

Pressure Control Valves

Backpressure 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

Medium-controlled overflow valves 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 overflow valves 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 bonnet, 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 increasing 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 the VDI/VDE guideline 2174 a leakage rate of 0.05 percent of the constant volume flow is permitted for the valve in closed position.

Standard

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

Options

- » for toxic or hazardous media: sealed bonnet 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 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 |

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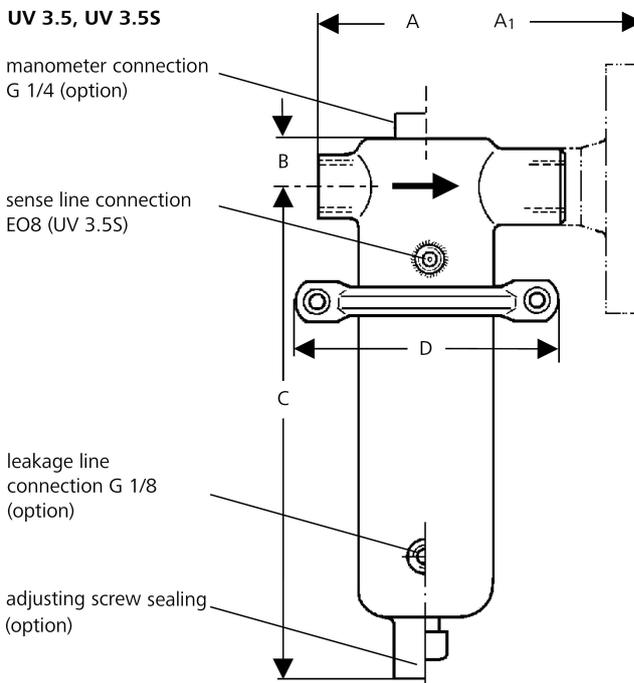
| Materials | | | |
|------------------------------|--|---|---------------|
| Type | UV 3.5 | | UV 3.5Z |
| Temperature | 80 °C | 130 °C | 200 °C |
| Body | CrNiMo-steel | CrNiMo-steel | CrNiMo-steel |
| Bonnet | | | |
| Internals | | | |
| Spring | CrNi-steel | CrNi-steel | CrNi-steel |
| Valve Seal | 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 | 25 | 25 | 25 | 25 |
| 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 |

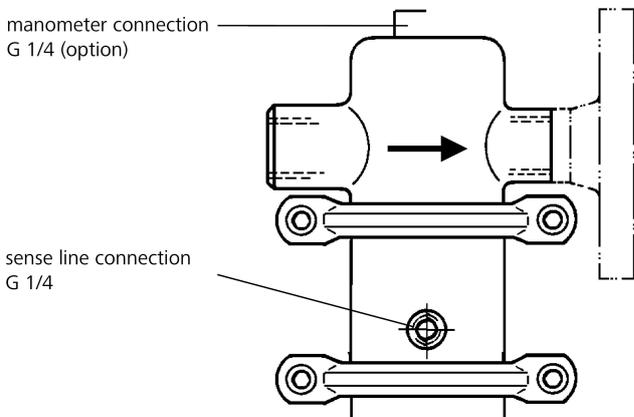
| Weights [kg] | | | | | |
|------------------------------|------|------------------|-------|-------|-------|
| setting range bar | type | nominal diameter | | | |
| | | G 1/2 | DN 15 | DN 20 | DN 25 |
| 0.005 - 0.025 0.02 - 0.12 | 3.5 | 6 | 7.5 | 7.5 | 8 |
| | 3.5Z | 6.5 | 8 | 8 | 8.5 |
| 0.1 - 0.5 | 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 |

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.

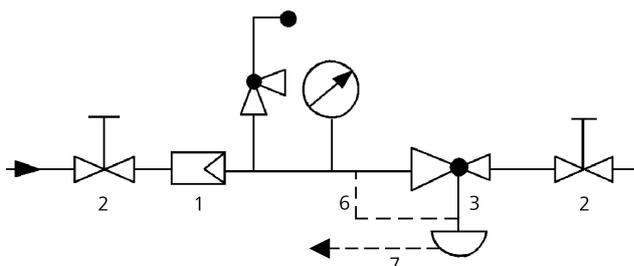
Dimensional Drawing



UV 3.5Z (dimensions see UV 3.5)



Recommended Installation



- 1 Strainer
 - 2 Shut-off Valves
 - 3 Overflow Valve
 - 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