



ACVATIX™

Butterfly valves PN 16**VKF42..**

-
- Gray cast iron or nodular cast iron valve body
 - DN 50...600
 - k_{vs} 65...37,000 m³/h
 - For fitting with PN 16 counter-flanges to ISO 7005
 - Tight-closing in accordance with ISO 5208, leakage rate A
 - No maintenance required
 - Can be equipped with SQL321B.., SQL361B.. electromotoric actuators, or GEB..1E, GBB..1E, GIB..1E damper actuator

Use

This device is used as motorized or shut-off valves in heating, ventilation and air conditioning systems applications.

- In open and closed circuits
- For 2-position (SPDT) or 3-position controls
- For DC 0...10 V control signals
- For chiller and cooling tower sequencing circuits
- To open or close the flow to a heat exchanger or to complete plant sections

Type summary

Product No.	Stock Number	DN	k_{vs}	Top Flange	Flow velocity of medium ¹⁾ Water [m/s]
			[m ³ /h]	EN ISO 5211	
VKF42.50	S55237-V100	50	65	F07	4.5
VKF42.65	S55237-V101	65	140		
VKF42.80	S55237-V102	80	210		
VKF42.100	S55237-V103	100	470		
VKF42.125	S55237-V104	125	750		
VKF42.150	S55237-V105	150	1250		
VKF42.200	S55237-V106	200	3100		
VKF42.250	S55237-V107	250	4050	F10	
VKF42.300	S55237-V108	300	7500	F12	
VKF42.350	S55237-V109	350	10250		
VKF42.400	S55237-V110	400	14100	F14	
VKF42.450	S55237-V111	450	18500		
VKF42.500	S55237-V112	500	24000	F16	
VKF42.600	S55237-V113	600	37000		

¹⁾ Recommended maximum velocity of flow and the butterfly valve fully open

k_{vs} Nominal flow rate of cold water (5...30 °C) through the fully open butterfly valve by a differential pressure of 100 kPa (1 bar)

Ordering

Butterfly valve, actuator must be ordered separately.

When ordering, please specify the quantity, product name and product number.

Example

Product No.	Stock No.	Product Name	Quantity
VKF42.50	S55237-V100	Butterfly valve	1

Delivery

Butterfly valve and actuator are packed separately.

Rev. No.

Please see chapter "Rev. No" on page 8.

Equipment combinations

Butterfly valve	Electromotoric actuators ¹⁾							
	SQL321B25 SQL361B50	SQL321B50 SQL361B50	SQL321B150 SQL361B150	SQL321B270 SQL361B270	SQL321B570 SQL361B570	SQL321B1400 SQL361B1400	SQL321B2650 SQL361B2650	
	Δp_s [kPa]							
VKF42.50	700							
VKF42.65	700							
VKF42.80	700							
VKF42.100	700							
VKF42.125		700						
VKF42.150								700
VKF42.200								700
VKF42.250				700				
VKF42.300								700
VKF42.350								700
VKF42.400					700			
VKF42.450					700			
VKF42.500					700			
VKF42.600						700	700	
						700		

¹⁾ SQL321B..., SQL361B... electromotoric actuators can be mounted directly on VKF42.. butterfly valves.

Δp_s Maximum permissible differential pressure at which the motorized butterfly valve will close securely against the pressure (close off pressure).

Product No.	Mounting kit	Damper actuators			
		GEB..1E	GBB...1E	GIB..1E	2*GIB...1E
		Δp_s [kPa]			
VKF42.50	ASK77.9	700			
VKF42.65		700			
VKF42.80	ASK77.10		700		
VKF42.100				700	
VKF42.125	ASK77.11				700
VKF42.150					700

Δp_s Maximum permissible differential pressure at which the motorized butterfly valve will close securely against the pressure (close off pressure).

Actuator overview

Product No.	Operating Voltage	Positioning Signal	Position Feedback Signal	Positioning Time for 90° at 50 Hz [s]	Nominal Torque [Nm]	Flange Connection EN ISO 5211	Data-sheet
SQL321B25	AC 220 V 1 phase	2-position (SPDT)	-	11	25	F07	N4520
SQL321B50		2-position (SPDT)	-	19	50	F07	
SQL361B50		DC 0...10 V	DC 0...10 V	19	50	F07	
SQL321B150		2-position (SPDT)	-	39	150	F07	
SQL361B150		DC 0...10 V	DC 0...10 V	39	150	F07	
SQL321B270		2-position (SPDT)	-	39	270	F10	
SQL361B270		DC 0...10 V	DC 0...10 V	39	270	F10	
SQL321B570		2-position (SPDT)	-	47	570	F12	
SQL361B570		DC 0...10 V	DC 0...10 V	47	570	F12	
SQL321B1400		2-position (SPDT)	-	76	1400	F14	
SQL361B1400		DC 0...10 V	DC 0...10 V	76	1400	F14	
SQL321B2650		2-position (SPDT)	-	105	2650	F16	
SQL361B2650		DC 0...10 V	DC 0...10 V	105	2650	F16	

Type		Operating voltage	Positioning signal		time	Torque	Connecting cable	Data sheet
GEB331.1E	GEB336.1E	AC 230 V	3-position	150 s	15 Nm	0.9 m	N4621	
GEB131.1E	GEB136.1E							
GEB161.1E	GEB166.1E							
GEB131.1E	GEB136.1E	AC 24 V	3-position	150 s	25 Nm	0.9 m	N4626	
GEB161.1E	GEB166.1E							
GEB131.1E	GEB136.1E							
GIB331.1E	GIB336.1E	AC 230 V	3-position	150 s	35 Nm	0.9 m	N4626	
GIB131.1E	GIB136.1E							
GIB161.1E	GIB166.1E							

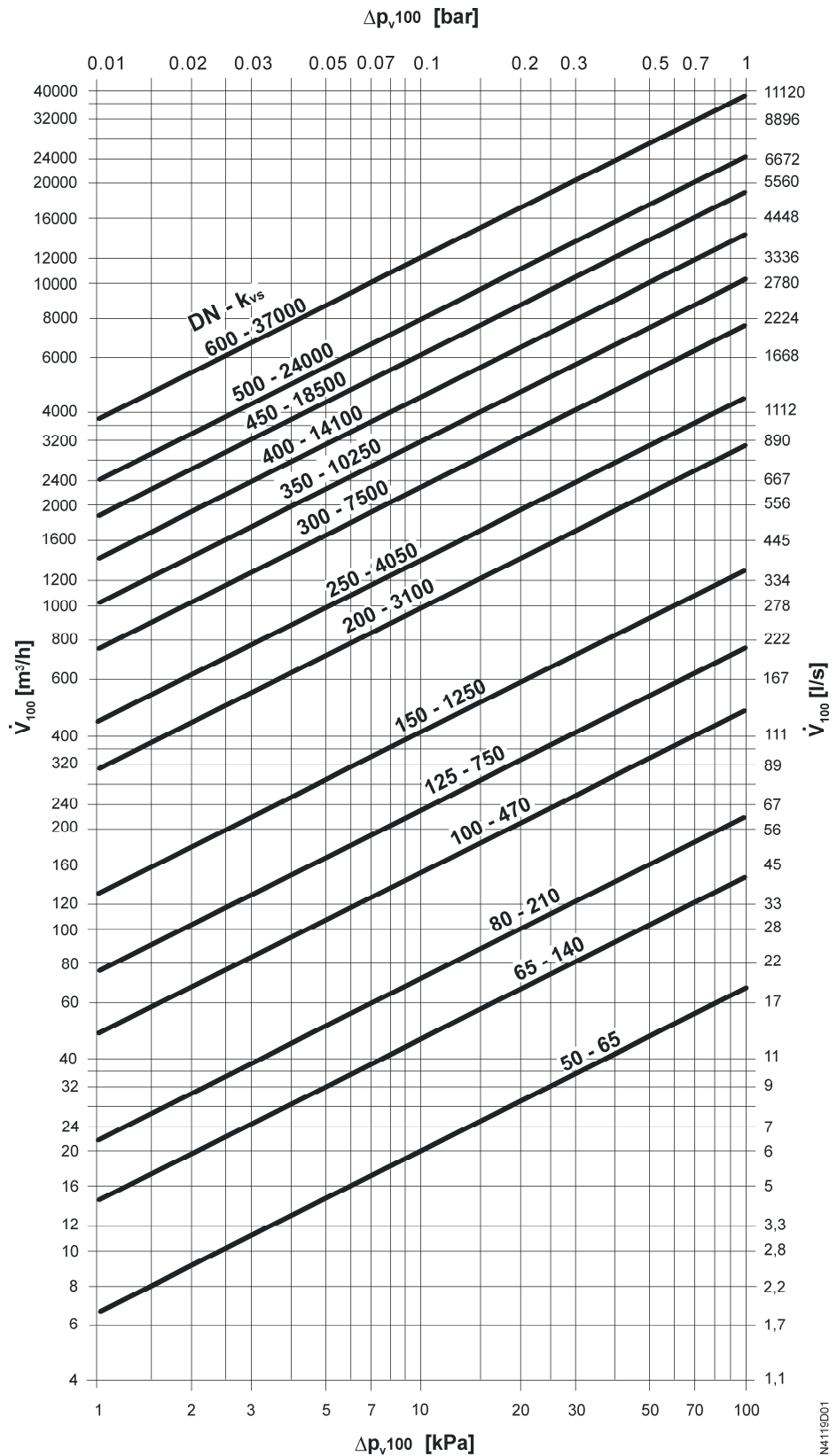
Mechanical design

Ring format, grey cast iron or nodular cast iron valve body with EPDM seat and multiple shaft bushing.

The seat is also used to seal the flange. There is thus no contact between the medium and the valve body.

The valve has a swing-through disc (angle of rotation 360°). The position of the valve disc is indicated by a notch on the front of the shaft.

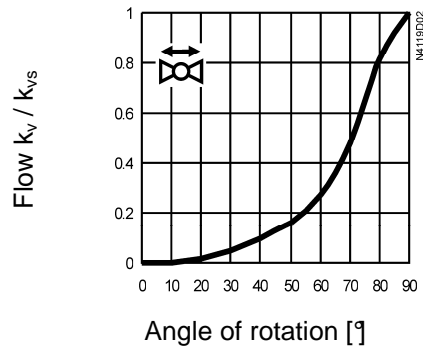
Flow diagram



Δp_{v100} = Differential pressure across the fully open butterfly valve by a volume flow \dot{V}_{v100}
 \dot{V}_{v100} = Volume flow through the fully open butterfly valve
 100 kPa = 1 bar \approx 10 mWC
 1 m^3/h = 0.278 l/s water at 20 °C

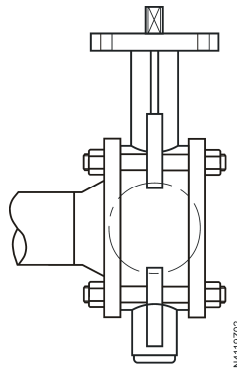
NA419D01

Flow characteristic



Engineering notes

Single flange mounting is possible: 700 kPa



The VKF42.. butterfly valves can accommodate flow in either direction.

Warning



To avoid pressure shocks on the butterfly valve, the VKF42.. must be driven to its fully open position either manually or via control signal Y14 prior to activating the pump(s).

Mounting notes

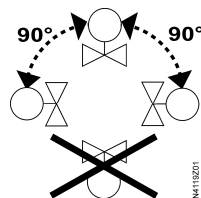
The mounting instruction 74 319 0808 0 (M4119) is enclosed in the product packaging.

DN 50...200 butterfly valves can be mounted in PN 10, PN 16 applications.

DN 250...600 butterfly valve can be mounted in PN 16 applications only!

Do not use additional flange sealing.

Orientation



Upright to horizontal

Maintenance notes

The VKF42.. butterfly valves require no maintenance.

Caution



Before performing any service works on the valve, actuator or mounting kit:

- Switch off the pump and power supply
- Close the main shut-off valves in the pipe work
- Release pressure in the pipes and allow them to cool down completely

If necessary, disconnect electrical connections from terminals.

Disposal



The valve must be commissioned only with the actuator correctly assembled.

Before disposal the valve must be dismantled and separated into its various constituent materials.

Legislation may demand special handling of certain components, or it may be sensible from an ecological point of view.

Current local legislation must be observed.

Warranty

The technical data given for these applications is valid only in conjunction with the Siemens actuators as detailed under "Equipment combinations", page 2.

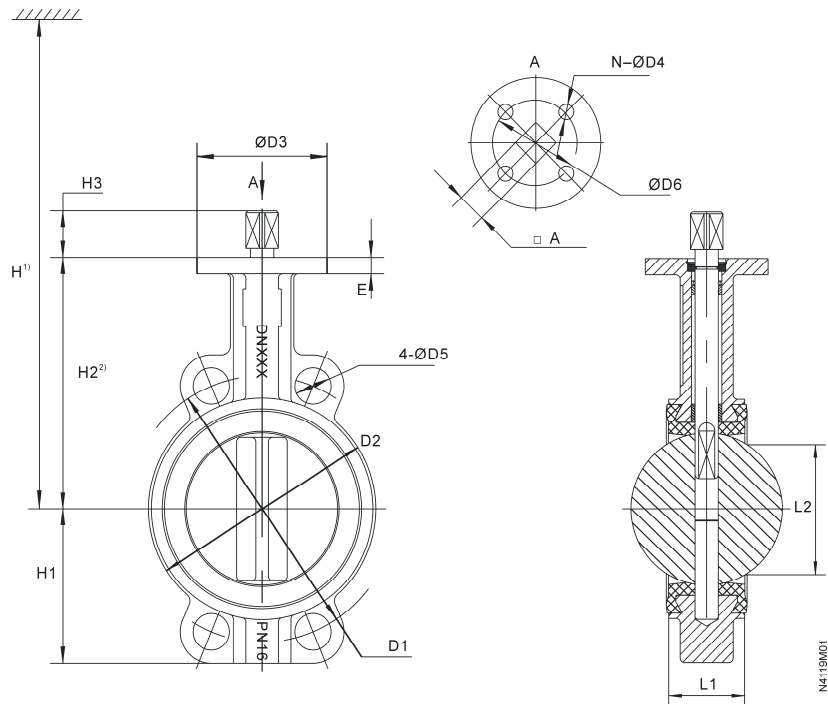
All terms of the warranty will be invalidated by the use of actuators from other manufacturers.

Technical data

Operating data	PN class	PN 16 to EN1333
	Permissible operating pressure	1600 kPa (16 bar)
	Flow characteristic	according to the diagram on page 5
	Leakage rate	A to ISO 5208 (tight-closing)
	Permissible medium	Chilled water, low temperature hot water, cooling water, brine, demineralized water (softened), water with anti-freeze Recommendation: Water treatment to VDI 2035
	Medium temperature	-10...80 °C
	Flange connection for pipes ¹⁾	PN 16 to ISO 7005
	Face to face dimension	DIN EN 558, series 20
	Top flange (flange for actuator)	EN ISO 5211
	Angle of rotation	90°
Standards	Environmental compatibility	ISO 14001 (Environment) ISO 9001 (Quality) Directive 2002/95/EC (RoHS)
Materials	Body	DN 50...150 Grey cast iron EN-GJL-200 (HT200) DN 200...600 Nodular cast iron EN-GJS-450-10 (QT450-10)
	Shaft	Stainless steel 1.4021 (2Cr13)
	Valve disc	Nodular cast iron EN-GJS-450-10 (QT450-10), Nylon coating
	Seat	EPDM
Dimensions		Refer to page 7 "Dimensions"
Weight		Refer to page 7 "Dimensions"

¹⁾ VKF42.., DN 50...200 are also suited for PN 10

Dimensions (mm)



Product No.	DN	L1	L2	H ¹⁾	H1	H2 ²⁾	H3	ØD3	E	PN 16			EN ISO 5211	n-ØD4	ØD6	A	Weight
										D1	D2	ØD5					
VKF42.50	50	42.6	32	594	65	130	14	90	9	125	92	18	F07	4-10	70	11	2.14
VKF42.65	65	45.6	47	607	71	143	14	90	9	145	106	18					2.53
VKF42.80	80	45.6	65	619	92	155	14	90	9	160	122	18					3.31
VKF42.100	100	51.6	91	634	104	170	14	90	11	180	150	18					4.47
VKF42.125	125	55.6	112	654	118	190	19	90	13	210	176	18				6.23	
VKF42.150	150	55.6	146	674	132	210	19	90	13	240	204	23				7.86	
VKF42.200	200	59.6	194	707	167	243	22	125	15	295	260	23	F10	4-12	102	22	13.49
VKF42.250	250	67.6	242	818	198	282	24	125	17	355	316	26					21.39
VKF42.300	300	77.6	292	846	230.5	310	29	150	17	410	372	26	F12	4-14	125	27	30.42
VKF42.350	350	79	325	881	257	345	29	150	20	470	415	26					41.94
VKF42.400	400	101.6	380	1118	309	377	45	175	21	525	473	30	F14	4-18	140	36	65.03
VKF42.450	450	113.6	428	1153	349	412	45	175	22	585	531	30					82.40
VKF42.500	500	126.6	474	1181	384	440	50	210	24	650	589	33	F16	4-22	165	46	108.71
VKF42.600	600	153.6	573	1303	477	562	50	210	28	770	700	36					184.71

L1	Corresponds to overall length according to EN 558, series 20
H ¹⁾	Overall height of valve and actuator
=	Valve installation height (H2) from middle of pipe
+	Installation height of actuator
	- SQL321B25 = 195 mm (DN50...100)
	- SQL3..1B50, SQL3..1B150 = 264 mm (DN50...200)
	- SQL3..1B270, SQL3..1B570 = 336 mm (DN250...350)
	- SQL3..1B1400, SQL3..1B2650 = 541 mm (DN400...600)
+	Minimum clearance (≥200 mm) from ceiling or wall for mounting, connection, operation, service etc.
H2 ²⁾	Dimension for actuator connection from centre of pipe

Revision numbers

Product No.	Valid from Rev. No.	Product No.	Valid from Rev. No.	Product No.	Valid from Rev. No.
VKF42.50	..A	VKF42.150	..A	VKF42.400	..A
VKF42.65	..A	VKF42.200	..A	VKF42.450	..A
VKF42.80	..A	VKF42.250	..A	VKF42.500	..A
VKF42.100	..A	VKF42.300	..A	VKF42.600	..A
VKF42.125	..A	VKF42.350	..A		