Braukmann DR300

Pressure regulator

APPLICATION

Pressure regulators of this type protect downstream installations against excessive supply pressure.

Pressure regulators are used when the capacity of direct controlled pressure reducing valves are insufficient. Their compact construction makes them particularly suitable for installation in limited spaces, for example in ducts.

By using a pressure regulator, pressurization damage is avoided and water consumption reduced.

The set pressure is also maintained constant, even when there is wide inlet pressure fluctuation.

Reduction of the operating pressure and maintaining it at a constant level minimizes flow noise in the installation.

APPROVALS

- DVGW
- WRAS (up to 23 °C)

SPECIAL FEATURES

- High precision control during pressure variances and low flow rates
- High flow capacity
- High control accuracy
- Powder-coated inside and outside - Powder used is physiologically and toxicologically safe
- Integral control circuit and ball valves
- No external energy required for operation
- Conforms to BSEN 1567



TECHNICAL DATA

Media	
Medium:	Drinking water
Connections/Sizes	
Connection sizes:	2" - 18"
Nominal sizes:	DN50 - DN450
Pressure values	
Inlet pressure:	0.5 - 16 bar / 0.5 - 25 bar
Outlet pressure:	3 - 15 bar / 3-19 bar
Nominal pressure:	PN16 / PN25
Preset outlet pressure:	4 bar
Min. pressure drop:	0.1 bar
Operating temperatures	
Max. operating temperature medium:	80 °C

$$\sigma_c = \frac{(Pe + 9)}{(Pe - Pa)}$$

P in mWS

$\sigma_c \geq 1.45$ is safe

e.g. Pe = 8 bar, Pa = 3 bar

$$\sigma_c = \frac{(80 + 9)}{(80 - 30)} = 1.78 \text{ safe}$$

CONSTRUCTION

Overview



	Components	Materials
1	Housing with flanges acc. to ISO 7005-2 / EN 1092-2	Ductile iron (ISO 1083), powder-coated
2	Pilot valve	Brass
3	Control circuit with integral rinsable filter insert and ball valves on inlet and outlet	High-quality synthetic material
	Not depicted components:	
	Cover plate	Ductile iron (ISO 1083), powder-coated
	Diaphragm plate	Ductile iron (ISO 1083), powder-coated
	Diaphragm	EPDM
	Spring	Stainless steel
	Regulating cone	Stainless steel
	Valve seat	Stainless steel
	Compression fittings	Brass
	Pilot valve housing	Brass
	Filter insert	Stainless steel
	Seals	EPDM

METHOD OF OPERATION

At zero pressure the valve is closed. When the system is then put into operation, the water flows in and opens the diaphragm valve. The outlet pressure is diverted via the link pipework to the pilot valve, which then closes. If the pilot valve is closed, the pressure in the chamber above the membrane rises. The membrane surface area is larger than the valve surface area and therefore the diaphragm valve closes. When water is drawn from the outlet, the outlet pressure falls, which in turn causes the pilot valve to open. As soon as the opening of the pilot valve becomes greater than the cross sectional area of the opening in the fine regulation valve, the pressure in the chamber above the diaphragm falls and the inlet pressure opens the diaphragm valve.

In this way the pilot valve regulates the control pressure so that the diaphragm valve opens just the required amount needed to maintain the outlet at constant pressure.

TRANSPORTATION AND STORAGE

Keep parts in their original packaging and unpack them shortly before use.

The following parameters apply during transportation and storage:

Parameter	Value
Environment:	clean, dry and dust free
Min. ambient temperature:	5 °C
Max. ambient temperature:	55 °C
Min. ambient relative humidity:	25 % *
Max. ambient relative humidity:	85 % *

*non condensing

INSTALLATION GUIDELINES

Setup requirements

- Install shut-off valves
- Install downstream of the strainer
  - Protects against damage from coarse particles
  - Note flow direction (indicated by arrow)
- The installation location should be protected against frost and be easily accessible
  - Pressure gauge can be read off easily
  - Simplified maintenance and cleaning
- Provide a straight section of pipework of at least five times the nominal valve size after the pressure reducing valve (in accordance with EN 806-2)
- Safety valve SV300 optional
- Requires regular maintenance in accordance with EN 806-5

Installation Example

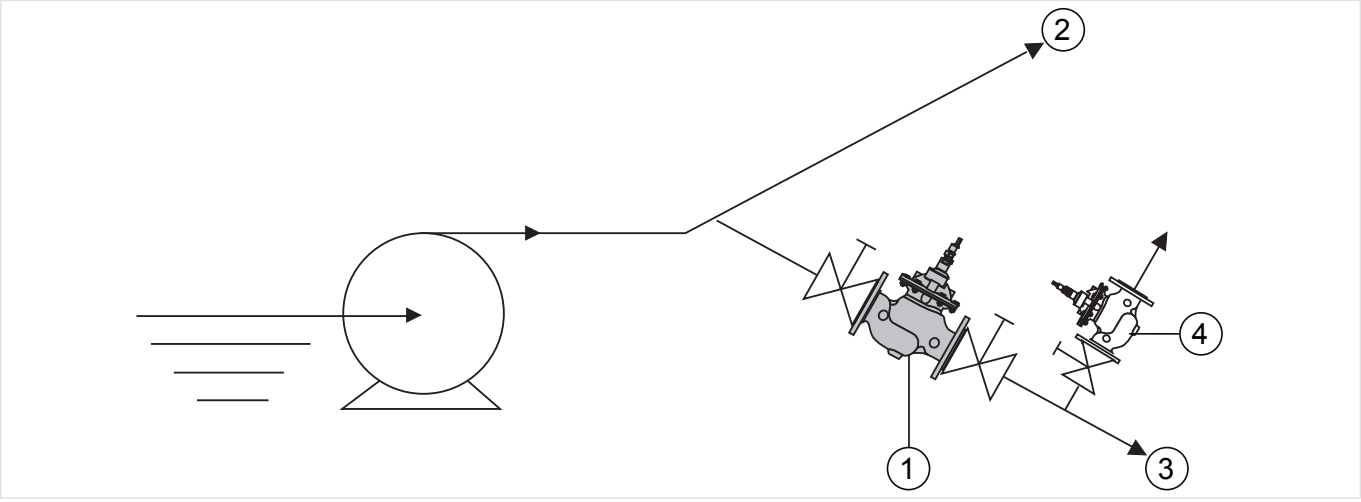


Fig. 1 Standard installation example for the pressure reducing valve

1 Pressure reducing valve
2 High pressure area
3 Low pressure area
4 SV300 (optional)

Connection sizes:	2"	2 1/2"	3"	4"	6"	8"	10"	12"	14"	16"	18"
Distance in mm (W*):	100	110	120	130	160	190	220	250	270	310	330

* Required installation distances between the centerline of the pipework and the surrounding in dependency of the connection size.

TECHNICAL CHARACTERISTICS

kvs-Values

Connection sizes:	50	65	80	100	150	200	250	300	350	400	450
k_{vs}-value (m^3/h):	43	43	103	167	407	676	1160	1600	2000	3000	3150
Flow rate (Q_{max}) in m^3/h - V=5.5 m/s:	40	40	100	160	350	620	970	1400	1900	2500	3100

Pressure drop characteristics

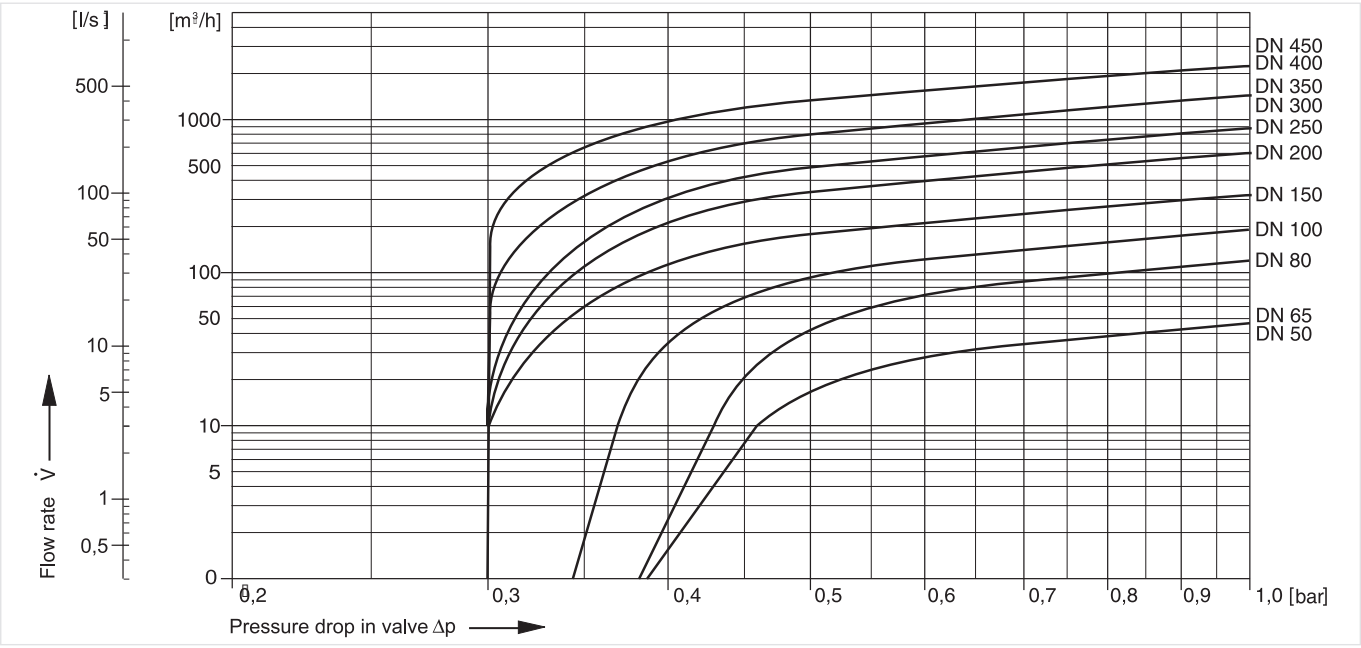
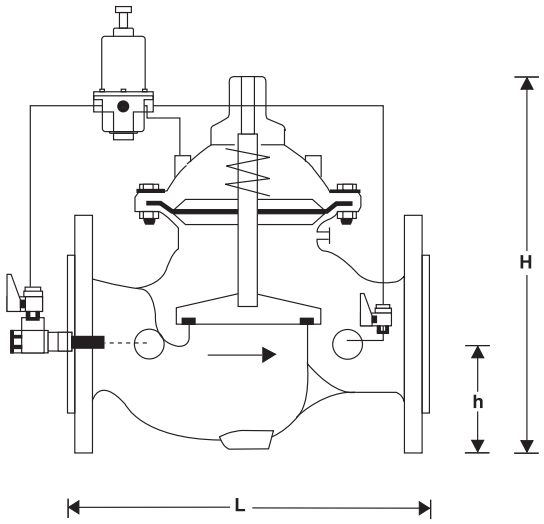


Fig. 2 Pressure drop within the valve in dependency of the flow rate and the used connection size

DIMENSIONS

Overview



Parameter		Values										
Connection sizes:	DN	50	65	80	100	150	200	250	300	350	400	450
Weight with pilot valve:	kg	14.0	15.0	24.0	39.0	82.0	159.0	247.0	407.0	512.0	824.0	947.0
Weight without pilot valve:	kg	12.0	13.0	22.0	37.0	80.0	157.0	245.0	405.0	510.0	822.0	945.0
Dimensions:	L	230	292	310	350	480	600	730	850	980	1100	1200
	H	270	280	330	350	480	570	730	870	910	1150	1170
	h	83	93	100	110	143	173	205	230	260	290	310

Note: All dimensions in mm unless stated otherwise.

ORDERING INFORMATION

The following tables contain all the information you need to make an order of an item of your choice. When ordering, please always state the type, the ordering or the part number.

Options

The valve is available in the following sizes: DN50, 60, 80, 100, 150, 200, 250, 300, 350, 400, 450.

• standard

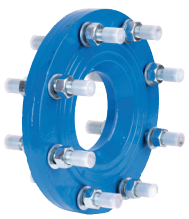
- not available

		DR300...A	DR300...B
Connection type:	Flange PN16, ISO 7005-2, EN 1092-2	•	-
	Flange PN25, ISO 7005-2, EN 1092-2	-	•

Note: ... = space holder for connection size

Note: Ordering number example for DN50 and type A: DR300-50A

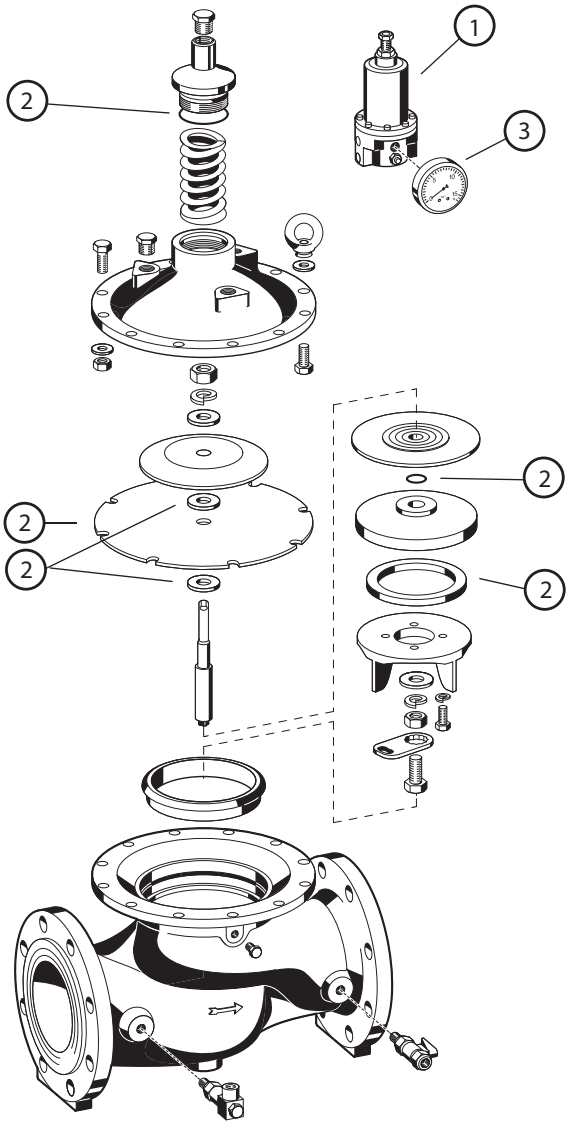
Accessories

	Description		Dimension	Part No.
	**EXF125-A**	**Extension flange DN125** Adapter flanges DN100 to DN125 Ductile iron, PN16 acc. ISO 7005-2 and EN 1092-2. Overall length with adapter flanges (without bolts) DN125 L=416mm, DVGW approved, including bolts, nuts and the seal disc.		
				EXF125-A

Spare Parts

Pressure Regulator DR300, from 2002 onwards

Overview



	Description	Dimension	Part No.
1	**Replacement pilot valve**		
		DN50 - DN450	CX-PR
2	**Cartridge insert complete**		
		DN50	0903750
		DN65	0903751
		DN80	0903752
		DN100	0903753
		DN150	0903754
		DN200	0903755
		DN250	0903756
		DN300	0903757
		DN350	0903758
		DN400	0903759
		DN450	0903760
3	**Pressure gauge**		
		0 - 16 bar	M07M-A16

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