

PRESSURE CONTROL

Back pressure regulators UV 4.5 ASME

Standard valve for medium to high flow rates



Technical data

Connection NPS	1/2 - 4
Flange class	150 - 300
PS _{max} *	4 - 145 psi
C _{vs} value	6 - 75 US gal/min.
K _{vs} value	5 - 65 m ³ /h
Temperature	266 °F (steam 302 °F) 130 °C (steam 150 °C)
Medium	liquids, gases and steam
*RT = -10 °C TO + 50 °C	

Description

Self-acting back pressure regulators are simple control valves offering accurate control while being easy to install and maintain. They control the pressure upstream of the valve without requiring pneumatic or electrical control elements.

The back pressure regulator UV 4.5 ASME is a diaphragm-operated, spring-loaded and balanced proportional valve for high flow rates. The valve body is made of cast steel. Diaphragm housing, bonnet and internal parts are made of stainless steel. The valve cone is fitted with a soft seal.

The inlet pressure to be controlled is balanced across the valve seat by the force of the valve spring (set pressure). If the inlet pressure rises above the set pressure, the valve opens. With decreasing inlet pressure the valve control orifice reduces, when the pipeline is depressurised, the valve is closed. Rotating the adjusting screw clockwise increases the inlet pressure.

The valve requires a sense line (to be installed on-site).

These valves are no shut-off elements ensuring a tight closing of the valve. In accordance with DIN EN 60534-4 and/or ANSI FCI 70-2 they may feature a leakage rate in closed position in compliance with the leakage classes V optional IV.

Standard

- » Body made of 1.0619 (GS-C25 / A216-WCB)
- » Diaphragm housing and closed bonnet made from stainless steel 316L (1.4404)
- » Internal parts made of stainless steel 316L / S31803 (1.4404 / 1.4462)
- » Leakage line connection and sealed adjusting screw
- » Balanced cone for soft opening and quick closing
- » Sense line connection
- » EPDM elastomers

Options

- » FKM elastomers
- » PTFE protection foil for diaphragm

Please specify on order

Please specify on order:

» Nominal diameter DN	» Flange PN
» K _{vs} -Value	» Pressure range
» Body material	» Elastomeres

Example: UV 4.5, DN 50, PN 40, K_{vs} 30 m³/h, 2 - 5 bar, GP240GH, EPDM

Product



Picture similar

Technical specification

C_{vs} values [US gal/min]

NPS	1/2	3/4	1	1 1/2	2	2 1/2	3	4
4 - 75 psi	6	8	8	34	34	75	75	75
60 - 145 psi	6	8	8	34	34	58	58	58

K_{vs} values [m³/h]

NPS	1/2	3/4	1	1 1/2	2	2 1/2	3	4
0.3 - 5 bar	5	7	7	30	30	65	65	65
4.5 - 10 bar	5	7	7	30	30	50	50	50

Pressure ranges [bar / psi]

pressure range	bar	0.3 - 1.1	0.8 - 2.5	2 - 5	4.5 - 10
pressure range	psi	4 - 16	10 - 35	30 - 75	60 - 145

Max. operating pressures PS with operating temperature TS

TS	setting range [bar]			
	0.3 - 1.1	0.8 - 2.5	2 - 5	4.5 - 10
-10 up to 150 °C	1.65 bar	3.75 bar	7.5 bar	15 bar

Max. operating pressures PS with operating temperature TS

TS	setting range [psi]			
	4 - 16	10 - 35	30 - 75	60 - 145
-20 up to 302 °F	25 psi	55 psi	110 psi	220 psi

Materials

Materials	
Body	A216-WCB (GP240GH - 1.0619) optional stainless steel 1.4408 (CF8M)
Diaphragm housing	Stainless steel 1.4404 (316L)
Bonnet	Stainless steel 1.4404 (316L)
Internal parts	Stainless steel 316L / S31803 (1.4404 / 1.4462)
Valve seal	Elastomeres optionally made of FKM, PTFE protection foile
Diaphragm	Elastomeres optionally made of FKM, PTFE protection foile
O-ring (release)	Elastomeres optionally made of FKM, PTFE protection foile

*All materials equal or of higher quality

Dimensions and weights

Dimensions [mm]									
size	class	nominal diameter							
		1/2"	3/4"	1"	1 1/2"	2"	2 1/2"	3"	4"
A*	150	184	184	184	222	254	276	298	352
	300	190	194	197	235	267	292	318	368
B		60	60	60	75	75	112	112	112
C		115	115	115	208	208	220	220	220
D		NPT 1/8"				NPT 1/4"			
øE		115	115	115	208	208	220	220	220

Dimensions [inch]									
size	class	nominal diameter							
		1/2"	3/4"	1"	1 1/2"	2"	2 1/2"	3"	4"
A*	150	7.25	7.25	7.25	8.75	10	10.88	11.75	13.88
	300	7.5	7.62	7.75	9.25	10.5	11.5	12.5	14.5
B		2.36	2.36	2.36	2.95	2.95	4.41	4.41	4.41
C		11	11	11	17.4	17.4	20.2	20.2	20.2
D		NPT 1/8"				NPT 1/4"			
øE		4.5	4.5	4.5	8.2	8.2	8.7	8.7	8.7

*Length tolerances according to ANSI/ISA-75.08.01-2016

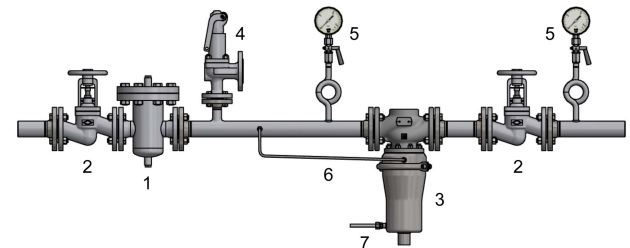
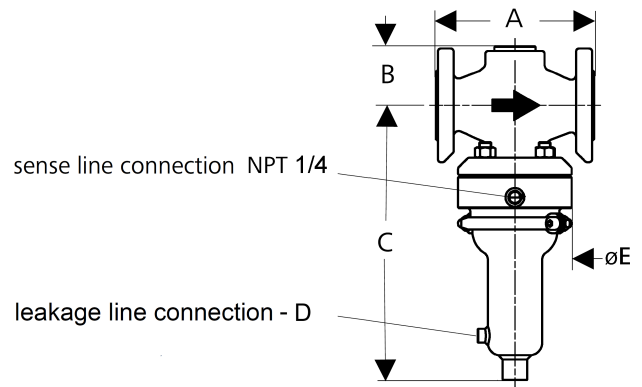
Weights									
Class	NPS	1/2"	3/4"	1"	1 1/2"	2"	2 1/2"	3"	4"
150	kg	9.5	10	10.5	35	38	66.5	68.5	75
	lbs	21	22	23	77	84	146.5	151	165
300	kg	10	11	12	37.5	39	68.5	72.5	83
	lbs	22	24	26.5	82.5	86	151	160	183

Customs tariff number	
84814010	

Recommended installation

- | | | | |
|---|-------------------------|---|----------------|
| 1 | Strainer | 5 | Pressure gauge |
| 2 | Shut-off valves | 6 | Sense line |
| 3 | Back pressure regulator | 7 | Leakage line |
| 4 | Safety valves | | |

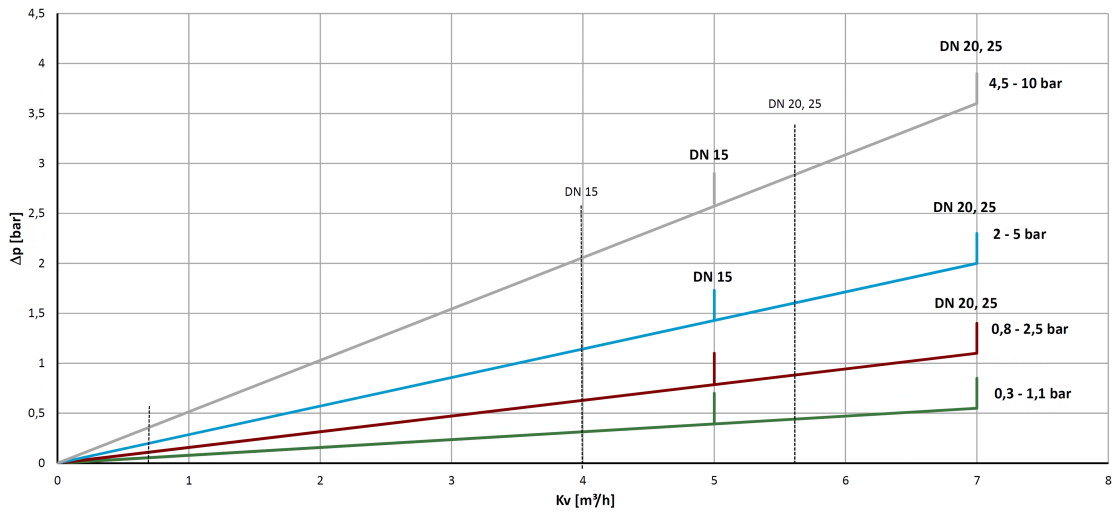
Sense line connection 10 - 20 x DN before the valve



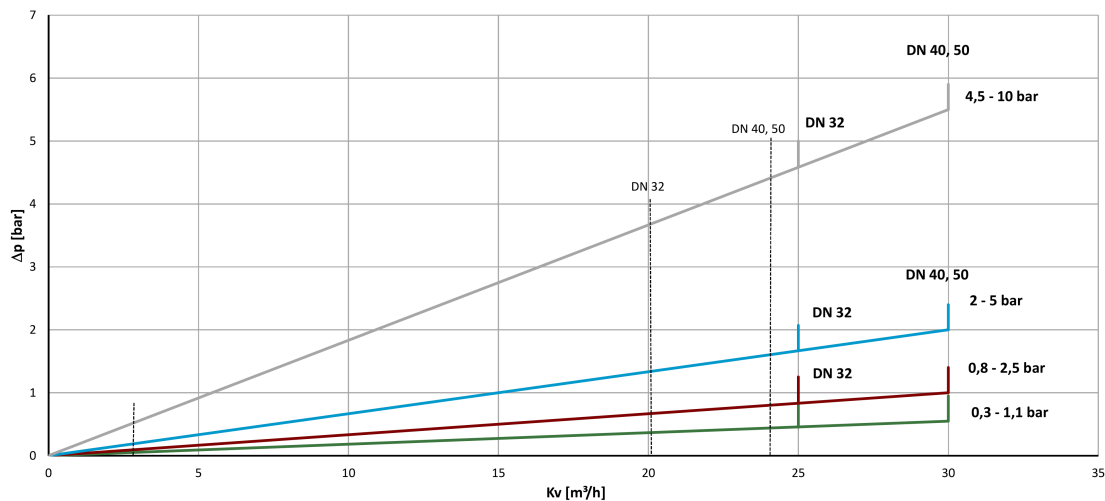
Please send us your enquiry and allow us to advise you. Special designs on request.
The pressure has always been indicated as overpressure. Mankenberg reserves the right to alter technical specifications without notice.

Appendix

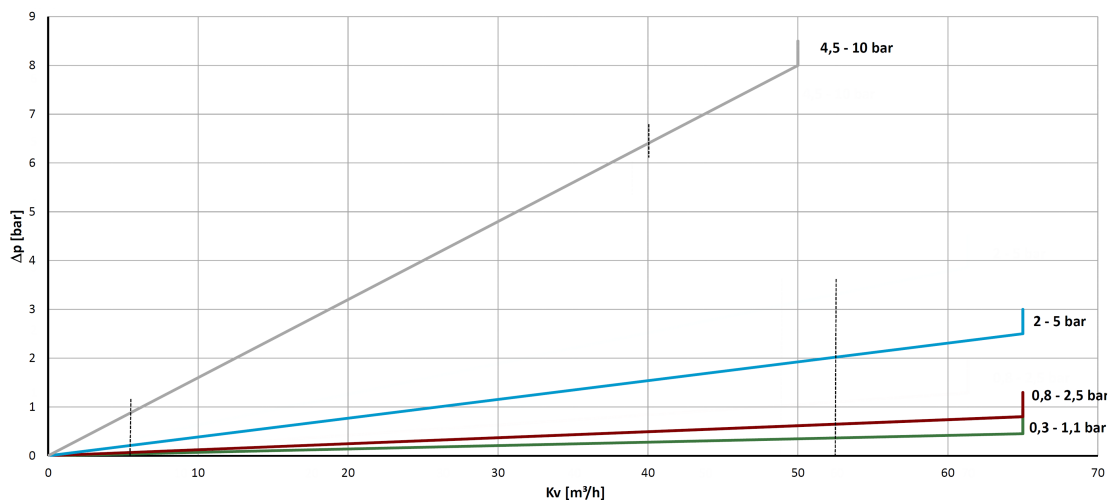
DN 15 - 25



DN 32 - 50



DN 65 - 100



Δp = pressure rise Kv = flow coefficient

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