary pipe can be connected to the low pressure test point of VIR balancing valve Fig. 9500. In this case the valve will keep constant the differential pressure on the sub-system including the unit but excluding the balancing valve. Fig. 9500 valve will allow the balancing of the total system and the measurement of the flow, but this flow will be determined by the sub-system including the unit. This option is usually selected when the sub-system to be balanced includes its own regulation devices (for example radiators with thermostat valves or heat exchangers with control valves).





The capillary pipe can also be connected to the high pressure test point of the VIR balancing valve Fig. 9500. In this case, the valve will keep constant the differential pressure on the sub-system, including both the unit and the balancing valve. In this case, the differential pressure acting on the unit will be the one kept automatically by Fig. FBB valve minus the pressure drop generated by the balancing valve Fig. 9500. The balancing valve will therefore allow both the measurement and the regulation of the flow in the sub-system. This option is usually selected when the unit includes devices allowing ON/OFF functions, but with no regulating functions.



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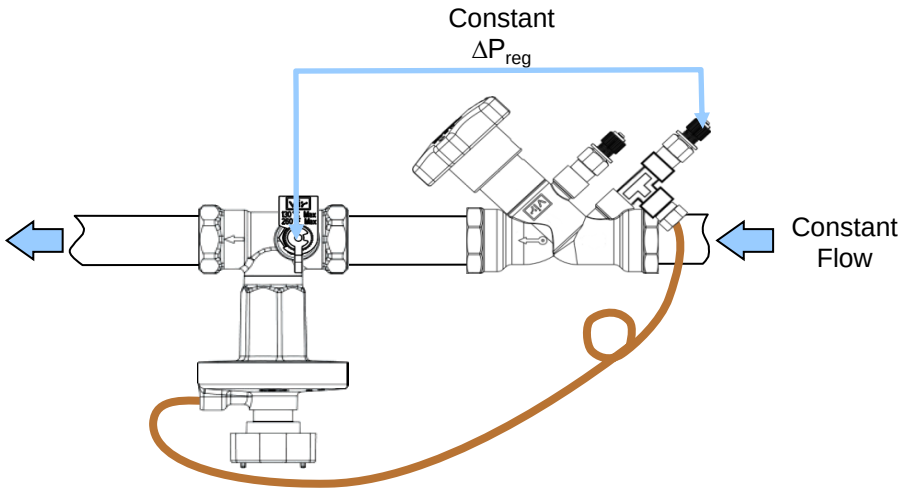
If the flow on the line requires maximum control, then Fig. FBB and Fig. 9500 can be installed sequentially. In this case, valve Fig. FBB will keep constant the pressure acting on Fig. 9500 balancing valve, the latter will then allow to measure the flow and set it to the desired value. The flow will then be kept constant independently from any pressure fluctuations which may arise in the line.



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