

# Pressure Control Valves DM 307, 308

## Sliding Gate Valves

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 <sub>vs</sub> -Value	1.7 - 338 m <sup>3</sup> /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<sub>vs</sub> 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<sub>vs</sub>-Values [m<sup>3</sup>/h] and max. Δp [bar]

nom. diam. DN	15	20	25	32	40	50
K <sub>vs</sub> -value	m <sup>3</sup> /h 4 (1.7)	6.4	11 (4)	16	26 (11)	45 (20)
max Δp	bar 40	40	32	40	35	20

#### K<sub>vs</sub>-values [m<sup>3</sup>/h] and max. Δp [bar]

nom. diam. DN	65	80	100	125	150
K <sub>vs</sub> -value	m <sup>3</sup> /h 52	92 (40)	154 (62)	237 (95)	338
max Δp	bar 15	9	6	4	3

#### 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

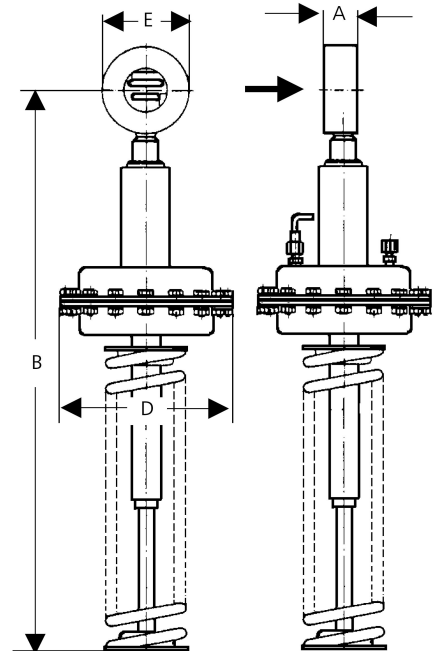
\*max. size with stressless spring  
DM 308 (closed spring cap) size C + 200 mm

### 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

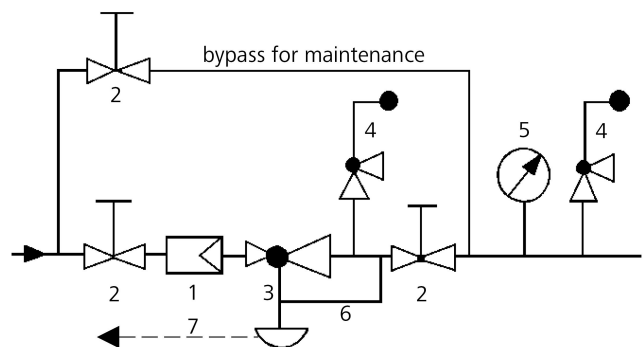
Special designs on request.  
The pressure has always been indicated as overpressure.  
Mankenberg reserves the right, to alter or improve the designs or specifications of the products described herein without notice.

### 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