

LINEAR 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.



VLC125  
Flange PN25



VLC225  
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 ALFxx1
- Series ALFxx4

### TECHNICAL DATA

Type: \_\_\_\_\_ 2-way plug valve  
 Pressure class: \_\_\_\_\_ PN25  
 Flow characteristic A-AB: \_\_\_\_\_ EQM  
 Stroke: \_\_\_\_\_ 20 mm  
 Rangeability Kv/Kv<sup>min</sup>: \_\_\_\_\_ see table  
 Leakrate A-AB, - DN15: \_\_\_\_\_ max. 0,02% of Kv 4  
 - DN25: \_\_\_\_\_ max. 0,02% of Kv 10  
 - DN40: \_\_\_\_\_ max. 0,02% of Kv 25  
 - DN20, DN32, DN50: \_\_\_\_\_ max. 0,02% of Kvs  
 ΔP<sub>max</sub>: \_\_\_\_\_ see graph  
 Temperature of medium: \_\_\_\_\_ max. +150°C  
 \_\_\_\_\_ min. -20°C  
 Media: \_\_\_\_\_ Heating water (in accordance with VDI2035)  
 \_\_\_\_\_ Water / Glycol mixtures, max. 50%  
 \_\_\_\_\_ Water / Ethanol mixtures, max. 28%  
 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

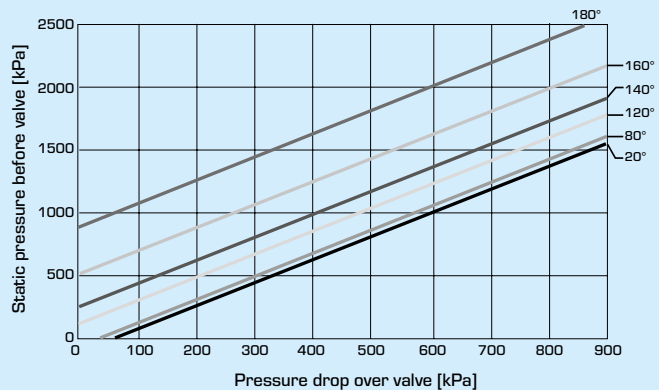
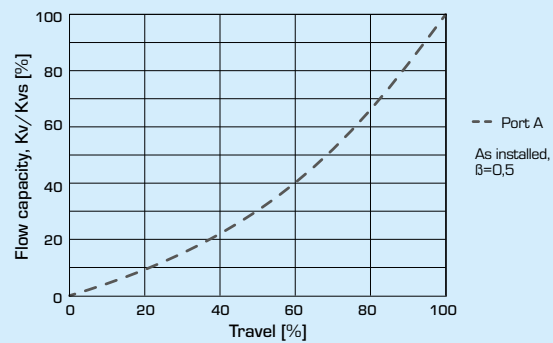
PED 2014/68/EU, article 4.3

### DN50

CE PED 2014/68/EU, Category I, module A, Fluid group 2

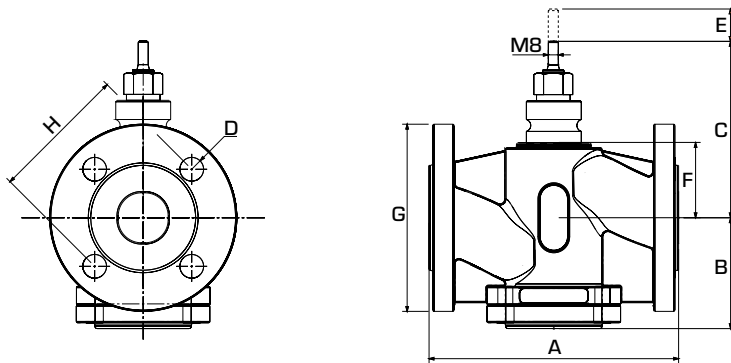
### VALVE CHARACTERISTICS

2-way valves, DN15-50



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

# CONTROL VALVE PN25 SERIES VLC100 AND VLC200



## 2-WAY CONTROL VALVE SERIES VLC125

Art. No.	Reference	DN	Kvs*	A	B	C	D	E	F	G	H	Rangeability Kv/Kv <sup>min</sup>	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
21300900	VLC125	25	10	160	96	130	4x14	20	45	115	85	>200	5,6
21301000	VLC125	32	16	180	100	143	4x19	20	58	140	100	>200	7,7
21301100	VLC125	40	25	200	99	144	4x19	20	60	150	110	>200	8,8
21301200	VLC125	50	38	230	111	160	4x19	20	75	165	125	>200	12,6

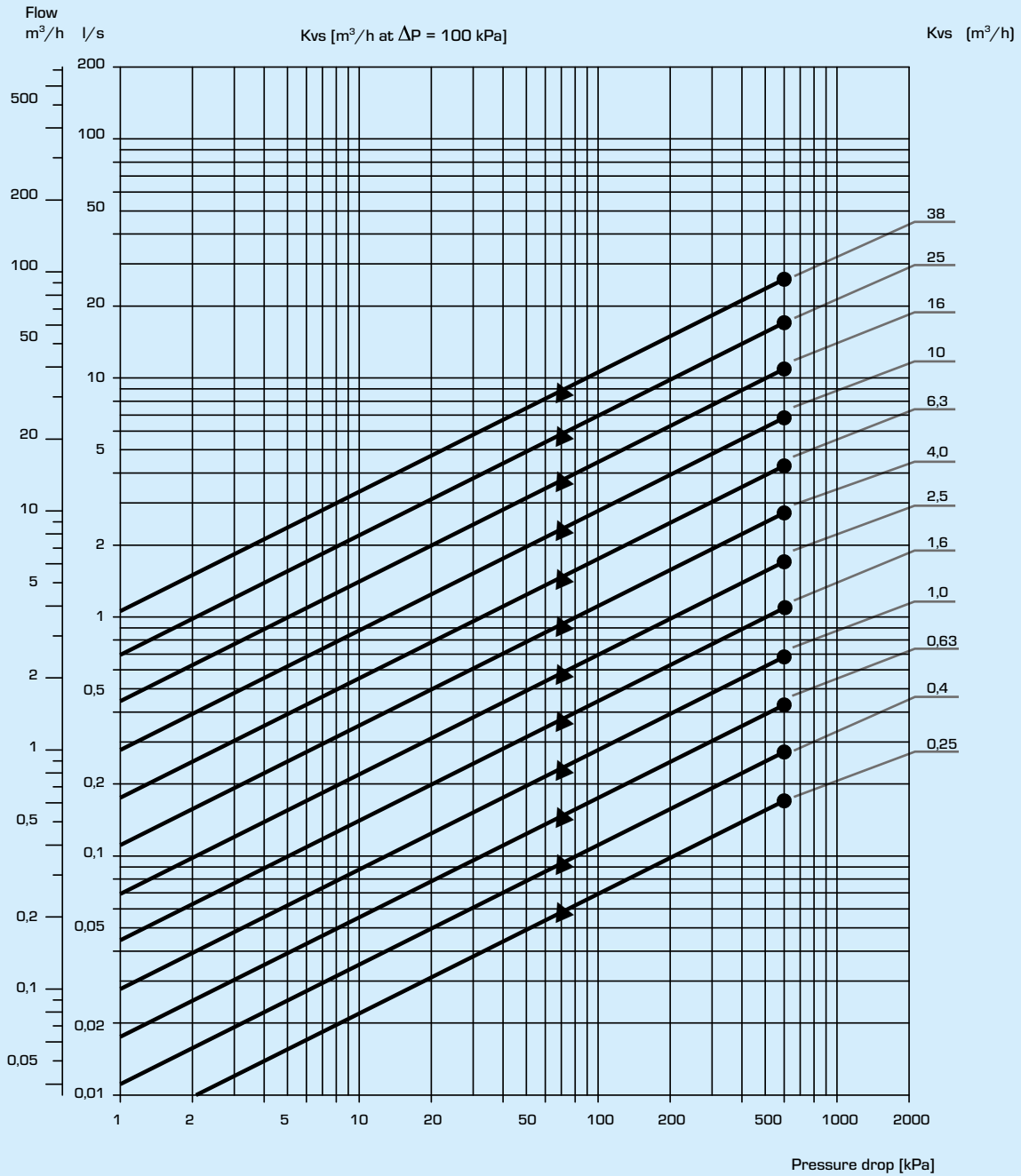
## 2-WAY CONTROL VALVE SERIES VLC225 WITH PRESSURE BALANCED PLUG

Art. No.	Reference	DN	Kvs*	A	B	C	D	E	F	G	H	Rangeability Kv/Kv <sup>min</sup>	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 m<sup>3</sup>/h at a pressure drop of 1 bar.

# CONTROL VALVE PN25 SERIES VLC100 AND VLC200

## 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.*

# CONTROL VALVE PN25 SERIES VLC100 AND VLC200

## 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.

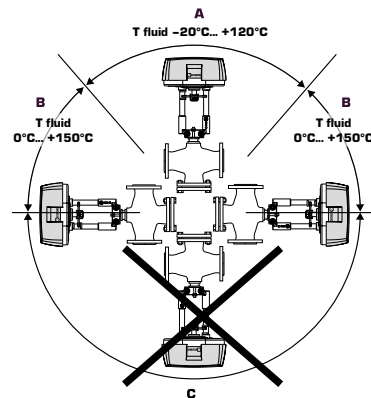
### Mounting positions:

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]

$\Delta p_v$  - pressure losses over the valve [bar]

$\Delta p_{sys}$  - pressure losses over the system with variable flow [bar]

$\Delta p_{inst}$  - 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

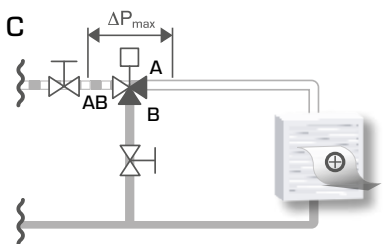


Installation without local circulating pump

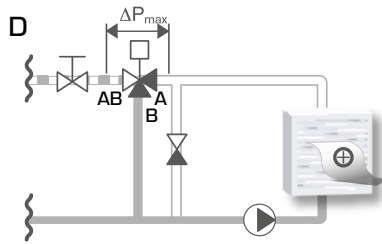


Installation with local circulating pump

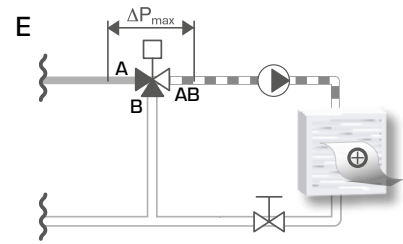
### 3-WAY CONTROL VALVES



Circuit without local circulation pump



Circuit with local circulation pump



Circuit with local circulating pump