

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 ALFxx1
- Series ALFxx4

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

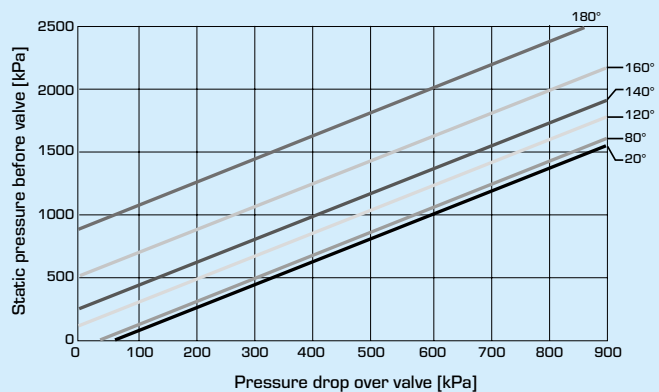
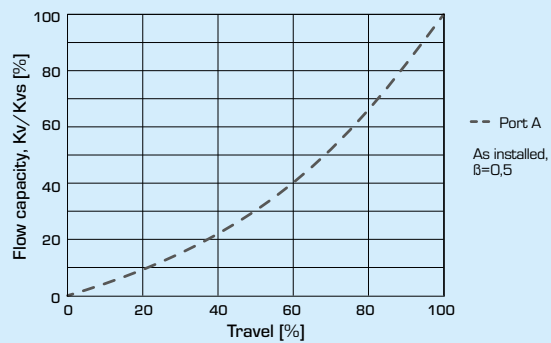
Material

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

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

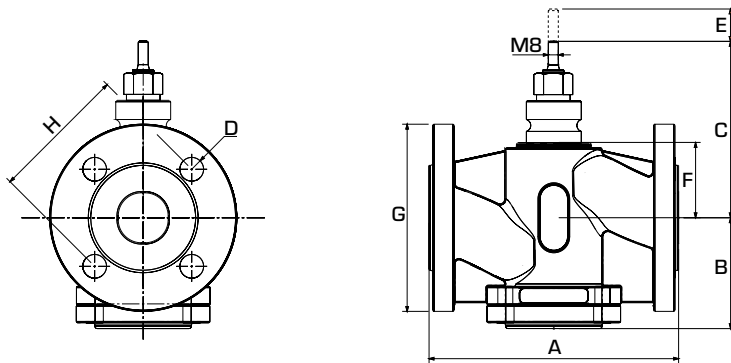
VALVE CHARACTERISTICS

2-way valves, DN15-50



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

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 ^{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 | |
| 21301000 | VLC125 | 32 | 16 | 180 | 100 | 143 | 4x19 | 20 | 58 | 140 | 100 | >200 | 7,7 |
| 21302200 | VLC125 | 40 | 2,5 | 200 | 99 | 144 | 4x19 | 20 | 60 | 150 | 110 | >70 | 7,7 |
| 21302300 | | | 4 | | | | | | | | | >70 | |
| 21302400 | | | 6,3 | | | | | | | | | >100 | |
| 21302500 | | | 10 | | | | | | | | | >200 | |
| 21302600 | | | 16 | | | | | | | | | >200 | |
| 21301100 | | | 25 | | | | | | | | | >200 | |
| 21301200 | VLC125 | 50 | 38 | 230 | 111 | 160 | 4x19 | 20 | 75 | 165 | 125 | >200 | 12,6 |

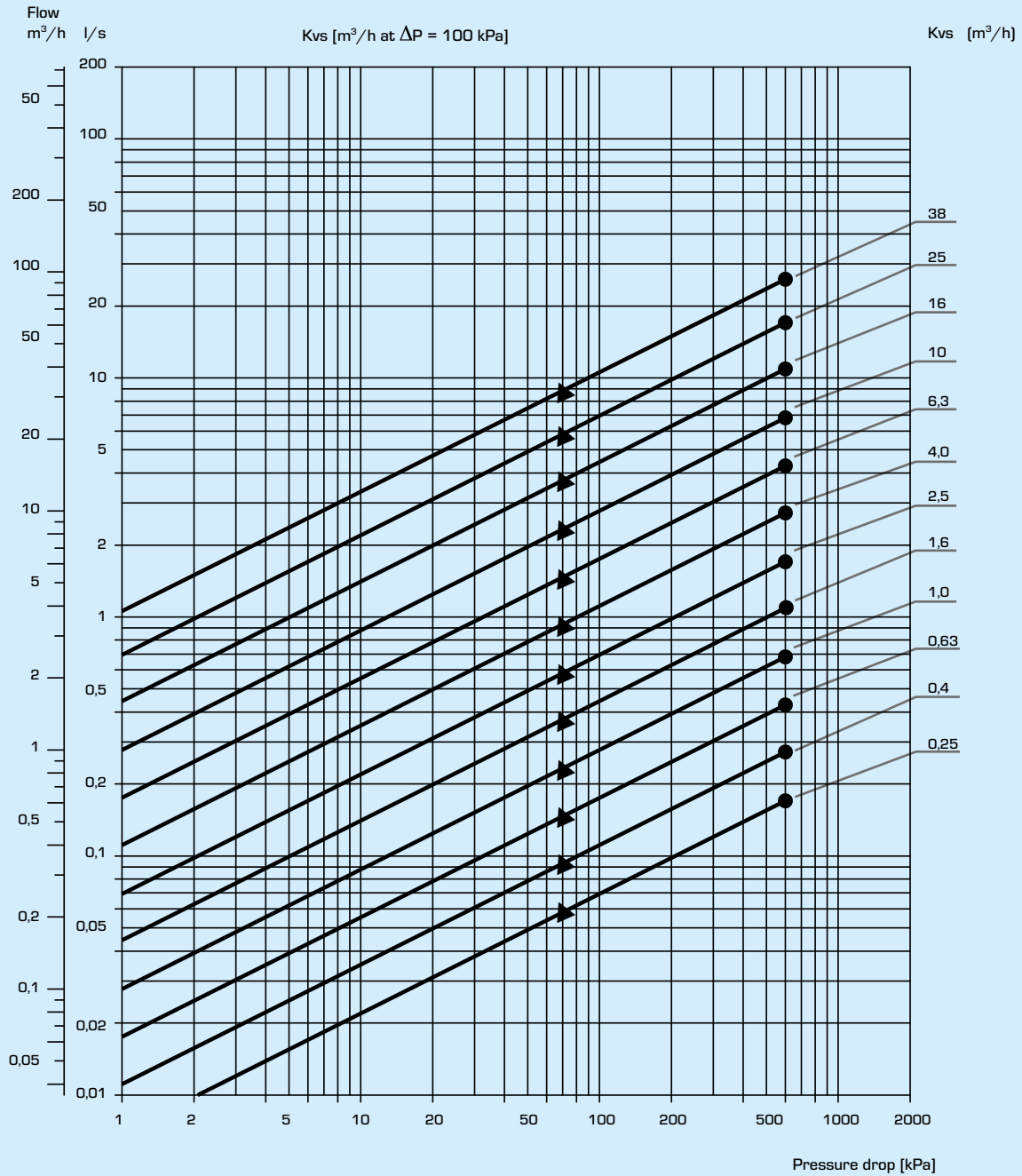
2-WAY CONTROL VALVE SERIES VLC225 WITH PRESSURE BALANCED PLUG

| Art. No. | Reference | DN | Kvs* | A | B | C | D | E | F | G | H | Rangeability Kv/Kv ^{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.

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 K_v -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.

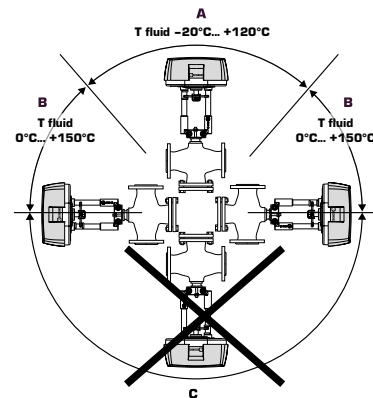
Mounting positions:

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]

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

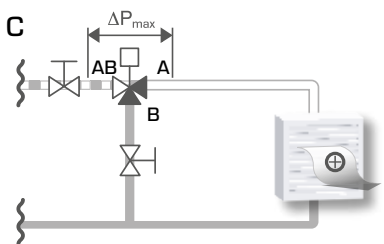


Installation without local circulating pump

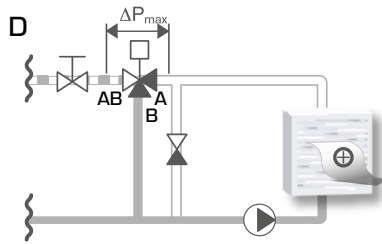


Installation with local circulating pump

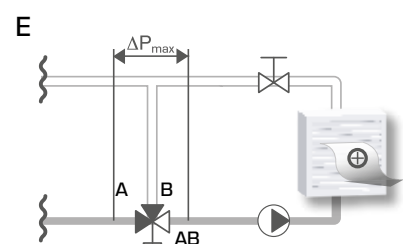
3-WAY CONTROL VALVES



Circuit without local circulation pump



Circuit with local circulation pump



Circuit with local circulating pump