

**Characterised control valve, 2-way, Internal thread**

- For open and closed cold and warm water systems
- For modulating water-side control of air handling units and heating systems
- Air bubble tight


**Type overview**

| Type         | kvs<br>[ m <sup>3</sup> /h] | DN<br>[ ] | Rp<br>["] | PN<br>[ ] | n(gl)<br>[ ] | Sv min.<br>[ ] |
|--------------|-----------------------------|-----------|-----------|-----------|--------------|----------------|
| R2015-P25-S1 | 0.25                        | 15        | 1/2       | 40        | 3.2          | 50             |
| R2015-P4-S1  | 0.4                         | 15        | 1/2       | 40        | 3.2          | 50             |
| R2015-P63-S1 | 0.63                        | 15        | 1/2       | 40        | 3.2          | 50             |
| R2015-1-S1   | 1                           | 15        | 1/2       | 40        | 3.2          | 50             |
| R2015-1P6-S1 | 1.6                         | 15        | 1/2       | 40        | 3.2          | 50             |
| R2015-2P5-S1 | 2.5                         | 15        | 1/2       | 40        | 3.2          | 50             |
| R2015-4-S1   | 4                           | 15        | 1/2       | 40        | 3.2          | 100            |
| R2015-6P3-S1 | 6.3                         | 15        | 1/2       | 40        | 3.2          | 100            |
| R2020-4-S1   | 4                           | 20        | 3/4       | 40        | 3.2          | 100            |
| R2020-6P3-S1 | 6.3                         | 20        | 3/4       | 40        | 3.2          | 100            |
| R2025-6P3-S2 | 6.3                         | 25        | 1         | 40        | 3.2          | 100            |
| R2025-10-S2  | 10                          | 25        | 1         | 40        | 3.2          | 100            |
| R2032-10-S2  | 10                          | 32        | 1 1/4     | 25        | 3.2          | 100            |
| R2032-20-S2  | 20                          | 32        | 1 1/4     | 25        | 3.2          | 100            |
| R2040-16-S2  | 16                          | 40        | 1 1/2     | 25        | 3.2          | 100            |
| R2040-25-S2  | 25                          | 40        | 1 1/2     | 25        | 3.2          | 100            |
| R2050-25-S3  | 25                          | 50        | 2         | 25        | 3.2          | 100            |
| R2050-40-S3  | 40                          | 50        | 2         | 25        | 3.2          | 100            |

**Technical data**

|                        |  |   |
|------------------------|--|---|
| <b>Functional data</b> | Media                                  | Cold and warm water, water with glycol up to max. 50% vol.  |
|                        | Medium temperature                     | -10...120°C   |
|                        | Medium temperature note                | The allowed media temperature can be limited, depending on the type of actuator. Limitations can be found in the respective data sheets of the actuators. |
|                        | Closing pressure $\Delta p_s$          | 1400kPa   |
|                        | Differential pressure $\Delta p_{max}$ | 350kPa  |
|                        | Differential pressure note             | 200kPa for low-noise operation  |
|                        | Flow characteristic                    | Equal percentage (VDI/VDE 2178), optimised in the opening range   |
|                        | Leakage rate                           | Leakage rate A, air-bubble-tight (EN 12266-1)   |
|                        | Pipe connectors                        | Internal thread according to ISO 7-1  |
|                        | Angle of rotation                      | 90° (Operating range 15...90°)  |
|                        | Installation position                  | Upright to horizontal (in relation to the stem)   |
|                        | Maintenance                            | Maintenance-free  |
|                        | <b>Materials</b>                       | Housing   |
| Closing element        |  | Stainless steel   |
| Stem                   |  | Stainless steel   |
| Stem seal              |  | O-ring EPDM   |
| Valve seat             |  | PTFE, O-ring EPDM   |
| Characterising disc    |  | TEFZEL<br>R2032-20-S2 has no characterising disc  |

**Safety notes**


- The valve has been designed for use in stationary heating, ventilation and air-conditioning systems and is not allowed to be used outside the specified field of application, especially in aircraft or in any other airborne means of transport.
- Only authorised specialists may carry out installation. All applicable legal or institutional installation regulations must be complied during installation.
- The valve does not contain any parts that can be replaced or repaired by the user.
- The valve may not be disposed of as household refuse. All locally valid regulations and requirements must be observed.
- When determining the flow rate characteristic of controlled devices, the recognised directives must be observed.

**Product features**

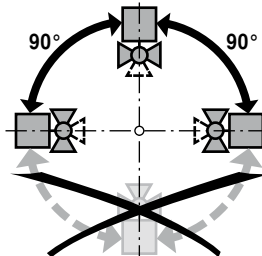
|                            |   |
|----------------------------|---|
| <b>Mode of operation</b>   | The characterised control valve is adjusted by a rotary actuator. The actuator is controlled by a commercially available modulating or 3-point control system and moves the ball of the valve – the throttling device – to the position dictated by the positioning signal. Open the characterised control valve counterclockwise and close it clockwise. |
| <b>Flow characteristic</b> | Equal percentage flow control is ensured by the integrated characterising disc.   |

**Accessories**

|                               | Description                                  | Type   |
|-------------------------------|--|--------|
| <b>Mechanical accessories</b> | Pipe connector to ballvalves DN 15 Rp 1/2"   | ZR2315 |
|                               | Pipe connector to ballvalves DN 20 Rp 3/4"   | ZR2320 |
|                               | Pipe connector to ballvalves DN 25 Rp 1"     | ZR2325 |
|                               | Pipe connector to ballvalves DN 32 Rp 1 1/4" | ZR2332 |
|                               | Pipe connector to ballvalves DN 40 Rp 1 1/2" | ZR2340 |
|                               | Pipe connector to ballvalves DN 50 Rp 2"     | ZR2350 |

**Installation notes**

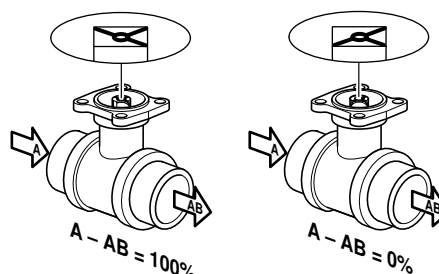
**Recommended installation positions** The ball valve can be installed upright to horizontal. The ball valve may not be installed in a hanging position, i.e. with the stem pointing downwards.



**Water quality requirements** The water quality requirements specified in VDI 2035 must be adhered to. Belimo valves are regulating devices. For the valves to function correctly in the long term, they must be kept free from particle debris (e.g. welding beads during installation work). The installation of suitable strainer is recommended.

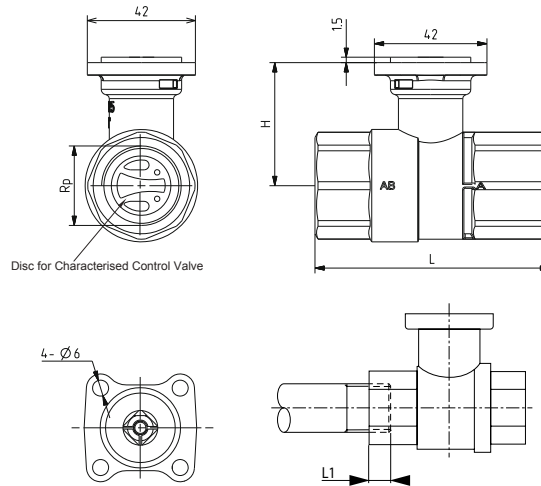
**Maintenance** Ball valves and rotary actuators are maintenance-free. Before any kind of service work is carried out on the actuator, it is essential to isolate the rotary actuator from the power supply (by unplugging the electrical cable). Any pumps in the part of the piping system concerned must also be switched off and the appropriate slide valves closed (allow everything to cool down first if necessary and reduce the system pressure to ambient pressure level). The system must not be returned to service until the ball valve and the rotary actuator have been properly reassembled in accordance with the instructions and the pipeline has been refilled in the proper manner.

**Flow direction** The direction of flow, specified by an arrow on the housing, is to be complied with, since otherwise the ball valve could become damaged. Please ensure that the ball is in the correct position (marking on the spindle).



## Dimensions [mm]

## Dimensional drawings



L1: Maximum screwing depth.  
The actuator dimensions can be found on the respective actuator data sheet.

| Type         | DN<br>[ ] | Rp<br>["] | L<br>[ mm] | L1<br>[ mm] | H<br>[ mm] | Weight approx.<br>[ kg] |
|--------------|-----------|-----------|------------|-------------|------------|-------------------------|
| R2015-P25-S1 | 15        | 1/2       | 67         | 13          | 35         | 0.24                    |
| R2015-P4-S1  | 15        | 1/2       | 67         | 13          | 35         | 0.24                    |
| R2015-P63-S1 | 15        | 1/2       | 67         | 13          | 35         | 0.24                    |
| R2015-1-S1   | 15        | 1/2       | 67         | 13          | 35         | 0.24                    |
| R2015-1P6-S1 | 15        | 1/2       | 67         | 13          | 35         | 0.24                    |
| R2015-2P5-S1 | 15        | 1/2       | 67         | 13          | 44         | 0.30                    |
| R2015-4-S1   | 15        | 1/2       | 67         | 13          | 44         | 0.30                    |
| R2015-6P3-S1 | 15        | 1/2       | 67         | 13          | 44         | 0.30                    |
| R2020-4-S1   | 20        | 3/4       | 79         | 14          | 44         | 0.37                    |
| R2020-6P3-S2 | 20        | 3/4       | 79         | 14          | 44         | 0.37                    |
| R2025-6P3-S2 | 25        | 1         | 87         | 16          | 46         | 0.55                    |
| R2025-10-S2  | 25        | 1         | 87         | 16          | 46         | 0.55                    |
| R2032-10-S2  | 32        | 1 1/4     | 105        | 19          | 46         | 0.7                     |
| R2032-20-S2  | 32        | 1 1/4     | 105        | 19          | 50.5       | 0.8                     |
| R2040-16-S2  | 40        | 1 1/2     | 111        | 19          | 50.5       | 0.95                    |
| R2040-25-S2  | 40        | 1 1/2     | 111        | 19          | 50.5       | 0.95                    |
| R2050-25-S3  | 50        | 2         | 125        | 22          | 56         | 1.5                     |
| R2050-40-S3  | 50        | 2         | 125        | 22          | 56         | 1.5                     |

\* R2032-20-S2 has no characterising disc