

# THREE-PORT BALL ZONE VALVES WITH FOUR CONNECTIONS ; PN 10 ; 5...120 °C

HMM 4.. Eng. 



- Body in brass
- Ball in hard chromed brass
- Adjustable centre-to-centre spacing
- Male threaded connections with unions
- Teflon and Viton seals



## 1. APPLICATION



HMM4 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. 120 °C,
- chilled water min. 5 °C,
- water with max. 50 % glycol.

## 2. MODELS

Code	DN body mm	Valve unions inches	Pipe unions inches	Kvs <sup>(1)</sup> m <sup>3</sup> /h		Suitable actuators CDK ... - CDR ...	
4 port		male	male			kPa <sup>(2)</sup> (bar)	sec. <sup>(3)</sup>
<b>HMM 410</b>	10	1/2"	3/8"	5.4	1.3	600 (6)	60
<b>HMM 415</b>	15	3/4"	1/2"	6.0	1.5	600 (6)	60
<b>HMM 420</b>	20	1"	3/4"	11	3	600 (6)	60
<b>HMM 425</b>	25	1"1/4"	1"	25.7	6.5	600 (6)	60

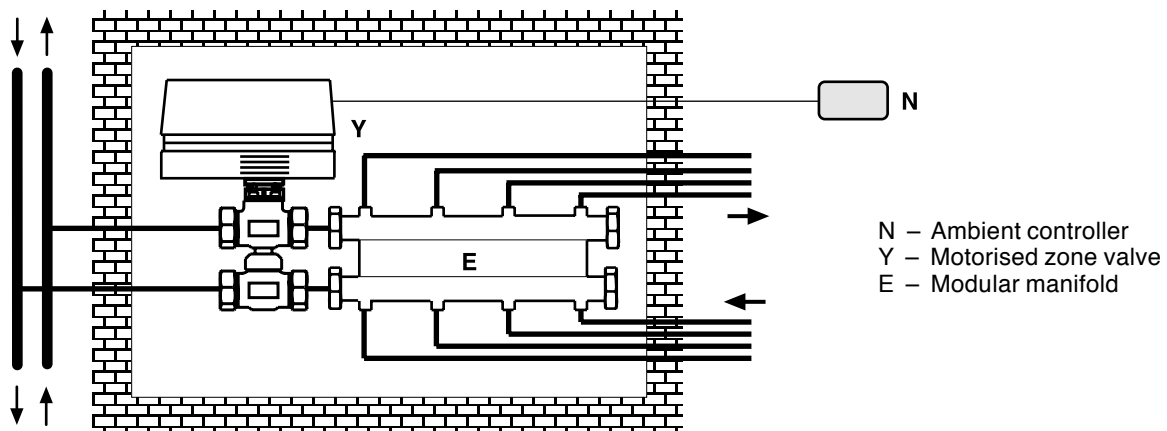
(1) Kvs = flow coefficient : flow in m<sup>3</sup>/h with valve open and pressure drop of 100 kPa.

(2) kPa = maximum differential pressure Δp permitted by actuator.

100 kPa = 10 mWG = 1 bar

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

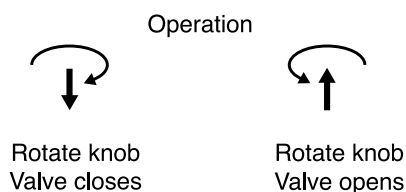
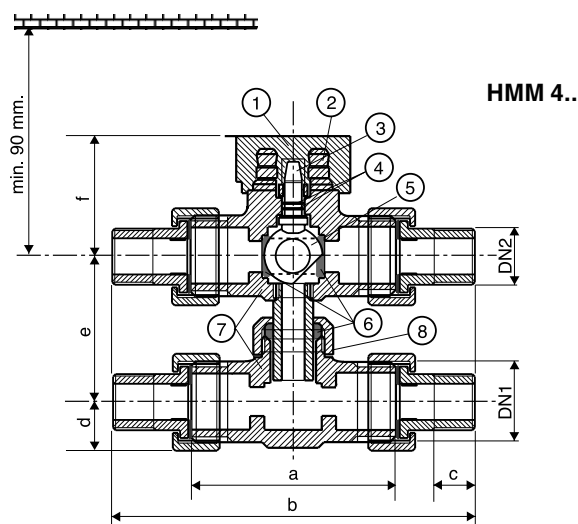
## 3. TYPICAL APPLICATION DIAGRAM



## 4. TECHNICAL DATA

Valve body	OT58 brass	Connections	male threaded with unions
Spindle	stainless steel	Nominal pressure	1000 kPa (10 bar)
Ball	hard chromed OT58 brass	Fluid temperature	5...120 °C
Seals:		Run	90 °
• – ball and nut	PTFE (teflon)		
• – spindle	viton O-Ring		

## 5. OVERALL DIMENSIONS



- 1 – Knob  
 2 – Actuator coupling  
 3 – Spindle  
 4 – Spindle O-Ring seals  
 5 – Ball  
 6 – PTFE (teflon) seals  
 7 – Valve body  
 8 – Securing nut

Code	DN 1 inches	DN 2 inches	a mm	b mm	c mm	d mm	e mm	f mm
HMM 410	1/2"	3/8"	51	103	9	14	min. 48 max. 58	36
HMM 415	3/4"	1/2"	51	106	10	16.5	48 58	36
HMM 420	1"	3/4"	51	112	12	20	65 75	41
HMM 425	1 1/4"	1"	63	133	13	25.5	82 92	47

## 6. CONSTRUCTION

The valve body (5.7) is made in OT58 brass, the spindle (5.3) is in stainless steel and the ball (5.5) is in hard chromed OT58 brass. The ball is enclosed by two seals (5.6) in PTFE (teflon) which ensure the total absence of let-by, while the spindle seal is ensured by two viton O-Rings (5.4).  
 At the head of the valve a knob (5.1) allows the manual movement of the ball.

## 7. MOUNTING

### 7.1 Mounting of the valve

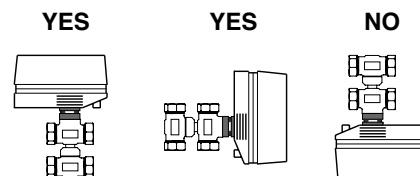
Before mounting the valve make sure that there isn't any extraneous matter in the pipework (remains of welding or threading). The pipework must not be subject to vibrations and must be perfectly aligned with the valve unions in order to avoid dangerous strains.

Adjust the centre to centre distance of the valve according to requirements, bearing in mind that the minimum and maximum permitted distance depends on the diameter of the valve (see column "e" of the table in section 5).

At the end of the operation tight the check nut up (5.8).

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 5).



### 7.2 Installing the actuator on the valve

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

CDR actuator: set the valve in the closed position manually. 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").

## 8. OPERATION

The valve operates with a 90° rotary movement.

The throughport is full bore with high flow coefficient, the by pass has narrow cross section with reduced flow coefficient.

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

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

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