

## Control valve



### Actuator

- pneumatic
- electric

### Nominal bores

- DN 15 to 150
- ANSI 1/2" to 6"

### Pressure ratings

- PN 16 to 40
- ANSI Classes 150 and 300

| Table of contents:   |      |
|--|------|
| ■ Special features   | 1    |
| ■ Technical data   | 2    |
| ■ Materials  | 2    |
| ■ Actuator layout and permissible differential pressures $\Delta p$ (examples) | 3    |
| ■ Actuator and accessories   | 4    |
| ■ Weights and dimensions (examples)  | 4    |
| Available on request:  |      |
| ■ Technical data   | 8B.1 |
| ■ Versions and variants  | 8B.2 |
| ■ Kvs-values and z-values  | 8B.3 |
| ■ Actuator layout and permissible differential pressures $\Delta p$ (complete) | 8B.4 |
| ■ Code numbers for types   | 8B.5 |
| ■ Weights and dimensions (complete)  | 8B.6 |
| ■ Operating and maintenance instructions                                       | 8B.7 |
| Also:  |      |
| ■ Pressure-temperature diagrams  | vR01 |
| ■ Specification sheet  | vR02 |

### Features

Body designed to meet flowpath criteria

Modular design

Stem guiding

Compact, sturdy construction

Easily replaceable components

Stainless steel internal parts

Actuation

Columns comply with NAMUR

Integrated pipeless mounting of position regulators possible

Interchangeable trim

### Advantages

- less noise
- less wear
- less maintenance

- many different combinations of valves and actuators possible
- plug / seat combinations
  - metal-sealing
  - soft-sealing
  - stellite or nitride hardened
  - lapped
- packing arrangements
  - maintenance-free PTFE glands
  - graphite etc.
  - complying with TA-air according to VDI2441

- precise ball guidance
- guided packing space
- minimal packing wear

- saves installation space

- low operating costs

- no corrosion

- pneumatic, electric and manual

- simple mounting of positioners, limit switches etc.

- high availability
- retrofitting possible

- plug / seat can be replaced

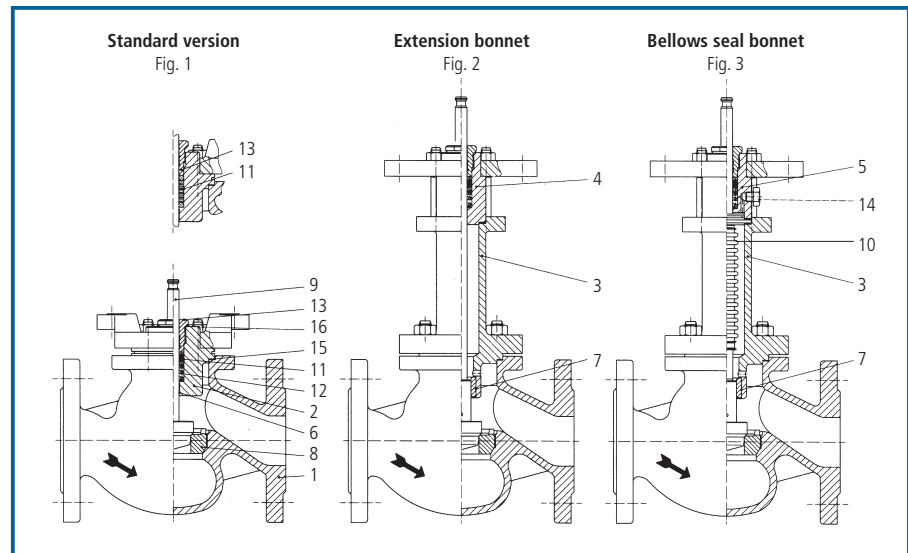
## Applications

Control valves in the 8B-series have been designed to meet various different industrial requirements relating to process technology.

## Technical data

|                  |  |
|------------------|--|
| Nominal bores    | <ul style="list-style-type: none"> <li>■ DN 15 to 150</li> <li>■ ANSI 1/2" to 6"</li> </ul>  |
| Pressure ratings | <ul style="list-style-type: none"> <li>■ carbon steel and stainless steel, PN 16 to 40 according to DIN 2401</li> <li>■ ANSI class 150 and 300</li> </ul>  |
| Characteristics  | <ul style="list-style-type: none"> <li>■ equal percentage, linear, quick open</li> </ul>   |
| Rangeability     | <ul style="list-style-type: none"> <li>■ kvs-values &gt; 4 to ≤ 63, 50 : 1</li> <li>   kvs-values ≤ 4 and &gt; 63, 30 : 1</li> </ul>   |
| kvs-values       | <ul style="list-style-type: none"> <li>■ control valve 0.06 to 260 m<sup>3</sup>/h, smaller kvs-values possible</li> <li>■ quick open valve 4.3 to 365 m<sup>3</sup>/h</li> </ul>  |
| Leakage          | <ul style="list-style-type: none"> <li>■ lapped plug and seat<br/>   ≤ 0.01% of kvs-value up to a kvs ≤ 63, above that 0.05%</li> <li>■ metal sealing<br/>   ≤ 0.001% of kvs-value</li> <li>■ PTFE-sealing : bubble-tight</li> </ul> |

## Materials



## Options

- special material e.g. hastelloy, titanium etc.
- model with heating jacket

| 1)<br>Item | Fig.               |   |   | Carbon steel<br>GS-C 25                                |  | Stainless steel |
|------------|--------------------|---|---|--|--|-----------------|
|            | 1                  | 2 | 3 |  |  |                 |
| 1          | Body               |   |   | W 1.4301 (DN 15–65), W 1.0619 (DN 80–150)              |  | W 1.4581        |
| 2          | Bonnet             |   |   | W 1.0619   |  | W 1.4435        |
| 3          | Extension bonnet   |   |   | W 1.4301   |  | W 1.4435        |
| 4          | Stem seal          |   |   | W 1.4301   |  | W 1.4435        |
| 5          | Stem seal          |   |   | W 1.4301   |  | W 1.4435        |
| 6          | Guide bush         |   |   | PTFE / W 1.4435  |  |                 |
| 7          | Guide bush         |   |   | W 1.4435 hardened                                      |  |                 |
| 8          | Seat ring          |   |   | Stainless steel  |  |                 |
| 9          | Plug and stem      |   |   | Stainless steel  |  |                 |
| 10         | Bellows            |   |   | W 1.4571   |  |                 |
| 11         | Packing            |   |   | PTFE-V-springs / hamar / graphite / PTFE/PTFE-graphite |  |                 |
| 12         | Pressure spring    |   |   | W 1.4571   |  |                 |
| 13         | Gland screw        |   |   | W 1.4305   |  | W 1.4435        |
| 14         | Check-point        |   |   | W 1.4435   |  |                 |
| 15         | Gaskets            |   |   | graphite   |  |                 |
| 16         | Tap bolts and nuts |   |   | A 2 70   |  |                 |

1) No replacement part positioning. See operating- and service instructions 8B.7.

We reserve the right to use equivalent alternative materials.

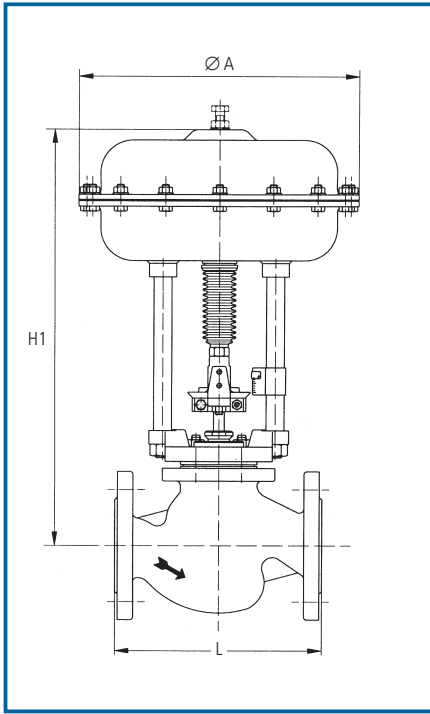
Examples of actuator layouts and permissible differential pressures Δp

| Actuator Po<br>Spring closes |          | Minimum air pressure setting (bar) |            | 1.4      | 1.4          | 2            | 3         | 4            | 5         | 5.5       |           |                |              |                 |              |                              |   |           |                             |           |                             |           |                             |           |                             |          |                             |          |
|------------------------------|----------|------------------------------------|------------|----------|--------------|--------------|-----------|--------------|-----------|-----------|-----------|----------------|--------------|-----------------|--------------|------------------------------|---|-----------|-----------------------------|-----------|-----------------------------|-----------|-----------------------------|-----------|-----------------------------|----------|-----------------------------|----------|
|                              |          | Air pressure setting range (bar)   |            | 0.3-1.1  | 0.8-1.35     | -            | -         | -            | -         | -         |           |                |              |                 |              |                              |   |           |                             |           |                             |           |                             |           |                             |          |                             |          |
| Valve                        |          | Nominal bores                      |            |          |              |              |           |              |           |           |           | 1) kvs<br>m³/h | 1) cv<br>gpm | Seating<br>∅ mm | Stroke<br>mm | Actuator-<br>size<br>MA 9... | Permissible differential pressures (in bar) for each type of seal |           |                             |           |                             |           |                             |           |                             |          |                             |          |
|                              |          | 15<br>1/2"                         | 20<br>3/4" | 25<br>1" | 32<br>1 1/4" | 40<br>1 1/2" | 50<br>2"  | 65<br>2 1/2" | 80<br>3"  | 100<br>4" | 150<br>6" |                |              |                 |              |                              | metallic and<br>soft (PTFE)                                       | Stellite  | metallic and<br>soft (PTFE) | Stellite  | metallic and<br>soft (PTFE) | Stellite  | metallic and<br>soft (PTFE) | Stellite  | metallic and<br>soft (PTFE) | Stellite | metallic and<br>soft (PTFE) | Stellite |
|                              |          | 16 A6 3R                           | 16 A6 1S   | 16 A6 2S | 16 A6 3S     | 16 A6 5S     | 16 A6 17S | 31 A6 17S    | 21 A6 3R  | 21 A6 1S  | 21 A6 2S  | 21 A6 4S       | 31 A6 5S     | 31 A6 16S       | 41 A6 10S    | 31 B6 3R                     | 31 B6 1S  | 31 B6 2S  | 31 B6 3S                    | 31 A6 3S  | 41 A6 6S                    | 41 A6 8S  | 41 A6 10S                   | 31 A6 17S | 41 A6 12S                   |          |                             |          |
|                              |          | 16 A6 4R                           | 16 A6 2S   | 41 A6 4S | 41 A6 6S     | 21 A6 3S     | 31 A6 3S  | 31 A6 5S     | 31 A6 16S | 41 A6 10S | 16 A6 3R  | 16 A6 1S       | 16 A6 2S     | 16 A6 4S        | 16 A6 5S     | 16 A6 17S                    | 21 A6 3R  | 21 A6 1S  | 21 A6 2S                    | 21 A6 4S  | 21 A6 5S                    | 21 A6 16S | 21 A6 17S                   | 21 A6 16S | 21 A6 10S                   |          |                             |          |
|                              |          | 21 A6 3R                           | 21 A6 1S   | 21 A6 2S | 21 A6 4S     | 21 A6 5S     | 21 A6 17S | 31 A6 17S    | 31 A6 16S | 41 A6 10S | 31 B6 3R  | 31 B6 1S       | 31 B6 2S     | 31 B6 3S        | 31 A6 3S     | 41 A6 6S                     | 41 A6 8S  | 41 A6 10S | 31 A6 17S                   | 41 A6 12S | 31 A6 17S                   | 41 A6 12S | 31 A6 17S                   | 41 A6 12S | 31 A6 17S                   |          |                             |          |
| 31 A6 3R                     | 31 A6 1S | 31 A6 2S                           | 31 A6 4S   | 31 A6 5S | 31 A6 17S    | 41 A6 10S    | 31 A6 16S | 41 A6 10S    | 31 B6 3R  | 31 B6 1S  | 31 B6 2S  | 31 B6 3S       | 31 A6 3S     | 41 A6 6S        | 41 A6 8S     | 41 A6 10S                    | 31 A6 17S   | 41 A6 12S | 31 A6 17S                   | 41 A6 12S | 31 A6 17S                   | 41 A6 12S | 31 A6 17S                   |           |                             |          |                             |          |

1) Further kvs-/cv-values (stroke 16 mm, only linear): 0.04/0.05 0.025/0.029 0.016/0.019 0.01/0.012 0.0063/0.0073 0.004/0.0046 0.0025/0.0029 0.0016/0.0019

Detailed documentation is available on request –  
 please phone us: +41 (0)61 467 91 20, or visit our internet site:  
[www.von-rohr.ch](http://www.von-rohr.ch)

**Pneumatic actuators**



**Technical data**

- compact construction, simple operation with multi-spring
- membrane surfaces: 110, 240, 510 and 1090 cm<sup>2</sup>
- setting forces 0.3 to 29 kN
- membrane made of polyamide weave with coating based on NBR
- housing made of steel plate coated on both sides with twin-pack epoxy resin, or in 316
- spindle made of W 1.4305, surface smoothed, O-ring seal
- maximum air supply pressure 6 bar
- permissible ambient temperature -30°C to +90°C
- quick and simple to reverse Po ↔ Ps

**Optional extras**

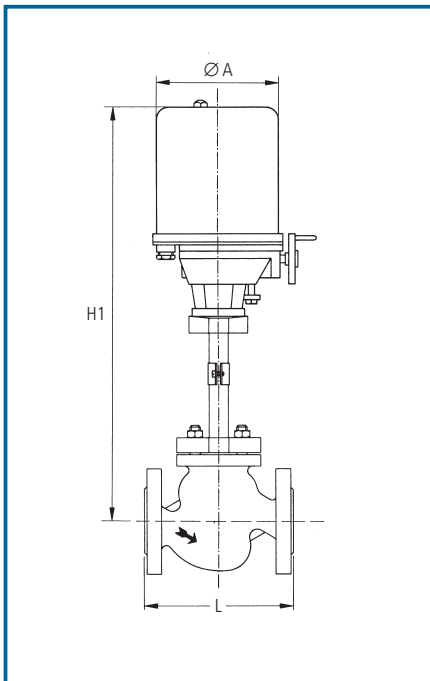
- housing made of W 1.4301, electrolytically polished if required
- mechanical stroke limitation, simple to adjust
- emergency manual adjustment

**Accessories**

- pneumatic and electro-pneumatic positioner, also in ex-version
- integrated mounting possible
- limit switches, solenoid valves, amplifiers etc.

| Valve    | DN                              | mm                  | 15  | 20                             | 25  | 32  | 40  | 50  | 65   | 80  | 100 | 150 |     |
|----------|---------------------------------|---------------------|-----|--------------------------------|-----|-----|-----|-----|------|-----|-----|-----|-----|
|          | L PN 16...40                    |                     | 130 | 150                            | 160 | 180 | 200 | 230 | 290  | 310 | 350 | 480 |     |
|          | 1) approx. weight of valve (kg) |                     | 6.5 | 8.5                            | 9   | 10  | 17  | 19  | 27.5 | 54  | 77  | 110 |     |
|          | 2) approx. weight of valve (kg) |                     | 10  | 12                             | 13  | 14  | 22  | 24  | 32   | 56  | 84  | 115 |     |
| Actuator | MA...                           | approx. weight (kg) | Ø A | H1 standard 1)                 |     |     |     |     |      |     |     |     |     |
|          | 9.16 A6 ...                     | 4                   | 162 | 341                            | 341 | 341 | 341 | 371 | 371  | 371 |     |     |     |
|          | 9.21 A6 ...                     | 6.5                 | 210 | 402                            | 402 | 402 | 402 | 432 | 432  | 432 |     |     |     |
|          | 9.31 B6 ...                     | 18                  | 310 | 412                            | 412 | 412 | 412 | 442 | 442  | 442 |     |     |     |
|          | 9.31 A6 ...                     | 19                  | 310 |                                |     |     |     |     |      |     | 543 | 568 | 613 |
|          | 9.41 A6 ...                     | 48                  | 415 |                                |     |     |     |     |      |     | 605 | 630 | 675 |
|          |                                 |                     |     | H1 bellows / extension tube 2) |     |     |     |     |      |     |     |     |     |
|          | 9.16 A6 ...                     | 4                   | 162 | 528                            | 528 | 528 | 528 | 528 | 528  | 528 |     |     |     |
|          | 9.21 A6 ...                     | 6.5                 | 210 | 589                            | 589 | 589 | 589 | 589 | 589  | 589 |     |     |     |
|          | 9.31 B6 ...                     | 18                  | 310 | 599                            | 599 | 599 | 599 | 599 | 599  | 599 |     |     |     |
|          | 9.31 A6 ...                     | 19                  | 310 |                                |     |     |     |     |      |     | 720 | 720 | 720 |
|          | 9.41 A6 ...                     | 48                  | 415 |                                |     |     |     |     |      |     | 782 | 782 | 782 |

**Electrical actuators**



**Technical data**

- connectors comply with DIN 3358 – F05, DIN 3210 – B0 and columns (pillars)
- thrust 0.6 bis 25 kN
- safety category IP 65
- permissible ambient temperature -20°C to +60°C
- motor voltage: standard 230 V 50 Hz
- 2 load switches built in as standard
- 1 travel-dependent switch 2.2,0 – 25

**Optional extras**

- other voltage
- limit switches
- feed back potentiometer, 1000 Ohm (other resistance values possible)
- electronic position transmitter
- positioner (positioning electronics, 0–10 V, 4–20 mA)
- heat-resistance

| Valve    | DN                           | mm                  | 15  | 20  | 25  | 32  | 40  | 50  | 65   | 80  | 100 | 150 |     |
|----------|------------------------------|---------------------|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|
|          | L PN 16...40                 |                     | 130 | 150 | 160 | 180 | 200 | 230 | 290  | 310 | 350 | 480 |     |
|          | approx. weight of valve (kg) |                     | 6.5 | 8.5 | 9   | 10  | 17  | 19  | 27.5 | 54  | 77  | 110 |     |
| Actuator | SHE...                       | approx. weight (kg) | Ø A |     |     |     |     |     |      |     |     |     |     |
|          | 2.0.6... – 1.2...            | 3                   | 128 | 348 | 348 | 348 | 348 | 379 | 379  | 379 |     |     |     |
|          | 2.1.2... – 6...              | 7                   | 145 | 478 | 478 | 478 | 478 | 509 | 509  | 509 | 589 | 614 | 659 |
|          | 2.8... – 15...               | 11                  | 188 |     |     |     |     | 564 | 564  | 564 | 644 | 669 | 714 |
|          | 2.15... – 25...              | 18                  | 216 |     |     |     |     |     |      |     | 710 | 735 | 780 |