SIEMENS

Highest standards of quality, efficiency and reliability

Air handling units, heat exchanger and chiller plant bundle

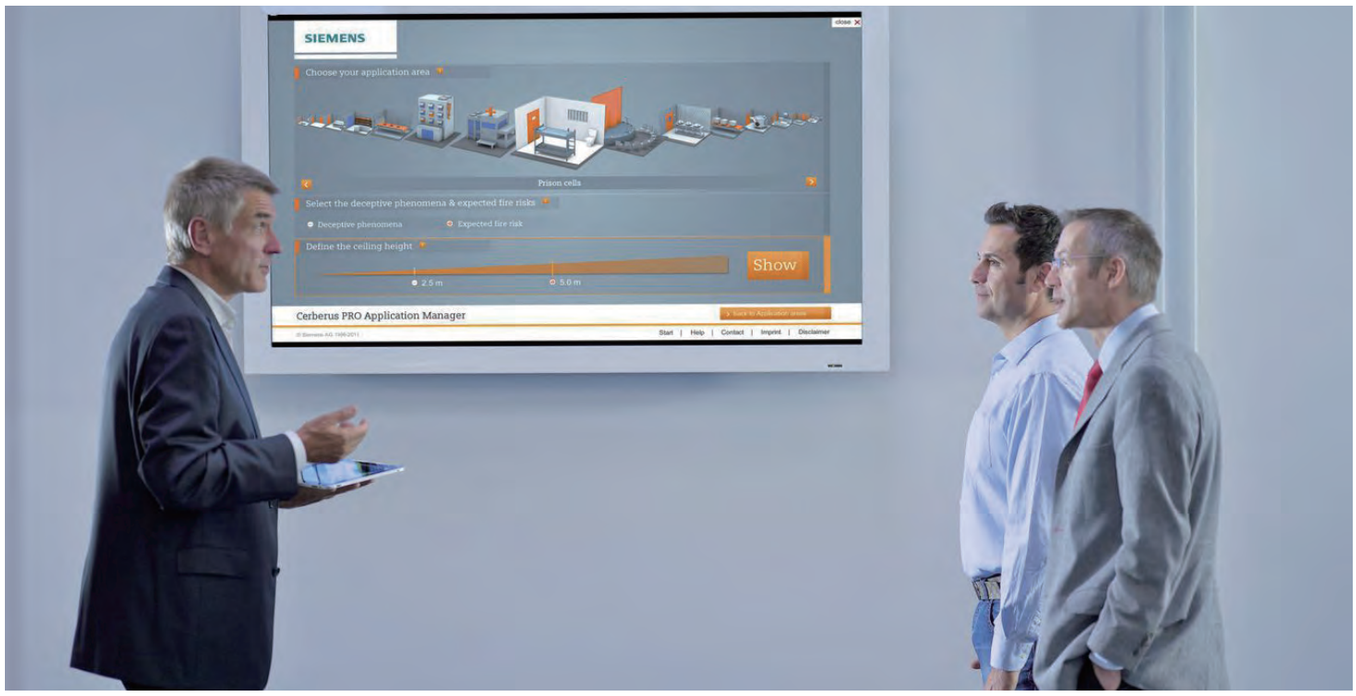
www.buildingtechnologies.siemens.com

HVAC systems and products from Siemens can effectively reduce your operating cost thanks to their extremely efficient use of energy. This means you can achieve up to 30% saving, while still maintaining a comfortable room environment.

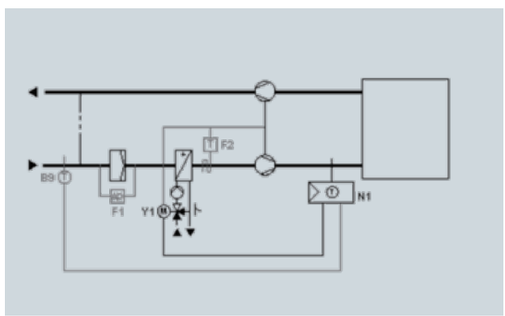
The environment benefits not only from the energy efficiency of the products and system, but from their high quality durability as well. In addition, Siemens production fulfills the highest requirements of environment policy, such as RoHS guideline for restricting the use of dangerous substance in electrical and electronic equipment.

HVAC product portfolio from Siemens offer a comprehensive range for every area of use and for every technical application. The components are optimally matched so your profit is not only from minimized installation and operating cost, but also generated from a high level of security against failure.

Deep experience of the HVAC and control knowledge allows Siemens to offer you products for building technology featuring the highest standards of quality, efficiency and reliability. Siemens is your partner who supports you competently and professionally – from your product procurement to on-site presence Siemens offers you a world class service in Building Technology.

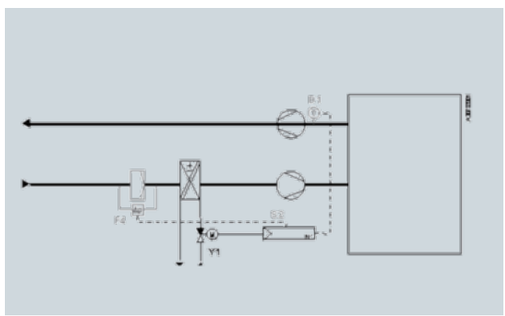


Stand-alone HVAC controller: simple, versatile and reliable



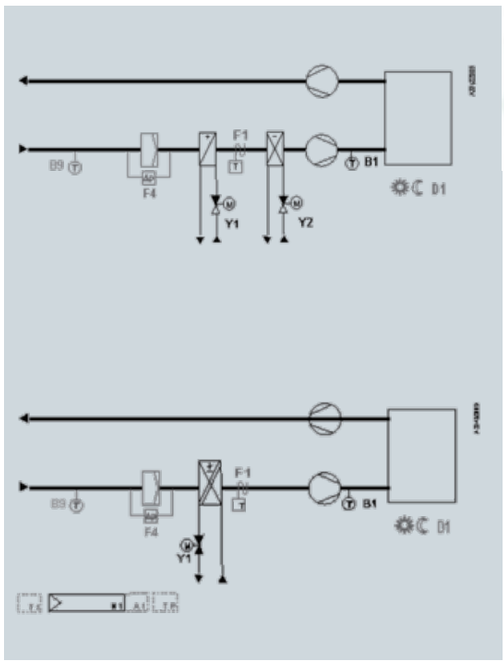
Synco 100

- Controller for supply air temperature control, P or PI mode control loop
- Remote setpoint readjuster and temperature setpoint shifted by outside temperature
- Direct mount on ductwork or wall mounted optioned



RDU340

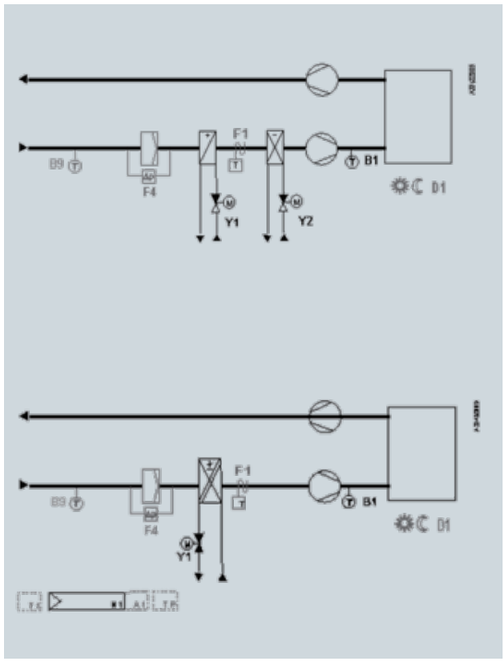
- Controller for return air temperature control, control loop
- Automatic or manual heat / cool changeover with comfort, energy saving and protect mode in operation
- Offer adjustable commissioning and control parameter to suitable several situation in your applications



RWD...

- Controller for temperature control, P or PI mode control loop
- Provide more application choice through RWD library with 39 pre-programmed application
- Offer various selectable auxiliary function to suit your application need
- LCD screen for commissioning
- Easy software tools for upload application and commissioning

Operating voltage [V]	Analog outputs	Relay outputs	Control loops	Product
AC230		2	1	RWD32
AC24		2	1	RWD82
AC24	2		1	RWD62
AC24	1	1	1	RWD68



Synco 200

- Controller for temperature control, P, PI or PID mode control loop
- Provided tested & predefined applications and flexible configuration
- Suitable for controlled variable temperature, relative / absolute humidity, pressure / differential pressure, air flow rate, indoor air quality
- Straight forward commissioning via operation

Digital inputs	Universal inputs	Analog outputs	Relay outputs	Control loops	Product No
1	4	0	2	1	RLU202
1	4	2	0	1	RLU220
1	4	2	2	2	RLU222
2	5	3	2	2	RLU232
2	5	3	6	2	RLU236

Symaro
– for fast, high precision measurement

Temperature								
Model		Room sensors	Duct sensors	Immersion sensors	Outside senseors		Strap-on sensors	Cable sensors
Type reference		QAA	QAM	QAE	QAC	QAC	QAD	QAH
Category:	Standard	■	■	■		■	■	■
	High quality				■			

Humidity									
Model		Room sensors				Air duct sensors			Outside sensors
Type reference		QFA	QFA...D	QFA	QFA...D	QFM	QFM...D	QFM...D	QFA
Category:	Standard	■	■			■			
	High quality			■	■		■	■	■
	Certified			■	■		■		

Air quality							
Model		Room sensors			Air duct sensors		
Type reference		QPA		QPA...D	QPM		QPM...D
Measured value	VOC	■			■		
	CO_2		■			■	
	CO_2/VOC		■	■		■	■
	CO_2/T		■	■		■	■
	CO_2/H/T		■	■		■	■
Display				■			■
Category:	Basic	■			■		
	Standard		■	■		■	■

Pressure							
Model		Differential pressure sensors				Absolute pressure sensors	
Medium		Air	Air	Liquids/gases	Liquids/gases	Liquids/gases	Refrigeration
Type reference		QBM65/75	QBM66	QBE63	QBEZx00-D	QBEZx02-P	QBEZx01-P
Category:	Standard		■	■		■	■
	High quality	■			■		
	Certified	■					

Flow							
Model		Flow switch			Flow sensor		Air velocity sensor
Medium		Liquids	Liquids	Liquids	Liquids	Liquids	Air
Type reference		QVE1900	QVE1901	QVE1902	QVE2x00	QVE3x00	QVM62.1
Category:	Basic	■	■	■			
	Standard				■		■
	High quality					■	

Actuators for HVAC applications: reliable and powerful – especially suited for environments in which a quiet atmosphere is required.

Actuators for HVAC applications

Powerful safety

OpenAir actuators for HVAC applications are available for low and high torques ranging from 2 Nm to 35 Nm and 125 N to 550 N respectively, so you can choose the right product for any type of application.

The powerful actuators with 35 Nm offer maximum safety under demanding operating conditions. And with their compact design, the small actuators with 2 Nm are ideally suited for difficult installation conditions. They can also be easily mounted in tight places, e.g. in false floors. Fastrunning damper actuators with a torque of 6 Nm, 2 s running time and a long service life are perfectly suited for special applications like fume hoods.

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Highlights

- High reliability thanks to high torque
- Compact actuators for difficult installation conditions
- The suitable actuator for every application – e.g. fastrunning damper actuators for laboratories
- Simple installation thanks to self-centering shaft adapters

Actuators for HVAC applications		Control signal	Operating voltage	Standard model	Feedback potenti-ometer (1 kOhm)	Adjustable start/span	Adjustable start/span with 2 auxiliary switches	Feedback (1 kOhm) with 2 auxiliary switches	2 auxiliary switches	Dimensions, round damper shaft (mm)	Dimensions, square damper shaft (mm)
Damper actuators spring return (SR)											
	**GQD series** 2 Nm for approx. 0.3 m² damper area 30 s running time 15 s SR time	2-position	AC/DC 24 V AC 230 V	GQD121.1A GQD321.1A	–	–	–	–	GQD126.1A GQD326.1A	8...15	6...11
		3-position	AC/DC 24 V	GQD131.1A	–	–	–	–	GQD136.1A		
		Modulating DC 0...10 V	AC/DC 24 V	GQD161.1A	–	–	–	–	GQD166.1A		
	**GNP series** 6 Nm for approx. 1 m² damper area 2 s running time el. fail-safe function	2-position	AC/DC 24 V	GNP191.1E	–	–	–	–	GNP196.1E	6.4...20.5	6.4...13
		3-position	AC/DC 24 V	GNP191.1E	–	–	–	–	GNP196.1E		
		Modulating DC 0/2…10 V 0/4...20 mA	AC/DC 24 V	GNP191.1E	–	–	–	–	GNP196.1E		
	**GMA series** 7 Nm for approx. 1.5 m² damper area 90 s running time 15 s SR time	2-position	AC/DC 24 V AC 230 V	GMA121.1E GMA321.1E	–	–	–	–	GMA126.1E GMA326.1E	6.4...20.5	6.4...13
		3-position	AC/DC 24 V	GMA131.1E	GMA132.1E	–	–	–	GMA136.1E		
		Modulating DC 0...10 V	AC/DC 24 V	GMA161.1E	–	GMA163.1E	GMA164.1E	–	GMA166.1E		
	**GCA series** 18 Nm for approx. 3 m² damper area 90 s running time 15 s SR time	2-position	AC/DC 24 V AC 230 V	GCA121.1E GCA321.1E	–	–	–	–	GCA126.1E GCA326.1E	8...25.6	6...18
		3-position	AC/DC 24 V	GCA131.1E	–	–	–	GCA135.1E	–		
		Modulating DC 0...10 V	AC/DC 24 V	GCA161.1E	–	GCA163.1E	GCA164.1E	–	GCA166.1E		
Damper actuators non-spring return											
	**GSD series** 2 Nm for approx. 0.3 m² damper area 30 s running time	2-position On/Off (1-wire SPST)	AC/DC 24 V AC 230 V	GSD121.1A GSD321.1A	–	–	–	–	GSD126.1A GSD326.1A	8...15	6...11
	**GDB series** 5 Nm for approx. 0.8 m² damper area 150 s running time	3-position	AC 24 V AC 230 V	GDB131.1E GDB331.1E	GDB132.1E GDB332.1E	–	–	–	GDB136.1E GDB336.1E	8...16	6...12.8
		Modulating DC 0...10 V	AC 24 V	GDB161.1E	–	GDB163.1E	GDB164.1E	–	GDB166.1E		
	**GLB series** 10 Nm for approx. 1.5 m² damper area 150 s running time	3-position	AC 24 V AC 230 V	GLB131.1E GLB331.1E	GLB132.1E GLB332.1E	–	–	–	GLB136.1E GLB336.1E	8...16	6...12.8
		Modulating DC 0...10 V	AC 24 V	GLB161.1E	–	GLB163.1E	GLB164.1E	–	GLB166.1E		
	**GAP series** 6 Nm for approx. 1 m² damper area 2 s running time	2-position	AC/DC 24 V	GAP191.1E	–	–	–	–	GAP196.1E	6.4...20.5	6.4...13
		3-position	AC/DC 24 V	GAP191.1E	–	–	–	–	GAP196.1E		
		Modulating DC 0/2...10 V 0/4...20 mA	AC/DC 24 V	GAP191.1E	–	–	–	–	GAP196.1E		
	**GEB series** 15 Nm for approx. 3 m² damper area 150 s running time	3-position	AC 24 V AC 230 V	GEB131.1E GEB331.1E	GEB132.1E GEB332.1E	–	–	–	GEB136.1E GEB336.1E	6.4...20.5	6.4...13
		Modulating DC 0...10 V	AC 24 V	GEB161.1E	–	GEB163.1E	GEB164.1E	–	GEB166.1E		
	**GBB series** 25 Nm for approx. 4 m² damper area 150 s running time	3-position	AC 24 V AC 230 V	GBB131.1E GBB331.1E	–	–	–	GBB135.1E GBB335.1E	GBB136.1E GBB336.1E	8...25.6	6...18
		Modulating DC 0...10 V	AC 24 V	GBB161.1E	–	GBB163.1E	GBB164.1E	–	GBB166.1E		
	**GIB series** 35 Nm for approx. 6 m² damper area 150 s running time	3-position	AC 24 V AC 230 V	GIB131.1E GIB331.1E	–	–	–	GIB135.1E GIB335.1E	GIB136.1E GIB336.1E	8...25.6	6...18
		Modulating DC 0...10 V	AC 24 V	GIB161.1E	–	GIB163.1E	GIB164.1E	–	GIB166.1E		
	**GDB series** 125 N for approx. 0.8 m² damper area 150 s running time	3-position	AC 24 V AC 230 V	GDB131.2E GDB331.2E	–	–	–	–	GDB136.2E GDB336.2E	–	–
		Modulating DC 0...10 V	AC 24 V	GDB161.2E	–	GDB163.2E	–	–	–		
	**GLB series** 250 N for approx. 1.5 m² damper area 150 s running time	3-position	AC 24 V AC 230 V	GLB131.2E GLB331.2E	–	–	–	–	GLB136.2E GLB336.2E	–	–
		Modulating DC 0...10 V	AC 24 V	GLB161.2E	–	GLB163.2E	–	–	–		
	**GEB series** 400 N for approx. 3 m² damper area 150 s running time	3-position	AC 24 V AC 230 V	GEB131.2E GEB331.2E	–	–	–	–	GEB136.2E GEB336.2E	–	–
		Modulating DC 0...10 V	AC 24 V	GEB161.2E	–	GEB163.2E	–	–	–		
	**GBB series** 550 N for approx. 4 m² damper area 150 s running time	3-position	AC 24 V AC 230 V	GBB131.2E GBB331.2E	–	–	–	–	GBB136.2E GBB336.2E	–	–
		Modulating DC 0...10 V	AC 24 V	GBB161.2E	–	GBB163.2E	–	–	–		

Acvatix – easy planning, easy installation and easy commissioning

Benefit from our decades of experience

Acvatix valves and actuators are improved continually based on our many years of experience in the field and subjected to rigorous testing in Siemens' in-house HVAC laboratory. The result: Acvatix products have been used for decades in millions of successful installations worldwide. You can be sure to receive the highest quality and maximum reliability.

Selection and engineering made easy

The VDI3805/ISO16757 Selector makes planning easier than ever. In addition to CAD data, it also includes specifier texts. The HIT Portal, the valve slide ruler or the Combi Valve Sizer app allow you to quickly find the right products for your application. You can use the HIT Portal to design the entire HVAC application step by step, including specifications complete with plant diagrams and lists of materials.

Installation in a few simple steps

Acvatix products make your daily work easier, whether it is intuitive manual operation irrespective of the installation position or valve actuator coupling with just one screw or via bayonet mount. Lost the instructions for a product? No problem! Simply use the "Scan to HIT" app from Siemens to scan the data matrix code on the product and receive complete product information.

Intelligent comfort for optimized plant operation

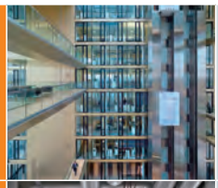
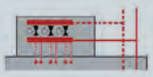
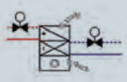
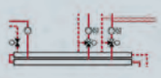
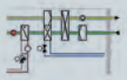
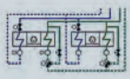
Acvatix offers rapid commissioning and efficient plant control. Easy-to-see operating status and position indicators speed up commissioning, testing and maintenance of the plant and help with troubleshooting. State-of-the-art products such as pressure independent combi valves save time and effort through automatic hydronic balancing. Acvatix is synonymous with robust design, outstanding reliability as well as minimal need for maintenance.

Highlights

- Products for any hydronic requirement
- Support and practical tools for every project phase
- High level of investment protection thanks to long life and maximum reliability
- Easy and quick planning, installation and commissioning

The Combi Valve Sizer app for smartphones makes it easy to select the right Acvatix combi valve and actuator. This makes designing energy-efficient HVAC systems easier than ever.

Application overview

Enegy consumption		Floor heating 	Radiator 	Zone control 	Fan coil 	Chilled ceiling 
Energy distrbution		Hot water 	Distribution 	Air handling unit 		
Energy generation		Boiler 	Heat exchanger plant 	Chiller plant 	Cooling tower 	

	Zone valve	Ball valve	Butterfly valve	Stroke valve (cooling)	Stroke valve (heating)	Steam valve	PICV	
Energy consumption	V…I46…	VAI61 / VBI60…					VPI46… / VPP46…	Fan coil units
							VPD… / VPE…	Radiators
		VAI61…					VPI46… / VPP46…	Floor heating
Energy distribution		VAI61…; VAF51…		V…G44… / V… P45…/ V…I47…/ / V…F47… V…G41…/ V…I41… / V…F42…C	V…G44… / V… P45…/ V…I47…/ / V…F47… V…G41…/ V…I41… / V…F42…C		VPI46… / VPP46… / VPF43…/ V…F53…	Air handling unit
			VKF42…	V…G44… / V… P45…/ V…I47…/ / V…F47… V…G41…/ V…I41… / V…F42…C				Differential pressure by-pass valve
		VAI61…; VAF51…		V…G44… / V… P45…/ V…I47…/ / V…F47… V…G41…/ V…I41… / V…F42…C	V…G44… / V… P45…/ V…I47…/ / V…F47… V…G41…/ V…I41… / V…F42…C		VPI46… / VPP46… / VPF43…/ V…F53…	Distrbution (H/C)
Energy generation		VAI61… / VBI61…	VKF42…/ VKF46…				VPF43…/ VPF53…	Chiller plant
			VKF42…/ VKF46…				VPF43…/ VPF53…	Cooling tower plant
					V…F42…KC / V… F43…/V…F53…	V..F43…K/ V… F53…/ V…F61…		District heating
					V…F42…KC / V… F43…/V…F53…	V..F43…K/ V… F53…/ V…F61…		Boiler plant
		VAF51…		V…I47…/ / V… F47… V…G41…/ V…I41… / V…F42…C	V…F42…C / V… F43…	V..F43…K/ V… F53…/ V…F61…	VPF43…/ VPF53…	Heat exchanger plant
			VKF42…					Ice storage

Threaded PICV with actuator

Typical application	Actuators	Data sheet				4.5 mm	2.5 / 5 mm	20 mm
-Terminal unit -Air handling unit -Distribution (H/C)	STA... / STP... SSA... SAX...P...	N4884 N4893 N4509				100 N	100 N	500 N
	Operating voltage	**Positioning signal**	**Positioning time [s]**					
			STA/STP	**SSA**	**SAX...P...**			
	AC 230V	3-position	-	150 / 300	30	-	**SSA31**	**SAY31P03**
		3-position	210	-	-	**STA23 / STP23**	-	-
	AC 24V	0 ... 10V	270 4)	-	30	**STA63 / STP63**	-	**SAY61P03**
	AC / DC 24V	3-positioning	-	150 / 300	-	-	**SSA81**	**SAY81P03**
		2-position / PDM	270	-	-	**STA73 / STP73**	-	-
		0 ... 10V	-	34 / 70	-	-	**SSA61 / SSA61EP**	-

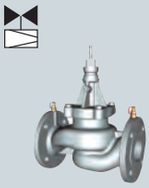
PN25 1 ...110 OC	Without pressure testing points	With pressure testing points	DN	G [inch]	V_{min} [l/h]	V_{max} [l/h]	Δp_{min} [kPa]	Δp_{max} [kPa]	Δp_{min} [kPa]	Δp_{max} [kPa]	Δp_{min} [kPa]	Δp_{max} [kPa]
Data sheet	N4855											
	**VPI46.10L0.2**	**VPP46.10L0.2Q**	10	½	30	200	16	400	16	400	-	-
	VPI46.15L0.2	**VPP46.15L0.2Q**	15	¾	30	200	16	400	16	400	-	-
	VPI46.15L0.6	**VPP46.15L0.6Q**	15	¾	100	575	19	400	190	400	-	-
	VPI46.20F1.4	**VPP46.20F1.4Q**	20	1	200	1190	22	400	-	-	-	-
				1	220	1330	-	-	22	400	-	-
	VPI46.25F1.8	**VPP46.25F1.8Q**	25	1 ¼	204	1470	23	400	-	-	-	-
				1 ¼	250	1800	-	-	23	400	-	-
	VPI46.32F4	**VPP46.32F4Q**	32	1 ½	450	3270	23	400	-	-	-	-
				1 ½	550	4001	-	-	28	400		

PN25 1 ...110 OC	Without pressure testing points	With pressure testing points	DN	G [inch]	V_{min} [l/h]	V_{max} [l/h]	Δp_{min} [kPa]	Δp_{max} [kPa]	Δp_{min} [kPa]	Δp_{max} [kPa]	Δp_{min} [kPa]	Δp_{max} [kPa]
Data sheet	N4855											
	**VPI46.15L0.2**	**VPI46.15L0.2Q**	15	½	30	200	16	400	16	400	-	-
	VPI46.15L0.6	**VPI46.15L0.6Q**	15	½	100	575	19	400	190	400	-	-
	VPI46.20F1.4	**VPI46.20F1.4Q**	20	¾	200	1190	22	400	-	-	-	-
				¾	220	1330	-	-	22	400	-	-
	VPI46.25F1.8	**VPI46.25F1.8Q**	25	1	204	1470	23	400	-	-	-	-
				1	250	1800	-	-	23	400	-	-
	VPI46.32F4	**VPI46.32F4Q**	32	1 ¼	450	3270	23	400	-	-	-	-
				1 ¼	550	4001	-	-	28	400		
	-	**VPI46.40F9.5Q**	40	1 ½	1370	9500	-	-	-	-	25	400
	-	**VPI46.50F12Q**	50	2	1400	11500	-	-	-	-	28	400

Flanged PICV valves with actuators

Typical application	Actuators	Data sheet					20 mm	20 / 40 mm	40 mm
-Terminal unit -Air handling unit -Differential pressure by pass valves -Distribution (H/C) -Chiller plant -Cooling tower -Heat exchanger plant	SAX...P... SQV91P... SAV...P...	N4509 N4833 M4510							
	Operating voltage	Positioning signal	Positioning times [s]			Spring return function [s]			
			SAX	SQV	SAV				
	AC 230 V	3-position	30	-	120	-	**SAX31P03**	-	**SAV31P00**
		3-position	-	40/80	-	30	-	**SQV91P40**	-
		3-position	-	40/80	-	30	-	**SQV91P30**	-
	AC / DC 24 V	3-position	30	-	120	-	**SAX81P03**	-	**SAV81P00**
		3-position	-	40/80	-	30	-	**SQV91P40**	-
		3-position	-	40/80	-	30	-	**SQV91P30**	-
		0 ... 10V / 4 ... 20mA	30	-	120	-	**SAX61P03**	-	**SQV61P00**
		0 ... 10V / 4 ... 20mA	-	40/80	-	30	-	**SQV91P40**	-
		0 ... 10V / 4 ... 20mA	-	40/80	-	30	-	**SQV91P30**	-

PN16	1 ... 120 OC	DN	V_{min} [m^3/h]	V_{max} [m^3/h]	Δp_{min} [kPa]	Δp_{max} [kPa]	Δp_{max} [kPa]	Δp_{max} [kPa]
Data sheet	N4315							
	**VPF43.50F16**	50	2.3	15	35	600	600	
	VPF43.50F25	50	4.3	25	70	600	600	
	VPF43.65F24	65	4.4	24	35	600	600	
	VPF43.65F35	65	6	35	70	600	600	
	VPF43.80F35	80	5.3	34	35	600	600	
	VPF43.80F45	80	7	43	70	600	600	
	VPF43.100F70	100	12.1	68	35		600	600
	VPF43.100F90	100	14.8	90	75		600	600
	VPF43.125F110	125	18.5	110	35		600	600
	VPF43.125F135	125	23	135	53		600	600
	VPF43.150F160	150	25.6	148	35		600	600
	VPF43.150F200	150	32	195	65		600	600

PN16	1 ... 120 OC	DN	V_{max} [m^3/h]	V_{max} [m^3/h]	Δp_{min} [kPa]	Δp_{max} [kPa]	Δp_{max} [kPa]	Δp_{max} [kPa]
Data sheet	N4315							
	**VPF53.50F16**	50	2.3	15	35	600	600	
	VPF53.50F25	50	4.3	25	70	600	600	
	VPF53.65F24	65	4.4	24	35	600	600	
	VPF53.65F35	65	6	35	70	600	600	
	VPF53.80F35	80	5.3	34	35	600	600	
	VPF53.80F45	80	7	43	70	600	600	
	VPF53.100F70	100	12.1	68	35		600	600
	VPF53.100F90	100	14.8	90	75		600	600
	VPF53.125F110	125	18.5	110	35		600	600
	VPF53.125F135	125	23	135	53		600	600
	VPF53.150F160	150	25.6	148	35		600	600
	VPF53.150F200	150	32	195	65		600	600

Flanged 2-port and 3-port valves with 20/40 mm actuators

Typical application	Actuators	Data sheet					Spring return function [s]		20 mm			40 mm	
-Air handling unit -Differential pressure by pass valves -Distribution (H/C) -Heat exchanger plant	SAX... SKD... SKB... SKC... SAV...	N4501 N4561 N4564 N4566 N4503							800 N	1000 N	2800 N	1600 N	2800 N
	Operating voltage	Positioning signal	Positioning time [s]										
			SAX	SAV	SKD	SKB SKC	SKD	SKB SKC					
	AC 230V	3-position	120	120	120	120	-	-	SAX31.00	SKD32.50	SKB32.50	SAV31.00	SKC32.60
		3-position	-	-	120	120	8	10	-	SKD32.51	SKB32.51	-	SKC32.61
		3-position	30	-	-	-	-	-	SAX31.03	-	-	-	-
		3-position	-	-	30	-	8	-	-	SKD32.21	-	-	-
	AC 24V	3-position	120	120	120	120	-	-	SAX81.00	SKD82.50	SKB82.50	SAV81.00	SKC82.60
		3-position	-	-	120	120	8	10	-	SKD82.51	SKB82.51	-	SKC82.61
		3-position	30	-	-	-	-	-	SAX81.03				
		0...10V, 4...20mA	-	-	30	120	-	-	-	SKD60	SKB60	-	SKC60
		0...10V, 4...20mA	-	-	30	120	15	10	-	SKD62	SKB62	-	SKC62
	AC / DC 24V	0...10V, 4...20mA	30	120	-	-	-	-	SAX61.00	-	-	SAV61.00	-

PN16	-10 ...150 OC			DN	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]
Data sheet	N4403														
	VVF42.25-...		VXF42.25-...	25	6.3, 10	1600	400	1600	400	1600	400	-	-	-	-
	VVF42.32-...		VXF42.32-...	32	16	900	400	1200	400	1600	400	-	-	-	-
	VVF42.40-...		VXF42.40-...	40	16, 25	550	400	750	400	1600	400	1250	400	-	-
	VVF42.50-...		VXF42.50-...	50	31.5, 40	350	300	450	400	1200	400	750	400	-	-
	VVF42.65-...		VXF42.65-...	65	50,63	200	150	250	200	700	400	450	400	-	-
	VVF42.80-...		VXF42.80-...	80	80, 100	125	75	175	125	450	400	250	225	-	-
	VVF42.100-...		VXF42.100-...	100	125, 160	-	-	-	-	-	-	160	225	300	250
	VVF42.125-...		VXF42.125-...	125	200, 250	-	-	-	-	-	-	125	90	190	160
	VVF42.150-...		VXF42.150-...	150	315, 400	-	-	-	-	-	-	80	60	125	100
	VVF42.65K...		-	65	63	1600	800	1600	800	1600	800	-	-	-	-
	VVF42.80K...		-	80	100	1600	800	1600	800	1600	800	-	-	-	-
	VVF42.100K...		-	100	160	-	-	-	-	-	-	1600	500	1600	800
	VVF42.125K...		-	125	200	-	-	-	-	-	-	1600	500	1600	800
	VVF42.150K...		-	150	315	-	-	-	-	-	-	1400	500	1600	800

Threaded 2-port and 3-port valves with 20 mm actuators

Typical application	Actuators	Data sheet				Spring return function [s]		20 mm		
-Air handling unit -Distribution (H/C) -Heat exchanger plant	SAX... SKD... SKB...	N4501 N4561 N4564						800 N	1000 N	2800 N
	Operating voltage	Positioning signal	Positioning time [s]							
			SAX	SKD	SKB	SKD	SKB/			
	AC 230V	3-position	120	120	120	-	-	SAX31.00	SKD32.50	SKB32.50
		3-position	-	120	120	8	10	-	SKD32.51	SKB32.51
		3-position	30	-	-	-	-	SAX31.03	-	-
		3-position	-	30	-	8	-	-	SKD32.21	-
	AC 24V	3-position	120	120	120	-	-	SAX81.00	SKD82.50	SKB82.50
		3-position	-	120	120	8	10	-	SKD82.51	SKB82.51
		3-position	30	-	-	-	-	SAX81.03		
		0...10V, 4...20mA	-	30	120	-	-	-	SKD60	SKB60
		0...10V, 4...20mA	-	30	120	15	10	-	SKD62	SKB62
	AC / DC 24V	0...10V, 4...20mA	30	-	-	-	-	SAX61.00	-	-

PN16	-10 ...150 OC			DN	G [inch]	K_{vs} [m^3/h]	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]
Data sheet	N4363		N4463									
	VVG41.11...12		-	15	G 1B	0.63, 1	1600	800	1600	800	1600	800
	VVG41.13		-	15	G 1B	1.6	1600	800	1600	800	1600	800
	VVG41.14		-	15	G 1B	2.5	1600	800	1600	800	1600	800
	VVG41.15		VXG41.15	15	G 1B	4	1600	800	1600	800	1600	800
	VVG41.20		VXG41.20	20	G 1¼ B	6.3	1600	800	1600	800	1600	800
	VVG41.25		VXG41.25	25	G 1½B	10	1550	800	1600	800	1600	800
	VVG41.32		VXG41.32	32	G 2B	16	875	800	1275	800	1600	800
	VVG41.40		VXG41.40	40	G 2¼B	25	525	525	775	775	1600	800
	VVG41.50		VXG41.50	50	G 2¾ B	40	300	300	450	450	1225	800

PN16	-10 ...150 OC			DN	G [inch]	K_{vs} [m^3/h]	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]
Data sheet	N4363		N4463									
	C/VVI41.15...		C/VVI41.15...	15	Rp ½	2.5/4.0	1600	400	1600	400	-	-
	C/VVI41.20-6.3		C/VVI41.20-6.3	20	Rp ¾	6.3	1600	400	1600	400	-	-
	C/VVI41.25-10		C/VVI41.25-10	25	Rp 1	10	1550	400	1600	400	-	-
	C/VVI41.32-16		C/VVI41.32-16	32	Rp 1 ¼	16	875	400	1275	400	-	-
	C/VVI41.40-25		C/VVI41.40-25	40	Rp 1 ½	25	525	400	775	400	-	-
	C/VVI41.50-40		C/VVI41.50-40	50	Rp 2	40	300	300	150	400	-	-

Remark:

Suitable to use with Steam

Suitable to use with water

Flanged 2-port and 3-port valves with 20/40 mm actuators

Typical application	Actuators	Data sheet						20 mm			40 mm
-Air handling unit -Differential pressure by pass valves -Distribution (H/C) -District heating -Boiler plant -Heat exchanger plant	SAX... SKD... SKB... SKC...	N4501 N4561 N4564 N4566				Spring return function [s]		800 N	1000 N	2800 N	2800 N
	Operating voltage	Positioning signal	Positioning time [s] SAX	SKD	SKB SKC	SKD	SKB/ SKC				
	AC 230V	3-position	120	120	120	-	-	SAX31.00	SKD32.50	SKB32.50	SKC32.60
		3-position	-	120	120	8	10	-	SKD32.51	SKB32.51	SKC32.61
		3-position	30	-	-	-	-	SAX31.03	-	-	-
		3-position	-	30	-	8	-	-	SKD32.21	-	-
	AC 24V	3-position	120	120	120	-	-	SAX81.00	SKD82.50	SKB82.50	SKC82.60
		3-position	-	120	120	8	10	-	SKD82.51	SKB82.51	SKC82.61
		3-position	30	-	-	-	-	SAX81.03			
		0...10V, 4...20mA	-	30	120	-	-	-	SKD60	SKB60	SKC60
		0...10V, 4...20mA	-	30	120	15	10	-	SKD62	SKB62	SKC62
	AC / DC 24V	0...10V, 4...20mA	30	-	-	-	-	SAX61.00	-	-	-

PN16	-20...220 OC		DN	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]
Data sheet	N4404	N4404										
	VVF43.65-50	-	65	50	-	-	-	-	-	-	700	650
	VVF43.65-63	VXF43.65-63	65	63	-	-	-	-	-	-	700	650
	VVF43.80-80	-	80	80	-	-	-	-	-	-	450	400
	VVF43.80-100	VXF43.80-100	80	100	-	-	-	-	-	-	450	400
	VVF43.100-125	-	100	125	-	-	-	-	-	-	300	250
	VVF43.100-160	VXF43.100-160	100	160	-	-	-	-	-	-	300	250
	VVF43.125-200	-	125	200	-	-	-	-	-	-	175	160
	VVF43.125-250	VXF43.125-140	125	250	-	-	-	-	-	-	175	160
	VVF43.150-315	-	150	315	-	-	-	-	-	-	125	100
	VVF43.150-400	VXF43.150-400	150	400	-	-	-	-	-	-	125	100
	VVF43.65-63K	-	65	63	-	-	-	-	-	-	1600	800
	VVF43.80-100K	-	80	100	-	-	-	-	-	-	1600	800
	VVF43.100-160K	-	100	160	-	-	-	-	-	-	1600	800
	VVF43.125-250K	-	125	250	-	-	-	-	-	-	1600	800
	VVF43.150-360K	-	150	36	-	-	-	-	-	-	1600	800

PN25	-20...220 OC		DN	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]
Data sheet	N4405	N4405										
	VVF53.15-...	-	15	0.16 / 0.2 / 0.25/ 0.32 / 0.4 / 0.5 / 0.63	2500	1200	2500	1200	2500	1200	-	-
	VVF53.15-...	-	15	0.8 / 1 / 1.25 / 2 / 3.2	2500	1200	2500	1200	2500	1200	-	-
	VVF53.15-...	VXF53.15-...	15	1.6 / 2.5 / 4	2500	1200	2500	1200	2500	1200	-	-
	VVF53.20-6.3	VXF53.20-6.3	20	6.3	2500	1200	2500	1200	2500	1200	-	-
	VVF53.25-...	-	25	5 / 8	1600	1200	2100	1200	2500	1200	-	-
	VVF53.25-...	VXF53.25-...	25	6.3 / 10	1600	1200	2100	1200	2500	1200	-	-
	VVF53.32-16	VXF53.32-16	32	16	900	750	1200	1100	2500	1200	-	-
	VVF53.40-...	-	40	12.5 / 20	550	500	750	650	2000	1200	-	-
	VVF53.40-...	VXF53.40-...	40	16 / 25	550	500	750	650	2000	1200	-	-
	VVF53.50-31.5	-	50	31.5	350	300	450	400	1200	1150	-	-
	VVF53.50-40	VXF53.50-40	50	40	350	300	450	400	1200	1150	-	-
	VVF53.65-63	VXF53.65-63	65	63	-	-	-	-	-	-	700	650
	VVF53.80-100	VXF53.80-100	80	100	-	-	-	-	-	-	450	400
	VVF53.100-160	VXF53.100-160	100	160	-	-	-	-	-	-	300	250
	VVF53.125-250	VXF53.125-250	125	250	-	-	-	-	-	-	190	160
	VVF53.150-400	VXF53.150-400	150	400	-	-	-	-	-	-	125	100
	VVF5.50-40K	-	50	40	2500	1250	2500	1250	2500	1250	-	-
	VVF65-63K	-	65	63	-	-	-	-	-	-	2500	1250
	VVF80-100K	-	80	100	-	-	-	-	-	-	2500	1250
	VVF100-160K	-	100	160	-	-	-	-	-	-	2500	1250
	VVF125-250K	-	125	250	-	-	-	-	-	-	2500	1250
	VVF150-360K	-	150	360	-	-	-	-	-	-	2500	1250

PN40	-20...220 OC (350 OC)		DN	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]
Data sheet	N4382	N4482										
	VVF61.09...11	-	15	0.19 / 0.3 / 0.45			4000	1600	4000	1600		
	VVF61.12...13	-	15	0.7 / 1.2			4000	1600	4000	1600		
	VVF61.14...15	VXF61.14...15	15	1.9 / 3			4000	1600 1200	4000	1600 1600		
	VVF61.23...25	VXF61.25...25	25	3 / 5 / 7.5 5 / 7.5			2250	1600 1200	4000	1600 1200		
	VVF61.39...40	VXF61.39...40	40	12 / 19					4000	1600 1200		
	VVF61.49...50	VXF61.49...50	50	19 / 31					4000	1600 1000		
	VVF61.65	VXF61.65	65	49							4000 -	1000 800
	VVF61.80	VXF61.80	80	78							4000 -	700 500
	VVF61.90	VXF61.90	100	124							4000 -	450 300
	VVF61.91	VXF61.91	125	200							4000 -	300 200
	VVF61.92	VXF61.92	150	300							4000 -	200 125

Remark:

Suitable to use with Steam

Suitable to use with water

Flanged 2-port and 3-port valves with 20/40 mm actuators and Thread 2-port and 3-port valves with 20mm actuators

Typical application	Actuators	Data sheet			20 mm	40mm
-Air handling unit -Distribution (H/C) -Heat exchanger plant	SBX... SBV...	N4519			700 N 	1600 N 
	Operating voltage	**Positioning signal**	**Positioning time [s]**			
			SBX	**SBV**		
	AC 230V	3-position	120	180	**SBX31**	**SBV31**
	AC 24V	3-position	120	180	**SBX81**	**SBV81**
		0...10V, 4...20mA	120	180	**SBX61**	**SBV61**

PN16	1 ...91 °C			DN	K_{vs} [m^3/h]	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]
Data sheet	N4419								
	**VVF47.50**		**VXF47.50**	50	40	300 -	300 300	-	-
	VVF47.65		**VXF47.65**	65	63	175 -	175 175		300 300
	VVF47.80		**VXF47.80**	80	100	100 -	100 100	250 -	250 250
	VVF47.100		**VXF47.100**	100	160	-	-	400 -	300 100
	VVF47.125		**VXF47.125**	125	250	-	-	400 -	300 100
	VVF47.150		**VXF47.150**	150	315	-	-	400 -	300 75

PN16	0...95 °C			DN	Rp [inch]	K_{vs} [m^3/h]	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]
Data sheet	N4470									
	**VVI47.15...**		**VXI47.15...**	15	Rp ½	2.5/4.0	1600	400	-	-
	VVI47.20-6.3		**VXI47.20-6.3**	20	Rp ¾	6.3	1600	400	–	-
	VVI47.25-10		**VXI47.25-10**	25	Rp 1	10	1550	400	-	-
	VVI47.32-16		**VXI47.32-16**	32	Rp 1 ¼	16	875	400	-	-
	VVI47.40-25		**VXI47.40-25**	40	Rp 1 ½	25	525	400	-	-
	VVI47.50-40		**VXI47.50-40**	50	Rp 2	40	300	300	-	-

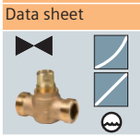
Threaded 2-port and 3-port valves with 5.5 mm actuators

Typical application	Actuators	Data sheet			5.5 mm		
-Air handling unit -Distribution (H/C)	SAS...	N4581					
	Operating voltage	**Positioning signal**	**Positioning time [s]**	**Sprint return function [s]**			
	AC 230V	3-position	120	-	**SAS31.00**		
		3-position	30	-	**SAS31.03**		
		3-position	120	< 28		**SAS31.50**	
		3-position	30	< 14		**SAS31.53**	
	AC /DC24V	3-position	120	-	**SAS81.00**		
		3-position	30	-	**SAS81.03**		
		3-position	30	<14			**SAS81.33**
		0...10V, 4...20mA	30	-	**SAS61.03**		
		0...10V, 4...20mA	30	<14			**SAS61.33**
		0...10V, 4...20mA	30	<14		**SAS61.53**	

PN16	1 ...91 °C			DN	K_{vs} [m^3/h]	Δp_s [kPa]	Δp_{max} [kPa]
Data sheet							
	**VVG44.15-...**		**VXG44.15-...**	15	0.25 / 0.4 / 0.63	1600	400
	VVG44.15-...		**VXG44.15-...**	15	1 / 1.6	725	400
	VVG44.15-...		**VXG44.15-...**	15	2.5 / 4	400	400
	VVG44.20-6.3		**VXG44.20-6.3**	20	6.3	750	400
	VVG44.25-10		**VXG44.25-10**	25	10	400	400
	VVG44.32-16		**VXG44.32-16**	32	16	250	250
	VVG44.40-25		**VXG44.40-25**	40	25	125	125

Threaded 2-port and 3-port valves with 5.5 mm actuators

Typical applications	Actuators	Data sheet			5.5 mm
-Air handling unit -Distribution (H/C)	SSC..	N4895			
	Operating voltage	**Positioning signal**	**Positioning time [s]**	**Sprint return function [s]**	
	AC 230V	3-position	150	-	**SSC31**
	AC 24 V	3-position	150	-	**SSC81**
	AC /DC24V	0...10 V	30	-	**SSC61**
		0...10 V	30	30	**SSC61.5**

PN16	1...110 ° C			DN	G [inch]	K_{vs} [m^3/h]	Δp_s [kPa]	Δp_{max} [kPa]
Data sheet	N4845							
	**VVP45.20-4**		**VXP45.20-4**	20	G 1B	4	350	350
	VVP45.25-6.3		**VXP45.25-6.3**	25	G 1 ¼ B	6.3	300	300
	VVP45.25-10		**VXP45.25-10**	25	G 1 ½ B	10	300	300
	VVP45.32-16		**VXP45.32-16**	32	G 2B	16	175	175
	VVP45.40-25		**VXP45.40-25**	40	G 2 ¼ B	25	75	75

2-port and 3-port ball valves with rotary actuators

Typical applications	Actuators	Data sheet					Spring return function	2 Nm	5 Nm	7 Nm	10 Nm
- Air handling unit - Distribution (H/C) - Heat exchanger plant	GQD..9A GDB..9E GMA..9E GLB..9E	N4659 N4657 N4658 N4657									
	Operating voltage	Positioning signal	Positioning time [s]								
			GQD	GDB	GMA	GLB					
	AC 230 V	3-position	–	150	–	150	–	–	GDB331.9E	–	GLB331.9E
	AC 24 V	3-position	–	150	–	150	–	–	GDB131.9E	–	GLB131.9E
		0...10 V	–	150	–	150	–	–	GDB161.9E	–	GLB161.9E
	AC/DC 24 V	3-position	30/15	–	90/15	–	✓	GQD131.9A	–	GMA131.9E	–
		0...10 V	30/15	–	90/15	–	✓	GQD161.9A	–	GMA161.9E	–

PN 40	1...120 °C			DN	Rp	k_{VS}	Δp_S	Δp_{max}	Δp_S	Δp_{max}	Δp_S	Δp_{max}
Data sheet	N4211		N4211		[inch]	[m³/h]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]
	**VAI61.15-..**		**VBI61.15-..**	15	Rp ½	1.6/2.5/4/6.3	1400	350	1400	350	1400	350
	VAI61.15-..		–	15	Rp ½	1/10	1400	350	1400	350	1400	350
	VAI61.20-..		**VBI61.20-..**	20	Rp ¾	4/6.3	1400	350	1400	350	1400	350
	VAI61.20-..		–	20	Rp ¾	10	1400	350	1400	350	1400	350
	VAI61.25-..		**VBI61.25-..**	25	Rp 1	10	–	–	1400	350	1400	350
	VAI61.25-..		–	25	Rp 1	6.3/16	–	–	1400	350	1400	350
	VAI61.32-..		–	32	Rp 1¼	10	–	–	–	–	1000	350
	VAI61.32-..		**VBI61.32-..**	32	Rp 1¼	16	–	–	–	–	1000	240
	VAI61.32-..		–	32	Rp 1¼	25	–	–	–	–	1000	240
	VAI61.40-..		–	40	Rp 1½	16	–	–	–	–	800	350
	VAI61.40-..		**VBI61.40-..**	40	Rp 1½	25	–	–	–	–	800	240
	VAI61.40-..		–	40	Rp 1½	40	–	–	–	–	800	240
	VAI61.50-..		–	50	Rp 2	25	–	–	–	–	600	350
	VAI61.50-..		**VBI61.50-..**	50	Rp 2	40	–	–	–	–	600	240
	VAI61.50-..		–	50	Rp 2	63	–	–	–	–	600	240

2-port ball valves with rotary actuators

Typical application	Actuators	Data sheet		Spring return function	25 Nm	35 Nm	70 Nm
– Heating plants – Ventilation and air conditioning plant – Cooling generation – Heat and cooling distribution	**GBB..1A** **GIB..1A**	N4626					
	Operating voltage	**Positioning signal**	**Positioning time[s]**				
	AC 230 V	3-position	150	–	**GBB331.1E**	**GIB331.1E**	**2*GIB331.1E**
	AC 24 V	3-position	150	–	**GBB131.1E**	**GIB131.1E**	**2*GIB131.1E**
		0...10V	150	–	**GBB161.1E**	**GIB161.1E**	**2*GIB161.1E**

PN 25	2...80°C	DN	K_{VS}	Δp_S	Δp_{max}	Δp_S	Δp_{max}	Δp_S	Δp_{max}
Data sheet	N4120		[m³/h]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]
	**VAF51.65-63**	65	63	400	400	–	–	–	–
	VAF51.80-100	80	100	400	400	–	–	–	–
	VAF51.100-160	100	160	–	–	400	400	–	–
	VAF51.125-200	125	200	–	–	300	300	–	–
	VAF51.150-360	150	360	–	–	–	–	400	400

Equipment combination

Typical applications	Actuators	Data sheet		25 Nm	50 Nm	150 Nm	270 Nm	570 Nm	1400 Nm	2650 Nm
- Shut off or control - For closed or open circuits	SQL321B	N4520								
	SQL361B	N4520								
	Operating voltage	**Positioning signal**	**Positioning time [s]**							
	AC 220 V	2P-SPDT	150	**SQL321B25**	**SQL321B50**	**SQL321B150**	**SQL321B270**	**SQL321B570**	**SQL321B1400**	**SQL321B2650**
	DC 0...10 V		150	**SQL361B50**	**SQL361B50**	**SQL361B150**	**SQL361B270**	**SQL361B570**	**SQL361B1400**	**SQL361B2650**
PN 16	-10...80 °C	DN	k_{vs} [m³/h]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]
Data sheet	N4119									
	**VKF42.50**	50	65	700	–	–	–	–	–	–
	VKF42.65	65	140	700	–	–	–	–	–	–
	VKF42.80	80	210	700	–	–	–	–	–	–
	VKF42.100	100	470	700	–	–	–	–	–	–
	VKF42.125	125	750	–	700	–	–	–	–	–
	VKF42.150	150	1250	–	–	700	–	–	–	–
	VKF42.200	200	3100	–	–	700	–	–	–	–
	VKF42.250	250	4050	–	–	–	700	–	–	–
	VKF42.300	300	7500	–	–	–	–	700	–	–
	VKF42.350	350	10250	–	–	–	–	700	–	–
	VKF42.400	400	14100	–	–	–	–	–	700	–
	VKF42.450	450	18500	–	–	–	–	–	700	–
	VKF42.500	500	24000	–	–	–	–	–	–	700
	VKF42.600	600	37000	–	–	–	–	–	–	700

Equipment combination

Typical applications	Actuators	Data sheet		15 Nm	25 Nm	35 Nm	70 Nm
- Shut off or control - For closed or open circuits	**GDB...** **GBB...** **GIB...**	N4626 N4621 N4621					
	Operating voltage	**Positioning signal**	**Positioning time[s]**				
	AC 230 V	3-position	150	**GEB331.1E**	**GBB331.1E**	**GIB331.1E**	**2*GIB331.1E**
		3-position	150	**GEB131.1E**	**GBB131.1E**	**GIB131.1E**	**2*GIB131.1E**
	AC 24 V	0...10 V	150	**GEB161.1E**	**GBB161.1E**	**GIB161.1E**	**2*GIB161.1E**
	Mounting set			**ASK77.9**	**ASK77.10**	**ASK77.10**	**ASK77.11**
PN 16	-10...80 °C	DN	k_{vs} [m³/h]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]
Data sheet	N4119						
	**VKF42.50**	50	65	700	–	–	–
	VKF42.65	65	140	700	–	–	–
	VKF42.80	80	210	–	700	–	–
	VKF42.100	100	470	–	–	700	–
	VKF42.125	125	750	–	–	–	700
	VKF42.150	150	1250	–	–	–	700

Notes: GEB..6.1E, GBB..6.1E, and GIB..6.1E are also applicable to above combination table.

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