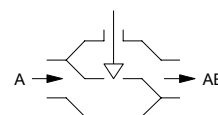


## KVDN..2/... : Unit through valve (regulating), PN 16

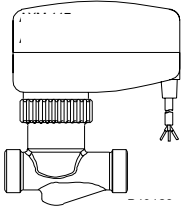
Used in conjunction with either the VA125.. thermal drive for unit valves, the continuous VA125..(S) drive or the VA120.., VA150.. motorised drive for unit valves for the control of heating zones, air secondary-treatment appliances and fan convectors.

Valve and drive are assembled either by simply screwing together or by using the bayonet fitting. Nickel-plated (DN 10) valve body of cast brass, DN 15 and DN 20 of gunmetal with male thread, without cap nut. Spindle of stainless steel with soft-sealing valve cone. Characteristic practically equal-percentage. Stuffing box with double O-ring seal. The through valve is closed when the spindle is pressed in.



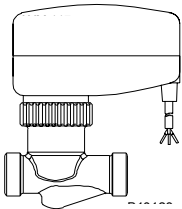
Type	Nominal dia. [DN]	$k_{VS}$ value [m <sup>3</sup> /h]	Connection	Weight [kg]
<b>KVDN10/2/0.16</b>	10	0.16	G½B	0.19
<b>KVDN10/2/0.40</b>	10	0.40	G½B	0.18
<b>KVDN10/2/0.63</b>	10	0.63	G½B	0.18
<b>KVDN10/2/1.0</b>	10	1.0	G½B	0.18
<b>KVDN10/2/1.6</b>	10	1.6	G½B	0.18
<b>KVDN15/2/2.5</b>	15	2.5	G¾B	0.28
<b>KVDN15/2/3.5</b>	15	3.5	G¾B	0.28
<b>KVDN20/2/4.5</b>	20	4.5	G1B	0.33

Nominal pressure	PN 16	Leakage rate	0.0001% of $k_{VS}$
Max. operating pressure	up to 120 °C, 16 bar	Dimension drawing	
Operating temperature	2...120 °C	Fitting instructions	
Characteristic	equal-percentage	fitted onto VA125.	
Valve stroke	4 mm	with auxiliary contacts	
		fitted onto VA120.	
		fitted onto AXM 150.	
		Declaration of materials used	



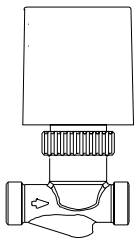
**Combined with a 24 V electric drive, VA120.1 , VA120.1M**

Actuator	Closes against the pressure		
Valve	$\Delta p_{max}$	$\Delta p_s$	close/off pressure
KVDN10/2/0.16	4.0	–	6.0
KVDN10/2/0.40	4.0	–	6.0
KVDN10/2/0.63	4.0	–	6.0
KVDN10/2/1.0	4.0	–	6.0
KVDN10/2/1.6	4.0	–	4.0
KVDN15/2/2.5	3.8	–	4.0
KVDN15/2/3.5	3.8	–	4.0
KVDN20/2/4.5	3.8	–	4.0



**Combined with a 230 V electric drive, VA150.2**

Actuator	Closes against the pressure		
Valve	$\Delta p_{max}$	$\Delta p_s$	close/off pressure
KVDN10/2/0.16	4.0	–	6.0
KVDN10/2/0.40	4.0	–	6.0
KVDN10/2/0.63	4.0	–	6.0
KVDN10/2/1.0	4.0	–	6.0
KVDN10/2/1.6	4.0	–	5.0
KVDN15/2/2.5	4.0	–	5.0
KVDN15/2/3.5	4.0	–	5.0
KVDN20/2/4.5	4.0	–	5.0



**Combined with a thermal and continuous drive, VA125.1(S) , VA125.2(S) , VA125.1M**

Actuator	Closes against the pressure		
Valve	$\Delta p_{max}$	$\Delta p_s$	close/off pressure
KVDN10/2/0.16	4.0	6.0	6.0
KVDN10/2/0.40	4.0	6.0	6.0
KVDN10/2/0.63	4.0	6.0	6.0
KVDN10/2/1.0	4.0	6.0	6.0
KVDN10/2/1.6	4.0	6.0	4.0
KVDN15/2/2.5	4.0	4.0	4.0
KVDN15/2/3.5	4.0	4.0	4.0
KVDN20/2/4.5	4.0	4.0	4.0

$\Delta p_{max}$  [bar]= Max. permissible pressure difference across the valve at which the actuator can still firmly open and close the valve. Figures stated are for a static pressure of 6 bar; at a static pressure of 16 bar, the values are reduced by 15%.

$\Delta p_s$  [bar]= Max. permissible pressure difference across the valve at which, in the event of a malfunction, the actuator can close the valve.

Close/off pressure The pressure difference across the valve in control mode that the force of the drive can overcome. In this mode, a reduced serviceable life can be expected. Cavitation, erosion and pressure surges may damage the valve. The values stated apply only when the valve is fitted to the actuator.

### Operation

The through valve (passage A-AB) is closed by pressing the spindle in; it is returned by spring pressure (the spring is in the valve). The VA125.. thermal drive can be used to move the valve to the OPEN or CLOSED position. Used in combination with the 'normally closed' drive version, the control passage closes in the event of power failure.

Used with the VA125.1M drive, the valve can be moved to any position. Depending on the way the control voltage is connected, the valve is moved continuously with a control voltage of 0...10 V. Connected to red cable: passage A-AB opens as the control voltage rises. Connected to white cable: the passage closes as the control voltage rises.

Used with the VA120.. motorised drive, the valve can be moved to any position. On the VA120.1M (with positioner), the valve is moved continuously by a control voltage of 0...10 V-.

Used with a continuous drive (0...10 V), the practically equal-percentage characteristic provides optimum control.

### Engineering and fitting notes

The final control element can be fitted in any position except facing downwards. The ingress of condensate, dripping water etc. into the drive should be prevented.

In order to prevent cavitation noise from affecting rooms where quietness is essential, the pressure difference across the valve should not exceed 0.8 bar.

In order to restrain contaminants in the water (e.g. welding beads, rust particles etc.) and prevent the spindle seal from being damaged, we recommend the employment of collective filters, e.g. for each floor or feed pipe. The composition of the water should be in accordance with VDI 2035.

The stuffing box can be replaced even when the valve is under pressure; no additional tools are required to do so. The stuffing box is sealed with regard to the medium. Medium with coolant such as glycol, min. 16% max. 40%.

When insulating the unit valve, the insulation should not extend beyond the cap nut or the bayonet ring on the drive.

### Additional technical data

Nickel-plated (DN10) valve body of cast brass, DN15 and DN20 of gunmetal with male thread, as per ISO 228/1, Class B, flat seal on body. Stuffing box with O ring of ethylene-propylene; protective cap (or manual-adjustment knob) of plastic.

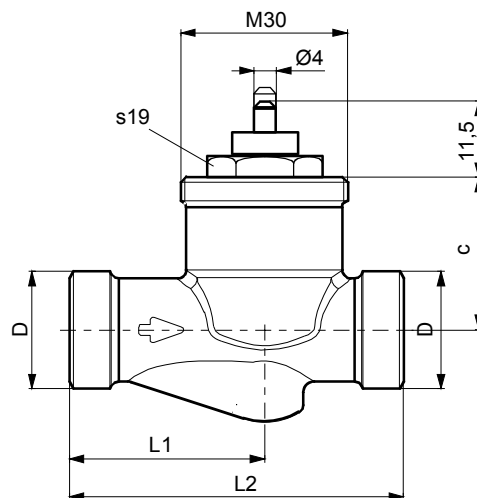
### Material numbers as per DIN

	DIN material no.	EN-DIN code
Valve body DN10	CW617N	Cu Zn 40 Pb2 as per EN12164
Valve body DN15 and DN20	CC490K	Cu Sn 3 Zn 8 Pb5-C as per EN1982
Valve seat DN10	CW617N	Cu Zn 40 Pb2 as per EN12164
Valve seat DN15 and DN20	CC490K	Cu Sn 3 Zn 8 Pb5-C as per EN1982
Spindle	1.4310	X10 Cr Ni18-8 as per EN188-1
Plug	CW617N	Cu Zn 40 Pb2 as per EN12164
Stuffing box	CW617N	Cu Zn 40 Pb2 as per EN12164

### Technical information

- Pressure and temperature specifications	EN764, EN1333
- Flow parameters	VDI/VDE 2173
- Sauter slide rule for valve sizing	7 090011 003
- Slide rule manual	7 000129 003
- PC program: Valve and drive sizing	7 000675 003
- Valvedim.exe	
- Technical manual: 'Regulating units'	7 000477 003
- CE conformity: Directive on Pressure Equipment 97/23/EG Article 3.3	

**Dimension drawing**

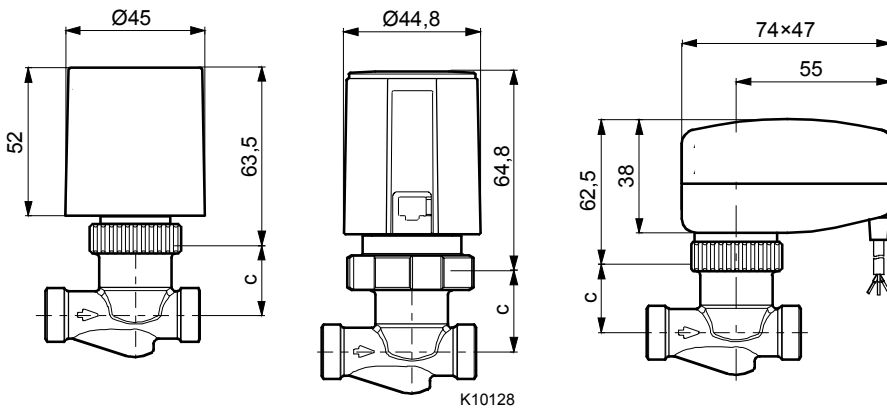


DN	D	d	L1	L2	c
10	G1/2	15	35	60	27,5
15	G3/4	-	36,5	65	33,7
20	G 1	-	30	65	33,7

**Assembly**

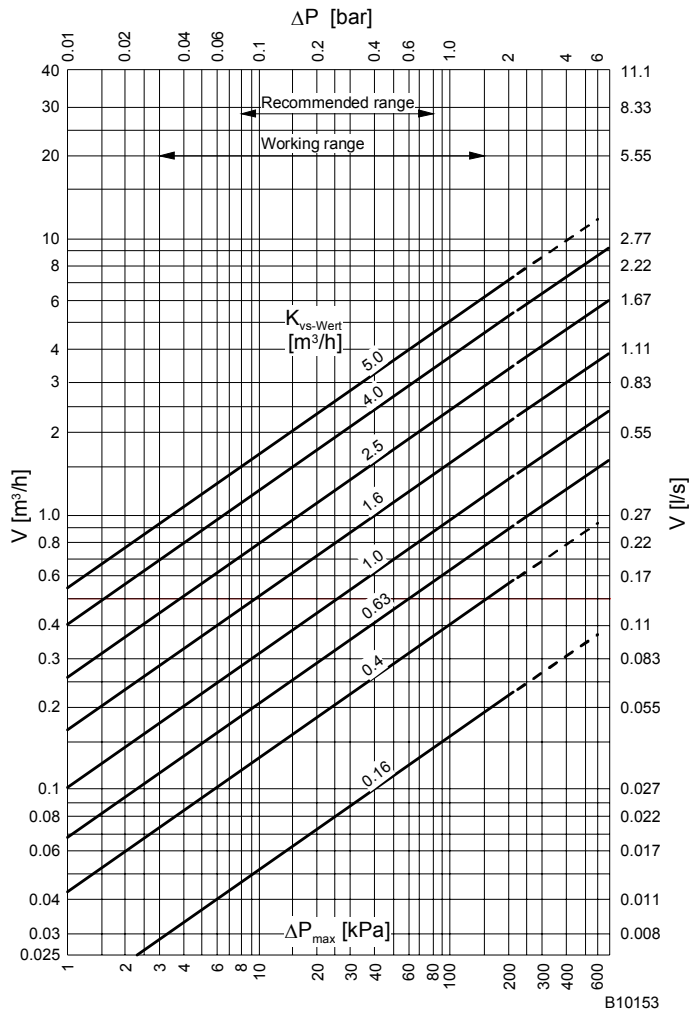
Combinations with VA125... thermal drive and VA120..., VA150.. motorised drive

VA120.1, VA120.1M, VA150.2



K10128

Table of pressure losses



B10153