

The complete product range of water solutions.



Edition 2015

BELIMO[®]

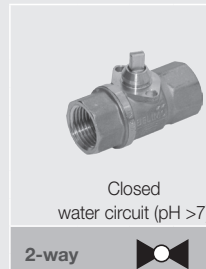
4	Zone valves	2-way characterised control valve	Internal thread	PN 16	DN 15	3
		6-way characterised control valve			DN 15 / DN 20	3
5	Pressure-independent characterised control valves	Belimo Energy Valve™	Internal thread	PN 16	DN 15–50	4
			Flange		DN 65–150	4
		Electronic pressure-independent characterised control valve	Internal thread	PN 16	DN 15–50	5
			Flange		DN 65–150	5
		Pressure-independent characterised control valve	Internal thread	PN 16	DN 15–50	6
6	Characterised control valves	2-way, 3-way	Internal thread	PN 16	DN 15–50	8
			External thread		10	
			Flange		PN 6	DN 15–50
		2-way	Flange	PN 16	DN 65–150	14
		2-way / 130 °C	External thread	PN 16	DN 10–20	16
		7	Globe valves	2-way, 3-way	External thread	PN 16
Flange	PN 6				DN 15–100	18
	PN 16				DN 15–150	20
2-way / 150 °C	Flange			PN 16	DN 15–150	22
2-way	Flange			PN 16 Partially pressure-balanced	DN 40–150	24
2-way, 3-way	Flange			PN 16	DN 200 / DN 250	26
				PN 25	DN 15–100	28
2-way	Flange			PN 25 Partially pressure-balanced	DN 65–100	30
3-way	Flange			PN 40	DN 15–100	32
8	Shut-off and change-over ball valves			2-way		
		3-way / T-bore	Internal thread	PN 16	DN 15–50	34
		3-way / L-bore				36
		2-way, 3-way / T-bore	External thread	PN 16	DN 15–50	38
			Flange	PN 6		40
		2-way / 130 °C	External thread	PN 16	DN 10–20	42
		9	Butterfly valves	Wafer type, lug type	Flange	PN 6, 10, 16
PN 16	DN 500–700					46

DN 15

Pipe connection	Internal thread Rp (ISO 7/1)
Medium temperature	+2...+90 °C
Flow characteristic	A-AB, equal percentage
Leakage rate	Leakage rate A, leak-proof (EN 12266-1)

Suitable actuators

Nominal torque	Open-close	3-point	Modulating (2–10 V)	MP-Bus® communication	Nominal voltage 24 V AC/DC 230 V AC	Running time motor 90°
----------------	------------	---------	---------------------	-----------------------	---	------------------------



DN 15	
k_{vs} [m³/h]	Valve type
0.4	C215Q
0.6	
1	
1.5	
2	
2.9	
4	
4.8	

Standard actuators with connection cable



1 Nm	•	•		24 V	75 s
	•	•		230 V	
			•	24 V	
			•	24 V	

Actuator type with connection cable

CQ24A	CQ24A-T
CQ230A	CQ230A-T
CQ24A-SR	CQ24A-SR-T
CQ24A-MPL	CQ24A-MPL-T

Actuator type with connecting terminals

CQ24A-T	CQ24A-T
CQ230A-T	CQ230A-T
CQ24A-SR-T	CQ24A-SR-T
CQ24A-MPL-T	CQ24A-MPL-T

Δp_{max} [kPa]

280
280
280
280

DN 15 / DN 20

Pipe connection	Internal thread Rp (ISO 7/1)
Medium temperature	+6...+80 °C
Linear flow characteristic	Sequence I: 0–30° Dead zone: 30–60° Sequence II: 60–90°
Leakage rate	Leakage rate A, air bubble tight (EN 12266-1)

Suitable actuators

Nominal torque	Modulating (2–10 V)	Modulating (2–10 V, variable)	MP-Bus® communication ¹⁾	Nominal voltage 24 V AC/DC	Running time motor 90°	Running time adjustable
----------------	---------------------	-------------------------------	-------------------------------------	-------------------------------	------------------------	-------------------------



DN 15			DN 20											
k_{vs} [m³/h]	k_{vs} [m³/h]	Valve type	k_{vs} [m³/h]	k_{vs} [m³/h]	Valve type									
0.25	0.25	R3015-P25-P25-B2	0.63	1.6	R3020-P63-1P6-B2									
	0.4	R3015-P25-P4-B2												
	0.63	R3015-P25-P63-B2												
	1	R3015-P25-1-B2												
	1.3	R3015-P25-1P3-B2												
0.4	0.25	R3015-P4-P25-B2				1	2.5	R3020-1-1P6-B2						
	0.4	R3015-P4-P4-B2												
	0.63	R3015-P4-P63-B2												
	1	R3015-P4-1-B2												
0.63	1.3	R3015-P4-1P3-B2							1.6	1.6	R3020-1P6-1P6-B2			
	0.25	R3015-P63-P25-B2												
	0.4	R3015-P63-P4-B2												
	0.63	R3015-P63-P63-B2												
1	1	R3015-P63-1-B2										2.5	0.63	R3020-2P5-1P6-B2
	1.3	R3015-P63-1P3-B2												
	0.25	R3015-1-P25-B2												
	0.4	R3015-1-P4-B2												
	0.63	R3015-1-P63-B2												
1.3	1	R3015-1-1-B2	1	1.6	R3020-1P6-1-B2									
	1.3	R3015-1-1P3-B2												
	0.25	R3015-1P3-P25-B2												
	0.4	R3015-1P3-P4-B2												
	0.63	R3015-1P3-P63-B2												
1.3	1	R3015-1P3-1-B2				1.6	2.5	R3020-2P5-1P6-B2						
	1.3	R3015-1P3-1P3-B2												
	1.3	R3015-1P3-1P3-B2												

Standard actuators



5 Nm	•	•	•	24 V	90 s

Actuator type

LR24A-SR
LR24A-MP

Δp_{max} [kPa]

100
100

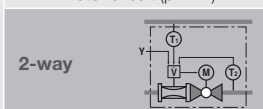
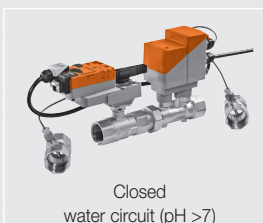
Δp_{max} [kPa]

100
100

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

DN 15–50 / internal thread

Pipe connection	Internal thread Rp (ISO 7/1)
Medium temperature	-10...+120 °C
Flow characteristic	Equal percentage (acc. to VDI/VDE 2178) Can be switched to linear
Leakage rate	A, air bubble tight (EN 12266-1)
V_{max}	Freely adjustable 30–100% V_{nom}
Completely parameterisable by means of integrated web server	



Actuators

Nominal torque	Modulating (2–10 V, variable)	MP-Bus® communication	BACnet IP communication	BACnet MS/TP communication	Nominal voltage 24 V AC/DC	Running time motor 90°
5 Nm	•	•	•	•	24 V	90 s
10 Nm	•	•	•	•	24 V	90 s
20 Nm	•	•	•	•	24 V	90 s

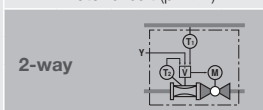
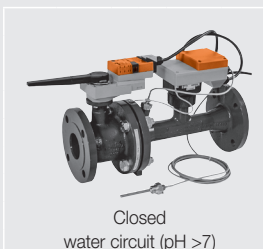


Actuator type	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}
	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]
LR..	1400	350				
NR..			1400	350		
SR..					1400	350

¹⁾ Theoretical k_{vs} value for pressure drop calculation.

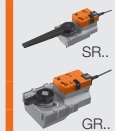
DN 65–150 / flange

Pipe connection	Flange PN 16 (EN 1092-1)
Medium temperature	-10...+120 °C
Flow characteristic	Equal percentage (acc. to VDI/VDE 2178) Can be switched to linear
Leakage rate	A, air bubble tight (EN 12266-1)
V_{max}	Freely adjustable 45–100% V_{nom}
Completely parameterisable by means of integrated web server	



Actuators

Nominal torque	Modulating (2–10 V, variable)	MP-Bus® communication	BACnet IP communication	BACnet MS/TP communication	Nominal voltage 24 V AC/DC	Running time motor 90°
20 Nm	•	•	•	•	24 V	90 s
40 Nm	•	•	•	•	24 V	90 s

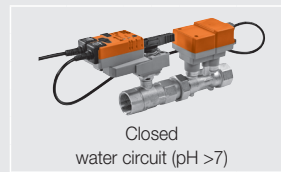


Actuator type	Δp_s	Δp_{max}	Δp_s	Δp_{max}
	[kPa]	[kPa]	[kPa]	[kPa]
SR..	690	340		
GR..			690	340

¹⁾ Theoretical k_{vs} value for pressure drop calculation.

DN 15–50 / internal thread

Pipe connection	Internal thread Rp (ISO 7/1)
Medium temperature	-10...+120 °C
	Equal percentage (acc. to VDI/VDE 2178) Can be switched to linear
Leakage rate	A, air bubble tight (EN 12266-1)
V_{max}	Freely adjustable 30–100% \dot{V}_{nom}
Control, operating range, position feedback, running time and further functions are parameterisable with PC-Tool	



2-way						DN 15, DN 20, DN 25	DN 32, DN 40	DN 50
DN	Rp ["]	\dot{V}_{nom} [l/s]	\dot{V}_{nom} [l/min]	k_{vs} theoretical [m ³ /h ¹]	Valve type with actuator	Valve type with actuator	Valve type with actuator	
15	1/2	0.35	21	2.9	EP015R+MP			
20	3/4	0.65	39	4.9	EP020R+MP			
25	1	1.15	69	8.6	EP025R+MP			
32	1 1/4	1.8	108	14.2		EP032R+MP		
40	1 1/2	2.5	150	21.3		EP040R+MP		
50	2	4.8	288	32			EP050R+MP	

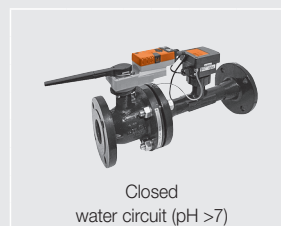
Actuators

Nominal torque	Modulating (2–10 V, variable)	MP-Bus® communication	Nominal voltage 24 V AC/DC	Running time motor 90°	Actuator type	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]
5 Nm	•	•	24 V	90 s	LR..	1400	350				
10 Nm	•	•	24 V	90 s	NR..			1400	350		
20 Nm	•	•	24 V	90 s	SR..					1400	350

¹⁾ Theoretical k_{vs} value for pressure drop calculation.

DN 65–150 / flange

Pipe connection	Flange PN 16 (EN 1092-1)
Medium temperature	-10...+120 °C
Flow characteristic	Equal percentage (acc. to VDI/VDE 2178) Can be switched to linear
Leakage rate	A, air bubble tight (EN 12266-1)
V_{max}	Freely adjustable 45–100% \dot{V}_{nom}
Control, operating range, position feedback, running time and further functions are parameterisable with PC-Tool	



2-way						DN 65, DN 80	DN 100, DN 125, DN 150
DN	Rp ["]	\dot{V}_{nom} [l/s]	\dot{V}_{nom} [l/min]	k_{vs} theoretical [m ³ /h ¹]	Valve type with actuator	Valve type with actuator	
65	2 1/2	8	480	45	P6065W800E-MP		
80	3	11	660	65	P6080W1100E-MP		
100	4	20	1200	115		P6100W2000E-MP	
125	5	31	1860	175		P6125W3100E-MP	
150	6	45	2700	270		P6150W4500E-MP	

Actuators

Nominal torque	Modulating (2–10 V, variable)	MP-Bus® communication	Nominal voltage 24 V AC/DC	Running time motor 90°	Actuator type	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]
20 Nm	•	•	24 V	90 s	SR..	690	340		
40 Nm	•	•	24 V	90 s	GR..			690	340

¹⁾ Theoretical k_{vs} value for pressure drop calculation.

DN 15–50

Pipe connection	Internal thread Rp (ISO 7/1)
Medium temperature	DN 15 / 20_+5...+100 °C DN 25–50_+5...+80 °C
Flow characteristic	Equal percentage (acc. to VDI/VDE 2178)
Leakage rate	Tight (leakage class IV at 350 kPa, EN 60534-4)

Suitable actuators

Nominal torque	Open-close	3-point	Modulating (2–10 V)	Emergency control function	Nominal voltage 24 V AC/DC 230 V AC	Running time motor 90°	Running time emergency control function	DN 15			DN 20		
								Rp ["]	V _{nom} [l/s]	Valve type	Rp ["]	V _{nom} [l/s]	Valve type
2-way	Closed water circuit (pH >7)							1/2	0.1	R215P-010	3/4	0.4	R220P-040
			1/2	0.2	R215P-020	3/4	0.6	R220P-060					
			1/2	0.4	R215P-040	3/4	0.6	R220P-060					

Standard actuators

LR.. NR.. SR..	Nominal torque	Open-close	3-point	Modulating	Emergency control function	Nominal voltage	Running time	Actuator type	Δp _s	Δp _{max}	Δp _s	Δp _{max}
									[kPa]	[kPa]	[kPa]	[kPa]
5 Nm	• •					24 V	90 s	LR24A	700	350	700	350
						230 V		LR230A	700	350	700	350
						24 V		LR24A-SR	700	350	700	350
10 Nm	• •					24 V	90 s	NR24A	700	350	700	350
						230 V		NR230A	700	350	700	350
						24 V		NR24A-SR	700	350	700	350
20 Nm	• •					24 V	90 s	SR24A	700	350	700	350
						230 V		SR230A	700	350	700	350
						24 V		SR24A-SR	700	350	700	350

Fast runners

LRC.. NRC.. SRC..	Nominal torque	Open-close	3-point	Modulating	Emergency control function	Nominal voltage	Running time	Actuator type	Δp _s	Δp _{max}	Δp _s	Δp _{max}
									[kPa]	[kPa]	[kPa]	[kPa]
5 Nm	• •					24 V	35 s	LRC24A-SR	700	350	700	350
						24 V	45 s	NRC24A-SR	700	350	700	350
						24 V	35 s	SRC24A-SR	700	350	700	350

Actuators with mechanical emergency control function

NRF.. SRF..	Nominal torque	Open-close	3-point	Modulating	Emergency control function	Nominal voltage	Running time	Emergency control time	Actuator type NC		Actuator type NO		Δp _s [kPa]	Δp _{max} [kPa]	Δp _s [kPa]	Δp _{max} [kPa]
									without auxiliary switch	with two auxiliary switches	without auxiliary switch	with two auxiliary switches				
4 Nm	• •					24 V	150 s	<20 s	LRF24-SR	..-S2	..-O	..-S2-O	700	350	700	350
						230 V			NRF230A-3	..-S2	..-O	..-S2-O	700	350	700	350
						24 V			NRF24A-SR	..-S2	..-O	..-S2-O	700	350	700	350
10 Nm	• •					24 V	90 s	<20 s	SRF24A-SR	..-S2	..-O	..-S2-O	700	350	700	350
						24 V			NRF24A-SR	..-S2	..-O	..-S2-O	700	350	700	350
						24 V			SRF24A-SR	..-S2	..-O	..-S2-O	700	350	700	350

Continued next page

DN 25			DN 32			DN 40			DN 50		
Rp ["]	V _{nom} [l/s]	Valve type	Rp ["]	V _{nom} [l/s]	Valve type	Rp ["]	V _{nom} [l/s]	Valve type	Rp ["]	V _{nom} [l/s]	Valve type
1	0.7	R225P-070	1 1/4	1.2	R232P-120	1 1/2	1.8	R240P-180	2	2.7	R250P-270
	1.1	R225P-110		1.6	R232P-160		2.2	R240P-220		5.5	R250P-550
Δp _s [kPa]	Δp _{max} [kPa]		Δp _s [kPa]	Δp _{max} [kPa]		Δp _s [kPa]	Δp _{max} [kPa]		Δp _s [kPa]	Δp _{max} [kPa]	
700	350										
700	350										
700	350										
700	350	700	350	700	350	700	350	700	350		
700	350	700	350	700	350	700	350	700	350		
700	350	700	350	700	350	700	350	700	350	700	350
700	350	700	350	700	350	700	350	700	350	700	350
700	350	700	350	700	350	700	350	700	350	700	350
Δp _s [kPa]	Δp _{max} [kPa]		Δp _s [kPa]	Δp _{max} [kPa]		Δp _s [kPa]	Δp _{max} [kPa]		Δp _s [kPa]	Δp _{max} [kPa]	
700	350										
700	350	700	350	700	350	700	350	700	350		
700	350	700	350	700	350	700	350	700	350	700	350
Δp _s [kPa]	Δp _{max} [kPa]		Δp _s [kPa]	Δp _{max} [kPa]		Δp _s [kPa]	Δp _{max} [kPa]		Δp _s [kPa]	Δp _{max} [kPa]	
700	350										
700	350	700	350	700	350	700	350	700	350		
700	350	700	350	700	350	700	350	700	350		
700	350	700	350	700	350	700	350	700	350	700	350

Continued from previous page

DN 15–50

Pipe connection	Internal thread Rp (ISO 7/1)
Medium temperature	-10...+120 °C (small actuators TR../TRY.. only up to +100 °C) (compact actuators KR.. only up to +80 °C)
Flow characteristic	A-AB equal percentage / B-AB linear (k_{vs} 70% of A-AB)
Leakage rate	Control path A-AB: leakage rate A, air bubble tight (EN 12266-1) / bypass B-AB: leakage class I

		DN 15	DN 20
<p>Closed and open water circuit (pH >7)</p> <p>2-way</p>	k_{vs} [m³/h] Valve type		
	0.25	R2015-P25-S1	
	0.4	R2015-P4-S1	
	0.63	R2015-P63-S1	
	1	R2015-1-S1	
	1.6	R2015-1P6-S1	4 R2020-4-S2
	2.5	R2015-2P5-S1	6.3 R2020-6P3-S2
<p>Closed water circuit (pH >7)</p> <p>3-way</p>	k_{vs} [m³/h] Valve type		
	0.25	R3015-P25-S1	
	0.4	R3015-P4-S1	
	0.63	R3015-P63-S1	
	1	R3015-1-S1	
	1.6	R3015-1P6-S1	4 R3020-4-S2
	2.5	R3015-2P5-S1	6.3 R3020-6P3-S2

Suitable actuators

Nominal torque	Open-close	3-point	Modulating (2–10 V)	Emergency control function	Nominal voltage 24 V AC/DC 230 V AC	Running time motor 90°	Running time emergency control function
----------------	------------	---------	---------------------	----------------------------	-------------------------------------	------------------------	---

Small and compact actuators

Actuator type	Δp_s [kPa]	Δp_{max}^1 [kPa]	Δp_s [kPa]	Δp_{max}^1 [kPa]
• • •	1400	350		
• • •	1400	350		
• • •	1400	350		
• • •	1400	350		
• • •	1400	350		
• • •	1400	350		
• • •	1400	350		

Standard actuators

Actuator type without auxiliary switch	Actuator type with auxiliary switch	Δp_s [kPa]	Δp_{max}^1 [kPa]	Δp_s [kPa]	Δp_{max}^1 [kPa]	
						5 Nm
• • •	• • •	1400	350			
• • •	• • •	1400	350			
• • •	• • •	1400	350			
• • •	• • •	1400	350			
• • •	• • •	1400	350			
• • •	• • •	1400	350			
• • •	• • •	1400	350			

Fast runners and very fast runners

Actuator type	Δp_s [kPa]	Δp_{max}^1 [kPa]	Δp_s [kPa]	Δp_{max}^1 [kPa]
2 Nm	1400	350		
4 Nm			1400	350
5 Nm			1400	350
8 Nm			1400	350
10 Nm			1400	350
20 Nm			1400	350

Actuators with mechanical emergency control function

Actuator type NC without auxiliary switch	Actuator type NO with two auxiliary switches	Δp_s [kPa]	Δp_{max}^1 [kPa]	Δp_s [kPa]	Δp_{max}^1 [kPa]	
						2 Nm
• • •	• • •	1400	350			
• • •	• • •	1400	350			
• • •	• • •			1400	350	
• • •	• • •			1400	350	
• • •	• • •			1400	350	
• • •	• • •			1400	350	

¹⁾ Low-noise operation $\Delta p_{max} = 200$ kPa.

²⁾ If medium temperature ≥ 100 °C, then line and valve must be insulated.

DN 25		DN 32		DN 40		DN 50	
k_{vs} [m ³ /h]	Valve type			k_{vs} [m ³ /h]	Valve type	k_{vs} [m ³ /h]	Valve type
6.3	R2025-6P3-S2			16	R2040-16-S3	25	R2050-25-S4
10	R2025-10-S2	k_{vs} [m ³ /h]	Valve type	25	R2040-25-S3	40	R2050-40-S4
16	R2025-16-S2	16	R2032-16-S3				
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
6.3	R3025-6P3-S2	16	R3032-16-S3	16	R3040-16-S3	25	R3050-25-S4
10	R3025-10-S2			25	R3040-25-S4	40	R3050-40-S4
						58	R3050-58-S4

Δp_s [kPa]	$\Delta p_{max}^{(1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{(1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{(1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{(1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{(1)}$ [kPa]

Δp_s [kPa]	$\Delta p_{max}^{(1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{(1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{(1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{(1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{(1)}$ [kPa]
1400	350								
1400	350								
1400	350								
1400	350	1400	350	1400	350				
1400	350	1400	350	1400	350				
1400	350	1400	350	1400	350				
1400	350	1400	350	1400	350	1400	350	1400	350
1400	350	1400	350	1400	350	1400	350	1400	350
1400	350	1400	350	1400	350	1400	350	1400	350

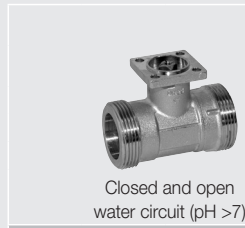
Δp_s [kPa]	$\Delta p_{max}^{(1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{(1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{(1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{(1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{(1)}$ [kPa]
1400	350								
1400	350								
1400	350	1400	350	1400	350				
1400	350	1400	350	1400	350				
1400	350	1400	350	1400	350	1400	350	1400	350

Δp_s [kPa]	$\Delta p_{max}^{(1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{(1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{(1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{(1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{(1)}$ [kPa]
1400	350								
1400	350								
1400	350	1400	350	1400	350				
1400	350	1400	350	1400	350				
1400	350	1400	350	1400	350	1400	350	1400	350

Continued from previous page

DN 10–50

Pipe connection	External thread G (ISO 228/1)
Medium temperature	+6...+100 °C (compact actuators KR.. only up to +80 °C) (DN 10–50: –10...+5 °C with spindle heating)
Flow characteristic	A-AB equal percentage / B-AB linear (k_{vs} 70% of A-AB)
Leakage rate	Control path A-AB: leakage rate A, air bubble tight (EN 12266-1) / bypass B-AB: leakage class I



2-way



3-way

DN 10		DN 15	
k_{vs} [m³/h]	Valve type	k_{vs} [m³/h]	Valve type
0.25	R405K	0.63	R409
0.4	R406K	1	R410
0.63	R407K	1.6	R411
1	R408K	2.5	R412
1.6	R409K	4	R413
		6.3	R414

DN 10		DN 15	
k_{vs} [m³/h]	Valve type	k_{vs} [m³/h]	Valve type
0.25	R505K	0.63	R509
0.4	R506K	1	R510
0.63	R507K	1.6	R511
1	R508K	2.5	R512
		4	R513

Suitable actuators

Nominal torque	Open-close	3-point	Modulating (2–10 V)	Emergency control function	Nominal voltage 24 V AC/DC 230 V AC	Running time motor 90°	Running time emergency control function
----------------	------------	---------	---------------------	----------------------------	-------------------------------------	------------------------	---

Small and compact actuators

Actuator type	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]
KR24			1400	200
TR24	1400	200	1400	200
KR230			1400	200
TR230-3	1400	200	1400	200
KR24-SR			1400	200
TR24-SR	1400	200	1400	200
TRY24-SR	1400	200	1400	200

Standard actuators

Actuator type	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]
LR24A	1400	200	1400	200
LR230A			1400	200
LR24A-SR			1400	200
NR24A			1400	200
NR230A			1400	200
NR24A-SR			1400	200
SR24A			1400	200
SR230A			1400	200
SR24A-SR			1400	200

Fast runners and very fast runners

Actuator type	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]
TRC24A-SR	1400	200	1400	200
LRQ24A-SR			1400	200
LRC24A-SR			1400	200
NRQ24A-SR			1400	200
NRC24A-SR			1400	200
SRC24A-SR			1400	200

Actuators with mechanical emergency control function

Actuator type	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]
TRF24-2	1400	200	1400	200
TRF24-SR	1400	200	1400	200
LRF24-SR			1400	200
NRFD230A-3			1400	200
NRF230A-3			1400	200
NRF24A-SR			1400	200
SRF24A-SR			1400	200

Value = recommended combinations Value = other possible combinations (Data does not relieve the user of the obligation for testing in individual cases.)

Continued next page

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
4	R417	6.3	R422			16	R438	25	R448
6.3	R418	10	R423	k_{vs} [m³/h]	Valve type	16	R439	40	R449
8.6	R419	16	R424	16	R431				
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	R517	6.3	R522	16	R531	16	R538	25	R548
6.3	R518	10	R523						

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]
1400	200								
1400	200								
1400	200								
1400	200								
1400	200								
1400	200								
1400	200								

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]
1400	200	1400	200						
1400	200	1400	200						
1400	200	1400	200						
1400	200	1400	200	1400	200	1400	200	1400	200
1400	200	1400	200	1400	200	1400	200	1400	200
1400	200	1400	200	1400	200	1400	200	1400	200
1400	200	1400	200	1400	200	1400	200	1400	200
1400	200	1400	200	1400	200	1400	200	1400	200

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]
1400	200								
1400	200	1400	200						
1400	200	1400	200						
1400	200	1400	200	1400	200	1400	200	1400	200
1400	200	1400	200	1400	200	1400	200	1400	200
1400	200	1400	200	1400	200	1400	200	1400	200

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]
1400	200								
1400	200								
1400	200	1400	200						
1400	200	1400	200						
1400	200	1400	200	1400	200	1400	200	1400	200
1400	200	1400	200	1400	200	1400	200	1400	200
1400	200	1400	200	1400	200	1400	200	1400	200

Continued from previous page

DN 15–50

Pipe connection	Flange PN 6 (EN 1092/1)
Medium temperature	-10...+100 °C (compact actuators KR.. only up to +80 °C)
Flow characteristic	A-AB equal percentage / B-AB linear (k_{vs} 70% of A-AB)
Leakage rate	Control path A-AB: leakage rate A, air bubble tight (EN 12266-1) / bypass B-AB: leakage class I

	DN 15	DN 20	
 Closed and open water circuit (pH >7) 2-way	k_{vs} [m³/h] Valve type 0.63 R6015RP63-B1 1 R6015R1-B1 1.6 R6015R1P6-B1 2.5 R6015R2P5-B1	k_{vs} [m³/h] Valve type 6.3 R6020R6P3-B1	
	 Closed water circuit (pH >7) 3-way	k_{vs} [m³/h] Valve type 0.63 R7015RP63-B1 1.6 R7015R1P6-B1 4 R7015R4-B1	k_{vs} [m³/h] Valve type 6.3 R7020R6P3-B1

Suitable actuators

Nominal torque	Open-close	3-point	Modulating (2–10 V)	Emergency control function	Nominal voltage 24 V AC/DC 230 V AC	Running time motor 90°	Running time emergency control function
----------------	------------	---------	---------------------	----------------------------	-------------------------------------	------------------------	---

Small and compact actuators

Actuator type	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]	
					24 V
2 Nm	600	100	600	100	KR24
	600	100	600	100	TR24
	600	100	600	100	KR230
	600	100	600	100	TR230-3
	600	100	600	100	KR24-SR
	600	100	600	100	TR24-SR
	600	100	600	100	TRY24-SR

Standard actuators

Actuator type	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]		
					without auxiliary switch	with auxiliary switch
5 Nm	600	100	600	100	LR24A	..-S
	600	100	600	100	LR230A	..-S
	600	100	600	100	LR24A-SR	
10 Nm	600	100	600	100	NR24A	..-S
	600	100	600	100	NR230A	..-S
	600	100	600	100	NR24A-SR	
20 Nm	600	100	600	100	SR24A	..-S
	600	100	600	100	SR230A	..-S
	600	100	600	100	SR24A-SR	

Fast runners and very fast runners

Actuator type	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]	
2 Nm	600	100	600	100	TRC24A-SR
4 Nm			600	100	LRQ24A-SR
5 Nm			600	100	LRC24A-SR
8 Nm			600	100	NRQ24A-SR
10 Nm			600	100	NRC24A-SR
20 Nm			600	100	SRC24A-SR

Actuators with mechanical emergency control function

Actuator type NC	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]			
					without auxiliary switch	with two auxiliary switches	without auxiliary switch
2 Nm	600	100	600	100	TRF24-2	..-O	
	600	100	600	100	TRF24-SR	..-O	
4 Nm			600	100	LRF24-SR		
			600	100	NRF230A-3	..-S2	..-O
			600	100	NRF230A-3	..-S2	..-O
			600	100	NRF24A-SR	..-S2	..-O
			600	100	SRF24A-SR	..-S2	..-O

Continued next page

DN 25		DN 32		DN 40		DN 50	
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	R6025R10-B2	16	R6032R16-B3	25	R6040R25-B3	40	R6050R40-B3
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	R7025R10-B2	16	R7032R16-B3	16	R7040R16-B3	25	R7050R25-B3

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	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

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	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

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	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

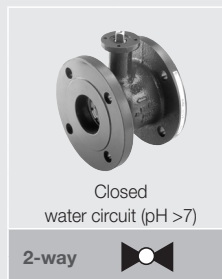
Continued from previous page

DN 65 – 150

Pipe connection	Flange PN 16 (EN 1092/1)
Medium temperature	-10...+120 °C
Flow characteristic	A-AB, equal percentage
Leakage rate	Leakage rate A, air bubble tight (EN 12266-1)

Suitable actuators

Nominal torque	Open-close	3-point	Modulating (2–10 V)	Emergency control function	Nominal voltage 24 V AC/DC 230 V AC	Running time motor 90'	Running time emergency control function	Auxiliary switch SPDT
----------------	------------	---------	---------------------	----------------------------	---	---------------------------	---	-----------------------



DN 65		DN 80	
k_{vs} [m ³ /h]	Valve type	k_{vs} [m ³ /h]	Valve type
63	R6065W63-S8	100	R6080W100-S8

Standard actuators

SR..	GR..	SRC..	Nominal torque	Open-close	3-point	Modulating (2–10 V)	Emergency control function	Nominal voltage	Running time motor	Running time emergency control function	Auxiliary switch SPDT	Actuator type				
												Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]	
20 Nm	•	•	24 V	90 s				24 V	90 s			SR24A-5	690	400	690	400
												SR230A-5	690	400	690	400
												SR24A-SR-5	690	400	690	400
												SR230A-SR-5	690	400	690	400
20 Nm	•	•	24 V	90 s				24 V	90 s			SR24P-5	690	400	690	400
												SR230P-5	690	400	690	400
												SR24P-SR-5	690	400	690	400
												SR230P-SR-5	690	400	690	400
40 Nm	•	•	24 V	150 s				24 V	150 s			GR24A-5	690	400	690	400
												GR230A-5	690	400	690	400
												GR24A-SR-5	690	400	690	400
												GR230A-SR-5	690	400	690	400

Fast runners

											Actuator type			
Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]											
20 Nm	•	24 V	35 s	SRC24A-SR-5	690	400	690	400						

Actuators with emergency control function

SRF..	GRK..	Nominal torque	Open-close	3-point	Modulating (2–10 V)	Emergency control function	Nominal voltage	Running time motor	Running time emergency control function	Auxiliary switch SPDT	Actuator type		Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]												
											NC	NO																
20 Nm	•	•	24 V	<75 s	<20 s	⊗	24 V	2			2	SRF24A-5	..-O	690	400	690	400											
												SRF24A-S2-5	..-O															
												SRF230A-5	..-O	690	400	690	400											
												SRF230A-S2-5	..-O															
20 Nm	•	•	24 V	90 s	<20 s	⊗	24 V	2	90 s	<20 s	2	SRF24A-SR-5	..-O	690	400	690	400											
												SRF24A-SR-S2-5	..-O															
												40 Nm	•	•	24 V	150 s	- -	24 V	150 s			2	GRK24A-5		690	400	690	400
																							GRK24A-SR-5		690	400	690	400

⊗ = Actuators with mechanical emergency control function.

-||- = Actuators with electrical emergency control function. The emergency setting position NC/NO of all -||- actuators can be adjusted on the actuator.

Continued next page

DN 100		DN 125		DN 150	
k_{vs} [m ³ /h] Valve type		k_{vs} [m ³ /h] Valve type		k_{vs} [m ³ /h] Valve type	
160	R6100W160-S8	250	R6125W250-S8	320	R6150W320-S8
Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]
690	400	690	400	690	400
690	400	690	400	690	400
690	400	690	400	690	400
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]
690	400	690	400	690	400
690	400	690	400	690	400

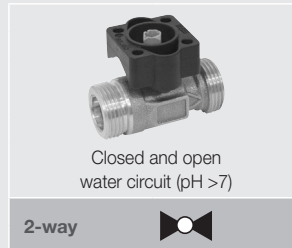
Continued from previous page

DN 10–20

Pipe connection	External thread G (ISO 228/1)
Medium temperature	+2...+130 °C
Flow characteristic	A-AB, equal percentage
Leakage rate	Leakage rate A, air bubble tight (EN 12266-1)

Suitable actuators

Nominal torque	Open-close	3-point	Modulating (2–10 V)	Emergency control function	Nominal voltage 24 V AC/DC 230 V AC	Running time motor 90°	Running time emergency control function
----------------	------------	---------	---------------------	----------------------------	---	---------------------------	---



DN 10		DN 15		DN 20	
k_{vs} [m³/h]	Valve type				
0.3	R404DK				
0.4	R405DK				
0.63	R406DK	k_{vs} [m³/h]	Valve type	k_{vs} [m³/h]	Valve type
1	R407DK	2.5	R412D	6.3	R417D
1.6	R408DK	4	R413D	10	R418D
2.5	R409DK	6.3	R414D	16	R419D

Small and compact actuators



							Actuator type	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]
2 Nm	•	•		24 V	100 s		TR24 ¹⁾	1400	800				
			•	24 V	90 s		TR24-SR ¹⁾	1400	800				
			•	24 V	35 s		TRY24-SR ¹⁾	1400	800				

Standard actuators



							Actuator type	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]
5 Nm	•	•		24 V			LR24A	1400	800	1400	800	1400	800
	•	•		230 V	90 s		LR230A	1400	800	1400	800	1400	800
			•	24 V			LR24A-SR	1400	800	1400	800	1400	800

Fast runners and very fast runners



							Actuator type	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]
2 Nm			•	24 V	15 s		TRC24A-SR	1400	800				
4 Nm			•	24 V	9 s		LRQ24A-SR	1400	800	1400	800	1400	800
5 Nm			•	24 V	35 s		LRC24A-SR	1400	800	1400	800	1400	800

Actuators with mechanical emergency control function

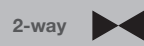


							Actuator type NC		Actuator type NO		Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]
							without auxiliary switch	with two auxiliary switches	without auxiliary switch	with two auxiliary switches						
2 Nm	•		⊗	24 V	90 s	<25 s	TRF24-2 ¹⁾		..-O	1400	800					
		•	⊗	24 V		25 s	TRF24-SR ¹⁾		..-O	1400	800					
4 Nm			⊗	24 V	150 s	<20 s	LRF24-SR ¹⁾			1400	800	1400	800	1400	800	
10 Nm	•		⊗	230 V	35 s	<20 s	NRFD230A-3	..-S2	..-O	1400	800	1400	800	1400	800	

¹⁾ If medium temperature ≥ 100 °C, then line and valve must be insulated.

DN 15–50

Pipe connection	External thread G (ISO 228)
Medium temperature	+5...+120 °C (-10...+5 °C with spindle heating)
Flow characteristic	A-AB equal percentage / B-AB linear
Leakage rate	Control path A-AB: max. 0.05% of k_{VS} value bypass B-AB: max. 1% of k_{VS} value



		DN 15	DN 20	DN 25	DN 32	DN 40	DN 50				
k_{VS} [m ³ /h]	0.63	H411B									
	1	H412B									
	1.6	H413B									
	2.5	H414B									
2-way		k_{VS} [m ³ /h]	Valve type	k_{VS} [m ³ /h]	Valve type	k_{VS} [m ³ /h]	Valve type				
	4	H415B	6.3	H420B	10	H425B	16	H432B	25	H440B	40



		DN 15	DN 20	DN 25	DN 32	DN 40	DN 50				
k_{VS} [m ³ /h]	0.63	H511B									
	1	H512B									
	1.6	H513B									
	2.5	H514B									
3-way		k_{VS} [m ³ /h]	Valve type	k_{VS} [m ³ /h]	Valve type	k_{VS} [m ³ /h]	Valve type				
	4	H515B	6.3	H520B	10	H525B	16	H532B	25	H540B	40

Suitable actuators

Actuating force	Actuating time per nominal stroke	Actuating time for emergency control function	Open-close	3-point	Modulating (2–10 V)	MP-Bus® communication ¹⁾	Emergency control function	Nominal voltage	24 V AC/DC	230 V AC
-----------------	-----------------------------------	---	------------	---------	---------------------	-------------------------------------	----------------------------	-----------------	------------	----------

Standard actuators

Actuating force	Actuating time per nominal stroke	Actuating time for emergency control function	Open-close	3-point	Modulating (2–10 V)	MP-Bus® communication ¹⁾	Emergency control function	Nominal voltage	24 V AC/DC	230 V AC	Actuator type		Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}
											Actuator type	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]
500 N	150 s							24 V			LV24A-TPC	1300	400	900	400	500	400	350	350	150	150	70	70	
											LV230A-TPC	1300	400	900	400	500	400	350	350	150	150	70	70	
											LV24A-SR-TPC	1300	400	900	400	500	400	350	350	150	150	70	70	
											LV24A-MP-TPC	1300	400	900	400	500	400	350	350	150	150	70	70	
1000 N	150 s							24 V			NV24A-TPC	1600	400	1600	400	1300	400	1000	400	500	400	300	300	
											NV230A-TPC	1600	400	1600	400	1300	400	1000	400	500	400	300	300	
											NV24A-SR-TPC	1600	400	1600	400	1300	400	1000	400	500	400	300	300	
											NV24A-MP-TPC	1600	400	1600	400	1300	400	1000	400	500	400	300	300	
1500 N	150 s							24 V			SV24A-TPC	1600	400	1600	400	1600	400	1600	400	900	400	550	400	
											SV230A-TPC	1600	400	1600	400	1600	400	1600	400	900	400	550	400	
											SV24A-SR-TPC	1600	400	1600	400	1600	400	1600	400	900	400	550	400	
											SV24A-MP-TPC	1600	400	1600	400	1600	400	1600	400	900	400	550	400	



Fast runners

Actuating force	Actuating time per nominal stroke	Actuating time for emergency control function	Open-close	3-point	Modulating (2–10 V)	MP-Bus® communication ¹⁾	Emergency control function	Nominal voltage	24 V AC/DC	230 V AC	Actuator type		Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}
											Actuator type	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]
500 N	35 s							24 V			LVC24A-SR-TPC	1300	400	900	400	500	400	350	350	150	150	70	70	
											LVC24A-MP-TPC	1300	400	900	400	500	400	350	350	150	150	70	70	
1000 N	35 s							24 V			NVC24A-SR-TPC	1600	400	1600	400	1300	400	1000	400	500	400	300	300	
											NVC24A-MP-TPC	1600	400	1600	400	1300	400	1000	400	500	400	300	300	
1500 N	35 s							24 V			SVC24A-SR-TPC	1600	400	1600	400	1600	400	1600	400	900	400	550	400	
											SVC24A-MP-TPC	1600	400	1600	400	1600	400	1600	400	900	400	550	400	



Actuators with electrical emergency control function²⁾

Actuating force	Actuating time per nominal stroke	Actuating time for emergency control function	Open-close	3-point	Modulating (2–10 V)	MP-Bus® communication ¹⁾	Emergency control function	Nominal voltage	24 V AC/DC	230 V AC	Actuator type		Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}
											Actuator type	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]
1000 N	150 s	35 s					-I-	24 V			NVK24A-3-TPC ³⁾	1600	400	1600	400	1300	400	1000	400	500	400	300	300	
											NVK230A-3	1600	400	1600	400	1300	400	1000	400	500	400	300	300	
											NVK24A-SR-TPC	1600	400	1600	400	1300	400	1000	400	500	400	300	300	
	35 s	35 s						-I-	24 V			NVK24A-MP-TPC	1600	400	1600	400	1300	400	1000	400	500	400	300	300
												NVKC24A-SR-TPC	1600	400	1600	400	1300	400	1000	400	500	400	300	300
												NVKC24A-MP-TPC	1600	400	1600	400	1300	400	1000	400	500	400	300	300



¹⁾ Running times, control signal, stroke limitation and other functions are adjustable on MP types using PC-Tool or ZTH EU parameterizing device (delivery state: modulating, operating range 2–10 V).
²⁾ The emergency setting position NC/NO of all -I- actuators can be adjusted on the actuator. Delivery state: actuator spindle retracted.
Closing point of the globe valves H..B is at top (valve stem extended).
³⁾ Nominal voltage 24 V AC.

DN 15 – 100

Pipe connection	Flange PN 6 (ISO 7005-2)
Medium temperature	+5...+120 °C (-10...+5 °C with spindle heating)
Flow characteristic	A-AB equal percentage / B-AB linear
Leakage rate	Control path A-AB: max. 0.05% of k_{VS} value / Bypass B-AB: max. 1% of k_{VS} value

		DN 15		DN 20		
 Closed cold and hot water systems 2-way		k_{VS} [m³/h]	Valve type	k_{VS} [m³/h]	Valve type	
		0.63	H611R		6.3	H620R
		1	H612R			
		1.6	H613R			
		2.5	H614R			
4	H615R					
 Closed cold and hot water systems 3-way		k_{VS} [m³/h]	Valve type	k_{VS} [m³/h]	Valve type	
		0.63	H711R		6.3	H720R
		1	H712R			
		1.6	H713R			
		2.5	H714R			
4	H715R					

Suitable actuators

Actuating force	Actuating time per nominal stroke	Actuating time for emergency control function	Open-close	3-point	Modulating (2–10 V)	MP-Bus® communication ¹⁾	Emergency control function	Nominal voltage 24 V AC/DC 230 V AC
-----------------	-----------------------------------	---	------------	---------	---------------------	-------------------------------------	----------------------------	---

Standard actuators

								Actuator type		Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]
	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
	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
	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
	2500 N	150 s						24 V	EV24A-TPC				
								230 V	EV230A-TPC				
								24 V	EV24A-SR-TPC				
								24 V	EV24A-MP-TPC				
	4500 N	120 s						24 V	RV24A-SR				
								24 V	RV24A-SR				

Fast runners

								Actuator type		Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]
	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
	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				
								24 V	EVC24A-SR				

Actuators with electrical emergency control function²⁾

								Actuator type		Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]		
	1000 N	150 s	35 s					24 V	NVK24A-3-TPC ³⁾	600	400	600	400		
								230 V	NVK230A-3	600	400	600	400		
								24 V	NVK24A-SR-TPC	600	400	600	400		
		35 s	35 s							24 V	NVK24A-MP-TPC	600	400	600	400
										24 V	NVKC24A-SR-TPC	600	400	600	400
										24 V	NVKC24A-MP-TPC	600	400	600	400
2000 N	150 s	35 s						24 V	AVK24A-3-TPC ³⁾						
								230 V	AVK230A-3						
								24 V	AVK24A-SR-TPC						
								24 V	AVK24A-MP-TPC						

¹⁾ Running times, control signal, stroke limitation and other functions are adjustable on MP types using PC-Tool or ZTH EU parameterizing device (delivery state: modulating, operating range 2–10 V).

²⁾ The emergency setting position NC/NO of all —|— actuators can be adjusted on the actuator. Delivery state: actuator spindle retracted.

Closing point of the globe valves H..R is at top (valve stem extended).



³⁾ Nominal voltage 24 V AC.

Continued from previous page

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	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
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						
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
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	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 15 – 150






Pipe connection	Flange PN 16 (ISO 7005-2)
Medium temperature	+5...+120 °C (-10...+5 °C with spindle heating)
Flow characteristic	A-AB equal percentage / B-AB linear
Leakage rate	Control path A-AB: max. 0.05% of k_{VS} value / Bypass B-AB: max. 1% of k_{VS} value

	DN 15		DN 20		DN 25	
 Closed cold and hot water systems 2-way	k_{VS} [m³/h]	Valve type				
	0.63	H611N				
	1	H612N				
	1.6	H613N				
	2.5	H614N				
			k_{VS} [m³/h]	Valve type	k_{VS} [m³/h]	Valve type
	4	H615N	6.3	H620N	10	H625N
 Closed cold and hot water systems 3-way	k_{VS} [m³/h]	Valve type				
	0.63	H711N				
	1	H712N				
	1.6	H713N				
	2.5	H714N				
			k_{VS} [m³/h]	Valve type	k_{VS} [m³/h]	Valve type
	4	H715N	6.3	H720N	10	H725N

Suitable actuators

Actuating force	Actuating time per nominal stroke	Actuating time for emergency control function	Open-close	3-point	Modulating (2 – 10 V)	MP-Bus® communication ¹⁾	Emergency control function	Nominal voltage 24 V AC/DC 230 V AC
-----------------	-----------------------------------	---	------------	---------	-----------------------	-------------------------------------	----------------------------	-------------------------------------

Standard actuators

LV.. NV.. SV..	Actuating force	Actuating time	Standard actuators				Actuator type	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]			
			•	•	•	•										
	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
	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
	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
	2500 N	150 s	•	•			24 V	EV24A-TPC								
			•	•			230 V	EV230A-TPC								
						•	•		24 V	EV24A-SR-TPC						
							•	•	24 V	EV24A-MP-TPC						
	4500 N	120 s					24 V	RV24A-SR								

Fast runners

EVC..	Actuating force	Actuating time	Fast runners				Actuator type	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]			
			•	•	•	•										
	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	
	1000 N	35 s			•			24 V	NVC24A-SR-TPC	1600	400	1600	400	1300	400	
					•	•		24 V	NVC24A-MP-TPC	1600	400	1600	400	1300	400	
						•	•		24 V	SVC24A-SR-TPC	1600	400	1600	400	1600	400
							•	•	24 V	SVC24A-MP-TPC	1600	400	1600	400	1600	400
2500 N	35 s			•		24 V	EVC24A-SR									

Actuators with electrical emergency control function²⁾

NVK.. NVKC..	Actuating force	Actuating time	Emergency control function	Emergency control function	Emergency control function	Nominal voltage	Actuator type	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]			
														•	•	•
	1000 N	150 s	35 s	•		-II-	24 V	NVK24A-3-TPC ³⁾	1600	400	1600	400	1300	400		
				•		-II-	230 V	NVK230A-3	1600	400	1600	400	1300	400		
					•	-II-	24 V	NVK24A-SR-TPC	1600	400	1600	400	1300	400		
		35 s	35 s		•	•	-II-	24 V	NVK24A-MP-TPC	1600	400	1600	400	1300	400	
						•	•	-II-	24 V	NVKC24A-SR-TPC	1600	400	1600	400	1300	400
						•	•	-II-	24 V	NVKC24A-MP-TPC	1600	400	1600	400	1300	400
	2000 N	150 s	35 s	•		-II-	24 V	AVK24A-3-TPC ³⁾								
				•		-II-	230 V	AVK230A-3								
					•	-II-	24 V	AVK24A-SR-TPC								
		•	•	-II-	24 V	AVK24A-MP-TPC										

¹⁾ Running times, control signal, stroke limitation and other functions are adjustable on MP types using PC-Tool or ZTH EU parameterizing device (delivery state: modulating, operating range 2 – 10 V).

²⁾ The emergency setting position NC/NO of all -II- actuators can be adjusted on the actuator. Delivery state: actuator spindle retracted.

Closing point of the globe valves H..N is at top (valve stem extended).

³⁾ Nominal voltage 24 V AC.

Continued from previous page

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	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				
16	H732N	25	H740N	40	H750N	58	H764N	63	H765N	90	H779N	100	H780N	145	H7100N	220	H7125N	320	H7150N
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]
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	900	400	550	400	280	280			160	160								
1600	400	900	400	550	400	280	280			160	160								
1600	400	900	400	550	400	280	280			160	160								
1600	400	900	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
								1100	400			700	400	450	400	290	290	190	190
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]
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	900	400	550	400	280	280			160	160								
1600	400	900	400	550	400	280	280			160	160								
								550	400			350	350	200	200	130	130	80	80
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]
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

Pipe connection	Flange PN 16 (ISO 7005-2)
Medium temperature	+5...+150 °C (120 °C to 1600 kPa, 150 °C to 1400 kPa)
Flow characteristic	A-AB, equal percentage
Leakage rate	Control path A-AB: max. 0.05% of k_{VS} value
Media	For closed hot water and steam systems ($\Delta p/p_1 < 0.4$), water with glycol up to max. 50 vol. %

Suitable actuators



DN 15				DN 20	
k_{VS} [m³/h]	Valve type	k_{VS} [m³/h]	Valve type	k_{VS} [m³/h]	Valve type
1	H612S	1.6	H613S	4	H619S
2.5	H614S	6.3	H620S		

Standard actuators

Actuating force	Actuating time per nominal stroke	Actuating time for emergency control function	Open-close	3-point	Modulating (2 – 10 V)	MP-Bus® communication ¹⁾	Emergency control function	Nominal voltage 24 V AC/DC 230 V AC	Actuator type	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}
										[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]
500 N	150 s							24 V	LV24A-TPC ²⁾	1600	1000	800	800	800	800
								230 V	LV230A-TPC ²⁾	1600	1000	800	800	800	800
								24 V	LV24A-SR-TPC ²⁾	1600	1000	800	800	800	800
1000 N	150 s							24 V	NV24A-TPC	1600	1000	1600	1000	1600	1000
								230 V	NV230A-TPC	1600	1000	1600	1000	1600	1000
								24 V	NV24A-SR-TPC	1600	1000	1600	1000	1600	1000
1500 N	150 s							24 V	NV24A-MP-TPC	1600	1000	1600	1000	1600	1000
								230 V	SV230A-TPC	1600	1000	1600	1000	1600	1000
								24 V	SV24A-SR-TPC	1600	1000	1600	1000	1600	1000
2500 N	150 s							24 V	SV24A-MP-TPC	1600	1000	1600	1000	1600	1000
								230 V	EV230A-TPC						
								24 V	EV24A-SR-TPC						
4500 N	120 s							24 V	EV24A-MP-TPC	1600	1000	1600	1000	1600	1000
								24 V	RV24A-SR						

Fast runners

Actuating force	Actuating time per nominal stroke	Actuating time for emergency control function	Open-close	3-point	Modulating (2 – 10 V)	MP-Bus® communication ¹⁾	Emergency control function	Nominal voltage 24 V AC/DC 230 V AC	Actuator type	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}
										[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]
500 N	35 s							24 V	LVC24A-SR-TPC ²⁾	1600	1000	800	800	800	800
								24 V	LVC24A-MP-TPC ²⁾	1600	1000	800	800	800	800
1000 N	35 s							24 V	NVC24A-SR-TPC	1600	1000	1600	1000	1600	1000
								24 V	NVC24A-MP-TPC	1600	1000	1600	1000	1600	1000
1500 N	35 s							24 V	SVC24A-SR-TPC	1600	1000	1600	1000	1600	1000
								24 V	SVC24A-MP-TPC	1600	1000	1600	1000	1600	1000
2500 N	35 s							24 V	EVC24A-SR						

Actuators with electrical emergency control function ³⁾

Actuating force	Actuating time per nominal stroke	Actuating time for emergency control function	Open-close	3-point	Modulating (2 – 10 V)	MP-Bus® communication ¹⁾	Emergency control function	Nominal voltage 24 V AC/DC 230 V AC	Actuator type	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	
										[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	
1000 N	150 s	35 s					-II-	24 V	NVK24A-3-TPC ⁴⁾	1600	1000	1600	1000	1600	1000	
								230 V	NVK230A-3	1600	1000	1600	1000	1600	1000	
								24 V	NVK24A-SR-TPC	1600	1000	1600	1000	1600	1000	
	35 s	35 s						-II-	24 V	NVK24A-MP-TPC	1600	1000	1600	1000	1600	1000
									24 V	NVKC24A-SR-TPC	1600	1000	1600	1000	1600	1000
									24 V	NVKC24A-MP-TPC	1600	1000	1600	1000	1600	1000
2000 N	150 s	35 s					-II-	230 V	AVK230A-3							
								24 V	AVK24A-SR-TPC							
								24 V	AVK24A-MP-TPC							

¹⁾ Running times, control signal, stroke limitation and other functions are adjustable on MP types using PC-Tool or ZTH EU parameterizing device (delivery state: modulating, operating range 2 – 10 V).

²⁾ For DN 15 only recommended with H610S and H611S.

³⁾ The emergency setting position NC/NO of all -II- actuators can be adjusted on the actuator. Delivery state: actuator spindle retracted.

Closing point of the globe valves H6..S is at bottom (valve stem retracted).

⁴⁾ Nominal voltage 24 V AC.

Continued from previous page

DN 25		DN 32		DN 40		DN 50		DN 65		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	k_{vs} [m³/h]	Valve type	k_{vs} [m³/h]	Valve type	
6.3	H624S																			
10	H625S	16	H632S	25	H640S	40	H650S	58	H664S	63	H665S	90	H680S	145	H6100S	220	H6125S	320	H6150S	
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]	
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	950	950	500	500	300	300	130	130											
1300	1000	950	950	500	500	300	300	130	130											
1300	1000	950	950	500	500	300	300	130	130											
1300	1000	950	950	500	500	300	300	130	130											
1600	1000	1550	1000	850	850	500	500	250	250											
1600	1000	1550	1000	850	850	500	500	250	250											
1600	1000	1550	1000	850	850	500	500	250	250											
1600	1000	1550	1000	850	850	500	500	250	250											
										550	550	350	350	200	200	110	110	70	70	
										550	550	350	350	200	200	110	110	70	70	
										550	550	350	350	200	200	110	110	70	70	
										550	550	350	350	200	200	110	110	70	70	
										1100	1000	700	700	450	450	250	250	180	180	
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]	
450	450	300	300	140	140	60	60													
450	450	300	300	140	140	60	60													
1300	1000	950	950	500	500	300	300	130	130											
1300	1000	950	950	500	500	300	300	130	130											
1600	1000	1550	1000	850	850	500	500	250	250											
1600	1000	1550	1000	850	850	500	500	250	250											
										550	550	350	350	200	200	110	110	70	70	
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]	
1300	1000	950	950	500	500	300	300	130	130											
1300	1000	950	950	500	500	300	300	130	130											
1300	1000	950	950	500	500	300	300	130	130											
1300	1000	950	950	500	500	300	300	130	130											
1300	1000	950	950	500	500	300	300	130	130											
1300	1000	950	950	500	500	300	300	130	130											
										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 40 – 150

Pipe connection	Flange PN 16 (ISO 7005-2)
Medium temperature	+5...+150 °C (120 °C to 1600 kPa, 150 °C to 1400 kPa)
Flow characteristic	A-AB, equal percentage
Leakage rate	Control path A-AB: max. 0.05% of k_{vs} value
Media	For closed hot water and steam systems ($\Delta p/p_1 < 0.4$), water with glycol up to max. 50 vol. %

Suitable actuators



DN 40		DN 50	
k_{vs} [m³/h]	Valve type	k_{vs} [m³/h]	Valve type
25	H640SP	40	H650SP

Standard actuators

Actuator type	Nominal voltage 24 V AC/DC 230 V AC	Emergency control function	MP-Bus® communication ¹⁾	Modulating (2–10 V)	3-point	Open-close	Actuating time for emergency control function	Actuating time per nominal stroke	Actuating force	Actuator type	Δp_s	Δp_{max}	Δp_s	Δp_{max}
											[kPa]	[kPa]	[kPa]	[kPa]
NV.. SV..	24 V	•	•	•	•	•	•	150 s	1000 N	NV24A-TPC	1600	1000	1600	1000
										NV230A-TPC	1600	1000	1600	1000
	230 V	•	•	•	•	•	•	150 s	1500 N	NV24A-SR-TPC	1600	1000	1600	1000
										NV24A-MP-TPC	1600	1000	1600	1000
EV.. RV..	24 V	•	•	•	•	•	•	150 s	2500 N	SV24A-TPC	1600	1000	1600	1000
										SV230A-TPC	1600	1000	1600	1000
	230 V	•	•	•	•	•	•	150 s	2500 N	SV24A-SR-TPC	1600	1000	1600	1000
										SV24A-MP-TPC	1600	1000	1600	1000
EVC..	24 V	•	•	•	•	•	•	150 s	2500 N	EV24A-TPC				
										EV230A-TPC				
	230 V	•	•	•	•	•	•	150 s	2500 N	EV24A-SR-TPC				
										EV24A-MP-TPC				
24 V	•	•	•	•	•	•	120 s	4500 N	RV24A-SR					

Fast runners

Actuator type	Nominal voltage 24 V AC/DC 230 V AC	Emergency control function	MP-Bus® communication ¹⁾	Modulating (2–10 V)	3-point	Open-close	Actuating time for emergency control function	Actuating time per nominal stroke	Actuating force	Actuator type	Δp_s	Δp_{max}	Δp_s	Δp_{max}
											[kPa]	[kPa]	[kPa]	[kPa]
NVC.. SVC..	24 V	•	•	•	•	•	•	35 s	1000 N	NVC24A-SR-TPC	1600	1000	1600	1000
										NVC24A-MP-TPC	1600	1000	1600	1000
EVC..	24 V	•	•	•	•	•	•	35 s	1500 N	SVC24A-SR-TPC	1600	1000	1600	1000
										SVC24A-MP-TPC	1600	1000	1600	1000
	24 V	•	•	•	•	•	•	35 s	2500 N	EVC24A-SR				

Actuators with electrical emergency control function ²⁾

Actuator type	Nominal voltage 24 V AC/DC 230 V AC	Emergency control function	MP-Bus® communication ¹⁾	Modulating (2–10 V)	3-point	Open-close	Actuating time for emergency control function	Actuating time per nominal stroke	Actuating force	Actuator type	Δp_s	Δp_{max}	Δp_s	Δp_{max}
											[kPa]	[kPa]	[kPa]	[kPa]
NVK.. NVKC..	24 V	•	•	•	•	•	35 s	150 s	1000 N	NVK24A-3-TPC ³⁾	1600	1000	1600	1000
										NVK230A-3	1600	1000	1600	1000
										NVK24A-SR-TPC	1600	1000	1600	1000
	230 V	•	•	•	•	•	•	150 s	2000 N	NVK24A-MP-TPC	1600	1000	1600	1000
										NVKC24A-SR-TPC	1600	1000	1600	1000
										NVKC24A-MP-TPC	1600	1000	1600	1000
AVK..	24 V	•	•	•	•	•	35 s	150 s	2000 N	AVK24A-3-TPC ³⁾				
										AVK230A-3				
										AVK24A-SR-TPC				
	24 V	•	•	•	•	•	35 s	2000 N	AVK24A-MP-TPC					

¹⁾ Running times, control signal, stroke limitation and other functions are adjustable on MP types using PC-Tool or ZTH EU parameterizing device (delivery state: modulating, operating range 2–10 V).

²⁾ The emergency setting position NC/NO of all --|I actuators can be adjusted on the actuator. Delivery state: actuator spindle retracted.

Closing point of the globe valves H6..SP is at bottom (valve stem retracted).

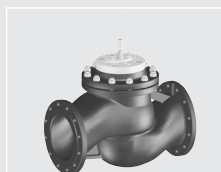
³⁾ Nominal voltage 24 V AC.

Continued from previous page

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
58	H664SP	90	H679SP	145	H6100SP	220	H6125SP	320	H6150SP
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]
1600	1000	1600	1000						
1600	1000	1600	1000						
1600	1000	1600	1000						
1600	1000	1600	1000						
1600	1000	1600	1000						
1600	1000	1600	1000						
1600	1000	1600	1000						
				600	600	600	600	600	600
				600	600	600	600	600	600
				600	600	600	600	600	600
				600	600	600	600	600	600
				600	600	600	600	600	600
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]
1600	1000	1600	1000						
1600	1000	1600	1000						
1600	1000	1600	1000						
1600	1000	1600	1000						
				600	600	600	600	600	600
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]
1600	1000	1600	1000						
1600	1000	1600	1000						
1600	1000	1600	1000						
1600	1000	1600	1000						
1600	1000	1600	1000						
				600	600				
				600	600				
				600	600				
				600	600				

DN 200 / DN 250

Pipe connection	Flange PN 16 (ISO 7005-2)
Medium temperature	+5...+120 °C
Flow characteristic	2-way: A-AB equal percentage 3-way: A-AB linear / B-AB linear
Leakage rate	Control path A-AB: max. 0.05% of k_{vs} value / bypass B-AB: max. 1% of k_{vs} value



Closed cold and hot water systems

2-way

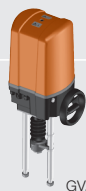


Closed cold and hot water systems

3-way

	DN 200		DN 250	
2-way	630	H6200W630-S7	1000	H6250W1000-S7
3-way	k_{vs} [m ³ /h]	Valve type	k_{vs} [m ³ /h]	Valve type
	630	H7200W630-S7	1000	H7250W1000-S7

Suitable actuators



Actuating force
Actuating time per nominal stroke
3-point
Modulating (2-10 V)¹⁾
Nominal voltage
24 V AC/DC
230 V AC
Auxiliary switch SPDT

Standard actuators

12000 N	82 s	•	•	230 V	2
				24 V	

Actuator type

Actuator type	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]
GV12-230-3-T	310	60	190	60
GV12-24-SR-T	310	60	190	60

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

DN 15 – 100

Pipe connection	Flange PN 25 (ISO 7005-2)
Medium temperature	+5...+200 °C (120 °C to 2500 kPa, H6..X..S2: 150 °C to 2430 kPa, H7..X..S2: 200 °C to 2300 kPa)
Flow characteristic	2-way: A-AB equal percentage 3-way: A-AB linear / B-AB linear
Leakage rate	Control path A-AB: max. 0.05% of k_{VS} value / bypass B-AB: max. 1% of k_{VS} value
Media	For closed hot water and steam systems ($\Delta p/p1 < 0.4$), water with glycol up to max. 50 vol. %

		DN 15			DN 20	
2-way			Closed hot water and steam systems in the non-critical range	k_{VS} [m³/h] Valve type	1	H6015X1-S2
				k_{VS} [m³/h] Valve type	1.6	H6015X1P6-S2
				k_{VS} [m³/h] Valve type	2.5	H6015X2P5-S2
				k_{VS} [m³/h] Valve type	4	H6015X4-S2
4	H6020X4-S2					
3-way			Closed cold water, warm water and hot water systems	k_{VS} [m³/h] Valve type	4	H7015X4-S2

Suitable actuators

Actuating force	Actuating time per nominal stroke	Actuating time for emergency control function	Open-close	3-point	Modulating (2 – 10 V)	MP-Bus® communication ¹⁾	Emergency control function	Nominal voltage 24 V AC/DC 230 V AC
-----------------	-----------------------------------	---	------------	---------	-----------------------	-------------------------------------	----------------------------	-------------------------------------

Standard actuators

										Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]
	500 N	150 s						24 V	LV24A-TPC ²⁾	2500	1000	800	800	800	800
								230 V	LV230A-TPC ²⁾	2500	1000	800	800	800	800
								24 V	LV24A-SR-TPC ²⁾	2500	1000	800	800	800	800
								24 V	LV24A-MP-TPC ²⁾	2500	1000	800	800	800	800
	1000 N	150 s						24 V	NV24A-TPC	2500	1000	2200	1000	2200	1000
								24 V	NV24A-SR-TPC	2500	1000	2200	1000	2200	1000
								24 V	NV24A-MP-TPC	2500	1000	2200	1000	2200	1000
								24 V	SV24A-TPC	2500	1000	2500	1000	2500	1000
	1500 N	150 s						230 V	SV230A-TPC	2500	1000	2500	1000	2500	1000
								24 V	SV24A-SR-TPC	2500	1000	2500	1000	2500	1000
								24 V	SV24A-MP-TPC	2500	1000	2500	1000	2500	1000
								24 V	EV24A-TPC						
	2500 N	150 s						230 V	EV230A-TPC						
								24 V	EV24A-SR-TPC						
								24 V	EV24A-MP-TPC						
								24 V	RV24A-SR						
	4500 N	120 s						24 V	RV24A-SR						

Fast runners

										Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]
	500 N	35 s						24 V	LVC24A-SR-TPC ²⁾	2500	1000	800	800	800	800
								24 V	LVC24A-MP-TPC ²⁾	2500	1000	800	800	800	800
								24 V	NVC24A-SR-TPC	2500	1000	2200	1000	2200	1000
								24 V	NVC24A-MP-TPC	2500	1000	2200	1000	2200	1000
	1000 N	35 s						24 V	SVC24A-SR-TPC	2500	1000	2500	1000	2500	1000
								24 V	SVC24A-MP-TPC	2500	1000	2500	1000	2500	1000
								24 V	EVC24A-SR						

Actuators with electrical emergency control function³⁾

										Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]	
	1000 N	150 s	35 s					24 V	NVK24A-3-TPC ⁴⁾	2500	1000	2200	1000	2200	1000	
								230 V	NVK230A-3	2500	1000	2200	1000	2200	1000	
								24 V	NVK24A-SR-TPC	2500	1000	2200	1000	2200	1000	
								24 V	NVK24A-MP-TPC	2500	1000	2200	1000	2200	1000	
		2000 N	150 s	35 s					24 V	NVVC24A-SR-TPC	2500	1000	2200	1000	2200	1000
									24 V	NVVC24A-MP-TPC	2500	1000	2200	1000	2200	1000
									24 V	AVK24A-3-TPC ⁴⁾						
									230 V	AVK230A-3						
	2000 N	150 s	35 s					24 V	AVK24A-SR-TPC							
								24 V	AVK24A-MP-TPC							

¹⁾ Running times, control signal, stroke limitation and other functions are adjustable on MP types using PC-Tool or ZTH EU parameterizing device (delivery state: modulating, operating range 0.5 – 10 V).

²⁾ Actuators LV..A.. possible only on valves H6..

³⁾ The emergency setting position NC/NO of all ---| actuators can be adjusted on the actuator. Delivery state: actuator spindle retracted.

Closing point of the globe valves H6..X is at bottom (valve stem retracted), closing point of the globe valves H7..X is at top (valve stem extended).

⁴⁾ Nominal voltage 24 V AC.

Continued from previous page

DN 20		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	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	k_{vs} [m³/h] Valve type
6.3	H6020X6P3-S2	10	H6025X10-S2	16	H6032X16-S2	25	H6040X25-S2	40	H6050X40-S2						
6.3	H6025X6P3-S2	10	H6025X10-S2	16	H6032X16-S2	25	H6040X25-S2	40	H6050X25-S2						
6.3	H7020X6P3-S2	10	H7025X10-S2	16	H7032X16-S2	25	H7040X25-S2	40	H7050X40-S2	63	H7065X63-S4	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]	Δp_s [kPa]	Δp_{max} [kPa]
600	600	450	450	300	300	140	140	60	60						
600	600	450	450	300	300	140	140	60	60						
600	600	450	450	300	300	140	140	60	60						
600	600	450	450	300	300	140	140	60	60						
1500	1000	1300	1000	900	900	500	500	300	300						
1500	1000	1300	1000	900	900	500	500	300	300						
1500	1000	1300	1000	900	900	500	500	300	300						
1500	1000	1300	1000	900	900	500	500	300	300						
2500	1000	2100	1000	1500	1000	850	850	500	500						
2500	1000	2100	1000	1500	1000	850	850	500	500						
2500	1000	2100	1000	1500	1000	850	850	500	500						
2500	1000	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
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	600	450	450	300	300	140	140	60	60						
600	600	450	450	300	300	140	140	60	60						
1500	1000	1300	1000	900	900	500	500	300	300						
1500	1000	1300	1000	900	900	500	500	300	300						
2500	1000	2100	1000	1500	1000	850	850	500	500						
2500	1000	2100	1000	1500	1000	850	850	500	500						
										550	550	350	350	200	200
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]
1500	1000	1300	1000	900	900	500	500	300	300						
1500	1000	1300	1000	900	900	500	500	300	300						
1500	1000	1300	1000	900	900	500	500	300	300						
1500	1000	1300	1000	900	900	500	500	300	300						
1500	1000	1300	1000	900	900	500	500	300	300						
1500	1000	1300	1000	900	900	500	500	300	300						
										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 65 – 100

Pipe connection	Flange PN 25 (ISO 7005-2)
Medium temperature	+5...+150 °C (120 °C to 2500 kPa, 150 °C to 2430 kPa)
Flow characteristic	A-AB, equal percentage
Leakage rate	Control path A-AB: max. 0.05% of k_{vs} value
Media	For closed hot water and steam systems ($\Delta p/p1 < 0.4$), water with glycol up to max. 50 vol. %

Suitable actuators

Actuating force	Actuating time per nominal stroke	Actuating time for emergency control function	Open-close 3-point	Modulating (2–10 V)	MP-Bus® communication ¹⁾	Emergency control function	Nominal voltage 24 V AC/DC 230 V AC
-----------------	-----------------------------------	---	--------------------	---------------------	-------------------------------------	----------------------------	-------------------------------------



DN 65		DN 80		DN 100	
k_{vs} [m³/h]	Valve type	k_{vs} [m³/h]	Valve type	k_{vs} [m³/h]	Valve type
58	H6065X58-SP2	90	H6080X90-SP2	125	H6100X125-SP2

Standard actuators



Actuating force	Actuating time	Emergency control	Open-close	Modulating	MP-Bus	Voltage	Actuator type	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}
								[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]
1000 N	150 s					24 V	NV24A-TPC	2100	1000	1600	1000	1000	1000
							NV230A-TPC	2100	1000	1600	1000	1000	1000
							NV24A-SR-TPC	2100	1000	1600	1000	1000	1000
							NV24A-MP-TPC	2100	1000	1600	1000	1000	1000
1500 N	150 s					24 V	SV24A-TPC	2500	1000	2400	1000	1700	1000
							SV230A-TPC	2500	1000	2400	1000	1700	1000
							SV24A-SR-TPC	2500	1000	2400	1000	1700	1000
							SV24A-MP-TPC	2500	1000	2400	1000	1700	1000

Fast runners



Actuating force	Actuating time	Emergency control	Open-close	Modulating	MP-Bus	Voltage	Actuator type	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}
								[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]
1000 N	35 s					24 V	NVC24A-SR-TPC	2100	1000	1600	1000	1000	1000
							NVC24A-MP-TPC	2100	1000	1600	1000	1000	1000
							SVC24A-SR-TPC	2500	1000	2400	1000	1700	1000
							SVC24A-MP-TPC	2500	1000	2400	1000	1700	1000

Actuators with electrical emergency control function ²⁾



Actuating force	Actuating time	Emergency control	Open-close	Modulating	MP-Bus	Voltage	Actuator type	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}
								[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]
1000 N	150 s	35 s				24 V	NVK24A-3-TPC ³⁾	2100	1000	1600	1000	1000	1000
							NVK230A-3	2100	1000	1600	1000	1000	1000
							NVK24A-SR-TPC	2100	1000	1600	1000	1000	1000
							NVK24A-MP-TPC	2100	1000	1600	1000	1000	1000
							NVKC24A-SR-TPC	2100	1000	1600	1000	1000	1000
							NVKC24A-MP-TPC	2100	1000	1600	1000	1000	1000

¹⁾ Running times, control signal, stroke limitation and other functions are adjustable on MP types using PC-Tool or ZTH EU parameterizing device (delivery state: modulating, operating range 2–10 V).

²⁾ The emergency setting position NC/NO of all ---|I actuators can be adjusted on the actuator. Delivery state: actuator spindle retracted.

Closing point of the globe valves H6..X is at bottom (valve stem retracted).

³⁾ Nominal voltage 24 V AC.

DN 15 – 100

Pipe connection	Flange PN 40 (ISO 7005-2)
Medium temperature	+5...+200 °C (120 °C to 4000 kPa, 200 °C to 3200 kPa)
Flow characteristic	A-AB linear / B-AB linear
Leakage rate	Control path A-AB: max. 0.05% of k_{VS} value / Bypass B-AB: max. 1% of k_{VS} value
Media	For closed cold water, warm water and hot water systems, water with glycol up to max. 50 vol. %

Suitable actuators

Actuating force	Actuating time per nominal stroke	Actuating time for emergency control function	Open-close	3-point	Modulating (2 – 10 V)	MP-Bus® communication ¹⁾	Emergency control function	Nominal voltage 24 V AC/DC 230 V AC
-----------------	-----------------------------------	---	------------	---------	-----------------------	-------------------------------------	----------------------------	---



DN 15		DN 20	
k_{VS} [m³/h]	Valve type	k_{VS} [m³/h]	Valve type
4	H7015Y4-S2	6.3	H7020Y6P3-S2

Standard actuators

Actuator type		Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]	
NV.. SV..	1000 N 150 s	24 V NV24A-TPC	2200	1000	1500	1000
		230 V NV230A-TPC	2200	1000	1500	1000
		24 V NV24A-SR-TPC	2200	1000	1500	1000
		24 V NV24A-MP-TPC	2200	1000	1500	1000
EV.. RV..	1500 N 150 s	24 V SV24A-TPC	3500	1000	2500	1000
		230 V SV230A-TPC	3500	1000	2500	1000
		24 V SV24A-SR-TPC	3500	1000	2500	1000
		24 V SV24A-MP-TPC	3500	1000	2500	1000
EV.. RV..	2500 N 150 s	24 V EV24A-TPC				
		230 V EV230A-TPC				
		24 V EV24A-SR-TPC				
NVC.. SVC..	4500 N 120 s	24 V EV24A-MP-TPC				
		24 V RV24A-SR				

Fast runners

Actuator type		Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]
1000 N 35 s	24 V NVC24A-SR-TPC	2200	1000	1500	1000
	24 V NVC24A-MP-TPC	2200	1000	1500	1000
1500 N 35 s	24 V SVC24A-SR-TPC	3500	1000	2500	1000
	24 V SVC24A-MP-TPC	3500	1000	2500	1000
2500 N 35 s	24 V EVC24A-SR				

Actuators with electrical emergency control function²⁾

Actuator type		Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]	
NVK.. NVKC..	1000 N 150 s 35 s	24 V NVK24A-3-TPC ³⁾	2200	1000	1500	1000
		230 V NVK230A-3	2200	1000	1500	1000
		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
AVK..	2000 N 150 s 35 s	24 V AVK24A-3-TPC ³⁾				
		230 V AVK230A-3				
		24 V AVK24A-SR-TPC				
		24 V AVK24A-MP-TPC				

¹⁾ Running times, control signal, stroke limitation and other functions are adjustable on MP types using PC-Tool or ZTH EU parameterizing device (delivery state: modulating, operating range 2 – 10 V).

²⁾ The emergency setting position NC/NO of all **-II-** actuators can be adjusted on the actuator. Delivery state: actuator spindle retracted.

Closing point of the globe valves H7..Y.. is at top (valve stem extended).

³⁾ Nominal voltage 24 V AC.

Continued from previous page

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	H7025Y10-S2	16	H7032Y16-S2	25	H7040Y25-S2	40	H7050Y40-S2	63	H7065Y63-S4	100	H7080Y100-S4	160	H7100Y160-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]
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
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]
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
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]
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
								400	400	250	250	150	150
								400	400	250	250	150	150
								400	400	250	250	150	150

DN 15–50

Pipe connection	Internal thread Rp (ISO 7/1)
Medium temperature	-10...+120 °C (small actuators TR../TRY.. only up to +100 °C) (compact actuators KR.. only up to +80 °C)
Flow characteristic	A-AB equal percentage / B-AB linear (k_{vs} 50% of A-AB)
Leakage rate	Control path A-AB: leakage rate A, air bubble tight (EN 12266-1) / bypass B-AB: leakage class I

		DN 15		DN 20	
2-way		k_{vs} [m³/h]	Valve type	k_{vs} [m³/h]	Valve type
3-way T-bore		k_{vs} [m³/h]	Valve type	k_{vs} [m³/h]	Valve type

Suitable actuators

Nominal torque	Open-close	3-point	Emergency control function	Nominal voltage 24 V AC/DC 230 V AC	Running time motor 90°	Running time emergency control
----------------	------------	---------	----------------------------	---	---------------------------	-----------------------------------

Small and compact actuators

Nominal torque	Open-close	3-point	Emergency control function	Nominal voltage	Running time	Actuator type	Δp_s	Δp_{max}^1	Δp_s	Δp_{max}^1
							[kPa]	[kPa]	[kPa]	[kPa]
2 Nm	•	•		24 V	35 s	TRY24 ²⁾	1400	1000		
					75 s	KR24 ²⁾	1400	1000		
					100 s	TR24 ²⁾	1400	1000		
				230 V	75 s	KR230 ²⁾	1400	1000		
					35 s	TRY230 ²⁾	1400	1000		

Standard actuators

Nominal torque	Open-close	3-point	Emergency control function	Nominal voltage	Running time	Actuator type	Δp_s	Δp_{max}^1	Δp_s	Δp_{max}^1
							[kPa]	[kPa]	[kPa]	[kPa]
5 Nm	•	•		24 V	90 s	LR24A	1400	1000	1400	1000
						LR230A	1400	1000	1400	1000
				230 V	NR24A	1400	1000	1400	1000	
					NR230A	1400	1000	1400	1000	
10 Nm	•	•		24 V	90 s	SR24A	1400	1000	1400	1000
						SR230A	1400	1000	1400	1000
				230 V	NR24A	1400	1000	1400	1000	
					NR230A	1400	1000	1400	1000	
20 Nm	•	•		24 V	90 s	SR24A	1400	1000	1400	1000
						SR230A	1400	1000	1400	1000
				230 V	NR24A	1400	1000	1400	1000	
					NR230A	1400	1000	1400	1000	

Very fast runners

Nominal torque	Open-close	3-point	Emergency control function	Nominal voltage	Running time	Actuator type	Δp_s	Δp_{max}^1	Δp_s	Δp_{max}^1
							[kPa]	[kPa]	[kPa]	[kPa]
4 Nm	•	•		24 V	9 s	LRQ24A	1400	1000	1400	1000
8 Nm	•	•		24 V	9 s	NRQ24A	1400	1000	1400	1000
16 Nm	•	•		24 V	9 s	SRQ24A	1400	1000	1400	1000

Actuators with mechanical emergency control function

Nominal torque	Open-close	3-point	Emergency control function	Nominal voltage	Running time	Actuator type	Δp_s	Δp_{max}^1	Δp_s	Δp_{max}^1
							[kPa]	[kPa]	[kPa]	[kPa]
2 Nm	•	•	⊗	24 V	75 s	TRF24 ²⁾	1400	1000		
						TRF230 ²⁾	1400	1000		
				230 V	75 s	TRF24 ²⁾	1400	1000	1400	1000
						TRF230 ²⁾	1400	1000	1400	1000
4 Nm	•	•	⊗	24 V	<75 s	LRF24 ²⁾	1400	1000	1400	1000
						LRF230 ²⁾	1400	1000	1400	1000
				230 V	<75 s	LRF24 ²⁾	1400	1000	1400	1000
						LRF230 ²⁾	1400	1000	1400	1000

Actuators with mechanical emergency control function

Nominal torque	Open-close	3-point	Emergency control function	Nominal voltage	Running time	Actuator type	Δp_s	Δp_{max}^1	Δp_s	Δp_{max}^1
							[kPa]	[kPa]	[kPa]	[kPa]
10 Nm	•	•	⊗	AC 24–240 V DC 24–125 V	<75 s	NRF24A	1400	1000	1400	1000
						NRF230A	1400	1000	1400	1000
				24 V	<75 s	SRF24A	1400	1000	1400	1000
						SRF230A	1400	1000	1400	1000
20 Nm	•	•	⊗	AC 24–240 V DC 24–125 V	<75 s	NRF24A	1400	1000	1400	1000
						NRF230A	1400	1000	1400	1000
				24 V	<75 s	SRF24A	1400	1000	1400	1000
						SRF230A	1400	1000	1400	1000

¹⁾ Low-noise operation $\Delta p_{max} = 200$ kPa.

²⁾ If medium temperature ≥ 100 °C, then line and valve must be insulated.

DN 25		DN 32		DN 40		DN 50	
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
26	R2025-S2	32	R2032-S3	31	R2040-S3	49	R2050-S4
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
26	R3025-S2	32	R3032-S3	31	R3040-S3	49	R3050-S4
Δp_s [kPa]	$\Delta p_{max}^{1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{1)}$ [kPa]
Δp_s [kPa]	$\Delta p_{max}^{1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{1)}$ [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
Δp_s [kPa]	$\Delta p_{max}^{1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{1)}$ [kPa]
1400	1000						
1400	1000	1400	1000	1400	1000		
1400	1000	1400	1000	1400	1000	1400	1000
Δp_s [kPa]	$\Delta p_{max}^{1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{1)}$ [kPa]
1400	1000						
1400	1000						
Δp_s [kPa]	$\Delta p_{max}^{1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{1)}$ [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

Continued from previous page

DN 15–50

Pipe connection	Internal thread Rp (ISO 7/1)
Medium temperature	-10...+100 °C (compact actuators KR.. only up to +80 °C)
Leakage rate	Leakage rate A, air bubble tight (EN 12266-1)

Suitable actuators



DN 15		DN 20	
k_{vs} [m³/h]	5.5	k_{vs} [m³/h]	11
Valve type	R3015-BL1	Valve type	R3020-BL2

Nominal torque	Open-close	3-point	Emergency control function	Nominal voltage 24 V AC/DC 230 V AC	Running time motor 90°	Running time emergency control function
2 Nm	•	•		24 V	35 s	
	•	•		230 V	75 s	
	•	•			100 s	
	•	•		230 V	75 s	
	•	•			35 s	

Small and compact actuators

							Actuator type	Δp_s [kPa]	Δp_{max}^1 [kPa]	Δp_s [kPa]	Δp_{max}^1 [kPa]
KR..	2 Nm	•	•		24 V	35 s	TRY24	500	350		
							KR24	500	350		
							TR24	500	350		
							TRY230	500	350		

Standard actuators

							Actuator type without auxiliary switch	Actuator type with auxiliary switch	Δp_s [kPa]	Δp_{max}^1 [kPa]	Δp_s [kPa]	Δp_{max}^1 [kPa]
TR.. TRY..	5 Nm	•	•		24 V	90 s	LR24A	..-S	500	350	500	350
							LR230A	..-S	500	350	500	350
LR.. NR.. SR..	10 Nm	•	•		24 V	90 s	NR24A	..-S	500	350	500	350
							NR230A	..-S	500	350	500	350
LR.. NR.. SR..	20 Nm	•	•		24 V	90 s	SR24A	..-S	500	350	500	350
							SR230A	..-S	500	350	500	350

Very fast runners

							Actuator type	Δp_s [kPa]	Δp_{max}^1 [kPa]	Δp_s [kPa]	Δp_{max}^1 [kPa]
LRQ.. NRQ.. SRQ..	4 Nm	•	•		24 V	9 s	LRQ24A	500	350	500	350
	8 Nm	•	•		24 V	9 s	NRQ24A	500	350	500	350
	16 Nm	•	•		24 V	9 s	SRQ24A	500	350	500	350

Actuators with mechanical emergency control function

							Actuator type NC without auxiliary switch	Actuator type NC with 1 auxiliary switch	Actuator type NO without auxiliary switch	Actuator type NO with 1 auxiliary switch	Δp_s [kPa]	Δp_{max}^1 [kPa]	Δp_s [kPa]	Δp_{max}^1 [kPa]
TRF..	2 Nm	•		⊗	24 V	75 s	TRF24	..-S	..-O	..-S-O	500	350		
							TRF230	..-S	..-O	..-S-O	500	350		
TRF..	4 Nm	•		⊗	24 V	<75 s	TRF24	..-S	..-O	..-S-O	500	350	500	350
							TRF230	..-S	..-O	..-S-O	500	350	500	350

Actuators with mechanical emergency control function

							Actuator type NC without auxiliary switch	Actuator type NC with two auxiliary switches	Actuator type NO without auxiliary switch	Actuator type NO with two auxiliary switches	Δp_s [kPa]	Δp_{max}^1 [kPa]	Δp_s [kPa]	Δp_{max}^1 [kPa]
LRF..	10 Nm	•		⊗	24 V	<75 s	NRF24A	..-S2	..-O	..-S2-O	500	350	500	350
							NRF230	..-S2	..-O	..-S2-O	500	350	500	350
LRF..	20 Nm	•		⊗	24 V	<75 s	SRF24A	..-S2	..-O	..-S2-O	500	350	500	350
							SRF230	..-S2	..-O	..-S2-O	500	350	500	350

¹⁾ Low-noise operation $\Delta p_{max} = 200$ kPa.

Continued from previous page

DN 25		DN 32				DN 40				DN 50			
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	R3025-BL2	9	R3032-BL2	15	R3032-BL3	14	R3040-BL3	47	R3040-BL4	24	R3050-BL3	75	R3050-BL4
Δp_s [kPa]	$\Delta p_{max}^{(1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{(1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{(1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{(1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{(1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{(1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{(1)}$ [kPa]
Δp_s [kPa]	$\Delta p_{max}^{(1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{(1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{(1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{(1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{(1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{(1)}$ [kPa]	Δp_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
Δp_s [kPa]	$\Delta p_{max}^{(1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{(1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{(1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{(1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{(1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{(1)}$ [kPa]	Δp_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		
Δp_s [kPa]	$\Delta p_{max}^{(1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{(1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{(1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{(1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{(1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{(1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{(1)}$ [kPa]
500	350	500	350										
500	350	500	350										
Δp_s [kPa]	$\Delta p_{max}^{(1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{(1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{(1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{(1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{(1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{(1)}$ [kPa]	Δp_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

DN 15–50

Pipe connection	External thread Rp (ISO 228/1)
Medium temperature	+6...+100 °C (compact actuators KR.. only up to +80 °C) (-10...+5 °C with spindle heating, not with R440, R450)
Flow characteristic	A-AB equal percentage / B-AB linear (k_{vs} 50% of A-AB)
Leakage rate	Control path A-AB: leakage rate A, air bubble tight (EN 12266-1) / bypass B-AB: leakage class I

		DN 15		DN 20	
2-way		k_{vs} [m³/h]	Valve type	k_{vs} [m³/h]	Valve type
		8.6	R415	21	R420
3-way T-bore		k_{vs} [m³/h]	Valve type	k_{vs} [m³/h]	Valve type
		8.6	R515	21	R520

Suitable actuators

Nominal torque	Open-close	3-point	Emergency control function	Nominal voltage 24 V AC/DC 230 V AC	Running time motor 90°	Running time emergency control function
----------------	------------	---------	----------------------------	-------------------------------------	------------------------	---

Small and compact actuators

Nominal torque	Open-close	3-point	Emergency control function	Nominal voltage	Running time motor 90°	Running time emergency control function	Actuator type				
							Δp_s [kPa]	$\Delta p_{max}^{1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{1)}$ [kPa]	
2 Nm	•	•		24 V	35 s		TRY24	1400	400	1400	400
							KR24	1400	400	1400	400
							TR24	1400	400	1400	400
	•	•		230 V	35 s		KR230	1400	400	1400	400
							TRY230	1400	400	1400	400

Standard actuators

Nominal torque	Open-close	3-point	Emergency control function	Nominal voltage	Running time motor 90°	Running time emergency control function	Actuator type		Δp_s [kPa]	$\Delta p_{max}^{1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{1)}$ [kPa]
							without auxiliary switch	with auxiliary switch				
5 Nm	•	•		24 V	90 s		LR24A	..-S	1400	400	1400	400
							LR230A	..-S	1400	400	1400	400
	•	•		230 V	90 s		NR24A	..-S	1400	400	1400	400
							NR230A	..-S	1400	400	1400	400
20 Nm	•	•		24 V	90 s		SR24A	..-S	1400	400	1400	400
							SR230A	..-S	1400	400	1400	400

Very fast runners

Nominal torque	Open-close	3-point	Emergency control function	Nominal voltage	Running time motor 90°	Running time emergency control function	Actuator type				
							Δp_s [kPa]	$\Delta p_{max}^{1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{1)}$ [kPa]	
4 Nm	•	•		24 V	9 s		LRQ24A	1400	400	1400	400
8 Nm	•	•		24 V	9 s		NRQ24A	1400	400	1400	400
16 Nm	•	•		24 V	9 s		SRQ24A	1400	400	1400	400

Actuators with mechanical emergency control function

Nominal torque	Open-close	3-point	Emergency control function	Nominal voltage	Running time motor 90°	Running time emergency control function	Actuator type NC			Actuator type NO			Δp_s [kPa]	$\Delta p_{max}^{1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{1)}$ [kPa]
							without auxiliary switch	with 1 auxiliary switch	without auxiliary switch	with 1 auxiliary switch	without auxiliary switch	with 1 auxiliary switch				
2 Nm	•	•	☉	24 V	75 s	75 s	TRF24	..-S	..-O	..-S-O	1400	400	1400	400		
							TRF230	..-S	..-O	..-S-O	1400	400	1400	400		
4 Nm	•	•	☉	24 V	<75 s	<20 s	LRF24	..-S	..-O	..-S-O	1400	400	1400	400		
							LRF230	..-S	..-O	..-S-O	1400	400	1400	400		

Actuators with mechanical emergency control function

Nominal torque	Open-close	3-point	Emergency control function	Nominal voltage	Running time motor 90°	Running time emergency control function	Actuator type NC		Actuator type NO		Δp_s [kPa]	$\Delta p_{max}^{1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{1)}$ [kPa]
							without auxiliary switch	with two auxiliary switches	without auxiliary switch	with two auxiliary switches				
10 Nm	•	•	☉	AC 24–240 V DC 24–125 V	<75 s	<20 s	NRF24A	..-S2	..-O	..-S2-O	1400	400	1400	400
							NRFA	..-S2	..-O	..-S2-O	1400	400	1400	400
20 Nm	•	•	☉	AC 24–240 V DC 24–125 V	<75 s	<20 s	SRF24A	..-S2	..-O	..-S2-O	1400	400	1400	400
							SRFA	..-S2	..-O	..-S2-O	1400	400	1400	400

¹⁾ Low-noise operation $\Delta p_{max} = 200$ kPa.

DN 25		DN 32		DN 40		DN 50	
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
26	R425	32	R432	32	R440	49	R450
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
26	R525	32	R532	32	R540	49	R550
Δp_s [kPa]	$\Delta p_{max}^{1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{1)}$ [kPa]
Δp_s [kPa]	$\Delta p_{max}^{1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{1)}$ [kPa]	Δp_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
Δp_s [kPa]	$\Delta p_{max}^{1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{1)}$ [kPa]	Δp_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
Δp_s [kPa]	$\Delta p_{max}^{1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{1)}$ [kPa]
1400	400						
1400	400						
Δp_s [kPa]	$\Delta p_{max}^{1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{1)}$ [kPa]	Δp_s [kPa]	$\Delta p_{max}^{1)}$ [kPa]	Δp_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

Continued from previous page

DN 15–50

Pipe connection	Flange PN 6 (EN 1092/1)
Medium temperature	-10...+100 °C (compact actuators KR.. only up to +80 °C)
Flow characteristic	A-AB equal percentage / B-AB linear (k_{vs} 50% of A-AB)
Leakage rate	Control path A-AB: leakage rate A, air bubble tight (EN 12266-1) / bypass B-AB: leakage class I

	DN 15	DN 20
<p>Closed and open water circuit (pH >7)</p> <p>2-way</p>	k_{vs} [m³/h] Valve type 15 R6015R-B1	k_{vs} [m³/h] Valve type 32 R6020R-B1
<p>Closed water circuit (pH >7)</p> <p>3-way T-bore</p>	k_{vs} [m³/h] Valve type 15 R7015R-B1	k_{vs} [m³/h] Valve type 32 R7020R-B1

Suitable actuators

Nominal torque	Open-close	3-point	Emergency control function	Nominal voltage 24 V AC/DC 230 V AC	Running time motor 90°	Running time emergency control function
----------------	------------	---------	----------------------------	-------------------------------------	------------------------	---

Small and compact actuators

Actuator type	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]
TR..	600	100	600	100
KR..	600	100	600	100
TR24	600	100	600	100
KR230	600	100	600	100
TRY230	600	100	600	100

Standard actuators

Actuator type	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]
LR24A	600	100	600	100
LR230A	600	100	600	100
NR24A	600	100	600	100
NR230A	600	100	600	100
SR24A	600	100	600	100
SR230A	600	100	600	100

Very fast runners

Actuator type	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]
LRQ24A	600	100	600	100
NRQ24A	600	100	600	100
SRQ24A	600	100	600	100

Actuators with mechanical emergency control function

Actuator type	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]
TRF24	600	100	600	100
TRF230	600	100	600	100
LRF24	600	100	600	100
LRF230	600	100	600	100

Actuators with mechanical emergency control function

Actuator type	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]
NRF24A	600	100	600	100
NRFA	600	100	600	100
SRF24A	600	100	600	100
SRFA	600	100	600	100

Continued next page

DN 25		DN 32		DN 40		DN 50	
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
26	R6025R-B2	32	R6032R-B3	31	R6040R-B3	49	R6050R-B3
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
26	R7025R-B2	32	R7032R-B3	31	R7040R-B3	49	R7050R-B3
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	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
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	100						
600	100	600	100	600	100		
600	100	600	100	600	100	600	100
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	100						
600	100						
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	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

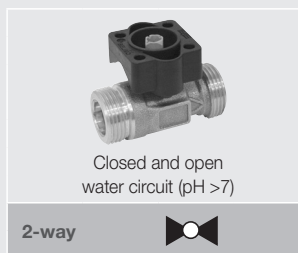
Continued from previous page

DN 10–20

Pipe connection	External thread G (ISO 228/1)
Medium temperature	+2...+130 °C
Flow characteristic	A-AB, equal percentage
Leakage rate	Leakage rate A, air bubble tight (EN 12266-1)

Suitable actuators

Nominal torque	Open-close	3-point	Emergency control function	Nominal voltage 24 V AC/DC 230 V AC	Running time motor 90°	Running time emergency control function
----------------	------------	---------	----------------------------	---	---------------------------	---



DN 10		DN 15		DN 20	
k_{vs} [m³/h]	Valve type	k_{vs} [m³/h]	Valve type	k_{vs} [m³/h]	Valve type
4	R410DK	12	R415D	25	R420D

Small and compact actuators



						Actuator type	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]
2 Nm	•	•		24 V	35 s	TRY24 ¹⁾	1400	400				
					100 s	TR24 ¹⁾	1400	400				
	•	•		230 V	35 s	TRY230 ¹⁾	1400	400				
					105 s	TR230-3 ¹⁾	1400	400				

Standard actuators



						Actuator type without auxiliary switch	with 1 auxiliary switch	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]
5 Nm	•	•		24 V	90 s	LR24A	..S	1400	400	1400	400	1400	400
						LR230A	..S	1400	400	1400	400	1400	400

Very fast runners



						Actuator type	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]
4 Nm	•	•		24 V	9 s	LRQ24A	1400	400	1400	400	1400	400

Actuators with mechanical emergency control function







						Actuator type NC			Actuator type NO			Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]
						without auxiliary switch	with 1 auxiliary switch	with two auxiliary switches	without auxiliary switch	with 1 auxiliary switch	with two auxiliary switches						
2 Nm	•	•	⊙	24 V	75 s	TRF24 ¹⁾	..S		..-O	..-S-O		1400	400				
						TRF230 ¹⁾	..S		..-O	..-S-O		1400	400				
4 Nm	•	•	⊙	24 V	75 s	TRF24 ¹⁾	..S		..-O	..-S-O		1400	400	1400	400	1400	400
						TRF230 ¹⁾	..S		..-O	..-S-O		1400	400	1400	400	1400	400
10 Nm	•	•	⊙	230 V	35 s	NRFD230A-3	..S2		..-O	..-S2-O		1400	400	1400	400	1400	400

¹⁾ If medium temperature ≥ 100 °C, then line and valve must be insulated.

DN 25 – 450

Pipe connection	Flange (ISO 7005-2 and EN 1092-2)
Medium temperature	-20...+120 °C
Leakage rate	A, tight (EN 12266-1)
PN 6, 10, 16	DN 25 – 200
PN 10, 16	DN 250 – 350
PN 16	DN 400 – 450

	DN 25	DN 32	DN 40	DN 50
 Closed and open water circuit (pH >7)				
With wafer type 	k_{vmax} [m³/h] 45	BV type D625N	k_{vmax} [m³/h] 55	BV type D632N
			k_{vmax} [m³/h] 70	BV type D640N
			k_{vmax} [m³/h] 90	BV type D650N
 Closed and open water circuit (pH >7)				
With lug type 	k_{vmax} [m³/h] 45	BV type D625NL	k_{vmax} [m³/h] 55	BV type D632NL
			k_{vmax} [m³/h] 70	BV type D640NL
			k_{vmax} [m³/h] 90	BV type D650NL

Suitable actuators

Nominal torque	Open-close	3-point	Terminal connection	Emergency control function	Nominal voltage 24 V AC/DC 230 V AC	Running time motor 90°	Auxiliary switch SPDT
----------------	------------	---------	---------------------	----------------------------	-------------------------------------	------------------------	-----------------------

Standard actuators

SR..	Nominal torque	Open-close	3-point	Terminal connection	Emergency control function	Nominal voltage 24 V AC/DC 230 V AC	Running time motor 90°	Actuator type		Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]
								open-close / 3-point	Modulating (2 – 10 V)				
SR..	20 Nm	•	•			24 V	90 s	SR24A-5	SR24A-SR-5	1200	1200	1200	1200
								SR230A-5	SR230A-SR-5	1200	1200	1200	1200
GR..	40 Nm	•				24 V	150 s	GR24A-5	GR24A-SR-5	1200	1200	1200	1200
								GR230A-5		1200	1200	1200	1200
GR..	<90 Nm	•				24 V	150 s	DR24A-7	DR24A-SR-7				
								DR230A-7					
						24 V		DR24A-TP-7					

Fast runners

DR..	Nominal torque	Open-close	3-point	Terminal connection	Emergency control function	Nominal voltage 24 V AC/DC 230 V AC	Running time motor	Actuator type		Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	
								open-close / 3-point	Modulating (2 – 10 V)					
DR..	35 Nm	•	•	•		24 V	15 s	2	SY1-24-3-T		1200	1200	1200	1200
								2	SY1-230-3-T		1200	1200	1200	1200
DRC..	40 Nm	•				24 V	35 s		GRC24A-5					
									GRC24G-5					
DRC..	<90 Nm	•				24 V	35 s		DRC24A-TP-7					
									DRC24G-T-7					
	<90 Nm	•				24 V	35 s		DRC24A-7					
									DRC24G-7					
SY1..	90 Nm	•	•	•		24 V	15 s	2	SY2-24-3-T	SY2-24-SR-T				
								2	SY2-230-3-T	SY2-230-SR-T				
SY1..	150 Nm	•	•	•		24 V	22 s	2	SY3-24-3-T	SY3-24-SR-T				
								2	SY3-230-3-T	SY3-230-SR-T				
SY..	400 Nm	•	•	•		24 V	16 s	2	SY4-24-3-T	SY4-24-SR-T				
								2	SY4-230-3-T	SY4-230-SR-T				
SY..	650 Nm	•	•	•		230 V	31 s	2	SY6-230-3-T					
									SY7-230A-3-T					
SY..	1000 Nm	•	•	•		230 V	55 s	2	SY8-230A-3-T					
									SY9-230A-3-T					
SY..	1500 Nm	•	•	•		230 V	70 s	2	SY10-230A-3-T					
									SY12-230A-3-T					
SY..	2000 Nm	•	•	•		230 V	70 s	2	SY10-230A-3-T					
									SY12-230A-3-T					
SY..	2500 Nm	•	•	•		230 V	70 s	2	SY10-230A-3-T					
									SY12-230A-3-T					
SY..	3500 Nm	•	•	•		230 V	70 s	2	SY10-230A-3-T					
									SY12-230A-3-T					

Actuators with emergency control function NC/NO

SRF..	Nominal torque	Open-close	3-point	Terminal connection	Emergency control function	Nominal voltage 24 V AC/DC 230 V AC	Running time motor	Actuator type		Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]		
								NC	NO						
SRF..	20 Nm	•				24 V	75 s	2	SRF24A-5	..-O	1200	1200	1200	1200	
								2	SRF24A-S2-5		1200	1200	1200	1200	
								75 s	2	SRFA-5	..-O	1200	1200	1200	1200
									2	SRFA-S2-5		1200	1200	1200	1200
GRK..	40 Nm	•			-II-	24 V	150 s	GRK24A-5		1200	1200	1200	1200		

⊕ = Actuators with mechanical emergency control function.

-II- = Actuators with electrical emergency control function. The emergency setting position NC/NO of all -II- actuators can be adjusted on the actuator.

Value = recommended combinations Value = other possible combinations (Data does not relieve the user of the obligation for testing in individual cases.)

Continued next page





DN 65	DN 80	DN 100	DN 125	DN 150	DN 200	DN 250	DN 300	DN 350	DN 400	DN 450											
k_{vmax} [m ³ /h]	k_{vmax} [m ³ /h]	k_{vmax} [m ³ /h]	k_{vmax} [m ³ /h]	k_{vmax} [m ³ /h]	k_{vmax} [m ³ /h]	k_{vmax} [m ³ /h]	k_{vmax} [m ³ /h]	k_{vmax} [m ³ /h]	k_{vmax} [m ³ /h]	k_{vmax} [m ³ /h]											
BV type	BV type	BV type	BV type	BV type	BV type	BV type	BV type	BV type	BV type	BV type											
180	D665N	300	D680N	580	D6100N	820	D6125N	1600	D6150N	2900	D6200N	4400	D6250N	7300	D6300N	10900	D6350N	14200	D6400N	18800	D6450N
k_{vmax} [m ³ /h]	k_{vmax} [m ³ /h]	k_{vmax} [m ³ /h]	k_{vmax} [m ³ /h]	k_{vmax} [m ³ /h]	k_{vmax} [m ³ /h]	k_{vmax} [m ³ /h]	k_{vmax} [m ³ /h]	k_{vmax} [m ³ /h]	k_{vmax} [m ³ /h]	k_{vmax} [m ³ /h]	k_{vmax} [m ³ /h]	k_{vmax} [m ³ /h]	k_{vmax} [m ³ /h]	k_{vmax} [m ³ /h]	k_{vmax} [m ³ /h]	k_{vmax} [m ³ /h]	k_{vmax} [m ³ /h]	k_{vmax} [m ³ /h]	k_{vmax} [m ³ /h]	k_{vmax} [m ³ /h]	
BV type	BV type	BV type	BV type	BV type	BV type	BV type	BV type	BV type	BV type	BV type	BV type	BV type	BV type	BV type	BV type	BV type	BV type	BV type	BV type	BV type	BV type
180	D665NL	300	D680NL	580	D6100NL	820	D6125NL	1600	D6150NL	2900	D6200NL	4400	D6250NL	7300	D6300NL	10900	D6350NL	14200	D6400NL	18800	D6450NL
Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]
1200	1200																				
1200	1200																				
1200	1200	1200																			
1200	1200	1200																			
				1200	1200																
				1200	1200																
					1200	1200															
					1200	1200															
					1200	1200															
					1200 ¹⁾	1200	1200														
					1200 ¹⁾	1200	1200														
										1200											
										1200											
											1200	1200									
												1200	1200								
														600							
														1200 ⁵⁾							
																600 ²⁾					
																1000 ³⁾					
																				600 ⁴⁾	
																				1000 ⁴⁾	
Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]
1200	1200																				
1200	1200																				
1200	1200																				
1200	1200																				
1200	1200	1200																			

Continued from previous page

¹⁾ Adapter ZSY-005
²⁾ Adapter ZSY-401
³⁾ Adapter ZSY-701
⁴⁾ Adapter ZSY-702
⁵⁾ Adapter ZSY-703

DN 500 – 700

Pipe connection	Flange (ISO 7005-2 and EN 1092-2)
Medium temperature	-20...+120 °C
Leakage rate	A, tight (EN 12266-1)
PN 16	DN 500 – 700

	DN 500	DN 600	DN 700			
 Closed and open water circuit (pH >7)						
With wafer type 	k_{vmax} [m³/h] 24100	BV type D6500N	k_{vmax} [m³/h] 37300	BV type D6600N	k_{vmax} [m³/h] 42800	BV type D6700N
 Closed and open water circuit (pH >7)						
With lug type 	k_{vmax} [m³/h] 24100	BV type D6500NL	k_{vmax} [m³/h] 37300	BV type D6600NL	k_{vmax} [m³/h] 42800	BV type D6700NL

Suitable actuators

Nominal torque	Open-close	3-point	Terminal connection	Nominal voltage 24 V AC/DC 230 V AC	Running time motor 90°	Auxiliary switch SPDT
1500 Nm	•	•	•	230 V	55 s	2
2000 Nm	•	•	•	230 V	70 s	2
2500 Nm	•	•	•	230 V	70 s	2
3500 Nm	•	•	•	230 V	70 s	2

Fast runners

	Actuator type open-close / 3-point	Modulating (2 – 10 V)	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]
1500 Nm	•	•	600 ¹⁾		
2000 Nm	•	•	1000 ²⁾		
2500 Nm	•	•		600 ³⁾	
3500 Nm	•	•		1000 ³⁾	200 ⁴⁾

¹⁾ Adapter ZSY-702

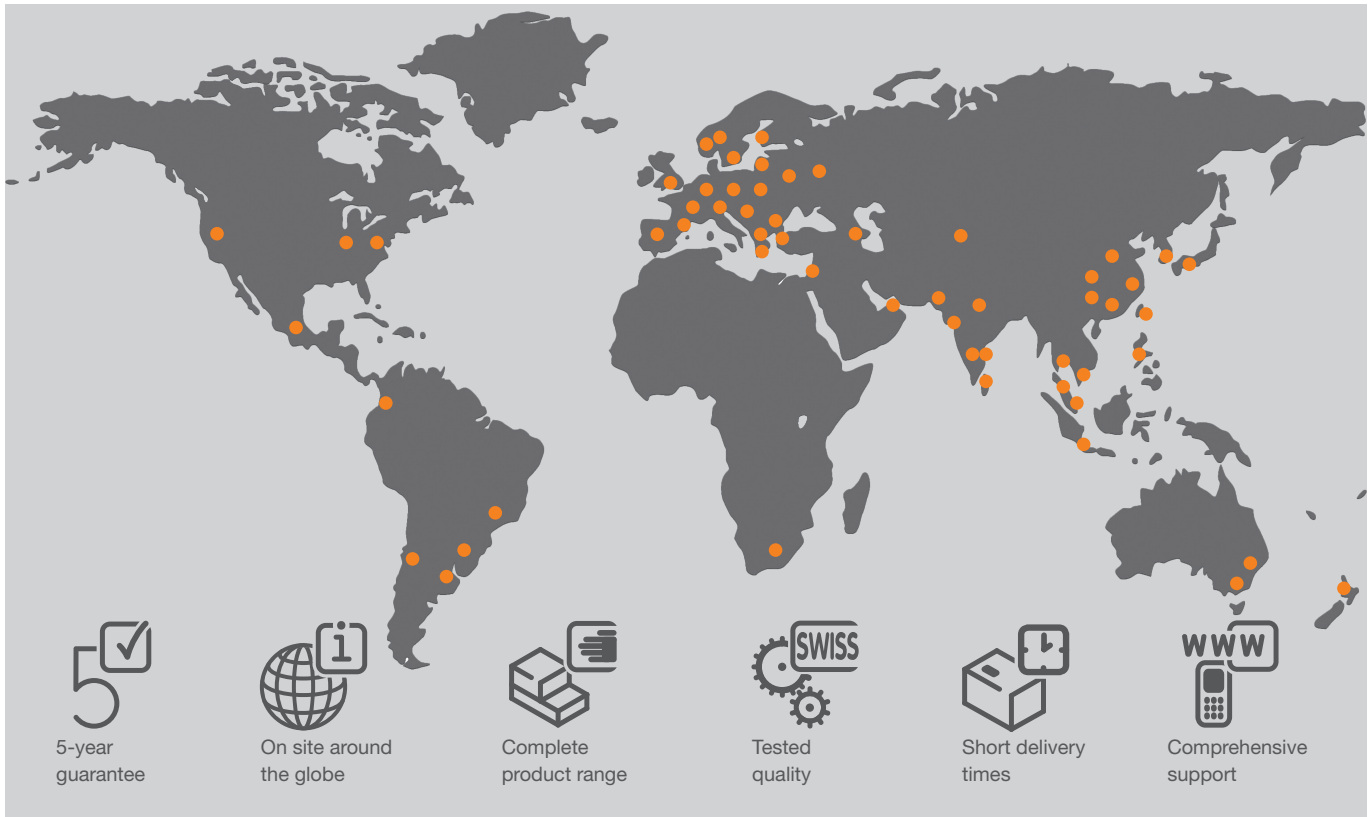
²⁾ Adapter ZSY-901

³⁾ Adapter ZSY-902

⁴⁾ Adapter ZSY-903

Value = recommended combinations Value = other possible combinations (Data does not relieve the user of the obligation for testing in individual cases.)

All-inclusive.



The image features a dark grey world map with numerous orange dots scattered across all continents, representing a global presence. Below the map are six icons, each with a corresponding text label:

- 5-year guarantee**: An icon of the number 5 with a checkmark inside a square.
- On site around the globe**: An icon of a globe with an information 'i' symbol inside a square.
- Complete product range**: An icon of a stack of three boxes with a list icon inside a square.
- Tested quality**: An icon of two interlocking gears with the word 'SWISS' inside a square.
- Short delivery times**: An icon of a box with a clock icon inside a square.
- Comprehensive support**: An icon of a mobile phone with the letters 'WWW' inside a square.

Belimo Europe

BELIMO Automation AG
Brunnenbachstrasse 1
CH-8340 Hinwil, Switzerland

Tel. +41 43 843 61 11
Fax +41 43 843 62 68
info@belimo.ch
www.belimo.eu

pdf - en - 02.2015 - Subject to technical modifications