

DM 505 for liquids and gases up to 130 °C, DM 505Z for steam up to 200 °C for low flow rates

## Technical Data

Connection	G 1/2
	DN 15 - 25
Nominal Pressure	Inlet PN 250
	Outlet PN 1 - 25
Inlet Pressure	up to 250 bar
Outlet Pressure	DM 505: 0.005 - 20 bar in 8 ranges
	DM 505Z: 0.005 - 12 bar in 7 ranges
$K_{vs}$ -Value	0.15 - 0.9 m <sup>3</sup> /h
Sense Line	DM 505: setting range 0.005 - 1.1 bar
	DM 505Z: all setting ranges
Tightness	acc. to VDI/VDE-guideline 2174
	(leakage rate $\leq$ 0.05% of $K_{vs}$ -value)

## 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 505 pressure reducing valve 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 valve type 505 Z, recommended for temperatures up to 200 °C, is identical in its design apart from the metallic cone seal and water-cooled thermal protection between body and diaphragm.

The spring module comprising spring cover, spring, setting spindle, 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-rising setting spindle).

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 setting spindle, 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 setting spindle clockwise increases the outlet pressure.

DM 505 Z requires a pilot line (to be installed on-site); for outlet pressures  $\leq$  1.1 bar DM 505 also requires a pilot line.

## STANDARD EQUIPMENT

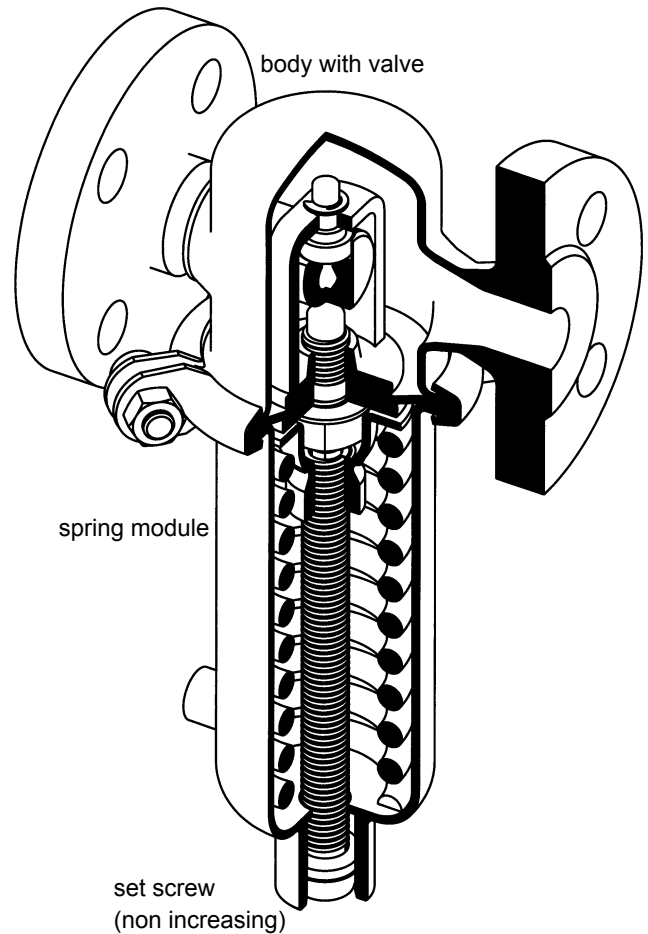
- All stainless steel construction
- Non-rising setting spindle
- Quick-release body clamp ring
- Pilot line connection (in the case of DM 505 only for outlet pressures  $\leq$  1.1 bar)

## OPTIONS

- Pressure gauge connection
- For toxic or hazardous media: sealed spring cover complete with leakage line connection (incl. sealed setting spindle). 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.

We reserve the right to alter technical specifications without notice.



<b><math>K_{vs}</math>-values [m<sup>3</sup>/h]</b>			
for all body sizes, please select	0.15	0.4	0.9

<b>DM 505 setting ranges [bar]</b>							
0.005-0.025	0.02-0.12	0.1-0.5	0.2-1.1	0.8-2.5	1-5	4-12	10-20

<b>DM 505Z setting ranges [bar]</b>						
0.005-0.025	0.02-0.12	0.1-0.5	0.2-1.1	0.8-2.5	1-5	4-12

<b>Permissible Reduction Ratio (max. <math>p_1/p_2</math>)</b>			
max. $p_1 = 250$ bar			
setting ranges 0.005 - 0.025 and 0.02- 0.12 bar			
$K_{vs}$ -value	0.15	0.4	0.9
ratio $p_1/p_2$	1485	1000	750
setting range 0.1 - 0.5 bar			
$K_{vs}$ -value	0.15	0.4	0.9
ratio $p_1/p_2$	405	280	210
setting range 0.2 - 1.1 bar			
$K_{vs}$ -value	0.15	0.4	0.9
ratio $p_1/p_2$	185	125	100
setting range 0.8 - 2.5 bar			
$K_{vs}$ -value	0.15	0.4	0.9
ratio $p_1/p_2$	105	70	50
setting range 1 - 5 bar, 4 - 12 bar, 10 - 20 bar			
$K_{vs}$ -value	0.15	0.4	0.9
ratio $p_1/p_2$	39	27	20

# Pressure Control Valves

# DM 505, 505Z

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for low flow rates

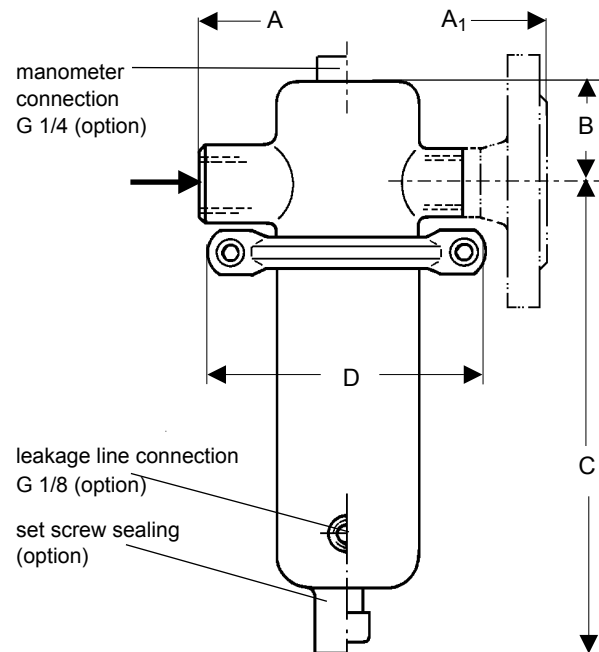
Materials			
Type	DM 505		DM 505Z
Temperature	80 °C	130 °C	200 °C
Body	CrNiMo-steel	CrNiMo-steel	CrNiMo-steel
Spring Cap			
Internals			
Set Screw			
Spring	CrNi-steel	CrNi-steel	CrNi-steel
Valve Seal	EU	FPM optional EPDM or PTFE	CrNiMo-steel
Diaphragm	CR	FPM oder EPDM	EPDM
Protection Foil	PTFE (option)	PTFE (option)	PTFE (option)

Dimensions [mm]						
pressure range [bar]	size	DM	G 1/2	flanges acc. to DIN 2635		
				DN 15	DN 20	DN 25
all ranges	A/A <sub>1</sub>	505 + 505Z	100	130	150	160
	B	505 + 505Z	53	53	53	53
0.005 - 0.025	C	505	257	257	257	267
	C	505Z	387	387	387	297
0.02 - 0.12	D	505 + 505Z	360	360	360	360
	C	505	257	257	257	267
0.1 - 0.5	C	505Z	387	387	387	297
	D	505 + 505Z	264	264	264	264
0.2 - 1.1	C	505	257	257	257	257
	C	505Z	387	387	387	387
0.8 - 2.5	D	505 + 505Z	200	200	200	200
	C	505	196	196	196	196
1 - 5	C	505Z	326	326	326	326
	D	505 + 505Z	138	138	138	138
4 - 12	C	505	190	190	190	190
	C	505Z	320	320	320	320
10 - 20	D	505 + 505Z	114	114	114	114

Weights [kg]					
pressure range [bar]	DM	G 1/2	flanges acc. to DIN 2635		
			DN 15	DN 20	DN 25
0.005 - 0.025	505	6	7.5	7.5	8
	505Z	6.5	8	8	8.5
0.02 - 0.12	505	5.5	7	7	7.5
	505Z	6	7.5	7.5	8
0.1 - 0.5	505	4.5	6	6	6.5
	505Z	5	6.5	6.5	7
0.2 - 1.1	505	2	3.5	3.5	4
	505Z	2.5	4	4	4.5
0.8 - 2.5	505	1.5	3	3	3.5
	505Z	2	3.5	3.5	4
1 - 5	505	1.5	3	3	3.5
4 - 12	505	2	3.5	3.5	4
10 - 20	505Z	2	3.5	3.5	4

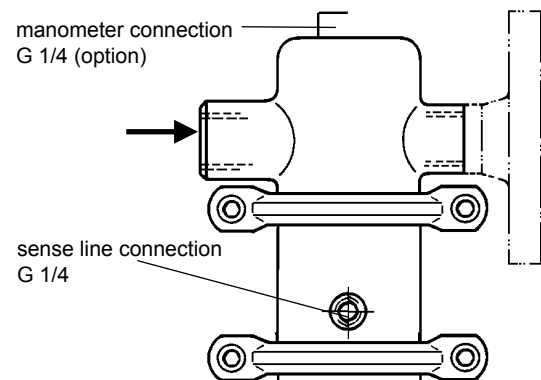
We reserve the right, to alter or improve the designs or specifications of the products described herein without notice.  
Special designs on request.

## DM 505

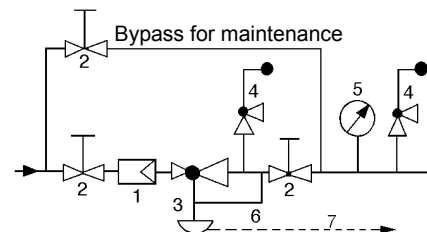


## DM 505Z

dimensions see DM 505



## Recommended Installation



- |                    |                               |
|--------------------|-------------------------------|
| 1 Strainer         | 5 Pressure Gauge              |
| 2 Shutoff Valves   | 6 Sense Line G 1/4 (DM 505Z)  |
| 3 Pressure Reducer | 7 Leakage Line G 1/8 (option) |
| 4 Safety Valve     |                               |

Sense line connection 10 - 20 x DN behind the valve