

Pressure Control Valves

Back Pressure Regulators UV 3.5, 3.5S, 3.5Z

Compact Valve for Small Flow Rates



Technical Data

Connection DN	15 - 25
Connection G	1/2
Nominal Pressure PN	25
Inlet Pressure	0.005 - 20 bar
K_{vs} -Value	0.2 - 0.90 m ³ /h
Temperature	200 °C
Medium	liquids, gases and steam

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 UV 3.5, UV 3.5S and UV 3.5Z backpressure regulators are spring-loaded diaphragm-controlled proportional control valves for small volumes. They are manufactured from deep-drawn stainless steel featuring excellent corrosion resistance. The valve cone can be fitted with a metallic or soft seal.

The spring module comprising spring cap, spring, adjusting screw, diaphragm and internal components, is connected to the valve body only by means of a clamp ring and two bolts. Changing the diaphragm or the complete spring assembly for a different control pressure range is extremely simple and does not call for special tools. The same applies to servicing and maintenance.

Changing the control pressure setting does not affect the height of the valve (non rising adjusting screw).

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 UV 3.5S and UV 3.5Z overflow valves require a pilot 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 III or V, optional IV:

Leakage class III (metal sealing cone) = 0.1 % K_{vs} value

Leakage class IV (PTFE seal cone) = 0.01 % K_{vs} value

Leakage class V (soft seal cone) = $1.8 \times 10^{-5} \times \Delta p \times D^*$ [l/h]

*D=seat diameter

Standard

- » all stainless steel construction
- » non rising adjusting screw
- » quick-release body clamp ring
- » sense line connection (UV 3.5S and UV 3.5Z)

Options

- » pneumatic actuation
- » for toxic or hazardous media: sealed spring cap complete with leakage line connection (incl. sealed adjusting screw). Must be installed with a leakage line capable of draining leaking medium safely and without pressure
- » various diaphragm and seal materials suitable for your medium
- » special connections: Aseptic, ANSI or JIS flanges, NPT, welding spigots; other connections on request
- » special versions on request

Operating instructions, know how and safety instructions must be observed. All the pressure has always been indicated as overpressure. We reserve the right to alter technical specifications without notice.



K_{vs} -Values [m³/h]

seat I	seat II	seat III
0.2	0.5	0.9

Setting Ranges [bar] UV 3.5 + UV 3.5S

setting range bar	nominal pressure
0.005 - 0.025	PN 1
0.02 - 0.12	
0.1 - 0.5	
0.2 - 1.1	PN 2.5
0.8 - 2.5	PN 6
1 - 5	PN 10
4 - 12	PN 25
10 - 20	

Setting Ranges [bar] UV 3.5Z

setting range bar	nominal pressure
0.005 - 0.025	PN 1
0.02 - 0.12	
0.1 - 0.5	
0.2 - 1.1	PN 2.5
0.8 - 2.5	PN 6
1 - 5	PN 10
4 - 12	PN 16

Pressure Control Valves

Back Pressure Regulators UV 3.5, 3.5S, 3.5Z

Compact Valve for Small Flow Rates



Materials			
Type	UV 3.5		UV 3.5Z
Temperature	80 °C	130 °C	200 °C
Body	CrNiMo-steel	CrNiMo-steel	CrNiMo-steel
Spring Cap			
Internals			
Spring	CrNi-steel	CrNi-steel	CrNi-steel
Valve Seal	UV 3.5: CrNiMo-steel UV 3.5S: EU	UV 3.5: CrNiMo-steel UV 3.5S: FPM or EPDM or PTFE	SST 316L
Diaphragm	CR	FPM or EPDM	EPDM
Prtection Foil for Diaphragm	PTFE (option)	PTFE (option)	PTFE (option)

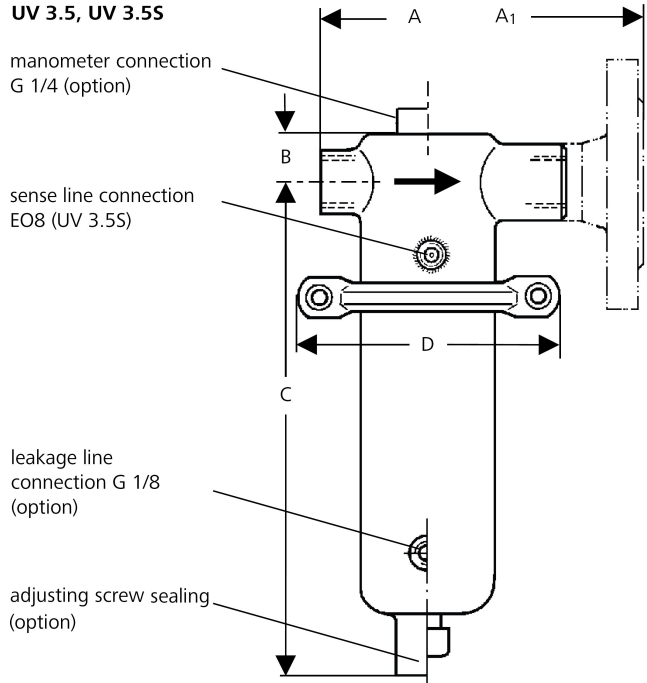
Dimensions [mm]						
setting range bar	size	type	nominal diameter			
			G 1/2	DN 15	DN 20	DN 25
all ranges	B	3.5 + 3.5Z	39	39	39	39
0.005 - 0.025 0.02 - 0.12	A/A ₁	3.5 + 3.5Z	100	130	150	160
	C	3.5	275	275	275	272
	C	3.5Z	405	405	405	415
	D	3.5 + 3.5Z	360	360	360	360
0.1 - 0.5	A/A ₁	3.5 + 3.5Z	100	130	150	160
	C	3.5	275	275	275	272
	C	3.5Z	405	405	405	415
	D	3.5 + 3.5Z	264	264	264	264
0.2 - 1.1	A/A ₁	3.5 + 3.5Z	100	130	150	160
	C	3.5	275	275	275	272
	C	3.5 + 3.5Z	405	405	405	405
	D	3.5 + 3.5Z	200	200	200	200
0.8 - 2.5	A/A ₁	3.5	100	180	180	180
	A/A ₁	3.5Z	100	130	150	160
	C	3.5	205	205	205	205
	C	3.5Z	338	338	338	338
1 - 5 4 - 12 10 - 20	A/A ₁	3.5 + 3.5Z	100	130	150	160
	C	3.5	205	205	205	205
	C	3.5Z	338	338	338	338
	D	3.5 + 3.5Z	114	114	114	114

Weights [kg]					
setting range bar	type	nominal diameter			
		G 1/2	DN 15	DN 20	DN 25
0.005 - 0.025 0.02 - 0.12	3.5	6	7.5	7.5	8
	3.5Z	6.5	8	8	8.5
0.1 - 0.5	3.5	5.5	7	7	7.5
	3.5Z	6	7.5	7.5	8
0.2 - 1.1	3.5	4.5	6	6	6.5
	3.5Z	5	6.5	6.5	7
0.8 - 2.5	3.5	2	3.5	3.5	4
	3.5Z	2.5	4	4	4.5
1 - 20	3.5	1.5	3	3	3.5
	3.5Z	2	3.5	3.5	4

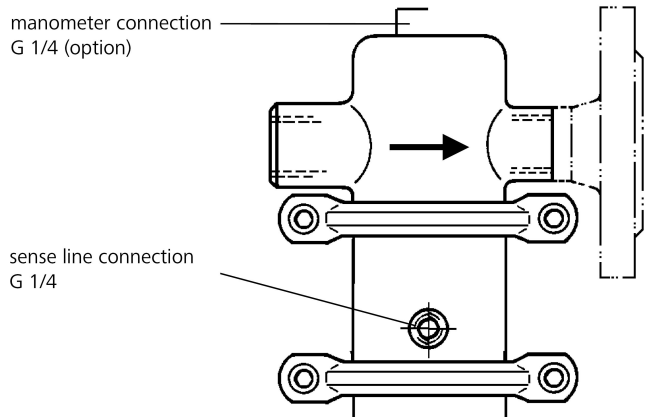
Customs Tariff Number
84814010

Special designs on request.
The pressure has always been indicated as overpressure.
Mankenberg reserves the right to alter or improve the designs or specifications of the products described herein without notice.

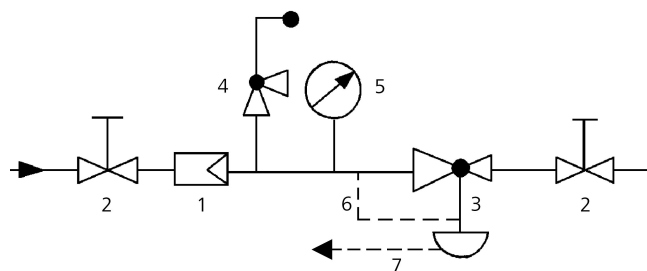
Dimensional Drawing



UV 3.5Z (dimensions see UV 3.5)



Recommended Installation



- 1 Strainer
 - 2 Shut-off Valves
 - 3 Backpressure Regulator
 - 4 Safety Valves
 - 5 Pressure Gauge
 - 6 Sense Line EO8, G 1/4 (option)
 - 7 Leakage Line G 1/8 (option)
- sense line connection 10 - 20 x DN before the valve
use MANKENBERG-Products