

LINEAR VALVES

CONTROL VALVE PN16 SERIES VLE300

The ESBE control valves series VLE325 are provided with flanges and are especially designed for replacement of STL-valves in existing applications.



Flange PN16

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.

CONTROL VALVE DESIGNED FOR

- Heating
- Comfort Cooling
- Ventilation
- District Heating
- District Cooling

SUITABLE ACTUATORS

- Series ALB140
- Series ALFxx1
- Series ALFxx4

TECHNICAL DATA

Type: _____ 2-way plug valve
 Pressure class: _____ PN16
 Flow characteristic A-AB: _____ EQM
 Stroke: _____ 20 mm
 Rangeability: _____ see table
 Leakrate A-AB, - DN 20-25: _____ max. 0,02% of Kv 4
 ΔP_{max}^* : _____ see graph below
 Temperature of medium: _____ max. +130°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

* ΔP_{max} = Max. differential pressure for valve and actuator combinations.

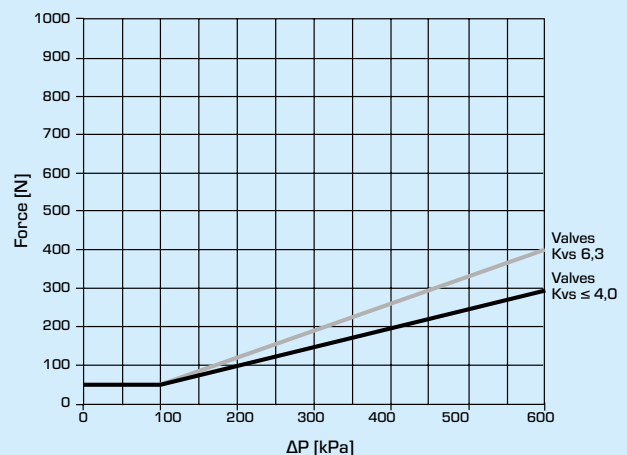
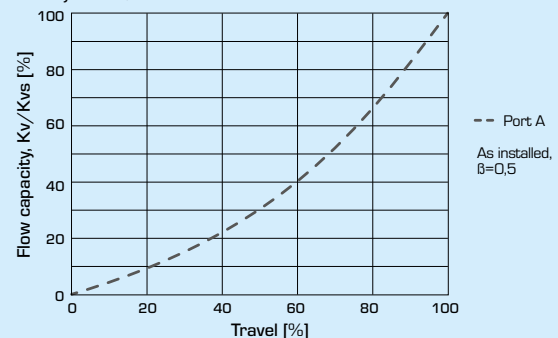
Material

Body: _____ Bronze Rg5
 Flanges: _____ Steel SS 1914
 Stem: _____ Stainless steel SS 2346
 Plug: _____ Stainless steel SS 2346
 Seat: _____ Stainless steel SS 2346
 Blind plug: _____ Brass CW602N
 Seat seal: _____ Metallic
 Packing box seal: _____ PTFE/EPDM

PED 2014/68/EU, article 4.3

VALVE CHARACTERISTICS

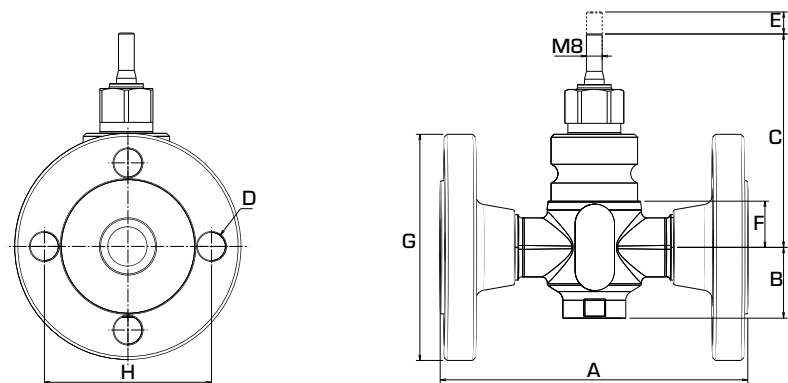
2-way valves, DN15-50



Required clamping force of the control unit for tightness 0.02% of Kvs.

CONTROL VALVE PN16

SERIES VLE300



2-WAY CONTROL VALVE SERIES VLE325

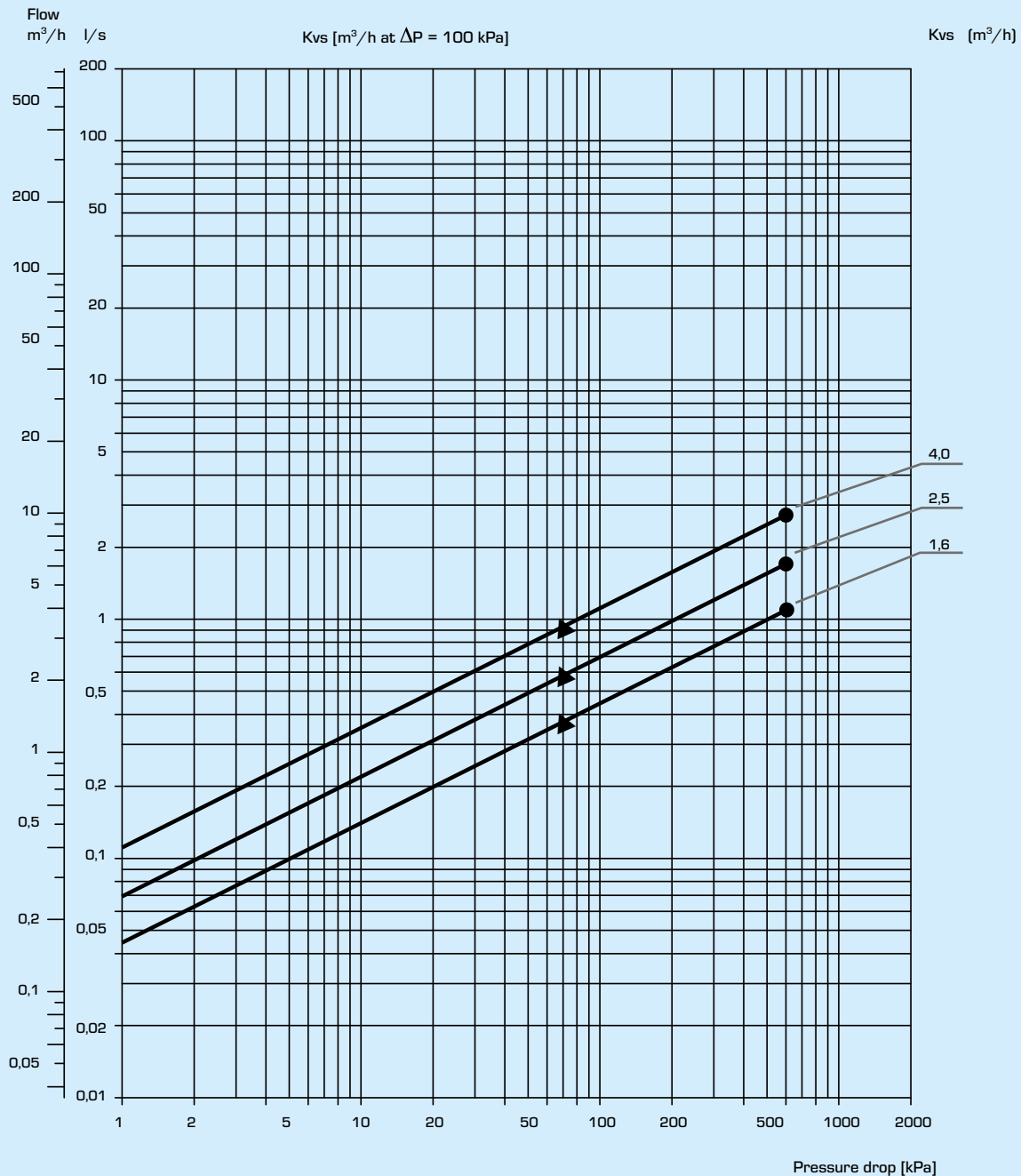
Art. No.	Reference	DN	Kvs*	A	B	C	D	E	F	G	H	Rangeability Kv/Kv ^{min}	Weight [kg]
21400300	VLE325	20	1,6	143	36	110	4x14	20	24	105	75	>100	3,0
21400400			2,5										
21400700	VLE325	25	1,6	156	36	110	4x14	20	24	115	85	>100	3,7
21400800			2,5										
21400900			4										

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

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FLOW CHART



- = max differential pressure drop allowed in mixing function
- ▲ = max differential pressure drop allowed in diverting function

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.

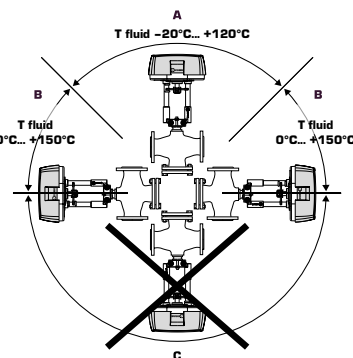
Mounting positions:

A = Allowed mounting position with fluid temperature between -20°C to $+120^{\circ}\text{C}$.

B = Allowed mounting position with fluid temperature between 0°C to $+150^{\circ}\text{C}$.

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]

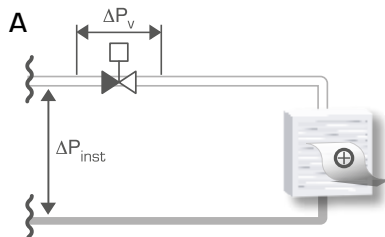
Recommendation : Valve authority [β] shall be between 0,3 to 0,7

a) 2-way valve

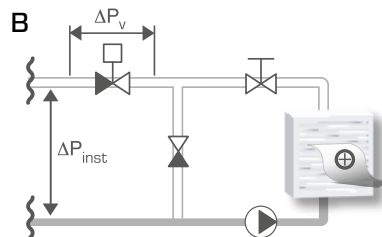
$$\beta = \frac{\Delta p_v}{\Delta p_v + \Delta p_{inst}}$$

INSTALLATION EXAMPLES

2-WAY CONTROL VALVES



Installation without local circulating pump



Installation with local circulating pump