

# THREE-PORT VALVE WITH CERAMIC DISK PN 10 ; 1...95°C



## VDM 3.. Eng.

- Brass body, stainless steel spindle
- Ceramic disk rotors
- Threaded male connections complete with unions (throughport)
- Threaded female connection (by pass)
- Viton seals



### 1. APPLICATION

VDM3 valves are designed to control water flow in heating and cooling systems. They are particularly suitable for zone plants, fan-coil plants and for mounting on modular manifolds.

They can be operated by hand or by rotary actuators model CDK and CDR.

Permitted fluids:

- hot water max. 95 °C,
- chilled water min. 1 °C,
- water with max. 50 % glycol.

### 2. MODELS

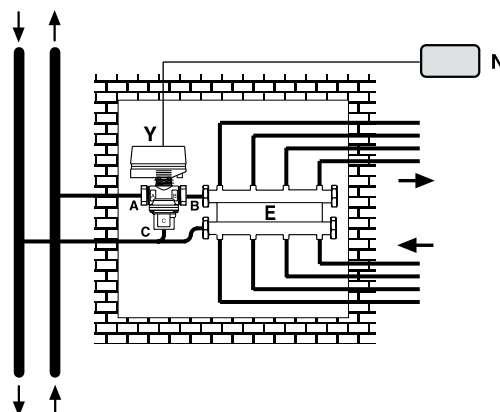
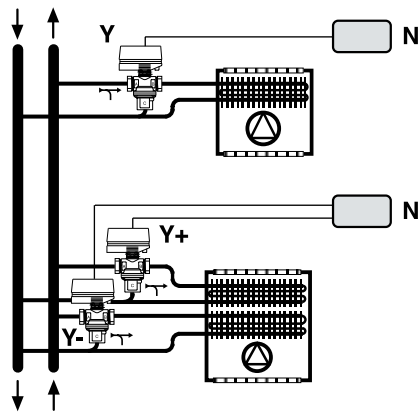
Code	Valve connections inches		Pipe connections inches		Kvs <sup>(1)</sup> m <sup>3</sup> /h		Suitable actuators CDK ... - CDR ...	
	male	female	throughport	by pass	↔	↕	kPa <sup>(2)</sup> (bar)	sec <sup>(3)</sup>
VDM 310	1/2"	1/2"	3/8"	1/2"	1.6	1.1	600 (6)	60
VDM 315	3/4"	1/2"	1/2"	1/2"	1.8	1.2	600 (6)	60

(1) Kvs = flow coefficient : flow in m<sup>3</sup>/h with valve open and pressure drop of 100 kPa.

(2) kPa = maximum differential pressure Δp max. permitted by actuator. 100 kPa = 10 mWG = 1 bar

(3) sec. = time necessary for actuator to make complete valve run.

### 3. SCHEMATIC DIAGRAMS



- N – Ambient controller
- E – Modular manifold
- Y – Motorised ceramic valve
- Y+ – Heating motorised ceramic valve
- Y- – Cooling motorised ceramic valve

### 4. TECHNICAL DATA

Valve body  
Spindle  
Internal rotor  
Seals  
Nominal pressure

OT58 brass  
stainless steel  
ceramic disk  
viton O-Ring  
1000 kPa (10 bar)

Connections :  
– throughport  
– by pass  
Fluid temperature  
Run

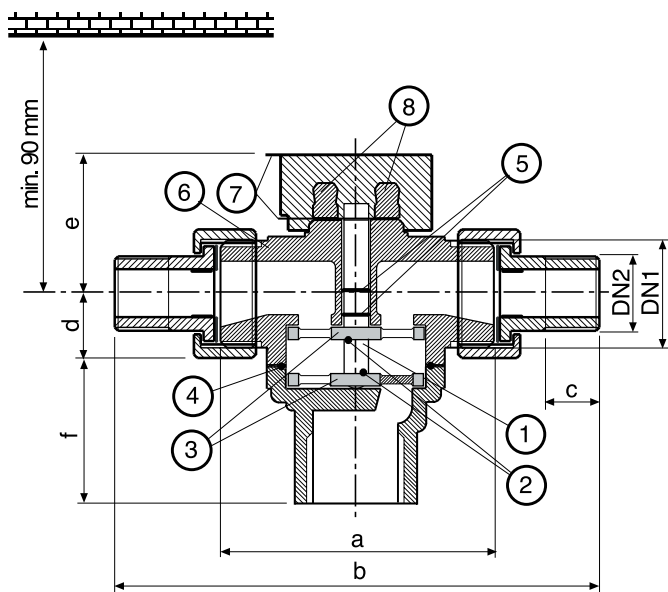
male threaded complete with unions  
female threaded  
1...95 °C  
90°

### 5. CONSTRUCTION

The body of the valve (6.6) is made of OT58 brass, the spindle (6.1) and the attachment lugs (6.8) are in stainless steel and the internal rotors (6.3) are ceramic disks. O-Rings inserted in the appropriate housings (6.5 e 6.4) ensure the watertight sealing of the spindle and of the juncture of the two parts of the valve.

At the head of the valve there is a knob which allows the manual movement.

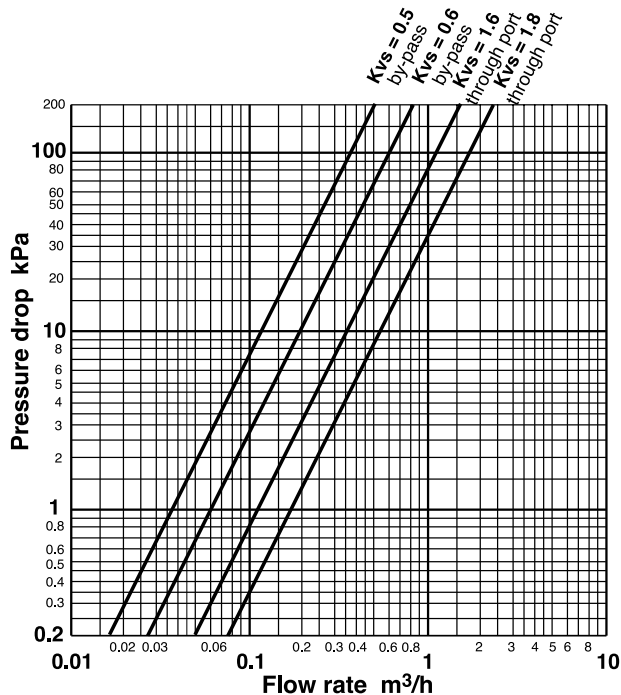
**6. OVERALL DIMENSIONS**



- 1 – Spindle
- 2 – Disk blocking pins
- 3 – Disk rotor
- 4 – Valve O-Ring seal
- 5 – Spindle O-Ring seal
- 6 – Valve body
- 7 – Pointer
- 8 – Actuator attachment lugs

Model	DN 1 inches	DN 2 inches	a mm	b mm	c mm	d mm	e mm	f mm
VDM 310	1/2"	3/8"	43	121	9	14	31.5	51
VDM 315	3/4"	1/2"	43	121	10	16.5	31.5	51

**7. PRESSURE DROP**



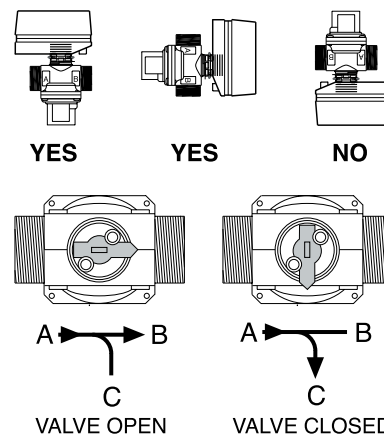
**8. MOUNTING**

**8.1 Mounting of the valve**

Before mounting the valve make sure that there isn't any extraneous matter in the pipework (remains of welding or threading). The pipework must not be subject to vibrations and must be perfectly aligned with the valve unions in order to avoid dangerous strains.

**Important:** to ensure the absence of let-by when closed, it is essential for the valve to be installed according to the flow direction of the fluid. Installation must be carried out so that the letters A, B and C, embossed on the valve body, appear as shown in the adjoining diagram.

The valve can be mounted in any position except with the spindle facing downwards. Leave enough space on the spindle side for the mounting of actuator (see section 6).



**8.2 Installing the actuator on the valve**

CDK actuator: by hand, set the valve in the closed position. Pull out the hand grip and then insert and push down the CDK actuator (factory setting: "Closed").

CDR actuator: by hand, set the valve in closed position. Pull out the hand grip and then, using a suitable tool, set the valve in the open position. Then insert and push down the CDR actuator (factory setting: "Open").

**9. OPERATION**

The valve operates with a 90° rotary movement.

The valve rotor comprises two appropriately-shaped ceramic disk which, when the valve closes (and provided it has been correctly installed in respect of the flow direction A, B and C), ensures nil let-by.

The valve can be operated by hand, using the hand grip, or by the CDK and CDR actuators.

A mark on the valve spindle, also visible when the actuator is installed, indicates the position of the valve.

**Amendments to data sheet**

From version	to version	Page	Section	Details of amendments
28.02.05 MZ	05.07.06 MZ	2	Overall dimensions	Amended Model VDM 315 instead VDM 311



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