PRESSURE CONTROL

Pressure reducing valve DM 510, 514

High pressure valve for small to medium flow rates

Technical data

Connection DN	15 - 50
Connection G	3/8 - 2
Nominal pressure PN	16 - 320
Inlet pressure	up to 320 bar
Outlet pressure	2 - 160 bar
K_{vs}value	0.2 - 5.5 m³/h
Temperature	400 °C
Medium	liquids, gases and steam

*RT = -10 °C up to + 50 °C

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 DM 510 and DM 514 pressure reducing valves are diaphragm, piston or bellows-controlled spring-loaded proportional control valves for high inlet and outlet pressures. They can be supplied with three types of connections: sockets, flanges and welding spigots. Each size of valve may be fitted with three different seats. The valve cone may be fitted with a soft or metallic seal.
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 III or V, optional IV.

Options

- Set pressure from 0,005 bar up to 2 bar (see sheet DM512/2.1....)
- Pressure gauge connection
- Hard-faced valve cone and seat
- 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 materials such as Duplex, Superduplex, Hastelloy® or titanium, others on request
- Special connections: ANSI or JIS flanges, NPT, welding spigots; other connections on request
- Special versions on request

Product

Picture similar

Technical specification

For more information see the attachment.

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Materials

Materials*			
Temperature	80 °C	130 °C	400 °C
Body	G 3/8 - 1, DN 15 - 25 = C-steel G 1 1/4 - 2, DN 32 - 50 = Stell welded Optional stainless steel for all diameters		
Bonnet	Steel welded optional stainless steel		
Internals	Stainless steel		
Spring	Stainless steel		
Metallic seal	Stainless steel		
Soft seal	EU	EPDM optional FKM or PTFE	
Diaphragm	EPDM	EPDM optional FKM	-
Protection foil (option)	PTFE		
O-ring for piston	EPDM	EPDM optional FKM or PTFE	-
Bellow	-	-	stainless steel

*All materials equal or of higher quality

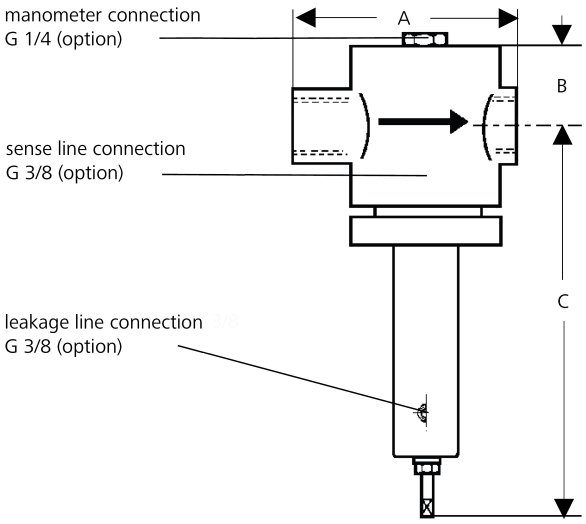
Dimensions and weights

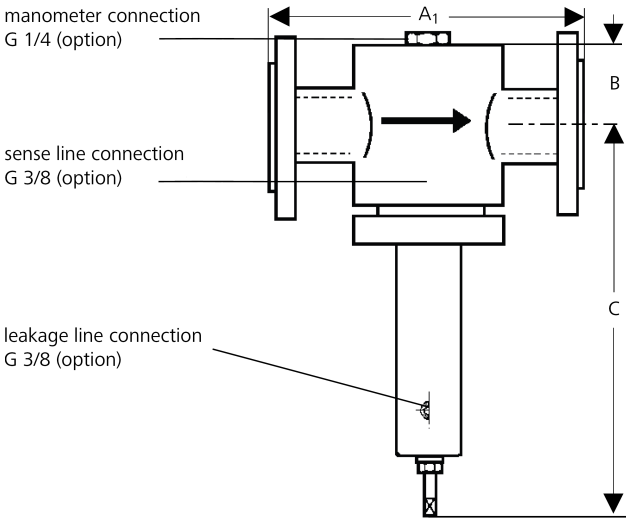
Dimensions [mm]
on request

Weights [kg]
on request

As the valve is designed specifically for your operating data and may vary considerably in terms of construction, we are unable at this stage to give any dimensions or weights. Please contact us if you have specific queries.

Customs tariff number
84811019





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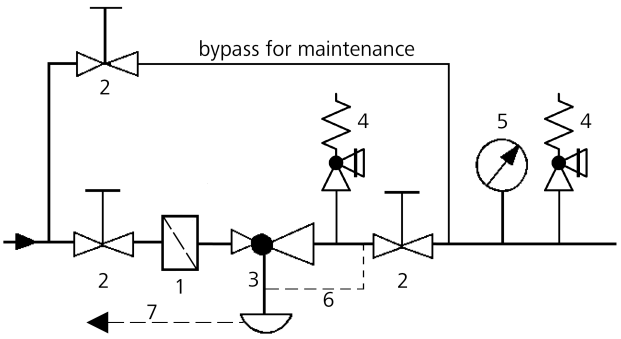
Recommended installation

1	Strainer	5	Pressure gauge
2	Shut-off valves	6	Sense line G 3/8 (option)
3	Pressure reducer	7	Leakage line G 3/8
4	Safety valves	8	Bypass

Sense line connection 10 - 20 x DN behind the valve



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Appendix

Permissible reduction ratio (max. p_1/p_2) DM 510

setting range bar	seat	nominal diameter		
		G 3/8 - 1	G 1 1/4 - 1 1/2	G 2
		DN 15 - 25	DN 32 - 40	DN 50
2 - 4	I	100	80	60
	II	30	29	18
	III	15	15	12
4 - 7	I	80	52	39
	II	30	19	12
	III	15	10	8
7 - 10	I	80	38	28
	II	30	14	8
	III	15	7	6
5 - 16	I	32	45	33
	II	21	16	10
	III	9	8	7
10 - 20	I	32	38	28
	II	21	14	8
	III	9	7	6
10 - 25	I	20	25	18
	II	17	9	6
	III	7	4,5	4
20 - 35	I	16	20	15
	II	13	7	4,5
	III	4	3,5	3
35 - 50	I	9	15	11
	II	9	5,5	3
	III	4	3	2,5
45 - 63	I	7	11	8
	II	7	4	2,5
	III	3	2	1,5
60 - 100	I	6	8	5,5
	II	6	2,5	1,5
	III	2,5	1,5	1,2

Permissible reduction ratio (p_1/p_2) DM 514

setting range bar	seat	G 3/8 - 2	DN 15 - 50
all ranges	I	4	
	II		
	III		

K_{vs} values [m^3/h]

nominal diameter								
G		3/8	1/2	3/4	1	1 1/4	1 1/2	2
DN		-	15	20	25	32	40	50
Sitz	I	0,2	0,2	0,25	0,25	0,4	0,4	1
	II	0,9	0,9	0,9	0,9	2,5	2,5	3,5
	III	1,7	1,8	2	2,2	3,9	3,9	5,5

Setting ranges [bar], DM 510

2 - 4	4 - 7	7 - 10	5 - 16	10 - 20
10 - 25	20 - 35	35 - 50	45 - 63	60 - 100

Setting ranges [bar], DM 514

40 - 100	80 - 160

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.

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