

PRESSURE CONTROL

Pressure reducing valve DM 505

Valve for small flow rates



Technical data

Connection DN	15 - 25
Connection G	1/2
Nominal pressure PN	250
Inlet pressure	up to 250 bar
Outlet pressure	0.005 - 20 bar
K_{vs} value	0.05 - 1.4 m ³ /h
Temperature	130 °C
Medium	liquids, gases and steam

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 reducing valve DM 505 is a diaphragm-controlled spring-loaded proportional control valve for small volumes. This pressure reducer is manufactured from deep-drawn stainless steel featuring excellent corrosion resistance. The tubular inlet spigot of the valve body accommodates the seat aperture. The soft-sealing valve cone is guided in the seat assembly and connected with the control diaphragm by means of a stirrup which surrounds the seat assembly.

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 range is very easy and without 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).

Outlet pressures ≤ 1.1 bar DM 505 requires a sense line (to be installed on-site).

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 V optional IV.

The design data refer to the maximum inlet pressure, the outlet pressure is limited by the setting range.

Standard

- » All stainless steel construction
- » Non-rising adjusting screw
- » Quick-release body clamp ring
- » Sense line connection (for outlet pressures $\leq 1,1$ bar)

Options

- » Pressure gauge connection
- » Electro-pneumatic control
- » 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
- » Different materials for diaphragm and seals, suitable for your medium
- » special connections: Aseptic, ANSI or DIN flanges, NPT, welding spigots; other connections on request
- » Special versions on request

Product



Picture similar

Technical specification

K_{vs} values [m³/h]

for all body sizes	0.05	0.2	0.5	0.9	1.4
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Setting ranges [bar] gases and steam

0.005 - 0.025			0.02 - 0.12		
0.1 - 0.5	0.2 - 1.1	0.8 - 2.5	1 - 5	4 - 12	12 - 20

Setting ranges [bar] liquids

0.1 - 0.5	0.2 - 1.1	0.8 - 2.5	1 - 5	4 - 12	12 - 20
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Permissible reduction ratio (max. p_1/p_2)

setting range bar	K_{vs} value m ³ /h				
	0.05	0.2	0.5	0.9	1.4
0.005 - 0.12	2415	1485	1000	750	530
0.1 - 0.5	665	405	280	210	145
0.2 - 1.1	303	185	125	100	66
0.8 - 2.5	175	105	70	50	38
1 - 20	64	39	27	20	14

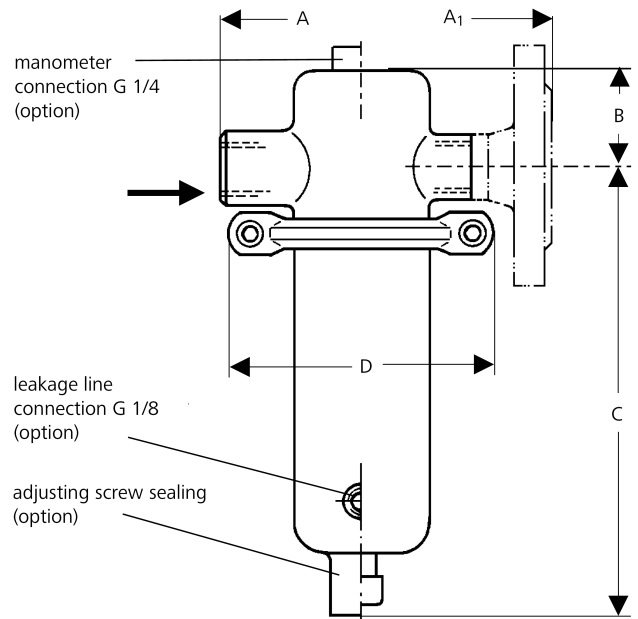
Materials

Materials*		
1	Body	stainless steel 1.4404 / 316L
2	Bonnet	stainless steel 1.4404 / 316L
3	Spring	stainless steel 1.4310 / 301
4	Internals	stainless steel 1.4404 / 316L
5	Adjusting screw	stainless steel 1.4404 / 316L
6	Valve seal	EPDM
7	Diaphragm	EPDM
8	Protection foil	option

*all materials equal or of higher quality

Dimensions and weights

Dimensions [mm]					
setting range [bar]	size	G 1/2	nominal diameter flanges acc. to DIN EN 1092-1		
			DN 15	DN 20	DN 25
0.005 - 0.025	A*/A ₁ *	100	130	150	160
	B	39	39	39	39
	C	257	257	257	257
	D	360	360	360	360
0.1 - 0.5	A*/A ₁ *	100	130	150	160
	B	39	39	39	39
	C	257	257	257	257
	D	264	264	264	264
0.2 - 1.1	A*/A ₁ *	100	130	150	160
	B	39	39	39	39
	C	257	257	257	257
	D	200	200	200	200
0.8 - 2.5	A*/A ₁ *	100	180	180	180
	B	39	39	39	39
	C	196	196	196	196
	D	138	138	138	138
1 - 5	A*/A ₁ *	100	130	150	160
	B	39	39	39	39
	C	190	190	190	190
	D	114	114	114	114



*overall length tolerances in acc. with DIN EN 558

**dimensions can vary according to type of connection, please inquire

Weights [kg]				
setting ranges [bar]	G 1/2	flanges acc. to DIN EN 1092-1		
		DN 15	DN 20	DN 25
0.005 - 0.025	6	7.5	7.5	8
0.02 - 0.12				
0.1 - 0.5	5.5	7	7	7.5
0.2 - 1.1	4.5	6	6	6.5
0.8 - 2.5	2	3.5	3.5	4
1 - 20	1.5	3	3	3.5

Customs tariff number

84811019

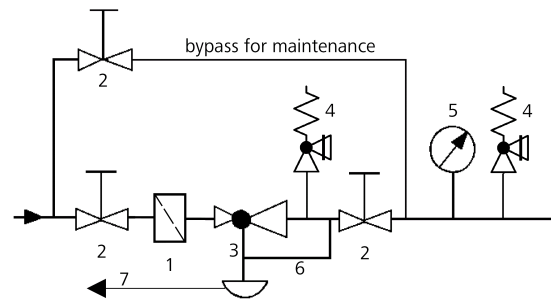
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Recommended installation

- 1 Strainer
- 2 Shut-off valves
- 3 Pressure reducing valve
- 4 Safety valve
- 5 Pressure gauge
- 6 Sense line
- 7 Leakage line

Sense line connection 10 - 20 x DN behind the valve



Authorised Distributor:



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Selangor Darul Ehsan, Malaysia.
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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.