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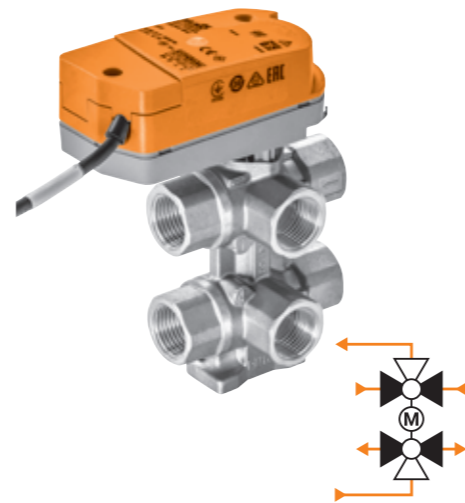
Zone valves**Maximum comfort, minimum consumption**

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

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

DN 15

Field 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° Dead zone: 30...60° Sequence II: 60...90°
Close-off pressure	Δp_s : 350 kPa
Max. differential pressure	Δp_{max} : 100 kPa
Permissible operating pressure	p_s : 1600 kPa

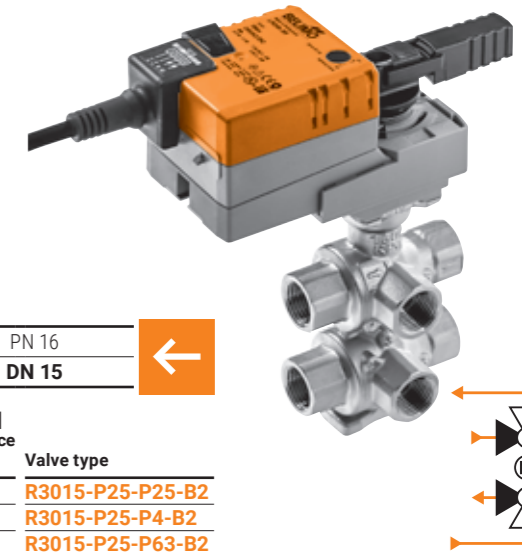


PN 16	
DN 15	
Sequence I	Sequence II
0.25	0.25
0.25	0.4
0.25	0.63
0.4	0.25
0.4	0.4
0.4	0.63
0.63	0.25
0.63	0.4
0.63	0.63

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	Valve type	
										Δp_s kPa	Δp_{max} kPa
Standard actuators											
CQ..	1 Nm	■	■	■	■	■	24 V	75 s	CQ24A-SR	350	100
									CQ24A-SZ	350	100
									CQ24A-MPL	350	100
									CQ24A-BAC	350	100
Standard actuators with connecting terminals											
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

Field 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° Dead zone: 30...60° Sequence II: 60...90°
Close-off pressure	Δp_s : 350 kPa
Max. differential pressure	Δp_{max} : 100 kPa
Permissible operating pressure	p_s : 1600 kPa



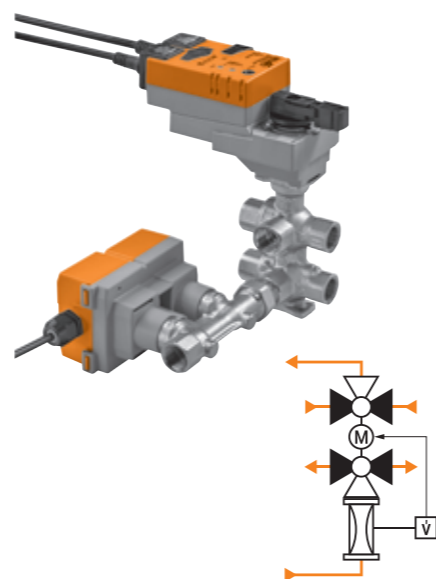
PN 16		DN 15		PN 16		DN 20	
Sequence I	Sequence II	Sequence I	Sequence II	Sequence I	Sequence II	Sequence I	Sequence II
0.25	0.25	0.25	0.25	0.63	0.63	0.63	0.63
0.25	0.4	0.25	0.4	0.63	1.3	0.63	1.3
0.25	0.63	0.25	0.63	0.63	1.8	0.63	1.8
0.25	1	0.25	1	0.63	2.5	0.63	2.5
0.25	1.3	0.25	1.3	0.63	4	0.63	4
0.25	1.8	0.25	1.8	0.63	1.6	0.63	1.6
0.4	0.25	0.4	0.25	1	1.6	1	1.6
0.4	0.4	0.4	0.4	1	2.5	1	2.5
0.4	0.63	0.4	0.63	1	4	1	4
0.4	1	0.4	1	1.6	4	1.6	4
0.4	1.3	0.4	1.3	1.6	1.6	1.6	1.6
0.4	1.8	0.4	1.8	1.6	2.5	1.6	2.5
0.63	0.25	0.63	0.25	2.5	2.5	2.5	2.5
0.63	0.4	0.63	0.4	2.5	4	2.5	4
0.63	0.63	0.63	0.63	2.5	0.63	2.5	0.63
0.63	1	0.63	1	2.5	1	2.5	1
0.63	1.3	0.63	1.3	2.5	1.6	2.5	1.6
0.63	1.8	0.63	1.8	2.5	2.5	2.5	2.5
1	0.25	1	0.25	4	4	4	4
1	0.4	1	0.4	4	0.63	4	0.63
1	0.63	1	0.63	4	1	4	1
1	1	1	1	4	1.6	4	1.6
1	1.3	1	1.3	4	2.5	4	2.5
1	1.8	1	1.8	4	2.5	4	2.5
1.3	0.25	1.3	0.25	4	0.63	4	0.63
1.3	0.4	1.3	0.4	4	1	4	1
1.3	0.63	1.3	0.63	4	1.6	4	1.6
1.3	1	1.3	1	4	2.5	4	2.5
1.3	1.3	1.3	1.3	4	2.5	4	2.5
1.3	1.8	1.3	1.8	4	4	4	4
1.8	0.25	1.8	0.25	4	0.63	4	0.63
1.8	0.4	1.8	0.4	4	1	4	1
1.8	0.63	1.8	0.63	4	1.6	4	1.6
1.8	1	1.8	1	4	2.5	4	2.5
1.8	1.3	1.8	1.3	4	2.5	4	2.5
1.8	1.8	1.8	1.8	4	4	4	4

Suitable actuators	Nominal torque	Modulating (2...10 V)	Modulating (2...10 V, variable) ¹⁾	MP-Bus communication ²⁾	Nominal voltage AC/DC 24 V	Running time motor 90°	Actuator type	Valve type	
								Δp_s kPa	Δp_{max} kPa
Standard actuators									
LR..	5 Nm	■	■	■	24 V	90 s	LR24A-SR	350	100
							LR24A-MP	350	100
PN 16 DN 25									
Standard actuators									
NR..	10 Nm	■	■	■	24 V	90 s	NR24A-SR	350	100
							NR24A-MP	350	100

¹⁾ Control, operating range, position feedback, running time and further functions are adjustable on MP types using PC-Tool
²⁾ 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

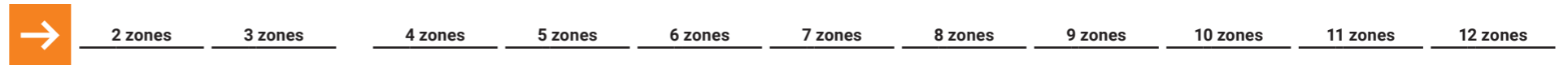
Field of use Closed water circuit (pH >7)
 Fluid temperature 6...80°C
 Pipe connection Internal thread Rp (ISO 7-1)
 Leakage rate Air-bubble tight, leakage rate A (EN 12266-1)
 Flow characteristic Linear
 Close-off pressure Δp_s : 350 kPa
 Max. differential pressure Δp_{max} : 110 kPa
 Permissible operating 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	Δp_s kPa	Δp_{max} kPa
16	15	1260	840	24 V	■	■	■	■	EP015R-R6+BAC	350	110
	20	2340	1620		■	■	■	■	EP020R-R6+BAC	350	110

2...12 zones

Material: Stainless steel
 Operating pressure: 6 bar
 Flow: 0...5 l/min
 Connection: G 1" (ISO 228)
 G 3/4" Euro cone



Suitable actuators	Nominal torque	Open/close	3-point	Modulating (2...10 V)	MP-Bus communication	Modbus communication	BACnet communication	Fail-safe	Nominal voltage AC/DC 24 V AC 230 V	Running time motor 90°	Actuator type	Manifold type																				
												EM-ECQ-02F	EM-ECQ-03F	EM-ECQ-04F	EM-ECQ-05F	EM-ECQ-06F	EM-ECQ-07F	EM-ECQ-08F	EM-ECQ-09F	EM-ECQ-10F	EM-ECQ-11F	EM-ECQ-12F										
Standard actuators																																
CQ.. 	1 Nm	■	■	■	—	—	—	—	24 V	75 s	CQ24A	■	■	■	■	■	■	■	■	■	■	■	■									
									230 V		CQ24A-SR	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■			
									24 V		CQ230A	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
									24 V		CQ24A-MPL	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
CQ..-MPL 	1 Nm	■	■	■	—	—	—	■	24 V	75 s	CQ24A-BAC	■	■	■	■	■	■	■	■	■	■	■	■									
									24 V		CQK24A	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■			
									230 V		CQK24A-SR	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
									24 V		CQK230A	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
CQK.. 	1 Nm	■	■	■	—	—	—	■	24 V	75 s	CQK24A-MPL	■	■	■	■	■	■	■	■	■	■	■	■									
									24 V		CQK24A	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	



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Pressure-independent characterised control valves

Complete transparency and highest efficiency

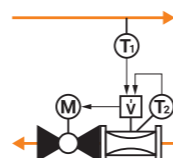
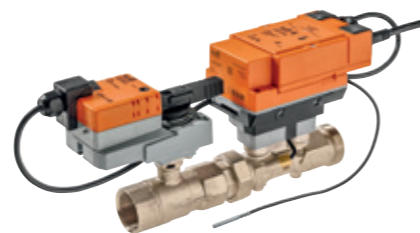
Belimo Energy ValveTM

	Internal and external thread	2-way	PN 25	DN 15...50	20
				DN 15...50 (MID)	21
		3-way		DN 15...50	22
	Flange	2-way	PN 16	DN 65...150	23
Electronic pressure-independent characterised control valve (EPIV)	Internal and external thread	2-way	PN 25	DN 15...50	24
	Flange		PN 16	DN 65...150	25

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

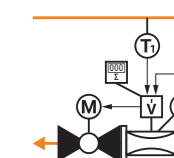
DN 15...50

- Field 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_s: 1600 kPa
- V'_{max}: Freely adjustable 25...100% of V'_{nom}
- Completely parametrizable by means of integrated web server or Belimo Assistant App (NFC)
- Optional connection to the Belimo Cloud
- Sensor-operated flow or power control
- Delta-T manager for optimal differential temperatures



DN 15...50 (MID)

- Field 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_s: 1600 kPa
- V'_{max}: Freely adjustable 25...100% of V'_{nom}
- 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 (NFC)
- Optional connection to the Belimo Cloud
- Sensor-operated flow or power control



PN	DN	G	Rp	V' _{nom} [l/s]	V' _{nom} [l/min]	V' _{nom} [m³/h]	Nominal voltage AC/DC 24 V	Modulating (2...10 V, variable)	MP-Bus communication	Modbus communication	BACnet communication	Glycol monitoring ¹⁾	Valve type with actuator	Δp _s kPa	Δp _{max} kPa	
With standard actuator																
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
Fail-safe																
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

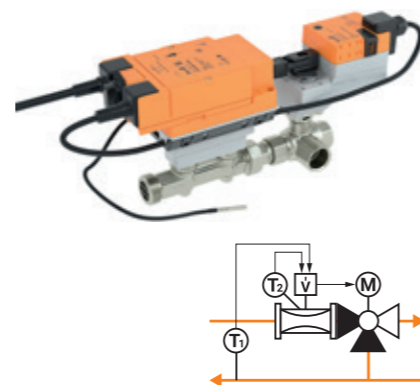
¹⁾ Optimum heat transfer can be ensured by glycol content monitoring.



PN	DN	G	Rp	V' _{nom} [l/s]	V' _{nom} [l/min]	V' _{nom} [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 _s kPa	Δp _{max} kPa	
With standard actuator															
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

- Field 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_s: 1600 kPa
- V_{max}: Freely adjustable 25...100% of V_{nom}
- Completely parametrisable by means of integrated web server or Belimo Assistant App (NFC)
- Optional connection to the Belimo Cloud
- Sensor-operated flow or power control



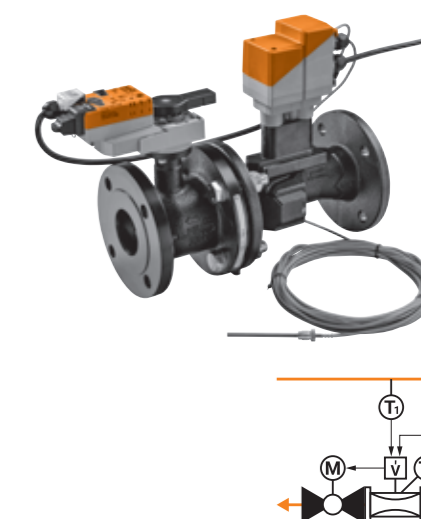
PN	DN	G	Rp	V _{nom} [l/s]	V _{nom} [l/min]	V _{nom} [m ³ /h]	Nominal voltage AC/DC 24 V	Modulating (2...10 V, variable)	MP-Bus communication	Modbus communication	BACnet communication	Glycol monitoring ¹⁾	Valve type with actuator	Δp _s kPa	Δp _{max} kPa
With standard actuator															
25	15	3/4"	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

¹⁾ Optimum heat transfer can be ensured by glycol content monitoring.

Note: 3-way Belimo Energy Valve™ with MID on request

DN 65...150

- Field 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_s: 1600 kPa
- V_{max}: Freely adjustable 30...100% of V_{nom}
- 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

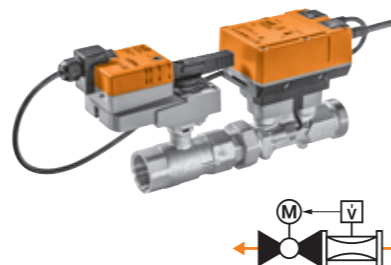


PN	DN	V _{nom} [l/s]	V _{nom} [l/min]	V _{nom} [m ³ /h]	Nominal voltage AC/DC 24 V	Modulating (2...10 V, variable)	MP-Bus communication	Modbus communication	BACnet communication	Glycol monitoring ¹⁾	Valve type with actuator	Δp _s kPa	Δp _{max} kPa
With standard actuator													
16	65	8	480	28.8	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
Fail-safe													
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

¹⁾ Optimum heat transfer can be ensured by glycol content monitoring.

DN 15...50

Field 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 _s : 1600 kPa
V' _{max}	Freely adjustable 25...100% of V' _{nom}
Control, operating range, feedback and other functions parametrisable with Belimo Assistant App	

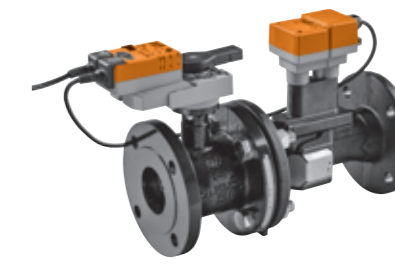


PN	DN	G	Rp	V' _{nom} [l/s]	V' _{nom} [l/min]	V' _{nom} [m ³ /h]	Nominal voltage AC/DC 24 V	Modulating (2...10 V, variable)	MP-Bus communication	Modbus communication	BACnet communication	Glycol monitoring ¹⁾	Valve type with actuator	Δp _s kPa	Δp _{max} kPa
With standard actuator															
25	15	3/4"	1/2"	0.42	25	1.5	24 V	■	■	■	■	■	EP015R2+BAC	1400	350
	20	1"	3/4"	0.69	41.7	2.5		■	■	■	■	■	EP020R2+BAC	1400	350
	25	1 1/4"	1"	0.97	58.3	3.5		■	■	■	■	■	EP025R2+BAC	1400	350
	32	1 1/2"	1 1/4"	1.67	100	6		■	■	■	■	■	EP032R2+BAC	1400	350
	40	2"	1 1/2"	2.78	166.7	10		■	■	■	■	■	EP040R2+BAC	1400	350
	50	2 1/2"	2"	4.17	250	15		■	■	■	■	■	EP050R2+BAC	1400	350
Fail-safe															
25	15	3/4"	1/2"	0.42	25	1.5	24 V	■	■	■	■	■	EP015R2+KBAC	1400	350
	20	1"	3/4"	0.69	41.7	2.5		■	■	■	■	■	EP020R2+KBAC	1400	350
	25	1 1/4"	1"	0.97	58.3	3.5		■	■	■	■	■	EP025R2+KBAC	1400	350
	32	1 1/2"	1 1/4"	1.67	100	6		■	■	■	■	■	EP032R2+KBAC	1400	350
	40	2"	1 1/2"	2.78	166.7	10		■	■	■	■	■	EP040R2+KBAC	1400	350
	50	2 1/2"	2"	4.17	250	15		■	■	■	■	■	EP050R2+KBAC	1400	350

¹⁾ By monitoring the glycol content, optimum system function can be ensured.

DN 65...150

Field 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 _s : 1600 kPa
V' _{max}	Freely adjustable 30...100% of V' _{nom}
Control, operating range, position feedback, running time and further functions are parametrisable with PC-Tool	



PN	DN	V' _{nom} [l/s]	V' _{nom} [l/min]	V' _{nom} [m ³ /h]	Nominal voltage AC/DC 24 V	Modulating (2...10 V, variable)	MP-Bus communication	Modbus communication	BACnet communication	Valve type with actuator	Δp _s kPa	Δp _{max} kPa
With standard actuator												
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
	Fail-safe											
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
	With Modbus/BACnet actuator											
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**

Internal thread	2-way – 3-way	PN 25	DN 32...50	28
		PN 40	DN 15...25	
External thread	2-way – 3-way	PN 25	DN 32...50	30
		PN 40	DN 15...25	
Flange	2-way – 3-way	PN 6	DN 15...50	32
	2-way	PN 16	DN 65...150	34
External thread	2-way	PN 40	DN 10...20 (130°C)	36

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

DN 10...20

Field 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 _s : 2700 kPa

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								
										k _{vs} [m³/h]	Valve type	Δp _s kPa	Δp _{v100} kPa	Δp _{v0} kPa	k _{vs} [m³/h]	Valve type	k _{vs} [m³/h]	Valve type	Δp _s kPa	Δp _{v100} kPa	Δp _{v0} kPa
Standard actuators																					
LR.. 	5 Nm	■	■			24 V	90 s		LR24A	0.3	R404DK	1400	400	800	2.5	R412D	6.3	R417D	1400	400	800
		■	■			230 V				0.4	R405DK	1400	400	800	4	R413D	10	R418D	1400	400	800
				■		24 V				0.63	R406DK	1400	400	800	6.3	R414D	16	R419D	1400	400	800
Fast running actuators																					
LRC.. 	5 Nm			■			35 s		LRC24A-SR	1	R407DK	1400	400	800							
Fail-safe actuators NC																					
LRF.. 	4 Nm				■		150 s	<20 s	LRF24-SR ¹⁾	1.6	R408DK	1400	400	800							

¹⁾ 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

External thread	2-way – 3-way	PN 16	DN 15...50	40
Flange	2-way – 3-way	PN 6	DN 15...100	42
	2-way – 3-way	PN 16	DN 15...150 (≤120°C)	44
	2-way – 3-way	PN 16	DN 15...150 (≤150°C)	46
	2-way	PN 16 partly pressure-balanced	DN 40...150	48
	2-way – 3-way	PN 16	DN 200/250	50
	2-way	PN 25	DN 15...50	52
	3-way	PN 25	DN 15...100	54
	2-way	PN 25 partly pressure-balanced	DN 65...100	56
Internal thread	2-way – 3-way	PN 25 stainless steel for special applications	DN 15...50	58

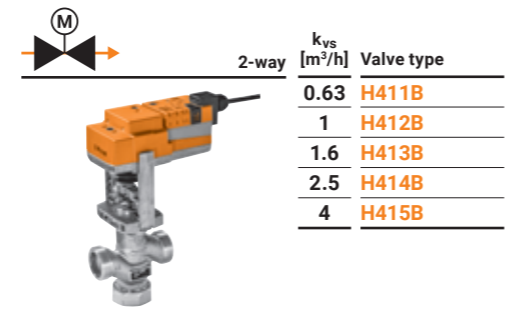
Please refer to the data sheets or notes for project planning for further technical data to be observed.

DN 15...50

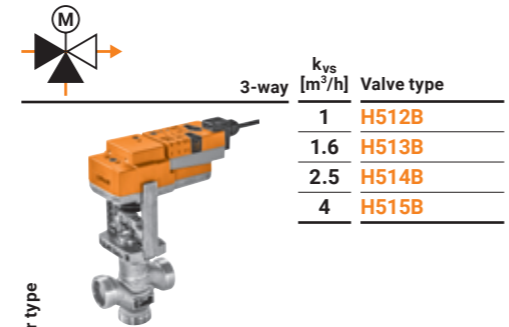
Field of use Closed and open water circuit (pH >7)
 Fluid temperature -10...120°C
 Pipe connection External thread G (ISO 228-1)
 Leakage rate 2-way: max. 0.05% of k_{vs} value
 3-way: control path A – AB: max. 0.05% of k_{vs} value /
 Bypass B – AB: max. 1% of k_{vs} value
 Flow characteristic 2-way: 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

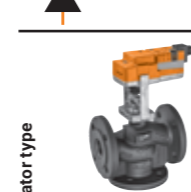
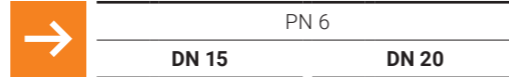
Suitable actuators	Actuating force ¹⁾	Actuating time per nominal stroke	Actuating time for fail-safe	Open/close	3-point	Modulating (2...10 V)	MP-Bus communication ¹⁾	Fail-safe	Nominal voltage AC/DC 24 V AC 230 V	Actuator type	Δp_s kPa	Δp_{max} kPa											
													Δp_s kPa	Δp_{max} kPa	Δp_s kPa	Δp_{max} kPa	Δp_s kPa	Δp_{max} kPa	Δp_s kPa	Δp_{max} kPa	Δp_s kPa	Δp_{max} kPa	
Standard actuators																							
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
	1000 N	150 s		■	■					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
1500 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
Fast running actuators																							
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
	1000 N	35 s				■				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
	1500 N	35 s				■				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
Fail-safe actuators NC/NO²⁾																							
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
						■	■			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

										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	Δp_s kPa	Δp_{max} kPa	Δp_s kPa	Δp_{max} kPa	Δp_s kPa	Δp_{max} kPa	Δp_s kPa	Δp_{max} kPa	Δp_s kPa	Δp_{max} kPa
6.3	H420B	10	H425B	16	H432B	25	H440B	40	H450B	900	400	500	400	350	350	150	150	70	70
6.3	H520B	10	H525B	16	H532B	25	H540B	40	H550B	900	400	500	400	350	350	150	150	70	70

¹⁾ 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).
²⁾ Delivery condition: Actuator spindle retracted. Closing point of the globe valves H..B is at top (valve stem extended).

DN 15...100

Field of use Closed water circuit (pH >7)
 Fluid temperature -10...120°C
 Pipe connection Flange PN 6 (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 : 600 kPa



2-way		Valve type	
0.63	H611R	k_{vs} [m³/h]	Valve type
1	H612R		
1.6	H613R		
2.5	H614R		
4	H615R		
	6.3	H620R	

3-way		Valve type	
0.63	H711R	k_{vs} [m³/h]	Valve type
1	H712R		
1.6	H713R		
2.5	H714R		
4	H715R		
	6.3	H720R	

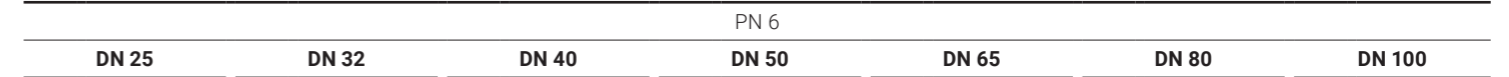
Suitable actuators	Actuating force ¹⁾	Actuating time per nominal stroke	Actuating time Fail-safe	Open/close	3-point	Modulating (2...10 V)	Communication MP-Bus ¹⁾	Fail-safe	Nominal voltage AC/DC 24 V AC 230 V	Actuator type	Δp_s kPa	Δp_{max} kPa	Δp_s kPa	Δp_{max} kPa
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Standard actuators															
LV.. NV.. SV..	500 N	150 s							24 V	LV24A-TPC	600	400	600	400	
									230 V	LV230A-TPC	600	400	600	400	
										24 V	LV24A-SR-TPC	600	400	600	400
										24 V	LV24A-MP-TPC	600	400	600	400
EV.. RV..	1000 N	150 s							24 V	NV24A-TPC	600	400	600	400	
									230 V	NV230A-TPC	600	400	600	400	
										24 V	NV24A-SR-TPC	600	400	600	400
										24 V	NV24A-MP-TPC	600	400	600	400
LVC.. NVC.. SVC..	1500 N	150 s							24 V	SV24A-TPC	600	400	600	400	
									230 V	SV230A-TPC	600	400	600	400	
										24 V	SV24A-SR-TPC	600	400	600	400
										24 V	SV24A-MP-TPC	600	400	600	400
EVC..	2500 N	150 s							24 V	EV24A-TPC					
									230 V	EV230A-TPC					
										24 V	EV24A-SR-TPC				
										24 V	EV24A-MP-TPC				
AVK..	4500 N	120 s							24 V	RV24A-SR					

Fast running actuators															
LVC.. NVC.. SVC..	500 N	35 s							24 V	LVC24A-SR-TPC	600	400	600	400	
									24 V	LVC24A-MP-TPC	600	400	600	400	
										24 V	NVC24A-SR-TPC	600	400	600	400
										24 V	NVC24A-MP-TPC	600	400	600	400
EVC..	1000 N	35 s							24 V	SVC24A-SR-TPC	600	400	600	400	
									24 V	SVC24A-MP-TPC	600	400	600	400	
										24 V	EVC24A-SR				

Fail-safe actuators NC/NO ²⁾																	
NVK.. NVKC..	1000 N	150 s	35 s						24 V	NVK24A-3-TPC	600	400	600	400			
										230 V	NVK230A-3	600	400	600	400		
											24 V	NVK24A-SR-TPC	600	400	600	400	
											24 V	NVK24A-MP-TPC	600	400	600	400	
	AVK..	2000 N	150 s	35 s						24 V	NVVC24A-SR-TPC	600	400	600	400		
											24 V	NVVC24A-MP-TPC	600	400	600	400	
												24 V	AVK24A-3-TPC				
												230 V	AVK230A-3				

¹⁾ 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).
²⁾ Delivery condition: Actuator spindle retracted. Closing point of the globe valves H..B is at top (valve stem extended).



DN 25		DN 32		DN 40		DN 50		DN 65		DN 80		DN 100	
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

10	H625R	16	H632R	25	H640R	40	H650R	58	H664R	90	H679R	145	H6100R
Δp_s kPa	Δp_{max} kPa	Δp_s kPa	Δp_{max} kPa	Δp_s kPa	Δp_{max} kPa	Δp_s kPa	Δp_{max} kPa	Δp_s kPa	Δp_{max} kPa	Δp_s kPa	Δp_{max} kPa	Δp_s kPa	Δp_{max} kPa

500	400	350	350	150	150	70	70						
500	400	350	350	150	150	70	70						
500	400	350	350	150	150	70	70						
500	400	350	350	150	150	70	70						
600	400	600	400	500	400	300	300	140	140	80	80		
600	400	600	400	500	400	300	300	140	140	80	80		
600	400	600	400	500	400	300	300	140	140	80	80		
600	400	600	400	500	400	300	300	140	140	80	80		
600	400	600	400	600	400	550	400	280	280	160	160		
600	400	600	400	600	400	550	400	280	280	160	160		
600	400	600	400	600	400	550	400	280	280	160	160		
600	400	600	400	600	400	550	400	280	280	160	160		

												200	200
												200	200
												200	200
												200	200
												450	400
500	400	350	350	150	150	70	70						
500	400	350	350	150	150	70	70						
600	400	600	400	500	400	300	300	140	140	80	80		
600	400	600	400	500	400	300	300	140	140	80	80		
600	400	600	400	600	400	550	400	280	280	160	160		
600	400	600	400	600	400	550	400	280	280	160	160		
												200	200
600	400	600	400	500	400	300	300	140	140	80	80		
600	400	600	400	500	400	300	300	140	140	80	80		
600	400	600	400	500	400	300	300	140	140	80	80		
600	400	600	400	500	400	300	300	140	140	80	80		
600	400	600	400	500	400	300	300	140	140	80	80		
												150	150
												150	150
												150	150
												150	150

DN 40...150

Field of use	Closed water circuit and steam circuit in the subcritical range (pH >7)
Fluid temperature	5...150°C (120°C to p _s 1600 kPa, 150°C to p _s 1400 kPa)
Pipe connection	Flange PN 16 (ISO 7005-2)
Leakage rate	Max. 0.05% of k _{vs} value
Flow characteristic	Equal percentage

DN 200/250


Field 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 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: linear/ bypass B – AB: linear
Permissible operating pressure	p_s : 1600 kPa

→	PN 16			
	DN 200		DN 250	

(M)	→	2-way	k_{VS} [m³/h]	Valve type	k_{VS} [m³/h]	Valve type
			630	H6200W630-S7	1000	H6250W1000-S7

(M)	→	3-way	k_{VS} [m³/h]	Valve type	k_{VS} [m³/h]	Valve type
			630	H7200W630-S7	1000	H7250W1000-S7

Suitable actuators

	Actuating force ¹⁾	Actuating time per nominal stroke	3-point		Nominal voltage AC/DC 24 V AC 230 V	Auxiliary switch SPDT Actuator type	Δp_s kPa	Δp_{max} kPa	Δp_s kPa	Δp_{max} kPa
			3-point	Modulating (2...10 V)						
GV.. 	Standard actuators									
	12000 N	82 s	■		230 V	2	310	60	190	60
			■		24 V		310	60	190	60

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

DN 15...50

Field of use	Closed water circuit and steam circuit in the subcritical range (pH >7)
Fluid temperature	5...150°C (120°C to p _s 2500 kPa, 150°C to p _s 2430 kPa)
Pipe connection	Flange PN 25 (ISO 7005-2)
Leakage rate	Max. 0.05% of k _{vs} value
Flow characteristic	Equal percentage

PN 25
DN 15

2-way
k_{vs} [m³/h]
1 H6015X1-S2
1.6 H6015X1P6-S2
2.5 H6015X2P5-S2
0.63 H6015XP63-S2
4 H6015X4-S2

Actuator type
1 H6015X1-S2
1.6 H6015X1P6-S2
2.5 H6015X2P5-S2
0.63 H6015XP63-S2
4 H6015X4-S2

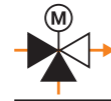
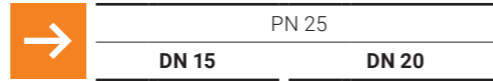
Suitable actuators	Actuating force	Actuating time per nominal stroke	Actuating time for fail-safe	Open/close	3-point	Modulating (2...10 V)	MP-Bus communication ¹⁾	Fail-safe	Nominal voltage AC/DC 24 V AC 230 V	Actuator type	Δp _s kPa	Δp _{max} kPa	PN 25	
													Δp _s kPa	Δp _{max} kPa
Standard actuators														
LV.. NV.. SV..	500 N	150 s		■	■				24 V	LV24A-TPC²⁾	2500	1000	800	800
				■	■			230 V	LV230A-TPC²⁾	2500	1000	800	800	
						■		24 V	LV24A-SR-TPC²⁾	2500	1000	800	800	
	1000 N	150 s				■			24 V	LV24A-MP-TPC²⁾	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	
Fast running actuators														
LVC.. NVC.. SVC..	500 N	35 s				■			24 V	LVC24A-SR-TPC²⁾	2500	1000	800	800
						■		24 V	LVC24A-MP-TPC²⁾	2500	1000	800	800	
						■		24 V	NVC24A-SR-TPC	2500	1000	2200	1000	
	1000 N	35 s				■			24 V	NVC24A-MP-TPC	2500	1000	2200	1000
						■		24 V	SVC24A-SR-TPC	2500	1000	2500	1000	
						■		24 V	SVC24A-MP-TPC	2500	1000	2500	1000	
Fail-safe actuators NC/NO³⁾														
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
							■		24 V	NVK24A-SR-TPC	2500	1000	2200	1000
	35 s	35 s				■			24 V	NVK24A-MP-TPC	2500	1000	2200	1000
						■		24 V	NVVC24A-SR-TPC	2500	1000	2200	1000	
						■		24 V	NVVC24A-MP-TPC	2500	1000	2200	1000	

¹⁾ 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).
²⁾ Actuators LV..A.. possible only on valves H6..
³⁾ 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 _{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				
4	H6020X4-S2	6.3	H6020X6P3-S2	10	H6025X10-S2	16	H6032X16-S2	25	H6040X25-S2	40	H6050X40-S2		
Δp _s kPa	Δp _{max} kPa	Δp _s kPa	Δp _{max} kPa	Δp _s kPa	Δp _{max} kPa	Δp _s kPa	Δp _{max} kPa	Δp _s kPa	Δp _{max} kPa	Δp _s kPa	Δp _{max} kPa		
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

Field of use Closed water circuit (pH >7)
 Fluid temperature 5...200°C (120°C to p_S 2500 kPa, 200°C to p_S 2300 kPa)
 Pipe connection Flange PN 25 (ISO 7005-2)
 Leakage rate Control path A – AB: max. 0.05% of k_{VS} value / bypass B – AB: max. 1% of k_{VS} value
 Flow characteristic Control path A – AB: linear / bypass B – AB: linear



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 ¹⁾	Fail-safe	Nominal voltage AC/DC 24 V AC 230 V	Actuator type	3-way		PN 25			
											k _{VS} [m ³ /h]	Valve type	k _{VS} [m ³ /h]	Valve type		
Standard actuators												4	H7015X4-S2	6.3	H7020X6P3-S2	
LV.. NV.. SV..	500 N	150 s							24 V	LV24A-TPC ²⁾	800	800	600	600		
								230 V	LV230A-TPC ²⁾	800	800	600	600			
									24 V	LV24A-SR-TPC ²⁾	800	800	600	600		
									24 V	LV24A-MP-TPC ²⁾	800	800	600	600		
	1000 N	150 s							24 V	NV24A-TPC	2200	1000	1000	1000		
								230 V	NV230A-TPC	2200	1000	1000	1000			
									24 V	NV24A-SR-TPC	2200	1000	1000	1000		
									24 V	NV24A-MP-TPC	2200	1000	1000	1000		
EV.. RV..	1500 N	150 s							24 V	SV24A-TPC	2500	1000	2500	1000		
								230 V	SV230A-TPC	2500	1000	2500	1000			
									24 V	SV24A-SR-TPC	2500	1000	2500	1000		
									24 V	SV24A-MP-TPC	2500	1000	2500	1000		
	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.. EVC..	4500 N	120 s							24 V	RV24A-SR						
			Fast running actuators													
										24 V	LVC24A-SR-TPC ²⁾	800	800	600	600	
										24 V	LVC24A-MP-TPC ²⁾	800	800	600	600	
	1000 N	35 s							24 V	NVC24A-SR-TPC	2200	1000	1500	1000		
									24 V	NVC24A-MP-TPC	2200	1000	1500	1000		
									24 V	SVC24A-SR-TPC	2500	1000	2500	1000		
									24 V	SVC24A-MP-TPC	2500	1000	2500	1000		
NVK.. NVKC.. AVK..	2000 N	150 s	35 s						24 V	EVC24A-SR						
				Fail-safe actuators NC/NO ³⁾												
											24 V	NVK24A-3-TPC	2200	1000	1500	1000
											230 V	NVK230A-3	2200	1000	1500	1000
	1000 N	150 s	35 s						24 V	NVK24A-SR-TPC	2200	1000	1500	1000		
										24 V	NVK24A-MP-TPC	2200	1000	1500	1000	
										24 V	NVKC24A-SR-TPC	2200	1000	1500	1000	
										24 V	NVKC24A-MP-TPC	2200	1000	1500	1000	
	2000 N	150 s	35 s						24 V	AVK24A-3-TPC	2200	1000	1500	1000		
										230 V	AVK230A-3	2200	1000	1500	1000	
										24 V	AVK24A-SR-TPC	2200	1000	1500	1000	
										24 V	AVK24A-MP-TPC	2200	1000	1500	1000	

¹⁾ 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).
²⁾ For DN 15 only recommended with H610S and H611S.
³⁾ 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 25		DN 32		DN 40		DN 50		DN 65		DN 80		DN 100	
k _{VS} [m ³ /h]	Valve type	k _{VS} [m ³ /h]	Valve type	k _{VS} [m ³ /h]	Valve type	k _{VS} [m ³ /h]	Valve type	k _{VS} [m ³ /h]	Valve type	k _{VS} [m ³ /h]	Valve type	k _{VS} [m ³ /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 _S kPa	Δp _{max} kPa	Δp _S kPa	Δp _{max} kPa	Δp _S kPa	Δp _{max} kPa	Δp _S kPa	Δp _{max} kPa	Δp _S kPa	Δp _{max} kPa	Δp _S kPa	Δp _{max} kPa	Δp _S kPa	Δp _{max} 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						
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						
2100	1000	1500	1000	850	850	500	500						
2100	1000	1500	1000	850	850	500	500						
								550	550	350	350	200	200
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 15...50

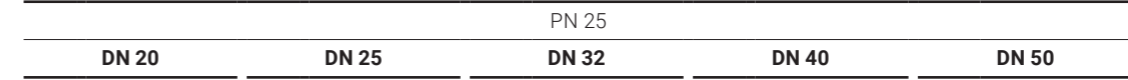
Field of use Closed and open water circuit (pH >7)
 Fluid temperature 0...130°C
 Pipe connection Internal thread (ISO 7-1)
 Leakage rate 2-way: max. 0.01% of k_{vs} value
 3-way: control path A – AB: max. 0.02% of k_{vs} value /
 bypass B – AB: max. 0.02% of k_{vs} value
 Flow characteristic 2-way: equal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



	k_{vs} [m³/h]	Valve type	k_{vs} [m³/h]	Valve type
2-way	1.6	H215S-G	4	H215S-J



	k_{vs} [m³/h]	Valve type	k_{vs} [m³/h]	Valve type
3-way	1.6	H315S-G	4	H315S-J



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	H220S-K	10	H225S-L	16	H232S-M	25	H240S-N	40	H250S-P

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	H320S-K	10	H325S-L	16	H332S-M	25	H340S-N	40	H350S-P

Suitable actuators

Actuator type	Actuating force	Actuating time per nominal stroke	Open/close	3-point	Modulating (2...10 V)	MP-Bus communication ¹⁾	Fail-safe	Nominal voltage AC/DC 24 V AC 230 V	Actuator type	Δp_s kPa	Δp_{max} kPa	Δp_s kPa	Δp_{max} kPa	
Standard actuators														
LV.. NV.. SV..	500 N	150 s	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	24 V	LV24A-TPC	650	650	650	650	
			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	230 V	LV230A-TPC	650	650	650	650
	1000 N	150 s	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	24 V	LV24A-SR-TPC	650	650	650	650
			<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	24 V	LV24A-MP-TPC	650	650	650	650
			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	24 V	NV24A-TPC	800	800	800	800
			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	230 V	NV230A-TPC	800	800	800	800
<input type="checkbox"/>			<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	24 V	NV24A-SR-TPC	800	800	800	800	
<input type="checkbox"/>			<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	24 V	NV24A-MP-TPC	800	800	800	800	
1500 N	150 s	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	24 V	SV24A-TPC					
		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	230 V	SV230A-TPC					
		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	24 V	SV24A-SR-TPC					
		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	24 V	SV24A-MP-TPC					
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	24 V	SV24A-SR-TPC				
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	24 V	SV24A-MP-TPC				
Fast running actuators														
LVC.. NVC.. SVC..	500 N	35 s	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	24 V	LVC24A-SR-TPC	650	650	650	650	
			<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	24 V	LVC24A-MP-TPC	650	650	650	650
	1000 N	35 s	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	24 V	NVC24A-SR-TPC	800	800	800	800	
			<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	24 V	NVC24A-MP-TPC	800	800	800	800
	1500 N	35 s	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	24 V	SVC24A-SR-TPC					
			<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	24 V	SVC24A-MP-TPC				
Fail-safe actuators NC/NO²⁾														
NVK.. NVKC..	1000 N	150 s	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	24 V	NVK24A-3-TPC	800	800	800	800	
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	230 V	NVK230A-3	800	800	800	800
	35 s	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	24 V	NVK24A-SR-TPC	800	800	800	800	
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	24 V	NVK24A-MP-TPC	800	800	800	800	
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	24 V	NVKC24A-SR-TPC	800	800	800	800	
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	24 V	NVKC24A-MP-TPC	800	800	800	800	

Δp_s kPa	Δp_{max} kPa	Δp_s kPa	Δp_{max} kPa	Δp_s kPa	Δp_{max} kPa	Δp_s kPa	Δp_{max} kPa	Δp_s kPa	Δp_{max} kPa
650	650								
650	650								
650	650								
650	650								
800	800	600	600	550	550	450	450	300	300
800	800	600	600	550	550	450	450	300	300
800	800	600	600	550	550	450	450	300	300
800	800	600	600	550	550	450	450	300	300
						700	700	500	500
						700	700	500	500
						700	700	500	500
						700	700	500	500
800	800	600	600	550	550	450	450	300	300
800	800	600	600	550	550	450	450	300	300
800	800	600	600	550	550	450	450	300	300
800	800	600	600	550	550	450	450	300	300
800	800	600	600	550	550	450	450	300	300
800	800	600	600	550	550	450	450	300	300

¹⁾ 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).
²⁾ 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).
³⁾ As a diverting valve, the maximum values are reduced to a quarter.

8

Control butterfly valves

Fit for reliable control applications

Wafer type flange	2-way	PN 6, 10, 16	DN 25...300	62
		PN 10, 16	DN 350	64
		PN 16	DN 400...700	64
Lug type flange	2-way	PN 10, 16	DN 25...150	62
		PN 16	DN 200...300	62
	3-way	PN 16	DN 350...700	64
		PN 16	DN 150...300	66

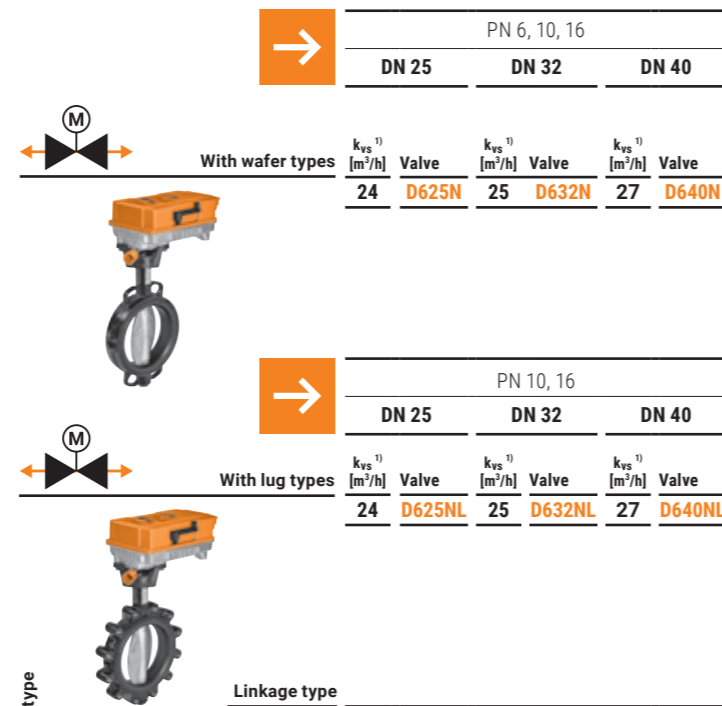
Please refer to the data sheets or notes for project planning for further technical data to be observed.

DN 25...300

Field of use	Closed and open water circuit (pH >7)
Fluid temperature	-20...120°C
Pipe connection	Flange (ISO 7005-2 and EN 1092-2) 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 DN 150...300: characteristic curve parametrisable with the Belimo Assistant App: equal percentage or linear
Permissible operating pressure	p _s : 1600 kPa

Suitable actuators	Nominal torque	Open/close	3-point	Modulating	Terminal connection	Fail-safe	Nominal voltage AC/DC 24 V AC 230 V	Running time motor 90°	Auxiliary switch SPDT	Degree of protection	Actuator type	Linkage type	
												Δp _s kPa	Δp _{max} kPa
Modulating actuators													
SR..	20 Nm	—	—	■	—	—	24 V	90 s	—	IP54	SR24A-SR-5	1200	300
				■			230 V	90 s		IP54	SR230A-SR-5	1200	300
GR..	40 Nm	—	—	■	—	—	24 V	150 s	—	IP54	GR24A-SR-5	1200	300
	<90 Nm	—	—	■	—	—	24 V	150 s	—	IP54	DR24A-SR-5	1200	300
				■						IP54	DR24A-SR-7	1200	300
Communicative actuators													
DR..	160 Nm	■	■	■	■	—	AC 24...240 V	35 s ²⁾	2	IP66/	PRCA-BAC-S2-T	1200	300
		■	■	■	■	—	DC 24...125 V	35 s ²⁾	2	IP67	PRCA-BAC-S2-T-200	1200	300
PR..	160 Nm	■	■	■	■	—	AC 24...240 V	35 s ²⁾	2	IP66/	PRCA-BAC-S2-T-250	1200	300
		■	■	■	■	—	DC 24...125 V	35 s ²⁾	2	IP67	PRCA-BAC-S2-T-200	1200	300
PRK..	160 Nm	■	■	■	■	—	AC 24...240 V	35 s ²⁾	2	IP66/	PRKCA-BAC-S2-T	1200	300
		■	■	■	■	—	DC 24...125 V	35 s ²⁾	2	IP67	PRKCA-BAC-S2-T-200	1200	300
		■	■	■	■	—				IP67	PRKCA-BAC-S2-T-250	1200	300

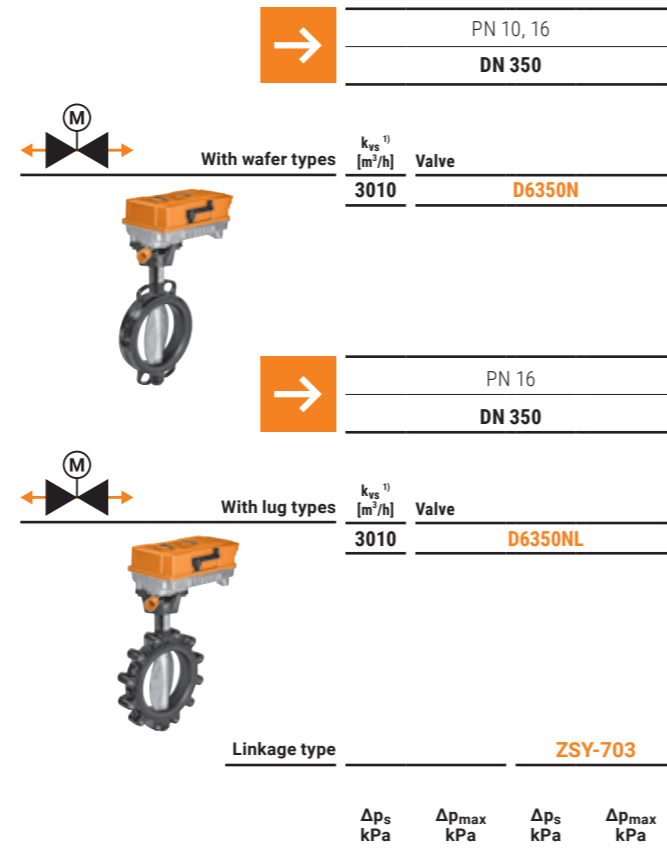
¹⁾ For control applications with an opening angle of 60%. The maximum flow speed of 4 m/s may not be exceeded in the control butterfly valve.
²⁾ 30...120 s parametrisable with the Belimo Assistant App (NFC)
³⁾ Linkage is only required in combination with a PR actuator.



PN 6, 10, 16										PN 6, 10, 16														
DN 25		DN 32		DN 40		DN 50		DN 65		DN 80		DN 100		DN 125		DN 150		DN 200		DN 250		DN 300		
k _{vs} ¹⁾ [m ³ /h]	Valve	k _{vs} ¹⁾ [m ³ /h]	Valve	k _{vs} ¹⁾ [m ³ /h]	Valve	k _{vs} ¹⁾ [m ³ /h]	Valve	k _{vs} ¹⁾ [m ³ /h]	Valve	k _{vs} ¹⁾ [m ³ /h]	Valve	k _{vs} ¹⁾ [m ³ /h]	Valve	k _{vs} ¹⁾ [m ³ /h]	Valve	k _{vs} ¹⁾ [m ³ /h]	Valve	k _{vs} ¹⁾ [m ³ /h]	Valve	k _{vs} ¹⁾ [m ³ /h]	Valve	k _{vs} ¹⁾ [m ³ /h]	Valve	
24	D625N	25	D632N	27	D640N	30	D650N	50	D665N	75	D680N	150	D6100N	260	D6125N	400	D6150N	820	D6200W	1300	D6250W	1740	D6300W	
PN 10, 16										PN 10, 16														
DN 25		DN 32		DN 40		DN 50		DN 65		DN 80		DN 100		DN 125		DN 150		DN 200		DN 250		DN 300		
k _{vs} ¹⁾ [m ³ /h]	Valve	k _{vs} ¹⁾ [m ³ /h]	Valve	k _{vs} ¹⁾ [m ³ /h]	Valve	k _{vs} ¹⁾ [m ³ /h]	Valve	k _{vs} ¹⁾ [m ³ /h]	Valve	k _{vs} ¹⁾ [m ³ /h]	Valve	k _{vs} ¹⁾ [m ³ /h]	Valve	k _{vs} ¹⁾ [m ³ /h]	Valve	k _{vs} ¹⁾ [m ³ /h]	Valve	k _{vs} ¹⁾ [m ³ /h]	Valve	k _{vs} ¹⁾ [m ³ /h]	Valve	k _{vs} ¹⁾ [m ³ /h]	Valve	
24	D625NL	25	D632NL	27	D640NL	30	D650NL	50	D665NL	75	D680NL	150	D6100NL	260	D6125NL	400	D6150NL	820	D6200WL	1300	D6250WL	1740	D6300WL	
										ZPR03 ³⁾		ZPR03 ³⁾		ZPR01 ³⁾		ZPR01		ZPR01		ZPR01		ZPR01		
Δp _s kPa	Δp _{max} kPa	Δp _s kPa	Δp _{max} kPa	Δp _s kPa	Δp _{max} kPa	Δp _s kPa	Δp _{max} kPa	Δp _s kPa	Δp _{max} kPa	Δp _s kPa	Δp _{max} kPa	Δp _s kPa	Δp _{max} kPa	Δp _s kPa	Δp _{max} kPa	Δp _s kPa	Δp _{max} kPa	Δp _s kPa	Δp _{max} kPa	Δp _s kPa	Δp _{max} kPa	Δp _s kPa	Δp _{max} 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

Field 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_s : 1600 kPa



		PN 16											
		DN 400		DN 450		DN 500		DN 600		DN 700			
$k_{vs}^{1)}$ [m³/h]	Valve	$k_{vs}^{1)}$ [m³/h]	Valve	$k_{vs}^{1)}$ [m³/h]	Valve	$k_{vs}^{1)}$ [m³/h]	Valve	$k_{vs}^{1)}$ [m³/h]	Valve	$k_{vs}^{1)}$ [m³/h]	Valve	$k_{vs}^{1)}$ [m³/h]	Valve
4140	D6400N	5490	D6450N	7060	D6500N	10900	D6600N	11760	D6700N				

		PN 16											
		DN 400		DN 450		DN 500		DN 600		DN 700			
$k_{vs}^{1)}$ [m³/h]	Valve	$k_{vs}^{1)}$ [m³/h]	Valve	$k_{vs}^{1)}$ [m³/h]	Valve	$k_{vs}^{1)}$ [m³/h]	Valve	$k_{vs}^{1)}$ [m³/h]	Valve	$k_{vs}^{1)}$ [m³/h]	Valve	$k_{vs}^{1)}$ [m³/h]	Valve
4140	D6400NL	5490	D6450NL	7060	D6500NL	10900	D6600NL	11760	D6700NL				

		ZSY-401		ZSY-701		ZSY-702		ZSY-702		ZSY-901		ZSY-902		ZSY-903	
Δp_s kPa	Δp_{max} kPa	Δp_s kPa	Δp_{max} kPa	Δp_s kPa	Δp_{max} kPa	Δp_s kPa	Δp_{max} kPa	Δp_s kPa	Δp_{max} kPa	Δp_s kPa	Δp_{max} kPa	Δp_s kPa	Δp_{max} kPa	Δp_s kPa	Δp_{max} kPa
600	300														
		1200	300	600	300										
				1200	300	600	300								
								1200	300						
										600	300				
										1000	300	200	200		

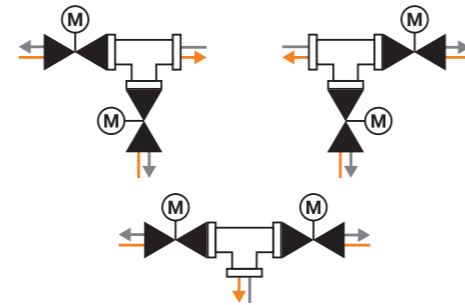
Suitable actuators	Nominal torque	Modulating (2...10 V / 0.5...10 V)	Terminal connection	Nominal voltage AC 230 V	Running time motor 90°	Auxiliary switch SPDT	Degree of protection	Actuator type	Linkage type							
									Δp_s kPa	Δp_{max} kPa	Δp_s kPa	Δp_{max} kPa				
SY..	650 Nm	■	■	230 V	31 s	2	IP67	ZSY-703	600	300						
	1000 Nm	■	■		55 s	2	IP67		SY6-230-MF-T			1200	300			
	1500 Nm	■	■		55 s	2	IP67		SY7-230A-MF-T							
	2000 Nm	■	■		70 s	2	IP67		SY8-230A-MF-T							
	2500 Nm	■	■		70 s	2	IP67		SY9-230A-MF-T							
	3500 Nm	■	■		70 s	2	IP67		SY10-230A-MF-T							


¹⁾ 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.

DN 150...300



Field 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 _s : 1600 kPa



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

Suitable T-pieces



Spherical graphite cast iron with fastening screws

¹⁾ For control applications with opening angle 60% (parametrisable with the Belimo Assistant App (NFC)). The maximum flow speed of 4 m/s may not be exceeded in the control butterfly valve.
²⁾ Parametrisable with the Belimo Assistant App (NFC)
³⁾ 30...120 s parametrisable with the Belimo Assistant App (NFC)
⁴⁾ T-piece is not included in scope of delivery.
⁵⁾ The necessary fastening screws and nuts are included in the scope of delivery.

9

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

Internal thread	Open/close ball valves	2-way		PN 25, 40	DN 15...50	70
	Changeover ball valves	3-way	T-bore			
	Changeover ball valves	3-way	L-bore	PN 25, 40	DN 15...50	72
External thread	Open/close ball valves	2-way		PN 25, 40	DN 15...50	74
	Changeover ball valves	3-way	T-bore			
Flange	Open/close ball valves	2-way		PN 6	DN 15...50	76
	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.

DN 15...50

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

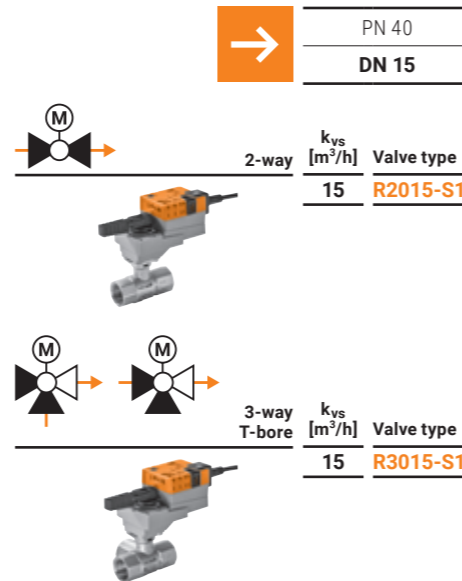
Fluid temperature -10...120°C¹⁾

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 AC/DC 24 V AC 230 V	Running time motor-90°	Running time fail-safe	Actuator type	PN 40	
									k_{vs} [m³/h]	Valve type
Compact actuators										
TR.. TRY..	2 Nm	■	■	—	24 V	100 s	—	TR24 ³⁾	15	R2015-S1
		■	■	—	230 V	35 s	—	TRY24 ³⁾	15	R2015-S1
		■	■	—	230 V	35 s	—	TRY230 ³⁾	15	R3015-S1
									Δp_s kPa	$\Delta p_{max}^{2)}$ kPa
Standard actuators										
LR.. NR.. SR..	5 Nm	■	■	—	24 V	90 s	—	LR24A	32	R2020-S2
		■	■	—	230 V		—	LR230A	26	R2025-S2
	10 Nm	■	■	—	24 V	90 s	—	NR24A	32	R2032-S3
		■	■	—	230 V		—	NR230A	31	R2040-S3
	20 Nm	■	■	—	24 V	90 s	—	SR24A	49	R2050-S4
		■	■	—	230 V		—	SR230A	49	R2050-S4
									Δp_s kPa	$\Delta p_{max}^{2)}$ kPa
Very fast running actuators										
LRQ.. NRQ.. SRQ..	4 Nm	■	—	—	24 V	9 s	—	LRQ24A	32	R3020-S2
		■	—	—	24 V		—	NRQ24A	26	R3025-S2
		■	—	—	24 V		—	SRQ24A	32	R3032-S3
									Δp_s kPa	$\Delta p_{max}^{2)}$ kPa
Fail-safe actuators NC/NO										
TRF..	2.5 Nm	■	■	—	24 V	75 s	<75 s	TRF24 ³⁾	..-S	..-O
		■	■	—	230 V		<20 s	TRF230 ³⁾	..-S	..-O
	4 Nm	■	■	—	24 V	75 s	<20 s	TRF24 ³⁾	..-S	..-O
		■	■	—	230 V		<20 s	TRF230 ³⁾	..-S	..-O
									Δp_s kPa	$\Delta p_{max}^{2)}$ kPa
LRF..	10 Nm	■	■	—	24 V	75 s	<20 s	LRF24A	..-S2	..-S2-O
		■	■	—	AC 24...240 V DC 24...125 V		<20 s	LRF24A	..-S2	..-S2-O
	20 Nm	■	■	—	24 V	75 s	<20 s	SRF24A	..-S2	..-S2-O
		■	■	—	AC 24...240 V DC 24...125 V		<20 s	SRF24A	..-S2	..-S2-O
									Δp_s kPa	$\Delta p_{max}^{2)}$ 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
32	R2020-S2	26	R2025-S2	32	R2032-S3	31	R2040-S3	49	R2050-S4
32	R3020-S2	26	R3025-S2	32	R3032-S3	31	R3040-S3	49	R3050-S4
Δp_s kPa	$\Delta p_{max}^{2)}$ kPa	Δp_s kPa	$\Delta p_{max}^{2)}$ kPa	Δp_s kPa	$\Delta p_{max}^{2)}$ kPa	Δp_s kPa	$\Delta p_{max}^{2)}$ kPa	Δp_s kPa	$\Delta p_{max}^{2)}$ 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

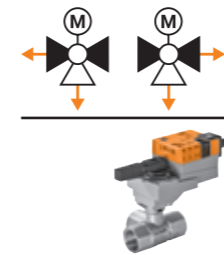
¹⁾ Compact actuators TR../TRY.. only up to 100°C
²⁾ Low-noise operation $\Delta p_{max} = 200$ kPa
³⁾ If fluid temperature $\geq 100^\circ\text{C}$, then pipeline and valve must be insulated.

DN 15...50

Field 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_s: 1600 kPa



PN 40
DN 15



3-way L-bore	k _{vs} [m³/h]	Valve type
	5.5	R3015-BL1

Suitable actuators

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	Δp _s kPa	Δp _{max} ¹⁾ kPa
Compact actuators										
TR.. TRY..	2 Nm	■	■	—	24 V	100 s		TR24	500	350
					230 V	35 s		TRY24	500	350
					230 V	35 s		TRY230	500	350
Standard actuators										
LR.. NR.. 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
Very fast running actuators										
LRQ.. NRQ.. SRQ..	4 Nm	■	—	—	24 V	9 s		LRQ24A	500	350
					24 V	9 s		NRQ24A	500	350
					24 V	9 s		SRQ24A	500	350
Fail-safe actuators NC/NO										
TRF..	2.5 Nm	■	■	—	24 V	75 s	<75 s	TRF24	500	350
					230 V	75 s	<20 s	TRF230	500	350
	4 Nm	■	■	—	24 V	75 s	<20 s	TRF24	500	350
					230 V	75 s	<20 s	TRF230	500	350
LRF..	10 Nm	■	■	—	24 V	75 s	<20 s	Without auxiliary switch	500	350
					24 V	75 s	<20 s	With 2 auxiliary switches	500	350
	20 Nm	■	■	—	AC 24...240 V DC 24...125 V	75 s	<20 s	Without auxiliary switch	500	350
					AC 24...240 V DC 24...125 V	75 s	<20 s	With 2 auxiliary switches	500	350

¹⁾ Low-noise operation Δp_{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		
11	R3020-BL2	10	R3025-BL2	9	R3032-BL2	15	R3032-BL3	14	R3040-BL3	47	R3040-BL4	24	R3050-BL3	75	R3050-BL4
Δp _s kPa	Δp _{max} ¹⁾ kPa	Δp _s kPa	Δp _{max} ¹⁾ kPa	Δp _s kPa	Δp _{max} ¹⁾ kPa	Δp _s kPa	Δp _{max} ¹⁾ kPa	Δp _s kPa	Δp _{max} ¹⁾ kPa	Δp _s kPa	Δp _{max} ¹⁾ kPa	Δp _s kPa	Δp _{max} ¹⁾ kPa	Δp _s kPa	Δp _{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
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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



10

Potable water valves

Open/close ball valves certified according to ACS, DVGW, KIWA, KIWA Sweden, ÖVGW, ÜA and WRAS

Rotary valves Internal thread 2-way PN 10 **DN 15...50** 80

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

11

Open/close and changeover butterfly valves

Open/close and changeover applications

Wafer type flange	2-way	PN 6, 10, 16	DN 25...300	84
		PN 10, 16	DN 350	86
		PN 16	DN 400...700	86
Lug type flange	2-way	PN 10, 16	DN 25...150	84
		PN 16	DN 200...300	84
		PN 16	DN 350...700	86
	3-way	PN 16	DN 150...300	88
Definitions	Formula symbol			89

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

DN 25...300

Field of use Closed and open water circuit (pH >7)
 Fluid temperature -20...120°C
 Pipe connection Flange (ISO 7005-2 and EN 1092-2)
 D6..W also: ISO 7005-1 and EN 1092-1
 Leakage rate Tight, leakage rate A (EN 12266-1)
 Permissible operating pressure p_s: 1600 kPa

→ PN 6, 10, 16

DN 25		DN 32		DN 40	
k _{vmax} [m ³ /h]	Valve type	k _{vmax} [m ³ /h]	Valve type	k _{vmax} [m ³ /h]	Valve type
50	D625N	55	D632N	65	D640N



→ PN 10, 16

DN 25		DN 32		DN 40	
k _{vmax} [m ³ /h]	Valve type	k _{vmax} [m ³ /h]	Valve type	k _{vmax} [m ³ /h]	Valve type
50	D625NL	55	D632NL	65	D640NL



Suitable actuators	Nominal torque	Open/close 3-point	Communicative	Terminal connection	Fail-safe	Nominal voltage AC/DC 24 V AC 230 V	Running time motor 90°	Auxiliary switch SPDT	Degree of protection	Actuator type	Linkage type		
											Δp _s kPa	Δp _{max} kPa	
Standard actuators													
SR..	20 Nm	■ ■	■	■	■	24 V	90 s	IP54	SR24A-5	1200	300	1200	
						230 V				1200	300	1200	300
GR..	40 Nm	■	■	■	■	24 V	150 s	IP54	GR24A-5	1200	300	1200	
						230 V				1200	300	1200	300
GRC..	<90 Nm	■	■	■	■	24 V	150 s	IP54	DR24A-5	1200	300	1200	
						230 V				1200	300	1200	300
DR..	40 Nm	■	■	■	■	24 V	35 s	IP54	GRC24A-5 ¹⁾	1200	300	1200	
						230 V				1200	300	1200	300
DRC..	<90 Nm	■	■	■	■	24 V	35 s	IP54	DRC24A-5 ¹⁾	1200	300	1200	
						230 V				1200	300	1200	300
PR..	<90 Nm	■	■	■	■	24 V	35 s	IP54	DRC230A-5 ¹⁾	1200	300	1200	
						230 V				1200	300	1200	300
SRF..	160 Nm	■ ■	■	■	■	AC 24...240 V	35 s ²⁾	2	IP66/ IP67	PRCA-S2-T	1200	300	1200
						DC 24...125 V					1200	300	1200
GRK..	20 Nm	■	■	■	■	24 V	75 s	2	IP54	SRF24A-5	1200	300	1200
						AC 24...240 V					1200	300	1200
DRK..	40 Nm	■	■	■	■	4 V	150 s	IP54	GRK24A-5	1200	300	1200	
						24 V				1200	300	1200	300
PRK..	160 Nm	■ ³⁾ ■ ³⁾	■	■	■	AC 24...240 V	35 s ²⁾	2	IP66/ IP67	PRKCA-BAC-S2-T	1200	300	1200
						DC 24...125 V					1200	300	1200

PN 6, 10, 16

DN 50		DN 65		DN 80		DN 100		DN 125		DN 150		DN 200		DN 250		DN 300	
k _{vmax} [m ³ /h]	Valve type	k _{vmax} [m ³ /h]	Valve type	k _{vmax} [m ³ /h]	Valve type	k _{vmax} [m ³ /h]	Valve type	k _{vmax} [m ³ /h]	Valve type	k _{vmax} [m ³ /h]	Valve type	k _{vmax} [m ³ /h]	Valve type	k _{vmax} [m ³ /h]	Valve type	k _{vmax} [m ³ /h]	Valve type
100	D650N	170	D665N	260	D680N	520	D6100N	880	D6125N	1400	D6150N	2200	D6200W	4200	D6250W	5700	D6300W

PN 10, 16


DN 50		DN 65		DN 80		DN 100		DN 125		DN 150		DN 200		DN 250		DN 300	
k _{vmax} [m ³ /h]	Valve type	k _{vmax} [m ³ /h]	Valve type	k _{vmax} [m ³ /h]	Valve type	k _{vmax} [m ³ /h]	Valve type	k _{vmax} [m ³ /h]	Valve type	k _{vmax} [m ³ /h]	Valve type	k _{vmax} [m ³ /h]	Valve type	k _{vmax} [m ³ /h]	Valve type	k _{vmax} [m ³ /h]	Valve type
100	D650NL	170	D665NL	260	D680NL	520	D6100NL	880	D6125NL	1400	D6150NL	2200	D6200WL	4200	D6250WL	5700	D6300WL

		ZPR03 ⁴⁾		ZPR03 ⁴⁾		ZPR01 ⁴⁾		ZPR01		ZPR01		ZPR01		ZPR01	
Δp _s kPa	Δp _{max} kPa	Δp _s kPa	Δp _{max} kPa	Δp _s kPa	Δp _{max} kPa	Δp _s kPa	Δp _{max} kPa	Δp _s kPa	Δp _{max} kPa	Δp _s kPa	Δp _{max} kPa	Δp _s kPa	Δp _{max} kPa	Δp _s kPa	Δp _{max} 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				
												1400	300		
														1400	300
1200		1200													
1200		1200													
1200		1200													
1200		1200		1200	300										
1200		1200		1200	300	1200	300								
								1200	300						
										1200	300				
												1400	300		
														1400	300

¹⁾ These products are also available as IP66 variant with protective housing.
²⁾ 30...120 s parametrisable with the Belimo Assistant App (NFC)
³⁾ Parametrisable with the Belimo Assistant App (NFC)
⁴⁾ Linkage is only required in combination with a PR actuator.

DN 350...700

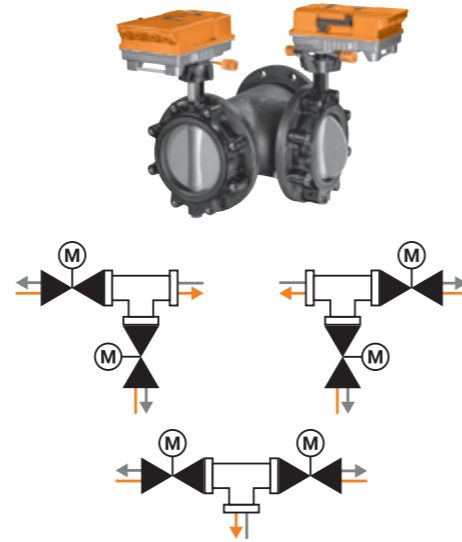
Field of use	Closed and open water circuit (pH >7)
Fluid temperature	-20...120°C
Pipe connection	Flange (ISO 7005-2 and EN 1092-2)
Leakage rate	Tight, leakage rate A (EN 12266-1)
Permissible operating pressure	p _s : 1600 kPa

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				
											With wafer types	k _{vmax} [m³/h]	Valve type	With lug types	k _{vmax} [m³/h]
SY.. 	650 Nm	■	■	■	230 V	31 s	2	IP67	ZSY-703	600	300	10900	D6350N	1200	300
	1000 Nm	■	■	■		55 s	2	IP67				10900	D6350N		
	1500 Nm	■	■	■		55 s	2	IP67				10900	D6350N		
	2000 Nm	■	■	■		70 s	2	IP67				10900	D6350N		
	2500 Nm	■	■	■		70 s	2	IP67				10900	D6350N		
	3500 Nm	■	■	■		70 s	2	IP67				10900	D6350N		

PN 16													
DN 400		DN 450		DN 500		DN 600		DN 700					
k _{vmax} [m³/h]	Valve type	k _{vmax} [m³/h]	Valve type	k _{vmax} [m³/h]	Valve type	k _{vmax} [m³/h]	Valve type	k _{vmax} [m³/h]	Valve type	k _{vmax} [m³/h]	Valve type	k _{vmax} [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 _{vmax} [m³/h]	Valve type	k _{vmax} [m³/h]	Valve type	k _{vmax} [m³/h]	Valve type	k _{vmax} [m³/h]	Valve type	k _{vmax} [m³/h]	Valve type	k _{vmax} [m³/h]	Valve type	k _{vmax} [m³/h]	Valve type
14200	D6400NL	18800	D6450NL	24100	D6500NL	37300	D6600NL	42800	D6700NL				
PN 16													
ZSY-401		ZSY-701		ZSY-702		ZSY-901		ZSY-902		ZSY-903			
Δp _s kPa	Δp _{max} kPa	Δp _s kPa	Δp _{max} kPa	Δp _s kPa	Δp _{max} kPa	Δp _s kPa	Δp _{max} kPa	Δp _s kPa	Δp _{max} kPa	Δp _s kPa	Δp _{max} kPa	Δp _s kPa	Δp _{max} kPa
600	300	1200	300	600	300	1200	300	1200	300	600	300	1000	300
										200	200		

DN 150...300

Field 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 _s : 1600 kPa



Definitions


Formula symbol

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

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

Δp_{v100}	[kPa]
V'₁₀₀	[m ³ /h]
k_{vs}	[m ³ /h]

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

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

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

²⁾ Parametrisable with the Belimo Assistant App

³⁾ 30...120 s parametrisable with the Belimo Assistant App (NFC)

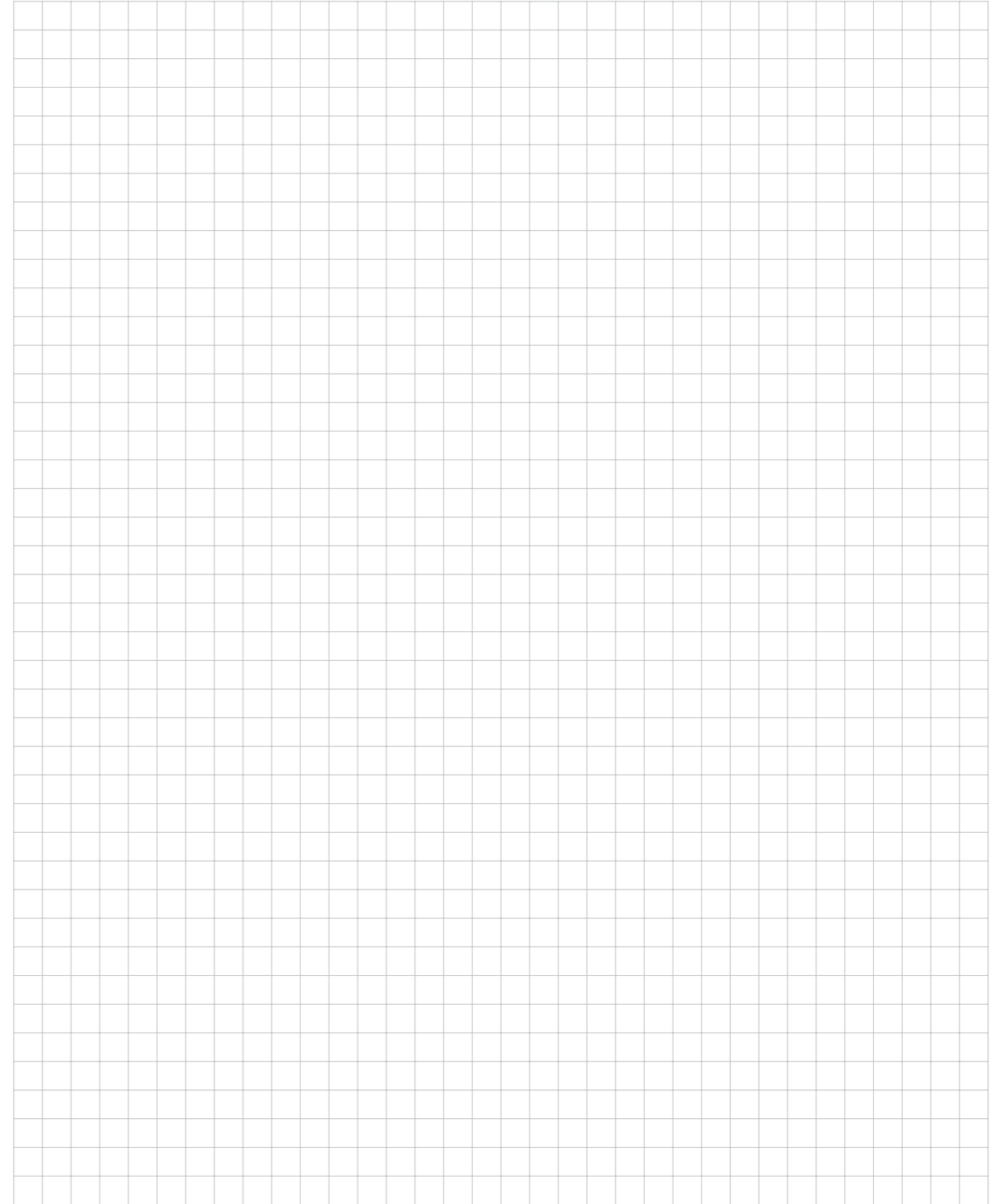
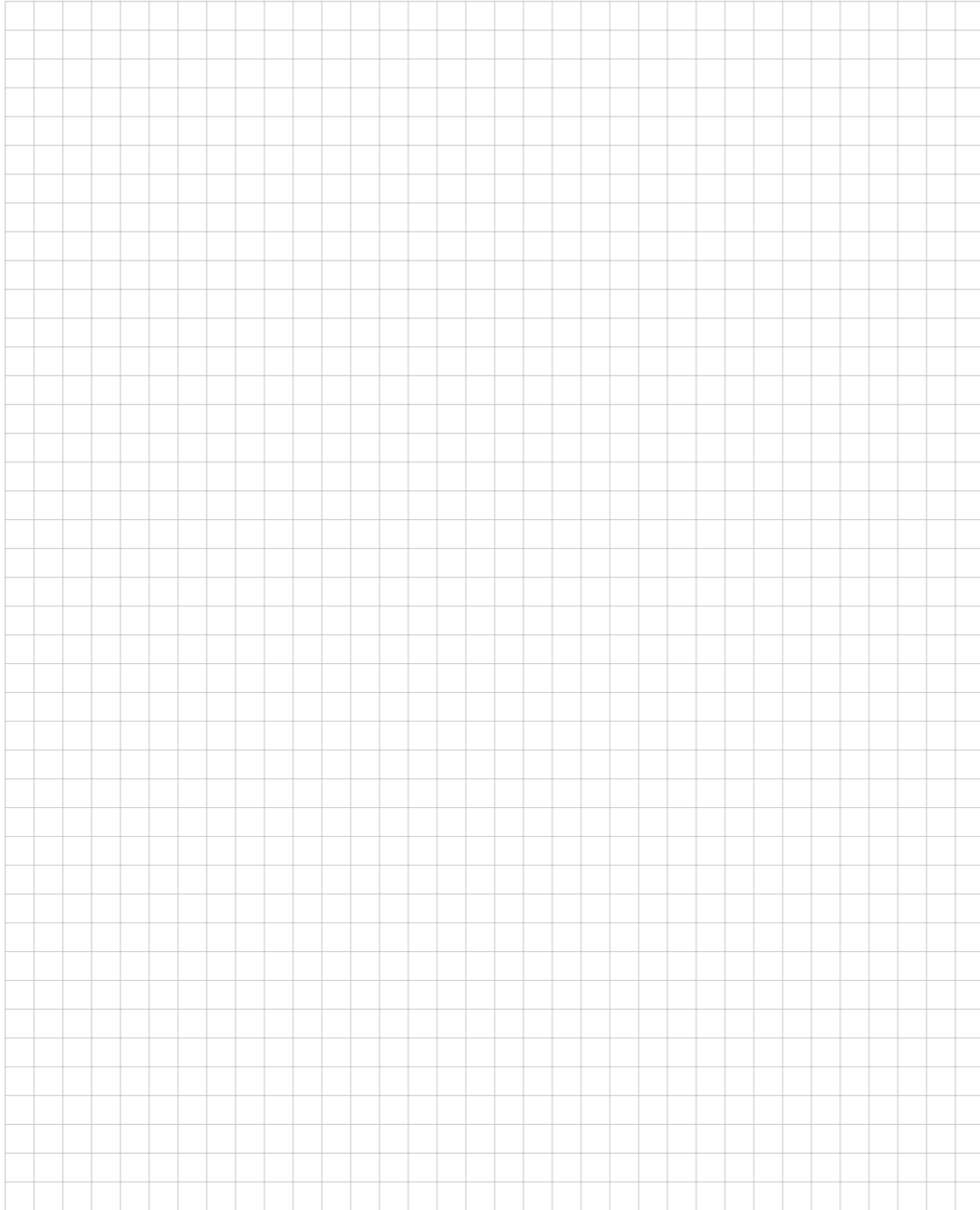
⁴⁾ T-piece is not included in scope of delivery.

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

Suitable T-pieces



Spherical graphite cast iron with fastening screws



All inclusive.

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

Always focusing on customer 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



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