

# Pressure Control Valves

## Pilot-operated Control Valves RP 840

### Pilot-operated Millibar Control Valve

#### Technical Data

Connection DN	25 - 150
Nominal Pressure PN	16
Inlet Pressure	up to 16 bar
Outlet Pressure	0.002 - 0.52 bar
K <sub>vs</sub> -Value	4 - 160 m <sup>3</sup> /h
Temperature	130 °C
Medium	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 RP 840 is a pilot-operated control valve consisting of a main valve for high flow rates combined with a millibar valve serving as pilot valve. Both valves are manufactured from deep-drawn stainless steel featuring excellent corrosion resistance and are arranged as a pre-mounted unit in a rack. The valve cone is soft-sealed.

In a pressureless pipeline the main valve is closed by the pre-tensioned spring.

If the outlet pressure falls below the pre-set nominal value, the pilot valve is kept open by its spring. The control medium flows off towards the valve outlet. Throttle D1 brings about a pressure drop, so that the control pressure in the main valve control mechanism nearly corresponds to the outlet pressure. The inlet pressure overcomes the outlet pressure and the closing spring force and opens the main valve.

Once the outlet pressure has reached the pre-set nominal value, the pilot valve starts to throttle. In doing so, the control pressure rises and pushes the main valve control mechanism to a regulating position. The throttles D1 and D2 serve to optimise the regulating behaviour. The bypass brings about rapid closure.

If the outlet pressure exceeds the nominal value, the pilot valve closes. The control pressure is equivalent to the inlet pressure. The main valve closes because the control mechanism diameter is larger than the valve seat. In addition, the spring also has a closing effect.

The valve is piped internally. The pulse lines must 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 V optional IV:

Leakage class IV (PTFE seal cone) = 0.01 % K<sub>vs</sub> value

Leakage class V (soft seal cone) =  $1.8 \times 10^{-5} \times \Delta p \times D^*$  [l/h]

\*D=seat diameter

#### Standard

- » completely piped
- » pre-mounted unit in a rack

#### Options

- » pressure gauge connection
- » various diaphragm and seal materials suitable for your medium
- » special connections: Aseptic, ANSI or JIS flanges, NPT, welding spigots; other connections on request
- » special versions on request

Operating instructions, know how and safety instructions must be observed. All 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]

Mainvalve	nominal diameter DN							
	25	40	50	65	80	100	125	150
DV 5.1	4	22	22	-	-	-	-	-
DV 4.8	-	-	32	50	80	100	-	-
DV 4.1	6	20	32	50	80	100	140	160

#### Setting Ranges [bar]

pilot valve diaphragm diameter 500 mm

0.002 - 0.003	0.003 - 0.015	0.008 - 0.03	0.012 - 0.07
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pilot valve diaphragm diameter 360 mm

0.004 - 0.006	0.005 - 0.032	0.015 - 0.06	0.025 - 0.14
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pilot valve diaphragm diameter

0.008 - 0.016	0.015 - 0.065	0.02 - 0.12	0.05 - 0.28
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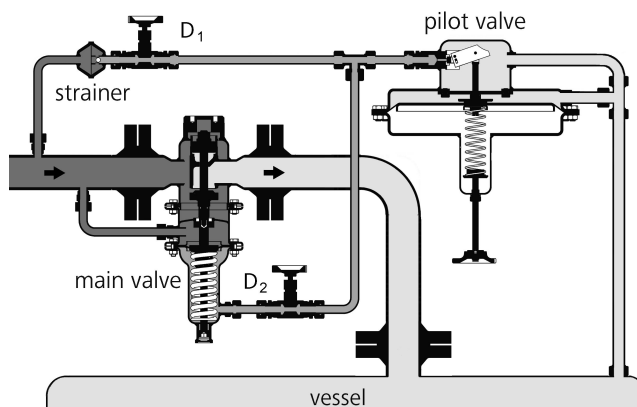
pilot valve diaphragm diameter

0.015 - 0.030	0.025 - 0.125	0.05 - 0.22	0.1 - 0.52
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#### Reduction Ratio (max. p<sub>1</sub>/p<sub>2</sub>)

diaphragm diameter[mm]

500	360	270	220
10000	6000	3000	1800



# Pressure Control Valves

## Pilot-operated Control Valves RP 840



Pilot-operated Millibar Control Valve

### Materials and Dimensions Main Valve

see main valve UV 4.1, UV 4.8 or UV 5.1

### Materials and Dimensions Pilot Valve

see DM 762

### Customs Tariff Number

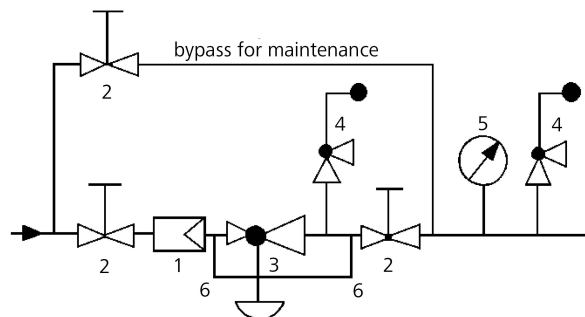
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Special designs on request.

The pressure has always been indicated as overpressure.

Mankenberg reserves the right to alter or improve the designs or specifications of the products described herein without notice.

### Recommended Installation



- |                          |                    |
|--------------------------|--------------------|
| 1 strainer               | 5 manometer        |
| 2 shut-off valve         | 6 sense line G 1/2 |
| 3 pressure control valve |                    |
| 4 safety valve           |                    |

sense line connection 10 x DN before and behind the valve  
use MANKENBERG-Products