

## PRESSURE CONTROL

# Back pressure regulators UV 3.9

Millibar control valve for medium to high flow rates



### Technical data

|                         |                          |
|-------------------------|--------------------------|
| Connection DN           | 15 - 50                  |
| Connection G            | 1/2 - 2                  |
| Nominal pressure PN     | 1 - 2.5                  |
| Inlet pressure          | 0.01 - 1.1 bar           |
| $K_{vs}$ value          | 5 - 22 m <sup>3</sup> /h |
| Temperature             | 130 °C                   |
| Medium                  | gases and liquids        |
| *RT = -10 °C TO + 50 °C |                          |

### Description

Self-acting back pressure regulators are simple control valves offering accurate control while being easy to install and maintain. They control the pressure upstream of the valve without requiring pneumatic or electrical control elements.

The UV 3.9 backpressure regulator is a spring-loaded diaphragm-controlled proportional control valve designed for very low inlet pressures. The valve is completely made of high-quality stainless steel with excellent corrosion resistance. The valve cone can be fitted with a soft or metallic seal.

The inlet pressure to be controlled is balanced across the valve seat by the force of the valve spring (set pressure). If the inlet pressure rises above the set pressure, the valve opens. With decreasing inlet pressure the valve control orifice reduces, when the pipeline is depressurised, the valve is closed. Rotating the adjusting screw clockwise increases the inlet 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 III or V, optional IV.

### Standard

- » All stainless steel construction

### Options

- » For toxic or hazardous media: sealed bonnet complete with leakage lineconnection (incl. sealed adjusting screw). Must be installed with a leakage line capable of draining leaking medium safely and without pressure
- » different materials for diaphragm and seals, suitable for your medium
- » Special connections: Aseptic, ANSI or JIS flanges, NPT, welding spigots; other connections on request
- » Special versions on request

### Product



Picture similar

### Technical specification

#### $K_{vs}$ values [m<sup>3</sup>/h]

|                  |                   |     |     |    |       |       |    |
|------------------|-------------------|-----|-----|----|-------|-------|----|
| nominal diameter | DN                | 15  | 20  | 25 | 32    | 40    | 50 |
|                  | G                 | 1/2 | 3/4 | 1  | 1 1/4 | 1 1/2 | 2  |
| $K_{vs}$ value   | m <sup>3</sup> /h | 5   | 7   | 8  | 22    | 22    | 22 |

#### Setting ranges [bar], nominal pressure for gases

|              |             |             |             |           |           |
|--------------|-------------|-------------|-------------|-----------|-----------|
| 0.01 - 0.025 | 0.02 - 0.06 | 0.05 - 0.12 | 0.10 - 0.25 | 0.2 - 0.5 | 0.4 - 1.1 |
| PN 0.1       | PN 0.1      | PN 0.2      | PN 0.4      | PN 1      | PN 2.5    |

#### Setting ranges [bar], nominal pressure for fluids

|             |           |           |
|-------------|-----------|-----------|
| 0.10 - 0.25 | 0.2 - 0.5 | 0.4 - 1.1 |
| PN 0.4      | PN 1      | PN 2.5    |

## Materials

| Materials*                    |                               |                               |
|-------------------------------|-------------------------------|-------------------------------|
| Temperature                   | 80 °C                         | 130 °C                        |
| Body, bonnet, internals       | stainless steel 1.4404 / 316L | stainless steel 1.4404 / 316L |
| Spring                        | stainless steel 1.4310 / 301  | stainless steel 1.4310 / 301  |
| Valve seal                    | EU                            | EPDM optional FKM, PTFE       |
| Diaphragm                     | CR                            | FKM optional EPDM             |
| Protection foil for diaphragm | PTFE (option)                 | PTFE (option)                 |

\*All materials equal or of higher quality

## Dimensions and weights

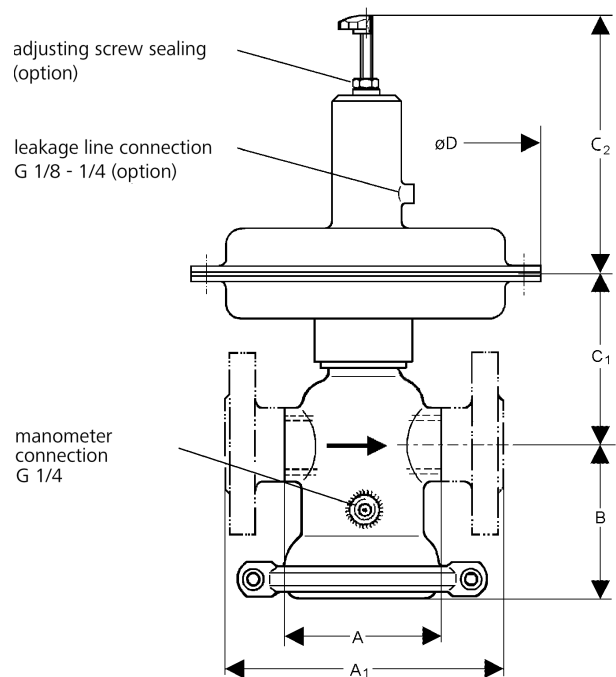
| Dimensions [mm]   |                  |                  |     |     |       |       |     |
|-------------------|------------------|------------------|-----|-----|-------|-------|-----|
| setting range bar | size             | nominal diameter |     |     |       |       |     |
|                   | G                | 1/2              | 3/4 | 1   | 1 1/4 | 1 1/2 | 2   |
|                   | DN               | 15               | 20  | 25  | 32    | 40    | 50  |
| all               | A*               | 85               | 91  | 85  | 130   | 145   | 185 |
| all               | A <sub>1</sub> * | 130              | 150 | 160 | 180   | 200   | 230 |
| all               | B                | 85               | 85  | 85  | 100   | 100   | 100 |
| all               | C <sub>1</sub>   | 105              | 105 | 105 | 125   | 125   | 125 |
| all               | C <sub>2</sub>   | 250              | 250 | 250 | 250   | 250   | 250 |
| 0.4 - 1.1         | ∅ D              | 175              | 175 | 175 | 175   | 175   | 175 |
| 0.2 - 0.5         | ∅ D              | 220              | 220 | 220 | 220   | 220   | 220 |
| 0.1 - 0.25        | ∅ D              | 270              | 270 | 270 | 270   | 270   | 270 |
| 0.05 - 0.12       | ∅ D              | 360              | 360 | 360 | 360   | 360   | 360 |
| 0.02 - 0.06       | ∅ D              | 500              | 500 | 500 | 500   | 500   | 500 |
| 0.01 - 0.025      | ∅ D              | 500              | 500 | 500 | 500   | 500   | 500 |

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

| Weights [kg]      |              |     |    |       |       |    |
|-------------------|--------------|-----|----|-------|-------|----|
| setting range bar | Connection G |     |    |       |       |    |
|                   | 1/2          | 3/4 | 1  | 1 1/4 | 1 1/2 | 2  |
| 0.4 - 1.1         | 6            | 6   | 6  | 7     | 7     | 7  |
| 0.2 - 0.5         | 7            | 7   | 7  | 8     | 8     | 8  |
| 0.1 - 0.25        | 9            | 9   | 9  | 10    | 10    | 10 |
| 0.05 - 0.12       | 14           | 14  | 14 | 15    | 15    | 15 |
| 0.02 - 0.06       | 15           | 15  | 15 | 16    | 16    | 16 |
| 0.01 - 0.025      | 15           | 15  | 15 | 16    | 16    | 16 |

| Weights [kg]      |                     |    |    |    |    |    |
|-------------------|---------------------|----|----|----|----|----|
| setting range bar | nominal diameter DN |    |    |    |    |    |
|                   | 15                  | 20 | 25 | 32 | 40 | 50 |
| 0.4 - 1.1         | 8                   | 8  | 8  | 11 | 11 | 11 |
| 0.2 - 0.5         | 9                   | 9  | 9  | 12 | 12 | 12 |
| 0.1 - 0.25        | 11                  | 11 | 11 | 14 | 14 | 14 |
| 0.05 - 0.12       | 16                  | 16 | 16 | 19 | 19 | 19 |
| 0.02 - 0.06       | 17                  | 17 | 17 | 20 | 20 | 20 |
| 0.01 - 0.025      | 17                  | 17 | 17 | 20 | 20 | 20 |

| Customs tariff number |
|-----------------------|
| 84814010              |



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Please send us your enquiry and allow us to advise you. Special designs on request.  
The pressure has always been indicated as overpressure. Mankenberg reserves the right to alter technical specifications without notice.

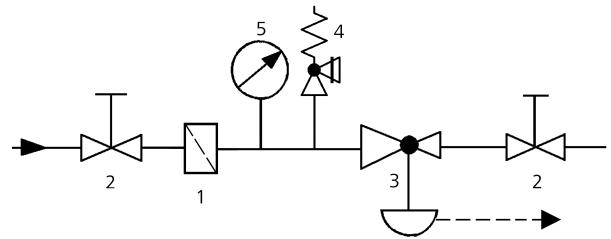
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## Recommended installation

- |   |                         |   |  |
|---|-------------------------|---|--|
| 1 | Strainer                | 4 | Safety valve                                   |
| 2 | Shut-off valves         | 5 | Pressure gauge                                 |
| 3 | Back pressure regulator | 6 | Leakage line connection G 1/8 - 1/4 (optional) |



### Authorised Distributor:



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