

Description

Flow controller with integrated control valve – combi-valve, is primarily designed to control the flow of circulation water in district heating systems. The flow controller is operated by electric actuator LV.. (manufactured by Belimo) and is controlled by microprocessor controller.

The limitation and flow regulation is realized by means of the pressure actuator with a diaphragm and integrated control valve. Control valve cone is controlled by the electric actuator and limited by the adjustable nut. Changing the position of the adjustable nut increases or decreases maximum flow across the valve.

The pressure actuator with a diaphragm is connected to the valve entry. Pressure difference acts through the impulse tube on the control diaphragm and flow controller cone. Each pressure change on the valve entry, causes the movement of the control diaphragm and flow controller cone and causes increase or decrease of the valve orifice. Differential pressure across the valve is kept constant, $\Delta p_{cv} = 0,2 \text{ bar}$.

The minimal required differential pressure across the combi-valve:

$$\Delta p_{vmin} = \Delta p_{cv} + (Q/K_{vs})^2$$

To ensure correct control function, required differential pressure across the valve must be:

$$\Delta p_v > \Delta p_{vmin}$$

Q – fluid flow

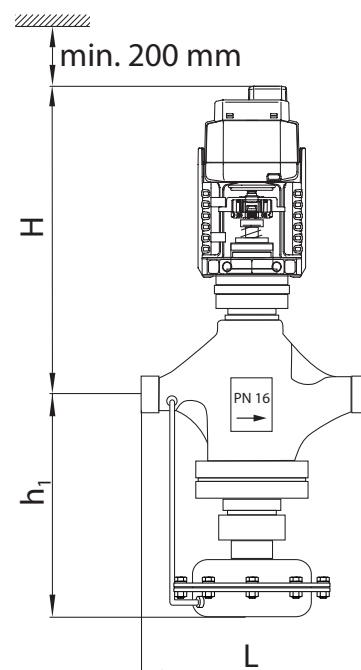


Types

KVN (PN 16)			
DN	Kvs (m³/h)	Lift (mm)	Type
15	1,6	10	KVN 015/1,6
15	2,5	10	KVN 015/2,5
15	4	10	KVN 015/4
20	6,3	12	KVN 020/6,3

Dimensions

DN	15	20
L (mm)	125	150
h1 (mm)	170	175
H (mm)	245	250
Connection	G1 "	G5/4 "



Technical data

Valve

Nominal diameter:	DN	15	15	15	20
Kvs value:	m ³ /h	1,6	2,5	4,0	6,3
Min flow rate:	m ³ /h	0,10	0,25	0,4	0,6
Max flow rate:	m ³ /h	0,8	1,3	2,0	3,0
Cavitation factor Z:		0,6			
Nominal pressure:	PN (bar)	16			
Medium:		Circulation water			
Max medium temperature:	(°C)	130 *			
Valve connection:		Cylindrical external thread, ISO 228			
Approx valve weight:	(kg)	6			
Valve body material:		EN-GJL-250			
Gasket:		FPM (ISO1629)			
Cones, spindle, seat material:		WN1.4057, WN1.4404, WN1.4021			

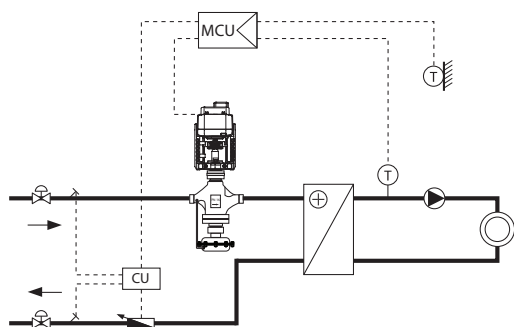
* short-term overdraft of fluid temperature can be at 140°C

Mechanical regulator

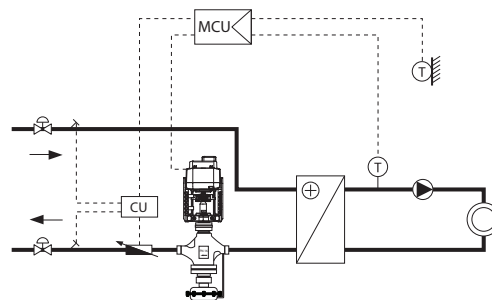
Nominal diameter :	DN	15	20
Effective surface:	(cm ²)	80	
Max. pressure difference:	(bar)	10	
Differential pressure:	(bar)	0,2	
Diaphragm material:		EPDM	
Impulse tube:		Ø6, WN1.4301	

Installation

The controller can be installed in the flow or return of the system.



Flow mounting in indirectly connected heating system



Return mounting in indirectly connected heating system



Before disposal the product must be dismantled into groups of structural components and delivered to authorized waste recycling organizations in order to preserve the environment. Local legislations must be obeyed when disposing of the components.

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Quality management, environmental management and occupational health and safety management system are conducted in accordance with the requirements of the international standards

ISO 9001:2015

ISO 14001:2015

OHSAS 18001:2007

