

The complete range of water solutions

2009



5

Years guarantee

SWISS QUALITY

BELIMO[®]

Pressure-independent characterised control valves






		Running times		Control (Operating range)		LR / LRF		NR		SR / ARF		
3-point	AC/DC 24 V	90 s		3-point								
	AC 230 V	90 s		3-point								
Modulating	AC/DC 24 V	9 s		DC 0 (2) ... 10 V		LR24A(-S)		NR24A(-S)		SR24A(-S)		
		35 s		DC 0 (2) ... 10 V		LRQ24A-SR		NRQ24A-SR				
		90 s		DC 0 (2) ... 10 V		LRC24A-SR		NRC24A-SR				
	Motor: 150 s / Spring: 20/16 s		DC 0 (2) ... 10 V	●	LRF24-SR(-O)					ARF24-SR-S(-O)		
Internal thread Rp (ISO 7/1) 2-way 		$p_s = 1600 \text{ kPa}$ $T_{max} = 100^\circ\text{C}$			Range of use closed circuits (pH > 7)							
		DN [mm]	Rp	V [l/s]	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]
		R215P-009 / R215P-036	15	1/2"	0.09/0.36	700	350	700	350	700	350	
		R220P-036 / R220P-066	20	3/4"	0.36/0.66							
		R225P-057 / R225P-098	25	1"	0.57/0.98	700	350					
		R232P-098 / R232P-151	32	1 1/4"	0.98/1.51			700	350	700	350	
		R240P-164 / R240P-208	40	1 1/2"	1.64/2.08							
		R250P-252	50	2"	2.52			700	350			
		R250P-505	50	2"	5.05					700	350	

Characterised control valves with small actuators

		Running times		Control (Operating range)		TRD / TRFD / TRCD		TR / TRF / TRC			
3-point	AC/DC 24 V	Motor: 90 s / Spring: <25 s		3-point	●	TRFD24-2(-O)		TRF24-2(-O)			
		95 s		3-point		TRD24		TR24			
	AC 230 V	105 s		3-point		TRD230-3 ⁵⁾		TR230-3 ⁵⁾			
Modulating	AC/DC 24 V	15 s		DC 0 (2) ... 10 V		TRCD24A-SR		TRC24A-SR			
		90 s		DC 0 (2) ... 10 V		TRD24-SR		TR24-SR			
		Motor: 90 s / Spring: 25 s		DC 0 (2) ... 10 V	●	TRFD24-SR(-O)		TRF24-SR(-O)			
Internal thread Rp (ISO 7/1) 2-way 		External thread G (ISO 228/1) 2-way 		$p_s = 4140 \text{ kPa}$ $T_{max} = 100^\circ\text{C}$ ³⁾		Range of use closed / open circuits (pH > 7)					
		DN [mm]	k_{vs} ¹⁾ [m ³ /h]	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]		
		R205K ... R209K	R305K ... R308K	R405K ... R409K	R505K ... R508K	10	0.25 / 0.4 / 0.63 / 1 / 1.6 ⁴⁾	1400	350 ²⁾		
		R209 ... R214	R309 ... R313	R409 ... R414	R509 ... R513	15	0.63 / 1 / 1.6 / 2.5 / 4 / 6.3 ⁴⁾			1400	350 ²⁾
		R217 ... R219	R317 ... R318	R417 ... R419	R517 ... R518	20	6.3 / 10 / 16 ⁴⁾			1400	350 ²⁾

1) to 5) see page 3

Characterised control valves with advanced function (max. 130 °C)

						TRD ¹⁾ / TRFD	LRD / LRF
		Running times	Control (Operating range)				
3-point	AC/DC 24 V	90 s	3-point				LRD24A
		100 s	3-point			TRD24	
		Motor: 90 s / Spring: 25 s	3-point	●		TRFD24-2(-O)	
Modulating	AC/DC 24 V	9 s	DC 0 (2) ... 10 V				LRQD24A-SR
		15 s	DC 0 (2) ... 10 V			TRCD24A-SR	
		35 s	DC 0 (2) ... 10 V				LRCD24A-SR
		90 s	DC 0 (2) ... 10 V			TRD24-SR	LRD24A-SR
		Motor: 90 s / Spring: 25 s	DC 0 (2) ... 10 V	●		TRFD24-SR(-O)	
		Motor: 150 s / Spring: 20 s	DC 0 (2) ... 10 V	●			LRF24-SR(-O)
External thread G (ISO 228/1)		p_s = 2700 kPa		Range of use			
2-way 		T _{max} = 130 °C (Water) ³⁾		closed / open circuits (pH > 7)			
		DN	k_{vs} ¹⁾	Δp_s	Δp_{v0}	Δp_s	Δp_{v0}
		[mm]	[m ³ /h]	[kPa]	[kPa]	[kPa]	[kPa]
R404DK ... R409DK		10	0.3/0.4/0.63/1/1.6/2.5 ⁴⁾	1400	800	1400	800
R412D ... R414D		15	2.5/4/6.3 ⁴⁾			1400	800
R417D ... R419D		20	6.3/10/16 ⁴⁾			1400	800

Explanations:

- 1) $k_{VS} = A - AB$, $k_{VS} (B - AB) = 70\% \times k_{VS}$
- 1a) $k_{VS} = A - AB$, $k_{VS} (B - AB) = 50\% \times k_{VS}$
- 2) Low noise operation, $\Delta p_{max} = 200$ kPa
- 3) Temperature of -10 ... +5 °C with stem heating expecting characterised control valves DN 10 and R529, R530, R538, R540, R548, R550
- 4) 2-way valves only
- 4a) R350G-A only
- 5) Parallel control not possible
- 5a) Only parallel control possible
- 6) MFT types: Running times, control signal, stroke limitation and other functions can be parameterised with PC-Tool or the parameterising device MFT-H (Delivery state: modulating)
- 7) Closing force 1000 N / inhibiting force 800 N
- 8) NVF..E together with globe valves H..B, H..N, H..R, H7..X.. und H7..Y.. NO (normally open)
- 9) NVF..E together with globe valves H6..S, H6..SP und H6..X.. NC (normally closed)
- 10) Can be switched to DC 0 (2) ... 10 V
- 11) If T > 100 °C the actuator must not mount directly over the pipe (e.g. lateral lying)

For the rotary sortiment is valid:

- Actuator types **without** "...-O": NC (normally closed)
 Actuator types **with** "...-O": NO (normally open)
 Actuator types with "...-S": with auxiliary switch

Characterised control valves with standard actuators

			LR / LRC / LRQ / LRF	NR / NRQ	SR / ARF	SR..P							
			LR: 5 ... 110°C ³⁾ LRF: 5 ... 100°C ³⁾	5 ... 110°C ³⁾	SR: 5 ... 110°C ³⁾ ARF: 5 ... 100°C ³⁾	5 ... 110°C ³⁾							
Running times	Control (Operating range)												
3-point	AC/DC 24 V	90 s	3-point										
	AC 230 V	90 s	3-point										
Modulating	AC/DC 24 V	9 s	DC 0 (2) ... 10 V	LR24A(-S)	NR24A(-S)	SR24A(-S)	SR24P						
		35 s	DC 0 (2) ... 10 V	LR230A(-S)	NR230A(-S)	SR230A(-S)	SR230P						
		90 s	DC 0 (2) ... 10 V	LRQ24A-SR	NRQ24A-SR								
			DC 0 (2) ... 10 V	LRC24A-SR									
Motor: 150 s / Spring: 20/16 s			DC 0 (2) ... 10 V	LR24A-SR	NR24A-SR	SR24A-SR	SR24P-SR						
			●	LRF24-SR(-O)		ARF24-SR-S(-O)							
Internal thread Rp (ISO 7/1)			p _s = 4140 kPa (DN 10 ... 25) p _s = 2760 kPa (DN 32 ... 50)		Range of use closed / open circuits (pH > 7)								
2-way		3-way		DN [mm]	k _{vs} ¹⁾ [m ³ /h]	Δp _s [kPa]	Δp _{max} [kPa]	Δp _s [kPa]	Δp _{max} [kPa]	Δp _s [kPa]	Δp _{max} [kPa]	Δp _s [kPa]	Δp _{max} [kPa]
R209 ... R214	R309 ... R313	15	0.63/1/1.6/2.5/4/6.3 ⁴⁾	1400	350 ²⁾	1400	350 ²⁾	1400	350 ²⁾	1400	350 ²⁾	1400	350 ²⁾
R217 ... R219	R317 / R318	20	4/6.3/8.6 ⁴⁾										
R222 ... R224	R322 / R323	25	6.3/10/16 ⁴⁾	1400	350 ²⁾								
R231	R331	32	16			1400	350 ²⁾	1400	350 ²⁾	1400	350 ²⁾	1400	350 ²⁾
R238 / R239	R338 / R339G	40	16/25										
R248 / R249	R348 / R349G / R350G-A	50	25/40/58 ^{4a)}			1400	350 ²⁾	1400	350 ²⁾	1400	350 ²⁾	1400	350 ²⁾
External thread G (ISO 228/1)			p _s = 2760 kPa (DN 32 ... 50) p _s = 2760 kPa (DN 32 ... 50)		Range of use closed / open circuits (pH > 7)								
2-way		3-way		DN [mm]	k _{vs} ¹⁾ [m ³ /h]	Δp _s [kPa]	Δp _{max} [kPa]	Δp _s [kPa]	Δp _{max} [kPa]	Δp _s [kPa]	Δp _{max} [kPa]	Δp _s [kPa]	Δp _{max} [kPa]
R409 ... R414	R509 ... R513	15	0.63/1/1.6/2.5/4/6.3 ⁴⁾	1400	350 ²⁾	1400	350 ²⁾	1400	350 ²⁾	1400	350 ²⁾	1400	350 ²⁾
R417 ... R419	R517 / R518	20	4/6.3/8.6 ⁴⁾										
R422 ... R424	R522 / R523	25	6.3/10/16 ⁴⁾	1400	350 ²⁾								
R431	R531	32	16			1400	350 ²⁾	1400	350 ²⁾	1400	350 ²⁾	1400	350 ²⁾
R438 / R439	R538	40	16/25 ⁴⁾										
R448 / R449	R548	50	25/40 ⁴⁾			1400	350 ²⁾	1400	350 ²⁾	1400	350 ²⁾	1400	350 ²⁾
Flange (EN 1092/1)			PN 6		Range of use closed / open circuits (pH > 7)								
2-way		3-way		DN [mm]	k _{vs} ¹⁾ [m ³ /h]	Δp _s [kPa]	Δp _{max} [kPa]	Δp _s [kPa]	Δp _{max} [kPa]	Δp _s [kPa]	Δp _{max} [kPa]	Δp _s [kPa]	Δp _{max} [kPa]
R609R ... R613R	R709R / R711R / R713R	15	0.63/1 ⁴⁾ /1.6/2.5 ⁴⁾ /4	600	100	600	100	600	100	600	100	600	100
R618R	R718R	20	6.3										
R623R	R723R	25	10	600	100								
R631R	R731R	32	16			600	100	600	100	600	100	600	100
R639R	R738R	40	16/25 ⁴⁾										
R649R	R748R	50	25/40 ⁴⁾			600	100						
R664R		65	58										
R679R		80	90					600	100	600	100	600	100

1) to 4) see page 3

Globe valves

Globe valves, PN 16, 150 °C

				NVF	NV	NVG	AV					
				800 N 20 mm	1000 N ⁷⁾ 20 mm	1600 N 20 mm	2000 N 40 mm	2500 N 40 mm				
		Running times	Control (Operating range)									
3-point	AC/DC 24 V	7.5 / 3.8 s/mm	3-point									
	AC 230 V	7.5 / 3.8 s/mm	3-point									
Multifunctional ⁶⁾	AC/DC 24 V	35 s	DC 0 ... 10 V									
		60 s	DC 0 (2) ... 10 V									
		150 s	DC 0 (2) ... 10 V									
		Motor: 150 s Spring: 30 s	DC 0 (2) ... 10 V	● NO NC	NVF24-MFT NVF24-MFT-E ⁹⁾							
Flange (ISO 7005) 2-way 			PN 16 T _{max} = 150 °C		Range of use closed circuits / steam: pressure ratio $\frac{\Delta p}{p_1} < 0,4$							
			DN [mm]	k _{vs} [m ³ /h]	Δp _s [kPa]	Δp _{max} [kPa]	Δp _s [kPa]	Δp _{max} [kPa]	Δp _s [kPa]	Δp _{max} [kPa]	Δp _s [kPa]	Δp _{max} [kPa]
H610S ... H615S			15	0.4 / 0.63 / 1 / 1.6 / 2.5 / 4	1600	1000	1600	1000	1600	1000		
H619S / H620S			20	4 / 6.3	1600	1000	1600	1000				
H624S / H625S			25	6.3 / 10	1000	1000	1300	1000				
H632S			32	16	750	750	1000	1000	1600	1000		
H640S			40	25	400	400	550	550	980	980		
H650S			50	40	250	250	350	350	600	600		
H664S			65	58			150	150	320	320		
H665S			65	63							400	400
H680S			80	90							270	270
H6100S			100	145							160	160
H6125S			125	220							90	90
H6150S			150	320							55	55
Flange (ISO 7005) 2-way 			PN 16 Partial pressure released T _{max} = 150 °C		Range of use closed circuits / steam: pressure ratio $\frac{\Delta p}{p_1} < 0,4$							
			DN [mm]	k _{vs} [m ³ /h]	Δp _s [kPa]	Δp _{max} [kPa]	Δp _s [kPa]	Δp _{max} [kPa]	Δp _s [kPa]	Δp _{max} [kPa]	Δp _s [kPa]	Δp _{max} [kPa]
H640SP			40	25	1600	1000	1600	1000				
H650SP			50	40	1600	1000	1600	1000				
H664SP			65	58	1350	1000	1600	1000				
H679SP			80	90	1300	1000	1600	1000				
H6100SP			100	145					600	600	600	600
H6125SP			125	220								
H6150SP			150	320					600	600	600	600

Large globe valves, PN 16, 120 °C

				GV				
				12 kN 65 mm				
		Running times	Control (Operating range)					
3-point	AC 230 V	0.79 mm/s	3-point	GV12-230-3-T				
Modulating	AC/DC 24 V	0.79 mm/s	DC 0 (2) ... 10 V	GV12-24-SR-T				
Flange (ISO 7005) 2-way 			PN 16 T _{max} = 120 °C		Range of use closed circuits			
3-way 			DN [mm]	k _{vs} [m ³ /h]	Δp _s [kPa]	Δp _{max} [kPa]		
H6200W630-S7		H7200W630-S7	200	630	310	310		
H6250W1000-S7		H7250W1000-S7	250	1000	190	190		

6), 7) and 9) see page 3

Globe valves, PN 25 and PN 40, 150 °C

				NVF	NV	NVG	AV	
				800 N 20 mm	1000 N ⁷⁾ 20 mm	1600 N 20 mm	2000 N 40 mm	2500 N 40 mm
		Running times	Control (Operating range)					
3-point	AC/DC 24 V	7.5 / 3.8 s/mm	3-point		NV24-3		AV24-3	
	AC 230 V	7.5 / 3.8 s/mm	3-point		NV230-3		AV230-3	
Multifunctional ⁶⁾	AC/DC 24 V	35 s	DC 0 ... 10 V		NVY24-MFT			
		60 s	DC 0 (2) ... 10 V				AVY24-MFT	
		150 s	DC 0 (2) ... 10 V		NV24-MFT	NVG24-MFT		AV24-MFT
	Motor: 150 s Spring: 30 s	DC 0 (2) ... 10 V	●	2-way NO NC	NVF24-MFT NVF24-MFT-E ⁹⁾			
				3-way NC NO	NVF24-MFT NVF24-MFT-E ⁸⁾			

Flange (ISO 7005) 2-way 		3-way 		PN 25 T _{max} = 150 °C		Range of use closed circuits							
DN [mm]	k _{vs} [m ³ /h]	DN [mm]	k _{vs} [m ³ /h]	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]
H6015XP4-S2	15	0.4		2500	1000	2500	1000	2500	1000				
H6015XP63-S2	15	0.63		2500	1000	2500	1000						
H6015X1-S2	15	1		1650	1000	2100	1000						
H6015X1P6-S2	15	1.6											
H6015X2P5-S2	15	2.5											
H6015X4-S2	H7015X4-S2	15	4	1650	1000	2100	1000						
H6020X4-S2		20	4	1180	1000	1560	1000						
H6020X6P3-S2	H7020X6P3-S2	20	6.3	1180	1000	1560	1000	2500	1000				
H6025X6P3-S2		25	6.3	960	960	1280	1000	2300	1000				
H6025X10-S2	H7025X10-S2	25	10	960	960	1280	1000	2300	1000				
H6032X10-S2		32	10	660	660	900	900	1600	1000				
H6032X16-S2	H7032X16-S2	32	16	660	660	900	900	1600	1000				
H6040X16-S2		40	16	360	360	500	500	950	980				
H6040X25-S2	H7040X25-S2	40	25	360	360	500	500	950	980				
H6050X25-S2		50	25	210	210	300	300	600	600				
H6050X40-S2	H7050X40-S2	50	40	210	210	300	300	600	600				
	H7065X63-S4	65	63							400	400	540	540
	H7080X100-S4	80	100							250	250	340	340
	H7100X160-S4	100	160							150	150	200	200

Flange (ISO 7005) 2-way 		PN 25 Partial pressure released T _{max} = 150 °C		Range of use closed circuits			
DN [mm]	k _{vs} [m ³ /h]	DN [mm]	k _{vs} [m ³ /h]	Δp _s [kPa]	Δp _{max} [kPa]	Δp _s [kPa]	Δp _{max} [kPa]
H6065X58-SP2	65	58		2100	1000		
H6080X90-SP2	80	90		1600	1000		
H6100X125-SP2	100	125		1000	1000		

Flange (ISO 7005) 3-way 		PN 40 T _{max} = 150 °C		Range of use closed circuits									
DN [mm]	k _{vs} [m ³ /h]	DN [mm]	k _{vs} [m ³ /h]	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]
H7015Y4-S2	15	4		1650	1000	2100	1000	3800	1000				
H7020Y6P3-S2	20	6.3		1180	1000	1560	1000	2700	1000				
H7025Y10-S2	25	10		960	960	1280	1000	2300	1000				
H7032Y16-S2	32	16		660	660	900	900	1600	1000				
H7040Y25-S2	40	25		360	360	500	500	950	950				
H7050Y40-S2	50	40		210	210	300	300	600	600				
H7065Y63-S4	65	63								400	400	540	540
H7080Y100-S4	80	100								250	250	340	340
H6100Y160-S4	100	160								150	150	200	200

6), 7), 8) and 9) see page 3

Shut-off valves

			TR / TRF	LR / LRQ / LRF	NR / NRQ	SR / ARF	SR..P
							IP66/67
			5 ... 110°C ³⁾	LR: 5 ... 110°C ³⁾ LRF: 5 ... 100°C ³⁾	5 ... 110°C ³⁾	SR: 5 ... 110°C ³⁾ ARF: 5 ... 100°C ³⁾	5 ... 110°C ³⁾
Open-close AC/DC 24 V	Running times	Control					
	9 s	1-/2-wire		LRQ24A	NRQ24A		
	90 s	1-/2-wire	TR24	LR24A(-S)	NR24A(-S)	SR24A(-S)	SR24P
	Motor: 75 s / Spring: 75 s	1-wire	●	TRF24(-S)(-O)			
	Motor: 75 s / Spring: 20 s	1-wire	●		LRF24(-S)(-O)		
AC 230 V	Motor: 150 s / Spring: 16 s	1-wire	●			ARF24-S(-O)	
	Running times	Control					
	9 s	1-/2-wire		LRQ230A	NRQ230A		
	90 s	1-/2-wire		LR230A(-S)	NR230A(-S)	SR230A(-S)	SR230P
	Motor: 75 s / Spring: 75 s	1-wire	●	TRF230(-S)(-O)			
Motor: 75 s / Spring: 20 s	1-wire	●		LRF230(-S)(-O)			
Motor: 150 s / Spring: 16 s	1-wire	●			ARF230-S(-O)		

Internal thread Rp (ISO 7/1)		$p_s = 4140 \text{ kPa}$ (DN 15 ... 25) $p_s = 2760 \text{ kPa}$ (DN 32 ... 50)		Range of use closed / open circuits (pH > 7)									
2-way	3-way	DN [mm]	k_{vs}^{1a} [m ³ /h]	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]
R215	R315	15	8.6	1400	1000 ²⁾	1400	1000 ²⁾	1400	1000 ²⁾	1400	1000 ²⁾	1400	1000 ²⁾
R220	R320	20	21	1400	1000 ²⁾								
R225	R325	25	26			1400	1000 ²⁾						
R232	R332	32	32					1400	1000 ²⁾	1400	1000 ²⁾	1400	1000 ²⁾
R240	R340	40	32										
R250	R350	50	49					1400	1000 ²⁾	1400	1000 ²⁾	1400	1000 ²⁾

External thread G (ISO 228/1)		$p_s = 4140 \text{ kPa}$ (DN 15 ... 25) $p_s = 2760 \text{ kPa}$ (DN 32 ... 50)		Range of use closed / open circuits (pH > 7)									
2-way	3-way	DN [mm]	k_{vs}^{1a} [m ³ /h]	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]
R415	R515	15	8.6	1400	1000 ²⁾	1400	1000 ²⁾	1400	1000 ²⁾	1400	1000 ²⁾	1400	1000 ²⁾
R420	R520	20	21	1400	1000 ²⁾								
R425	R525	25	26			1400	1000 ²⁾						
R432	R532	32	32					1400	1000 ²⁾	1400	1000 ²⁾	1400	1000 ²⁾
R440	R540	40	32										
R450	R550	50	49					1400	1000 ²⁾	1400	1000 ²⁾	1400	1000 ²⁾

Flange (EN 1092/1)		PN 6		Range of use closed / open circuits (pH > 7)									
2-way	3-way	DN [mm]	k_{vs}^{1a} [m ³ /h]	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]
R615R	R715R	15	8.6	600	100 ²⁾	600	100 ²⁾	600	100 ²⁾	600	100 ²⁾	600	100 ²⁾
R620R	R720R	20	21	600	100 ²⁾								
R625R	R725R	25	26			600	100 ²⁾						
R632R	R732R	32	32					600	100 ²⁾	600	100 ²⁾	600	100 ²⁾
R640R	R740R	40	32										
R650R	R750R	50	49					600	100 ²⁾				
R665R		65	160										
R680R		80	160							600	100 ²⁾	600	100 ²⁾

1a), 2) and 3) see page 3

Change-over valves

				TR / TRF	LR / LRQ / LRF	NR / NRQ	SR / ARF	SR..P
								IP66/67
				5 ... 110 °C ³⁾	LR: 5 ... 110 °C ³⁾ LRF: 5 ... 100 °C ³⁾	5 ... 110 °C ³⁾	SR: 5 ... 110 °C ³⁾ ARF: 5 ... 100 °C ³⁾	5 ... 110 °C ³⁾
Open-close AC/DC 24 V	Running times	Control			LRQ24A	NRQ24A		
	9 s	1-/2-wire						
	90 s	1-/2-wire		TR24	LR24A(-S)	NR24A(-S)	SR24A(-S)	SR24P
	Motor: 75 s / Spring: 75 s	1-wire	●	TRF24(-S)(-O)				
	Motor: 75 s / Spring: 20 s	1-wire	●		LRF24(-S)(-O)			
AC 230 V	Motor: 150 s / Spring: 16 s	1-wire	●				ARF24-S(-O)	
	9 s	1-/2-wire			LRQ230A	NRQ230A		
	90 s	1-/2-wire			LR230A(-S)	NR230A(-S)	SR230A(-S)	SR230P
	Motor: 75 s / Spring: 75 s	1-wire	●	TRF230(-S)(-O)				
	Motor: 75 s / Spring: 20 s	1-wire	●		LRF230(-S)(-O)			
Motor: 150 s / Spring: 16 s	1-wire	●				ARF230-S(-O)		

Internal thread Rp (ISO 7/1) 3-way 	$p_s = 4140 \text{ kPa}$ (DN 15 ... 25) $p_s = 2760 \text{ kPa}$ (DN 32 ... 50)		Range of use closed / open circuits (pH > 7)									
	DN [mm]	k_{vs}^{1a} [m ³ /h]	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]
R315BL	15	4.5	500	350 ²⁾	500	350 ²⁾	500	350 ²⁾	500	350 ²⁾	500	350 ²⁾
R320BL	20	8.5										
R325BL	25	9			500	350 ²⁾						
R332BL	32	15					500	350 ²⁾	500	350 ²⁾	500	350 ²⁾
R340BL	40	14										
R350BL	50	17					500	350 ²⁾	500	350 ²⁾	500	350 ²⁾

Shut-off valves with advanced function (max. 130 °C)

				TRD / TRFD	LRD / LRQ / LRF
Open-close AC/DC 24 V	Running times	Control			LRQD24A
	9 s	1-/2-wire			LRD24A(-S)
	90 s	1-/2-wire		TRD24	
	100 s	1-/2-wire		TRFD24(-S)(-O)	
	Motor: 75 s / Spring: 75 s	1-wire	●		LRF24(-S)(-O)
AC 230 V	Motor: 75 s / Spring: 20 s	1-wire	●		LRD230A(-S)
	90 s	1-/2-wire		TRD230-3	
	105 s	1-/2-wire		TRFD230(-S)(-O)	
	Motor: 75 s / Spring: 75 s	1-wire	●		LRF230(-S)(-O)
	Motor: 75 s / Spring: 20 s	1-wire	●		

External thread G (ISO 228/1) 2-way 	$p_s = 2700 \text{ kPa}$ $T_{max} = 130 \text{ °C}$ (Water) ³⁾		Range of use closed / open circuits (pH > 7)			
	DN [mm]	k_{vs} [m ³ /h]	Δp_s [kPa]	Δp_{v100} [kPa]	Δp_s [kPa]	Δp_{v100} [kPa]
R410DK	10	4	1400	400	1400	400
R415D	15	12			1400	400
R420D	20	25			1400	400

3) see page 3

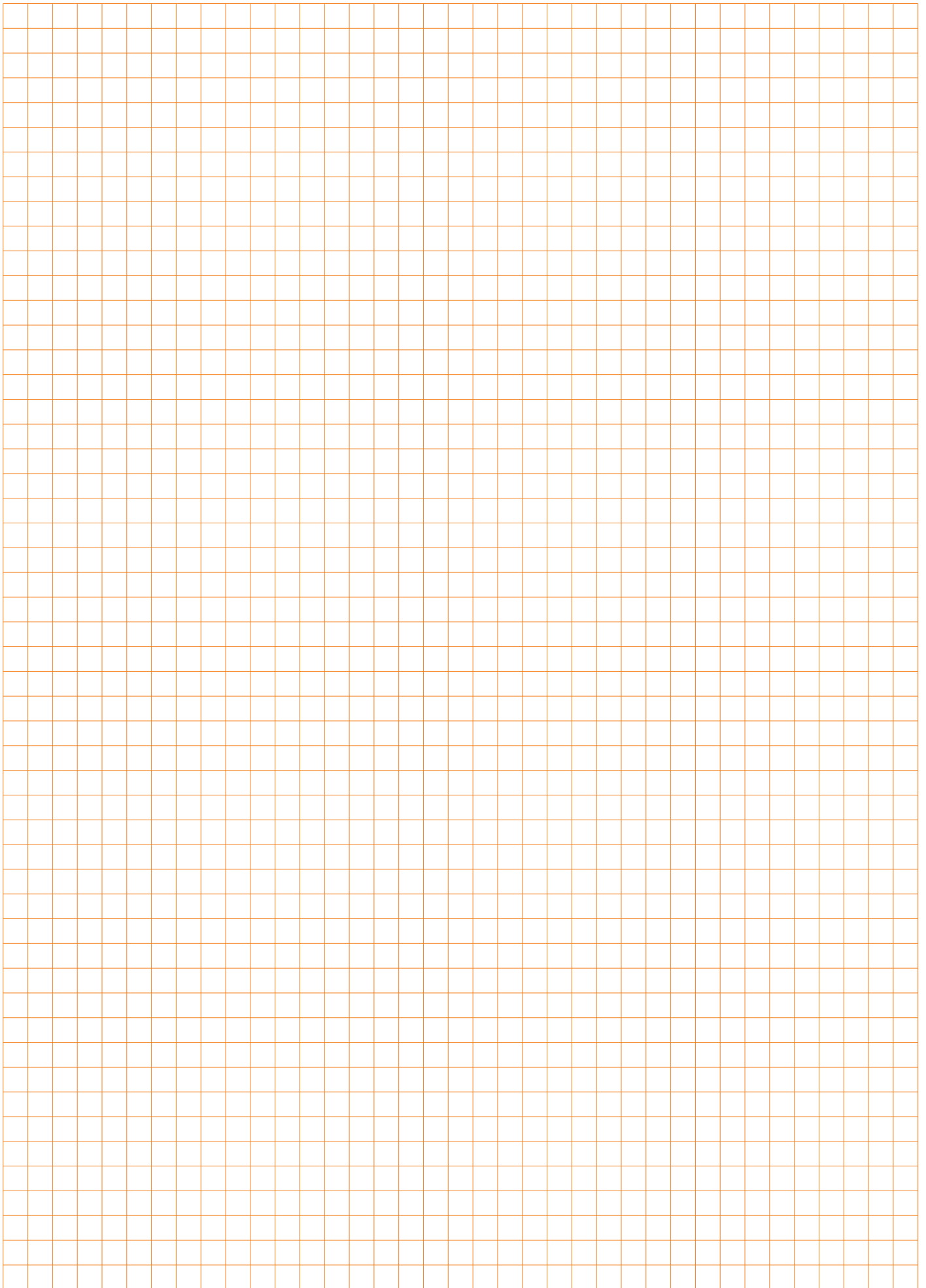
Butterfly valves with rotary actuators

			ARF	SR	SR..P	GR	DGR 5a)
					IP66/67 		
	Running times	Control					
Open-close	AC/DC 24 V	90 s					
		150 s		SR24A-5	SR24P-R		
		Motor: 150 s / Spring: 16 s	●	ARF24(-S)-5-O			
AC 230 V		90 s		SR230A-5	SR230P-R		
		150 s				GR230A-5	GR230A-7
		Motor: 150 s / Spring: 16 s	●	ARF230(-S)-5-O			
Flange (ISO 7005) 2-way 		PN6 / PN10 / PN16 T = -20 ... +120 °C (with glycol) T _{max} = max. 130 °C during one hour		Range of use closed / open circuits (pH > 7)			
		DN [mm]	k_{vs} [m ³ /h]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]
D625N		25	45	1200	1200	1200	
D632N		32	55				
D640N		40	70				
D650N		50	90				
D665N		65	180	1200			
D680N		80	300	600	1200	1200	1200
D6100N		100	580		200		1200
D6125N		125	820				600
D6150N		150	1600				1200

Butterfly valves with fast actuators

			SY1 5)	SY2 5)	SY3 5)	SY4 5)	SY5 5)
			IP67 	IP67 	IP67 	IP67 	IP67
	Running times	Control					
Open-close	AC 24 V	15 s					
		16 s					
		22 s					
		2-wire	SY1-24-3-T	SY2-24-3-T			
		2-wire				SY4-24-3-T	
		2-wire			SY3-24-3-T		SY5-24-3-T
AC 230 V		13 s	SY1-230-3-T				
		17 s		SY2-230-3-T			
		18 s				SY4-230-3-T	
		25 s					SY5-230-3-T
		26 s			SY3-230-3-T		
Flange (ISO 7005) 2-way 		PN6 / PN10 / PN16 T = -20 ... +120 °C (with glycol) T _{max} = max. 130 °C during one hour		Range of use closed / open circuits (pH > 7)			
		DN [mm]	k_{vs} [m ³ /h]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]
D625N		25	45	1200			
D632N		32	55				
D640N		40	70				
D650N		50	90				
D665N		65	180				
D680N		80	300				
D6100N		100	580	1200			
D6125N		125	820		1200	1200	
D6150N		150	1600		1200		
D6200N		200	2900			1200	
D6250N		250	4400			1200	1200
D6300N		300	7300			600	1200
D6350N		350	10900				600

5) and 5a) see page 3



All-inclusive.



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