9655

Cast Iron Differential Pressure Control Valve

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Cast Iron differential pressure control valve
Flanged PN16 according to EN1092-2 (ex DIN2533)
Available in the following versions:

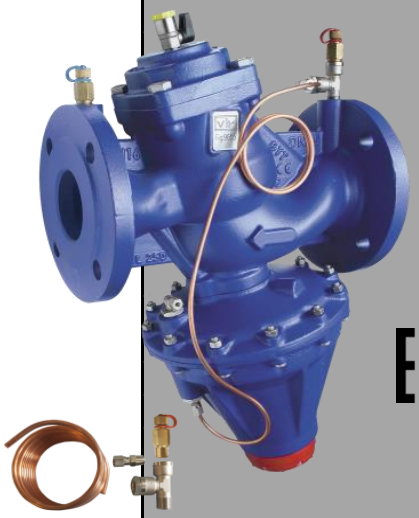
- For regulating ΔP range 20-80kPa from DN65 to DN150
- For regulating ΔP range 80-160kPa from DN65 to DN100

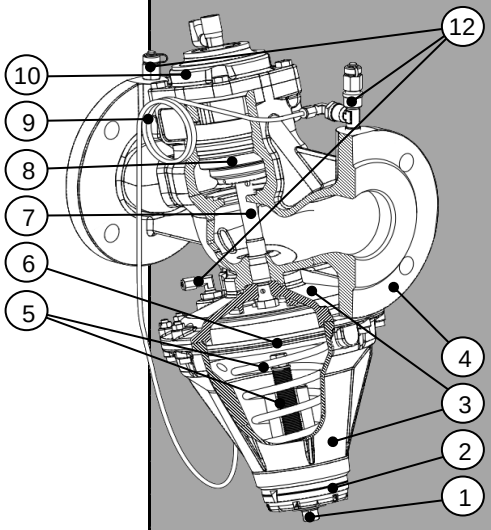
Tolerance on nominal ΔP ±10%
With copper capillary tube, diameter 4mm, length 2m
Test points and joints included (refer to installation paragraph)
TR CU 010 compliant

PN16 (Max 16bar up to 90°C, max 13bar at 110°C)
Free of CE marking (cat. according to Art. 4.3 Dir. 2014/68/EU)

Working conditions

- Suitable for: water, -10°C to +110°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

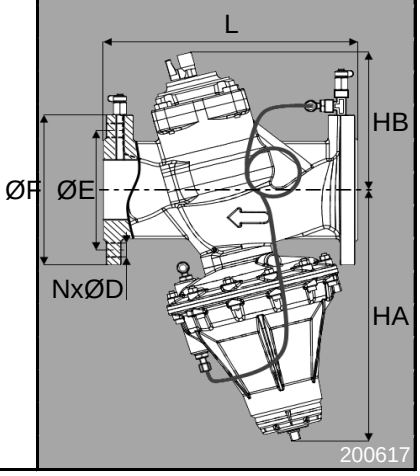
N.	Part	Material	Norm
1	Reg. screw	Brass	EN12164 CW617N
2	Graduated scale	Polyamide	-
3	Spring housing	Aluminum	-
4	Body	Cast iron	EN-GJL-250
5	Springs	Stainless steel	AISI 302
6	Membrane	Reinforced EPDM	-
7	Stems	Brass	EN12164 CW617N
8	Shutter	Aluminum	-
9	Pipe	Copper	-
10	Bonnet	Cast iron	EN-GJL-250
11	O-ring and seals	EPDM	-
12	Fittings	Brass	-

[1]Test points with EPDM Perox gaskets and polypropylene ties, nickel pl. fittings

DIMENSIONS

DN	ØF [mm]	ØE [mm]	NxØD [mm]	HA [mm]	HB [mm]	L [mm]	ΔP [kPa]	Flow range [l/s]	$K_{v100\%}$ [1] [m^3/h]	Wgt [kg]
065	185	145	4x18	310	170	290	20-80	0,28-20,8	45	21,6
H 065	185	145	4x18	310	170	290	80-160	0,56-20,8	52	21,6
080	200	160	8x18	400	182	310	20-80	0,33-23,6	78	28,1
H 080	200	160	8x18	400	182	310	80-160	0,83-27,8	84	28,1
100	220	180	8x18	414	200	350	20-80	0,42-33,3	105	33,6
H 100	220	180	8x18	414	200	350	80-160	0,83-41,7	107	33,6
125	250	210	8x18	436	275	400	20-80	0,83-47,2	152	46,4
150	285	240	8x22	460	300	480	20-80	1,11-63,9	204	75,4

[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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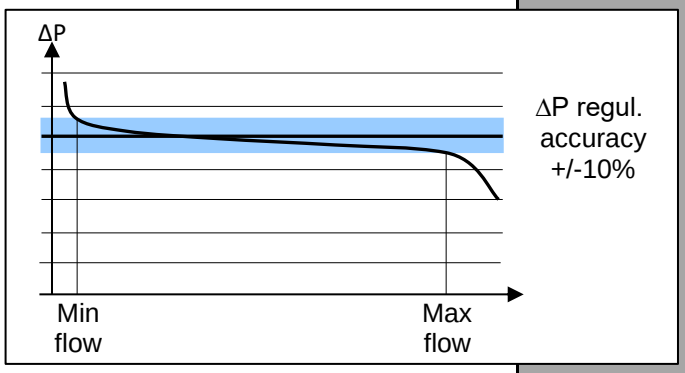
WORKING RANGE

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 10% ΔP regulation accuracy.



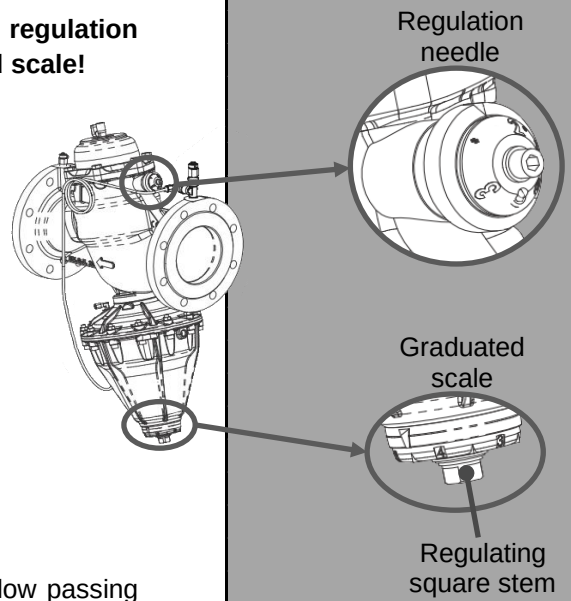
ΔP	Flow [l/s]							
[kPa]	L 065	H 065	L 080	H 080	L 100	H 100	125	150
20	0,28-11,1	-	0,33-16,7	-	0,42-27,8	-	0,83-30,6	1,11-33,3
30	0,28-16,7	-	0,42-19,4	-	0,56-33,3	-	1,11-38,9	1,39-44,4
40	0,42-18,1	-	0,42-23,6	-	0,56-33,3	-	1,11-38,9	1,39-44,4
50	0,42-18,1	-	0,42-23,6	-	0,56-33,3	-	1,11-41,7	1,39-69,4
60	0,42-20,8	-	0,42-23,6	-	0,56-33,3	-	1,39-47,2	1,39-63,9
80	0,42-20,8	0,56-20,8	0,42-23,6	0,83-27,8	0,83-33,3	0,83-38,9	1,39-47,2	1,94-63,9
100	-	0,56-20,8	-	0,83-27,8	-	0,83-38,9	-	-
120	-	0,56-20,8	-	0,83-27,8	-	0,83-38,9	-	-
140	-	0,56-20,8	-	0,83-27,8	-	1,11-41,7	-	-
160	-	0,56-20,8	-	1,11-27,8	-	1,11-41,7	-	-

PRESETTING

Presetting allows to define a draft regulation corresponding approximately to the desired differential pressure to be maintained. The initial regulating position to set on the valve can be defined by using the following table. It is possible to set the valve by using a monkey wrench on the regulating square stem sticking out of the red graduated scale at its bottom.

To complete the presetting for DN125 and DN150 valves, the regulation needle must be adjusted to match the value set on the graduated scale!

ΔP	Regulating position							
[kPa]	L 065	H 065	L 080	H 080	L 100	H 100	125	150
20	0,0	-	0,0	-	0,0	-	0,0	0,0
30	1,0	-	0,5	-	1,0	-	0,5	0,5
40	1,5	-	0,8	-	1,5	-	1,0	1,0
50	2,0	-	1,2	-	2,0	-	1,5	1,5
60	2,3	-	1,7	-	2,7	-	2,0	2,0
80	2,8	0,0	3,0	0,0	3,5	0,0	3,0	3,0
100	-	0,5	-	1,0	-	1,0	-	-
120	-	1,0	-	1,7	-	2,0	-	-
140	-	1,5	-	2,2	-	2,3	-	-
160	-	2,0	-	2,5	-	2,5	-	-



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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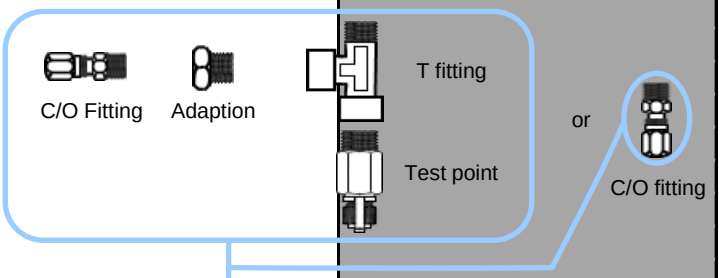
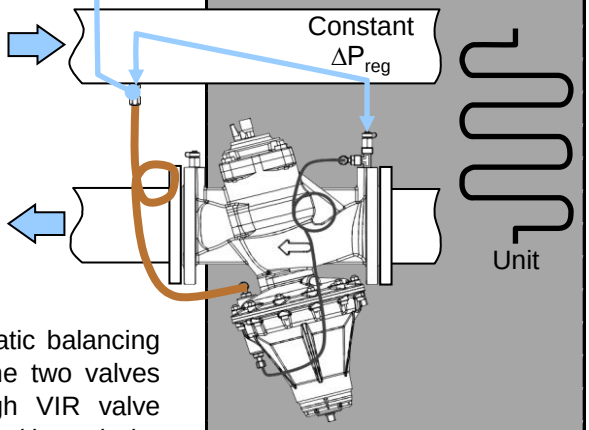
INSTALLATION

We recommend the installation of VIR Fig.9655 valve on the system's output line. The valve is provided with a connection kit comprising a 4mm capillary pipe 2m long and an O/N (olive & nut) fitting threaded ⅛" ISO228/1 to connect it to the system's input line or to the service valve. The kit also includes a T fitting threaded ¼" ISO228/1, a test point and a ¼" -⅛" adaptor fitting.

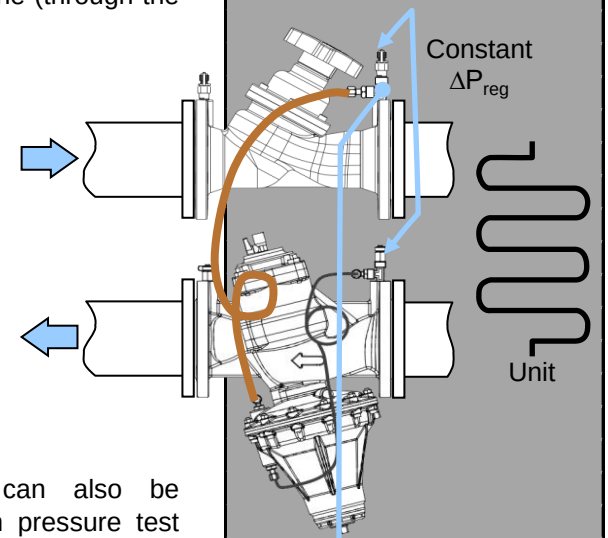


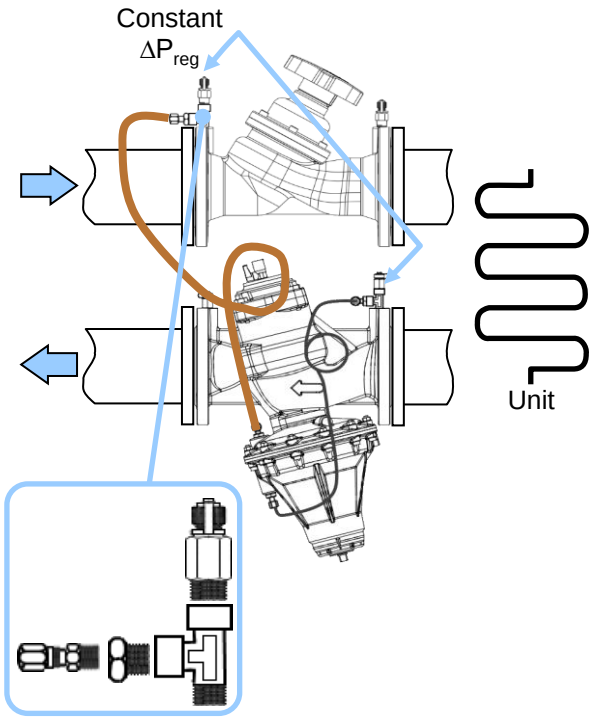
It's possible to use the VIR Fig.9565 valve by simply installing it onto the system's output line and connecting the capillary pipe to the input line by using the capillary pipe. By using also the T fitting and the test point included in the kit it will also be possible to directly measure the pressure regulated by the valve whilst in working conditions. 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.9655 valve in combination with a VIR static balancing valve Fig.9555P, used as a service valve. The combined use of the two valves allows to contemporarily regulate the differential pressure (through VIR valve Fig.9655) and to balance the system and measure the flow on the line (through the VIR valve Fig.9555P).

The capillary pipe can be connected to the low pressure test point (downstream of Fig.9555P balancing valve installed on the system's input line). In this case the valve will keep constant the differential pressure on the sub-system including the unit but excluding the balancing valve. Fig.9555P 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 (upstream of Fig.9555P balancing valve installed on the system's input line). 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.9655 valve minus the pressure drop generated by the balancing valve Fig.9555P. 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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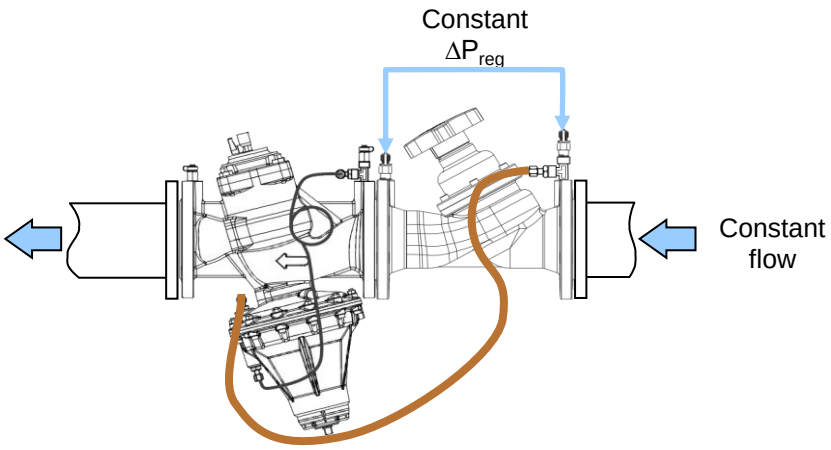
If the flow on the line requires maximum control Fig.9555P and Fig.9655 can be installed sequentially. In this case, valve Fig.9655 will keep constant the pressure acting on Fig.9555P balancing valve, the latter will then allow to measure the flow and set it to the desired value. The flow will then be kept constant independently from any pressure fluctuations which may arise in the line.



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