

Pressure Control Valves

Pressure Reducing Valves DM 586 ATEX

Millibar valve for potentially explosive atmospheres



Technical Data

Connection DN	20 - 50
Connection G	3/4 - 2
Nominal Pressure PN	16
Inlet Pressure	up to 16 bar
Outlet Pressure	0.008 - 0.95 bar
K _{vs} -Value	7 - 22 m ³ /h
Temperature	-10 °C 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 reducing valve DM 586 ATEX is a diaphragm-controlled, spring-loaded and balanced proportional control valve for high flow rates especially for the control of millibar ranges in potentially explosive atmospheres. The valve is made of deep-drawn stainless steel with excellent corrosion resistance. The valve cone is soft-sealed.

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.

Standard

- » All stainless steel construction
- » Non rising adjusting screw
- » Sense line connection
- » Balanced cone for controlling the outlet pressure independently from the inlet pressure

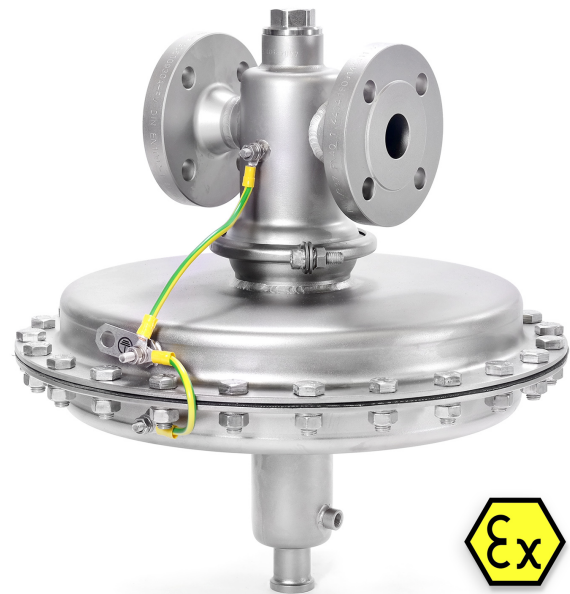
Special features of the ATEX version

- » Conformity to ATEX Directive 2014/34 / EU and DIN EN ISO 80079-36
- » Leakage line connection, adjusting screw seal and lock
- » Potential equalization among the valve components
- » Protected body connections
- » Grounding device at the valve body
- » Electrically conductive components

Options

- » Various diaphragm and seal materials suitable for your medium
- » Kleiner K_{vs}-Wert für Nennweite DN 40 + DN 50
- » Special connections: Aseptic, ANSI or JIS flanges, NPT, welding spigots; other connections on request

Operating instructions, supplementary operating instructions, know-how and safety instructions must be strictly observed. All the pressure has been specified as overpressure. Technical data subject to change.



ATEX Marking

Ex II 2G Ex h IIB 85°C...130°C Gb X

K_{vs} Values [m³/h]

nominal diameter	G	3/4	1	1 1/2	2
	DN	20	25	40	50
K _{vs} value	m ³ /h	7	8	22 (8*)	22 (8*)

* Option

Setting Ranges [bar], Nominal Pressure

0.008 - 0.03	0.02 - 0.12	0.1 - 0.65	0.3 - 0.95
PN 16/1	PN 16/1	PN 16/1	PN 16/2.5

Reduction Ratio (max. p₁/p₂)

setting range [bar]	K _{vs} value [m ³ /h]		diaphragm ø [mm]
	7 + 8	22	
0.008 - 0.03	600	375	360
0.02 - 0.12	350	350	360
0.1 - 0.65	300	300	200
0.3 - 0.95	170	170	200

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Materials

Design	Standard	Option
Body	1.4404 / 316L	
Diaphragm Housing	1.4404 / 316L	
Seat	1.4408 / 316L	
Cone Plate	1.4404 / 316L	
Valve Seal	EPDM	FKM
Diaphragm	EPDM	FKM, PTFE-protection foil
O-Rings	EPDM	FKM
Medium Wetted Internal Parts	1.4404 - 1.4462 / 316L - Duplex	
Spring	1.4310 / 301	
Spring Cap	1.4404 - 1.4571 / 316L - 316Ti	
Screws, Nuts	A4-70,A4	

Mankenberg is free to upgrade materials without further notice. Special designs may differ in material choice.

Dimensions [mm]

pressure range bar	size	nominal diameter / K_{vs} -values [m ³ /h]					
		G 3/4 DN 20	G 1 DN 25	G 1 1/2 DN 40		G 2 DN 50	
all ranges	A*	91	85	145	145	185	185
	A ₁ *	150	160	200	200	230	230
	B	76	76	76	80	76	80
	C	305	305	305	305	305	305
0.008 - 0.03	D	ø360	ø360	ø360	ø360	ø360	ø360
0.02 - 0.12		ø360	ø360	ø360	ø360	ø360	ø360
0.1 - 0.65		264	264	264	264	264	264
0.3 - 0.95		264	264	264	264	264	264

* Overall length tolerances in acc. with DIN EN 558

Weights Sleeve Connection [kg]

pressure range bar	nominal diameter G			
	3/4	1	1 1/2	2
0.008 - 0.03		14.5		
0.02 - 0.12		14.5		
0.1 - 0.65	8.5			
0.3 - 0.95	8.5			

Weights Flange Connection [kg]

pressure range bar	nominal diameter DN			
	20	25	40	50
0.008 - 0.03			17	20
0.02 - 0.12			17	20
0.1 - 0.65	10.5	11	13.5	15
0.3 - 0.95	10.5	11	13.5	15

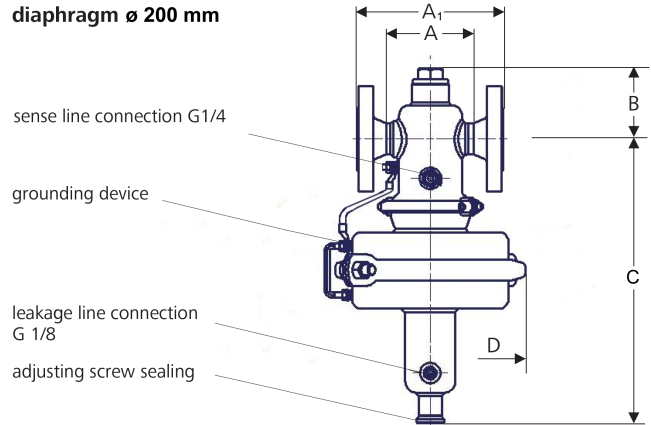
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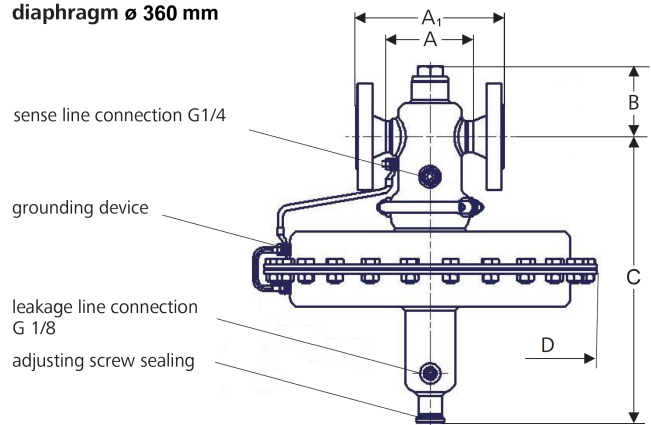
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Dimensional Drawing

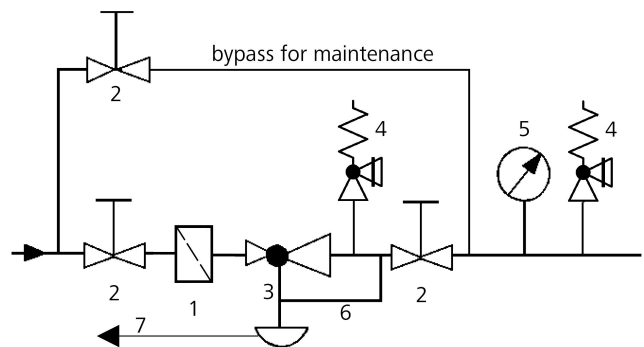
diaphragm ø 200 mm



diaphragm ø 360 mm



Recommended Installation



- 1 Strainer*
- 2 Shut-off Valves
- 3 Pressure Reducer*
- 4 Safety Valves*
- 5 Pressure Gauge
- 6 Sense Line G 1/4
- 7 Leakage Line G 1/8 (option)

Sense line connection 10 - 20 x DN behind the valve

*Use MANKENBERG-Products