



ACVATIX™

## Butterfly valves PN6, PN10, PN16, VKF41..

- Grey cast iron housing EN-GJL-250
- DN 40...200
- $k_{vs}$  50...4000 m<sup>3</sup>/h
- For fitting between PN 6, PN 10, PN 16 counter-flanges to ISO 7005
- Metallic tight-closing
- Angle of rotation 90°
- No maintenance required
- Can be fitted with type SAL..T10 and SAL..T40 electromotoric actuators

### Use

For use as a control or shut-off valve in heating, ventilation and air conditioning systems, e.g.:

- In closed circuits
- For 2-position controls (open/closed)
- For boiler and chiller sequencing circuits
- To open or close the flow to a heat exchanger or to complete plant sections
- In applications where minimal leakage through the fully closed valve is allowable


## Type summary

Product number	DN	k <sub>vs</sub> [m <sup>3</sup> /h]	Leakage rate in % of k <sub>vs</sub> -value	Velocity of water flow <sup>1)</sup>				
				SAL31..T10 SAL81..T10	SAL61..T10	SAL31..T40 SAL81..T40	SAL61..T40	
VKF41.40	40	50	0.22	4	2.5	-	-	
VKF41.50	50	80	0.14					
VKF41.65	65	200	0.09					
VKF41.80	80	400	0.06					
VKF41.100	100	760	0.04					
VKF41.125	125	1000	0.04	2.5	1.5	4	4	
VKF41.150	150	2100	0.02					
VKF41.200	200	4000	0.01					

<sup>1)</sup> Recommended maximum velocity of flow and the butterfly valve fully open

k<sub>vs</sub> Nominal flow rate of cold water (5...30 °C) through the fully open butterfly valve by a differential pressure of 100 kPa (1 bar)

## Accessories

Designation	Product number	Stock number	Description
Mounting set	ASK33N	S55845-Z101	 <p>For mounting SAL..T10 actuators on VKF41..., DN 40...200 and SAL..T40 actuators on VKF41..., DN 150...200</p>

## Ordering

Example:

Product number	Stock number	Designation	Quantity
VKF41.50	VKF41.50	Butterfly valve VKF41.50 including centering sleeves	1
SAL31.03T10	S55162-A109	Actuator SAL31.03T10	1
ASK33N	S55845-Z101	Mounting set ASK33N	1

Delivery

Butterfly valve, actuator and mounting set are packed separately.

4 centering sleeves are supplied with each butterfly valve, for fitting the valve between PN 10 and PN 16 flanges.

Revision numbers

See overview, page 8.

## Equipment combinations

	Mounting set		Electromotoric actuator			
	SAL..T10 <sup>1)</sup>	SAL..T40	SAL..T10	SAL..T40		
Butterfly valve			$\Delta p_s$ [kPa]			
VKF41.40	ASK33N		500	-		
VKF41.50						
VKF41.65						
VKF41.80			ASK33N		300	
VKF41.100					250	400
VKF41.125					125	300
VKF41.150						
VKF41.200						

$\Delta p_s$  Maximum permissible differential pressure at which the motorized butterfly valve will close securely against the pressure (close off pressure)

### Actuator overview

Product number	Operating voltage	Positioning signal	Spring return	Positioning time	Positioning force	Data sheet		
SAL31.00T10	AC 230 V	3-position	No	120 s	10 Nm	N4502		
SAL31.00T40				120 s	40 Nm			
SAL31.03T10				30 s	10 Nm			
SAL81.00T10	AC/DC 24 V			DC 0...10 V	120 s		10 Nm	
SAL81.00T40					DC 4...20 mA		120 s	40 Nm
SAL81.03T10							0...1000 $\Omega$	30 s
SAL61.00T10		120 s	10 Nm					
SAL61.00T40		120 s	40 Nm					
SAL61.03T10		30 s	10 Nm					

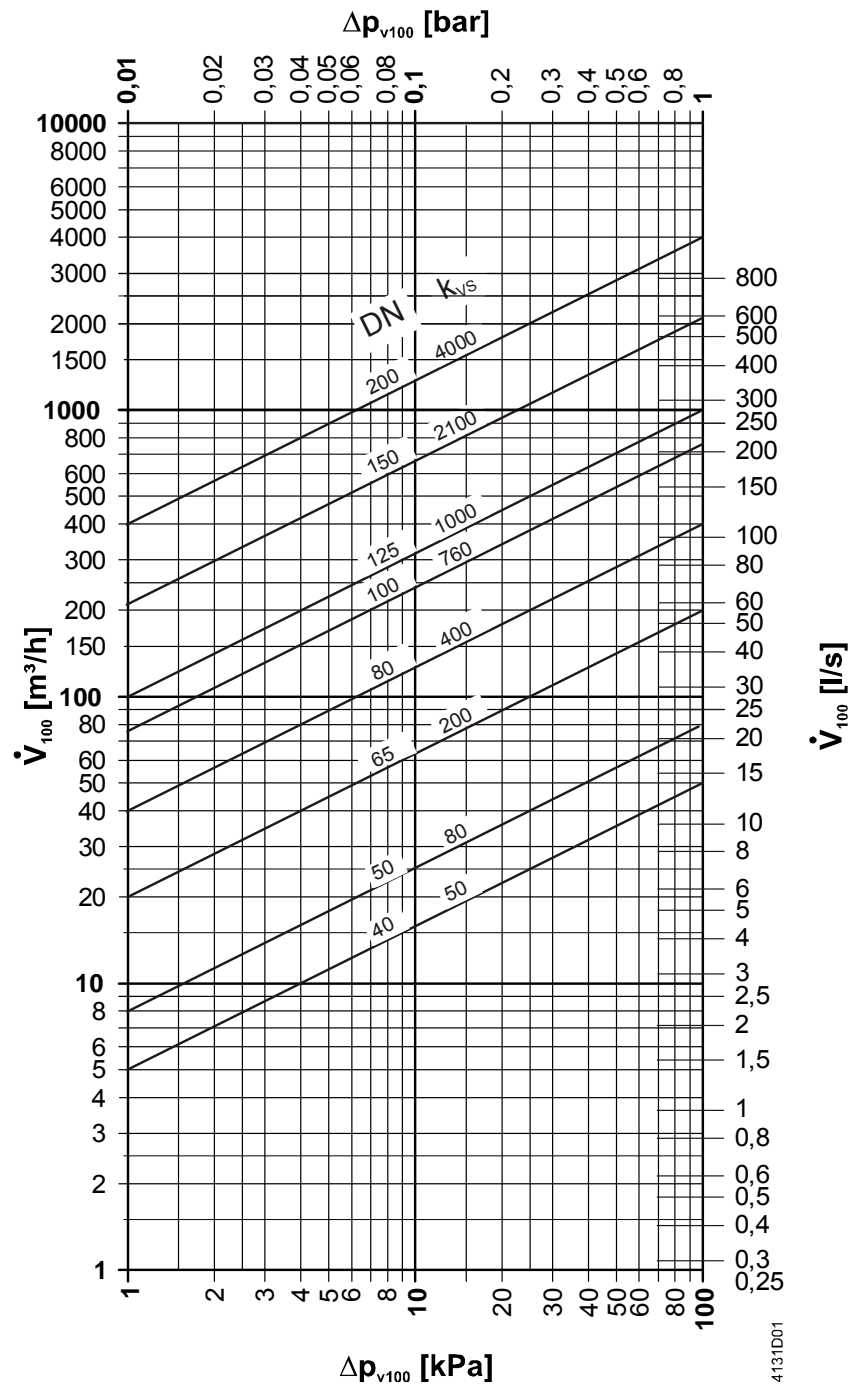
## Mechanical design

### Butterfly valve

Stainless steel disk and shaft. The valve disk closes against an end-stop. The position of the valve disc is indicated by a notch on the front of the shaft.

### Mounting set

In all cases, a mounting set is required to assemble the actuators on a VKF41.. valve.



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

Engineering notes

The VKF41.. butterfly valves can accommodate flow in either direction.

In heating systems, the valve should preferably be installed in the return, where the seal will be exposed to lower temperatures, so extending its service life.

## Warning

To avoid pressure shocks on the butterfly valve, the VKF41.. must be driven to its fully open position (either manually or via positioning signal Y1) prior to activating the pump(s).

## Mounting notes

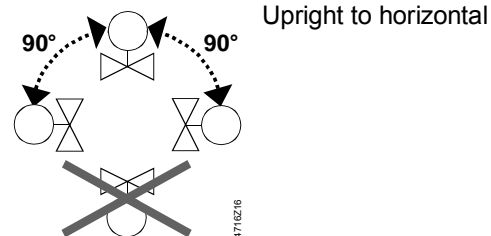
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Orientation



The Mounting Instructions 4 319 8927 0 are enclosed in the product packaging.

VKF41.. butterfly valves can be mounted in PN 6, PN 10, PN 16 applications.



The valve, actuator and mounting set are easily assembled directly on site. There is no need for special tools or calibration.

## Commissioning notes

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The butterfly valve must be commissioned only with the mounting set and actuator correctly assembled.

- Disk rotated clockwise: Increasing flow
- Disk rotated anti-clockwise: Decreasing flow

## Maintenance

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### Caution

The VKF41.. butterfly valves require no maintenance.

Before performing any service work on the valve, actuator or mounting set:

- Switch off the pump and power supply
  - Close the main shut-off valves in the pipework
  - Release pressure in the pipes and allow them to cool down completely
- If necessary, disconnect electrical connections from terminals.

The valve must be re-commissioned only with the correctly mounted actuator.

## Disposal

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Do not dispose of the device as household waste.

- Special handling of individual components may be mandated by law or make ecological sense.
- Observe all local and currently applicable laws and regulations.

## Warranty

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The technical data given for these applications is valid only in conjunction with the Siemens actuators as detailed under "Equipment combinations", page 3.

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)	
	Leakage rate	refer to "Type summary", page 2	
	Permissible media	chilled water, low temperature hot water, high temperature hot water, brine, softened water, water with anti-freeze; recommendation: water treatment to VDI2035	
	Medium temperature	-10...120 °C	
	Flanged connection for pipes	PN 6, PN 10, PN 16 to ISO7005	
	Angle of rotation	90° (to end stop)	
	Standards, directives and approvals	Pressure Equipment Directive Pressure-carrying accessories	PED 2014/68/EU Scope: Article 1, section 1 Definitions: Article 2, section 5
		Fluid group 2:       DN 40...50 DN 65...200	without CE-marking as per article 4, section 3 (sound engineering practice) <sup>1)</sup> Category I, Modul A, with CE-marking as per article 14, section 2
		EU Conformity (CE) DN 65...200	A5W00006521 <sup>2)</sup>
EAC Conformity		Eurasia Conformity	
Environmental compatibility		The product environmental declaration CE1E4131de <sup>2)</sup> contains data on environmentally compatible product design and assessments (RoHS compliance, materials composition, packaging, environmental benefit, disposal).	
Materials	Housing	grey cast iron EN-GJL-250	
	Shaft	stainless steel 1.4104	
	Valve disc	stainless steel 1.4016	
	Shaft seal	EPDM O-rings	
Dimensions		refer to "Dimensions"	
Weight		refer to "Dimensions"	

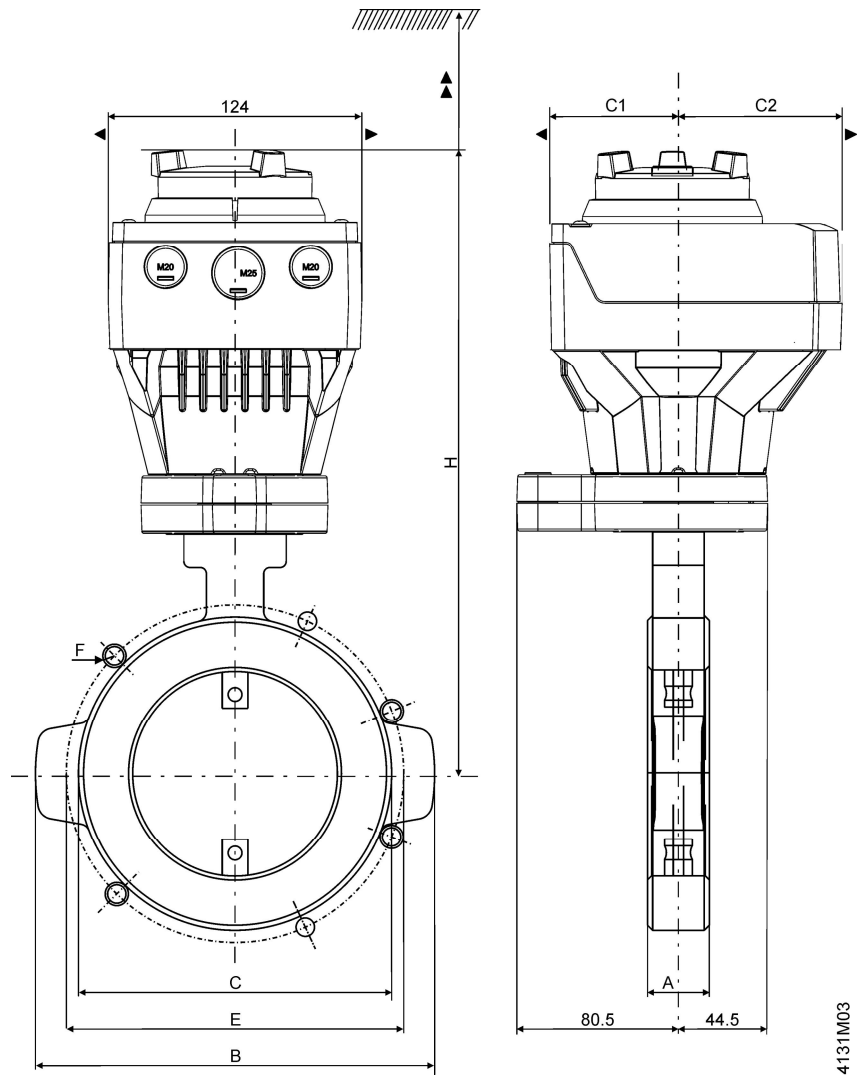
<sup>1)</sup> Valves where PS x DN < 1000, do not require special testing and cannot carry the CE label.

<sup>2)</sup> The documents can be downloaded from <http://siemens.com/bt/download>

## Dimensions

Dimensions in mm

VKF41.. with  
SAL..T10 and ASK33N  
SAL..T40 and ASK33N



4131M03

- ▶ > 100 mm: minimum clearance from the wall or ceiling
- ▶▶ > 200 mm: minimum clearance for mounting, connection, operation, maintenance etc

Type	DN	A	B	C	E	F	E	F	H	[kg]
VKF41.40	40	30	130	87	100	M12 (4x)	110	M16 (4x)	275	1.72
VKF41.50	50	30	140	97	110	M12 (4x)	125	M16 (4x)	280	1.94
VKF41.65	65	30	160	117	130	M12 (4x)	145	M16 (4x)	287.5	2.37
VKF41.80	80	30	175	133	150	M16 (4x)	160	M16 (8x)	295	2.63
VKF41.100	100	30	195	153	170	M16 (4x)	180	M16 (8x)	305	2.92
VKF41.125	125	40	225	183	200	M16 (8x)	210	M16 (8x)	325.5	5.25
VKF41.150	150	40	255	208	225	M16 (8x)	240	M20 (8x)	338	6.29
VKF41.200	200	40	310	263	280	M16 (8x)	295	M20 (8x) for PN 10 M20 (12x) for PN 16	363	8.44

DN = Nominal size

H = Total actuator height plus minimum distance to the wall or the ceiling for mounting, connection, operation, maintenance etc.

## Revision numbers

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Type	Valid from rev. no.	Type	Valid from rev. no.	Type	Valid from rev. no.
VKF41.40	/01	VKF41.80	/01	VKF41.150	/01
VKF41.50	/01	VKF41.100	/01	VKF41.200	/01
VKF41.65	/01	VKF41.125	/01		

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