9755

Cast Iron Pressure Independent Control Valve (PICV)

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Cast iron pressure independent control valve (PICV)
Flanged PN16 according to EN1092-2 (ex DIN2533)
With differential pressure regulator for ΔP up to 400kPa
Tolerance on nominal regulated flow ±15%
With 0-10VDC modulating actuator, power supply 50Hz/60Hz 24V AC/DC
(IP54, 3,5W, travel 90° in 150 seconds, ambient temperature -30° to +50°C)
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)

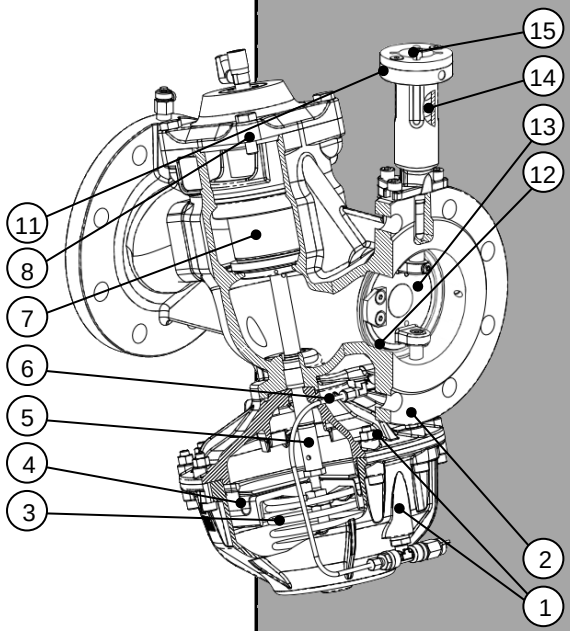
Working conditions

- 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

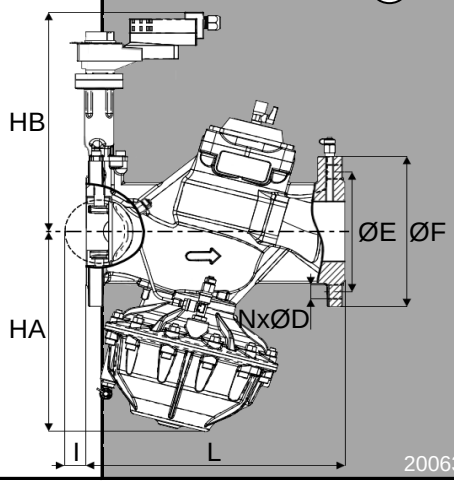
N.	Part	Material	Norm
1	Spring housing	Aluminum	-
2	Body	Cast iron	EN-GJL-250
3	Pres. reg. springs	Stainless steel	AISI 302
4	Membrane	EPDM	-
5	Pres. reg. stems	Brass[1]	EN12164 CW617N
6	Pipe	Copper	-
7	Shutter	Brass[1]	EN12164 CW617N
8	Bonnet	Cast iron	EN-GJL-250
9	O-ring and seals	EPDM	-
10	Fittings	Brass[2]	-
11	Actuator Stand	Aluminum	-
12	Shutter seat	Stainless steel	AISI 304
13	Shutter	Brass[3]	EN12164 CW617N
14	Overt. prev. spring	Spring steel	2FD
15	Shutter stem	Brass[4]	EN12164 CW617N
16	Bolts and nuts	Stainless steel	A2

[1]With R-PTFE bushings, EPDM gaskets, aluminum guides, shutter stop in AISI 304 stainless steel
[2]Test points with EPDM Perox gaskets and polypropylene ties, nickel plated fittings
[3]With regulating cone in glass reinforced polyester for DN100
[4]With PTFE sliding washer and PTFE coated stainless steel bushings



DIMENSIONS

DN	ØF [mm]	ØE [mm]	NxØD [mm]	HA [mm]	HB [mm]	L [mm]	I [mm]	Flow [l/s]	Weight [kg]
065	185	145	4x18	217	296	290	17	2,39-7,22	23,3
080	200	160	8x18	281	305	310	25	3,17-10,0	29,8
100	220	180	8x18	295	318	350	30	6,44-22,9	35,3
125	250	210	8x18	317	366	400	46	8,81-34,7	48,1
150	285	240	8x22	341	395	480	56	12,4-44,4	77,1



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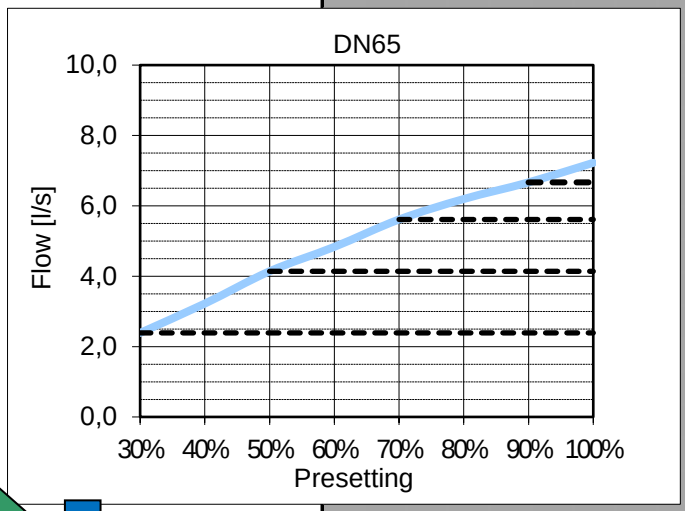
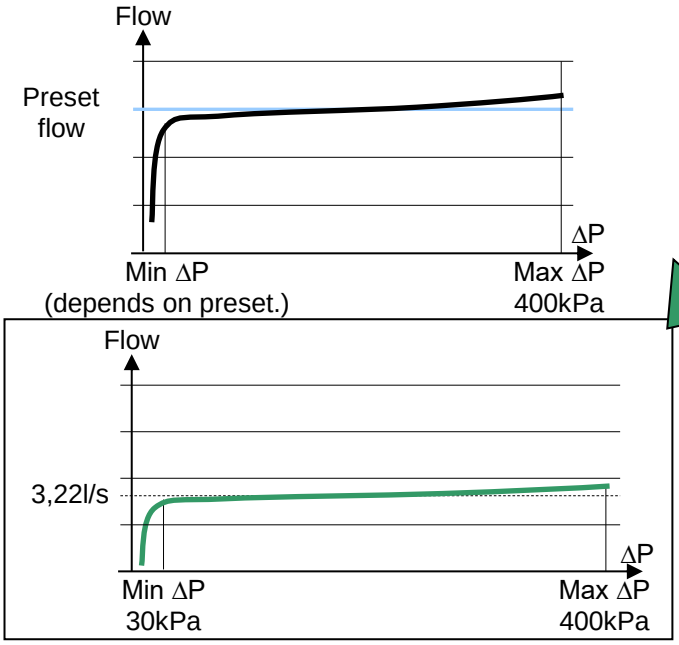
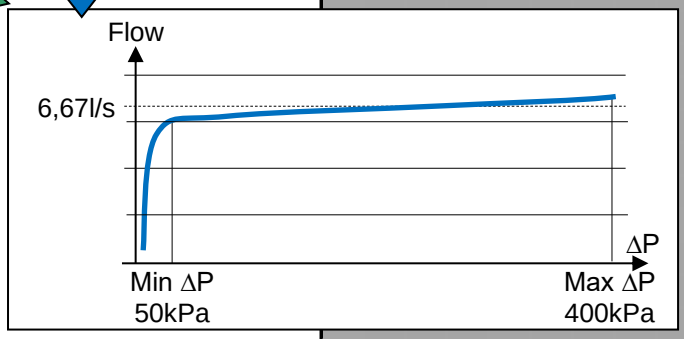
PRESETTING

Presetting allows to define the maximum flow that will be kept constant (by means of dynamic balancing) while the valve is used in fully open condition in its working differential pressure range.
Presetting determines also the minimum working differential pressure of the valve.

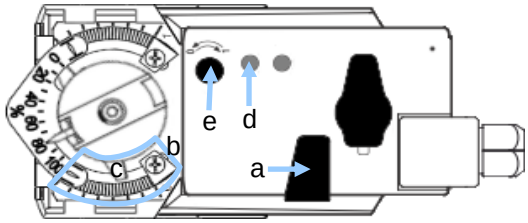




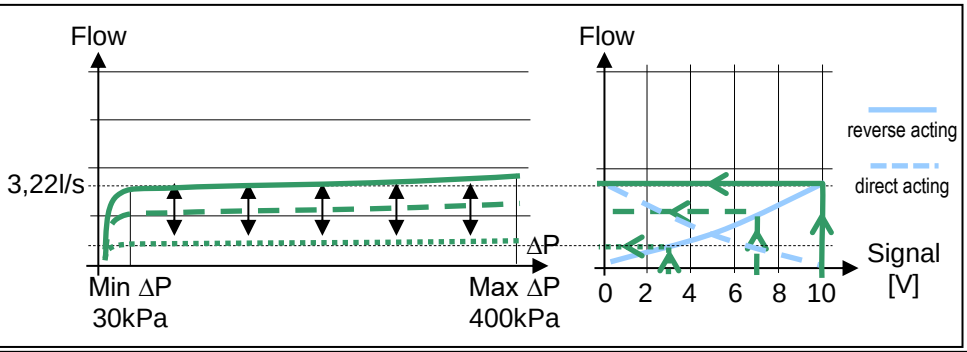


It is possible to preset the valve by acting on the mechanical stop of the actuator:

1) by acting on the manual override button (a) move the actuator into the desired presetting position (it's not possible to set values below 30%); the graphs in the next page show the correspondence between the presetting position and the regulated flow;
2) with a screwdriver move the mechanical stop (b) to the corresponding stop on the actuator stem (c);
3) start the auto stroke detection by pressing the “Adaption” button (d).



At the end of the auto stroke detection, the new maximum opening position is assigned to the opening signal, and the actuator will then redistribute the correspondence between the 0-10V signal and the opening position of the valve.
By acting on the indicate switch (e), it's possible to set the actuator on "reverse acting" (arrow on 1 as per factory settings, close with 0V signal) or "direct acting" (arrow on 0, open with 0V signal).



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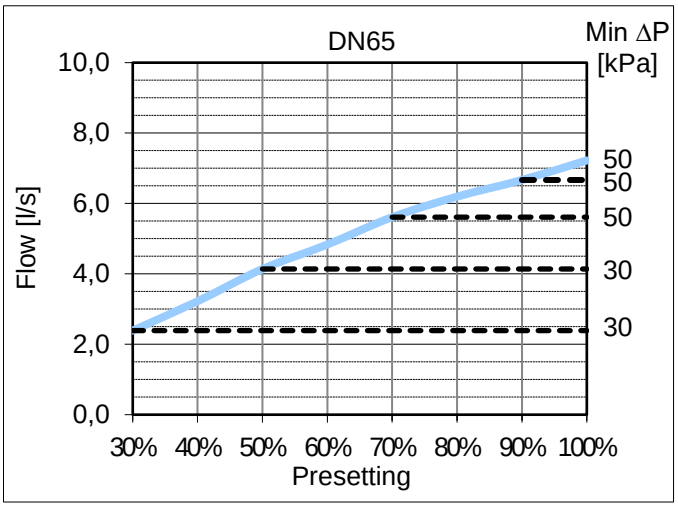
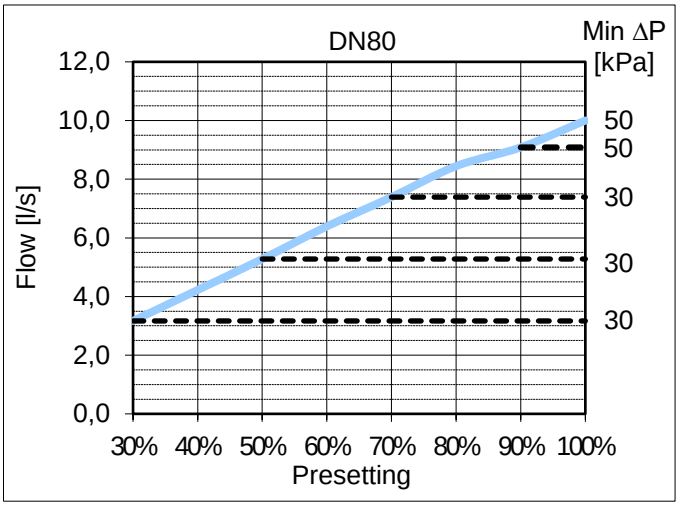
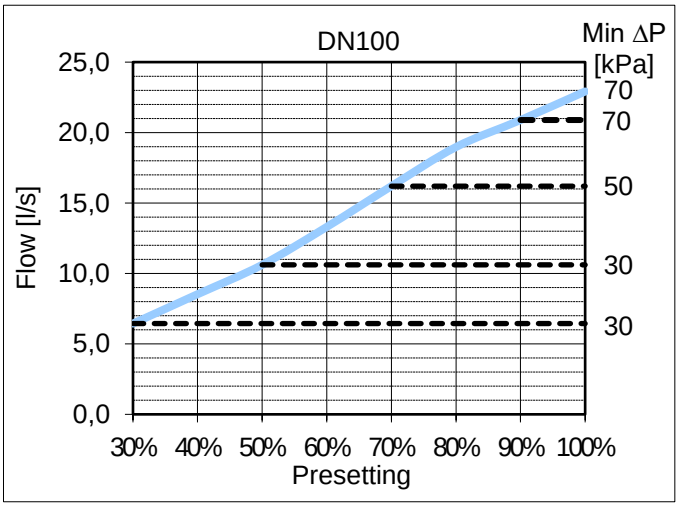


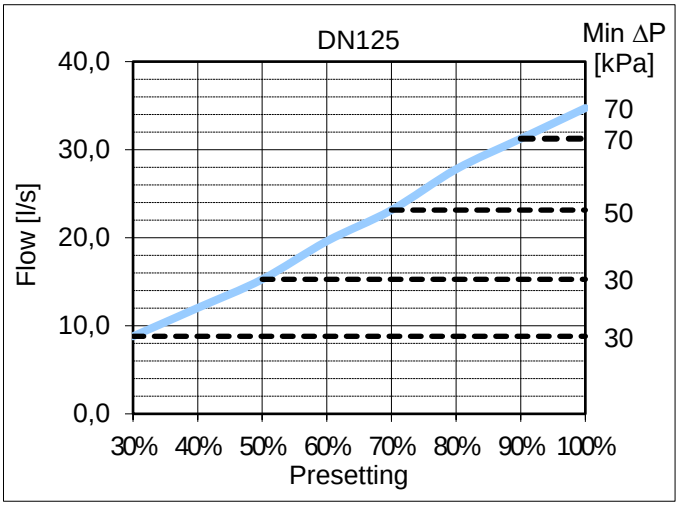
DN65 Preset.	Flow [l/s]	Flow [m³/h]	ΔP min. [kPa]
30%	2,39	8,6	30
40%	3,22	11,6	30
50%	4,14	14,9	30
60%	4,83	17,4	30
70%	5,61	20,2	50
80%	6,19	22,3	50
90%	6,67	24,0	50
100%	7,22	26,0	50



DN80 Preset.	Flow [l/s]	Flow [m³/h]	ΔP min. [kPa]
30%	3,17	11,4	30
40%	4,22	15,2	30
50%	5,28	19,0	30
60%	6,39	23,0	30
70%	7,39	26,6	30
80%	8,44	30,4	50
90%	9,08	32,7	50
100%	10,0	36,0	50



DN100 Preset.	Flow [l/s]	Flow [m³/h]	ΔP min. [kPa]
30%	6,44	23,2	30
40%	8,53	30,7	30
50%	10,6	38,2	30
60%	13,3	47,9	30
70%	16,2	58,3	50
80%	19,0	68,3	50
90%	20,9	75,2	70
100%	22,9	82,5	70



DN125 Preset.	Flow [l/s]	Flow [m³/h]	ΔP min. [kPa]
30%	8,81	31,7	30
40%	12,0	43,3	30
50%	15,3	55,0	30
60%	19,6	70,6	50
70%	23,1	83,3	50
80%	27,8	100	60
90%	31,3	113	70
100%	34,7	125	70

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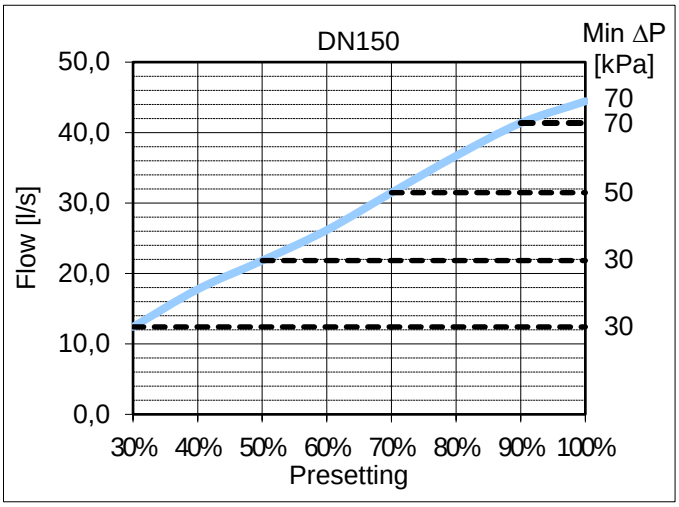


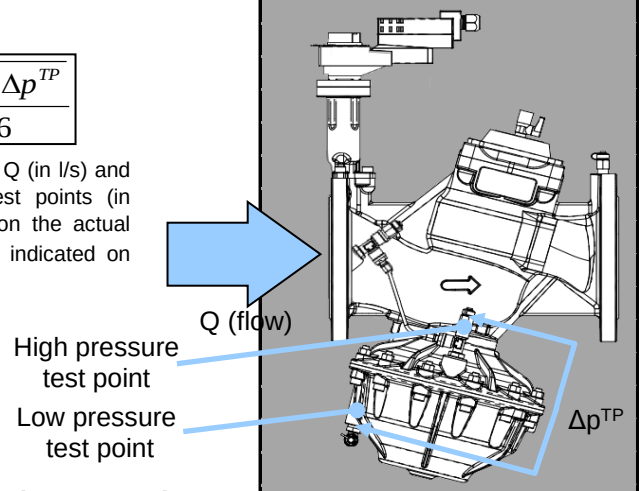
DN150 Preset.	Flow [l/s]	Flow [m³/h]	ΔP min. [kPa]
30%	12,4	44,7	30
40%	17,8	63,9	30
50%	21,8	78,6	30
60%	26,2	94,2	30
70%	31,5	113	50
80%	36,7	132	60
90%	41,4	149	70
100%	44,4	160	70

FLOW MEASUREMENT

Actuator Position	K_v [m³/h @ 1bar] 065	080	100	125	150
30%	19,2	26,6	57,9	67,3	96,7
40%	25,9	36,7	79,3	94,5	143
50%	34,7	45,9	102	127	189
60%	42,6	57,8	136	166	231
70%	48,8	68,6	172	204	275
80%	54,7	78,8	216	260	336
90%	61,2	89,2	224	300	387
100%	66,3	96,6	278	332	428

$$Q = \frac{K_v \cdot \sqrt{\Delta p^{TP}}}{36}$$

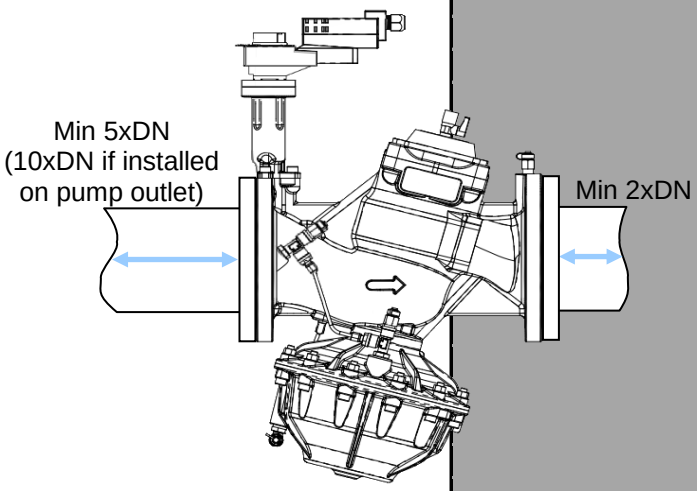
Formula linking flow Q (in l/s) and Δp measured at test points (in kPa). K_v depends on the actual actuator position as indicated on table.



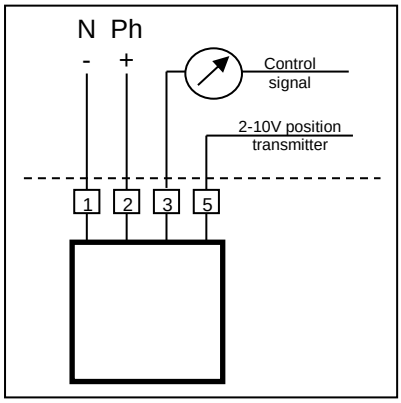
Valve presetting must be done according to the indications in the "Presetting" paragraph, Flow measurement indications are provided only as a check tool in case of problems on the system/valve.
We suggest, if possible, to move the actuator to its presetting position before taking the measure. Make sure the actuator do not move during the measure!

INSTALLATION

To obtain the best performances valve must be installed on a pipe with its same nominal size preceded and followed by straight pipe lengths as per figure indications.



WIRING DIAGRAM



Ref.	Designation
N	Wiring to neutral
Ph	Wiring to phase
+	Wiring to + pole
-	Wiring to - pole

WARNING: the actuator can only detect control signals >0,5V.

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