

# Pressure Control Valves

## Pressure Reducing Valves DM 618Z

Standard Cast Valve for Steam



### Technical Data

Connection DN	15 - 100
Nominal Pressure PN	16 - 40
Inlet Pressure	up to 40 bar
Outlet Pressure	0.3 - 10 bar
K <sub>vs</sub> -Value	3.6 - 100 m <sup>3</sup> /h
Temperature	250 °C
Medium	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 618Z is a diaphragm-operated, spring-loaded and balanced proportional valve for high flow rates. The valve body is made of cast steel. Diaphragm housing, spring cap and internal parts are made of stainless steel 316L. The valve cone is fitted with a 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.

The valves requires a sense line (to be installed on-site).

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.

### Standard

- » Body made of GS-C 25 1.0619 (A216-WCB)
- » Diaphragm housing, spring cap and internal parts made of stainless steel 1.4404 (316L)
- » Closed spring cap with leakage line connection and sealed adjusting screw
- » Balanced cone for controlling the outlet pressure independently from the initial pressure
- » Sense line connection

### Options

- » Body made of stainless steel 1.4408 (CF8M)
- » FKM elastomeres
- » PTFE protection foil for diaphragm

Operating instructions, know how and safety instructions must be observed. 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]									
DN	15	20	25	32	40	50	65	80	100
min.	0.8	0.8	0.8	1	1	1	1	1	1
0.3 - 1.1 bar	3.6	6	6	16	27	35	45	50	55
0.8 - 10 bar	4.5	8	8	16	27	35	80	90	100

Setting Ranges [ bar], Nominal Pressure PN				
bar	0.3 - 1.1	0.8 - 2.5	2 - 5	4.5 - 10
PN	40/2.5	40/6	40/10	40/16

max. Operating Pressures PS with Operating Temperature TS					
TS	-10 °C	130 °C	150 °C	200 °C	250 °C
PS	40 bar	38 bar	36 bar	33 bar	30 bar

Reduction Ratio (max. p <sub>1</sub> /p <sub>2</sub> )			
setting range bar	nominal diameter		
	DN 15 - 25	DN 32 - 50	DN 65 - 100
4.5 - 10	10 : 1	8 : 1	5 : 1
2 - 5	20 : 1	15 : 1	8 : 1
0.8 - 2.5	30 : 1	20 : 1	12 : 1
0.3 - 1.1	15 : 1	11 : 1	6 : 1

e.g.: set pressure 0.8 bar = max. inlet pressure 24 bar (30 x 0.8)

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### Materials

Body	GS-C 25 1.0619 (A216-WCB)*
Diaphragm Housing	stainless steel 1.4404 (316L)
Spring Cap	stainless steel 1.4404 (316L)
Internal Parts	stainless steel 1.4404 (316L)
Valve Seal	stainless steel 1.4404 (316L)
Diaphragm	EPDM**
O-ring	FEPM**

\* Body optionally made of stainless steel 1.4408 (CF8M)

\*\* FKM, optionally with PTFE protection foil

### Dimensions [mm]

size	nominal diameter DN									
	15	20	25	32	40	50	65	80	100	
A*	130	150	160	180	200	230	290	310	350	
B	60	60	60	75	75	75	112	112	112	
C	380	380	380	540	540	540	610	610	610	
D	G 1/8	G 1/8	G 1/8	G 1/4	G 1/4	G 1/4	G 1/4	G 1/4	G 1/4	
øE	115	115	115	208	208	208	220	220	220	

\* Overall length tolerances in acc. with DIN EN 558

### Weights [kg]

nominal diameter DN										
15	20	25	32	40	50	65	80	100		
11	12	13	35	37.5	40	72	75	82		

### Custom Tariff Number

84811019

### Please specify on order:

» nominal diameter » nominal pressure  
 »  $K_{vs}$  value » pressure range  
 » body material » elastomeres  
 example: DM 618Z, DN 50, PN 40,  $K_{vs}$  40 m<sup>3</sup>/h, 2 - 5 bar, GS-C25, EPDM

### Typical Applications

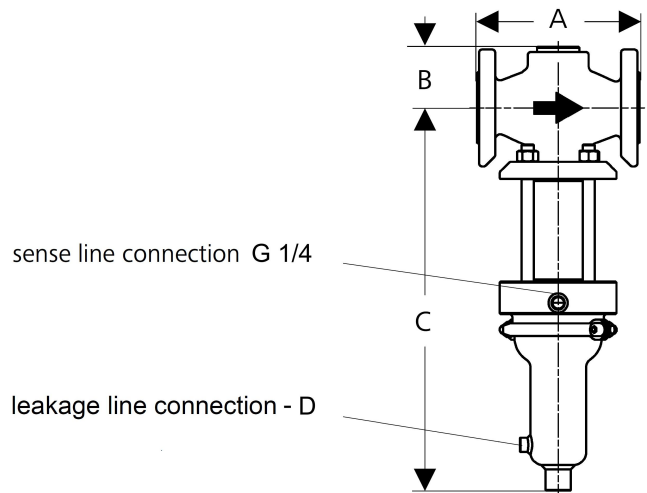
- » Conventional fuel supply and residues disposal (int.al. KKS Code: EKG, ENX)
- » Water supply and disposal – distribution system (int.al. KKS Code: GHC, GQA)
- » Drying of solid matter (int.al. KKS Code: HTN)
- » Conventional heat generation (int.al. KKS Code: HTQ)
- » Steam, water, gas cycle condensate system (int.al. KKS Code: LCA, LCW)
- » Water treatment and distribution (int.al. KKS Code: PCB)
- » Cooling water systems (int.al. KKS Code: PCC)
- » Generation of working air (int.al. KKS Code: SCA)

Special designs on request.

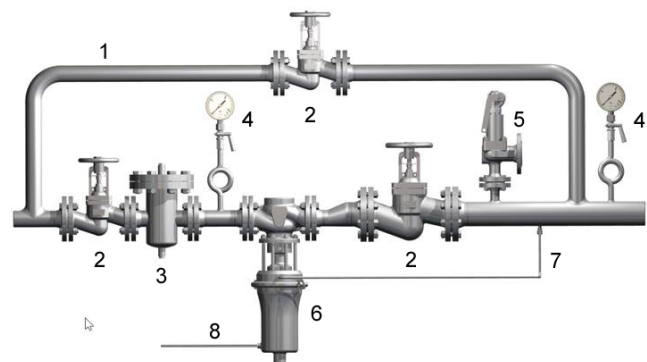
The pressure has always been indicated as overpressure.

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### Dimensional Drawing



### Recommended Installation



- 1 Bypass for Maintenance
- 2 Shut-off Valves
- 3 Strainer\*
- 4 Pressure Gauge
- 5 Safety Valves\*
- 6 **Pressure Reducer\***
- 7 Sense Line
- 8 Leakage Line

Sense line connection 10 - 20 x DN behind the valve

\*Use MANKENBERG-Products

Installation in a horizontal line without strain with the spring cap pointing vertically downwards in such a way that the arrow on the body points in the direction of flow.

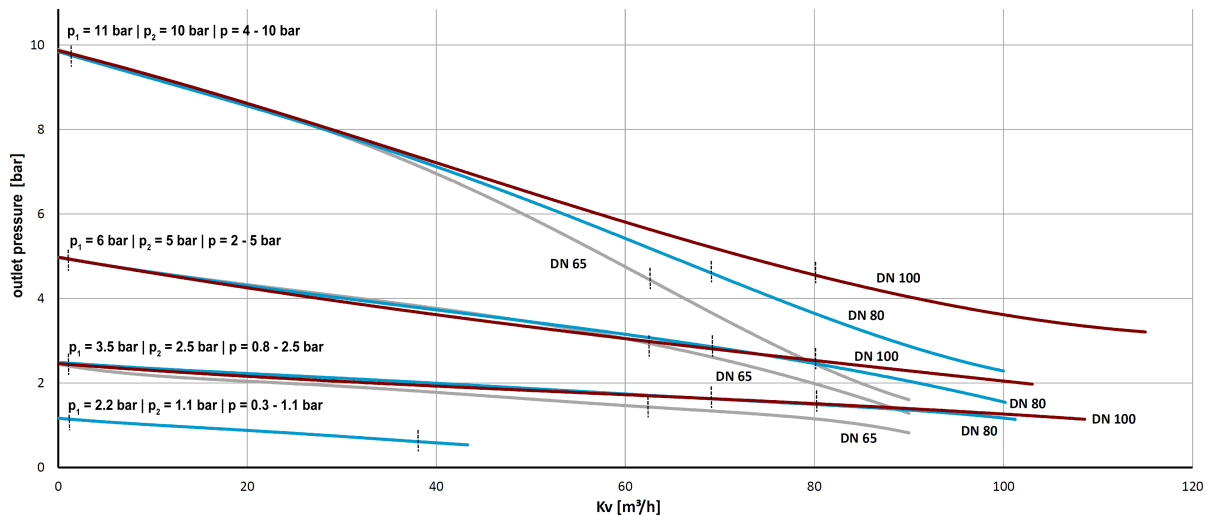
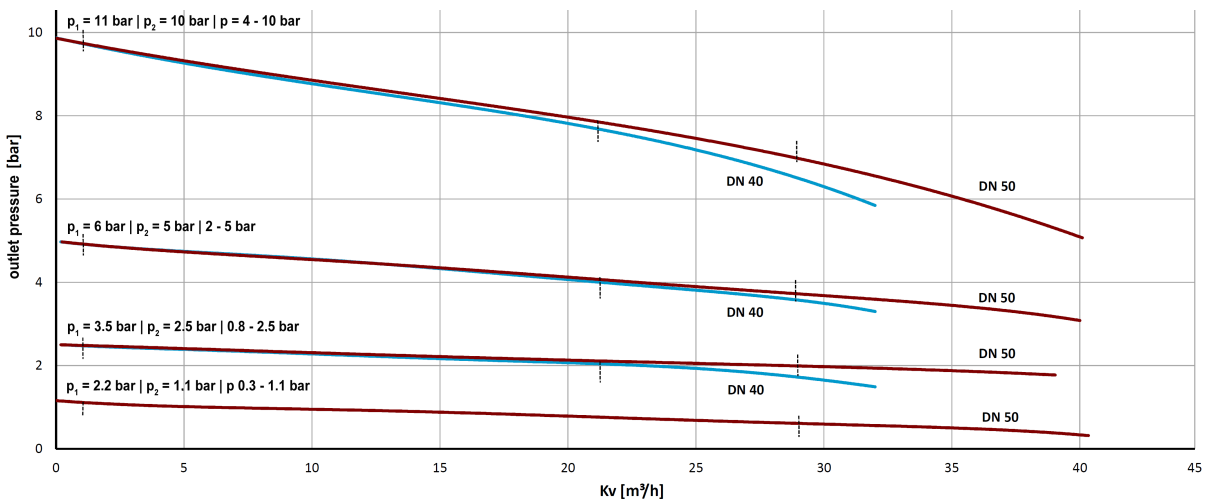
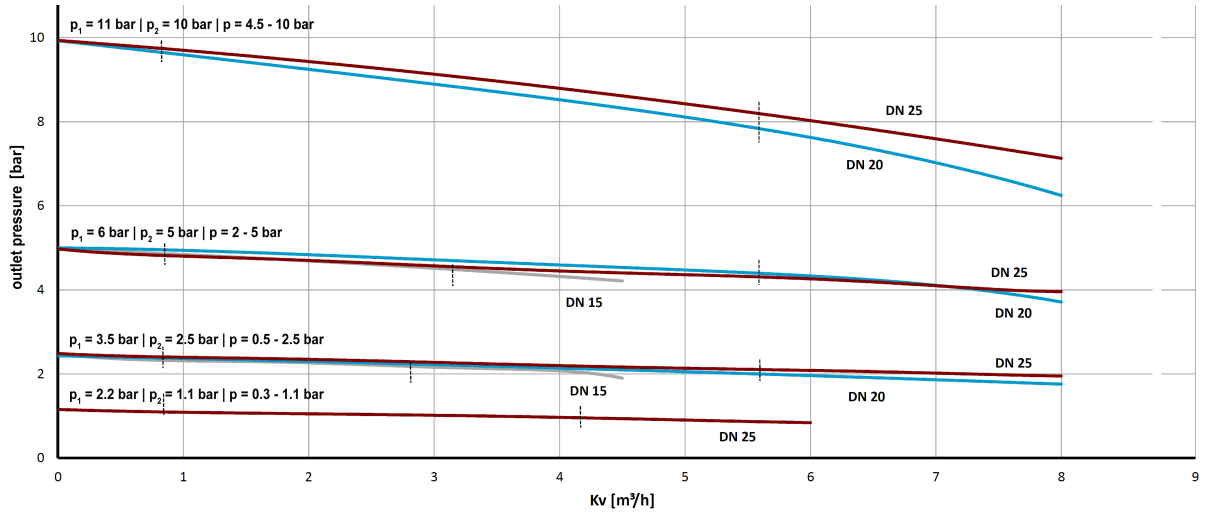
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### Flow Charts



$p$  = pressure range     $p_1$  = inlet pressure     $p_2$  = adjusted outlet pressure     $\vdash$  = recommended working range

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