

Efficiency and reliability in versatile applications.

# The complete product range of water applications

Edition 2022



## Table of contents

|   |   |    |    |
|---|---|----|----|
| <b>Control valves</b>                   | Zone valves                                       | 5  | 4  |
|   | Pressure-independent characterised control valves | 17 | 5  |
|   | Characterised control valves (CCV)                | 25 | 6  |
|   | Globe valves                                      | 37 | 7  |
|   | Control butterfly valves                          | 59 | 8  |
| <b>Open/close and changeover valves</b> | Ball valves                                       | 67 | 9  |
|   | Potable water valves                              | 77 | 10 |
|   | Open/close and changeover butterfly valves        | 81 | 11 |
| <b>Definitions</b>                      | Formula symbol                                    | 87 |    |

## 4

## Zone valves

Maximum comfort, minimum consumption

|   |                 |       |       |                   |    |
|---|-----------------|-------|-------|-------------------|----|
| <b>Characterised control valve (QCV)</b>                                  | Internal thread | 2-way | PN 25 | <b>DN 15...25</b> | 6  |
| <b>Changeover ball valve (QCV)</b>  |                 | 3-way |       |                   | 7  |
| <b>Characterised control valve (QCV)</b>                                  | External thread | 2-way | PN 25 | <b>DN 15/20</b>   | 8  |
| <b>Changeover ball valve (QCV)</b>  |                 | 3-way |       |                   | 9  |
| <b>Pressure-independent quick compact valve (PIQCV)</b>                   | Internal thread | 2-way | PN 25 | <b>DN 15...25</b> | 10 |
| <b>Pressure-independent flow limiter valve (PIFLV)</b>                    |                 |       |       |                   | 11 |
| <b>Characterised control valve</b>  | Internal thread | 6-way | PN 16 | <b>DN 15</b>      | 12 |
|   |                 |       |       | <b>DN 15...25</b> | 13 |
| <b>Electronic pressure-independent characterised control valve (EPIV)</b> |                 |       |       | <b>DN 15/20</b>   | 14 |

Please refer to the data sheets or notes for project planning for further technical data to be observed.

### Valve Sizer App

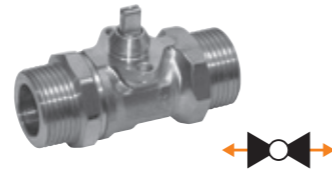
Easily find the right valve and the right actuator for your application with the convenient Valve Sizer App. Install the app via the "App Store" or "Google Play". With the QR Code you can get there directly.





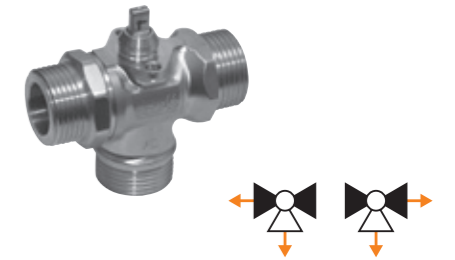
# DN 15/20

- Range of use: Closed water circuit (pH >7)
- Fluid temperature: 2...90°C
- Pipe connection: External thread G (ISO 228-1)
- Leakage rate: Air-bubble tight, leakage rate A (EN 12266-1)
- Flow characteristic: Equal percentage
- Close-off pressure:  $\Delta p_s$ : 520 kPa
- Max. differential pressure:  $\Delta p_{max}$ : 280 kPa
- Permissible operating pressure:  $p_s$ : 1600 kPa



# DN 15/20

- Range of use: Closed water circuit (pH >7)
- Fluid temperature: 2...90°C
- Pipe connection: External thread G (ISO 228-1)
- Leakage rate: Air-bubble tight, leakage rate A (EN 12266-1)
- Close-off pressure:  $\Delta p_s$ : 280 kPa
- Max. differential pressure:  $\Delta p_{max}$ : 280 kPa
- Permissible operating pressure:  $p_s$ : 1600 kPa



| Suitable actuators | Nominal torque | Open/close | 3-point | Modulating (2...10 V) | Modulating (0.5...10 V) | MP-Bus communication | BACnet communication | Modbus communication | Fail-safe | Nominal voltage AC/DC 24 V AC 230 V | Running time motor 90° | Actuator type | PN 25            |                      |                  |                      |     |   |   |   |   |      |      |         |             |            |     |     |     |     |   |      |      |        |           |     |     |     |
|--------------------|----------------|------------|---------|-----------------------|-------------------------|----------------------|----------------------|----------------------|-----------|-------------------------------------|------------------------|---------------|------------------|----------------------|------------------|----------------------|-----|---|---|---|---|------|------|---------|-------------|------------|-----|-----|-----|-----|---|------|------|--------|-----------|-----|-----|-----|
|                    |                |            |         |                       |                         |                      |                      |                      |           |                                     |                        |               | DN 15            |                      | DN 20            |                      |     |   |   |   |   |      |      |         |             |            |     |     |     |     |   |      |      |        |           |     |     |     |
|                    |                |            |         |                       |                         |                      |                      |                      |           |                                     |                        |               | $k_{vs}$ [m³/h]  | Valve type           | $k_{vs}$ [m³/h]  | Valve type           |     |   |   |   |   |      |      |         |             |            |     |     |     |     |   |      |      |        |           |     |     |     |
|                    |                |            |         |                       |                         |                      |                      |                      |           |                                     |                        |               | $\Delta p_s$ kPa | $\Delta p_{max}$ kPa | $\Delta p_s$ kPa | $\Delta p_{max}$ kPa |     |   |   |   |   |      |      |         |             |            |     |     |     |     |   |      |      |        |           |     |     |     |
|                    |                |            |         |                       |                         |                      |                      |                      |           |                                     |                        |               | 0.4...4.5        | C415Q-J              | 0.5...7.8        | C420Q-K              |     |   |   |   |   |      |      |         |             |            |     |     |     |     |   |      |      |        |           |     |     |     |
| CQ..               | 1 Nm           | ■          | ■       | ■                     | ■                       | ■                    | ■                    | ■                    | ■         | 24 V                                | 75 s                   | CQ24A         | 520              | 280                  | 520              | 280                  |     |   |   |   |   |      |      |         |             |            |     |     |     |     |   |      |      |        |           |     |     |     |
|                    |                |            |         |                       |                         |                      |                      |                      |           |                                     |                        |               | CQ24A-SR         | 520                  | 280              | 520                  | 280 |   |   |   |   |      |      |         |             |            |     |     |     |     |   |      |      |        |           |     |     |     |
|                    |                |            |         |                       |                         |                      |                      |                      |           |                                     |                        |               | CQ24A-SZ         | 520                  | 280              | 520                  | 280 |   |   |   |   |      |      |         |             |            |     |     |     |     |   |      |      |        |           |     |     |     |
|                    |                |            |         |                       |                         |                      |                      |                      |           |                                     |                        |               | CQ24A-MPL        | 520                  | 280              | 520                  | 280 |   |   |   |   |      |      |         |             |            |     |     |     |     |   |      |      |        |           |     |     |     |
|                    |                |            |         |                       |                         |                      |                      |                      |           |                                     |                        |               | CQ24A-BAC        | 520                  | 280              | 520                  | 280 |   |   |   |   |      |      |         |             |            |     |     |     |     |   |      |      |        |           |     |     |     |
|                    |                |            |         |                       |                         |                      |                      |                      |           |                                     |                        |               | CQ230A           | 520                  | 280              | 520                  | 280 |   |   |   |   |      |      |         |             |            |     |     |     |     |   |      |      |        |           |     |     |     |
|                    |                |            |         |                       |                         |                      |                      |                      |           |                                     |                        |               | CQ..-T           | 1 Nm                 | ■                | ■                    | ■   | ■ | ■ | ■ | ■ | 24 V | 75 s | CQ24A-T | 520         | 280        | 520 | 280 |     |     |   |      |      |        |           |     |     |     |
|                    |                |            |         |                       |                         |                      |                      |                      |           |                                     |                        |               |                  |                      |                  |                      |     |   |   |   |   |      |      |         | CQ24A-SR-T  | 520        | 280 | 520 | 280 |     |   |      |      |        |           |     |     |     |
|                    |                |            |         |                       |                         |                      |                      |                      |           |                                     |                        |               |                  |                      |                  |                      |     |   |   |   |   |      |      |         | CQ24A-SZ-T  | 520        | 280 | 520 | 280 |     |   |      |      |        |           |     |     |     |
|                    |                |            |         |                       |                         |                      |                      |                      |           |                                     |                        |               |                  |                      |                  |                      |     |   |   |   |   |      |      |         | CQ24A-MPL-T | 520        | 280 | 520 | 280 |     |   |      |      |        |           |     |     |     |
| CQ230A-T           | 520            | 280        | 520     | 280                   |                         |                      |                      |                      |           |                                     |                        |               |                  |                      |                  |                      |     |   |   |   |   |      |      |         |             |            |     |     |     |     |   |      |      |        |           |     |     |     |
| CQK..              | 1 Nm           | ■          | ■       | ■                     | ■                       | ■                    | ■                    | ■                    | 24 V      | 35 s                                | CQC230A                | 520           |                  |                      |                  |                      |     |   |   |   |   |      |      |         | 280         | 520        | 280 |     |     |     |   |      |      |        |           |     |     |     |
|                    |                |            |         |                       |                         |                      |                      |                      |           |                                     |                        | 15 s          |                  |                      |                  |                      |     |   |   |   |   |      |      |         | CQD230A     | 520        | 280 |     |     |     |   |      |      |        |           |     |     |     |
|                    |                |            |         |                       |                         |                      |                      |                      |           |                                     |                        |               |                  |                      |                  |                      |     |   |   |   |   |      |      |         |             | CQD230A-20 |     |     | 520 | 280 |   |      |      |        |           |     |     |     |
|                    |                |            |         |                       |                         |                      |                      |                      |           |                                     |                        | CQK..-T       |                  |                      |                  |                      |     |   |   |   |   |      |      |         | 1 Nm        | ■          | ■   | ■   | ■   | ■   | ■ | 24 V | 75 s | CQK24A | 520       | 280 | 520 | 280 |
|                    |                |            |         |                       |                         |                      |                      |                      |           |                                     |                        |               |                  |                      |                  |                      |     |   |   |   |   |      |      |         |             |            |     |     |     |     |   |      |      |        | CQK24A-SR | 520 | 280 | 520 |
|                    |                |            |         |                       |                         |                      |                      |                      |           |                                     |                        |               | CQK24A-MPL       | 520                  | 280              | 520                  | 280 |   |   |   |   |      |      |         |             |            |     |     |     |     |   |      |      |        |           |     |     |     |
| CQK230A            | 520            | 280        | 520     | 280                   |                         |                      |                      |                      |           |                                     |                        |               |                  |                      |                  |                      |     |   |   |   |   |      |      |         |             |            |     |     |     |     |   |      |      |        |           |     |     |     |
| CQK..-T            | 1 Nm           | ■          | ■       | ■                     | ■                       | ■                    | ■                    | 24 V                 | 75 s      | CQK24A-SR-T                         | 520                    | 280           | 520              | 280                  |                  |                      |     |   |   |   |   |      |      |         |             |            |     |     |     |     |   |      |      |        |           |     |     |     |
|                    |                |            |         |                       |                         |                      |                      |                      |           |                                     | CQK24A-MPL-T           | 520           | 280              | 520                  | 280              |                      |     |   |   |   |   |      |      |         |             |            |     |     |     |     |   |      |      |        |           |     |     |     |
|                    |                |            |         |                       |                         |                      |                      |                      |           |                                     | 230 V                  | CQK230A-T     | 520              | 280                  | 520              | 280                  |     |   |   |   |   |      |      |         |             |            |     |     |     |     |   |      |      |        |           |     |     |     |

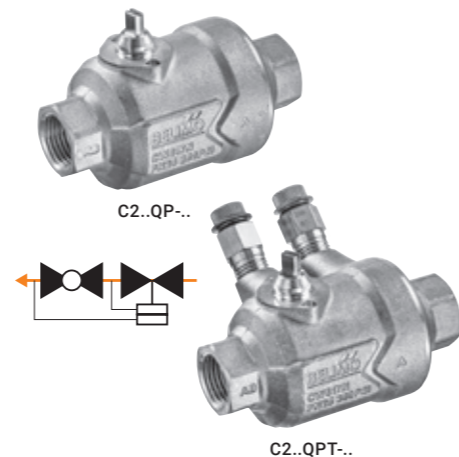
<sup>1)</sup> Fail-safe actuators NO available (e.g. CQK24A-O)

| Suitable actuators | Nominal torque | Open/close | 3-point | MP-Bus communication | BACnet communication | Modbus communication | Fail-safe | Nominal voltage AC/DC 24 V AC 230 V | Running time motor 90° | Actuator type | PN 25            |                      |                  |                      |     |   |   |      |      |         |             |      |     |     |     |   |   |      |      |        |            |     |     |     |     |
|--------------------|----------------|------------|---------|----------------------|----------------------|----------------------|-----------|-------------------------------------|------------------------|---------------|------------------|----------------------|------------------|----------------------|-----|---|---|------|------|---------|-------------|------|-----|-----|-----|---|---|------|------|--------|------------|-----|-----|-----|-----|
|                    |                |            |         |                      |                      |                      |           |                                     |                        |               | DN 15            |                      | DN 20            |                      |     |   |   |      |      |         |             |      |     |     |     |   |   |      |      |        |            |     |     |     |     |
|                    |                |            |         |                      |                      |                      |           |                                     |                        |               | $k_{vs}$ [m³/h]  | Valve type           | $k_{vs}$ [m³/h]  | Valve type           |     |   |   |      |      |         |             |      |     |     |     |   |   |      |      |        |            |     |     |     |     |
|                    |                |            |         |                      |                      |                      |           |                                     |                        |               | $\Delta p_s$ kPa | $\Delta p_{max}$ kPa | $\Delta p_s$ kPa | $\Delta p_{max}$ kPa |     |   |   |      |      |         |             |      |     |     |     |   |   |      |      |        |            |     |     |     |     |
|                    |                |            |         |                      |                      |                      |           |                                     |                        |               | 2.3              | C515Q-H              | 3.6              | C520Q-J              |     |   |   |      |      |         |             |      |     |     |     |   |   |      |      |        |            |     |     |     |     |
| CQ..               | 1 Nm           | ■          | ■       | ■                    | ■                    | ■                    | ■         | 24 V                                | 75 s                   | CQ24A         | 280              | 280                  | 280              | 280                  |     |   |   |      |      |         |             |      |     |     |     |   |   |      |      |        |            |     |     |     |     |
|                    |                |            |         |                      |                      |                      |           |                                     |                        |               | CQ24A-MPL        | 280                  | 280              | 280                  | 280 |   |   |      |      |         |             |      |     |     |     |   |   |      |      |        |            |     |     |     |     |
|                    |                |            |         |                      |                      |                      |           |                                     |                        |               | CQ24A-BAC        | 280                  | 280              | 280                  | 280 |   |   |      |      |         |             |      |     |     |     |   |   |      |      |        |            |     |     |     |     |
|                    |                |            |         |                      |                      |                      |           |                                     |                        |               | CQ230A           | 280                  | 280              | 280                  | 280 |   |   |      |      |         |             |      |     |     |     |   |   |      |      |        |            |     |     |     |     |
|                    |                |            |         |                      |                      |                      |           |                                     |                        |               | CQ..-T           | 1 Nm                 | ■                | ■                    | ■   | ■ | ■ | 24 V | 75 s | CQ24A-T | 280         | 280  | 280 | 280 |     |   |   |      |      |        |            |     |     |     |     |
|                    |                |            |         |                      |                      |                      |           |                                     |                        |               |                  |                      |                  |                      |     |   |   |      |      |         | CQ24A-MPL-T | 280  | 280 | 280 | 280 |   |   |      |      |        |            |     |     |     |     |
|                    |                |            |         |                      |                      |                      |           |                                     |                        |               |                  |                      |                  |                      |     |   |   |      |      |         | CQ230A-T    | 280  | 280 | 280 | 280 |   |   |      |      |        |            |     |     |     |     |
|                    |                |            |         |                      |                      |                      |           |                                     |                        |               |                  |                      |                  |                      |     |   |   |      |      |         | CQK..       | 1 Nm | ■   | ■   | ■   | ■ | ■ | 24 V | 75 s | CQK24A | 280        | 280 | 280 | 280 |     |
|                    |                |            |         |                      |                      |                      |           |                                     |                        |               |                  |                      |                  |                      |     |   |   |      |      |         |             |      |     |     |     |   |   |      |      |        | CQK24A-MPL | 280 | 280 | 280 | 280 |
|                    |                |            |         |                      |                      |                      |           |                                     |                        |               |                  |                      |                  |                      |     |   |   |      |      |         |             |      |     |     |     |   |   |      |      |        | CQK230A    | 280 | 280 | 280 | 280 |
| CQK..-T            | 1 Nm           | ■          | ■       | ■                    | ■                    | 24 V                 | 75 s      | CQK24A-MPL-T                        | 280                    | 280           |                  |                      |                  |                      |     |   |   |      |      |         |             |      |     |     |     |   |   |      |      |        | 280        | 280 |     |     |     |
|                    |                |            |         |                      |                      |                      |           |                                     | CQK230A-T              | 280           |                  |                      |                  |                      |     |   |   |      |      |         |             |      |     |     |     |   |   |      |      |        | 280        | 280 | 280 |     |     |

<sup>1)</sup> Fail-safe actuators NO available (e.g. CQK24A-O)

# DN 15...25

Range of use Closed water circuit (pH >7)  
 Fluid temperature 2...90°C  
 Pipe connection Internal thread Rp (ISO 7-1)  
 Leakage rate Air-bubble tight, leakage rate A (EN 12266-1)  
 Flow characteristic Equal percentage  
 Close-off pressure  $\Delta p_s$ : 1400 kPa  
 Max. differential pressure  $\Delta p_{max}$ : 350 kPa  
 Permissible operating pressure  $p_s$ : 1600 kPa

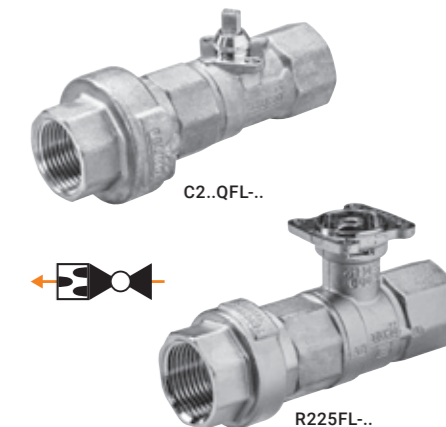


| Suitable actuators            | Nominal torque | Open/close 3-point | Modulating (2...10 V) | Modulating (0.5...10 V) | MP-Bus communication | BACnet communication | Modbus communication | Fail-safe | Nominal voltage AC/DC 24 V AC 230 V | Running time motor 90° | Actuator type | PN 25            |                      |                  |                      |                  |                      |     |
|-------------------------------|----------------|--------------------|-----------------------|-------------------------|----------------------|----------------------|----------------------|-----------|-------------------------------------|------------------------|---------------|------------------|----------------------|------------------|----------------------|------------------|----------------------|-----|
|                               |                |                    |                       |                         |                      |                      |                      |           |                                     |                        |               | DN 15            |                      | DN 20            |                      | DN 25            |                      |     |
|                               |                |                    |                       |                         |                      |                      |                      |           |                                     |                        |               | $V_{nom}$ [l/h]  | Valve type           | $V_{nom}$ [l/h]  | Valve type           | $V_{nom}$ [l/h]  | Valve type           |     |
|                               |                |                    |                       |                         |                      |                      |                      |           |                                     |                        |               | $\Delta p_s$ kPa | $\Delta p_{max}$ kPa | $\Delta p_s$ kPa | $\Delta p_{max}$ kPa | $\Delta p_s$ kPa | $\Delta p_{max}$ kPa |     |
| <b>Standard actuators</b>     |                |                    |                       |                         |                      |                      |                      |           |                                     |                        |               |                  |                      |                  |                      |                  |                      |     |
| CQ..                          | 1 Nm           |                    |                       |                         |                      |                      |                      |           | 24 V                                | 75 s                   |               | CQ24A            | 1400                 | 350              | 1400                 | 350              | 1400                 | 350 |
|                               |                |                    |                       |                         |                      |                      |                      |           |                                     |                        |               | CQ24A-SR         | 1400                 | 350              | 1400                 | 350              | 1400                 | 350 |
|                               |                |                    |                       |                         |                      |                      |                      |           |                                     |                        |               | CQ24A-SZ         | 1400                 | 350              | 1400                 | 350              | 1400                 | 350 |
|                               |                |                    |                       |                         |                      |                      |                      |           |                                     |                        |               | CQ24A-MPL        | 1400                 | 350              | 1400                 | 350              | 1400                 | 350 |
|                               |                |                    |                       |                         |                      |                      |                      |           |                                     |                        |               | CQ24A-BAC        | 1400                 | 350              | 1400                 | 350              | 1400                 | 350 |
|                               |                |                    |                       |                         |                      |                      |                      |           |                                     |                        |               | CQ230A           | 1400                 | 350              | 1400                 | 350              | 1400                 | 350 |
| CQ..-T                        | 1 Nm           |                    |                       |                         |                      |                      |                      | 24 V      | 75 s                                |                        |               | CQ24A-T          | 1400                 | 350              | 1400                 | 350              | 1400                 | 350 |
|                               |                |                    |                       |                         |                      |                      |                      |           |                                     |                        |               | CQ24A-SR-T       | 1400                 | 350              | 1400                 | 350              | 1400                 | 350 |
|                               |                |                    |                       |                         |                      |                      |                      |           |                                     |                        |               | CQ24A-SZ-T       | 1400                 | 350              | 1400                 | 350              | 1400                 | 350 |
|                               |                |                    |                       |                         |                      |                      |                      |           |                                     |                        |               | CQ24A-MPL-T      | 1400                 | 350              | 1400                 | 350              | 1400                 | 350 |
|                               |                |                    |                       |                         |                      |                      |                      |           |                                     |                        |               | CQ230A-T         | 1400                 | 350              | 1400                 | 350              | 1400                 | 350 |
|                               |                |                    |                       |                         |                      |                      |                      |           |                                     |                        |               |                  |                      |                  |                      |                  |                      |     |
| <b>Fast running actuators</b> |                |                    |                       |                         |                      |                      |                      |           |                                     |                        |               |                  |                      |                  |                      |                  |                      |     |
| CQK..                         | 1 Nm           |                    |                       |                         |                      |                      |                      | 24 V      | 75 s                                |                        |               | CQK24A           | 1400                 | 350              | 1400                 | 350              | 1400                 | 350 |
|                               |                |                    |                       |                         |                      |                      |                      |           |                                     |                        |               | CQK24A-SR        | 1400                 | 350              | 1400                 | 350              | 1400                 | 350 |
| CQK..-T                       | 1 Nm           |                    |                       |                         |                      |                      |                      | 24 V      | 75 s                                |                        |               | CQK24A-SR-T      | 1400                 | 350              | 1400                 | 350              | 1400                 | 350 |
|                               |                |                    |                       |                         |                      |                      |                      |           |                                     |                        |               | CQK24A-MPL-T     | 1400                 | 350              | 1400                 | 350              | 1400                 | 350 |

<sup>1)</sup> Fail-safe actuators NO available (e.g. CQK24A-0)

# DN 15...25

Range of use Closed water circuit (pH >7)  
 Fluid temperature 2...60°C  
 Pipe connection Internal thread Rp (ISO 7-1)  
 Leakage rate Air-bubble tight, leakage rate A (EN 12266-1)  
 Close-off pressure  $\Delta p_s$ : 520 kPa  
 Max. differential pressure  $\Delta p_{max}$ : 280 kPa  
 Permissible operating pressure  $p_s$ : 1600 kPa

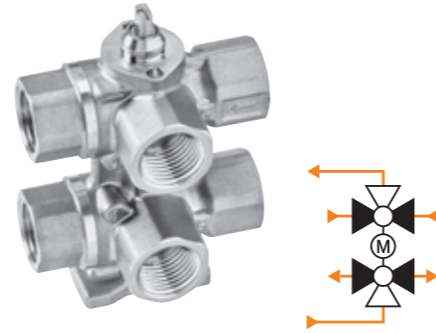


| Suitable actuators  | Nominal torque | Open/close 3-point | MP-Bus communication | BACnet communication | Modbus communication | Fail-safe | Nominal voltage AC/DC 24 V AC 230 V | Running time motor 90° | Actuator type | PN 25            |                      |                  |                      |                  |                      |      |      |  |          |  |  |  |  |     |     |
|---|----------------|--------------------|----------------------|----------------------|----------------------|-----------|-------------------------------------|------------------------|---------------|------------------|----------------------|------------------|----------------------|------------------|----------------------|------|------|--|----------|--|--|--|--|-----|-----|
|   |                |                    |                      |                      |                      |           |                                     |                        |               | DN 15            |                      | DN 20            |                      | DN 25            |                      |      |      |  |          |  |  |  |  |     |     |
|   |                |                    |                      |                      |                      |           |                                     |                        |               | $V_{nom}$ [l/h]  | Valve type           | $V_{nom}$ [l/h]  | Valve type           | $V_{nom}$ [l/h]  | Valve type           |      |      |  |          |  |  |  |  |     |     |
|   |                |                    |                      |                      |                      |           |                                     |                        |               | $\Delta p_s$ kPa | $\Delta p_{max}$ kPa | $\Delta p_s$ kPa | $\Delta p_{max}$ kPa | $\Delta p_s$ kPa | $\Delta p_{max}$ kPa |      |      |  |          |  |  |  |  |     |     |
| <b>Standard actuators</b>   |                |                    |                      |                      |                      |           |                                     |                        |               |                  |                      |                  |                      |                  |                      |      |      |  |          |  |  |  |  |     |     |
| CQ..  | 1 Nm           |                    |                      |                      |                      |           | 24 V                                | 75 s                   |               | CQ24A            | 520                  | 280              | 520                  | 280              |                      |      |      |  |          |  |  |  |  |     |     |
|   |                |                    |                      |                      |                      |           |                                     |                        |               | CQ24A-MPL        | 520                  | 280              | 520                  | 280              |                      |      |      |  |          |  |  |  |  |     |     |
|   |                |                    |                      |                      |                      |           |                                     |                        |               | CQ24A-BAC        | 520                  | 280              | 520                  | 280              |                      |      |      |  |          |  |  |  |  |     |     |
|   |                |                    |                      |                      |                      |           |                                     |                        |               | CQ230A           | 520                  | 280              | 520                  | 280              |                      |      |      |  |          |  |  |  |  |     |     |
|   |                |                    |                      |                      |                      |           |                                     |                        |               | 5 Nm             |                      |                  |                      |                  |                      | 24 V | 90 s |  | LR24A    |  |  |  |  | 520 | 280 |
|   |                |                    |                      |                      |                      |           |                                     |                        |               |                  |                      |                  |                      |                  |                      |      |      |  | LR230A   |  |  |  |  | 520 | 280 |
| <b>Standard actuators with connecting terminals</b>                     |                |                    |                      |                      |                      |           |                                     |                        |               |                  |                      |                  |                      |                  |                      |      |      |  |          |  |  |  |  |     |     |
| LR..  | 1 Nm           |                    |                      |                      |                      |           | 24 V                                | 75 s                   |               | CQ24A-T          | 520                  | 280              | 520                  | 280              |                      |      |      |  |          |  |  |  |  |     |     |
|   |                |                    |                      |                      |                      |           |                                     |                        |               | CQ24A-MPL-T      | 520                  | 280              | 520                  | 280              |                      |      |      |  |          |  |  |  |  |     |     |
|   |                |                    |                      |                      |                      |           |                                     |                        |               | CQ230A-T         | 520                  | 280              | 520                  | 280              |                      |      |      |  |          |  |  |  |  |     |     |
|   |                |                    |                      |                      |                      |           |                                     |                        |               | LR24A-TP         |                      |                  |                      |                  | 520                  | 280  |      |  |          |  |  |  |  |     |     |
|   |                |                    |                      |                      |                      |           |                                     |                        |               | LR230A-TP        |                      |                  |                      |                  | 520                  | 280  |      |  |          |  |  |  |  |     |     |
|   |                |                    |                      |                      |                      |           |                                     |                        |               | 5 Nm             |                      |                  |                      |                  |                      | 24 V | 90 s |  | LR24A-TP |  |  |  |  | 520 | 280 |
| LR230A-TP   |                |                    |                      |                      | 520                  | 280       |                                     |                        |               |                  |                      |                  |                      |                  |                      |      |      |  |          |  |  |  |  |     |     |
| <b>Fast running actuators</b>   |                |                    |                      |                      |                      |           |                                     |                        |               |                  |                      |                  |                      |                  |                      |      |      |  |          |  |  |  |  |     |     |
| CQK..   | 1 Nm           |                    |                      |                      |                      |           | 24 V                                | 75 s                   |               | CQK24A           | 520                  | 280              | 520                  | 280              |                      |      |      |  |          |  |  |  |  |     |     |
|   |                |                    |                      |                      |                      |           |                                     |                        |               | CQK24A-MPL       | 520                  | 280              | 520                  | 280              |                      |      |      |  |          |  |  |  |  |     |     |
|   |                |                    |                      |                      |                      |           |                                     |                        |               | CQK230A          | 520                  | 280              | 520                  | 280              |                      |      |      |  |          |  |  |  |  |     |     |
| 4 Nm  |                |                    |                      |                      |                      | 24 V      | 75 s                                |                        | LRF24         |                  |                      |                  |                      | 520              | 280                  |      |      |  |          |  |  |  |  |     |     |
|   |                |                    |                      |                      |                      |           |                                     |                        | LRF230        |                  |                      |                  |                      | 520              | 280                  |      |      |  |          |  |  |  |  |     |     |
| <b>Fail-safe actuators NC/NO <sup>1)</sup> and connecting terminals</b> |                |                    |                      |                      |                      |           |                                     |                        |               |                  |                      |                  |                      |                  |                      |      |      |  |          |  |  |  |  |     |     |
| CQK..-T   | 1 Nm           |                    |                      |                      |                      |           | 24 V                                | 75 s                   |               | CQK24A-MPL-T     | 520                  | 280              | 520                  | 280              |                      |      |      |  |          |  |  |  |  |     |     |
|   |                |                    |                      |                      |                      |           |                                     |                        |               | CQK230A-T        | 520                  | 280              | 520                  | 280              |                      |      |      |  |          |  |  |  |  |     |     |

<sup>1)</sup> Fail-safe actuators NO available (e.g. CQK24A-0)

# DN 15

|                                |   |
|--------------------------------|---|
| Range of use                   | Closed water circuit (pH >7)  |
| Fluid temperature              | 6...80°C  |
| Pipe connection                | Internal thread Rp (ISO 7-1)  |
| Leakage rate                   | Air-bubble tight, leakage rate A (EN 12266-1)                               |
| Flow characteristic            | Linear: Sequence I: 0...30°<br>Dead zone: 30...60°<br>Sequence II: 60...90° |
| Close-off pressure             | $\Delta p_s$ : 350 kPa  |
| Max. differential pressure     | $\Delta p_{max}$ : 100 kPa  |
| Permissible operating pressure | $p_s$ : 1600 kPa  |

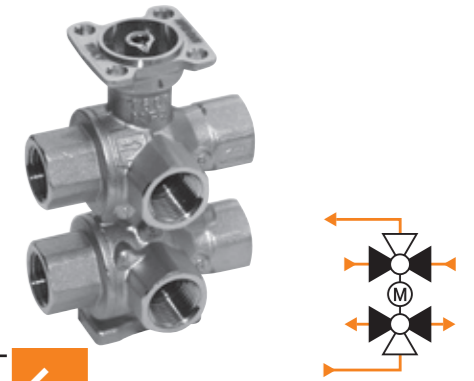


|      |                 |                 |                  |
|------|-----------------|-----------------|------------------|
|      |                 | PN 16           |                  |
|      |                 | <b>DN 15</b>    |                  |
|      | $k_{vs}$ [m³/h] | $k_{vs}$ [m³/h] | Valve type       |
|      | Sequence I      | Sequence II     |                  |
| 0.25 | 0.25            | 0.25            | R3015-P25-P25-B1 |
|      | 0.4             | 0.4             | R3015-P25-P4-B1  |
|      | 0.63            | 0.63            | R3015-P25-P63-B1 |
| 0.4  | 0.25            | 0.25            | R3015-P4-P25-B1  |
|      | 0.4             | 0.4             | R3015-P4-P4-B1   |
|      | 0.63            | 0.63            | R3015-P4-P63-B1  |
| 0.63 | 0.25            | 0.25            | R3015-P63-P25-B1 |
|      | 0.4             | 0.4             | R3015-P63-P4-B1  |
|      | 0.63            | 0.63            | R3015-P63-P63-B1 |

| Suitable actuators                                  | Nominal torque | Modulating (2...10 V) | Modulating (0.5...10 V) | MP-Bus communication | Modbus communication | BACnet communication | Nominal voltage AC/DC 24 V AC 230 V | Running time motor 90° | Actuator type | Actuator type    |                      |     |     |
|---|----------------|-----------------------|-------------------------|----------------------|----------------------|----------------------|-------------------------------------|------------------------|---------------|------------------|----------------------|-----|-----|
|   |                |                       |                         |                      |                      |                      |                                     |                        |               | $\Delta p_s$ kPa | $\Delta p_{max}$ kPa |     |     |
| <b>Standard actuators</b>                           |                |                       |                         |                      |                      |                      |                                     |                        |               |                  |                      |     |     |
| CQ..  | 1 Nm           | ■                     | —                       | —                    | —                    | —                    | 24 V                                | 75 s                   | CQ24A-SR      | 350              | 100                  |     |     |
|   |                | —                     | ■                       | —                    | —                    | CQ24A-SZ             |                                     |                        |               |                  |                      | 350 | 100 |
|   |                | —                     | —                       | ■                    | —                    | CQ24A-MPL            |                                     |                        |               |                  |                      | 350 | 100 |
|   |                | —                     | —                       | —                    | ■                    | CQ24A-BAC            |                                     |                        |               |                  |                      | 350 | 100 |
| <b>Standard actuators with connecting terminals</b> |                |                       |                         |                      |                      |                      |                                     |                        |               |                  |                      |     |     |
| CQ..-T  | 1 Nm           | ■                     | —                       | —                    | —                    | —                    | 24 V                                | 75 s                   | CQ24A-SR-T    | 350              | 100                  |     |     |
|   |                | —                     | ■                       | —                    | —                    | CQ24A-SZ-T           |                                     |                        |               |                  |                      | 350 | 100 |
|   |                | —                     | —                       | ■                    | —                    | CQ24A-MPL-T          |                                     |                        |               |                  |                      | 350 | 100 |

# DN 15...25

|                                |  |
|--------------------------------|--|
| Range of use                   | Closed water circuit (pH >7)   |
| Fluid temperature              | 6...80°C   |
| Pipe connection                | Internal thread Rp (ISO 7-1)   |
| Leakage rate                   | Air-bubble tight, leakage rate A (EN 12266-1)                                  |
| Flow characteristic            | Linear:<br>Sequence I: 0...30°<br>Dead zone: 30...60°<br>Sequence II: 60...90° |
| Close-off pressure             | $\Delta p_s$ : 350 kPa   |
| Max. differential pressure     | $\Delta p_{max}$ : 100 kPa   |
| Permissible operating pressure | $p_s$ : 1600 kPa   |



|      |                 |                 |                  |
|------|-----------------|-----------------|------------------|
|      |                 | PN 16           |                  |
|      |                 | <b>DN 15</b>    |                  |
|      | $k_{vs}$ [m³/h] | $k_{vs}$ [m³/h] | Valve type       |
|      | Sequence I      | Sequence II     |                  |
| 0.25 | 0.25            | 0.25            | R3015-P25-P25-B2 |
|      | 0.4             | 0.4             | R3015-P25-P4-B2  |
|      | 0.63            | 0.63            | R3015-P25-P63-B2 |
|      | 1               | 1               | R3015-P25-1-B2   |
|      | 1.3             | 1.3             | R3015-P25-1P3-B2 |
| 0.4  | 0.25            | 0.25            | R3015-P4-P25-B2  |
|      | 0.4             | 0.4             | R3015-P4-P4-B2   |
|      | 0.63            | 0.63            | R3015-P4-P63-B2  |
|      | 1               | 1               | R3015-P4-1-B2    |
|      | 1.3             | 1.3             | R3015-P4-1P3-B2  |
| 0.63 | 0.25            | 0.25            | R3015-P63-P25-B2 |
|      | 0.4             | 0.4             | R3015-P63-P4-B2  |
|      | 0.63            | 0.63            | R3015-P63-P63-B2 |
|      | 1               | 1               | R3015-P63-1-B2   |
|      | 1.3             | 1.3             | R3015-P63-1P3-B2 |
| 1    | 0.25            | 0.25            | R3015-1-P25-B2   |
|      | 0.4             | 0.4             | R3015-1-P4-B2    |
|      | 0.63            | 0.63            | R3015-1-P63-B2   |
|      | 1               | 1               | R3015-1-1-B2     |
|      | 1.3             | 1.3             | R3015-1-1P3-B2   |
| 1.3  | 0.25            | 0.25            | R3015-1P3-P25-B2 |
|      | 0.4             | 0.4             | R3015-1P3-P4-B2  |
|      | 0.63            | 0.63            | R3015-1P3-P63-B2 |
|      | 1               | 1               | R3015-1P3-1-B2   |
|      | 1.3             | 1.3             | R3015-1P3-1P3-B2 |
| 1.8  | 0.25            | 0.25            | R3015-1P8-P25-B2 |
|      | 0.4             | 0.4             | R3015-1P8-P4-B2  |
|      | 0.63            | 0.63            | R3015-1P8-P63-B2 |
|      | 1               | 1               | R3015-1P8-1-B2   |
|      | 1.3             | 1.3             | R3015-1P8-1P3-B2 |

| Suitable actuators        | Nominal torque | Modulating (2...10 V) | Modulating (2...10 V, variable) | MP-Bus communication <sup>1)</sup> | Nominal voltage AC/DC 24 V | Running time motor 90° | Actuator type | Actuator type    |                      |
|---------------------------|----------------|-----------------------|---------------------------------|------------------------------------|----------------------------|------------------------|---------------|------------------|----------------------|
|                           |                |                       |                                 |                                    |                            |                        |               | $\Delta p_s$ kPa | $\Delta p_{max}$ kPa |
| <b>Standard actuators</b> |                |                       |                                 |                                    |                            |                        |               |                  |                      |
| LR..                      | 5 Nm           | ■                     | —                               | —                                  | 24 V                       | 90 s                   | LR24A-SR      | 350              | 100                  |
|                           |                | —                     | ■                               | —                                  |                            |                        |               |                  |                      |

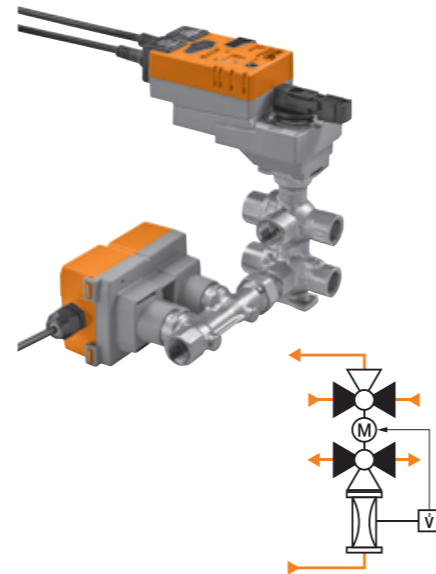
|     |                 |                 |                  |
|-----|-----------------|-----------------|------------------|
|     |                 | PN 16           |                  |
|     |                 | <b>DN 25</b>    |                  |
|     | $k_{vs}$ [m³/h] | $k_{vs}$ [m³/h] | Valve type       |
|     | Sequence I      | Sequence II     |                  |
| 6.3 | 6.3             | 6.3             | R3025-6P3-6P3-B3 |

| Suitable actuators        | Nominal torque | Modulating (2...10 V) | Modulating (2...10 V, variable) | MP-Bus communication <sup>2)</sup> | Nominal voltage AC/DC 24 V | Running time motor 90° | Actuator type | Actuator type    |                      |
|---------------------------|----------------|-----------------------|---------------------------------|------------------------------------|----------------------------|------------------------|---------------|------------------|----------------------|
|                           |                |                       |                                 |                                    |                            |                        |               | $\Delta p_s$ kPa | $\Delta p_{max}$ kPa |
| <b>Standard actuators</b> |                |                       |                                 |                                    |                            |                        |               |                  |                      |
| NR..                      | 10 Nm          | ■                     | —                               | —                                  | 24 V                       | 90 s                   | NR24A-SR      | 350              | 100                  |
|                           |                | —                     | ■                               | —                                  |                            |                        |               |                  |                      |

<sup>1)</sup> Control, operating range, position feedback, running time and further functions are adjustable on MP types using PC-Tool  
<sup>2)</sup> Other modulating and communicative actuator solutions for operating range 0.5...10 V and bus and system integration available (e.g. Modbus, BACnet, KNX)

# DN 15/20

- Range of use: Closed water circuit (pH >7)
- Fluid temperature: 6...80°C
- Pipe connection: Internal thread Rp (ISO 7-1)
- Leakage rate: Air-bubble tight, leakage rate A (EN 12266-1)
- Flow characteristic: Linear
- Close-off pressure:  $\Delta p_s$ : 350 kPa
- Max. differential pressure:  $\Delta p_{max}$ : 110 kPa
- Permissible operating pressure:  $p_s$ : 1600 kPa
- $V'_{max}$ : Freely adjustable 5...100% of  $V'_{nom}$
- Control, operating range, position feedback, running time and further functions are parametrisable with the Belimo Assistant App (NFC) and ZTH EU



| PN | DN | $V'_{nom}$ [l/h] | $V'_{max}$ low-noise [l/h] | Nominal voltage AC/DC 24 V | Modulating (2...10 V, variable) | MP-Bus communication | BACnet communication | Modbus communication | Valve type with actuator | $\Delta p_s$ kPa | $\Delta p_{max}$ kPa |
|----|----|------------------|----------------------------|----------------------------|---------------------------------|----------------------|----------------------|----------------------|--------------------------|------------------|----------------------|
| 16 | 15 | 1260             | 840                        | 24 V                       | ■                               | ■                    | ■                    | ■                    | EP015R-R6+BAC            | 350              | 110                  |
|    | 20 | 2340             | 1620                       |                            | ■                               | ■                    | ■                    | ■                    | EP020R-R6+BAC            |                  |                      |



# 5



## Pressure-independent characterised control valves

Complete transparency and highest efficiency

### Belimo Energy Valve™

|   |                 |       |                         |    |
|---|-----------------|-------|-------------------------|----|
| Internal and external thread  | 2-way           | PN 25 | <b>DN 15...50</b>       | 18 |
|   | 3-way           |       | <b>DN 15...50 (MID)</b> | 19 |
| Flange  | 2-way           | PN 16 | <b>DN 15...50</b>       | 20 |
|   | 2-way           | PN 16 | <b>DN 65...150</b>      | 21 |
| <b>Electronic pressure-independent characterised control valve (EPIV)</b> | Internal thread | PN 25 | <b>DN 15...50</b>       | 22 |
|   | Flange          | PN 16 | <b>DN 65...150</b>      | 23 |

Please refer to the data sheets or notes for project planning for further technical data to be observed.

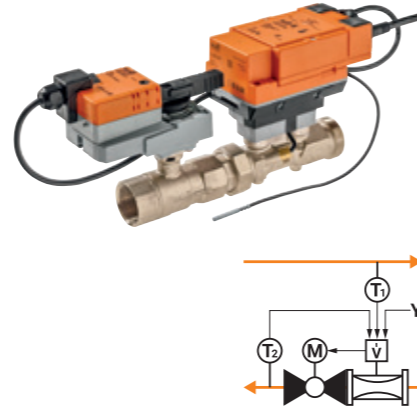
### Valve Sizer App

Easily find the right valve and the right actuator for your application with the convenient Valve Sizer App. Install the app via the "App Store" or "Google Play". With the QR Code you can get there directly.



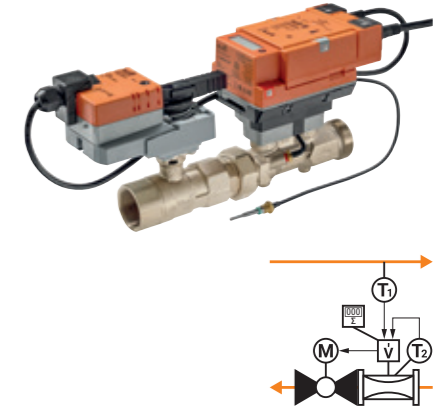
# DN 15...50

- Range of use: Closed water circuit (pH >7)
- Fluid temperature: -10...120°C
- Pipe connection: Internal thread Rp (ISO 7-1) and External thread G (ISO 228-1)
- Leakage rate: Air-bubble tight, leakage rate A (EN 12266-1)
- Permissible operating pressure: p<sub>s</sub>: 1600 kPa
- V'<sub>max</sub>: Freely adjustable 25...100% of V'<sub>nom</sub>
- Completely parametrizable by means of integrated web server or Belimo Assistant App
- Optional connection to the Belimo Cloud
- Sensor-operated flow or power control
- Delta-T manager for optimal differential temperatures



# DN 15...50 (MID)

- Range of use: Closed water circuit (pH >7)
- Fluid temperature: -10...120°C
- Medium temperature note: MID certified 15...120°C
- Pipe connection: Internal thread Rp (ISO 7-1) and External thread G (ISO 228-1)
- Leakage rate: Air-bubble tight, leakage rate A (EN 12266-1)
- Permissible operating pressure: p<sub>s</sub>: 1600 kPa
- V'<sub>max</sub>: Freely adjustable 25...100% of V'<sub>nom</sub>
- The thermal energy meters meet the requirements of EN 1434 and have type approval according to the European Measuring Instruments Directive 2014/32/EU (MI-004) as a heat meter.
- Completely parametrizable by means of integrated web server or Belimo Assistant App
- Optional connection to the Belimo Cloud
- Sensor-operated flow or power control



| PN                            | DN | G      | Rp     | V' <sub>nom</sub> [l/s] | V' <sub>nom</sub> [l/min] | V' <sub>nom</sub> [m³/h] | Nominal voltage AC/DC 24 V | Modulating (2...10 V, variable) | MP-Bus communication | Modbus communication | BACnet communication | Glycol monitoring <sup>1)</sup> | Valve type with actuator | Δp <sub>s</sub> kPa | Δp <sub>max</sub> kPa |     |
|-------------------------------|----|--------|--------|-------------------------|---------------------------|--------------------------|----------------------------|---------------------------------|----------------------|----------------------|----------------------|---------------------------------|--------------------------|---------------------|-----------------------|-----|
| <b>With standard actuator</b> |    |        |        |                         |                           |                          |                            |                                 |                      |                      |                      |                                 |                          |                     |                       |     |
| 25                            | 15 | 3/4"   | 1/2"   | 0.42                    | 25                        | 1.5                      | 24 V                       | ■                               | ■                    | ■                    | ■                    | ■                               | EV015R2+BAC              | 1400                | 350                   |     |
|                               | 20 | 1"     | 3/4"   | 0.69                    | 41.7                      | 2.5                      |                            | ■                               | ■                    | ■                    | ■                    | ■                               | ■                        | EV020R2+BAC         | 1400                  | 350 |
|                               | 25 | 1 1/4" | 1"     | 0.97                    | 58.3                      | 3.5                      |                            | ■                               | ■                    | ■                    | ■                    | ■                               | ■                        | EV025R2+BAC         | 1400                  | 350 |
|                               | 32 | 1 1/2" | 1 1/4" | 1.67                    | 100                       | 6                        |                            | ■                               | ■                    | ■                    | ■                    | ■                               | ■                        | EV032R2+BAC         | 1400                  | 350 |
|                               | 40 | 2"     | 1 1/2" | 2.78                    | 166.7                     | 10                       |                            | ■                               | ■                    | ■                    | ■                    | ■                               | ■                        | EV040R2+BAC         | 1400                  | 350 |
|                               | 50 | 2 1/2" | 2"     | 4.17                    | 250                       | 15                       |                            | ■                               | ■                    | ■                    | ■                    | ■                               | ■                        | EV050R2+BAC         | 1400                  | 350 |
| <b>Fail-safe</b>              |    |        |        |                         |                           |                          |                            |                                 |                      |                      |                      |                                 |                          |                     |                       |     |
| 25                            | 15 | 3/4"   | 1/2"   | 0.42                    | 25                        | 1.5                      | 24 V                       | ■                               | ■                    | ■                    | ■                    | ■                               | EV015R2+KBAC             | 1400                | 350                   |     |
|                               | 20 | 1"     | 3/4"   | 0.69                    | 41.7                      | 2.5                      |                            | ■                               | ■                    | ■                    | ■                    | ■                               | ■                        | EV020R2+KBAC        | 1400                  | 350 |
|                               | 25 | 1 1/4" | 1"     | 0.97                    | 58.3                      | 3.5                      |                            | ■                               | ■                    | ■                    | ■                    | ■                               | ■                        | EV025R2+KBAC        | 1400                  | 350 |
|                               | 32 | 1 1/2" | 1 1/4" | 1.67                    | 100                       | 6                        |                            | ■                               | ■                    | ■                    | ■                    | ■                               | ■                        | EV032R2+KBAC        | 1400                  | 350 |
|                               | 40 | 2"     | 1 1/2" | 2.78                    | 166.7                     | 10                       |                            | ■                               | ■                    | ■                    | ■                    | ■                               | ■                        | EV040R2+KBAC        | 1400                  | 350 |
|                               | 50 | 2 1/2" | 2"     | 4.17                    | 250                       | 15                       |                            | ■                               | ■                    | ■                    | ■                    | ■                               | ■                        | EV050R2+KBAC        | 1400                  | 350 |

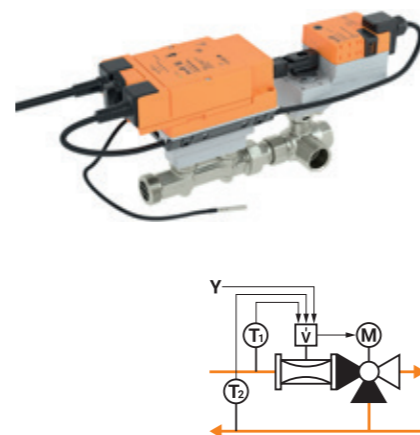
<sup>1)</sup> Optimum heat transfer can be ensured by glycol content monitoring.



| PN                            | DN | G      | Rp     | V' <sub>nom</sub> [l/s] | V' <sub>nom</sub> [l/min] | V' <sub>nom</sub> [m³/h] | Nominal voltage AC/DC 24 V | Modulating (2...10 V, variable) | MP-Bus communication | Modbus communication | BACnet communication | Valve type with actuator | Δp <sub>s</sub> kPa | Δp <sub>max</sub> kPa |     |
|-------------------------------|----|--------|--------|-------------------------|---------------------------|--------------------------|----------------------------|---------------------------------|----------------------|----------------------|----------------------|--------------------------|---------------------|-----------------------|-----|
| <b>With standard actuator</b> |    |        |        |                         |                           |                          |                            |                                 |                      |                      |                      |                          |                     |                       |     |
| 25                            | 15 | 3/4"   | 1/2"   | 0.42                    | 25                        | 1.5                      | 24 V                       | ■                               | ■                    | ■                    | ■                    | EV015R2+MID              | 1400                | 350                   |     |
|                               | 20 | 1"     | 3/4"   | 0.69                    | 41.7                      | 2.5                      |                            | ■                               | ■                    | ■                    | ■                    | ■                        | EV020R2+MID         | 1400                  | 350 |
|                               | 25 | 1 1/4" | 1"     | 0.97                    | 58.3                      | 3.5                      |                            | ■                               | ■                    | ■                    | ■                    | ■                        | EV025R2+MID         | 1400                  | 350 |
|                               | 32 | 1 1/2" | 1 1/4" | 1.67                    | 100                       | 6                        |                            | ■                               | ■                    | ■                    | ■                    | ■                        | EV032R2+MID         | 1400                  | 350 |
|                               | 40 | 2"     | 1 1/2" | 2.78                    | 166.7                     | 10                       |                            | ■                               | ■                    | ■                    | ■                    | ■                        | EV040R2+MID         | 1400                  | 350 |
|                               | 50 | 2 1/2" | 2"     | 4.17                    | 250                       | 15                       |                            | ■                               | ■                    | ■                    | ■                    | ■                        | EV050R2+MID         | 1400                  | 350 |

## DN 15...50

- Range of use: Closed water circuit (pH >7)
- Fluid temperature: -10...120°C
- Pipe connection: Internal thread Rp (ISO 7-1) and External thread G (ISO 228-1)
- Leakage rate: Control path A – AB: air-bubble tight, Leakage rate A (EN12266-1) / Bypass B – AB: leakage class I
- Permissible operating pressure: p<sub>S</sub>: 1600 kPa
- V<sub>max</sub>: Freely adjustable 25...100% of V<sub>nom</sub>
- Completely parametrisable by means of integrated web server
- Optional connection to the Belimo Cloud
- Sensor-operated flow or power control

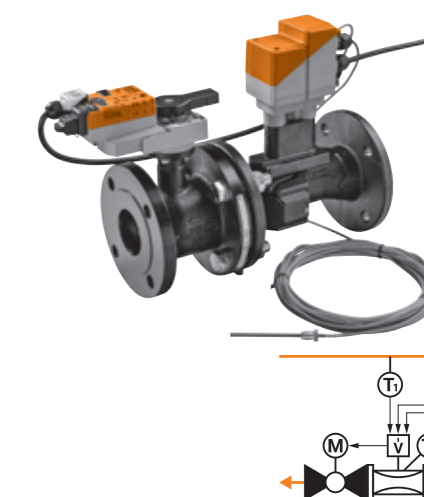


| PN                            | DN | G      | Rp     | V <sub>nom</sub> [l/s] | V <sub>nom</sub> [l/min] | V <sub>nom</sub> [m <sup>3</sup> /h] | Nominal voltage AC/DC 24 V | Modulating (2...10 V, variable) | MP-Bus communication | Modbus communication | BACnet communication | Glycol monitoring <sup>1)</sup> | Valve type with actuator | Δp <sub>S</sub> kPa | Δp <sub>max</sub> kPa |
|-------------------------------|----|--------|--------|------------------------|--------------------------|--------------------------------------|----------------------------|---------------------------------|----------------------|----------------------|----------------------|---------------------------------|--------------------------|---------------------|-----------------------|
| <b>With standard actuator</b> |    |        |        |                        |                          |                                      |                            |                                 |                      |                      |                      |                                 |                          |                     |                       |
| 25                            | 15 | 3/4"   | 1/2"   | 0.42                   | 25                       | 1.5                                  | 24 V                       | ■                               | ■                    | ■                    | ■                    | ■                               | EV015R3+BAC              | 1400                | 350                   |
|                               | 20 | 1"     | 3/4"   | 0.69                   | 41.7                     | 2.5                                  |                            | ■                               | ■                    | ■                    | ■                    | ■                               | EV020R3+BAC              | 1400                | 350                   |
|                               | 25 | 1 1/4" | 1"     | 0.97                   | 58.3                     | 3.5                                  |                            | ■                               | ■                    | ■                    | ■                    | ■                               | EV025R3+BAC              | 1400                | 350                   |
|                               | 32 | 1 1/2" | 1 1/4" | 1.67                   | 100                      | 6                                    |                            | ■                               | ■                    | ■                    | ■                    | ■                               | EV032R3+BAC              | 1400                | 350                   |
|                               | 40 | 2"     | 1 1/2" | 2.78                   | 166.7                    | 10                                   |                            | ■                               | ■                    | ■                    | ■                    | ■                               | EV040R3+BAC              | 1400                | 350                   |
|                               | 50 | 2 1/2" | 2"     | 4.17                   | 250                      | 15                                   |                            | ■                               | ■                    | ■                    | ■                    | ■                               | EV050R3+BAC              | 1400                | 350                   |

<sup>1)</sup> Optimum heat transfer can be ensured by glycol content monitoring.

## DN 65...150

- Range of use: Closed water circuit (pH >7)
- Fluid temperature: -10...120°C
- Pipe connection: Flange PN 16 (EN 1092-2)
- Leakage rate: Air-bubble tight, leakage rate A (EN 12266-1)
- Permissible operating pressure: p<sub>S</sub>: 1600 kPa
- V<sub>max</sub>: Freely adjustable 30...100% of V<sub>nom</sub>
- Completely parametrisable by means of integrated web server
- Optional connection to the Belimo Cloud
- Sensor-operated flow or power control
- Delta-T manager for optimal differential temperatures

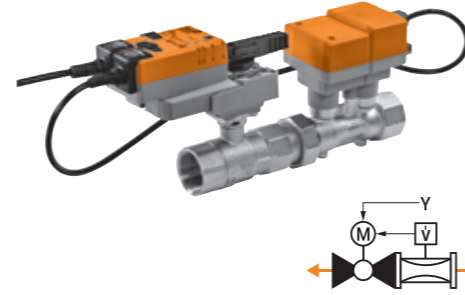


| PN                            | DN  | V <sub>nom</sub> [l/s] | V <sub>nom</sub> [l/min] | V <sub>nom</sub> [m <sup>3</sup> /h] | Nominal voltage AC/DC 24 V | Modulating (2...10 V, variable) | MP-Bus communication | Modbus communication | BACnet communication | Glycol monitoring <sup>1)</sup> | Valve type with actuator | Δp <sub>S</sub> kPa | Δp <sub>max</sub> kPa |
|-------------------------------|-----|------------------------|--------------------------|--------------------------------------|----------------------------|---------------------------------|----------------------|----------------------|----------------------|---------------------------------|--------------------------|---------------------|-----------------------|
| <b>With standard actuator</b> |     |                        |                          |                                      |                            |                                 |                      |                      |                      |                                 |                          |                     |                       |
| 16                            | 65  | 8                      | 480                      | 28.8                                 | 24 V                       | ■                               | ■                    | ■                    | ■                    | ■                               | EV065F+BAC               | 690                 | 340                   |
|                               | 80  | 11                     | 660                      | 39.6                                 |                            | ■                               | ■                    | ■                    | ■                    | ■                               | EV080F+BAC               | 690                 | 340                   |
|                               | 100 | 20                     | 1200                     | 72                                   |                            | ■                               | ■                    | ■                    | ■                    | ■                               | EV100F+BAC               | 690                 | 340                   |
|                               | 125 | 31                     | 1860                     | 111.6                                |                            | ■                               | ■                    | ■                    | ■                    | ■                               | EV125F+BAC               | 690                 | 340                   |
|                               | 150 | 45                     | 2700                     | 162                                  |                            | ■                               | ■                    | ■                    | ■                    | ■                               | EV150F+BAC               | 690                 | 340                   |
| <b>Fail-safe</b>              |     |                        |                          |                                      |                            |                                 |                      |                      |                      |                                 |                          |                     |                       |
| 16                            | 65  | 8                      | 480                      | 28.8                                 | 24 V                       | ■                               | ■                    | ■                    | ■                    | ■                               | EV065F+KBAC              | 690                 | 340                   |
|                               | 80  | 11                     | 660                      | 39.6                                 |                            | ■                               | ■                    | ■                    | ■                    | ■                               | EV080F+KBAC              | 690                 | 340                   |
|                               | 100 | 20                     | 1200                     | 72                                   |                            | ■                               | ■                    | ■                    | ■                    | ■                               | EV100F+KBAC              | 690                 | 340                   |
|                               | 125 | 31                     | 1860                     | 111.6                                |                            | ■                               | ■                    | ■                    | ■                    | ■                               | EV125F+KBAC              | 690                 | 340                   |
|                               | 150 | 45                     | 2700                     | 162                                  |                            | ■                               | ■                    | ■                    | ■                    | ■                               | EV150F+KBAC              | 690                 | 340                   |

<sup>1)</sup> Optimum heat transfer can be ensured by glycol content monitoring.

## DN 15...50

|   |  |
|---|--|
| Range of use  | Closed water circuit (pH >7)                     |
| Fluid temperature   | -10...120°C                                      |
| Pipe connection   | Internal thread Rp (ISO 7-1)                     |
| Leakage rate  | Air-bubble tight, leakage rate A (EN 12266-1)    |
| Permissible operating pressure  | p <sub>S</sub> : 1600 kPa                        |
| V' <sub>max</sub>   | Freely adjustable 30...100% of V' <sub>nom</sub> |
| Sensor-operated flow control  |  |
| Control, operating range, position feedback, running time and further functions | are parametrisable with PC-Tool                  |

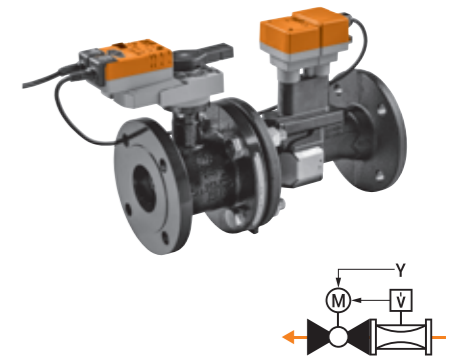


| PN                                 | DN | Rp     | V' <sub>nom</sub> [l/s] | V' <sub>nom</sub> [l/min] | V' <sub>nom</sub> [m <sup>3</sup> /h] | Nominal voltage AC/DC 24 V | Modulating (2...10 V, variable) | MP-Bus communication | Modbus communication | BACnet communication | Valve type with actuator | Δp <sub>S</sub> kPa | Δp <sub>max</sub> kPa |
|------------------------------------|----|--------|-------------------------|---------------------------|---------------------------------------|----------------------------|---------------------------------|----------------------|----------------------|----------------------|--------------------------|---------------------|-----------------------|
| <b>With standard actuator</b>      |    |        |                         |                           |                                       |                            |                                 |                      |                      |                      |                          |                     |                       |
| 25                                 | 15 | 1/2"   | 0.35                    | 21                        | 1.26                                  | 24 V                       | ■                               | ■                    |                      |                      | EP015R+MP                | 1400                | 350                   |
|                                    | 20 | 3/4"   | 0.65                    | 39                        | 2.34                                  |                            | ■                               | ■                    |                      |                      | EP020R+MP                | 1400                | 350                   |
|                                    | 25 | 1"     | 1.15                    | 69                        | 4.14                                  |                            | ■                               | ■                    |                      |                      | EP025R+MP                | 1400                | 350                   |
|                                    | 32 | 1 1/4" | 1.8                     | 108                       | 6.48                                  |                            | ■                               | ■                    |                      |                      | EP032R+MP                | 1400                | 350                   |
|                                    | 40 | 1 1/2" | 2.5                     | 150                       | 9                                     |                            | ■                               | ■                    |                      |                      | EP040R+MP                | 1400                | 350                   |
|                                    | 50 | 2"     | 4.8                     | 288                       | 17.28                                 |                            | ■                               | ■                    |                      |                      | EP050R+MP                | 1400                | 350                   |
| <b>Fail-safe</b>                   |    |        |                         |                           |                                       |                            |                                 |                      |                      |                      |                          |                     |                       |
| 25                                 | 15 | 1/2"   | 0.35                    | 21                        | 1.26                                  | 24 V                       | ■                               | ■                    |                      |                      | EP015R+KMP               | 1400                | 350                   |
|                                    | 20 | 3/4"   | 0.65                    | 39                        | 2.34                                  |                            | ■                               | ■                    |                      |                      | EP020R+KMP               | 1400                | 350                   |
|                                    | 25 | 1"     | 1.15                    | 69                        | 4.14                                  |                            | ■                               | ■                    |                      |                      | EP025R+KMP               | 1400                | 350                   |
|                                    | 32 | 1 1/4" | 1.8                     | 108                       | 6.48                                  |                            | ■                               | ■                    |                      |                      | EP032R+KMP               | 1400                | 350                   |
|                                    | 40 | 1 1/2" | 2.5                     | 150                       | 9                                     |                            | ■                               | ■                    |                      |                      | EP040R+KMP               | 1400                | 350                   |
|                                    | 50 | 2"     | 4.8                     | 288                       | 17.28                                 |                            | ■                               | ■                    |                      |                      | EP050R+KMP               | 1400                | 350                   |
| <b>With Modbus/BACnet actuator</b> |    |        |                         |                           |                                       |                            |                                 |                      |                      |                      |                          |                     |                       |
| 25                                 | 15 | 1/2"   | 0.35                    | 21                        | 1.26                                  | 24 V                       | ■                               | ■                    | ■                    | ■                    | EP015R+MOD               | 1400                | 350                   |
|                                    | 20 | 3/4"   | 0.65                    | 39                        | 2.34                                  |                            | ■                               | ■                    | ■                    | ■                    | EP020R+MOD               | 1400                | 350                   |
|                                    | 25 | 1"     | 1.15                    | 69                        | 4.14                                  |                            | ■                               | ■                    | ■                    | ■                    | EP025R+MOD               | 1400                | 350                   |
|                                    | 32 | 1 1/4" | 1.8                     | 108                       | 6.48                                  |                            | ■                               | ■                    | ■                    | ■                    | EP032R+MOD               | 1400                | 350                   |
|                                    | 40 | 1 1/2" | 2.5                     | 150                       | 9                                     |                            | ■                               | ■                    | ■                    | ■                    | EP040R+MOD               | 1400                | 350                   |
|                                    | 50 | 2"     | 4.8                     | 288                       | 17.28                                 |                            | ■                               | ■                    | ■                    | ■                    | EP050R+MOD               | 1400                | 350                   |

The valve types EP..R+MP/MOD/KMP will be replaced in the course of the year by the new types EP..R2+(K)BAC.

## DN 65...150

|   |  |
|---|--|
| Range of use  | Closed water circuit (pH >7)                     |
| Fluid temperature   | -10...120°C                                      |
| Pipe connection   | Flange PN 16 (EN 1092-2)                         |
| Leakage rate  | Air-bubble tight, leakage rate A (EN 12266-1)    |
| Permissible operating pressure  | p <sub>S</sub> : 1600 kPa                        |
| V' <sub>max</sub>   | Freely adjustable 30...100% of V' <sub>nom</sub> |
| Sensor-operated flow control  |  |
| Control, operating range, position feedback, running time and further functions | are parametrisable with PC-Tool                  |



| PN                            | DN                                 | V' <sub>nom</sub> [l/s] | V' <sub>nom</sub> [l/min] | V' <sub>nom</sub> [m <sup>3</sup> /h] | Nominal voltage AC/DC 24 V | Modulating (2...10 V, variable) | MP-Bus communication | Modbus communication | BACnet communication | Valve type with actuator | Δp <sub>S</sub> kPa | Δp <sub>max</sub> kPa |
|-------------------------------|------------------------------------|-------------------------|---------------------------|---------------------------------------|----------------------------|---------------------------------|----------------------|----------------------|----------------------|--------------------------|---------------------|-----------------------|
| <b>With standard actuator</b> |                                    |                         |                           |                                       |                            |                                 |                      |                      |                      |                          |                     |                       |
| 16                            | 65                                 | 8                       | 480                       | 28.8                                  | 24 V                       | ■                               | ■                    |                      |                      | EP065F+MP                | 690                 | 340                   |
|                               | 80                                 | 11                      | 660                       | 39.6                                  |                            | ■                               | ■                    |                      |                      | EP080F+MP                | 690                 | 340                   |
|                               | 100                                | 20                      | 1200                      | 72                                    |                            | ■                               | ■                    |                      |                      | EP100F+MP                | 690                 | 340                   |
|                               | 125                                | 31                      | 1860                      | 111.6                                 |                            | ■                               | ■                    |                      |                      | EP125F+MP                | 690                 | 340                   |
|                               | 150                                | 45                      | 2700                      | 162                                   |                            | ■                               | ■                    |                      |                      | EP150F+MP                | 690                 | 340                   |
|                               | <b>Fail-safe</b>                   |                         |                           |                                       |                            |                                 |                      |                      |                      |                          |                     |                       |
| 16                            | 65                                 | 8                       | 480                       | 28.8                                  | 24 V                       | ■                               | ■                    |                      |                      | EP065F+KMP               | 690                 | 340                   |
|                               | 80                                 | 11                      | 660                       | 39.6                                  |                            | ■                               | ■                    |                      |                      | EP080F+KMP               | 690                 | 340                   |
|                               | 100                                | 20                      | 1200                      | 72                                    |                            | ■                               | ■                    |                      |                      | EP100F+KMP               | 690                 | 340                   |
|                               | 125                                | 31                      | 1860                      | 111.6                                 |                            | ■                               | ■                    |                      |                      | EP125F+KMP               | 690                 | 340                   |
|                               | 150                                | 45                      | 2700                      | 162                                   |                            | ■                               | ■                    |                      |                      | EP150F+KMP               | 690                 | 340                   |
|                               | <b>With Modbus/BACnet actuator</b> |                         |                           |                                       |                            |                                 |                      |                      |                      |                          |                     |                       |
| 16                            | 65                                 | 8                       | 480                       | 28.8                                  | 24 V                       | ■                               | ■                    | ■                    | ■                    | EP065F+MOD               | 690                 | 340                   |
|                               | 80                                 | 11                      | 660                       | 39.6                                  |                            | ■                               | ■                    | ■                    | ■                    | EP080F+MOD               | 690                 | 340                   |
|                               | 100                                | 20                      | 1200                      | 72                                    |                            | ■                               | ■                    | ■                    | ■                    | EP100F+MOD               | 690                 | 340                   |
|                               | 125                                | 31                      | 1860                      | 111.6                                 |                            | ■                               | ■                    | ■                    | ■                    | EP125F+MOD               | 690                 | 340                   |
|                               | 150                                | 45                      | 2700                      | 162                                   |                            | ■                               | ■                    | ■                    | ■                    | EP150F+MOD               | 690                 | 340                   |

## 6

## Characterised control valves (CCV)

Reliable control of heating and cooling circuits

|                        |               |       |                           |    |
|------------------------|---------------|-------|---------------------------|----|
| <b>Internal thread</b> | 2-way – 3-way | PN 25 | <b>DN 32...50</b>         | 26 |
|                        |               | PN 40 | <b>DN 15...25</b>         |    |
| <b>External thread</b> | 2-way – 3-way | PN 25 | <b>DN 32...50</b>         | 28 |
|                        |               | PN 40 | <b>DN 15...25</b>         |    |
| <b>Flange</b>          | 2-way – 3-way | PN 6  | <b>DN 15...50</b>         | 30 |
|                        | 2-way         | PN 16 | <b>DN 65...150</b>        | 32 |
| <b>External thread</b> | 2-way         | PN 40 | <b>DN 10...20 (130°C)</b> | 34 |

Please refer to the data sheets or notes for project planning for further technical data to be observed.

### Valve Sizer App

Easily find the right valve and the right actuator for your application with the convenient Valve Sizer App. Install the app via the "App Store" or "Google Play". With the QR Code you can get there directly.











# DN 65...150

|                                |   |
|--------------------------------|---|
| Range of use                   | Closed water circuit (pH >7)                  |
| Fluid temperature              | -10...120°C                                   |
| Pipe connection                | Flange PN 16 (EN 1092-2)                      |
| Leakage rate                   | Air-bubble tight, leakage rate A (EN 12266-1) |
| Flow characteristic            | Equal percentage                              |
| Permissible operating pressure | p <sub>s</sub> : 1600 kPa                     |



PN 16

DN 65



| 2-way | k <sub>vs</sub> [m³/h] | Valve type |
|-------|------------------------|------------|
| 63    | R6065W63-S8            |            |

PN 16

DN 80

DN 100

DN 125

DN 150

| k <sub>vs</sub> [m³/h] | Valve type   | k <sub>vs</sub> [m³/h] | Valve type   | k <sub>vs</sub> [m³/h] | Valve type   | k <sub>vs</sub> [m³/h] | Valve type   |
|------------------------|--------------|------------------------|--------------|------------------------|--------------|------------------------|--------------|
| 100                    | R6080W100-S8 | 160                    | R6100W160-S8 | 250                    | R6125W250-S8 | 320                    | R6150W320-S8 |

| Suitable actuators               | Nominal torque | Open/close | 3-point | Modulating (2...10 V) | Fail-safe | Nominal voltage AC/DC 24 V AC 230 V | Running time motor 90° | Running time fail-safe | Auxiliary switch SPDT | Actuator type  | Δp <sub>s</sub> kPa | Δp <sub>max</sub> <sup>1)</sup> kPa |
|----------------------------------|----------------|------------|---------|-----------------------|-----------|-------------------------------------|------------------------|------------------------|-----------------------|----------------|---------------------|-------------------------------------|
| <b>Standard actuators</b>        |                |            |         |                       |           |                                     |                        |                        |                       |                |                     |                                     |
| SR..                             | 20 Nm          | ■          | ■       | ■                     | ■         | 24 V                                | 90 s                   |                        |                       | SR24A-5        | 690                 | 400                                 |
|                                  |                |            |         |                       |           | 230 V                               |                        |                        |                       | SR230A-5       |                     |                                     |
|                                  |                |            |         |                       |           | 24 V                                |                        |                        |                       | SR24A-SR-5     |                     |                                     |
|                                  |                |            |         |                       |           | 230 V                               |                        |                        |                       | SR230A-SR-5    |                     |                                     |
|                                  |                |            |         |                       |           | 24 V                                |                        |                        |                       | SR24P-5        |                     |                                     |
|                                  |                |            |         |                       |           | 230 V                               |                        |                        |                       | SR230P-5       |                     |                                     |
| GR..                             | 40 Nm          | ■          | ■       | ■                     | ■         | 24 V                                | 150 s                  |                        |                       | SR24P-SR-5     | 690                 | 400                                 |
|                                  |                |            |         |                       |           | 230 V                               |                        |                        |                       | SR230P-SR-5    |                     |                                     |
|                                  |                |            |         |                       |           | 24 V                                |                        |                        |                       | GR24A-5        |                     |                                     |
|                                  |                |            |         |                       |           | 230 V                               |                        |                        |                       | GR230A-5       |                     |                                     |
|                                  |                |            |         |                       |           | 24 V                                |                        |                        |                       | GR24A-SR-5     |                     |                                     |
|                                  |                |            |         |                       |           | 230 V                               |                        |                        |                       | GR230A-SR-5    |                     |                                     |
| <b>Fast running actuators</b>    |                |            |         |                       |           |                                     |                        |                        |                       |                |                     |                                     |
| SRC..                            | 20 Nm          | ■          | ■       | ■                     | ■         | 24 V                                | 35 s                   |                        |                       | SRC24A-SR-5    | 690                 | 400                                 |
| <b>Fail-safe actuators NC/NO</b> |                |            |         |                       |           |                                     |                        |                        |                       |                |                     |                                     |
| SRF..                            | 20 Nm          | ■          | ■       | ■                     | ■         | 24 V                                | <75 s                  | <20 s                  | 2                     | SRF24A-5       | 690                 | 400                                 |
|                                  |                |            |         |                       |           |                                     |                        |                        |                       | SRF24A-S2-5    |                     |                                     |
|                                  |                |            |         |                       |           |                                     |                        |                        |                       | SRFA-5         |                     |                                     |
|                                  |                |            |         |                       |           |                                     |                        |                        |                       | SRFA-S2-5      |                     |                                     |
| GRK..                            | 40 Nm          | ■          | ■       | ■                     | ■         | 24 V                                | 90 s                   | <20 s                  | 2                     | SRF24A-SR-5    | 690                 | 400                                 |
|                                  |                |            |         |                       |           |                                     |                        |                        |                       | SRF24A-SR-S2-5 |                     |                                     |
|                                  |                |            |         |                       |           |                                     |                        |                        |                       | GRK24A-5       |                     |                                     |
|                                  |                |            |         |                       |           |                                     |                        |                        |                       | GRK24A-SR-5    |                     |                                     |

| Δp <sub>s</sub> kPa | Δp <sub>max</sub> <sup>1)</sup> kPa | Δp <sub>s</sub> kPa | Δp <sub>max</sub> <sup>1)</sup> kPa | Δp <sub>s</sub> kPa | Δp <sub>max</sub> <sup>1)</sup> kPa | Δp <sub>s</sub> kPa | Δp <sub>max</sub> <sup>1)</sup> kPa |
|---------------------|-------------------------------------|---------------------|-------------------------------------|---------------------|-------------------------------------|---------------------|-------------------------------------|
| 690                 | 400                                 |                     |                                     |                     |                                     |                     |                                     |
| 690                 | 400                                 |                     |                                     |                     |                                     |                     |                                     |
| 690                 | 400                                 |                     |                                     |                     |                                     |                     |                                     |
| 690                 | 400                                 |                     |                                     |                     |                                     |                     |                                     |
| 690                 | 400                                 |                     |                                     |                     |                                     |                     |                                     |
| 690                 | 400                                 |                     |                                     |                     |                                     |                     |                                     |
| 690                 | 400                                 | 690                 | 400                                 | 690                 | 400                                 | 690                 | 400                                 |
| 690                 | 400                                 | 690                 | 400                                 | 690                 | 400                                 | 690                 | 400                                 |
| 690                 | 400                                 | 690                 | 400                                 | 690                 | 400                                 | 690                 | 400                                 |
| 690                 | 400                                 | 690                 | 400                                 | 690                 | 400                                 | 690                 | 400                                 |
| 690                 | 400                                 | 690                 | 400                                 | 690                 | 400                                 | 690                 | 400                                 |
| 690                 | 400                                 | 690                 | 400                                 | 690                 | 400                                 | 690                 | 400                                 |
| 690                 | 400                                 | 690                 | 400                                 | 690                 | 400                                 | 690                 | 400                                 |

<sup>1)</sup> Low-noise operation Δp<sub>max</sub> = 200 kPa

# DN 10...20

|                                |   |
|--------------------------------|---|
| Range of use                   | Closed and open water circuit (pH >7)         |
| Fluid temperature              | 2...130°C                                     |
| Pipe connection                | External thread G (ISO 228-1)                 |
| Leakage rate                   | Air-bubble tight, leakage rate A (EN 12266-1) |
| Flow characteristic            | Equal percentage                              |
| Permissible operating pressure | p <sub>s</sub> : 2700 kPa                     |



|              |
|--------------|
| PN 40        |
| <b>DN 10</b> |

|              |              |
|--------------|--------------|
| PN 40        |              |
| <b>DN 15</b> | <b>DN 20</b> |



| 2-way | k <sub>vs</sub> [m³/h] | Valve type |
|-------|------------------------|------------|
|       | 0.3                    | R404DK     |
|       | 0.4                    | R405DK     |
|       | 0.63                   | R406DK     |
|       | 1                      | R407DK     |
|       | 1.6                    | R408DK     |
|       | 2.5                    | R409DK     |

| k <sub>vs</sub> [m³/h] | Valve type | k <sub>vs</sub> [m³/h] | Valve type |
|------------------------|------------|------------------------|------------|
| 2.5                    | R412D      | 6.3                    | R417D      |
| 4                      | R413D      | 10                     | R418D      |
| 6.3                    | R414D      | 16                     | R419D      |

| Suitable actuators        | Nominal torque                    | Open/close | 3-point | Modulating (2...10 V) | Fail-safe | Nominal voltage AC/DC 24 V AC 230 V | Running time motor 90° | Nominal torque running time | Actuator type          | 2-way               |                        |                      | PN 40               |                        |                      |
|---------------------------|-----------------------------------|------------|---------|-----------------------|-----------|-------------------------------------|------------------------|-----------------------------|------------------------|---------------------|------------------------|----------------------|---------------------|------------------------|----------------------|
|                           |                                   |            |         |                       |           |                                     |                        |                             |                        | Δp <sub>s</sub> kPa | Δp <sub>v100</sub> kPa | Δp <sub>v0</sub> kPa | Δp <sub>s</sub> kPa | Δp <sub>v100</sub> kPa | Δp <sub>v0</sub> kPa |
| <b>Standard actuators</b> |                                   |            |         |                       |           |                                     |                        |                             |                        |                     |                        |                      |                     |                        |                      |
| LR..                      | 5 Nm                              | ■          | ■       |                       |           | 24 V                                | 90 s                   |                             | LR24A                  | 1400                | 400                    | 800                  | 1400                | 400                    | 800                  |
|                           |                                   | ■          | ■       |                       |           | 230 V                               |                        |                             | LR230A                 | 1400                | 400                    | 800                  | 1400                | 400                    | 800                  |
|                           |                                   |            |         | ■                     |           | 24 V                                |                        |                             | LR24A-SR               | 1400                | 400                    | 800                  | 1400                | 400                    | 800                  |
| LRC..                     | <b>Fast running actuators</b>     |            |         |                       |           |                                     |                        |                             |                        |                     |                        |                      |                     |                        |                      |
|                           | 5 Nm                              |            |         | ■                     |           |                                     | 35 s                   |                             | LRC24A-SR              | 1400                | 400                    | 800                  | 1400                | 400                    | 800                  |
| LRF..                     | <b>Actuators with fail-safeNC</b> |            |         |                       |           |                                     |                        |                             |                        |                     |                        |                      |                     |                        |                      |
|                           | 4 Nm                              |            |         | ■                     | ■         |                                     | 150 s                  | <20 s                       | LRF24-SR <sup>1)</sup> | 1400                | 400                    | 800                  | 1400                | 400                    | 800                  |

<sup>1)</sup> If fluid temperature ≥100°C, then pipeline and valve must be insulated.

## 7

## Globe valves

Energy-optimised control of steam, cold, warm and hot water circuits

|                        |               |  |                             |    |
|------------------------|---------------|--|-----------------------------|----|
| <b>External thread</b> | 2-way – 3-way | PN 16  | <b>DN 15...50</b>           | 38 |
| <b>Flange</b>          | 2-way – 3-way | PN 6   | <b>DN 15...100</b>          | 40 |
|                        | 2-way – 3-way | PN 16  | <b>DN 15...150 (≤120°C)</b> | 42 |
|                        | 2-way – 3-way | PN 16  | <b>DN 15...150 (≤150°C)</b> | 44 |
|                        | 2-way         | PN 16 partly pressure-balanced                 | <b>DN 40...150</b>          | 46 |
|                        | 2-way – 3-way | PN 16  | <b>DN 200/250</b>           | 48 |
|                        | 2-way         | PN 25  | <b>DN 15...50</b>           | 50 |
|                        | 3-way         | PN 25  | <b>DN 15...100</b>          | 52 |
|                        | 2-way         | PN 25 partly pressure-balanced                 | <b>DN 65...100</b>          | 54 |
| <b>Internal thread</b> | 2-way – 3-way | PN 25 stainless steel for special applications | <b>DN 15...50</b>           | 56 |

Please refer to the data sheets or notes for project planning for further technical data to be observed.

### Valve Sizer App

Easily find the right valve and the right actuator for your application with the convenient Valve Sizer App. Install the app via the "App Store" or "Google Play". With the QR Code you can get there directly.



# DN 15...50

Range of use Closed and open water circuit (pH >7)  
 Fluid temperature -10...120°C  
 Pipe connection External thread G (ISO 228-1)  
 Leakage rate 2-way: max. 0.05% of  $k_{vs}$  value  
 3-way: Control path A – AB: max. 0.05% of  $k_{vs}$  value /  
 Bypass B – AB: max. 1% of  $k_{vs}$  value  
 Flow characteristic 2-way: equal percentage  
 3-way: Control path A – AB: equal percentage /  
 Bypass B – AB: linear  
 Permissible operating pressure  $p_s$ : 1600 kPa



|       |
|-------|
| PN 16 |
| DN 15 |

**2-way**

| $k_{vs}$ [m³/h] | Valve type |
|-----------------|------------|
| 0.63            | H411B      |
| 1               | H412B      |
| 1.6             | H413B      |
| 2.5             | H414B      |
| 4               | H415B      |

**3-way**

| $k_{vs}$ [m³/h] | Valve type |
|-----------------|------------|
| 1               | H512B      |
| 1.6             | H513B      |
| 2.5             | H514B      |
| 4               | H515B      |

| PN 16 |       |       |       |       |  |  |  |  |  |
|-------|-------|-------|-------|-------|--|--|--|--|--|
| DN 20 | DN 25 | DN 32 | DN 40 | DN 50 |  |  |  |  |  |

| $k_{vs}$ [m³/h] | Valve type | $k_{vs}$ [m³/h] | Valve type | $k_{vs}$ [m³/h] | Valve type | $k_{vs}$ [m³/h] | Valve type | $k_{vs}$ [m³/h] | Valve type |
|-----------------|------------|-----------------|------------|-----------------|------------|-----------------|------------|-----------------|------------|
| 6.3             | H420B      | 10              | H425B      | 16              | H432B      | 25              | H440B      | 40              | H450B      |

| $k_{vs}$ [m³/h] | Valve type | $k_{vs}$ [m³/h] | Valve type | $k_{vs}$ [m³/h] | Valve type | $k_{vs}$ [m³/h] | Valve type | $k_{vs}$ [m³/h] | Valve type |
|-----------------|------------|-----------------|------------|-----------------|------------|-----------------|------------|-----------------|------------|
| 6.3             | H520B      | 10              | H525B      | 16              | H532B      | 25              | H540B      | 40              | H550B      |

| Suitable actuators                            | Actuating force <sup>1)</sup> | Actuating time per nominal stroke | Actuating time for fail-safe | Open/close | 3-point | Modulating (2...10 V) | MP-Bus communication <sup>1)</sup> | Fail-safe | Nominal voltage AC/DC 24 V AC 230 V | Actuator type  | $\Delta p_s$ kPa | $\Delta p_{max}$ kPa |                  |                      |                  |                      |                  |                      |                  |                      |                  |                      |
|---|-------------------------------|-----------------------------------|------------------------------|------------|---------|-----------------------|------------------------------------|-----------|-------------------------------------|----------------|------------------|----------------------|------------------|----------------------|------------------|----------------------|------------------|----------------------|------------------|----------------------|------------------|----------------------|
|   |                               |                                   |                              |            |         |                       |                                    |           |                                     |                |                  |                      | $\Delta p_s$ kPa | $\Delta p_{max}$ kPa | $\Delta p_s$ kPa | $\Delta p_{max}$ kPa | $\Delta p_s$ kPa | $\Delta p_{max}$ kPa | $\Delta p_s$ kPa | $\Delta p_{max}$ kPa | $\Delta p_s$ kPa | $\Delta p_{max}$ kPa |
| <b>Standard actuators</b>                     |                               |                                   |                              |            |         |                       |                                    |           |                                     |                |                  |                      |                  |                      |                  |                      |                  |                      |                  |                      |                  |                      |
| LV.. NV.. SV..                                | 500 N                         | 150 s                             |                              |            |         |                       |                                    |           | 24 V                                | LV24A-TPC      | 1300             | 400                  | 900              | 400                  | 500              | 400                  | 350              | 350                  | 150              | 150                  | 70               | 70                   |
|   |                               |                                   |                              |            |         |                       |                                    |           | 230 V                               | LV230A-TPC     | 1300             | 400                  | 900              | 400                  | 500              | 400                  | 350              | 350                  | 150              | 150                  | 70               | 70                   |
|   |                               |                                   |                              |            |         |                       |                                    |           | 24 V                                | LV24A-SR-TPC   | 1300             | 400                  | 900              | 400                  | 500              | 400                  | 350              | 350                  | 150              | 150                  | 70               | 70                   |
|   |                               |                                   |                              |            |         |                       |                                    |           | 24 V                                | LV24A-MP-TPC   | 1300             | 400                  | 900              | 400                  | 500              | 400                  | 350              | 350                  | 150              | 150                  | 70               | 70                   |
|   |                               |                                   |                              |            |         |                       |                                    |           | 24 V                                | NV24A-TPC      | 1600             | 400                  | 1600             | 400                  | 1300             | 400                  | 1000             | 400                  | 500              | 400                  | 300              | 300                  |
|   |                               |                                   |                              |            |         |                       |                                    |           | 230 V                               | NV230A-TPC     | 1600             | 400                  | 1600             | 400                  | 1300             | 400                  | 1000             | 400                  | 500              | 400                  | 300              | 300                  |
| 1000 N  | 150 s                         |                                   |                              |            |         |                       |                                    |           | 24 V                                | NV24A-SR-TPC   | 1600             | 400                  | 1600             | 400                  | 1300             | 400                  | 1000             | 400                  | 500              | 400                  | 300              | 300                  |
|   |                               |                                   |                              |            |         |                       |                                    |           | 24 V                                | NV24A-MP-TPC   | 1600             | 400                  | 1600             | 400                  | 1300             | 400                  | 1000             | 400                  | 500              | 400                  | 300              | 300                  |
|   |                               |                                   |                              |            |         |                       |                                    |           | 24 V                                | SV24A-TPC      | 1600             | 400                  | 1600             | 400                  | 1600             | 400                  | 1600             | 400                  | 900              | 400                  | 550              | 400                  |
|   |                               |                                   |                              |            |         |                       |                                    |           | 230 V                               | SV230A-TPC     | 1600             | 400                  | 1600             | 400                  | 1600             | 400                  | 1600             | 400                  | 900              | 400                  | 550              | 400                  |
|   |                               |                                   |                              |            |         |                       |                                    |           | 24 V                                | SV24A-SR-TPC   | 1600             | 400                  | 1600             | 400                  | 1600             | 400                  | 1600             | 400                  | 900              | 400                  | 550              | 400                  |
|   |                               |                                   |                              |            |         |                       |                                    |           | 24 V                                | SV24A-MP-TPC   | 1600             | 400                  | 1600             | 400                  | 1600             | 400                  | 1600             | 400                  | 900              | 400                  | 550              | 400                  |
| 1500 N  | 150 s                         |                                   |                              |            |         |                       |                                    |           | 24 V                                | LVC24A-SR-TPC  | 1300             | 400                  | 900              | 400                  | 500              | 400                  | 350              | 350                  | 150              | 150                  | 70               | 70                   |
|   |                               |                                   |                              |            |         |                       |                                    |           | 24 V                                | LVC24A-MP-TPC  | 1300             | 400                  | 900              | 400                  | 500              | 400                  | 350              | 350                  | 150              | 150                  | 70               | 70                   |
|   |                               |                                   |                              |            |         |                       |                                    |           | 24 V                                | NVC24A-SR-TPC  | 1600             | 400                  | 1600             | 400                  | 1300             | 400                  | 1000             | 400                  | 500              | 400                  | 300              | 300                  |
|   |                               |                                   |                              |            |         |                       |                                    |           | 24 V                                | NVC24A-MP-TPC  | 1600             | 400                  | 1600             | 400                  | 1300             | 400                  | 1000             | 400                  | 500              | 400                  | 300              | 300                  |
|   |                               |                                   |                              |            |         |                       |                                    |           | 24 V                                | SVC24A-SR-TPC  | 1600             | 400                  | 1600             | 400                  | 1600             | 400                  | 1600             | 400                  | 900              | 400                  | 550              | 400                  |
|   |                               |                                   |                              |            |         |                       |                                    |           | 24 V                                | SVC24A-MP-TPC  | 1600             | 400                  | 1600             | 400                  | 1600             | 400                  | 1600             | 400                  | 900              | 400                  | 550              | 400                  |
| <b>Fast running actuators</b>                 |                               |                                   |                              |            |         |                       |                                    |           |                                     |                |                  |                      |                  |                      |                  |                      |                  |                      |                  |                      |                  |                      |
| LVC.. NVC.. SVC..                             | 500 N                         | 35 s                              |                              |            |         |                       |                                    |           | 24 V                                | LVC24A-SR-TPC  | 1300             | 400                  | 900              | 400                  | 500              | 400                  | 350              | 350                  | 150              | 150                  | 70               | 70                   |
|   |                               |                                   |                              |            |         |                       |                                    |           | 24 V                                | LVC24A-MP-TPC  | 1300             | 400                  | 900              | 400                  | 500              | 400                  | 350              | 350                  | 150              | 150                  | 70               | 70                   |
|   |                               |                                   |                              |            |         |                       |                                    |           | 24 V                                | NVC24A-SR-TPC  | 1600             | 400                  | 1600             | 400                  | 1300             | 400                  | 1000             | 400                  | 500              | 400                  | 300              | 300                  |
|   |                               |                                   |                              |            |         |                       |                                    |           | 24 V                                | NVC24A-MP-TPC  | 1600             | 400                  | 1600             | 400                  | 1300             | 400                  | 1000             | 400                  | 500              | 400                  | 300              | 300                  |
|   |                               |                                   |                              |            |         |                       |                                    |           | 24 V                                | SVC24A-SR-TPC  | 1600             | 400                  | 1600             | 400                  | 1600             | 400                  | 1600             | 400                  | 900              | 400                  | 550              | 400                  |
|   |                               |                                   |                              |            |         |                       |                                    |           | 24 V                                | SVC24A-MP-TPC  | 1600             | 400                  | 1600             | 400                  | 1600             | 400                  | 1600             | 400                  | 900              | 400                  | 550              | 400                  |
| <b>Fail-safe actuators NC/NO<sup>2)</sup></b> |                               |                                   |                              |            |         |                       |                                    |           |                                     |                |                  |                      |                  |                      |                  |                      |                  |                      |                  |                      |                  |                      |
| NVK.. NVKC..                                  | 1000 N                        | 150 s                             | 35 s                         |            |         |                       |                                    |           | 24 V                                | NVK24A-3-TPC   | 1600             | 400                  | 1600             | 400                  | 1300             | 400                  | 1000             | 400                  | 500              | 400                  | 300              | 300                  |
|   |                               |                                   |                              |            |         |                       |                                    |           | 230 V                               | NVK230A-3      | 1600             | 400                  | 1600             | 400                  | 1300             | 400                  | 1000             | 400                  | 500              | 400                  | 300              | 300                  |
|   |                               |                                   |                              |            |         |                       |                                    |           | 24 V                                | NVK24A-SR-TPC  | 1600             | 400                  | 1600             | 400                  | 1300             | 400                  | 1000             | 400                  | 500              | 400                  | 300              | 300                  |
|   |                               |                                   |                              |            |         |                       |                                    |           | 24 V                                | NVK24A-MP-TPC  | 1600             | 400                  | 1600             | 400                  | 1300             | 400                  | 1000             | 400                  | 500              | 400                  | 300              | 300                  |
|   |                               |                                   |                              |            |         |                       |                                    |           | 24 V                                | NVKC24A-SR-TPC | 1600             | 400                  | 1600             | 400                  | 1300             | 400                  | 1000             | 400                  | 500              | 400                  | 300              | 300                  |
|   |                               |                                   |                              |            |         |                       |                                    |           | 24 V                                | NVKC24A-MP-TPC | 1600             | 400                  | 1600             | 400                  | 1300             | 400                  | 1000             | 400                  | 500              | 400                  | 300              | 300                  |

<sup>1)</sup> Running times, control signal, stroke limitation and other functions for MP types can be adjusted with PC-Tool or Service-Tool ZTH EU (delivery condition: modulating, operating range 2...10 V).

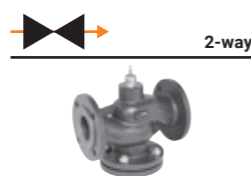
<sup>2)</sup> Delivery condition: Actuator spindle retracted. Closing point of the globe valves H..B is at top (valve stem extended).



# DN 15...150

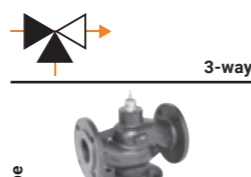
Range of use Closed water circuit (pH >7)  
 Fluid temperature -10...120°C  
 Pipe connection Flange PN 16 (ISO 7005-2)  
 Leakage rate 2-way: max. 0.05% of  $k_{vs}$  value  
 3-way: Control path A – AB: max. 0.05% of  $k_{vs}$  value / Bypass B – AB: max. 1% of  $k_{vs}$  value  
 Flow characteristic 2-way: equal percentage  
 3-way: Control path A – AB: equal percentage / Bypass B – AB: linear  
 Permissible operating pressure  $p_s$ : 1600 kPa

| PN 16 |       |       |
|-------|-------|-------|
| DN 15 | DN 20 | DN 25 |



| 2-way |  | $k_{vs}$ [m³/h] | Valve type |
|-------|--|-----------------|------------|
|       |  | 0.63            | H611N      |
|       |  | 1               | H612N      |
|       |  | 1.6             | H613N      |
|       |  | 2.5             | H614N      |
|       |  | 4               | H615N      |

| $k_{vs}$ [m³/h] | Valve type | $k_{vs}$ [m³/h] | Valve type |
|-----------------|------------|-----------------|------------|
| 6.3             | H620N      | 10              | H625N      |



| 3-way |  | $k_{vs}$ [m³/h] | Valve type |
|-------|--|-----------------|------------|
|       |  | 0.63            | H711N      |
|       |  | 1               | H712N      |
|       |  | 1.6             | H713N      |
|       |  | 2.5             | H714N      |
|       |  | 4               | H715N      |

| $k_{vs}$ [m³/h] | Valve type | $k_{vs}$ [m³/h] | Valve type |
|-----------------|------------|-----------------|------------|
| 6.3             | H720N      | 10              | H725N      |

| Suitable actuators | Actuating force <sup>1)</sup> | Actuating time per nominal stroke | Actuating time Fail-safe | Open/close | 3-point | Modulating (2...10 V) | Communication MP-Bus <sup>1)</sup> | Fail-safe | Nominal voltage AC/DC 24 V AC 230 V | Actuator type | 2-way            |                      | 3-way            |                      |
|--------------------|-------------------------------|-----------------------------------|--------------------------|------------|---------|-----------------------|------------------------------------|-----------|-------------------------------------|---------------|------------------|----------------------|------------------|----------------------|
|                    |                               |                                   |                          |            |         |                       |                                    |           |                                     |               | $\Delta p_s$ kPa | $\Delta p_{max}$ kPa | $\Delta p_s$ kPa | $\Delta p_{max}$ kPa |

| Standard actuators |        |       |  |  |  |  |  |      |          |            |              |      |      |      |      |      |     |
|--------------------|--------|-------|--|--|--|--|--|------|----------|------------|--------------|------|------|------|------|------|-----|
| LV.. NV.. SV..     | 500 N  | 150 s |  |  |  |  |  |      | 24 V     | LV24A-TPC  | 1300         | 400  | 900  | 400  | 500  | 400  |     |
|                    |        |       |  |  |  |  |  |      | 230 V    | LV230A-TPC | 1300         | 400  | 900  | 400  | 500  | 400  |     |
|                    |        |       |  |  |  |  |  |      |          | 24 V       | LV24A-SR-TPC | 1300 | 400  | 900  | 400  | 500  | 400 |
|                    |        |       |  |  |  |  |  |      |          | 24 V       | LV24A-MP-TPC | 1300 | 400  | 900  | 400  | 500  | 400 |
| EV.. RV..          | 1000 N | 150 s |  |  |  |  |  |      | 24 V     | NV24A-TPC  | 1600         | 400  | 1600 | 400  | 1300 | 400  |     |
|                    |        |       |  |  |  |  |  |      | 230 V    | NV230A-TPC | 1600         | 400  | 1600 | 400  | 1300 | 400  |     |
|                    |        |       |  |  |  |  |  |      |          | 24 V       | NV24A-SR-TPC | 1600 | 400  | 1600 | 400  | 1300 | 400 |
|                    |        |       |  |  |  |  |  |      |          | 24 V       | NV24A-MP-TPC | 1600 | 400  | 1600 | 400  | 1300 | 400 |
| LVC.. NVC.. SVC..  | 1500 N | 150 s |  |  |  |  |  |      | 24 V     | SV24A-TPC  | 1600         | 400  | 1600 | 400  | 1600 | 400  |     |
|                    |        |       |  |  |  |  |  |      | 230 V    | SV230A-TPC | 1600         | 400  | 1600 | 400  | 1600 | 400  |     |
|                    |        |       |  |  |  |  |  |      |          | 24 V       | SV24A-SR-TPC | 1600 | 400  | 1600 | 400  | 1600 | 400 |
|                    |        |       |  |  |  |  |  |      |          | 24 V       | SV24A-MP-TPC | 1600 | 400  | 1600 | 400  | 1600 | 400 |
| LVC.. NVC.. SVC..  | 2500 N | 150 s |  |  |  |  |  |      | 24 V     | EV24A-TPC  |              |      |      |      |      |      |     |
|                    |        |       |  |  |  |  |  |      | 230 V    | EV230A-TPC |              |      |      |      |      |      |     |
|                    |        |       |  |  |  |  |  |      |          | 24 V       | EV24A-SR-TPC |      |      |      |      |      |     |
|                    |        |       |  |  |  |  |  |      |          | 24 V       | EV24A-MP-TPC |      |      |      |      |      |     |
| LVC.. NVC.. SVC..  | 4500 N | 120 s |  |  |  |  |  | 24 V | RV24A-SR |            |              |      |      |      |      |      |     |

| Fast running actuators |        |      |  |  |  |  |  |      |           |               |               |      |      |      |      |      |     |
|------------------------|--------|------|--|--|--|--|--|------|-----------|---------------|---------------|------|------|------|------|------|-----|
| EVC..                  | 500 N  | 35 s |  |  |  |  |  |      | 24 V      | LVC24A-SR-TPC | 1300          | 400  | 900  | 400  | 500  | 400  |     |
|                        |        |      |  |  |  |  |  |      |           | 24 V          | LVC24A-MP-TPC | 1300 | 400  | 900  | 400  | 500  | 400 |
|                        |        |      |  |  |  |  |  |      |           | 24 V          | NVC24A-SR-TPC | 1600 | 400  | 1600 | 400  | 1300 | 400 |
|                        |        |      |  |  |  |  |  |      |           | 24 V          | NVC24A-MP-TPC | 1600 | 400  | 1600 | 400  | 1300 | 400 |
| EVC..                  | 1000 N | 35 s |  |  |  |  |  |      | 24 V      | SVC24A-SR-TPC | 1600          | 400  | 1600 | 400  | 1600 | 400  |     |
|                        |        |      |  |  |  |  |  |      |           | 24 V          | SVC24A-MP-TPC | 1600 | 400  | 1600 | 400  | 1600 | 400 |
|                        |        |      |  |  |  |  |  |      |           | 24 V          | SVC24A-SR-TPC | 1600 | 400  | 1600 | 400  | 1600 | 400 |
|                        |        |      |  |  |  |  |  |      |           | 24 V          | SVC24A-MP-TPC | 1600 | 400  | 1600 | 400  | 1600 | 400 |
| EVC..                  | 2500 N | 35 s |  |  |  |  |  | 24 V | EVC24A-SR |               |               |      |      |      |      |      |     |

| Fail-safe actuators NC/NO <sup>2)</sup> |        |       |      |  |  |  |  |  |      |              |           |                |      |      |      |      |      |     |
|---|--------|-------|------|--|--|--|--|--|------|--------------|-----------|----------------|------|------|------|------|------|-----|
| NVK.. NVKC..                            | 1000 N | 150 s | 35 s |  |  |  |  |  | 24 V | NVK24A-3-TPC | 1600      | 400            | 1600 | 400  | 1300 | 400  |      |     |
|   |        |       |      |  |  |  |  |  |      | 230 V        | NVK230A-3 | 1600           | 400  | 1600 | 400  | 1300 | 400  |     |
|   |        |       |      |  |  |  |  |  |      |              | 24 V      | NVK24A-SR-TPC  | 1600 | 400  | 1600 | 400  | 1300 | 400 |
|   |        |       |      |  |  |  |  |  |      |              | 24 V      | NVK24A-MP-TPC  | 1600 | 400  | 1600 | 400  | 1300 | 400 |
|   |        |       |      |  |  |  |  |  |      |              | 24 V      | NVKC24A-SR-TPC | 1600 | 400  | 1600 | 400  | 1300 | 400 |
|   |        |       |      |  |  |  |  |  |      |              | 24 V      | NVKC24A-MP-TPC | 1600 | 400  | 1600 | 400  | 1300 | 400 |
| AVK..                                   | 2000 N | 150 s | 35 s |  |  |  |  |  | 24 V | AVK24A-3-TPC |           |                |      |      |      |      |      |     |
|   |        |       |      |  |  |  |  |  |      | 230 V        | AVK230A-3 |                |      |      |      |      |      |     |
|   |        |       |      |  |  |  |  |  |      |              | 24 V      | AVK24A-SR-TPC  |      |      |      |      |      |     |
|   |        |       |      |  |  |  |  |  |      |              | 24 V      | AVK24A-MP-TPC  |      |      |      |      |      |     |

<sup>1)</sup> Running times, control signal, stroke limitation and other functions for MP types can be adjusted with PC-Tool or Service-Tool ZTH EU (delivery condition: modulating, operating range 2...10 V).

<sup>2)</sup> Delivery condition: Actuator spindle retracted. Closing point of the globe valves H..B is at top (valve stem extended).

| PN 16 |  |       |  |       |  |       |  |       |  |        |  |        |  |        |  |  |  |
|-------|--|-------|--|-------|--|-------|--|-------|--|--------|--|--------|--|--------|--|--|--|
| DN 32 |  | DN 40 |  | DN 50 |  | DN 65 |  | DN 80 |  | DN 100 |  | DN 125 |  | DN 150 |  |  |  |

| $k_{vs}$ [m³/h] | Valve type | $k_{vs}$ [m³/h] | Valve type | $k_{vs}$ [m³/h] | Valve type | $k_{vs}$ [m³/h] | Valve type | $k_{vs}$ [m³/h] | Valve type | $k_{vs}$ [m³/h] | Valve type | $k_{vs}$ [m³/h] | Valve type | $k_{vs}$ [m³/h] | Valve type |
|-----------------|------------|-----------------|------------|-----------------|------------|-----------------|------------|-----------------|------------|-----------------|------------|-----------------|------------|-----------------|------------|
| 16              | H632N      | 25              | H640N      | 40              | H650N      | 58              | H664N      | 63              | H665N      | 90              | H679N      | 100             | H680N      | 145             | H6100N     |

| $k_{vs}$ [m³/h] | Valve type | $k_{vs}$ [m³/h] | Valve type | $k_{vs}$ [m³/h] | Valve type | $k_{vs}$ [m³/h] | Valve type | $k_{vs}$ [m³/h] | Valve type | $k_{vs}$ [m³/h] | Valve type | $k_{vs}$ [m³/h] | Valve type | $k_{vs}$ [m³/h] | Valve type |
|-----------------|------------|-----------------|------------|-----------------|------------|-----------------|------------|-----------------|------------|-----------------|------------|-----------------|------------|-----------------|------------|
| 16              | H732N      | 25              | H740N      | 40              | H750N      | 58              | H764N      | 63              | H765N      | 90              | H779N      | 100             | H780N      | 145             | H7100N     |

| $\Delta p_s$ kPa | $\Delta p_{max}$ kPa | $\Delta p_s$ kPa | $\Delta p_{max}$ kPa | $\Delta p_s$ kPa | $\Delta p_{max}$ kPa | $\Delta p_s$ kPa | $\Delta p_{max}$ kPa | $\Delta p_s$ kPa | $\Delta p_{max}$ kPa | $\Delta p_s$ kPa | $\Delta p_{max}$ kPa | $\Delta p_s$ kPa | $\Delta p_{max}$ kPa | $\Delta p_s$ kPa | $\Delta p_{max}$ kPa |
|------------------|----------------------|------------------|----------------------|------------------|----------------------|------------------|----------------------|------------------|----------------------|------------------|----------------------|------------------|----------------------|------------------|----------------------|
|------------------|----------------------|------------------|----------------------|------------------|----------------------|------------------|----------------------|------------------|----------------------|------------------|----------------------|------------------|----------------------|------------------|----------------------|

|      |     |     |     |     |     |     |     |  |  |     |     |     |     |     |     |     |     |
|------|-----|-----|-----|-----|-----|-----|-----|--|--|-----|-----|-----|-----|-----|-----|-----|-----|
| 350  | 350 | 150 | 150 | 70  | 70  |     |     |  |  |     |     |     |     |     |     |     |     |
| 350  | 350 | 150 | 150 | 70  | 70  |     |     |  |  |     |     |     |     |     |     |     |     |
| 350  | 350 | 150 | 150 | 70  | 70  |     |     |  |  |     |     |     |     |     |     |     |     |
| 350  | 350 | 150 | 150 | 70  | 70  |     |     |  |  |     |     |     |     |     |     |     |     |
| 1000 | 400 | 500 | 400 | 300 | 300 | 140 | 140 |  |  | 80  | 80  |     |     |     |     |     |     |
| 1000 | 400 | 500 | 400 | 300 | 300 | 140 | 140 |  |  | 80  | 80  |     |     |     |     |     |     |
| 1000 | 400 | 500 | 400 | 300 | 300 | 140 | 140 |  |  | 80  | 80  |     |     |     |     |     |     |
| 1000 | 400 | 500 | 400 | 300 | 300 | 140 | 140 |  |  | 80  | 80  |     |     |     |     |     |     |
| 1600 | 400 | 600 | 400 | 550 | 400 | 280 | 280 |  |  | 160 | 160 |     |     |     |     |     |     |
| 1600 | 400 | 600 | 400 | 550 | 400 | 280 | 280 |  |  | 160 | 160 |     |     |     |     |     |     |
| 1600 | 400 | 600 | 400 | 550 | 400 | 280 | 280 |  |  | 160 | 160 |     |     |     |     |     |     |
| 1600 | 400 | 600 | 400 | 550 | 400 | 280 | 280 |  |  | 160 | 160 |     |     |     |     |     |     |
|      |     |     |     |     |     | 550 | 400 |  |  | 350 | 350 | 200 | 200 | 130 | 130 | 80  | 80  |
|      |     |     |     |     |     | 550 | 400 |  |  | 350 | 350 | 200 | 200 | 130 | 130 | 80  | 80  |
|      |     |     |     |     |     | 550 | 400 |  |  | 350 | 350 | 200 | 200 | 130 | 130 | 80  | 80  |
|      |     |     |     |     |     | 550 | 400 |  |  | 350 | 350 | 200 | 200 | 130 | 130 | 80  | 80  |
|      |     |     |     |     |     | 700 | 400 |  |  | 700 | 400 | 450 | 400 | 290 | 290 | 190 | 190 |

|      |     |     |     |     |     |     |     |  |  |     |     |     |     |     |     |    |    |
|------|-----|-----|-----|-----|-----|-----|-----|--|--|-----|-----|-----|-----|-----|-----|----|----|
| 350  | 350 | 150 | 150 | 70  | 70  |     |     |  |  |     |     |     |     |     |     |    |    |
| 350  | 350 | 150 | 150 | 70  | 70  |     |     |  |  |     |     |     |     |     |     |    |    |
| 1000 | 400 | 500 | 400 | 300 | 300 | 140 | 140 |  |  | 80  | 80  |     |     |     |     |    |    |
| 1000 | 400 | 500 | 400 | 300 | 300 | 140 | 140 |  |  | 80  | 80  |     |     |     |     |    |    |
| 1600 | 400 | 600 | 400 | 550 | 400 | 280 | 280 |  |  | 160 | 160 |     |     |     |     |    |    |
| 1600 | 400 | 600 | 400 | 550 | 400 | 280 | 280 |  |  | 160 | 160 |     |     |     |     |    |    |
|      |     |     |     |     |     | 550 | 400 |  |  | 350 | 350 | 200 | 200 | 130 | 130 | 80 | 80 |

|      |     |     |     |     |     |     |     |  |  |     |     |     |     |  |  |
|------|-----|-----|-----|-----|-----|-----|-----|--|--|-----|-----|-----|-----|--|--|
| 1000 | 400 | 500 | 400 | 300 | 300 | 140 | 140 |  |  | 80  | 80  |     |     |  |  |
| 1000 | 400 | 500 | 400 | 300 | 300 | 140 | 140 |  |  | 80  | 80  |     |     |  |  |
| 1000 | 400 | 500 | 400 | 300 | 300 | 140 | 140 |  |  | 80  | 80  |     |     |  |  |
| 1000 | 400 | 500 | 400 | 300 | 300 | 140 | 140 |  |  | 80  | 80  |     |     |  |  |
| 1000 | 400 | 500 | 400 | 300 | 300 | 140 | 140 |  |  | 80  | 80  |     |     |  |  |
| 1000 | 400 | 500 | 400 | 300 | 300 | 140 | 140 |  |  | 80  | 80  |     |     |  |  |
|      |     |     |     |     |     | 400 | 400 |  |  | 250 | 250 | 150 | 150 |  |  |
|      |     |     |     |     |     | 400 | 400 |  |  | 250 | 250 | 150 | 150 |  |  |
|      |     |     |     |     |     | 400 | 400 |  |  | 250 | 250 | 150 | 150 |  |  |
|      |     |     |     |     |     | 400 | 400 |  |  | 250 | 250 | 150 | 150 |  |  |

# DN 15...150


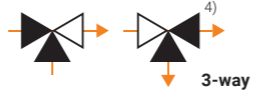
Range of use Closed water circuit and steam circuit in the subcritical range (pH >7)


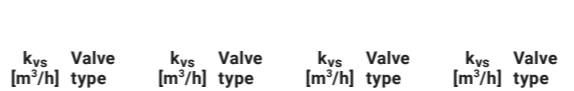
Fluid temperature 5...150°C (120°C to p<sub>s</sub> 1600 kPa, 150°C to p<sub>s</sub> 1400 kPa)








Pipe connection Flange PN 16 (ISO 7005-2)

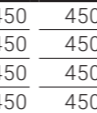
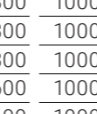
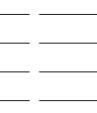
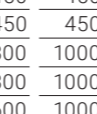
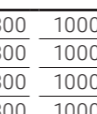
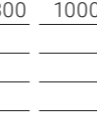
Leakage rate 2-way: max. 0.05% of k<sub>vs</sub> value  
3-way: Control path A – AB: max. 0.05% of k<sub>vs</sub> value / Bypass B – AB: max. 1% of k<sub>vs</sub> value

Flow characteristic 2-way: equal percentage  
3-way: Control path A – AB: equal percentage/Bypass B – AB: linear

|   |                                     | PN 16     |           |         |           |
|---|-------------------------------------|-----------|-----------|---------|-----------|
|   |                                     | DN 15     |           | DN 20   |           |
| <br>2-way | k <sub>vs</sub> [m <sup>3</sup> /h] | 1         | 1.6       | 4       | 6.3       |
|   | Valve type                          | H612S     | H613S     | H619S   | H620S     |
|   |                                     | 0.4 H610S | 2.5 H614S | 4 H615S | 6.3 H620S |
| <br>3-way | k <sub>vs</sub> [m <sup>3</sup> /h] | 4         | 6.3       |         |           |
|   | Valve type                          | H715S     | H720S     |         |           |
|   |                                     |           |           |         |           |

|  |                                     | PN 16 |       |       |       |       |       |        |        |        |        |        |  |  |  |  |  |
|--|-------------------------------------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--|--|--|--|--|
|  |                                     | DN 25 | DN 32 | DN 40 | DN 50 | DN 65 | DN 80 | DN 100 | DN 125 | DN 150 |        |        |  |  |  |  |  |
| <br>2-way | k <sub>vs</sub> [m <sup>3</sup> /h] | 6.3   | 10    | 16    | 25    | 40    | 58    | 63     | 100    | 145    | 220    | 320    |  |  |  |  |  |
|  | Valve type                          | H624S | H625S | H632S | H640S | H650S | H664S | H665S  | H680S  | H6100S | H6125S | H6150S |  |  |  |  |  |
|  |                                     |       |       |       |       |       |       |        |        |        |        |        |  |  |  |  |  |
| <br>3-way | k <sub>vs</sub> [m <sup>3</sup> /h] | 10    | 16    | 25    | 40    |       |       | 63     | 100    | 160    | 220    | 320    |  |  |  |  |  |
|  | Valve type                          | H725S | H732S | H740S | H750S |       |       | H765S  | H780S  | H7100S | H7125S | H7150S |  |  |  |  |  |
|  |                                     |       |       |       |       |       |       |        |        |        |        |        |  |  |  |  |  |

| Suitable actuators   | Actuating force <sup>1)</sup>   | Actuating time per nominal stroke | Actuating time Fail-safe | Open/close | 3-point | Modulating (2...10 V) | Communication MP-Bus <sup>1)</sup> | Fail-safe | Nominal voltage AC/DC 24 V AC 230 V | Actuator type               | Δp <sub>s</sub> kPa |                       | Δp <sub>max</sub> kPa |                       |      |
|--|---|-----------------------------------|--------------------------|------------|---------|-----------------------|------------------------------------|-----------|-------------------------------------|-----------------------------|---------------------|-----------------------|-----------------------|-----------------------|------|
|  |   |                                   |                          |            |         |                       |                                    |           |                                     |                             | Δp <sub>s</sub> kPa | Δp <sub>max</sub> kPa | Δp <sub>s</sub> kPa   | Δp <sub>max</sub> kPa |      |
| <br>LV.. NV.. SV..     | 500 N   | 150 s                             |                          |            |         |                       |                                    |           | 24 V                                | LV24A-TPC <sup>2)</sup>     | 1600                | 1000                  | 800                   | 800                   |      |
|  |   |                                   |                          |            |         |                       |                                    |           | 230 V                               | LV230A-TPC <sup>2)</sup>    | 1600                | 1000                  | 800                   | 800                   |      |
|  |   |                                   |                          |            |         |                       |                                    |           | 24 V                                | LV24A-SR-TPC <sup>2)</sup>  | 1600                | 1000                  | 800                   | 800                   |      |
|  |   |                                   |                          |            |         |                       |                                    |           | 24 V                                | LV24A-MP-TPC <sup>2)</sup>  | 1600                | 1000                  | 800                   | 800                   |      |
|  | <br>EV.. RV..    | 1000 N                            | 150 s                    |            |         |                       |                                    |           |                                     | 24 V                        | NV24A-TPC           | 1600                  | 1000                  | 1600                  | 1000 |
|  |   |                                   |                          |            |         |                       |                                    |           |                                     | 230 V                       | NV230A-TPC          | 1600                  | 1000                  | 1600                  | 1000 |
|  |   |                                   |                          |            |         |                       |                                    |           |                                     | 24 V                        | NV24A-SR-TPC        | 1600                  | 1000                  | 1600                  | 1000 |
|  |   |                                   |                          |            |         |                       |                                    |           |                                     | 24 V                        | NV24A-MP-TPC        | 1600                  | 1000                  | 1600                  | 1000 |
|  |   |                                   |                          |            |         |                       |                                    |           |                                     | 24 V                        | SV24A-TPC           | 1600                  | 1000                  | 1600                  | 1000 |
|  |   |                                   |                          |            |         |                       |                                    |           |                                     | 230 V                       | SV230A-TPC          | 1600                  | 1000                  | 1600                  | 1000 |
| <br>LVC.. NVC.. SVC.. | 2500 N  | 150 s                             |                          |            |         |                       |                                    |           | 24 V                                | EV24A-TPC                   |                     |                       |                       |                       |      |
|  |   |                                   |                          |            |         |                       |                                    |           | 230 V                               | EV230A-TPC                  |                     |                       |                       |                       |      |
|  |   |                                   |                          |            |         |                       |                                    |           | 24 V                                | EV24A-SR-TPC                |                     |                       |                       |                       |      |
|  |   |                                   |                          |            |         |                       |                                    |           | 24 V                                | EV24A-MP-TPC                |                     |                       |                       |                       |      |
|  |   |                                   |                          |            |         |                       |                                    |           | 24 V                                | RV24A-TPC                   |                     |                       |                       |                       |      |
|  |   |                                   |                          |            |         |                       |                                    |           | 230 V                               | RV230A-TPC                  |                     |                       |                       |                       |      |
| <br>EVC..             | 500 N   | 35 s                              |                          |            |         |                       |                                    |           | 24 V                                | LVC24A-SR-TPC <sup>2)</sup> | 1600                | 1000                  | 800                   | 800                   |      |
|  |   |                                   |                          |            |         |                       |                                    |           | 24 V                                | LVC24A-MP-TPC <sup>2)</sup> | 1600                | 1000                  | 800                   | 800                   |      |
|  |   |                                   |                          |            |         |                       |                                    |           | 24 V                                | NVC24A-SR-TPC               | 1600                | 1000                  | 1600                  | 1000                  |      |
|  |   |                                   |                          |            |         |                       |                                    |           | 24 V                                | NVC24A-MP-TPC               | 1600                | 1000                  | 1600                  | 1000                  |      |
|  | <br>NVK.. NVKC.. | 1000 N                            | 35 s                     | 35 s       |         |                       |                                    |           |                                     | 24 V                        | SVC24A-SR-TPC       | 1600                  | 1000                  | 1600                  | 1000 |
|  |   |                                   |                          |            |         |                       |                                    |           |                                     | 24 V                        | SVC24A-MP-TPC       | 1600                  | 1000                  | 1600                  | 1000 |
|  |   |                                   |                          |            |         |                       |                                    |           |                                     | 24 V                        | EVC24A-SR           | 1600                  | 1000                  | 1600                  | 1000 |
|  |   |                                   |                          |            |         |                       |                                    |           |                                     | 24 V                        | NVK24A-3-TPC        | 1600                  | 1000                  | 1600                  | 1000 |
|  |   |                                   |                          |            |         |                       |                                    |           |                                     | 230 V                       | NVK230A-3           | 1600                  | 1000                  | 1600                  | 1000 |
|  |   |                                   |                          |            |         |                       |                                    |           |                                     | 24 V                        | NVK24A-SR-TPC       | 1600                  | 1000                  | 1600                  | 1000 |
| <br>AVK..             | 2000 N  | 150 s                             | 35 s                     |            |         |                       |                                    |           | 24 V                                | NVK24A-MP-TPC               | 1600                | 1000                  | 1600                  | 1000                  |      |
|  |   |                                   |                          |            |         |                       |                                    |           | 24 V                                | NVKC24A-SR-TPC              | 1600                | 1000                  | 1600                  | 1000                  |      |
|  |   |                                   |                          |            |         |                       |                                    |           | 24 V                                | NVKC24A-MP-TPC              | 1600                | 1000                  | 1600                  | 1000                  |      |
|  |   |                                   |                          |            |         |                       |                                    |           | 24 V                                | AVK24A-3-TPC                |                     |                       |                       |                       |      |
|  |   |                                   |                          |            |         |                       |                                    |           | 230 V                               | AVK230A-3                   |                     |                       |                       |                       |      |
|  |   |                                   |                          |            |         |                       |                                    |           | 24 V                                | AVK24A-SR-TPC               |                     |                       |                       |                       |      |
| <br>AVK..             | 2000 N  | 150 s                             | 35 s                     |            |         |                       |                                    |           | 24 V                                | AVK24A-MP-TPC               |                     |                       |                       |                       |      |
|  |   |                                   |                          |            |         |                       |                                    |           | 24 V                                | AVK24A-SR-TPC               |                     |                       |                       |                       |      |

| Suitable actuators   | Actuating force <sup>1)</sup>   | Actuating time per nominal stroke | Actuating time Fail-safe | Open/close | 3-point | Modulating (2...10 V) | Communication MP-Bus <sup>1)</sup> | Fail-safe | Nominal voltage AC/DC 24 V AC 230 V | Actuator type | Δp <sub>s</sub> kPa |                       | Δp <sub>max</sub> kPa |                       |     |
|--|---|-----------------------------------|--------------------------|------------|---------|-----------------------|------------------------------------|-----------|-------------------------------------|---------------|---------------------|-----------------------|-----------------------|-----------------------|-----|
|  |   |                                   |                          |            |         |                       |                                    |           |                                     |               | Δp <sub>s</sub> kPa | Δp <sub>max</sub> kPa | Δp <sub>s</sub> kPa   | Δp <sub>max</sub> kPa |     |
| <br>LV.. NV.. SV..     | 500 N   | 150 s                             |                          |            |         |                       |                                    |           |                                     |               | 450                 | 450                   | 300                   | 300                   |     |
|  |   |                                   |                          |            |         |                       |                                    |           |                                     |               | 450                 | 450                   | 300                   | 300                   |     |
|  |   |                                   |                          |            |         |                       |                                    |           |                                     |               | 450                 | 450                   | 300                   | 300                   |     |
|  |   |                                   |                          |            |         |                       |                                    |           |                                     |               | 450                 | 450                   | 300                   | 300                   |     |
|  | <br>EV.. RV..    | 1000 N                            | 150 s                    |            |         |                       |                                    |           |                                     |               |                     | 1300                  | 1000                  | 950                   | 950 |
|  |   |                                   |                          |            |         |                       |                                    |           |                                     |               |                     | 1300                  | 1000                  | 950                   | 950 |
|  |   |                                   |                          |            |         |                       |                                    |           |                                     |               |                     | 1300                  | 1000                  | 950                   | 950 |
|  |   |                                   |                          |            |         |                       |                                    |           |                                     |               |                     | 1300                  | 1000                  | 950                   | 950 |
|  |   |                                   |                          |            |         |                       |                                    |           |                                     |               |                     | 1300                  | 1000                  | 950                   | 950 |
|  |   |                                   |                          |            |         |                       |                                    |           |                                     |               |                     | 1300                  | 1000                  | 950                   | 950 |
| <br>LVC.. NVC.. SVC.. | 2500 N  | 150 s                             |                          |            |         |                       |                                    |           |                                     |               | 1600                | 1000                  | 1550                  | 1000                  |     |
|  |   |                                   |                          |            |         |                       |                                    |           |                                     |               | 1600                | 1000                  | 1550                  | 1000                  |     |
|  |   |                                   |                          |            |         |                       |                                    |           |                                     |               | 1600                | 1000                  | 1550                  | 1000                  |     |
|  |   |                                   |                          |            |         |                       |                                    |           |                                     |               | 1600                | 1000                  | 1550                  | 1000                  |     |
|  |   |                                   |                          |            |         |                       |                                    |           |                                     |               | 1600                | 1000                  | 1550                  | 1000                  |     |
|  |   |                                   |                          |            |         |                       |                                    |           |                                     |               | 1600                | 1000                  | 1550                  | 1000                  |     |
| <br>EVC..             | 500 N   | 35 s                              |                          |            |         |                       |                                    |           |                                     |               | 450                 | 450                   | 300                   | 300                   |     |
|  |   |                                   |                          |            |         |                       |                                    |           |                                     |               | 450                 | 450                   | 300                   | 300                   |     |
|  |   |                                   |                          |            |         |                       |                                    |           |                                     |               | 450                 | 450                   | 300                   | 300                   |     |
|  |   |                                   |                          |            |         |                       |                                    |           |                                     |               | 450                 | 450                   | 300                   | 300                   |     |
|  | <br>NVK.. NVKC.. | 1000 N                            | 35 s                     | 35 s       |         |                       |                                    |           |                                     |               |                     | 1300                  | 1000                  | 950                   | 950 |
|  |   |                                   |                          |            |         |                       |                                    |           |                                     |               |                     | 1300                  | 1000                  | 950                   | 950 |
|  |   |                                   |                          |            |         |                       |                                    |           |                                     |               |                     | 1300                  | 1000                  | 950                   | 950 |
|  |   |                                   |                          |            |         |                       |                                    |           |                                     |               |                     | 1300                  | 1000                  | 950                   | 950 |
|  |   |                                   |                          |            |         |                       |                                    |           |                                     |               |                     | 1300                  | 1000                  | 950                   | 950 |
|  |   |                                   |                          |            |         |                       |                                    |           |                                     |               |                     | 1300                  | 1000                  | 950                   | 950 |
| <br>AVK..             | 2000 N  | 150 s                             | 35 s                     |            |         |                       |                                    |           |                                     |               | 400                 | 400                   | 250                   | 250                   |     |
|  |   |                                   |                          |            |         |                       |                                    |           |                                     |               | 400                 | 400                   | 250                   | 250                   |     |
|  |   |                                   |                          |            |         |                       |                                    |           |                                     |               | 400                 | 400                   | 250                   | 250                   |     |
|  |   |                                   |                          |            |         |                       |                                    |           |                                     |               | 400                 | 400                   | 250                   | 250                   |     |
|  |   |                                   |                          |            |         |                       |                                    |           |                                     |               | 400                 | 400                   | 250                   | 250                   |     |
|  |   |                                   |                          |            |         |                       |                                    |           |                                     |               | 400                 | 400                   | 250                   | 250                   |     |

<sup>1)</sup> Running times, control signal, stroke limitation and other functions for MP types can be adjusted with PC-Tool or Service-Tool ZTH EU (delivery condition: modulating, operating range 2...10 V).  
<sup>2)</sup> For DN 15 only recommended with H610S and H611S.  
 Subject to technical modifications

<sup>3)</sup> The fail-safe position NC/NO or all fail-safe actuators can be adjusted on the actuator. Delivery condition: Actuator spindle retracted. Closing point of the globe valves H..R is at top (valve stem extended).  
<sup>4)</sup> As a diverting valve, the maximum values are reduced to a quarter.  
 Subject to technical modifications







# DN 200/250


|                                |  |
|--------------------------------|--|
| Range of use                   | Closed water circuit (pH >7)   |
| Fluid temperature              | 5...120°C  |
| Pipe connection                | Flange PN 16 (ISO 7005-2)  |
| Leakage rate                   | 2-way: max. 0.05% of $k_{VS}$ value<br>3-way: Control path A – AB: max. 0.05% of $k_{VS}$ value/<br>Bypass B – AB: max. 1% of $k_{VS}$ value |
| Flow characteristic            | 2-way: Equal percentage<br>3-way: Control path A – AB: linear/<br>Bypass B – AB: linear  |
| Permissible operating pressure | $p_s$ : 1600 kPa   |

|   |        |        |
|---|--------|--------|
| ➔ | PN 16  |        |
|   | DN 200 | DN 250 |

|   |       |                    |                     |                    |                      |
|---|-------|--------------------|---------------------|--------------------|----------------------|
|  | 2-way | $k_{VS}$<br>[m³/h] | Valve type          | $k_{VS}$<br>[m³/h] | Valve type           |
|  |       | <b>630</b>         | <b>H6200W630-S7</b> | <b>1000</b>        | <b>H6250W1000-S7</b> |

|   |       |                    |                     |                    |                      |
|---|-------|--------------------|---------------------|--------------------|----------------------|
|   | 3-way | $k_{VS}$<br>[m³/h] | Valve type          | $k_{VS}$<br>[m³/h] | Valve type           |
|  |       | <b>630</b>         | <b>H7200W630-S7</b> | <b>1000</b>        | <b>H7250W1000-S7</b> |

**Suitable actuators**

|  | Actuating force <sup>1)</sup> | Actuating time per nominal stroke | Modulating (2...10 V) |            | Nominal voltage<br>AC/DC 24 V<br>AC 230 V | Auxiliary switch SPDT<br>Actuator type | 2-way               |                         | 3-way               |                         |    |
|--|-------------------------------|-----------------------------------|-----------------------|------------|---|--|---------------------|-------------------------|---------------------|-------------------------|----|
|  |                               |                                   | 3-point               | Modulating |   |  | $\Delta p_s$<br>kPa | $\Delta p_{max}$<br>kPa | $\Delta p_s$<br>kPa | $\Delta p_{max}$<br>kPa |    |
| GV..  | <b>Standard actuators</b>     |                                   |                       |            |   |  |                     |                         |                     |                         |    |
|  | 12000 N                       | 82 s                              | ■                     |            | 230 V                                     | 2                                      | <b>GV12-230-3-T</b> | 310                     | 60                  | 190                     | 60 |
|  |                               |                                   | ■                     |            | 24 V                                      |  | <b>GV12-24-SR-T</b> | 310                     | 60                  | 190                     | 60 |

<sup>1)</sup> Operating range can be switched 0.5...10 V / 2...10 V

# DN 15...50

|                     |  |
|---------------------|--|
| Range of use        | Closed water circuit and steam circuit in the subcritical range (pH >7)        |
| Fluid temperature   | 5...150°C (120°C to p <sub>s</sub> 2500 kPa, 150°C to p <sub>s</sub> 2430 kPa) |
| Pipe connection     | Flange PN 25 (ISO 7005-2)  |
| Leakage rate        | Max. 0.05% of k <sub>VS</sub> value  |
| Flow characteristic | Equal percentage   |

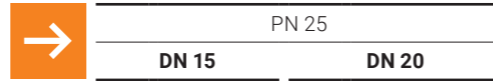
| Suitable actuators                             | Actuating force | Actuating time per nominal stroke | Actuating time for fail-safe | Open/close | 3-point | Modulating (2...10 V) | MP-Bus communication <sup>1)</sup> | Fail-safe | Nominal voltage AC/DC 24 V AC 230 V | Actuator type               | PN 25               |                       | DN 15               |                       |      |
|--|-----------------|-----------------------------------|------------------------------|------------|---------|-----------------------|------------------------------------|-----------|-------------------------------------|-----------------------------|---------------------|-----------------------|---------------------|-----------------------|------|
|  |                 |                                   |                              |            |         |                       |                                    |           |                                     |                             | Δp <sub>s</sub> kPa | Δp <sub>max</sub> kPa | Δp <sub>s</sub> kPa | Δp <sub>max</sub> kPa |      |
| <b>Standard actuators</b>                      |                 |                                   |                              |            |         |                       |                                    |           |                                     |                             |                     |                       |                     |                       |      |
| LV.. NV.. SV..                                 | 500 N           | 150 s                             |                              | ■          | ■       |                       |                                    |           | 24 V                                | LV24A-TPC <sup>2)</sup>     | 2500                | 1000                  | 800                 | 800                   |      |
|  |                 |                                   |                              | ■          | ■       |                       |                                    | 230 V     | LV230A-TPC <sup>2)</sup>            | 2500                        | 1000                | 800                   | 800                 |                       |      |
|  | 1000 N          | 150 s                             |                              |            |         | ■                     |                                    |           | 24 V                                | LV24A-SR-TPC <sup>2)</sup>  | 2500                | 1000                  | 800                 | 800                   |      |
|  |                 |                                   |                              |            |         | ■                     | ■                                  |           | 24 V                                | LV24A-MP-TPC <sup>2)</sup>  | 2500                | 1000                  | 800                 | 800                   |      |
|  |                 |                                   |                              |            |         | ■                     | ■                                  |           | 24 V                                | NV24A-TPC                   | 2500                | 1000                  | 2200                | 1000                  |      |
|  |                 |                                   |                              |            |         |                       |                                    | ■         |                                     | 230 V                       | NV230A-TPC          | 2500                  | 1000                | 2200                  | 1000 |
| 1500 N   | 150 s           |                                   |                              |            |         | ■                     |                                    | 24 V      | NV24A-SR-TPC                        | 2500                        | 1000                | 2200                  | 1000                |                       |      |
|  |                 |                                   |                              |            |         | ■                     | ■                                  |           | 24 V                                | NV24A-MP-TPC                | 2500                | 1000                  | 2200                | 1000                  |      |
|  |                 |                                   |                              |            | ■       | ■                     |                                    | 24 V      | SV24A-TPC                           | 2500                        | 1000                | 2500                  | 1000                |                       |      |
|  |                 |                                   |                              |            |         |                       | ■                                  |           | 230 V                               | SV230A-TPC                  | 2500                | 1000                  | 2500                | 1000                  |      |
| <b>Fast running actuators</b>                  |                 |                                   |                              |            |         |                       |                                    |           |                                     |                             |                     |                       |                     |                       |      |
| LVC.. NVC.. SVC..                              | 500 N           | 35 s                              |                              |            |         | ■                     |                                    |           | 24 V                                | LVC24A-SR-TPC <sup>2)</sup> | 2500                | 1000                  | 800                 | 800                   |      |
|  |                 |                                   |                              |            |         | ■                     | ■                                  |           | 24 V                                | LVC24A-MP-TPC <sup>2)</sup> | 2500                | 1000                  | 800                 | 800                   |      |
|  | 1000 N          | 35 s                              |                              |            |         | ■                     |                                    |           | 24 V                                | NVC24A-SR-TPC               | 2500                | 1000                  | 2200                | 1000                  |      |
|  |                 |                                   |                              |            |         | ■                     | ■                                  |           | 24 V                                | NVC24A-MP-TPC               | 2500                | 1000                  | 2200                | 1000                  |      |
| 1500 N   | 35 s            |                                   |                              |            | ■       |                       |                                    | 24 V      | SVC24A-SR-TPC                       | 2500                        | 1000                | 2500                  | 1000                |                       |      |
|  |                 |                                   |                              |            | ■       | ■                     |                                    | 24 V      | SVC24A-MP-TPC                       | 2500                        | 1000                | 2500                  | 1000                |                       |      |
| <b>Fail-safe actuators NC/NO <sup>3)</sup></b> |                 |                                   |                              |            |         |                       |                                    |           |                                     |                             |                     |                       |                     |                       |      |
| NVK.. NVKC..                                   | 1000 N          | 150 s                             | 35 s                         |            | ■       |                       |                                    |           | 24 V                                | NVK24A-3-TPC                | 2500                | 1000                  | 2200                | 1000                  |      |
|  |                 |                                   |                              |            | ■       | ■                     |                                    |           | 230 V                               | NVK230A-3                   | 2500                | 1000                  | 2200                | 1000                  |      |
|  |                 | 35 s                              | 35 s                         |            |         |                       | ■                                  |           |                                     | 24 V                        | NVK24A-SR-TPC       | 2500                  | 1000                | 2200                  | 1000 |
|  |                 |                                   |                              |            |         |                       | ■                                  | ■         |                                     | 24 V                        | NVK24A-MP-TPC       | 2500                  | 1000                | 2200                  | 1000 |
|  |                 |                                   |                              |            |         |                       | ■                                  | ■         |                                     | 24 V                        | NVKC24A-SR-TPC      | 2500                  | 1000                | 2200                  | 1000 |
|  |                 |                                   |                              |            |         |                       | ■                                  | ■         |                                     | 24 V                        | NVKC24A-MP-TPC      | 2500                  | 1000                | 2200                  | 1000 |

<sup>1)</sup> Running times, control signal, stroke limitation and other functions for MP types can be adjusted with PC-Tool or Service-Tool ZTH EU (delivery condition: modulating, operating range 2...10 V).  
<sup>2)</sup> Actuators LV..A.. possible only on valves H6..  
<sup>3)</sup> The fail-safe position NC/NO or all fail-safe actuators can be adjusted on the actuator. Delivery condition: Actuator spindle retracted. Closing point of the globe valves H..R is at top (valve stem extended).

| PN 25                  |            |                        |              |                        |             |                        |             |                        |             |                        |             |
|------------------------|------------|------------------------|--------------|------------------------|-------------|------------------------|-------------|------------------------|-------------|------------------------|-------------|
| DN 20                  |            | DN 25                  |              | DN 32                  |             | DN 40                  |             | DN 50                  |             |                        |             |
| k <sub>VS</sub> [m³/h] | Valve type | k <sub>VS</sub> [m³/h] | Valve type   | k <sub>VS</sub> [m³/h] | Valve type  | k <sub>VS</sub> [m³/h] | Valve type  | k <sub>VS</sub> [m³/h] | Valve type  | k <sub>VS</sub> [m³/h] | Valve type  |
| 4                      | H6020X4-S2 | 6.3                    | H6020X6P3-S2 | 10                     | H6025X10-S2 | 16                     | H6032X16-S2 | 25                     | H6040X25-S2 | 40                     | H6050X40-S2 |
| 800                    | 800        | 800                    | 600          | 450                    | 450         | 300                    | 300         | 140                    | 140         | 60                     | 60          |
| 800                    | 800        | 800                    | 600          | 450                    | 450         | 300                    | 300         | 140                    | 140         | 60                     | 60          |
| 800                    | 800        | 800                    | 600          | 450                    | 450         | 300                    | 300         | 140                    | 140         | 60                     | 60          |
| 800                    | 800        | 800                    | 600          | 450                    | 450         | 300                    | 300         | 140                    | 140         | 60                     | 60          |
| 2200                   | 1000       | 1500                   | 1000         | 1300                   | 1000        | 900                    | 900         | 500                    | 500         | 300                    | 300         |
| 2200                   | 1000       | 1500                   | 1000         | 1300                   | 1000        | 900                    | 900         | 500                    | 500         | 300                    | 300         |
| 2200                   | 1000       | 1500                   | 1000         | 1300                   | 1000        | 900                    | 900         | 500                    | 500         | 300                    | 300         |
| 2200                   | 1000       | 1500                   | 1000         | 1300                   | 1000        | 900                    | 900         | 500                    | 500         | 300                    | 300         |
| 2500                   | 1000       | 2500                   | 1000         | 2100                   | 1000        | 1500                   | 1000        | 850                    | 850         | 500                    | 500         |
| 2500                   | 1000       | 2500                   | 1000         | 2100                   | 1000        | 1500                   | 1000        | 850                    | 850         | 500                    | 500         |
| 2500                   | 1000       | 2500                   | 1000         | 2100                   | 1000        | 1500                   | 1000        | 850                    | 850         | 500                    | 500         |
| 2500                   | 1000       | 2500                   | 1000         | 2100                   | 1000        | 1500                   | 1000        | 850                    | 850         | 500                    | 500         |
| 2200                   | 1000       | 1500                   | 1000         | 1300                   | 1000        | 900                    | 900         | 500                    | 500         | 300                    | 300         |
| 2200                   | 1000       | 1500                   | 1000         | 1300                   | 1000        | 900                    | 900         | 500                    | 500         | 300                    | 300         |
| 2200                   | 1000       | 1500                   | 1000         | 1300                   | 1000        | 900                    | 900         | 500                    | 500         | 300                    | 300         |
| 2200                   | 1000       | 1500                   | 1000         | 1300                   | 1000        | 900                    | 900         | 500                    | 500         | 300                    | 300         |
| 2200                   | 1000       | 1500                   | 1000         | 1300                   | 1000        | 900                    | 900         | 500                    | 500         | 300                    | 300         |
| 2200                   | 1000       | 1500                   | 1000         | 1300                   | 1000        | 900                    | 900         | 500                    | 500         | 300                    | 300         |

# DN 15...100

Range of use Closed water circuit (pH >7)  
 Fluid temperature 5...200°C (120°C to p<sub>s</sub> 2500 kPa, 200°C to p<sub>s</sub> 2300 kPa)  
 Pipe connection Flange PN 25 (ISO 7005-2)  
 Leakage rate Control path A – AB: max. 0.05% of k<sub>vs</sub> value / Bypass B – AB: max. 1% of k<sub>vs</sub> value  
 Flow characteristic Control path A – AB: linear / bypass B – AB: linear

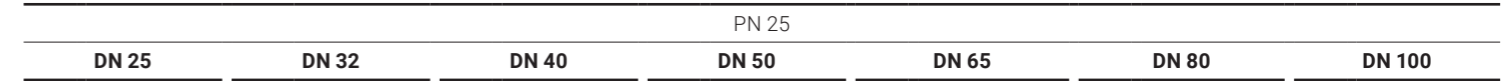


| 3-way | k <sub>vs</sub> [m³/h] | Valve type | k <sub>vs</sub> [m³/h] | Valve type |
|-------|------------------------|------------|------------------------|------------|
| 4     | H7015X4-S2             | 6.3        | H7020X6P3-S2           |            |



| Suitable actuators                            | Actuating force | Actuating time per nominal stroke | Actuating time for fail-safe        |                                     |                                     |                                    | Nominal voltage AC/DC 24 V AC 230 V | Actuator type               | DN 15          |                     | DN 20                 |                     |                       |
|---|-----------------|-----------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|------------------------------------|-------------------------------------|-----------------------------|----------------|---------------------|-----------------------|---------------------|-----------------------|
|   |                 |                                   | Open/close                          | 3-point                             | Modulating (2...10 V)               | MP-Bus communication <sup>1)</sup> |                                     |                             | Fail-safe      | Δp <sub>s</sub> kPa | Δp <sub>max</sub> kPa | Δp <sub>s</sub> kPa | Δp <sub>max</sub> kPa |
| <b>Standard actuators</b>                     |                 |                                   |                                     |                                     |                                     |                                    |                                     |                             |                |                     |                       |                     |                       |
| LV.. NV.. SV..                                | 500 N           | 150 s                             | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>           | 24 V                                | LV24A-TPC <sup>2)</sup>     | 800            | 800                 | 600                   | 600                 |                       |
|   |                 |                                   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>           | 230 V                               | LV230A-TPC <sup>2)</sup>    | 800            | 800                 | 600                   | 600                 |                       |
|   |                 |                                   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>           | 24 V                                | LV24A-SR-TPC <sup>2)</sup>  | 800            | 800                 | 600                   | 600                 |                       |
|   |                 |                                   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>           | 24 V                                | LV24A-MP-TPC <sup>2)</sup>  | 800            | 800                 | 600                   | 600                 |                       |
| EV.. RV..                                     | 1000 N          | 150 s                             | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>           | 24 V                                | NV24A-TPC                   | 2200           | 1000                | 1000                  | 1000                |                       |
|   |                 |                                   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>           | 230 V                               | NV230A-TPC                  | 2200           | 1000                | 1000                  | 1000                |                       |
|   |                 |                                   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>           | 24 V                                | NV24A-SR-TPC                | 2200           | 1000                | 1000                  | 1000                |                       |
|   |                 |                                   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>           | 24 V                                | NV24A-MP-TPC                | 2200           | 1000                | 1000                  | 1000                |                       |
| LVC.. NVC.. SVC..                             | 2500 N          | 150 s                             | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>           | 24 V                                | SV24A-TPC                   | 2500           | 1000                | 2500                  | 1000                |                       |
|   |                 |                                   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>           | 230 V                               | SV230A-TPC                  | 2500           | 1000                | 2500                  | 1000                |                       |
|   |                 |                                   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>           | 24 V                                | SV24A-SR-TPC                | 2500           | 1000                | 2500                  | 1000                |                       |
|   |                 |                                   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>           | 24 V                                | SV24A-MP-TPC                | 2500           | 1000                | 2500                  | 1000                |                       |
| EVC..   | 4500 N          | 120 s                             | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>           | 24 V                                | EV24A-TPC                   |                |                     |                       |                     |                       |
|   |                 |                                   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>           | 230 V                               | EV230A-TPC                  |                |                     |                       |                     |                       |
|   |                 |                                   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>           | 24 V                                | EV24A-SR-TPC                |                |                     |                       |                     |                       |
|   |                 |                                   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>           | 24 V                                | EV24A-MP-TPC                |                |                     |                       |                     |                       |
| <b>Fast running actuators</b>                 |                 |                                   |                                     |                                     |                                     |                                    |                                     |                             |                |                     |                       |                     |                       |
| EVC..   | 500 N           | 35 s                              | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>           | 24 V                                | LVC24A-SR-TPC <sup>2)</sup> | 800            | 800                 | 600                   | 600                 |                       |
|   |                 |                                   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>           | 24 V                                | LVC24A-MP-TPC <sup>2)</sup> | 800            | 800                 | 600                   | 600                 |                       |
|   |                 |                                   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>           | 24 V                                | NVC24A-SR-TPC               | 2200           | 1000                | 1500                  | 1000                |                       |
|   |                 |                                   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>           | 24 V                                | NVC24A-MP-TPC               | 2200           | 1000                | 1500                  | 1000                |                       |
| EVC..   | 1000 N          | 35 s                              | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>           | 24 V                                | SVC24A-SR-TPC               | 2500           | 1000                | 2500                  | 1000                |                       |
|   |                 |                                   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>           | 24 V                                | SVC24A-MP-TPC               | 2500           | 1000                | 2500                  | 1000                |                       |
|   |                 |                                   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>           | 24 V                                | EVC24A-SR                   |                |                     |                       |                     |                       |
|   |                 |                                   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>           | 24 V                                | EVC24A-SR                   |                |                     |                       |                     |                       |
| <b>Fail-safe actuators NC/NO<sup>3)</sup></b> |                 |                                   |                                     |                                     |                                     |                                    |                                     |                             |                |                     |                       |                     |                       |
| NVK.. NVKC..                                  | 1000 N          | 150 s                             | 35 s                                | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>           | <input type="checkbox"/>            | 24 V                        | NVK24A-3-TPC   | 2200                | 1000                  | 1500                | 1000                  |
|   |                 |                                   |                                     | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>           | <input type="checkbox"/>            | 230 V                       | NVK230A-3      | 2200                | 1000                  | 1500                | 1000                  |
|   |                 |                                   |                                     | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>           | <input type="checkbox"/>            | 24 V                        | NVK24A-SR-TPC  | 2200                | 1000                  | 1500                | 1000                  |
|   |                 |                                   |                                     | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>           | <input type="checkbox"/>            | 24 V                        | NVK24A-MP-TPC  | 2200                | 1000                  | 1500                | 1000                  |
| AVK..   | 2000 N          | 150 s                             | 35 s                                | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>           | <input type="checkbox"/>            | 24 V                        | NVKC24A-SR-TPC | 2200                | 1000                  | 1500                | 1000                  |
|   |                 |                                   |                                     | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>           | <input type="checkbox"/>            | 24 V                        | NVKC24A-MP-TPC | 2200                | 1000                  | 1500                | 1000                  |
|   |                 |                                   |                                     | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>           | <input type="checkbox"/>            | 24 V                        | AVK24A-3-TPC   | 2200                | 1000                  | 1500                | 1000                  |
|   |                 |                                   |                                     | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>           | <input type="checkbox"/>            | 230 V                       | AVK230A-3      | 2200                | 1000                  | 1500                | 1000                  |
| AVK..   | 2000 N          | 150 s                             | 35 s                                | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>           | <input type="checkbox"/>            | 24 V                        | AVK24A-SR-TPC  | 2200                | 1000                  | 1500                | 1000                  |
|   |                 |                                   |                                     | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>           | <input type="checkbox"/>            | 24 V                        | AVK24A-MP-TPC  | 2200                | 1000                  | 1500                | 1000                  |
|   |                 |                                   |                                     | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>           | <input type="checkbox"/>            | 24 V                        | AVK24A-SR-TPC  | 2200                | 1000                  | 1500                | 1000                  |
|   |                 |                                   |                                     | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>           | <input type="checkbox"/>            | 24 V                        | AVK24A-MP-TPC  | 2200                | 1000                  | 1500                | 1000                  |

<sup>1)</sup> Running times, control signal, stroke limitation and other functions for MP types can be adjusted with PC-Tool or Service-Tool ZTH EU (delivery condition: modulating, operating range 2...10 V).  
<sup>2)</sup> For DN 15 only recommended with H610S and H611S.  
<sup>3)</sup> The fail-safe position NC/NO or all fail-safe actuators can be adjusted on the actuator. Delivery condition: Actuator spindle retracted. Closing point of the globe valves H..R is at top (valve stem extended).






| DN 25                  |             | DN 32                  |             | DN 40                  |             | DN 50                  |             | DN 65                  |              | DN 80                  |              | DN 100                 |              |
|------------------------|-------------|------------------------|-------------|------------------------|-------------|------------------------|-------------|------------------------|--------------|------------------------|--------------|------------------------|--------------|
| k <sub>vs</sub> [m³/h] | Valve type  | k <sub>vs</sub> [m³/h] | Valve type  | k <sub>vs</sub> [m³/h] | Valve type  | k <sub>vs</sub> [m³/h] | Valve type  | k <sub>vs</sub> [m³/h] | Valve type   | k <sub>vs</sub> [m³/h] | Valve type   | k <sub>vs</sub> [m³/h] | Valve type   |
| 10                     | H7025X10-S2 | 16                     | H7032X16-S2 | 25                     | H7040X25-S2 | 40                     | H7050X40-S2 | 63                     | H7020X6P3-S2 | 100                    | H7080X100-S4 | 160                    | H7100X160-S4 |

| Δp <sub>s</sub> kPa | Δp <sub>max</sub> kPa | Δp <sub>s</sub> kPa | Δp <sub>max</sub> kPa | Δp <sub>s</sub> kPa | Δp <sub>max</sub> kPa | Δp <sub>s</sub> kPa | Δp <sub>max</sub> kPa | Δp <sub>s</sub> kPa | Δp <sub>max</sub> kPa | Δp <sub>s</sub> kPa | Δp <sub>max</sub> kPa | Δp <sub>s</sub> kPa | Δp <sub>max</sub> kPa |
|---------------------|-----------------------|---------------------|-----------------------|---------------------|-----------------------|---------------------|-----------------------|---------------------|-----------------------|---------------------|-----------------------|---------------------|-----------------------|
| 450                 | 450                   | 300                 | 300                   | 140                 | 140                   | 60                  | 60                    |                     |                       |                     |                       |                     |                       |
| 450                 | 450                   | 300                 | 300                   | 140                 | 140                   | 60                  | 60                    |                     |                       |                     |                       |                     |                       |
| 450                 | 450                   | 300                 | 300                   | 140                 | 140                   | 60                  | 60                    |                     |                       |                     |                       |                     |                       |
| 450                 | 450                   | 300                 | 300                   | 140                 | 140                   | 60                  | 60                    |                     |                       |                     |                       |                     |                       |
| 1300                | 1000                  | 900                 | 900                   | 500                 | 500                   | 300                 | 300                   |                     |                       |                     |                       |                     |                       |
| 1300                | 1000                  | 900                 | 900                   | 500                 | 500                   | 300                 | 300                   |                     |                       |                     |                       |                     |                       |
| 1300                | 1000                  | 900                 | 900                   | 500                 | 500                   | 300                 | 300                   |                     |                       |                     |                       |                     |                       |
| 1300                | 1000                  | 900                 | 900                   | 500                 | 500                   | 300                 | 300                   |                     |                       |                     |                       |                     |                       |
| 2100                | 1000                  | 1500                | 1000                  | 850                 | 850                   | 500                 | 500                   |                     |                       |                     |                       |                     |                       |
| 2100                | 1000                  | 1500                | 1000                  | 850                 | 850                   | 500                 | 500                   |                     |                       |                     |                       |                     |                       |
| 2100                | 1000                  | 1500                | 1000                  | 850                 | 850                   | 500                 | 500                   |                     |                       |                     |                       |                     |                       |
|                     |                       |                     |                       |                     |                       |                     |                       | 550                 | 550                   | 350                 | 350                   | 200                 | 200                   |
|                     |                       |                     |                       |                     |                       |                     |                       | 550                 | 550                   | 350                 | 350                   | 200                 | 200                   |
|                     |                       |                     |                       |                     |                       |                     |                       | 550                 | 550                   | 350                 | 350                   | 200                 | 200                   |
|                     |                       |                     |                       |                     |                       |                     |                       | 550                 | 550                   | 350                 | 350                   | 200                 | 200                   |
|                     |                       |                     |                       |                     |                       |                     |                       | 1100                | 1000                  | 700                 | 700                   | 450                 | 450                   |
| 450                 | 450                   | 300                 | 300                   | 140                 | 140                   | 60                  | 60                    |                     |                       |                     |                       |                     |                       |
| 450                 | 450                   | 300                 | 300                   | 140                 | 140                   | 60                  | 60                    |                     |                       |                     |                       |                     |                       |
| 1300                | 1000                  | 900                 | 900                   | 500                 | 500                   | 300                 | 300                   |                     |                       |                     |                       |                     |                       |
| 1300                | 1000                  | 900                 | 900                   | 500                 | 500                   | 300                 | 300                   |                     |                       |                     |                       |                     |                       |
| 1300                | 1000                  | 900                 | 900                   | 500                 | 500                   | 300                 | 300                   |                     |                       |                     |                       |                     |                       |
| 1300                | 1000                  | 900                 | 900                   | 500                 | 500                   | 300                 | 300                   |                     |                       |                     |                       |                     |                       |
| 1300                | 1000                  | 900                 | 900                   | 500                 | 500                   | 300                 | 300                   |                     |                       |                     |                       |                     |                       |
| 1300                | 1000                  | 900                 | 900                   | 500                 | 500                   | 300                 | 300                   | 400                 | 400                   | 250                 | 250                   | 150                 | 150                   |
| 1300                | 1000                  | 900                 | 900                   | 500                 | 500                   | 300                 | 300                   | 400                 | 400                   | 250                 | 250                   | 150                 | 150                   |
| 1300                | 1000                  | 900                 | 900                   | 500                 | 500                   | 300                 | 300                   | 400                 | 400                   | 250                 | 250                   | 150                 | 150                   |
| 1300                | 1000                  | 900                 | 900                   | 500                 | 500                   | 300                 | 300                   | 400                 | 400                   | 250                 | 250                   | 150                 | 150                   |

# DN 65...100

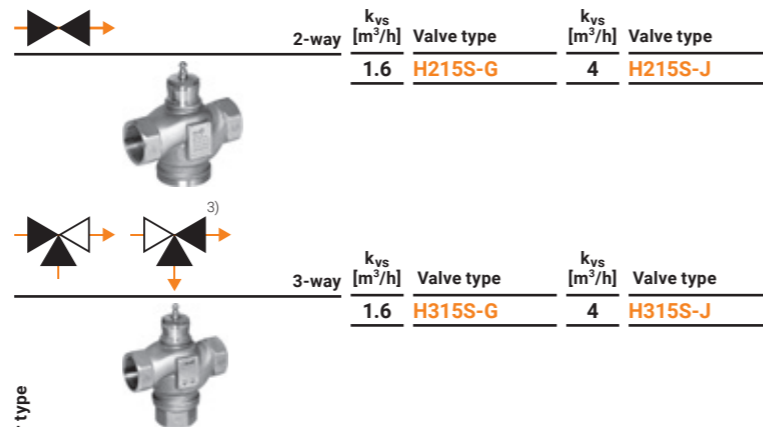
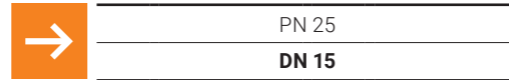
|                     |  |
|---------------------|--|
| Range of use        | Closed water circuit and steam circuit in the subcritical range (pH > 7) flange PN 65 (ISO 7005-2) |
| Fluid temperature   | 5...150°C (120°C to p <sub>s</sub> 2500 kPa, 150°C to p <sub>s</sub> 2430 kPa)                     |
| Pipe connection     | Flange PN 25 (ISO 7005-2)  |
| Leakage rate        | Max. 0.05% of k <sub>VS</sub> value  |
| Flow characteristic | Equal percentage   |

| Suitable actuators                            | Actuating force   | Actuating time per nominal stroke | Actuating time for fail-safe | Open/close                          | 3-point                             | Modulating (2...10 V)               | MP-Bus communication <sup>1)</sup>  | Fail-safe                           | Nominal voltage<br>AC/DC 24 V<br>AC 230 V | Actuator type | PN 25          |                        | PN 25                                  |                        |  |                        |  |                        |                          |
|---|---|-----------------------------------|------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|---|---------------|----------------|------------------------|--|------------------------|--|------------------------|--|------------------------|--------------------------|
|   |   |                                   |                              |                                     |                                     |                                     |                                     |                                     |   |               | DN 65          | Valve type             | DN 80                                  | DN 100                 | Valve type                             | Valve type             | Valve type                             |                        |                          |
|   |   |                                   |                              |                                     |                                     |                                     |                                     |                                     |   |               |                | 2-way                  | k <sub>VS</sub><br>[m <sup>3</sup> /h] | Valve type             | k <sub>VS</sub><br>[m <sup>3</sup> /h] | Valve type             | k <sub>VS</sub><br>[m <sup>3</sup> /h] | Valve type             |                          |
|   |   |                                   |                              |                                     |                                     |                                     |                                     |                                     |   |               |                | 58                     | H6065X58-SP2                           | 90                     | H6080X90-SP2                           | 125                    | H6100X125-SP2                          |                        |                          |
|   |   |                                   |                              |                                     |                                     |                                     |                                     |                                     |   |               |                | Δp <sub>s</sub><br>kPa | Δp <sub>max</sub><br>kPa               | Δp <sub>s</sub><br>kPa | Δp <sub>max</sub><br>kPa               | Δp <sub>s</sub><br>kPa | Δp <sub>max</sub><br>kPa               | Δp <sub>s</sub><br>kPa | Δp <sub>max</sub><br>kPa |
| <b>Standard actuators</b>                     |   |                                   |                              |                                     |                                     |                                     |                                     |                                     |   |               |                |                        |  |                        |  |                        |  |                        |                          |
| NV..<br>SV..                                  |  | 1000 N                            | 150 s                        | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |                                     |                                     |                                     | 24 V                                      | NV24A-TPC     | 2100           | 1000                   | 1600                                   | 1000                   | 1000                                   | 1000                   |  |                        |                          |
|   |   |                                   |                              | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |                                     |                                     |                                     | 230 V                                     | NV230A-TPC    | 2100           | 1000                   | 1600                                   | 1000                   | 1000                                   | 1000                   |  |                        |                          |
|   |   |                                   |                              | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |                                     |                                     | 24 V                                      | NV24A-SR-TPC  | 2100           | 1000                   | 1600                                   | 1000                   | 1000                                   | 1000                   |  |                        |                          |
|   |   |                                   |                              | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |                                     | 24 V                                      | NV24A-MP-TPC  | 2100           | 1000                   | 1600                                   | 1000                   | 1000                                   | 1000                   |  |                        |                          |
|   |   |                                   |                              | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |                                     |                                     |                                     | 24 V                                      | SV24A-TPC     | 2500           | 1000                   | 2400                                   | 1000                   | 1700                                   | 1000                   |  |                        |                          |
|   |   |                                   |                              | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |                                     |                                     |                                     | 230 V                                     | SV230A-TPC    | 2500           | 1000                   | 2400                                   | 1000                   | 1700                                   | 1000                   |  |                        |                          |
| NVC..<br>SVC..                                |  | 1000 N                            | 35 s                         |                                     |                                     | <input checked="" type="checkbox"/> |                                     |                                     | 24 V                                      | NVC24A-SR-TPC | 2100           | 1000                   | 1600                                   | 1000                   | 1000                                   | 1000                   |  |                        |                          |
|   |   |                                   |                              |                                     |                                     | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |                                     | 24 V                                      | NVC24A-MP-TPC | 2100           | 1000                   | 1600                                   | 1000                   | 1000                                   | 1000                   |  |                        |                          |
|   |   |                                   |                              |                                     |                                     | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |                                     | 24 V                                      | SVC24A-SR-TPC | 2500           | 1000                   | 2400                                   | 1000                   | 1700                                   | 1000                   |  |                        |                          |
|   |   |                                   |                              |                                     |                                     | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |                                     | 24 V                                      | SVC24A-MP-TPC | 2500           | 1000                   | 2400                                   | 1000                   | 1700                                   | 1000                   |  |                        |                          |
| <b>Fail-safe actuators NC/NO<sup>2)</sup></b> |   |                                   |                              |                                     |                                     |                                     |                                     |                                     |   |               |                |                        |  |                        |  |                        |  |                        |                          |
| NVK..<br>NVKC..                               |  | 1000 N                            | 150 s                        | 35 s                                | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |                                     |                                     |   | 24 V          | NVK24A-3-TPC   | 2100                   | 1000                                   | 1600                   | 1000                                   | 1000                   | 1000                                   |                        |                          |
|   |   |                                   |                              |                                     | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |                                     |                                     |   | 230 V         | NVK230A-3      | 2100                   | 1000                                   | 1600                   | 1000                                   | 1000                   | 1000                                   |                        |                          |
|   |   |                                   |                              |                                     | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |                                     |   | 24 V          | NVK24A-SR-TPC  | 2100                   | 1000                                   | 1600                   | 1000                                   | 1000                   | 1000                                   |                        |                          |
|   |   |                                   |                              |                                     | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |   | 24 V          | NVK24A-MP-TPC  | 2100                   | 1000                                   | 1600                   | 1000                                   | 1000                   | 1000                                   |                        |                          |
|   |   |                                   |                              |                                     | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |   | 24 V          | NVVC24A-SR-TPC | 2100                   | 1000                                   | 1600                   | 1000                                   | 1000                   | 1000                                   |                        |                          |
|   |   |                                   |                              |                                     | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |   | 24 V          | NVVC24A-MP-TPC | 2100                   | 1000                                   | 1600                   | 1000                                   | 1000                   | 1000                                   |                        |                          |

<sup>1)</sup> Running times, control signal, stroke limitation and other functions for MP types can be adjusted with PC-Tool or Service-Tool ZTH EU (delivery condition: modulating, operating range 2...10 V).  
<sup>2)</sup> The fail-safe position NC/NO or all fail-safe actuators can be adjusted on the actuator. Delivery condition: Actuator spindle retracted. Closing point of the globe valves H..R is at top (valve stem extended).

# DN 15...50

Range of use Closed and open water circuit (pH >7)  
 Fluid temperature 0...130°C  
 Pipe connection Internal thread (ISO 7-1)  
 Leakage rate 2-way: max. 0.01% of  $k_{vs}$  value  
 3-way: Control path A – AB: max. 0.02% of  $k_{vs}$  value /  
 Bypass B – AB: max. 0.02% of  $k_{vs}$  value  
 Flow characteristic 2-way: equal percentage  
 3-way: Control path A – AB: equal percentage /  
 Bypass B – AB: linear  
 Permissible operating pressure  $p_s$ : 2500 kPa



| Suitable actuators                            | Actuating force | Actuating time per nominal stroke | Open/close | 3-point | Modulating (2...10 V) | MP-Bus communication <sup>1)</sup> | Fail-safe | Nominal voltage<br>AC/DC 24 V<br>AC 230 V | Actuator type | 2-way              |            | 3-way              |            | $\Delta p_s$<br>kPa | $\Delta p_{max}$<br>kPa | $\Delta p_s$<br>kPa | $\Delta p_{max}$<br>kPa |                    |            |                    |            |    |         |  |
|---|-----------------|-----------------------------------|------------|---------|-----------------------|------------------------------------|-----------|---|---------------|--------------------|------------|--------------------|------------|---------------------|-------------------------|---------------------|-------------------------|--------------------|------------|--------------------|------------|----|---------|--|
|   |                 |                                   |            |         |                       |                                    |           |   |               | $k_{vs}$<br>[m³/h] | Valve type | $k_{vs}$<br>[m³/h] | Valve type |                     |                         |                     |                         | $k_{vs}$<br>[m³/h] | Valve type | $k_{vs}$<br>[m³/h] | Valve type |    |         |  |
| <b>Standard actuators</b>                     |                 |                                   |            |         |                       |                                    |           |   |               | 1.6                | H215S-G    | 4                  | H215S-J    | 6.3                 | H220S-K                 | 10                  | H225S-L                 | 16                 | H232S-M    | 25                 | H240S-N    | 40 | H250S-P |  |
| <b>Fast running actuators</b>                 |                 |                                   |            |         |                       |                                    |           |   |               | 1.6                | H315S-G    | 4                  | H315S-J    | 6.3                 | H320S-K                 | 10                  | H325S-L                 | 16                 | H332S-M    | 25                 | H340S-N    | 40 | H350S-P |  |
| <b>Fail-safe actuators NC/NO<sup>2)</sup></b> |                 |                                   |            |         |                       |                                    |           |   |               |                    |            |                    |            |                     |                         |                     |                         |                    |            |                    |            |    |         |  |

| PN 25              |            |                    |            |                    |            |                    |            |                    |            | PN 25              |            |                    |            |                    |            |                    |            |                    |            |                    |            |                    |            |                    |            |                    |            |    |         |
|--------------------|------------|--------------------|------------|--------------------|------------|--------------------|------------|--------------------|------------|--------------------|------------|--------------------|------------|--------------------|------------|--------------------|------------|--------------------|------------|--------------------|------------|--------------------|------------|--------------------|------------|--------------------|------------|----|---------|
| DN 20              |            |                    |            |                    | DN 25      |                    |            |                    |            | DN 32              |            |                    |            |                    | DN 40      |                    |            |                    |            | DN 50              |            |                    |            |                    |            |                    |            |    |         |
| $k_{vs}$<br>[m³/h] | Valve type | $k_{vs}$<br>[m³/h] | Valve type | $k_{vs}$<br>[m³/h] | Valve type | $k_{vs}$<br>[m³/h] | Valve type | $k_{vs}$<br>[m³/h] | Valve type | $k_{vs}$<br>[m³/h] | Valve type | $k_{vs}$<br>[m³/h] | Valve type | $k_{vs}$<br>[m³/h] | Valve type | $k_{vs}$<br>[m³/h] | Valve type | $k_{vs}$<br>[m³/h] | Valve type | $k_{vs}$<br>[m³/h] | Valve type | $k_{vs}$<br>[m³/h] | Valve type | $k_{vs}$<br>[m³/h] | Valve type | $k_{vs}$<br>[m³/h] | Valve type |    |         |
| 6.3                | H220S-K    | 10                 | H225S-L    | 16                 | H232S-M    | 25                 | H240S-N    | 40                 | H250S-P    | 6.3                | H320S-K    | 10                 | H325S-L    | 16                 | H332S-M    | 25                 | H340S-N    | 40                 | H350S-P    | 6.3                | H320S-K    | 10                 | H325S-L    | 16                 | H332S-M    | 25                 | H340S-N    | 40 | H350S-P |



<sup>1)</sup> Running times, control signal, stroke limitation and other functions for MP types can be adjusted with PC-Tool or Service-Tool ZTH EU (delivery condition: modulating, operating range 2...10 V).  
<sup>2)</sup> The fail-safe position NC/NO or all fail-safe actuators can be adjusted on the actuator. Delivery condition: Actuator spindle retracted. Closing point of the globe valves H..R is at top (valve stem extended).

<sup>3)</sup> As a diverting valve, the maximum values are reduced to a quarter.

## 8

## Control butterfly valves

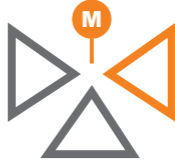

### Fit for reliable control applications

|                          |       |              |                     |    |
|--------------------------|-------|--------------|---------------------|----|
| <b>Wafer type flange</b> | 2-way | PN 6, 10, 16 | <b>DN 25...300</b>  | 60 |
|                          |       | PN 10, 16    | <b>DN 350</b>       | 62 |
|                          |       | PN 16        | <b>DN 400...700</b> | 62 |
| <b>Lug type flange</b>   | 2-way | PN 10, 16    | <b>DN25...150</b>   | 60 |
|                          |       | PN 16        | <b>DN 200...300</b> | 60 |
|                          | 3-way | PN 16        | <b>DN 350...700</b> | 62 |
|                          |       | PN 16        | <b>DN 150...300</b> | 64 |

Please refer to the data sheets or notes for project planning for further technical data to be observed.

**Valve Sizer App**

Easily find the right valve and the right actuator for your application with the convenient Valve Sizer App. Install the app via the "App Store" or "Google Play". With the QR Code you can get there directly.


# DN 25...300

|                                |   |
|--------------------------------|---|
| Range of use                   | Closed and open water circuit (pH >7)   |
| Fluid temperature              | -20...120°C   |
| Pipe connection                | Flange (ISO 7005-2 and EN 1092-2)<br>D6..W additionally: ISO 7005-1 and EN 1092-1   |
| Leakage rate                   | Tight, leakage rate A (EN 12266-1)  |
| Flow characteristic            | DN 25...125: 0...60% opening angle: equal percentage<br>DN 150...300: characteristic curve parametrisable with the Belimo Assistant App: equal percentage or linear |
| Permissible operating pressure | p <sub>s</sub> : 1600 kPa   |

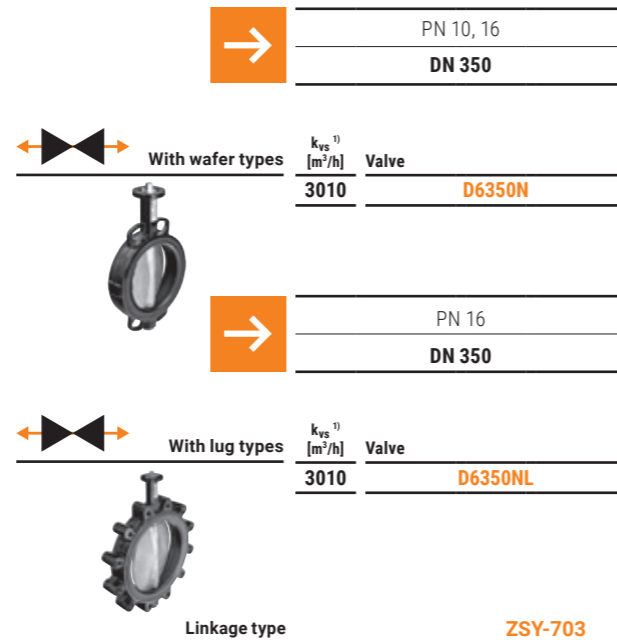
| Suitable actuators  | Nominal torque  | Open/close  | 3-point | Modulating | Terminal connection | Fail-safe | Nominal voltage<br>AC/DC 24 V<br>AC 230 V | Running time motor 90° | Auxiliary switch SPDT | Degree of protection | Actuator type  | Linkage type | PN 6, 10, 16           |                          |                        |   |   |   |           |           |           |   |   |   |
|---|---|---|---------|------------|---------------------|-----------|---|------------------------|-----------------------|----------------------|--|--------------|------------------------|--------------------------|------------------------|---|---|---|-----------|-----------|-----------|---|---|---|
|   |   |   |         |            |                     |           |   |                        |                       |                      |  |              | Δp <sub>s</sub><br>kPa | Δp <sub>max</sub><br>kPa | Δp <sub>s</sub><br>kPa | Δp <sub>max</sub><br>kPa                                | Δp <sub>s</sub><br>kPa                                  | Δp <sub>max</sub><br>kPa                                |           |           |           |   |   |   |
| <div style="display: flex; align-items: center;"> <div> <p>→</p> <p>PN 6, 10, 16</p> <p>With wafer types</p> <table border="1"> <thead> <tr> <th>DN 25</th> <th>DN 32</th> <th>DN 40</th> </tr> </thead> <tbody> <tr> <td>k<sub>vs</sub><sup>1)</sup> [m<sup>3</sup>/h] Valve</td> <td>k<sub>vs</sub><sup>1)</sup> [m<sup>3</sup>/h] Valve</td> <td>k<sub>vs</sub><sup>1)</sup> [m<sup>3</sup>/h] Valve</td> </tr> <tr> <td>24 D625N</td> <td>25 D632N</td> <td>27 D640N</td> </tr> </tbody> </table> </div> </div> |   |   |         |            |                     |           |   |                        |                       |                      |  |              | DN 25                  | DN 32                    | DN 40                  | k <sub>vs</sub> <sup>1)</sup> [m <sup>3</sup> /h] Valve | k <sub>vs</sub> <sup>1)</sup> [m <sup>3</sup> /h] Valve | k <sub>vs</sub> <sup>1)</sup> [m <sup>3</sup> /h] Valve | 24 D625N  | 25 D632N  | 27 D640N  |   |   |   |
| DN 25   | DN 32   | DN 40   |         |            |                     |           |   |                        |                       |                      |  |              |                        |                          |                        |   |   |   |           |           |           |   |   |   |
| k <sub>vs</sub> <sup>1)</sup> [m <sup>3</sup> /h] Valve   | k <sub>vs</sub> <sup>1)</sup> [m <sup>3</sup> /h] Valve | k <sub>vs</sub> <sup>1)</sup> [m <sup>3</sup> /h] Valve |         |            |                     |           |   |                        |                       |                      |  |              |                        |                          |                        |   |   |   |           |           |           |   |   |   |
| 24 D625N  | 25 D632N  | 27 D640N  |         |            |                     |           |   |                        |                       |                      |  |              |                        |                          |                        |   |   |   |           |           |           |   |   |   |
| <div style="display: flex; align-items: center;"> <div> <p>→</p> <p>PN 10, 16</p> <p>With lug types</p> <table border="1"> <thead> <tr> <th>DN 25</th> <th>DN 32</th> <th>DN 40</th> </tr> </thead> <tbody> <tr> <td>k<sub>vs</sub><sup>1)</sup> [m<sup>3</sup>/h] Valve</td> <td>k<sub>vs</sub><sup>1)</sup> [m<sup>3</sup>/h] Valve</td> <td>k<sub>vs</sub><sup>1)</sup> [m<sup>3</sup>/h] Valve</td> </tr> <tr> <td>24 D625NL</td> <td>25 D632NL</td> <td>27 D640NL</td> </tr> </tbody> </table> </div> </div>   |   |   |         |            |                     |           |   |                        |                       |                      |  |              | DN 25                  | DN 32                    | DN 40                  | k <sub>vs</sub> <sup>1)</sup> [m <sup>3</sup> /h] Valve | k <sub>vs</sub> <sup>1)</sup> [m <sup>3</sup> /h] Valve | k <sub>vs</sub> <sup>1)</sup> [m <sup>3</sup> /h] Valve | 24 D625NL | 25 D632NL | 27 D640NL |   |   |   |
| DN 25   | DN 32   | DN 40   |         |            |                     |           |   |                        |                       |                      |  |              |                        |                          |                        |   |   |   |           |           |           |   |   |   |
| k <sub>vs</sub> <sup>1)</sup> [m <sup>3</sup> /h] Valve   | k <sub>vs</sub> <sup>1)</sup> [m <sup>3</sup> /h] Valve | k <sub>vs</sub> <sup>1)</sup> [m <sup>3</sup> /h] Valve |         |            |                     |           |   |                        |                       |                      |  |              |                        |                          |                        |   |   |   |           |           |           |   |   |   |
| 24 D625NL   | 25 D632NL   | 27 D640NL   |         |            |                     |           |   |                        |                       |                      |  |              |                        |                          |                        |   |   |   |           |           |           |   |   |   |
| SR..  | 20 Nm   | —   | —       | ■          | —                   | —         | 24 V                                      | 90 s                   | —                     | IP54                 | SR24A-SR-5   | —            | 1200                   | 300                      | 1200                   | 300   | 1200  | 300   | —         | —         | —         | — | — | — |
| GR..  | 40 Nm   | —   | —       | ■          | —                   | —         | 24 V                                      | 150 s                  | —                     | IP54                 | GR24A-SR-5   | —            | 1200                   | 300                      | 1200                   | 300   | 1200  | 300   | —         | —         | —         | — | — | — |
| DR..  | <90 Nm  | —   | —       | ■          | —                   | —         | 24 V                                      | 150 s                  | —                     | IP54                 | DR24A-SR-5<br>DR24A-SR-7                                   | —            | —                      | —                        | —                      | —   | —   | —   | —         | —         | —         | — | — | — |
| PR..  | 160 Nm  | ■   | ■       | ■          | ■                   | —         | AC 24...240 V<br>DC 24...125 V            | 35 s <sup>2)</sup>     | 2                     | IP66/<br>IP67        | PRCA-BAC-S2-T<br>PRCA-BAC-S2-T-200<br>PRCA-BAC-S2-T-250    | —            | —                      | —                        | —                      | —   | —   | —   | —         | —         | —         | — | — | — |
| PRK..   | 160 Nm  | ■   | ■       | ■          | ■                   | ■         | AC 24...240 V<br>DC 24...125 V            | 35 s <sup>2)</sup>     | 2                     | IP66/<br>IP67        | PRKCA-BAC-S2-T<br>PRKCA-BAC-S2-T-200<br>PRKCA-BAC-S2-T-250 | —            | —                      | —                        | —                      | —   | —   | —   | —         | —         | —         | — | — | — |


<sup>1)</sup> For control applications with an opening angle of 60%. The maximum flow speed of 4 m/s may not be exceeded in the control butterfly valve.  
<sup>2)</sup> 30...120 s variable  
<sup>3)</sup> Linkage is only required in combination with a PR actuator.

| PN 6, 10, 16  |   |   |   |   |   |   |   |   |   |   |   |   | PN 10, 16   |   |   |   |   |   |   |   |   |   |                       |        |       | PN 16 |  |       |  |  |  |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----------------------|--------|-------|-------|--|-------|--|--|--|--|--|--|--|--|--|--|
| DN 50   |   |   | DN 65   |   |   | DN 80   |   |   | DN 100  |   |   | DN 125  |   |   | DN 150  |   |   | DN 200  |   |   | DN 250  |   |                       | DN 300 |       |       |  |       |  |  |  |  |  |  |  |  |  |  |
| k <sub>vs</sub> <sup>1)</sup> [m <sup>3</sup> /h] Valve | k <sub>vs</sub> <sup>1)</sup> [m <sup>3</sup> /h] Valve | k <sub>vs</sub> <sup>1)</sup> [m <sup>3</sup> /h] Valve | k <sub>vs</sub> <sup>1)</sup> [m <sup>3</sup> /h] Valve | k <sub>vs</sub> <sup>1)</sup> [m <sup>3</sup> /h] Valve | k <sub>vs</sub> <sup>1)</sup> [m <sup>3</sup> /h] Valve | k <sub>vs</sub> <sup>1)</sup> [m <sup>3</sup> /h] Valve | k <sub>vs</sub> <sup>1)</sup> [m <sup>3</sup> /h] Valve | k <sub>vs</sub> <sup>1)</sup> [m <sup>3</sup> /h] Valve | k <sub>vs</sub> <sup>1)</sup> [m <sup>3</sup> /h] Valve | k <sub>vs</sub> <sup>1)</sup> [m <sup>3</sup> /h] Valve | k <sub>vs</sub> <sup>1)</sup> [m <sup>3</sup> /h] Valve | k <sub>vs</sub> <sup>1)</sup> [m <sup>3</sup> /h] Valve | k <sub>vs</sub> <sup>1)</sup> [m <sup>3</sup> /h] Valve | k <sub>vs</sub> <sup>1)</sup> [m <sup>3</sup> /h] Valve | k <sub>vs</sub> <sup>1)</sup> [m <sup>3</sup> /h] Valve | k <sub>vs</sub> <sup>1)</sup> [m <sup>3</sup> /h] Valve | k <sub>vs</sub> <sup>1)</sup> [m <sup>3</sup> /h] Valve | k <sub>vs</sub> <sup>1)</sup> [m <sup>3</sup> /h] Valve | k <sub>vs</sub> <sup>1)</sup> [m <sup>3</sup> /h] Valve | k <sub>vs</sub> <sup>1)</sup> [m <sup>3</sup> /h] Valve | k <sub>vs</sub> <sup>1)</sup> [m <sup>3</sup> /h] Valve | k <sub>vs</sub> <sup>1)</sup> [m <sup>3</sup> /h] Valve |                       |        |       |       |  |       |  |  |  |  |  |  |  |  |  |  |
| 30 D650N  | 50 D665N  | 75 D680N  | 150 D6100N  | 260 D6125N  | 400 D6150N  | 820 D6200W  | 1300 D6250W   | 1740 D6300W   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —                     |        |       |       |  |       |  |  |  |  |  |  |  |  |  |  |
| 30 D650NL   | 50 D665NL   | 75 D680NL   | 150 D6100NL   | 260 D6125NL   | 400 D6150NL   | 820 D6200WL   | 1300 D6250WL  | 1740 D6300WL  | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —                     |        |       |       |  |       |  |  |  |  |  |  |  |  |  |  |
|   |   |   |   |   |   |   |   |   |   |   |   |   | ZPR03 <sup>3)</sup>                                     |   |   | ZPR03 <sup>3)</sup>                                     |   |   | ZPR01 <sup>3)</sup>                                     |   |   | ZPR01   |                       |        | ZPR01 |       |  | ZPR01 |  |  |  |  |  |  |  |  |  |  |
| Δp <sub>s</sub> kPa                                     | Δp <sub>max</sub> kPa                                   | Δp <sub>s</sub> kPa                                     | Δp <sub>max</sub> kPa                                   | Δp <sub>s</sub> kPa                                     | Δp <sub>max</sub> kPa                                   | Δp <sub>s</sub> kPa                                     | Δp <sub>max</sub> kPa                                   | Δp <sub>s</sub> kPa                                     | Δp <sub>max</sub> kPa                                   | Δp <sub>s</sub> kPa                                     | Δp <sub>max</sub> kPa                                   | Δp <sub>s</sub> kPa                                     | Δp <sub>max</sub> kPa                                   | Δp <sub>s</sub> kPa                                     | Δp <sub>max</sub> kPa                                   | Δp <sub>s</sub> kPa                                     | Δp <sub>max</sub> kPa                                   | Δp <sub>s</sub> kPa                                     | Δp <sub>max</sub> kPa                                   | Δp <sub>s</sub> kPa                                     | Δp <sub>max</sub> kPa                                   | Δp <sub>s</sub> kPa                                     | Δp <sub>max</sub> kPa |        |       |       |  |       |  |  |  |  |  |  |  |  |  |  |
| 1200  | 300   | 1200  | 300   | 1200  | 300   | 1200  | 300   | 1200  | 300   | 1200  | 300   | 1200  | 300   | 1200  | 300   | 1200  | 300   | 1200  | 300   | 1200  | 300   | 1200  | 300                   |        |       |       |  |       |  |  |  |  |  |  |  |  |  |  |
| 1200  | 300   | 1200  | 300   | 1200  | 300   | 1200  | 300   | 1200  | 300   | 1200  | 300   | 1200  | 300   | 1200  | 300   | 1200  | 300   | 1200  | 300   | 1200  | 300   | 1200  | 300                   |        |       |       |  |       |  |  |  |  |  |  |  |  |  |  |
| 1200  | 300   | 1200  | 300   | 1200  | 300   | 1200  | 300   | 1200  | 300   | 1200  | 300   | 1200  | 300   | 1200  | 300   | 1200  | 300   | 1200  | 300   | 1200  | 300   | 1200  | 300                   |        |       |       |  |       |  |  |  |  |  |  |  |  |  |  |
| —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —                     |        |       |       |  |       |  |  |  |  |  |  |  |  |  |  |
| —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —                     |        |       |       |  |       |  |  |  |  |  |  |  |  |  |  |
| —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —                     |        |       |       |  |       |  |  |  |  |  |  |  |  |  |  |
| —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —                     |        |       |       |  |       |  |  |  |  |  |  |  |  |  |  |
| —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —                     |        |       |       |  |       |  |  |  |  |  |  |  |  |  |  |
| —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —                     |        |       |       |  |       |  |  |  |  |  |  |  |  |  |  |
| —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —                     |        |       |       |  |       |  |  |  |  |  |  |  |  |  |  |

# DN 350...700

|                                |   |
|--------------------------------|---|
| Range of use                   | Closed and open water circuit (pH >7)   |
| Fluid temperature              | -20...120°C                             |
| Pipe connection                | Flange (ISO 7005-2 and EN 1092-2)       |
| Leakage rate                   | Tight, leakage rate A (EN 12266-1)      |
| Flow characteristic            | 0...60% opening angle: equal percentage |
| Permissible operating pressure | p <sub>S</sub> : 1600 kPa               |



| Suitable actuators   | Nominal torque              | Modulating | Terminal connection | Nominal voltage AC 230 V | Running time motor 90° | Auxiliary switch SPDT | Degree of protection | Actuator type  | Linkage type        |                       | ZSY-703             |                       |
|--|-----------------------------|------------|---------------------|--------------------------|------------------------|-----------------------|----------------------|----------------|---------------------|-----------------------|---------------------|-----------------------|
|  |                             |            |                     |                          |                        |                       |                      |                | Δp <sub>S</sub> kPa | Δp <sub>max</sub> kPa | Δp <sub>S</sub> kPa | Δp <sub>max</sub> kPa |
| SY..  | <b>Modulating actuators</b> |            |                     |                          |                        |                       |                      |                |                     |                       |                     |                       |
|  | 650 Nm                      | ■          | ■                   | 230 V                    | 31 s                   | 2                     | IP67                 | SY6-230-MF-T   | 600                 | 300                   |                     |                       |
|  | 1000 Nm                     | ■          | ■                   |                          | 55 s                   | 2                     | IP67                 | SY7-230A-MF-T  |                     |                       | 1200                | 300                   |
|  | 1500 Nm                     | ■          | ■                   |                          | 55 s                   | 2                     | IP67                 | SY8-230A-MF-T  |                     |                       |                     |                       |
|  | 2000 Nm                     | ■          | ■                   |                          | 70 s                   | 2                     | IP67                 | SY9-230A-MF-T  |                     |                       |                     |                       |
|  | 2500 Nm                     | ■          | ■                   |                          | 70 s                   | 2                     | IP67                 | SY10-230A-MF-T |                     |                       |                     |                       |
| 3500 Nm  | ■                           | ■          | 70 s                |                          | 2                      | IP67                  | SY12-230A-MF-T       |                |                     |                       |                     |                       |

<sup>1)</sup> For control applications with an opening angle of 60%. The maximum flow speed of 4 m/s may not be exceeded in the control butterfly valve.

| PN 16   |                       |   |                       |   |                       |   |                       |   |                       |  |  |  |  |
|---|-----------------------|---|-----------------------|---|-----------------------|---|-----------------------|---|-----------------------|--|--|--|--|
| DN 400  |                       | DN 450  |                       | DN 500  |                       | DN 600  |                       | DN 700  |                       |  |  |  |  |
| k <sub>vs</sub> <sup>1)</sup> [m <sup>3</sup> /h] | Valve                 | k <sub>vs</sub> <sup>1)</sup> [m <sup>3</sup> /h] | Valve                 | k <sub>vs</sub> <sup>1)</sup> [m <sup>3</sup> /h] | Valve                 | k <sub>vs</sub> <sup>1)</sup> [m <sup>3</sup> /h] | Valve                 | k <sub>vs</sub> <sup>1)</sup> [m <sup>3</sup> /h] | Valve                 |  |  |  |  |
| 4140  | D6400N                | 5490  | D6450N                | 7060  | D6500N                | 10900   | D6600N                | 11760   | D6700N                |  |  |  |  |
| PN 10   |                       |   |                       |   |                       |   |                       |   |                       |  |  |  |  |
| DN 400  |                       | DN 450  |                       | DN 500  |                       | DN 600  |                       | DN 700  |                       |  |  |  |  |
| k <sub>vs</sub> <sup>1)</sup> [m <sup>3</sup> /h] | Valve                 | k <sub>vs</sub> <sup>1)</sup> [m <sup>3</sup> /h] | Valve                 | k <sub>vs</sub> <sup>1)</sup> [m <sup>3</sup> /h] | Valve                 | k <sub>vs</sub> <sup>1)</sup> [m <sup>3</sup> /h] | Valve                 | k <sub>vs</sub> <sup>1)</sup> [m <sup>3</sup> /h] | Valve                 |  |  |  |  |
| 4140  | D6400NL               | 5490  | D6450NL               | 7060  | D6500NL               | 10900   | D6600NL               | 11760   | D6700NL               |  |  |  |  |
| ZSY-401   |                       |   |                       |   |                       |   |                       |   |                       |  |  |  |  |
| Δp <sub>S</sub> kPa                               | Δp <sub>max</sub> kPa | Δp <sub>S</sub> kPa                               | Δp <sub>max</sub> kPa | Δp <sub>S</sub> kPa                               | Δp <sub>max</sub> kPa | Δp <sub>S</sub> kPa                               | Δp <sub>max</sub> kPa | Δp <sub>S</sub> kPa                               | Δp <sub>max</sub> kPa |  |  |  |  |
| 600   | 300                   |   |                       |   |                       |   |                       |   |                       |  |  |  |  |
|   |                       | 1200  | 300                   | 600   | 300                   |   |                       |   |                       |  |  |  |  |
|   |                       |   |                       | 1200  | 300                   | 600   | 300                   |   |                       |  |  |  |  |
|   |                       |   |                       |   |                       | 1200  | 300                   |   |                       |  |  |  |  |
|   |                       |   |                       |   |                       |   |                       | 600   | 300                   |  |  |  |  |
|   |                       |   |                       |   |                       |   |                       | 1000  | 300                   |  |  |  |  |
|   |                       |   |                       |   |                       |   |                       |   | 200                   |  |  |  |  |
|   |                       |   |                       |   |                       |   |                       |   | 200                   |  |  |  |  |



# DN 150...300

Range of use: Closed and open water circuit (pH >7) for mixing and distribution applications

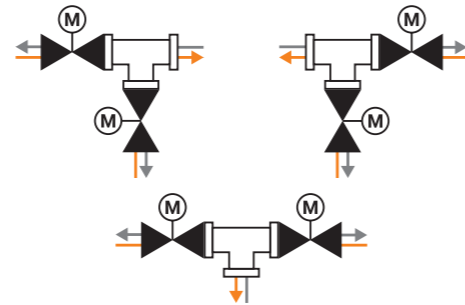
Fluid temperature: -20...120°C


Pipe connection: Flange (ISO 7005-2 and EN 1092-2) D7..WL/BAC also: ISO 7005-1 and EN 1092-1

Leakage rate: Tight, leakage rate A (EN 12266-1)

Flow characteristic: Characteristic curve parametrisable with the Belimo Assistant App: Control path A – AB: equal percentage and bypass B – AB: equal percentage inverted or control path A – AB: linear and bypass B – AB: linear inverted

Permissible operating pressure: p<sub>s</sub>: 1600 kPa



| PN   | DN  | k <sub>vs</sub> [m³/h] <sup>1)</sup> | Open/close <sup>2)</sup> | Modulating (2...10 V / 0.5...10 V) <sup>2)</sup> | BACnet MS/TP communication <sup>2)</sup> | Modbus RTU communication <sup>2)</sup> | MP-Bus communication <sup>2)</sup> | Nominal voltage                | Running time motor 90° <sup>3)</sup> | Auxiliary switch SPDT | Degree of protection | Control butterfly valve type with actuator | Δp <sub>s</sub> kPa | Δp <sub>max</sub> kPa | T-piece type         |
|--|-----|--------------------------------------|--------------------------|--|--|--|------------------------------------|--------------------------------|--------------------------------------|-----------------------|----------------------|--|---------------------|-----------------------|----------------------|
| <b>With communicative actuator</b>   |     |                                      |                          |  |  |  |                                    |                                |                                      |                       |                      |  |                     |                       |                      |
| <br>16 | 150 | 400                                  | ■                        | ■  | ■  | ■                                      | ■                                  | AC 24...240 V<br>DC 24...125 V | 35 s                                 | 4                     | IP66<br>IP67         | D7150NL/BAC <sup>4)</sup>                  | 1200                | 300                   | ZD7150 <sup>5)</sup> |
|  | 200 | 800                                  | ■                        | ■  | ■  | ■                                      | ■                                  |                                | 35 s                                 | 4                     | IP66<br>IP67         | D7200WL/BAC <sup>4)</sup>                  | 1400                | 300                   | ZD7200 <sup>5)</sup> |
|  | 250 | 1200                                 | ■                        | ■  | ■  | ■                                      | ■                                  |                                | 35 s                                 | 4                     | IP66<br>IP67         | D7250WL/BAC <sup>4)</sup>                  | 1400                | 300                   | ZD7250 <sup>5)</sup> |
|  | 300 | 1700                                 | ■                        | ■  | ■  | ■                                      | ■                                  |                                | 35 s                                 | 4                     | IP66<br>IP67         | D7300WL/BAC <sup>4)</sup>                  | 1400                | 300                   | ZD7300 <sup>5)</sup> |

**Suitable T-pieces**



Spheroidal graphite cast iron with fastening screws

<sup>1)</sup> For control applications with opening angle 60% (parametrisable with the Belimo Assistant App). The maximum flow speed of 4 m/s may not be exceeded in the control butterfly valve.

<sup>2)</sup> Parametrisable with the Belimo Assistant App

<sup>3)</sup> 30...120 s variable

<sup>4)</sup> T-piece is not included in scope of delivery.

<sup>5)</sup> The necessary fastening screws and nuts are included in the scope of delivery.

## 9

**Ball valves****Open/close and changeover applications**

|                        |                        |       |        |           |                   |    |
|------------------------|------------------------|-------|--------|-----------|-------------------|----|
| <b>Internal thread</b> | Open/close ball valves | 2-way |        | PN 25, 40 | <b>DN 15...50</b> | 68 |
|                        | Changeover ball valves | 3-way | T-bore |           |                   |    |
|                        | Changeover ball valves | 3-way | L-bore | PN 25, 40 | <b>DN 15...50</b> | 70 |
| <b>External thread</b> | Open/close ball valves | 2-way |        | PN 25, 40 | <b>DN 15...50</b> | 72 |
|                        | Changeover ball valves | 3-way | T-bore |           |                   |    |
| <b>Flange</b>          | Open/close ball valves | 2-way |        | PN 6      | <b>DN 15...50</b> | 74 |
|                        | Changeover ball valves | 3-way | T-bore |           |                   |    |

Please refer to the data sheets or notes for project planning for further technical data to be observed.

**Valve Sizer App**

Easily find the right valve and the right actuator for your application with the convenient Valve Sizer App. Install the app via the "App Store" or "Google Play". With the QR Code you can get there directly.



# DN 15...50

Range of use 2-way: Closed and open water circuit (pH >7)  
 3-way: Closed water circuit (pH >7)

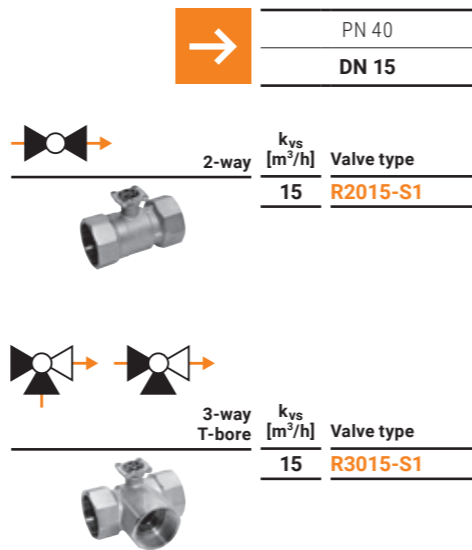
Fluid temperature -10...120°C <sup>1)</sup>

Pipe connection Internal thread Rp (ISO 7-1)

Leakage rate 2-way: air-bubble tight, leakage rate A (EN 12266-1)  
 3-way: Path A – AB: air-bubble tight, leakage rate A (EN 12266-1)/Bypass B – AB: Leakage class I

Flow 3-way: Bypass B – AB: approx. 50% of the  $k_{vs}$  value

Permissible operating pressure  $p_s$ : 1600 kPa



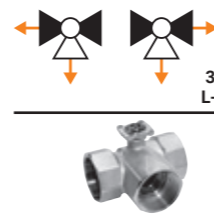
| Suitable actuators                 | Nominal torque | Open/close | 3-point | Fail-safe | Nominal voltage<br>AC/DC 24 V<br>AC 230 V | Running time motor 90° | Running time fail-safe | Actuator type            | $\Delta p_s$<br>kPa       | $\Delta p_{max}^{2)}$<br>kPa |                           |                       |      |
|------------------------------------|----------------|------------|---------|-----------|---|------------------------|------------------------|--------------------------|---------------------------|------------------------------|---------------------------|-----------------------|------|
|                                    |                |            |         |           |   |                        |                        |                          |                           |                              | Without auxiliary switch  | With auxiliary switch |      |
| <b>Compact actuators</b>           |                |            |         |           |   |                        |                        |                          |                           |                              |                           |                       |      |
| TR..<br>TRY..                      | 2 Nm           | ■          | ■       | —         | 24 V                                      | 100 s                  | —                      | TR24 <sup>3)</sup>       | 1400                      | 1000                         |                           |                       |      |
|                                    |                | ■          | ■       | —         | 230 V                                     | 35 s                   | —                      | TRY24 <sup>3)</sup>      | 1400                      | 1000                         |                           |                       |      |
|                                    |                | ■          | ■       | —         | 230 V                                     | 35 s                   | —                      | TRY230 <sup>3)</sup>     | 1400                      | 1000                         |                           |                       |      |
| <b>Standard actuators</b>          |                |            |         |           |   |                        |                        |                          |                           |                              |                           |                       |      |
| LR..<br>NR..<br>SR..               | 5 Nm           | ■          | ■       | —         | 24 V                                      | 90 s                   | —                      | LR24A                    | 1400                      | 1000                         |                           |                       |      |
|                                    |                | ■          | ■       | —         | 230 V                                     |                        | —                      | LR230A                   | 1400                      | 1000                         |                           |                       |      |
|                                    | 10 Nm          | ■          | ■       | —         | 24 V                                      | 90 s                   | —                      | NR24A                    | 1400                      | 1000                         |                           |                       |      |
|                                    |                | ■          | ■       | —         | 230 V                                     |                        | —                      | NR230A                   | 1400                      | 1000                         |                           |                       |      |
|                                    | 20 Nm          | ■          | ■       | —         | 24 V                                      | 90 s                   | —                      | SR24A                    | 1400                      | 1000                         |                           |                       |      |
|                                    |                | ■          | ■       | —         | 230 V                                     |                        | —                      | SR230A                   | 1400                      | 1000                         |                           |                       |      |
| <b>Very fast running actuators</b> |                |            |         |           |   |                        |                        |                          |                           |                              |                           |                       |      |
| LRQ..<br>NRQ..<br>SRQ..            | 4 Nm           | ■          | ■       | —         | 24 V                                      | 9 s                    | —                      | LRQ24A                   | 1400                      | 1000                         |                           |                       |      |
|                                    | 8 Nm           | ■          | ■       | —         | 24 V                                      | 9 s                    | —                      | NRQ24A                   | 1400                      | 1000                         |                           |                       |      |
|                                    | 16 Nm          | ■          | ■       | —         | 24 V                                      | 9 s                    | —                      | SRQ24A                   | 1400                      | 1000                         |                           |                       |      |
| <b>Fail-safe actuators NC/NO</b>   |                |            |         |           |   |                        |                        |                          |                           |                              |                           |                       |      |
| TRF..                              | 2.5 Nm         | ■          | —       | ■         | 24 V                                      | 75 s                   | <75 s                  | TRF24 <sup>3)</sup>      | ..-S                      | ..-O                         | ..-S-O                    | 1400                  | 1000 |
|                                    |                | ■          | —       | ■         | 230 V                                     |                        | TRF230 <sup>3)</sup>   | ..-S                     | ..-O                      | ..-S-O                       | 1400                      | 1000                  |      |
|                                    | 4 Nm           | ■          | —       | ■         | 24 V                                      | 75 s                   | <20 s                  | TRF24 <sup>3)</sup>      | ..-S                      | ..-O                         | ..-S-O                    | 1400                  | 1000 |
|                                    |                | ■          | —       | ■         | 230 V                                     |                        | TRF230 <sup>3)</sup>   | ..-S                     | ..-O                      | ..-S-O                       | 1400                      | 1000                  |      |
| LRF..                              | 10 Nm          | ■          | —       | ■         | 24 V                                      | 75 s                   | <20 s                  | Without auxiliary switch | With 2 auxiliary switches | Without auxiliary switch     | With 2 auxiliary switches | 1400                  | 1000 |
|                                    |                | ■          | —       | ■         | AC 24...240 V<br>DC 24...125 V            |                        | NRF24A                 | ..-S2                    | ..-O                      | ..-S2-O                      | 1400                      | 1000                  |      |
|                                    | 20 Nm          | ■          | —       | ■         | 24 V                                      | 75 s                   | <20 s                  | Without auxiliary switch | With 2 auxiliary switches | Without auxiliary switch     | With 2 auxiliary switches | 1400                  | 1000 |
|                                    |                | ■          | —       | ■         | AC 24...240 V<br>DC 24...125 V            |                        | NRF24A                 | ..-S2                    | ..-O                      | ..-S2-O                      | 1400                      | 1000                  |      |
| NRF..<br>SRF..                     | 20 Nm          | ■          | —       | ■         | 24 V                                      | 75 s                   | <20 s                  | Without auxiliary switch | With 2 auxiliary switches | Without auxiliary switch     | With 2 auxiliary switches | 1400                  | 1000 |
|                                    |                | ■          | —       | ■         | AC 24...240 V<br>DC 24...125 V            |                        | SRF24A                 | ..-S2                    | ..-O                      | ..-S2-O                      | 1400                      | 1000                  |      |

<sup>1)</sup> Compact actuators TR../TRY.. only up to 100°C  
<sup>2)</sup> Low-noise operation  $\Delta p_{max} = 200$  kPa  
<sup>3)</sup> If fluid temperature  $\geq 100^\circ\text{C}$ , then pipeline and valve must be insulated.

| PN 40                           |                              |                                 |                              | PN 25                           |                              |                                 |                              |                                 |                              |                                 |                              |
|---------------------------------|------------------------------|---------------------------------|------------------------------|---------------------------------|------------------------------|---------------------------------|------------------------------|---------------------------------|------------------------------|---------------------------------|------------------------------|
| DN 15                           |                              | DN 20                           |                              | DN 25                           |                              | DN 32                           |                              | DN 40                           |                              | DN 50                           |                              |
| $k_{vs}$<br>[m <sup>3</sup> /h] | Valve type                   | $k_{vs}$<br>[m <sup>3</sup> /h] | Valve type                   | $k_{vs}$<br>[m <sup>3</sup> /h] | Valve type                   | $k_{vs}$<br>[m <sup>3</sup> /h] | Valve type                   | $k_{vs}$<br>[m <sup>3</sup> /h] | Valve type                   | $k_{vs}$<br>[m <sup>3</sup> /h] | Valve type                   |
| 15                              | R2015-S1                     | 32                              | R2020-S2                     | 26                              | R2025-S2                     | 32                              | R2032-S3                     | 31                              | R2040-S3                     | 49                              | R2050-S4                     |
| 15                              | R3015-S1                     | 32                              | R3020-S2                     | 26                              | R3025-S2                     | 32                              | R3032-S3                     | 31                              | R3040-S3                     | 49                              | R3050-S4                     |
| $\Delta p_s$<br>kPa             | $\Delta p_{max}^{2)}$<br>kPa | $\Delta p_s$<br>kPa             | $\Delta p_{max}^{2)}$<br>kPa | $\Delta p_s$<br>kPa             | $\Delta p_{max}^{2)}$<br>kPa | $\Delta p_s$<br>kPa             | $\Delta p_{max}^{2)}$<br>kPa | $\Delta p_s$<br>kPa             | $\Delta p_{max}^{2)}$<br>kPa | $\Delta p_s$<br>kPa             | $\Delta p_{max}^{2)}$<br>kPa |
| 1400                            | 1000                         | 1400                            | 1000                         | 1400                            | 1000                         | 1400                            | 1000                         | 1400                            | 1000                         | 1400                            | 1000                         |
| 1400                            | 1000                         | 1400                            | 1000                         | 1400                            | 1000                         | 1400                            | 1000                         | 1400                            | 1000                         | 1400                            | 1000                         |
| 1400                            | 1000                         | 1400                            | 1000                         | 1400                            | 1000                         | 1400                            | 1000                         | 1400                            | 1000                         | 1400                            | 1000                         |
| 1400                            | 1000                         | 1400                            | 1000                         | 1400                            | 1000                         | 1400                            | 1000                         | 1400                            | 1000                         | 1400                            | 1000                         |
| 1400                            | 1000                         | 1400                            | 1000                         | 1400                            | 1000                         | 1400                            | 1000                         | 1400                            | 1000                         | 1400                            | 1000                         |
| 1400                            | 1000                         | 1400                            | 1000                         | 1400                            | 1000                         | 1400                            | 1000                         | 1400                            | 1000                         | 1400                            | 1000                         |
| 1400                            | 1000                         | 1400                            | 1000                         | 1400                            | 1000                         | 1400                            | 1000                         | 1400                            | 1000                         | 1400                            | 1000                         |
| 1400                            | 1000                         | 1400                            | 1000                         | 1400                            | 1000                         | 1400                            | 1000                         | 1400                            | 1000                         | 1400                            | 1000                         |

# DN 15...50

Range of use Closed and open water circuit (pH >7)  
 Fluid temperature -10...100°C  
 Pipe connection Internal thread Rp (ISO 7-1)  
 Leakage rate Air-bubble tight, leakage rate A (EN 12266-1)  
 Permissible operating pressure p<sub>s</sub>: 1600 kPa



|                 |            |
|-----------------|------------|
| $k_{vs}$ [m³/h] | Valve type |
| 5.5             | R3015-BL1  |

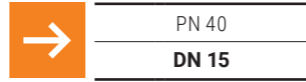
| Suitable actuators                 | Nominal torque | Open/close |           |               | Nominal voltage<br>AC/DC 24 V<br>AC 230 V | Running time motor 90° | Running time fail-safe | Actuator type            | $\Delta p_s$<br>kPa     | $\Delta p_{max}^{1)}$<br>kPa |
|------------------------------------|----------------|------------|-----------|---------------|---|------------------------|------------------------|--------------------------|-------------------------|------------------------------|
|                                    |                | 3-point    | Fail-safe | Actuator type |   |                        |                        |                          |                         |                              |
| <b>Compact actuators</b>           |                |            |           |               |   |                        |                        |                          |                         |                              |
| TR..<br>TRY..                      | 2 Nm           | ■          | ■         | —             | 24 V                                      | 100 s                  |                        | TR24                     | 500                     | 350                          |
|                                    |                | ■          | ■         | —             | 230 V                                     | 35 s                   |                        | TRY24                    | 500                     | 350                          |
|                                    |                | ■          | ■         | —             | 230 V                                     | 35 s                   |                        | TRY230                   | 500                     | 350                          |
|                                    |                |            |           |               |   |                        |                        | Without auxiliary switch | With auxiliary switch   |                              |
| <b>Standard actuators</b>          |                |            |           |               |   |                        |                        |                          |                         |                              |
| LR..<br>NR..<br>SR..               | 5 Nm           | ■          | ■         | —             | 24 V                                      | 90 s                   |                        | LR24A                    | 500                     | 350                          |
|                                    |                | ■          | ■         | —             | 230 V                                     | 90 s                   |                        | LR230A                   | 500                     | 350                          |
|                                    | 10 Nm          | ■          | ■         | —             | 24 V                                      | 90 s                   |                        | NR24A                    | 500                     | 350                          |
|                                    |                | ■          | ■         | —             | 230 V                                     | 90 s                   |                        | NR230A                   | 500                     | 350                          |
|                                    | 20 Nm          | ■          | ■         | —             | 24 V                                      | 90 s                   |                        | SR24A                    | 500                     | 350                          |
|                                    |                | ■          | ■         | —             | 230 V                                     | 90 s                   |                        | SR230A                   | 500                     | 350                          |
| <b>Very fast running actuators</b> |                |            |           |               |   |                        |                        |                          |                         |                              |
| LRQ..<br>NRQ..<br>SRQ..            | 4 Nm           | ■          | ■         | —             | 24 V                                      | 9 s                    |                        | LRQ24A                   | 500                     | 350                          |
|                                    | 8 Nm           | ■          | ■         | —             | 24 V                                      | 9 s                    |                        | NRQ24A                   | 500                     | 350                          |
|                                    | 16 Nm          | ■          | ■         | —             | 24 V                                      | 9 s                    |                        | SRQ24A                   | 500                     | 350                          |
|                                    |                |            |           |               |   |                        |                        | Actuator type NC         | Actuator type NO        |                              |
|                                    |                |            |           |               |   |                        |                        | Without auxiliary switch | With 1 auxiliary switch | Without auxiliary switch     |
|                                    |                |            |           |               |   |                        |                        |                          |                         | With 1 auxiliary switch      |
| <b>Fail-safe actuators NC/NO</b>   |                |            |           |               |   |                        |                        |                          |                         |                              |
| TRF..                              | 2.5 Nm         | ■          | —         | ■             | 24 V                                      | 75 s                   | <75 s                  | TRF24                    | 500                     | 350                          |
|                                    |                | ■          | —         | ■             | 230 V                                     | 75 s                   | <75 s                  | TRF230                   | 500                     | 350                          |
|                                    | 4 Nm           | ■          | —         | ■             | 24 V                                      | 75 s                   | <20 s                  | LRF24                    | 500                     | 350                          |
|                                    |                | ■          | —         | ■             | 230 V                                     | 75 s                   | <20 s                  | LRF230                   | 500                     | 350                          |
| LRF..                              | 10 Nm          | ■          | —         | ■             | 24 V                                      | 75 s                   | <20 s                  | NRF24A                   | 500                     | 350                          |
|                                    |                | ■          | —         | ■             | AC 24...240 V<br>DC 24...125 V            | 75 s                   | <20 s                  | NRFA                     | 500                     | 350                          |
|                                    | 20 Nm          | ■          | —         | ■             | 24 V                                      | 75 s                   | <20 s                  | SRF24A                   | 500                     | 350                          |
|                                    |                | ■          | —         | ■             | AC 24...240 V<br>DC 24...125 V            | 75 s                   | <20 s                  | SRFA                     | 500                     | 350                          |

<sup>1)</sup> Low-noise operation  $\Delta p_{max} = 200$  kPa

| PN 40            |                           |                  |                           | PN 25            |                           |                  |                           |                  |                           |                  |                           |                  |                           |                  |                           |
|------------------|---------------------------|------------------|---------------------------|------------------|---------------------------|------------------|---------------------------|------------------|---------------------------|------------------|---------------------------|------------------|---------------------------|------------------|---------------------------|
| DN 20            |                           | DN 25            |                           | DN 32            |                           |                  |                           | DN 40            |                           |                  |                           | DN 50            |                           |                  |                           |
| $k_{vs}$ [m³/h]  | Valve type                | $k_{vs}$ [m³/h]  | Valve type                | $k_{vs}$ [m³/h]  | Valve type                | $k_{vs}$ [m³/h]  | Valve type                | $k_{vs}$ [m³/h]  | Valve type                | $k_{vs}$ [m³/h]  | Valve type                | $k_{vs}$ [m³/h]  | Valve type                | $k_{vs}$ [m³/h]  | Valve type                |
| 11               | R3020-BL2                 | 10               | R3025-BL2                 | 9                | R3032-BL2                 | 15               | R3032-BL3                 | 14               | R3040-BL3                 | 47               | R3040-BL4                 | 24               | R3050-BL3                 | 75               | R3050-BL4                 |
| $\Delta p_s$ kPa | $\Delta p_{max}^{1)}$ kPa | $\Delta p_s$ kPa | $\Delta p_{max}^{1)}$ kPa | $\Delta p_s$ kPa | $\Delta p_{max}^{1)}$ kPa | $\Delta p_s$ kPa | $\Delta p_{max}^{1)}$ kPa | $\Delta p_s$ kPa | $\Delta p_{max}^{1)}$ kPa | $\Delta p_s$ kPa | $\Delta p_{max}^{1)}$ kPa | $\Delta p_s$ kPa | $\Delta p_{max}^{1)}$ kPa | $\Delta p_s$ kPa | $\Delta p_{max}^{1)}$ kPa |
| 500              | 350                       | 500              | 350                       | 500              | 350                       | 500              | 350                       | 500              | 350                       | 500              | 350                       | 500              | 350                       | 500              | 350                       |
| 500              | 350                       | 500              | 350                       | 500              | 350                       | 500              | 350                       | 500              | 350                       | 500              | 350                       | 500              | 350                       | 500              | 350                       |
| 500              | 350                       | 500              | 350                       | 500              | 350                       | 500              | 350                       | 500              | 350                       | 500              | 350                       | 500              | 350                       | 500              | 350                       |
| 500              | 350                       | 500              | 350                       | 500              | 350                       | 500              | 350                       | 500              | 350                       | 500              | 350                       | 500              | 350                       | 500              | 350                       |
| 500              | 350                       | 500              | 350                       | 500              | 350                       | 500              | 350                       | 500              | 350                       | 500              | 350                       | 500              | 350                       | 500              | 350                       |
| 500              | 350                       | 500              | 350                       | 500              | 350                       | 500              | 350                       | 500              | 350                       | 500              | 350                       | 500              | 350                       | 500              | 350                       |
| 500              | 350                       | 500              | 350                       | 500              | 350                       | 500              | 350                       | 500              | 350                       | 500              | 350                       | 500              | 350                       | 500              | 350                       |
| 500              | 350                       | 500              | 350                       | 500              | 350                       | 500              | 350                       | 500              | 350                       | 500              | 350                       | 500              | 350                       | 500              | 350                       |
| 500              | 350                       | 500              | 350                       | 500              | 350                       | 500              | 350                       | 500              | 350                       | 500              | 350                       | 500              | 350                       | 500              | 350                       |
| 500              | 350                       | 500              | 350                       | 500              | 350                       | 500              | 350                       | 500              | 350                       | 500              | 350                       | 500              | 350                       | 500              | 350                       |
| 500              | 350                       | 500              | 350                       | 500              | 350                       | 500              | 350                       | 500              | 350                       | 500              | 350                       | 500              | 350                       | 500              | 350                       |
| 500              | 350                       | 500              | 350                       | 500              | 350                       | 500              | 350                       | 500              | 350                       | 500              | 350                       | 500              | 350                       | 500              | 350                       |
| 500              | 350                       | 500              | 350                       | 500              | 350                       | 500              | 350                       | 500              | 350                       | 500              | 350                       | 500              | 350                       | 500              | 350                       |

# DN 15...50

Range of use Closed and open water circuit (pH >7)  
 Fluid temperature -10...100°C  
 Pipe connection External thread G (ISO 228-1)  
 Leakage rate 2-way: air-bubble tight, leakage rate A (EN 12266-1)  
 3-way: Path A – AB: air-bubble tight, leakage rate A (EN 12266-1)/Bypass B – AB: Leakage class I  
 Flow 3-way: Bypass B – AB: approx. 50% of the  $k_{vs}$  value  
 Permissible operating pressure  $p_s$ : 1600 kPa



| 2-way |  | $k_{vs}$ [m³/h] | Valve type |
|-------|--|-----------------|------------|
|       |  | 8.6             | R415       |

| 3-way T-bore |  | $k_{vs}$ [m³/h] | Valve type |
|--------------|--|-----------------|------------|
|              |  | 8.6             | R515       |

| Suitable actuators                 | Nominal torque | Open/close | 3-point | Fail-safe                   | Nominal voltage AC/DC 24 V AC 230 V | Running time motor 90° | Running time fail-safe | Actuator type |                          |                           |
|------------------------------------|----------------|------------|---------|-----------------------------|-------------------------------------|------------------------|------------------------|---------------|--------------------------|---------------------------|
|                                    |                |            |         |                             |                                     |                        |                        |               | $\Delta p_s$ kPa         | $\Delta p_{max}^{1)}$ kPa |
| <b>Compact actuators</b>           |                |            |         |                             |                                     |                        |                        |               |                          |                           |
| TR..<br>TRY..                      | 2 Nm           | ■          | ■       | —                           | 24 V                                | 100 s                  | —                      | TR24          | 1400                     | 400                       |
|                                    |                | ■          | ■       | —                           | 230 V                               | 35 s                   | —                      | TRY24         | 1400                     | 400                       |
|                                    |                | ■          | ■       | —                           | 230 V                               | 35 s                   | —                      | TRY230        | 1400                     | 400                       |
|                                    |                |            |         |                             |                                     |                        |                        |               | Without auxiliary switch | With auxiliary switch     |
| <b>Standard actuators</b>          |                |            |         |                             |                                     |                        |                        |               |                          |                           |
| LR..<br>NR..<br>SR..               | 5 Nm           | ■          | ■       | —                           | 24 V                                | 90 s                   | —                      | LR24A         | 1400                     | 400                       |
|                                    |                | ■          | ■       | —                           | 230 V                               |                        |                        | LR230A        | 1400                     | 400                       |
|                                    | 10 Nm          | ■          | ■       | —                           | 24 V                                | 90 s                   | —                      | NR24A         | 1400                     | 400                       |
|                                    |                | ■          | ■       | —                           | 230 V                               |                        |                        | NR230A        | 1400                     | 400                       |
|                                    | 20 Nm          | ■          | ■       | —                           | 24 V                                | 90 s                   | —                      | SR24A         | 1400                     | 400                       |
|                                    |                | ■          | ■       | —                           | 230 V                               |                        |                        | SR230A        | 1400                     | 400                       |
| <b>Very fast running actuators</b> |                |            |         |                             |                                     |                        |                        |               |                          |                           |
| LRQ..<br>NRQ..<br>SRQ..            | 4 Nm           | ■          | ■       | —                           | 24 V                                | 9 s                    | —                      | LRQ24A        | 1400                     | 400                       |
|                                    |                | ■          | ■       | —                           | 24 V                                |                        |                        | NRQ24A        | 1400                     | 400                       |
|                                    |                | ■          | ■       | —                           | 24 V                                |                        |                        | SRQ24A        | 1400                     | 400                       |
|                                    |                |            |         |                             |                                     |                        |                        |               | Actuator type NC         | Actuator type NO          |
|                                    |                |            |         |                             |                                     |                        |                        |               | Without auxiliary switch | With 1 auxiliary switch   |
| <b>Fail-safe actuators NC/NO</b>   |                |            |         |                             |                                     |                        |                        |               |                          |                           |
| TRF..                              | 2.5 Nm         | ■          | ■       | —                           | 24 V                                | 75 s                   | <75 s                  | TRF24         | 1400                     | 400                       |
|                                    |                | ■          | ■       | —                           | 230 V                               |                        |                        | TRF230        | 1400                     | 400                       |
|                                    | 4 Nm           | ■          | ■       | —                           | 24 V                                | 75 s                   | <20 s                  | TRF24         | 1400                     | 400                       |
|                                    |                | ■          | ■       | —                           | 230 V                               |                        |                        | TRF230        | 1400                     | 400                       |
|                                    |                |            |         |                             |                                     |                        |                        |               | Without auxiliary switch | With 1 auxiliary switch   |
| LRF..                              | 10 Nm          | ■          | ■       | —                           | 24 V                                | 75 s                   | <20 s                  | NRF24A        | 1400                     | 400                       |
|                                    |                | ■          | ■       | —                           | AC 24...240 V DC 24...125 V         |                        |                        | NRFA          | 1400                     | 400                       |
|                                    | 20 Nm          | ■          | ■       | —                           | 24 V                                | 75 s                   | <20 s                  | SRF24A        | 1400                     | 400                       |
| ■                                  |                | ■          | —       | AC 24...240 V DC 24...125 V | SRFA                                |                        |                        | 1400          | 400                      |                           |

<sup>1)</sup> Low-noise operation  $\Delta p_{max} = 200$  kPa

| PN 40            |                           |                  |                           | PN 25            |                           |                  |                           |                  |                           |
|------------------|---------------------------|------------------|---------------------------|------------------|---------------------------|------------------|---------------------------|------------------|---------------------------|
| DN 20            |                           | DN 25            |                           | DN 32            |                           | DN 40            |                           | DN 50            |                           |
| $k_{vs}$ [m³/h]  | Valve type                | $k_{vs}$ [m³/h]  | Valve type                | $k_{vs}$ [m³/h]  | Valve type                | $k_{vs}$ [m³/h]  | Valve type                | $k_{vs}$ [m³/h]  | Valve type                |
| 21               | R420                      | 26               | R425                      | 32               | R432                      | 32               | R440                      | 49               | R450                      |
| $k_{vs}$ [m³/h]  | Valve type                | $k_{vs}$ [m³/h]  | Valve type                | $k_{vs}$ [m³/h]  | Valve type                | $k_{vs}$ [m³/h]  | Valve type                | $k_{vs}$ [m³/h]  | Valve type                |
| 21               | R520                      | 26               | R525                      | 32               | R532                      | 32               | R540                      | 49               | R550                      |
| $\Delta p_s$ kPa | $\Delta p_{max}^{1)}$ kPa | $\Delta p_s$ kPa | $\Delta p_{max}^{1)}$ kPa | $\Delta p_s$ kPa | $\Delta p_{max}^{1)}$ kPa | $\Delta p_s$ kPa | $\Delta p_{max}^{1)}$ kPa | $\Delta p_s$ kPa | $\Delta p_{max}^{1)}$ kPa |
| 1400             | 400                       | 1400             | 400                       | 1400             | 400                       | 1400             | 400                       | 1400             | 400                       |
| 1400             | 400                       | 1400             | 400                       | 1400             | 400                       | 1400             | 400                       | 1400             | 400                       |
| 1400             | 400                       | 1400             | 400                       | 1400             | 400                       | 1400             | 400                       | 1400             | 400                       |
| 1400             | 400                       | 1400             | 400                       | 1400             | 400                       | 1400             | 400                       | 1400             | 400                       |
| 1400             | 400                       | 1400             | 400                       | 1400             | 400                       | 1400             | 400                       | 1400             | 400                       |
| 1400             | 400                       | 1400             | 400                       | 1400             | 400                       | 1400             | 400                       | 1400             | 400                       |
| 1400             | 400                       | 1400             | 400                       | 1400             | 400                       | 1400             | 400                       | 1400             | 400                       |
| 1400             | 400                       | 1400             | 400                       | 1400             | 400                       | 1400             | 400                       | 1400             | 400                       |
| 1400             | 400                       | 1400             | 400                       | 1400             | 400                       | 1400             | 400                       | 1400             | 400                       |
| 1400             | 400                       | 1400             | 400                       | 1400             | 400                       | 1400             | 400                       | 1400             | 400                       |
| 1400             | 400                       | 1400             | 400                       | 1400             | 400                       | 1400             | 400                       | 1400             | 400                       |

# DN 15...50

Range of use 2-way: Closed and open water circuit (pH >7)  
 3-way: Closed water circuit (pH >7)

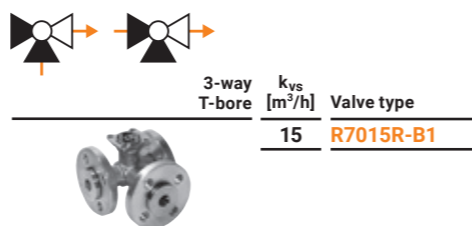
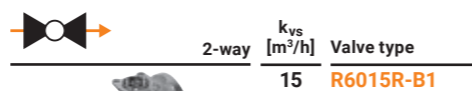
Fluid temperature -10...100°C

Pipe connection Flange PN 6 (EN 1092-1/4)

Leakage rate 2-way: air-bubble tight, leakage rate A (EN 12266-1)  
 3-way: Path A – AB: air-bubble tight, leakage rate A (EN 12266-1)/Bypass B – AB: Leakage class I

Flow 3-way: Bypass B – AB: approx. 50% of the  $k_{VS}$  value

Permissible operating pressure  $p_s$ : 600 kPa



| Suitable actuators                 | Nominal torque | Open/close | 3-point | Fail-safe | Nominal voltage<br>AC/DC 24 V<br>AC 230 V | Running time motor 90° | Running time fail-safe | Actuator type | $\Delta p_s$<br>kPa      | $\Delta p_{max}$<br>kPa | 2-way                     |            | 3-way T-bore             |            |                           |  |
|------------------------------------|----------------|------------|---------|-----------|---|------------------------|------------------------|---------------|--------------------------|-------------------------|---------------------------|------------|--------------------------|------------|---------------------------|--|
|                                    |                |            |         |           |   |                        |                        |               |                          |                         | $k_{VS}$<br>[m³/h]        | Valve type | $k_{VS}$<br>[m³/h]       | Valve type |                           |  |
| <b>Compact actuators</b>           |                |            |         |           |   |                        |                        |               |                          |                         |                           |            |                          |            |                           |  |
| TR..<br>TRY..                      | 2 Nm           | ■          | ■       | —         | 24 V                                      | 35 s                   | —                      | TR24          | 600                      | 100                     |                           |            |                          |            |                           |  |
|                                    |                | ■          | ■       | —         | 230 V                                     | 100 s                  | —                      | TRY24         | 600                      | 100                     |                           |            |                          |            |                           |  |
|                                    |                | ■          | ■       | —         | 230 V                                     | 35 s                   | —                      | TRY230        | 600                      | 100                     |                           |            |                          |            |                           |  |
|                                    |                |            |         |           |   |                        |                        |               | Without auxiliary switch |                         | With auxiliary switch     |            |                          |            |                           |  |
| <b>Standard actuators</b>          |                |            |         |           |   |                        |                        |               |                          |                         |                           |            |                          |            |                           |  |
| LR..<br>NR..<br>SR..               | 5 Nm           | ■          | ■       | —         | 24 V                                      | 90 s                   | —                      | LR24A         | 600                      | 100                     | ..-S                      |            |                          |            |                           |  |
|                                    |                | ■          | ■       | —         | 230 V                                     | 90 s                   | —                      | LR230A        | 600                      | 100                     | ..-S                      |            |                          |            |                           |  |
|                                    | 10 Nm          | ■          | ■       | —         | 24 V                                      | 90 s                   | —                      | NR24A         | 600                      | 100                     | ..-S                      |            |                          |            |                           |  |
|                                    |                | ■          | ■       | —         | 230 V                                     | 90 s                   | —                      | NR230A        | 600                      | 100                     | ..-S                      |            |                          |            |                           |  |
| 20 Nm                              | ■              | ■          | —       | 24 V      | 90 s                                      | —                      | SR24A                  | 600           | 100                      | ..-S                    |                           |            |                          |            |                           |  |
|                                    | ■              | ■          | —       | 230 V     | 90 s                                      | —                      | SR230A                 | 600           | 100                      | ..-S                    |                           |            |                          |            |                           |  |
| <b>Very fast running actuators</b> |                |            |         |           |   |                        |                        |               |                          |                         |                           |            |                          |            |                           |  |
| LRQ..<br>NRQ..<br>SRQ..            | 4 Nm           | ■          | ■       | —         | 24 V                                      | 9 s                    | —                      | LRQ24A        | 600                      | 100                     |                           |            |                          |            |                           |  |
|                                    | 8 Nm           | ■          | ■       | —         | 24 V                                      | 9 s                    | —                      | NRQ24A        | 600                      | 100                     |                           |            |                          |            |                           |  |
|                                    | 16 Nm          | ■          | ■       | —         | 24 V                                      | 9 s                    | —                      | SRQ24A        | 600                      | 100                     |                           |            |                          |            |                           |  |
|                                    |                |            |         |           |   |                        |                        |               | Actuator type NC         |                         | Actuator type NO          |            |                          |            |                           |  |
|                                    |                |            |         |           |   |                        |                        |               | Without auxiliary switch |                         | With 1 auxiliary switch   |            | Without auxiliary switch |            | With 1 auxiliary switch   |  |
| <b>Fail-safe actuators NC/NO</b>   |                |            |         |           |   |                        |                        |               |                          |                         |                           |            |                          |            |                           |  |
| TRF..                              | 2.5 Nm         | ■          | ■       | —         | 24 V                                      | 75 s                   | <75 s                  | TRF24         | ..-S                     | ..-O                    | ..-S-O                    | 600        | 100                      |            |                           |  |
|                                    |                | ■          | ■       | —         | 230 V                                     | 75 s                   | <75 s                  | TRF230        | ..-S                     | ..-O                    | ..-S-O                    | 600        | 100                      |            |                           |  |
| LRF..                              | 4 Nm           | ■          | ■       | —         | 24 V                                      | 75 s                   | <20 s                  | LRF24         | ..-S                     | ..-O                    | ..-S-O                    | 600        | 100                      |            |                           |  |
|                                    |                | ■          | ■       | —         | 230 V                                     | 75 s                   | <20 s                  | LRF230        | ..-S                     | ..-O                    | ..-S-O                    | 600        | 100                      |            |                           |  |
|                                    |                |            |         |           |   |                        |                        |               | Without auxiliary switch |                         | With 2 auxiliary switches |            | Without auxiliary switch |            | With 2 auxiliary switches |  |
| NRF..<br>SRF..                     | 10 Nm          | ■          | ■       | —         | 24 V                                      | 75 s                   | <20 s                  | NRF24A        | ..-S2                    | ..-O                    | ..-S2-O                   | 600        | 100                      |            |                           |  |
|                                    |                | ■          | ■       | —         | AC 24...240 V<br>DC 24...125 V            | 75 s                   | <20 s                  | NRFA          | ..-S2                    | ..-O                    | ..-S2-O                   | 600        | 100                      |            |                           |  |
| NRF..<br>SRF..                     | 20 Nm          | ■          | ■       | —         | 24 V                                      | 75 s                   | <20 s                  | SRF24A        | ..-S2                    | ..-O                    | ..-S2-O                   | 600        | 100                      |            |                           |  |
|                                    |                | ■          | ■       | —         | AC 24...240 V<br>DC 24...125 V            | 75 s                   | <20 s                  | SRFA          | ..-S2                    | ..-O                    | ..-S2-O                   | 600        | 100                      |            |                           |  |

Subject to technical modifications

|                     |                         | PN 6                |                         |                     |                         |                     |                         |                     |                         |                     |                         |
|---------------------|-------------------------|---------------------|-------------------------|---------------------|-------------------------|---------------------|-------------------------|---------------------|-------------------------|---------------------|-------------------------|
|                     |                         | DN 20               | DN 25                   | DN 32               | DN 40                   | DN 50               |                         |                     |                         |                     |                         |
| $k_{VS}$<br>[m³/h]  | Valve type              | $k_{VS}$<br>[m³/h]  | Valve type              | $k_{VS}$<br>[m³/h]  | Valve type              | $k_{VS}$<br>[m³/h]  | Valve type              | $k_{VS}$<br>[m³/h]  | Valve type              | $k_{VS}$<br>[m³/h]  | Valve type              |
| 32                  | R6020R-B1               | 26                  | R6025R-B2               | 32                  | R6032R-B3               | 31                  | R6040R-B3               | 49                  | R6050R-B3               |                     |                         |
| 32                  | R7020R-B1               | 26                  | R7025R-B2               | 32                  | R7032R-B3               | 31                  | R7040R-B3               | 49                  | R7050R-B3               |                     |                         |
| $\Delta p_s$<br>kPa | $\Delta p_{max}$<br>kPa | $\Delta p_s$<br>kPa | $\Delta p_{max}$<br>kPa | $\Delta p_s$<br>kPa | $\Delta p_{max}$<br>kPa | $\Delta p_s$<br>kPa | $\Delta p_{max}$<br>kPa | $\Delta p_s$<br>kPa | $\Delta p_{max}$<br>kPa | $\Delta p_s$<br>kPa | $\Delta p_{max}$<br>kPa |
| 600                 | 100                     | 600                 | 100                     | 600                 | 100                     | 600                 | 100                     | 600                 | 100                     | 600                 | 100                     |
| 600                 | 100                     | 600                 | 100                     | 600                 | 100                     | 600                 | 100                     | 600                 | 100                     | 600                 | 100                     |
| 600                 | 100                     | 600                 | 100                     | 600                 | 100                     | 600                 | 100                     | 600                 | 100                     | 600                 | 100                     |
| 600                 | 100                     | 600                 | 100                     | 600                 | 100                     | 600                 | 100                     | 600                 | 100                     | 600                 | 100                     |
| 600                 | 100                     | 600                 | 100                     | 600                 | 100                     | 600                 | 100                     | 600                 | 100                     | 600                 | 100                     |
| 600                 | 100                     | 600                 | 100                     | 600                 | 100                     | 600                 | 100                     | 600                 | 100                     | 600                 | 100                     |
| 600                 | 100                     | 600                 | 100                     | 600                 | 100                     | 600                 | 100                     | 600                 | 100                     | 600                 | 100                     |
| 600                 | 100                     | 600                 | 100                     | 600                 | 100                     | 600                 | 100                     | 600                 | 100                     | 600                 | 100                     |

Subject to technical modifications



# 10

## Potable water valves

DVGW, ACS and WRAS-certified  
open/close ball valves

Rotary valves

Internal thread

2-way

PN 10

DN 15...50

78

Please refer to the data sheets or notes for project planning for further technical data to be observed.

### Valve Sizer App

Easily find the right valve and the right actuator for your application with the convenient Valve Sizer App. Install the app via the "App Store" or "Google Play". With the QR Code you can get there directly.







# 11

## Open/close and changeover butterfly valves

### Open/close and changeover applications

|                          |                |              |                     |    |
|--------------------------|----------------|--------------|---------------------|----|
| <b>Wafer type flange</b> | 2-way          | PN 6, 10, 16 | <b>DN 25...300</b>  | 82 |
|                          |                | PN 10, 16    | <b>DN 350</b>       | 84 |
|                          |                | PN 16        | <b>DN 400...700</b> | 84 |
| <b>Lug type flange</b>   | 2-way          | PN 10, 16    | <b>DN 25...150</b>  | 82 |
|                          |                | PN 16        | <b>DN 200...300</b> | 82 |
|                          |                | PN 16        | <b>DN 350...700</b> | 84 |
|                          | 3-way          | PN 16        | <b>DN 150...300</b> | 86 |
| <b>Definitions</b>       | Formula symbol |              |                     | 87 |

Please refer to the data sheets or notes for project planning for further technical data to be observed.

#### Valve Sizer App


Easily find the right valve and the right actuator for your application with the convenient Valve Sizer App. Install the app via the "App Store" or "Google Play". With the QR Code you can get there directly.

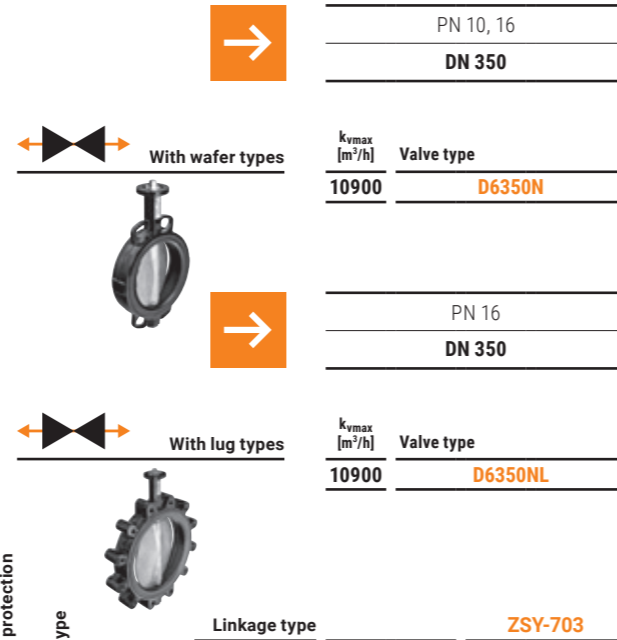




# DN 350...700

|                                |                                       |
|--------------------------------|---------------------------------------|
| Range of use                   | Closed and open water circuit (pH >7) |
| Fluid temperature              | -20...120°C                           |
| Pipe connection                | Flange (ISO 7005-2 and EN 1092-2)     |
| Leakage rate                   | Tight, leakage rate A (EN 12266-1)    |
| Permissible operating pressure | p <sub>s</sub> : 1600 kPa             |

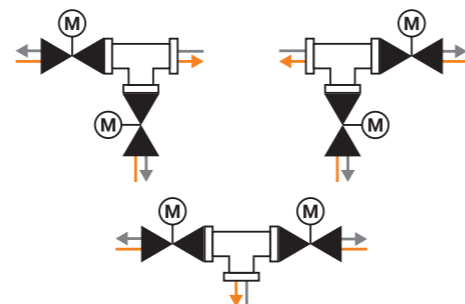
| Suitable actuators   | Nominal torque | Open/close | 3-point | Terminal connection | Nominal voltage AC 230 V | Running time motor 90° | Auxiliary switch SPDT | Degree of protection | Actuator type | Linkage type | PN 10, 16 |        |        |        |
|--|----------------|------------|---------|---------------------|--------------------------|------------------------|-----------------------|----------------------|---------------|--------------|-----------|--------|--------|--------|
|  |                |            |         |                     |                          |                        |                       |                      |               |              | DN 350    | DN 400 | DN 450 | DN 500 |
| SY..  | 650 Nm         | ■          | ■       | ■                   | 230 V                    | 31 s                   | 2                     | IP67                 | ZSY-703       | 10900        |           |        |        |        |
|  | 1000 Nm        | ■          | ■       | ■                   |                          | 55 s                   | 2                     | IP67                 |               | 1200         | 300       |        |        |        |
|  | 1500 Nm        | ■          | ■       | ■                   |                          | 55 s                   | 2                     | IP67                 |               |              |           |        |        |        |
|  | 2000 Nm        | ■          | ■       | ■                   |                          | 70 s                   | 2                     | IP67                 |               |              |           |        |        |        |
|  | 2500 Nm        | ■          | ■       | ■                   |                          | 70 s                   | 2                     | IP67                 |               |              |           |        |        |        |
|  | 3500 Nm        | ■          | ■       | ■                   |                          | 70 s                   | 2                     | IP67                 |               |              |           |        |        |        |




| PN 16   |                       |                          |                       |                          |                       |                          |                       |                          |                       |                          |                       |                          |                       |
|---|-----------------------|--------------------------|-----------------------|--------------------------|-----------------------|--------------------------|-----------------------|--------------------------|-----------------------|--------------------------|-----------------------|--------------------------|-----------------------|
| DN 400  |                       | DN 450                   |                       | DN 500                   |                       | DN 600                   |                       | DN 700                   |                       |                          |                       |                          |                       |
| k <sub>vmax</sub> [m³/h]  | Valve type            | k <sub>vmax</sub> [m³/h] | Valve type            | k <sub>vmax</sub> [m³/h] | Valve type            | k <sub>vmax</sub> [m³/h] | Valve type            | k <sub>vmax</sub> [m³/h] | Valve type            | k <sub>vmax</sub> [m³/h] | Valve type            | k <sub>vmax</sub> [m³/h] | Valve type            |
| 14200   | D6400N                | 18800                    | D6450N                | 24100                    | D6500N                | 37300                    | D6600N                | 42800                    | D6700N                |                          |                       |                          |                       |
| PN 16   |                       |                          |                       |                          |                       |                          |                       |                          |                       |                          |                       |                          |                       |
| DN 400  |                       | DN 450                   |                       | DN 500                   |                       | DN 600                   |                       | DN 700                   |                       |                          |                       |                          |                       |
| k <sub>vmax</sub> [m³/h]  | Valve type            | k <sub>vmax</sub> [m³/h] | Valve type            | k <sub>vmax</sub> [m³/h] | Valve type            | k <sub>vmax</sub> [m³/h] | Valve type            | k <sub>vmax</sub> [m³/h] | Valve type            | k <sub>vmax</sub> [m³/h] | Valve type            | k <sub>vmax</sub> [m³/h] | Valve type            |
| 14200   | D6400NL               | 18800                    | D6450NL               | 24100                    | D6500NL               | 37300                    | D6600NL               | 42800                    | D6700NL               |                          |                       |                          |                       |
| ZSY-401    ZSY-701    ZSY-702    ZSY-702    ZSY-901    ZSY-902    ZSY-903 |                       |                          |                       |                          |                       |                          |                       |                          |                       |                          |                       |                          |                       |
| Δp <sub>s</sub> kPa   | Δp <sub>max</sub> kPa | Δp <sub>s</sub> kPa      | Δp <sub>max</sub> kPa | Δp <sub>s</sub> kPa      | Δp <sub>max</sub> kPa | Δp <sub>s</sub> kPa      | Δp <sub>max</sub> kPa | Δp <sub>s</sub> kPa      | Δp <sub>max</sub> kPa | Δp <sub>s</sub> kPa      | Δp <sub>max</sub> kPa | Δp <sub>s</sub> kPa      | Δp <sub>max</sub> kPa |
| 600   | 300                   | 1200                     | 300                   | 600                      | 300                   | 1200                     | 300                   | 600                      | 300                   | 1200                     | 300                   | 600                      | 300                   |
|   |                       |                          |                       |                          |                       |                          |                       |                          |                       |                          |                       | 600                      | 300                   |
|   |                       |                          |                       |                          |                       |                          |                       |                          |                       |                          |                       | 1000                     | 300                   |
|   |                       |                          |                       |                          |                       |                          |                       |                          |                       |                          |                       | 200                      | 200                   |

## DN 150...300

|                                |   |
|--------------------------------|---|
| Range of use                   | Closed and open water circuit (pH >7) for changeover applications           |
| Fluid temperature              | -20...120°C   |
| Pipe connection                | Flange (ISO 7005-2 and EN 1092-2) D7..WL/BAC also: ISO 7005-1 and EN 1092-1 |
| Leakage rate                   | Tight, leakage rate A (EN 12266-1)  |
| Permissible operating pressure | p <sub>s</sub> : 1600 kPa   |



| PN   | DN | k <sub>vmax</sub> [m <sup>3</sup> /h] <sup>1)</sup> | Open/close <sup>2)</sup> | Modulating (2...10 V / 0.5...10 V) <sup>2)</sup> | BACnet MS/TP communication <sup>2)</sup> | Modbus RTU communication <sup>2)</sup> | MP-Bus communication <sup>2)</sup> | Nominal voltage                | Running time motor 90° <sup>3)</sup> | Auxiliary switch SPDT | Degree of protection | Changeover butterfly valve type with actuator | Δp <sub>s</sub> kPa | Δp <sub>max</sub> kPa | T-piece type         |
|--|----|---|--------------------------|--|--|--|------------------------------------|--------------------------------|--------------------------------------|-----------------------|----------------------|---|---------------------|-----------------------|----------------------|
| <b>With communicative actuator</b>   |    |   |                          |  |  |  |                                    |                                |                                      |                       |                      |   |                     |                       |                      |
| D7..L/BAC<br> | 16 | 150   | 1100                     | ■  | ■  | ■                                      | ■                                  | AC 24...240 V<br>DC 24...125 V | 35 s                                 | 4                     | IP66<br>IP67         | D7150NL/BAC <sup>4)</sup>                     | 1200                | 300                   | ZD7150 <sup>5)</sup> |
|  |    | 200   | 1800                     | ■  | ■  | ■                                      | ■                                  |                                | 35 s                                 | 4                     | IP66<br>IP67         | D7200WL/BAC <sup>4)</sup>                     | 1400                | 300                   | ZD7200 <sup>5)</sup> |
|  |    | 250   | 3000                     | ■  | ■  | ■                                      | ■                                  |                                | 35 s                                 | 4                     | IP66<br>IP67         | D7250WL/BAC <sup>4)</sup>                     | 1400                | 300                   | ZD7250 <sup>5)</sup> |
|  |    | 300   | 4700                     | ■  | ■  | ■                                      | ■                                  |                                | 35 s                                 | 4                     | IP66<br>IP67         | D7300WL/BAC <sup>4)</sup>                     | 1400                | 300                   | ZD7300 <sup>5)</sup> |

### Suitable T-pieces



Spherical graphite cast iron with fastening screws

## Definitions

### Formula symbol

|                       |   |
|-----------------------|---|
| <b>k<sub>v</sub></b>  | The flow coefficient k <sub>v</sub> [m <sup>3</sup> /h] is the specific volume flow of a valve with a defined delay angle with reference to 100 kPa (1 bar). The k <sub>v</sub> value changes, depending on the valve position. The flow coefficient is determined for a water temperature of 5...40 °C.  |
| <b>k<sub>vs</sub></b> | The k <sub>v</sub> value in reference to the nominal delay angle is referred to as the k <sub>vs</sub> value. The nominal delay angle defines the maximum valve opening and is specified by the manufacturer.<br>Characterised control valve (CCV):<br>Flow coefficient at 100% valve opening (90° angle of rotation)<br>Zone valve (QCV):<br>Flow coefficient with corresponding position of the end stop clip (variable)<br>Globe valves:<br>Flow coefficient at 100% valve opening<br>Butterfly valves:<br>Flow coefficient at 60% valve opening for control application |

$$k_{vs} = \frac{V'_{100}}{\sqrt{\frac{\Delta p_{v100}}{100}}}$$

Δp<sub>v100</sub> [kPa]  
V'<sub>100</sub> [m<sup>3</sup>/h]  
k<sub>vs</sub> [m<sup>3</sup>/h]

|                                     |  |
|-------------------------------------|--|
| <b>k<sub>vmax</sub></b>             | Flow coefficient for 100% opened butterfly valve for open/close and changeover application.  |
| <b>V'<sub>nom</sub></b>             | Maximum possible flow rate of a pressure-independent valve, catalogue value, delivery condition.                                       |
| <b>V'<sub>max</sub></b>             | Set maximum flow of a pressure-independent valve with the greatest positioning signal, e.g. 10 V.                                      |
| <b>Δp<sub>max</sub></b>             | Maximum permissible differential pressure for long service life across control path A – AB, with reference to the whole opening range. |
| <b>Δp<sub>v100</sub></b> (R4..D(K)) | Maximum permissible differential pressure for long service life with valve completely open.  |
| <b>Δp<sub>v0</sub></b> (R4..D(K))   | Maximum permissible differential pressure for long service life with closed valve.   |
| <b>Δp<sub>s</sub></b>               | Maximum close-off pressure at which the valve can still seal tightly, with reference to the particular leakage class.                  |
| <b>p<sub>s</sub></b>                | Permissible operating pressure   |

<sup>1)</sup> For changeover applications. The maximum flow speed of 4 m/s may not be exceeded in the changeover butterfly valve.

<sup>2)</sup> Parametrisable with the Belimo Assistant App

<sup>3)</sup> 30...120 s variable

<sup>4)</sup> T-piece is not included in scope of delivery.

<sup>5)</sup> The necessary fastening screws and nuts are included in the scope of delivery.

# All inclusive.

Belimo as a global market leader develops innovative solutions for the controlling of heating, ventilation and air-conditioning systems. Actuators, valves and sensors represent our core business.

Always focusing on customer added value, we deliver more than only products. We offer you the complete product range for the regulation and control of HVAC systems from a single source. At the same time, we rely on tested Swiss quality with a five-year warranty. Our worldwide representatives in over 80 countries guarantee short delivery times and comprehensive support through the entire product life. Belimo does indeed include everything.

The "small" Belimo devices have a big impact on comfort, energy efficiency, safety, installation and maintenance.

In short: Small devices, big impact.



5-year warranty



On site around the globe



Complete product range



Tested quality



Short delivery times



Comprehensive support



**BELIMO Automation AG**

Brunnenbachstrasse 1, 8340 Hinwil, Switzerland

+41 43 843 61 11, [info@belimo.ch](mailto:info@belimo.ch), [www.belimo.com](http://www.belimo.com)

**BELIMO**<sup>®</sup>