

Pressure Control Valves

Sliding Gate Valves DM 307, 308

High-efficiency Pressure Reducing Valve



Technical Data

| | |
|------------------------|-----------------------------|
| Connection DN | 15 - 50 |
| Nominal Pressure PN | 10 - 40 |
| Inlet Pressure | up to 40 bar |
| Outlet Pressure | 0.1 - 10 bar |
| K _{vs} -Value | 1.7 - 338 m ³ /h |
| Temperature | 300 °C |
| Medium | liquids, gases and steam |

Description

Medium-controlled pressure reducers are simple control valves offering accurate control while being easy to install and maintain. They control the pressure downstream of the valve without requiring pneumatic or electrical control elements.

The DM 307 and DM 308 pressure reducing valves are spring-loaded proportional control valves for large volumes providing the following special features:

- » space-saving installation between flanges
- » low weight (especially for the large valve sizes)
- » valve body geometry common to all pressure ranges PN 10-40
- » high K_{vs} ratings
- » low leakage
- » low-noise operation

Two slotted discs which slide and seal against each other are operated by a medium-controlled spring-loaded diaphragm drive mechanism. When the system is depressurised the valve spring keeps the slots in "open" position. As the pressure rises the fluid flows from the inlet side through the slots and acts on the diaphragm/spring mechanism from the outlet side (outlet pressure) via the pilot line. The outlet pressure to be controlled is balanced across the diaphragm by the force of the valve spring (set pressure). As the outlet pressure rises above the pressure set using the adjusting screw, the slots narrow and the volume of medium is reduced. As the outlet pressure drops the valve control orifice increases; when the pipeline is depressurised the valve is open. Rotating the adjusting screw clockwise increases the outlet pressure. The pressure reducers DM 307 and DM 308 require a pilot line (to be installed on-site). We recommend that the pilot line be fitted with an expansion tank.

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.

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 connections: Aseptic, ANSI or DIN flanges, 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] and max. Δp [bar]

| | | | | | | |
|------------------------|---------------------------|-----|--------|----|---------|---------|
| nom. diam. DN | 15 | 20 | 25 | 32 | 40 | 50 |
| K _{vs} -value | m ³ /h 4 (1.7) | 6.4 | 11 (4) | 16 | 26 (11) | 45 (20) |
| max Δp | bar 36 | 36 | 32 | 40 | 35 | 20 |

K_{vs}-values [m³/h] and max. Δp [bar]

| | | | | | |
|------------------------|----------------------|---------|----------|----------|-----|
| nom. diam. DN | 65 | 80 | 100 | 125 | 150 |
| K _{vs} -value | m ³ /h 52 | 92 (40) | 154 (62) | 237 (95) | 338 |
| max Δp | bar 11 | 6 | 3.8 | 2.4 | 1.9 |

Setting Ranges [bar], Nominal Pressure PN

| | | | | | |
|-----------|-----------|-----------|---------|----------|----------|
| 0.1 - 0.3 | 0.2 - 0.6 | 0.5 - 1.2 | 1 - 2.5 | 2 - 5 | 4 - 10 |
| PN 40/1 | PN 40/1 | PN 40/2.5 | PN 40/6 | PN 40/10 | PN 40/16 |

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Materials

| | | | |
|---------------------|---|----------------------------|-------------------------|
| Design | standard | medium wetted CrNiMo-steel | completely CrNiMo-steel |
| Body | C-steel | CrNiMo-steel | CrNiMo-steel |
| Diaphragm Housing. | C-steel | CrNiMo-steel | CrNiMo-steel |
| Bonnet | C-steel | CrNiMo-steel | CrNiMo-steel |
| Spring | spring steel C | spring steel C | CrNiMo-steel |
| Plates (valve seal) | stainless steel, special carbon material, metallic impregnation | | |
| Diaphragm | CR optional FPM, EPDM or PTFE | | |

Dimensions [mm]

| pressure range bar | size | nominal diameter DN | | | | | | | | | | |
|-----------------------|------|---------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | | 15 | 20 | 25 | 32 | 40 | 50 | 65 | 80 | 100 | 125 | 150 |
| all ranges | øE | 53 | 62 | 72 | 82 | 92 | 108 | 127 | 142 | 164 | 194 | 219 |
| | A | 33 | 33 | 33 | 33 | 33 | 43 | 46 | 46 | 52 | 56 | 56 |
| 0,1-0,3 | B* | 550 | 555 | 560 | 680 | 685 | 695 | 705 | 715 | 725 | 740 | 755 |
| | D | 360 | 360 | 360 | 500 | 500 | 500 | 500 | 500 | 500 | 500 | 500 |
| 0,2-0,6 | B* | 550 | 555 | 560 | 680 | 685 | 695 | 705 | 715 | 725 | 740 | 755 |
| | D | 270 | 270 | 270 | 360 | 360 | 360 | 360 | 360 | 360 | 360 | 360 |
| 0,5-1,2 | B* | 550 | 555 | 560 | 680 | 685 | 695 | 705 | 715 | 725 | 740 | 755 |
| | D | 220 | 220 | 220 | 270 | 270 | 270 | 270 | 270 | 270 | 270 | 270 |
| 1,0-2,5 2-5 / 4-10 | B* | 530 | 535 | 540 | 680 | 685 | 695 | 705 | 715 | 725 | 740 | 755 |
| | D | 175 | 175 | 175 | 220 | 220 | 220 | 220 | 220 | 220 | 220 | 220 |

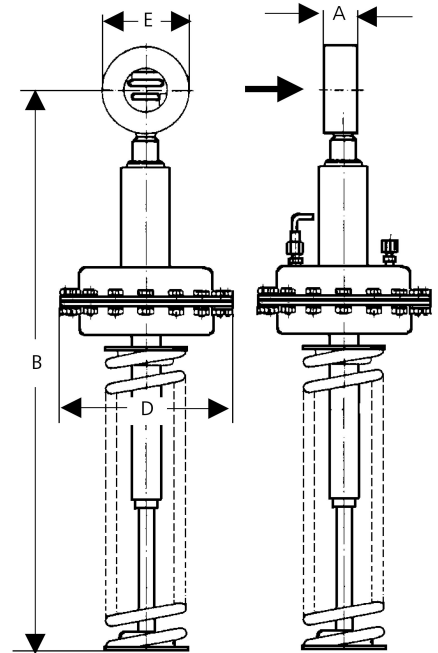
*max. size with stressless spring
DM 308 (closed spring cap) size C + 200 mm

Weights [kg]

| pressure range bar | nominal diameter DN | | | | | | | | | | |
|--------------------|---------------------|------|------|----|------|------|------|------|------|------|------|
| | 15 | 20 | 25 | 32 | 40 | 50 | 65 | 80 | 100 | 125 | 150 |
| 0.1-0.3 | 19.7 | 19.8 | 19.9 | 23 | 23.1 | 24.2 | 24.7 | 25.4 | 25.6 | 28.4 | 30.4 |
| 0.2-0.6 | 16.7 | 16.8 | 16.9 | 22 | 22.1 | 23.2 | 23.7 | 24.4 | 24.6 | 27.4 | 29.4 |
| 0.5-1.2 | 13.7 | 13.8 | 13.9 | 19 | 19.1 | 20.2 | 20.7 | 21.4 | 22.6 | 24.4 | 26.4 |
| 1.0-10 | 12.7 | 12.8 | 12.9 | 16 | 16.1 | 17.2 | 17.7 | 18.4 | 19.6 | 21.4 | 23.4 |

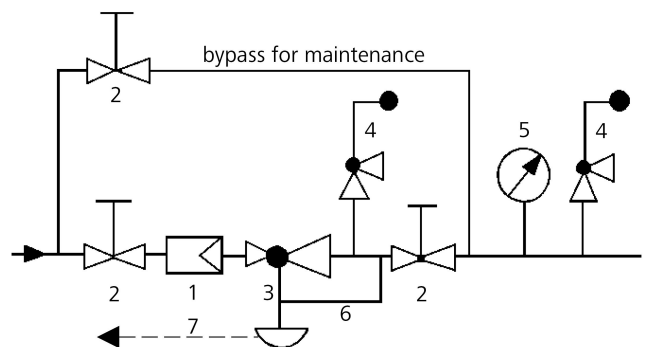
Special designs on request.
The pressure has always been indicated as overpressure.
Mankenberg reserves the right to alter or improve the designs or specifications of the products described herein without notice.

Dimensional Drawing



D = diaphragm ø
control line connection ø 8/6 Ermeto

Recommended Installation



- 1 Strainer
- 2 Shut-off Valves
- 3 Pressure Reducer
- 4 Safety Valves
- 5 Pressure Gauge
- 6 Sense Line Ø 8/6 Ermeto
- 7 Leakage Line (option)

sense line connection 10 - 20 x DN behind the valve
use MANKENBERG-Products