

PRESSURE CONTROL

Pressure reducing valve DM 503

Valve for small to medium flow rates

Technical data

| | |
|---------------------|-----------------------------|
| Connection G | 1/2 - 1 1/2 |
| Nominal pressure PN | 100 |
| Inlet pressure | 100 bar |
| Back pressure | 2 - 21 bar |
| K_{vs} value | 1.3 - 4.8 m ³ /h |
| Temperature | -35 up to 130 °C |
| Medium | liquids and gases |

Description

Self-acting 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 pressure reducer DM 503 is a diaphragm-controlled spring-loaded proportional control valve for small to medium flow rates. The valve body and medium-wetted internal parts are made of stainless steel 316Ti and 316L featuring excellent corrosion resistance. The valve cone is soft-seated.

The outlet pressure to be controlled is balanced across the control unit by the force of the valve spring (set pressure). As the outlet pressure rises above the pressure set using the adjusting screw, the valve cone moves towards the seat 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.

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 IV (0,01 % K_{vs} value).

Standard

- » Body and medium wetted internal parts made of 316Ti and 316L stainless steel
- » Non-rising adjusting screw
- » Pressure gauge connection

Options

- » 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



Picture similar

Technical specification

K_{vs} values m³/h

| Nominal diameter | G 1/2 - 1 | G 1 1/4 - 1 1/2 | |
|-------------------|-----------|-----------------|-----|
| m ³ /h | 1.3 | 3 | 4.8 |

Setting range [bar]

| Nominal diameter | G 1/2 - 1 1/2 | | |
|------------------|---------------|--------|---------|
| bar | 2 - 5 | 4 - 12 | 10 - 21 |

Permissible Reduction Ratio (max. p_1/p_2)

| Pressure range | K_{vs} value m ³ /h | | |
|----------------|----------------------------------|----|-----|
| bar | 1.3 | 3 | 4.8 |
| 2 - 5 | 15 | 12 | 6 |
| 4 - 12 | 15 | 12 | 6 |
| 10 - 21 | 13 | 9 | 5 |

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Materials

| Materials | | |
|-----------------------|--------------------------------|-------------|
| Temperature | 80°C | 130°C |
| Body | 1.4571 / 316Ti + 1.4404 / 316L | |
| Bonnet | 1.4404 / 316L | |
| Internal parts | 1.4404 / 316L | |
| Adjusting screw | A4 | |
| Spring | 1.4310 / 304 | |
| Soft seal / Cone seal | PEEK | |
| Diaphragm | CR | EPDM or FKM |

*All materials equal or of higher quality

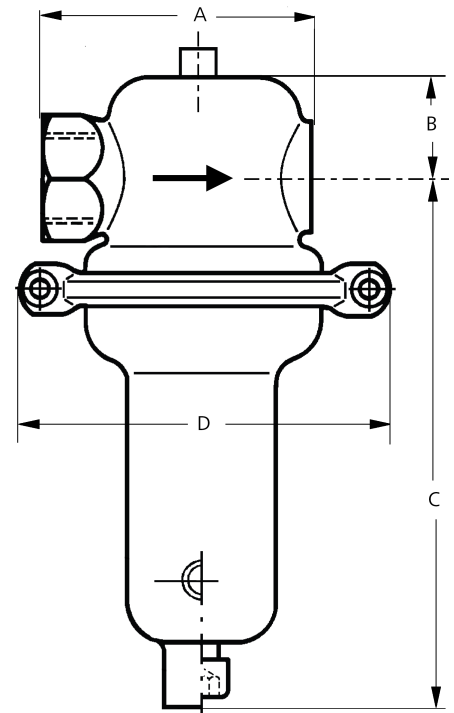
Dimensions and weights

| Dimensions [mm] | | | | | |
|-----------------|--------------------|-----|-----|-------|-------|
| Size | Nominal diameter G | | | | |
| | 1/2 | 3/4 | 1 | 1 1/4 | 1 1/2 |
| A* | 159 | 159 | 105 | 186 | 130 |
| B | 51 | 51 | 51 | 65 | 65 |
| C | 200 | 200 | 200 | 205 | 205 |
| D | 138 | 138 | 138 | 138 | 138 |

*overall length tolerances in acc. with DIN EN 558

| Weights [kg] | | | | | |
|--------------------|--------------------|-----|-----|-------|-------|
| Pressure range bar | Nominal diameter G | | | | |
| | 1/2 | 3/4 | 1 | 1 1/4 | 1 1/2 |
| 2 - 5 / 4 - 12 | 3.1 | 3.1 | 2.4 | 4.2 | 3.2 |
| 10 - 21 | 3.6 | 3.6 | 2.9 | 5 | 4 |

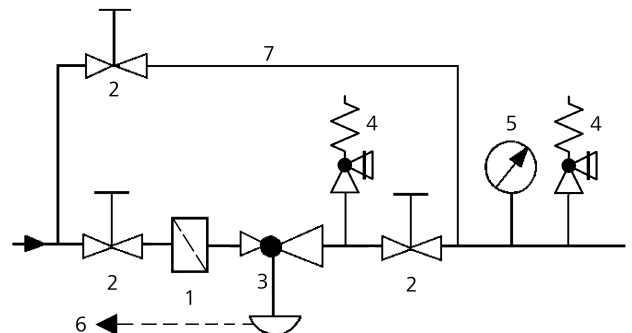
| Customs tariff number | |
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| 84811019 | |



Recommended installation

- 1 Strainer
- 2 Shut-off valves
- 3 Pressure reducing valve
- 4 Safety valve
- 5 Pressure gauge
- 6 Leakage line (option)
- 7 Bypass for maintenance

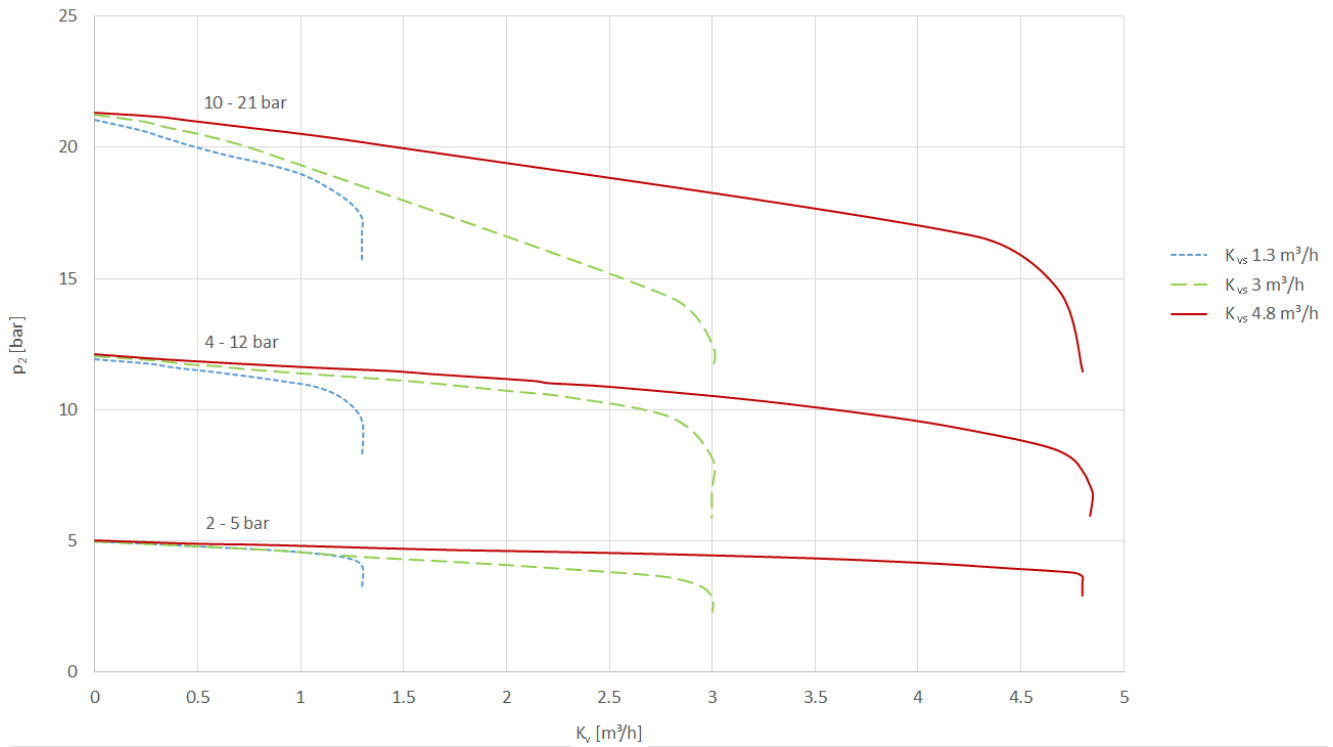
Sense line connection 10 - 20 x DN behind the valve



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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.

Flow chart



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