

LINEAR VALVES

CONTROL VALVE PN16 SERIES VLE100

ESBE control valves series VLE122 and VLE132 are 2-way and 3-way external threaded valves for PN16, DN 15-50.



VLE122
External thread PN16



VLE132
External thread PN16

MEDIA

These valves can handle the following types of media:

- Hot and cold water.
- Water containing phosphate or hydrazine additives.
- 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

Connection sets with Internal Thread Fittings or Soldering Fittings are available as an option.

Art. No. _____ Adaptor kit, Siemens SQX

CONTROL VALVE DESIGNED FOR

- Heating
- Comfort Cooling
- Floor heating
- Solar heating
- Ventilation
- District Heating
- District Cooling

SUITABLE ACTUATORS

- Series ALB140
- Series ALFxx1
- Series ALFxx4

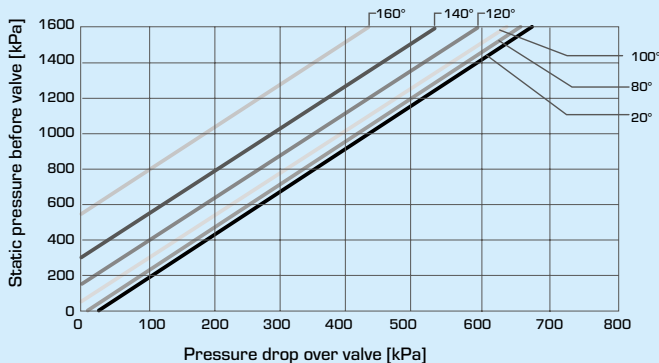
TECHNICAL DATA

Type: _____ 2- and 3-way plug valve
 Pressure class: _____ PN 16
 Flow characteristic A-AB: _____ EQM
 Flow characteristic B-AB: _____ Complementary
 Stroke: _____ 20 mm
 Rangeability K_v/K_v^{min} : _____ see table
 Leakrate A-AB, - DN15: _____ max. 0,02% of K_v 4
 - DN 20-50: _____ max. 0,02% of K_v s
 Leakrate B-AB, - DN15: _____ max. 0,05% of K_v 4
 - DN 20-50: _____ max. 0,05% of K_v s
 ΔP_{max} : _____ see graph
 Media temperature: _____ max. +150°C
 _____ min. -20°C
 Media: _____ Heating water (in accordance with VDI2035)
 _____ Water / Glycol mixtures, max. 50%
 _____ Water / Ethanol mixtures, max. 28%
 Connection: _____ External pipe thread, ISO 228/1

Material

Body: _____ Bronze Rg5
 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

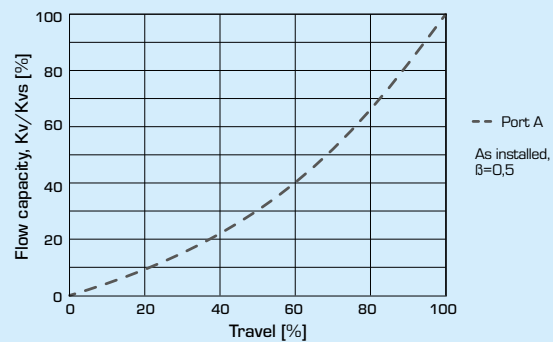
PED 2014/68/EU, article 4.3



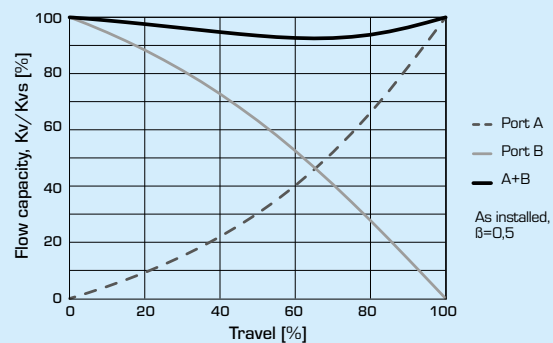
Pressure drop limit where cavitation might occur. Is dependent of valve inlet pressure and temperature of water.

VALVE CHARACTERISTICS

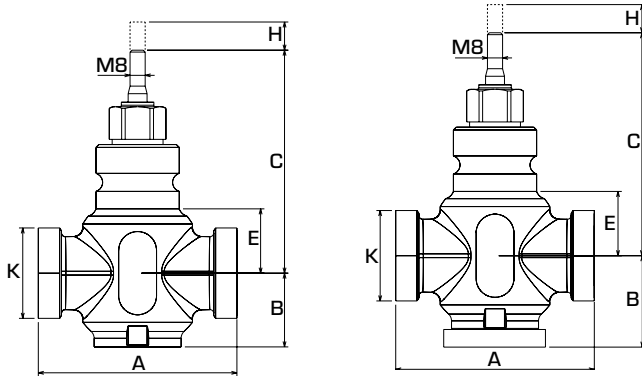
2-way valves, DN15-50



3-way valves, DN15-50



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2-WAY CONTROL VALVE SERIES VLE122

Art. No.	Reference	DN	Kvs*	A	B	C	E	H	K	Rangeability Kv/Kv ^{min}	Weight [kg]
21250100	VLE122	15	0,25	100	36	110	24	20	G 1"	>50	1,0
21250200			0,4								
21250300			0,63								
21250400			1								
21250500			1,6								
21250600			2,5								
21250700	4										
21250800	VLE122	20	6,3	100	38	116	30	20	G 1 1/4"	>100	1,2
21250900	VLE122	25	10	105	39	120	34	20	G 1 1/2"	>100	1,4
21251000	VLE122	32	16	105	39	121	35	20	G 2"	>100	1,8
21251100	VLE122	40	25	130	48	128	42	20	G 2 1/4"	>100	2,6
21251200	VLE122	50	38	150	58	139	53	20	G 2 3/4"	>100	4,3

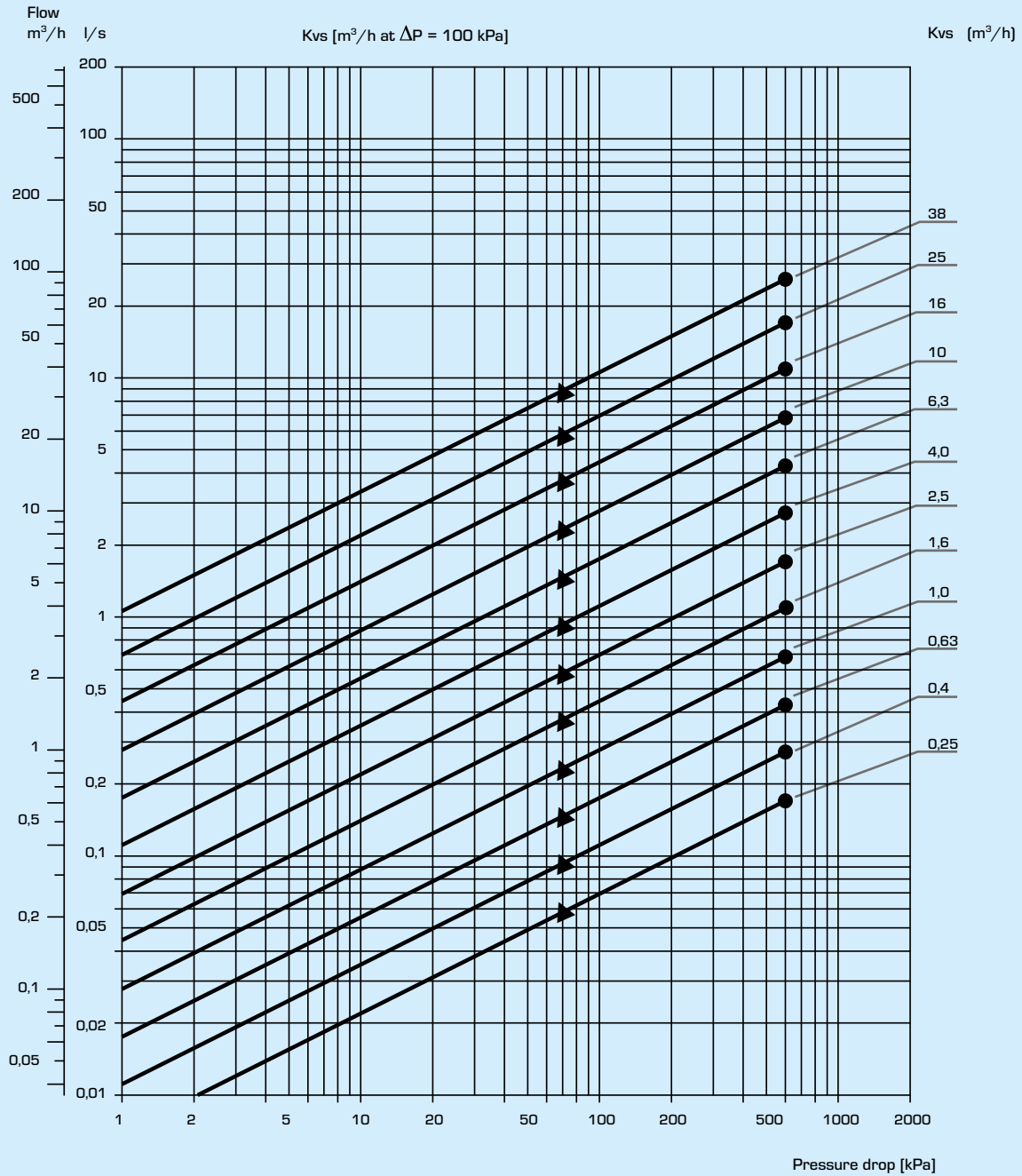
3-WAY CONTROL VALVE SERIES VLE132

Art. No.	Reference	DN	Kvs*	A	B	C	E	H	K	Rangeability Kv/Kv ^{min}	Weight [kg]
21251300	VLE132	15	1,6	100	50	110	24	20	G 1"	>50	1,1
21251400			2,5								
21251500			4								
21251600	VLE132	20	6,3	100	50	116	30	20	G 1 1/4"	>100	1,3
21251700	VLE132	25	10	105	52	120	34	20	G 1 1/2"	>100	1,6
21251800	VLE132	32	16	105	52	121	35	20	G 2"	>100	2,0
21251900	VLE132	40	25	130	65	128	42	20	G 2 1/4"	>100	2,9
21252000	VLE132	50	38	150	75	139	53	20	G 2 3/4"	>100	4,6

* 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.

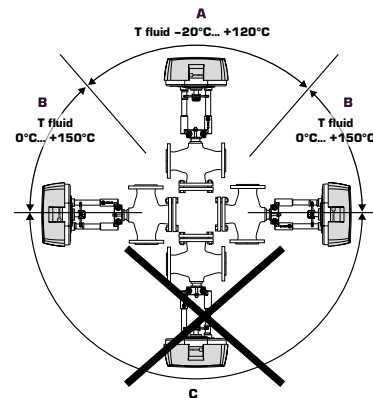
Mounting positions:

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

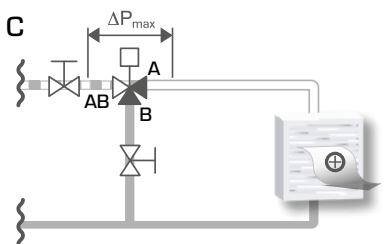


Installation without local circulating pump

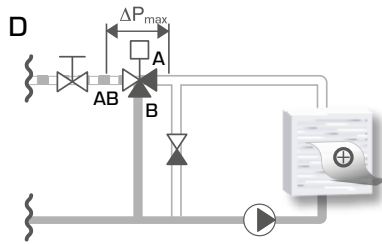


Installation with local circulating pump

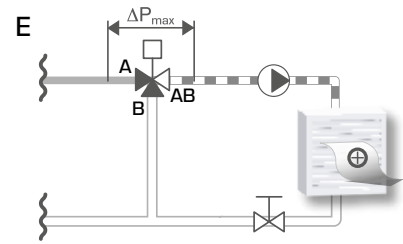
3-WAY CONTROL VALVES



Circuit without local circulation pump



Circuit with local circulation pump



Circuit with local circulating pump