

Acvatix™

Butterfly valves PN6/10/16

VFW41..U



- Nodular cast iron housing EN-GJS-400-18-LT
- DN 40...200
- k_{vs} 40...4000 m³/h
- For fitting between PN 6, PN 10, PN 16 counter-flanges to ISO 7005
- Angle of rotation 90°
- No maintenance required
- Can be fitted with type SAL..T10/F05 electromotoric actuators

Use

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

- In open and closed circuits
- For 2-position controls (open/closed)
- For 3-position controls
- 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 No.	Stock Number	DN	K _{vs}	Leakage rate	Velocity of flow ¹⁾ water [m/s]	
			[m ³ /h]		in % of K _{vs} value	SAL31..T10/F05 SAL81..T10/F05
VFW41.40U	S55235-V168	DN40	40	0.05	4	2.5
VFW41.50U	S55235-V169	DN50	100			
VFW41.65U	S55235-V170	DN65	155			
VFW41.80U	S55235-V171	DN80	260			
VFW41.100U	S55235-V172	DN100	520			
VFW41.125U	S55235-V173	DN125	820			
VFW41.150U	S55235-V174	DN150	1600		2.5	1.5
VFW41.200U	S55235-V175	DN200	4000			

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 at a differential pressure of 100 kPa (1 bar)

Ordering

Example

Product No.	Stock No.	Designation	Quantity
VFW41.50U	S55235-V169	Butterfly valve VFW41.50U	1
SAL31.03T10/F05	S55162-A121	Actuator SAL31.03T10/F05	1
ASK41NF05SP	S55845-Z255	Manual adjuster	1

Delivery

Butterfly valve and actuator are packed separately.

The butterfly valves are supplied without counter-flanges.

Rev. No.

See Revision numbers [▶ 9].

Equipment combinations

Butterfly valve	Manual adjuster	Electromotoric actuators SAL..T10/F05 Δp_s [kPa]
VFW41.40U	ASK41NF05SP	500
VFW41.50U		
VFW41.65U		
VFW41.80U		
VFW41.100U		
VFW41.125U		300
VFW41.150U		250
VFW41.200U		125

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

Actuator overview

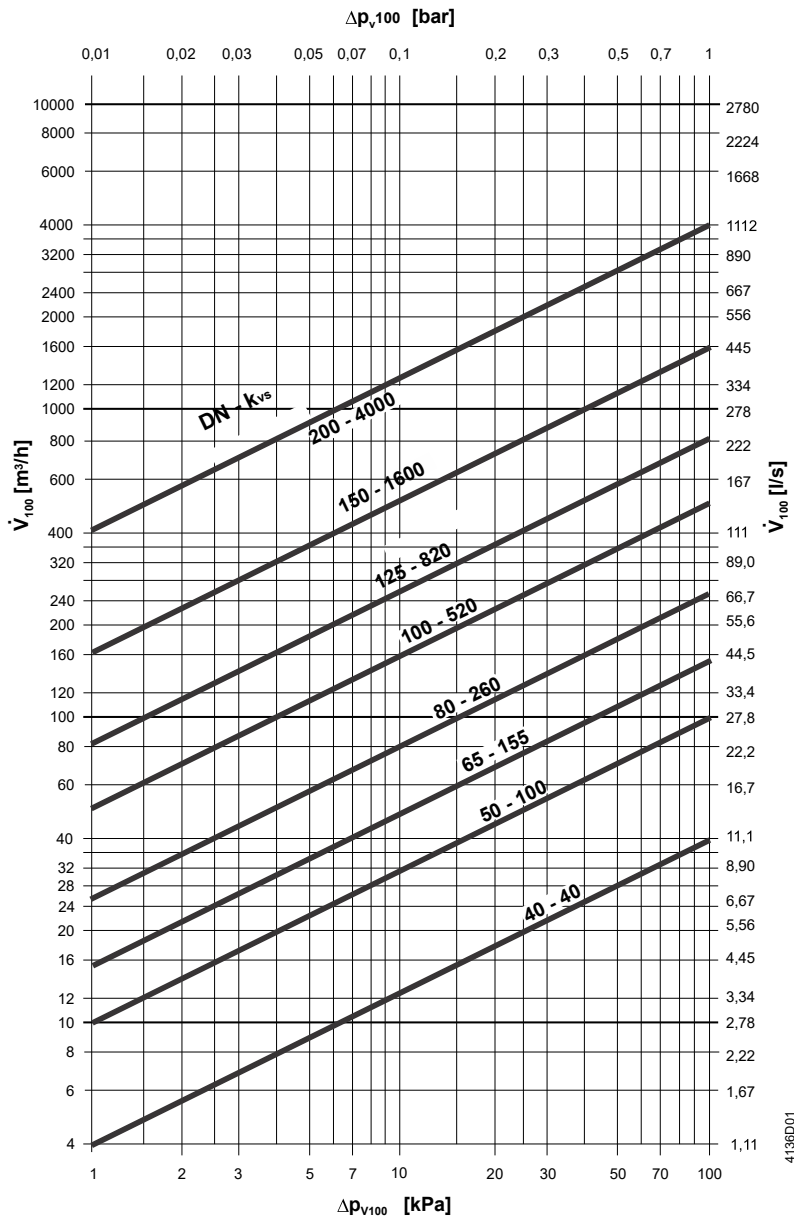
Product no.	Operating voltage	Positioning signal	Spring return	Positioning time	Positioning force
SAL31.03T10/F05	AC 230 V	3-position DC 0...10 V DC 4...20 mA 0...1000 Ω	No	30 s	10 Nm
SAL81.03T10/F05	AC/DC 24 V				
SAL61.03T10/F05					

Butterfly valve

Ring format, nodular cast iron housing with EPDM liner and multiple shaft bearing.

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

Flow diagram



ΔP_{V100} = Differential pressure across the fully open butterfly valve by a volume flow \dot{V}_{100}

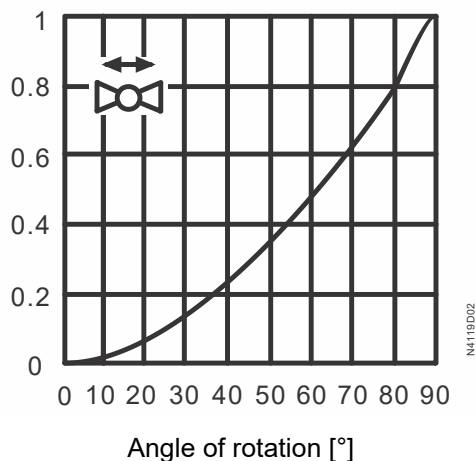
\dot{V}_{100} = Volume flow through the fully open butterfly valve

100 kPa = 1 bar \approx 10 mWC

1 m³/h = 0.278 l/s water at 20 °C

Flow characteristic

Flow k_v / k_{vs}



Engineering Notes

The VFW41..U 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.

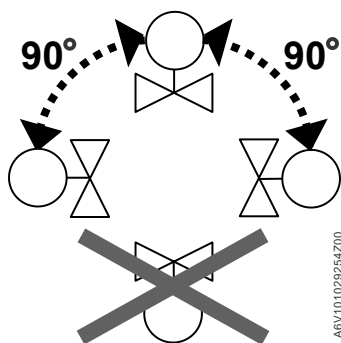
Warning

To avoid pressure shocks on the butterfly valve, the VFW41..U must be driven to its fully open position (either manually or via positioning signal Y1) prior to activating the pump(s).

Mounting notes

The Mounting Instructions A6V11918413 are enclosed in the product packaging. VFW41..U butterfly valves can be mounted in PN 6, PN 10, PN 16 applications.

Orientation



Upright to horizontal

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

Maintenance notes

Caution

The VFW41..U butterfly valves require no maintenance.

⚠ WARNING



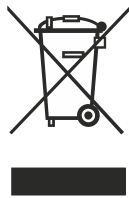
Before performing any service works on the valve, actuator or mounting kit:

- 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.

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

Disposal



The valve is considered an electronics device for disposal in terms of European Directive 2012/19/EU and may not be disposed of as domestic garbage.

- Disassemble the valve into individual parts prior to disposing of it and sort the individual parts by the various types of materials.
- Comply with all local and currently applicable laws and regulations.

Warranty

Technical data on specific applications are valid only together with Siemens products listed under "Equipment combinations". Siemens rejects any and all warranties in the event that third-party products are used.

Operating data	
PN class	PN 16 to EN1333
Permissible operating pressure	1600 kPa (16 bar)
Flow characteristic	See "Flow characteristic" on Mechanical design [► 4]
Leakage rate	Refer to Type summary [► 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	-20...120 °C
Flanged connection for pipes	PN6, PN10 and PN16 according to ISO 7005
Angle of rotation (Operation)	90°

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	without CE-marking as per article 4, section 3 (sound engineering practice) ¹⁾
	DN 65...200	Category II, Module A2, with CE-marking As per article 14, section 2
EU conformity (CE)	DN 65...200	A5W00006521 ²⁾
EAC Conformity	Eurasia Conformity	
Environmental compability	The product environmental declaration CE A5W00193658A ²⁾ contains data on environmentally compatible product design and assessments (RoHS compliance, materials composition, packaging, environmental benefit, disposal).	

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

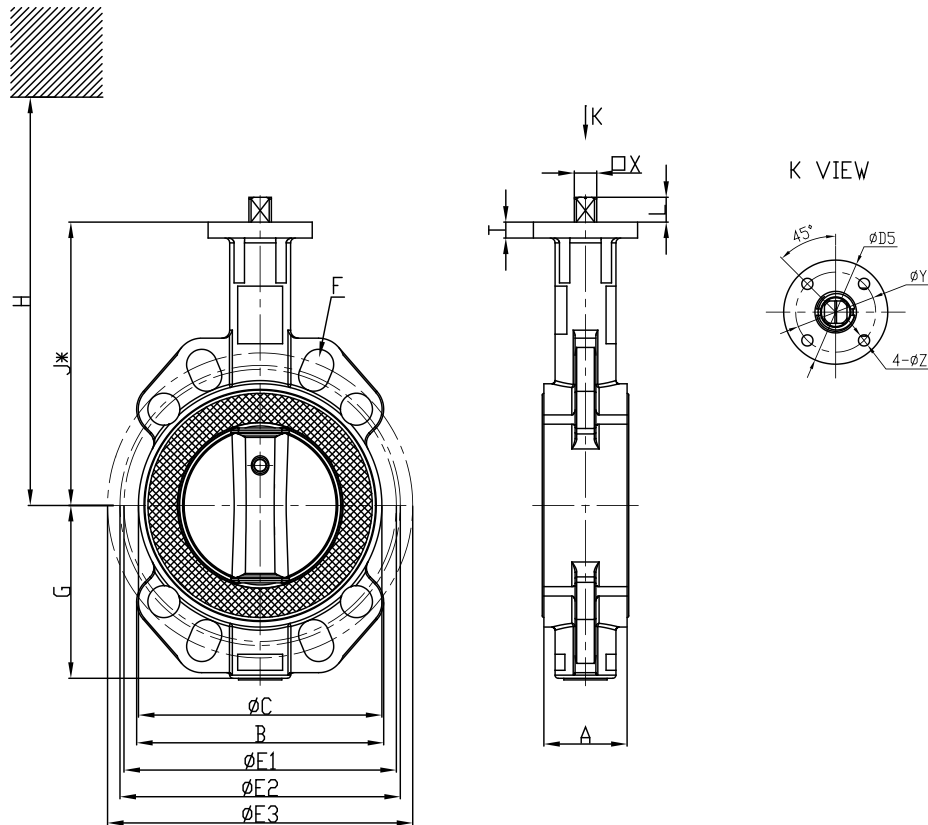
²⁾ The documents can be downloaded from <http://siemens.com/bt/download>

Materials	
Valve body	Nodular cast iron EN-GJS-400-18-LT
Stem	Stainless steel 1.4021 (2Cr13)
Valve disc	Stainless steel 1.4308 (304/CF8)
Seat	EPDM-HT

Dimensions/weight	
Dimensions	See Dimensions [► 8]
Weight	See Dimensions [► 8]

Dimensions

Dimensions in mm:



Type	DN	A	B	C	G	J*	T	D5	L	PN 6		PN 10		PN 16		X	EN 5211x	Y	Z	kg
										$\varnothing E1$	F	$\varnothing E2$	F	$\varnothing E2$	F					
VFW41.40U	40	35	107	72	68	115	10	54	15.5	100	M12 (4x)	110	M16 (4x)	110	M16 (4x)	14	F05	50	7	1.55
VFW41.50U	50	45	118	93	72	143	10	54	15.5	110	M12 (4x)	125	M16 (4x)	125	M16 (4x)					2.52
VFW41.65U	65	48	136	108	78	156	10	54	15.5	130	M12 (4x)	145	M16 (4x)	145	M16 (4x)					3.17
VFW41.80U	80	48	140	124	95	162	10	65	15.5	150	M16 (4x)	160	M16 (8x)	160	M16 (8x)					3.72
VFW41.100U	100	54	154	152	108	177	10	65	15.5	170	M16 (4x)	180	M16 (8x)	180	M16 (8x)					5.23
VFW41.125U	125	58	120	177	123	190	10	65	15.5	200	M16 (8x)	210	M16 (8x)	210	M16 (8x)					6.65
VFW41.150U	150	58	135	210	138	205	13	90	15.5	225	M16 (8x)	240	M20 (8x)	240	M20 (8x)					7.79
VFW41.200U	200	63	159	265	168	236	12	90	15.5	280	M16(8x)	295	M20(8x)	295	M20(12x)					11.15

A Corresponds to overall length acc. to EN 558, series 20

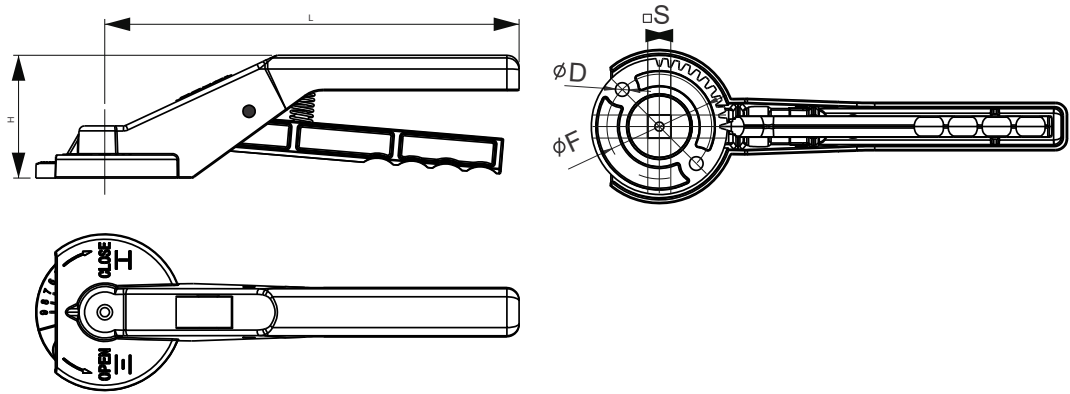
* Dimension for actuator connection from centre of pipe



H, overall height of valve and actuator

= Valve installation height (J*) from middle of pipe + Installation height of actuator
 - SAL..T10/F05 = 160 mm (DN 40...200)

+ Minimum clearance (> 200 mm) from ceiling or wall for mounting, connection, operation, service etc.

ASK41NF05SP



Type	DN	L	H	D	S	F	
				Ø		Ø	[kg]
ASK41NF05SP	40...200	195	68	6.5	14	50	0.32

Revision numbers

Product No.	Valid from Rev. No.
VFW41.40U	..A
VFW41.50U	..A
VFW41.65U	..A
VFW41.80U	..A
VFW41.100U	..A
VFW41.125U	..A
VFW41.150U	..A
VFW41.200U	..A

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