

LINEAR MOTORIZED VALVES

CONTROL VALVE PN25 SERIES VLC100 AND VLC200

ESBE control valves series VLC125 and VLC225 are 2-way flanged valves for PN25, DN 15-50.



Flange PN25

Flange PN25,
pressure-balanced plug

MEDIA

These valves can handle the following types of media:

- Hot and cold water.
- Water with antifreeze additives such as glycol.

If the valve is used for media at temperatures below 0°C (32°F), it should be equipped with a stem heater in order to prevent ice formation on the valve stem.

ACCESSORIES DN 15 - 50

Art. No.

26000700 _____ Adaptor kit, Siemens SQX

CONTROL VALVE DESIGNED FOR

- Heating
- District Heating
- Comfort Cooling
- District Cooling

SUITABLE ACTUATORS

- Series ALB140
- Series ALFxx4
- Series ALFxx1
- Series ALHx00

TECHNICAL DATA

Type: _____ 2-way plug valve
 Pressure class: _____ PN25
 Flow characteristic A-AB: _____ EQM
 Stroke: _____ 20 mm
 Rangeability K_v/K_v^{min} : _____ see table
 Leakrate A-AB, - DN15: _____ max. 0.02% of K_v 4
 - DN25: _____ max. 0.02% of K_v 10
 - DN40: _____ max. 0.02% of K_v 25
 - DN20, DN32, DN50: _____ max. 0.02% of K_v s
 ΔP_{max} : _____ see graph
 Temperature of medium: _____ max. +150°C
 _____ min. -20°C
 Connection: _____ Flange, ISO 7005-2

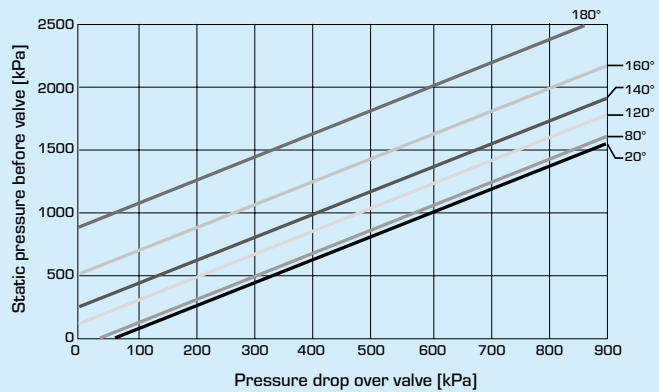
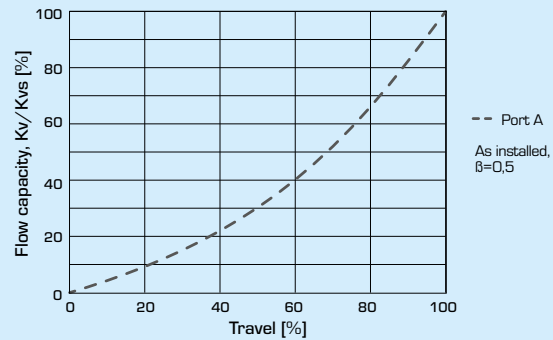
Material

Body: _____ Nodular iron EN-JS 1030
 Stem: _____ Stainless steel SS 2346
 Plug: _____ Stainless steel SS 2346
 Seat: _____ Stainless steel SS 2346
 Seat seal: _____ Metallic
 Packing box seal: _____ PTFE/EPDM

DN15-40 PED 2014/68/EU, article 4.3
 CE DN50 PED 2014/68/EU, Category I, module A,
 Fluid group 2

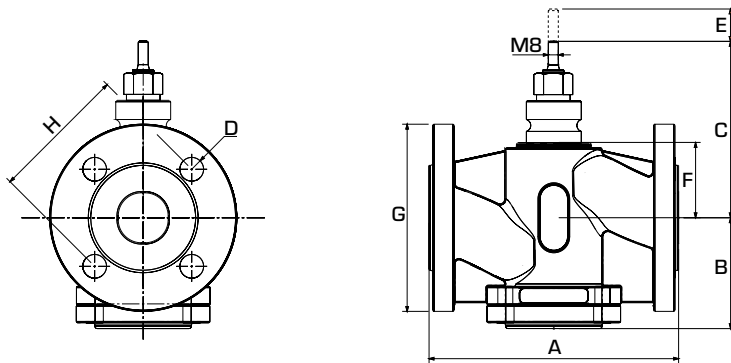
VALVE CHARACTERISTICS

2-way valves, DN15-50



Pressure drop limit where cavitation might occur.
 Is dependent of valve inlet pressure and temperature of water.

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2-WAY CONTROL VALVE SERIES VLC125

Art. No.	Reference	DN	Kvs*	A	B	C	D	E	F	G	H	Rangeability Kv/Kv ^{min}	Weight [kg]	
21300100	VLC125	15	0.25	130	81	122	4x14	20	37	95	65	>50	3.6	
21300200			0.4											
21300300			0.63											
21300400			1											
21300500			1.6											
21300600			2.5											
21300700			4											
21300800	VLC125	20	6.3	150	92	124	4x14	20	40	105	75	>200	4.4	
21301700	VLC125	25	1.6	160	96	130	4x14	20	45	115	85	>30	4.4	
21301800			2.5									>70		
21301900			4									>100		
21302000			6.3									>200		
21300900			10									>200		5.6
21301000	VLC125	32	16	180	100	143	4x19	20	58	140	100	>200	7.7	
21302100	VLC125	40	1.6	200	99	144	4x19	20	60	150	110	>30	7.7	
21302200			2.5									>70		
21302300			4									>70		
21302400			6.3									>100		
21302500			10									>200		
21302600			16									>200		
21301100			25									>200		8.8
21301200			VLC125									50		38

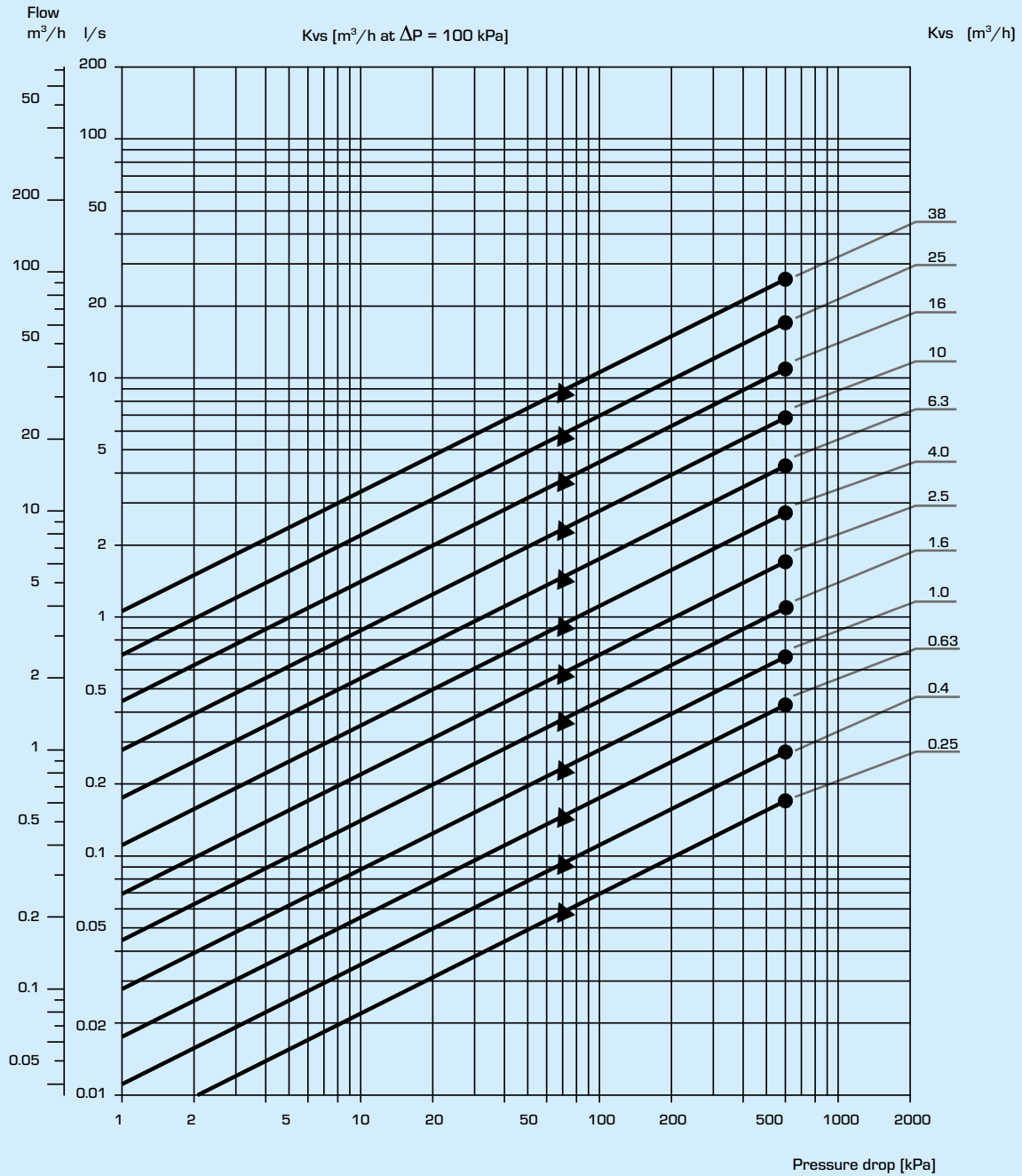
2-WAY CONTROL VALVE SERIES VLC225 WITH PRESSURE BALANCED PLUG

Art. No.	Reference	DN	Kvs*	A	B	C	D	E	F	G	H	Rangeability Kv/Kv ^{min}	Weight [kg]
21301300	VLC225	25	10	160	96	130	4x14	20	45	115	85	>200	5.9
21301400	VLC225	32	16	180	100	143	4x19	20	58	140	100	>200	8.1
21301500	VLC225	40	25	200	99	144	4x19	20	60	150	110	>200	9.3
21301600	VLC225	50	38	230	111	160	4x19	20	75	165	125	>200	13.5

* Kvs-value in m³/h at a pressure drop of 1 bar.

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FLOW CHART



To be considered: As both the viscosity and the thermal conduction are affected when glycol is added to the system water, this fact has to be considered when dimensioning the valve. A good rule is to choose one size higher Kv-value when 30 – 50% glycol is added. A lower concentration of glycol may be disregarded. N.B.! Maximum 50% glycol for freezing protection and oxygen absorbing compounds are allowed as additives.

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INSTALLATION

The valve should be mounted with flow direction in accordance with the valve marking.

If possible, the valve should be installed in the return pipe, in order to avoid exposing the actuator to high temperatures.

The valve must not be installed with the actuator mounted below the valve.

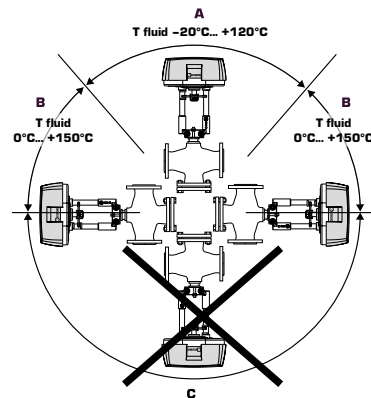
Mounting positions:

A = Allowed mounting position with fluid temperature between -20°C to +120°C.

B = Allowed mounting position with fluid temperature between 0°C to +150°C.

C = Not allowed mounting position.

To ensure that suspended solids will not become jammed between the valve plug and seat, a filter should be installed upstream of the valve, and the pipe system should be flushed before the valve is installed.



VALVE AUTHORITY [β]

Δp_v - pressure losses over the valve [bar]

Δp_{sys} - pressure losses over the system with variable flow [bar]

Δp_{inst} - pressure losses over the installation [bar]

Recommendation : Valve authority [β] shall be between 0.3 to 0.7

a) 2-way valve

$$\beta = \frac{\Delta p_v}{\Delta p_v + \Delta p_{inst}}$$

b) 3-way valve

$$\beta = \frac{\Delta p_v}{\Delta p_v + \Delta p_{sys}}$$

INSTALLATION EXAMPLES

2-WAY CONTROL VALVES

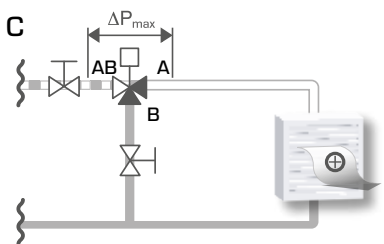


Installation without local circulating pump

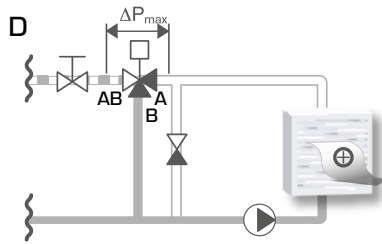


Installation with local circulating pump

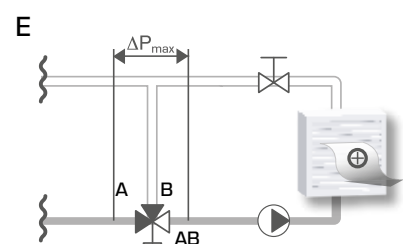
3-WAY CONTROL VALVES



Circuit without local circulation pump



Circuit with local circulation pump



Circuit with local circulating pump