

# Pressure Control Valves

## Pilot-operated Control Valves RP 115

### Pilot-operated Pressure Reducing Valve



#### Technical Data

|                        |                                 |
|------------------------|---------------------------------|
| Connection DN          | 40 - 600                        |
| Nominal Pressure PN    | 10, 16, 25                      |
| Inlet Pressure         | up to 25 bar                    |
| Outlet Pressure        | 0.7 - 7 / 1,5 - 15 / 8 - 24 bar |
| K <sub>vs</sub> -Value | 20 - 3235 m <sup>3</sup> /h     |
| Temperature            | 70 °C                           |
| Medium                 | water                           |

#### 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 RP 115 pressure reducing valve is a pilot-controlled control valve consisting of main valve with position indicator, control unit, pilot valve, pressure gauge, stop valves and connecting pipes. The main valve cone is fitted with a soft seal. This valve which has been specially developed for drinking water applications, features an electrostatically deposited coating on internal and external surfaces and meets the KTW recommendation of the German Ministry for Health.

The control unit contains adjustable restrictors which allow the control characteristics of the pressure reducer to be matched to the system (closing, opening and response speeds).

The pressure reducer is completely piped. It does not require any additional pilot lines.

The pressure difference between inlet pressure and outlet pressure must be at least 0.5 bar!

The particle size of the medium shall not exceed 0.3 mm, otherwise a suitable strainer must be installed upstream of the valve.

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.

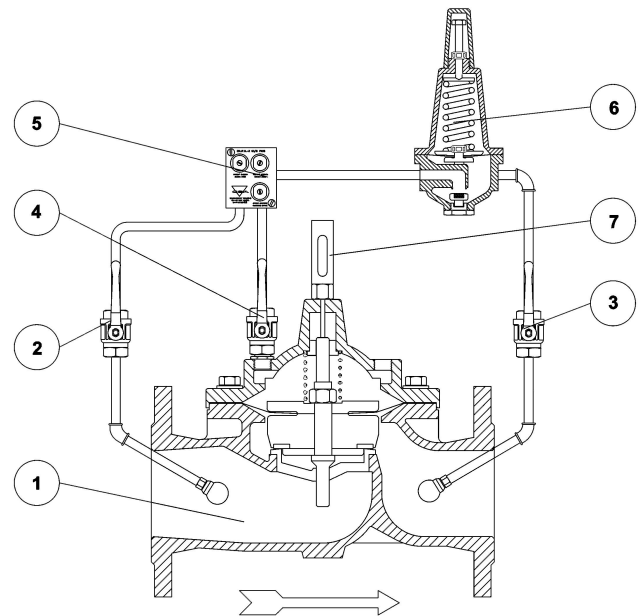
#### Standard

- » Pressure stage PN 16
- » Designed acc. to EN-1074/4
- » Flanges as per EN 1092/2
- » Body made of spheroidal cast iron GJS 450-10 with epoxy coating in blue RAL 5005, thickness min. 250 µm
- » Internal parts, pilot valve and piping made of stainless steel 1.4301
- » Coating as per DVGW W270 and KTW recommendation of the German Ministry for Health

#### Options

- » Set pressures < 0.7 bar and also up to 25 bar
- » Pressure stages PN 10, PN 25
- » Body with reduced flow rate
- » Throttle cone
- » Anti cavitation cone
- » Special designs:
  - differential pressure control valves
  - flow control valve
  - float valve
  - others on request

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.



- |                  |                  |                  |
|------------------|------------------|------------------|
| 1 Main valve     | 2 Shut off valve | 3 Shut off valve |
| 4 Shut off valve | 5 Control unit   | 6 Pilot valve    |
| 7 Vane relay     |                  |                  |

K<sub>vs</sub> values see sheet No. RP 115/2.1.....3

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### Materials - Main Valve

|             |   |
|-------------|---|
| Temperature | 70 °C   |
| Body        | spheroidal cast iron GJS 450-10 Epoxy-coated* |
| Cover       | spheroidal cast iron GJS 450-10 Epoxy-coated* |
| Internals   | stainless steel 1.4301 optional 1.4404        |
| Spring      | stainless steel                               |
| Valve Seal  | NBR optional EPDM                             |
| O-Ring      | NBR optional EPDM                             |
| Diaphragm   | NBR-Nylon-reinforced optional EPDM            |
| Screws      | stainless steel                               |

\* in accordance with KTW-recommendation and DVGW W270, thickness min. 250 µm

### Materials - Pilot Circuit

|                 |  |
|-----------------|--|
| Control Unit    | stainless steel  |
| Pilot Valve     | bronze, internals made of stainless steel, diaphragm made of NBR |
| Filter Sieve    | 1.4404   |
| Sense Line      | stainless steel  |
| Fittings        | brass  |
| Shut-off Valves | brass, nickel plated   |

### Dimensions [mm] and Weights [kg] Body Design Standard

| size | nominal diameter DN |     |      |     |     |
|------|---------------------|-----|------|-----|-----|
|      | 40                  | 50  | 65   | 80  | 100 |
| A    | 230                 | 230 | 290  | 310 | 350 |
| B    | 162                 | 162 | 194  | 218 | 260 |
| C    | 83                  | 83  | 93   | 100 | 118 |
| D    | 233                 | 233 | 255  | 274 | 316 |
| kg   | 18                  | 18  | 23,5 | 28  | 39  |

### Dimensions [mm] and Weights [kg] Body Design Standard

| size | nominal diameter DN |     |     |     |      |
|------|---------------------|-----|-----|-----|------|
|      | 150                 | 200 | 250 | 300 | 400  |
| A    | 480                 | 600 | 730 | 850 | 1100 |
| B    | 370                 | 444 | 570 | 680 | 870  |
| C    | 150                 | 180 | 213 | 242 | 310  |
| D    | 431                 | 540 | 577 | 598 | 895  |
| kg   | 84                  | 138 | 264 | 405 | 704  |

### Dimensions [mm] und Weights [kg] Body Design Option PN 25

| size | nominal diameter DN |     |     |     |     |
|------|---------------------|-----|-----|-----|-----|
|      | 80                  | 100 | 125 | 150 | 200 |
| A    | 310                 | 350 | 400 | 480 | 600 |
| B    | 162                 | 218 | 304 | 260 | 370 |
| C    | 100                 | 118 | 135 | 150 | 180 |
| D    | 237                 | 273 | 383 | 326 | 433 |
| kg   | 24                  | 34  | 47  | 54  | 97  |

### Dimensions [mm] and Weights [kg] Body Design Option PN 25

| size | nominal diameter DN |     |      |      |      |
|------|---------------------|-----|------|------|------|
|      | 250                 | 300 | 400  | 500  | 600  |
| A    | 730                 | 850 | 1100 | 1250 | 1450 |
| B    | 444                 | 570 | 680  | 870  | 870  |
| C    | 213                 | 242 | 310  | 365  | 423  |
| D    | 583                 | 653 | 735  | 920  | 945  |
| kg   | 172                 | 304 | 480  | 782  | 922  |

### Customs Tariff Number

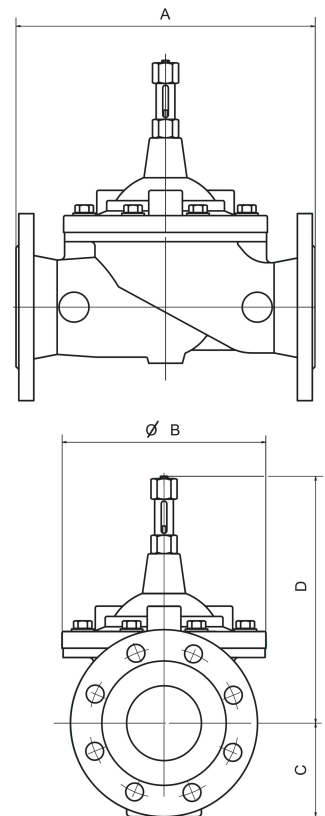
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Special designs on request.

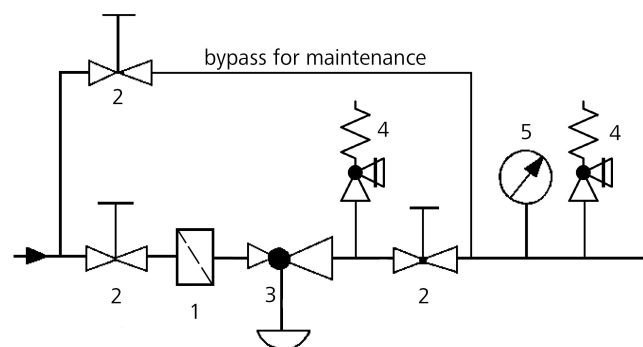
The pressure has always been indicated as overpressure.

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### Dimensional Drawing



### Recommended Installation



1 Strainer\*

2 Shut-off Valves

3 Pressure Reducer\*

\*Use MANKENBERG-Products

4 Safety Valve\*

5 Manometer

# Pressure Control Valves

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### Kvs Values [m³/h] Standard Seat

| body design | nominal diameter |    |    |     |     |     |     |
|-------------|------------------|----|----|-----|-----|-----|-----|
|             | 40               | 50 | 65 | 80  | 100 | 125 | 150 |
| Standard    | 40               | 40 | 65 | 100 | 165 | -   | 410 |
| Option      | -                | -  | -  | 50  | 115 | 185 | 195 |

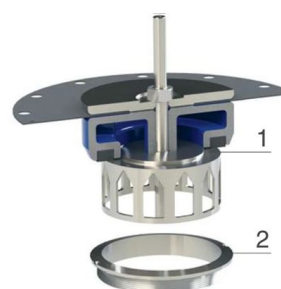
| body design | nominal diameter |      |      |      |      |      |
|-------------|------------------|------|------|------|------|------|
|             | 200              | 250  | 300  | 400  | 500  | 600  |
| Standard    | 660              | 1125 | 1500 | 2675 | -    | -    |
| Option      | 485              | 800  | 1255 | 1740 | 3085 | 3235 |



### Kvs Values [m³/h] Throttle Cone

| body design | nominal diameter |    |    |    |     |     |     |
|-------------|------------------|----|----|----|-----|-----|-----|
|             | 40               | 50 | 65 | 80 | 100 | 125 | 150 |
| Standard    | 30               | 30 | 55 | 75 | 130 | -   | 310 |
| Option      | -                | -  | -  | 40 | 90  | 145 | 150 |

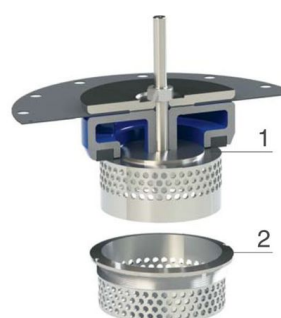
| body design | nominal diameter |     |      |      |      |      |
|-------------|------------------|-----|------|------|------|------|
|             | 200              | 250 | 300  | 400  | 500  | 600  |
| Standard    | 520              | 865 | 1170 | 2110 | -    | -    |
| Option      | 375              | 630 | 965  | 1355 | 2405 | 2585 |



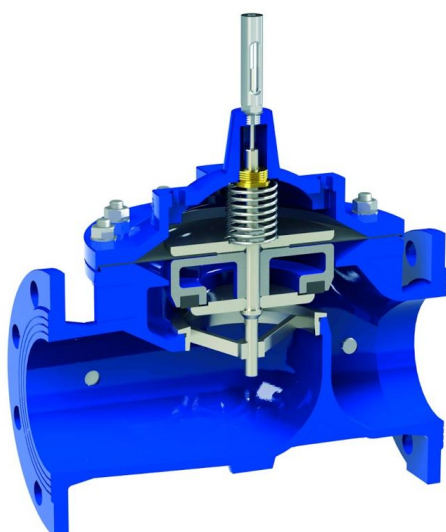
### Kvs Values [m³/h] Anti Cavitation Cone

| body design | nominal diameter |    |    |    |     |     |     |
|-------------|------------------|----|----|----|-----|-----|-----|
|             | 40               | 50 | 65 | 80 | 100 | 125 | 150 |
| Standard    | 20               | 20 | 30 | 50 | 80  | -   | 205 |
| Option      | -                | -  | -  | 20 | 50  | 70  | 85  |

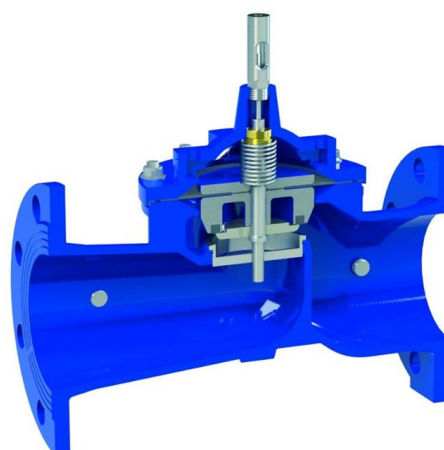
| body design | nominal diameter |     |     |      |      |      |
|-------------|------------------|-----|-----|------|------|------|
|             | 200              | 250 | 300 | 400  | 500  | 600  |
| Standard    | 330              | 560 | 750 | 1335 | -    | -    |
| Option      | 205              | 360 | 565 | 780  | 1390 | 1455 |



### Body Designs



Standard



Option (reduced K<sub>vs</sub> values)

Special designs on request.  
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