



The Oventrop Quality Management System is certified to DIN-EN-ISO 9001

## Underfloor heating regulating set

### Tender specification:

Oventrop underfloor heating regulating set for the control of the flow temperature of e.g. combined radiator/underfloor heating systems. The underfloor heating regulating set consists of a straight pattern valve, a bypass valve, a temperature controller with contact sensor and an electric sensor for attachment to pipe.

Floor surface	Item no.
up to 85 m <sup>2</sup>	114 42 51
up to 120 m <sup>2</sup>	114 42 52

### Installation:

The underfloor heating regulating set has to be installed according to the installation example. By adding hot water which is e.g. taken from the radiator circuit, the flow temperature of the underfloor heating circuit is maintained constant within the necessary proportional band. Any change in the flow temperature is registered by the contact sensor of the temperature controller and is transmitted to the valve. In case of a failure, the electric sensor for attachment to pipe shuts off the pump.

### Regulation:

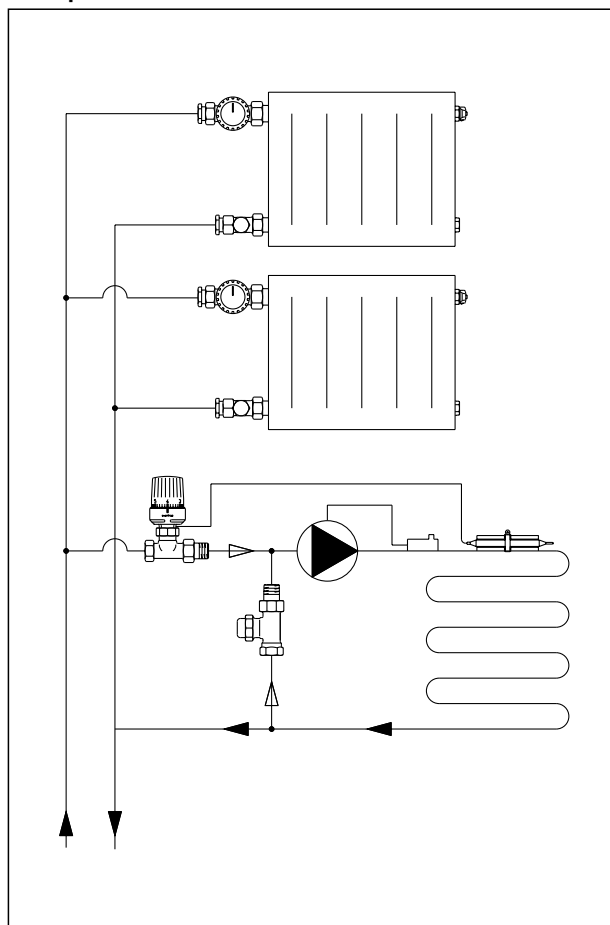
The regulation is carried out with the bypass valve opened. The desired flow temperature is set at the temperature controller. Should the flow temperature not reach the desired value, the bypass valve has to be closed step by step until the set value is reached. The electric sensor for attachment to pipe has to be set at a value exceeding the nominal value of the temperature controller by approx. 5 K.

### Components:

Set 1 up to 85 m <sup>2</sup>		Item no.
Straight pattern valve DN 15		118 01 04
Bypass valve DN 20		102 76 66
Temperature controller with contact sensor control range 20 - 50 °C		
2 m capillary		114 28 61
Electric sensor for attachment to pipe with hidden temperature setting control range 20 - 90 °C		114 30 00
Set 2 up to 120 m <sup>2</sup>		
Straight pattern valve DN 20		118 01 06
Bypass valve DN 25		102 76 68
Temperature controller with contact sensor control range 20 - 50 °C		
2 m capillary		114 28 61
Electric sensor for attachment to pipe with hidden temperature setting control range 20 - 90 °C		114 30 00

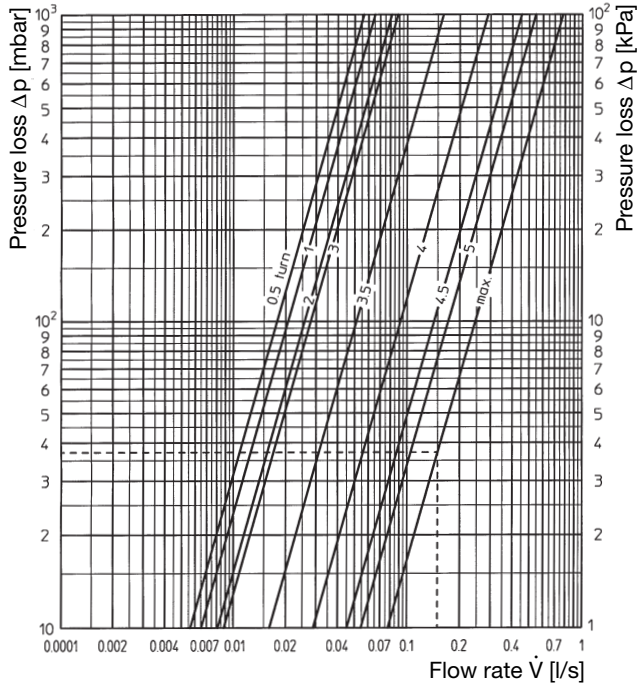


### Example of installation:

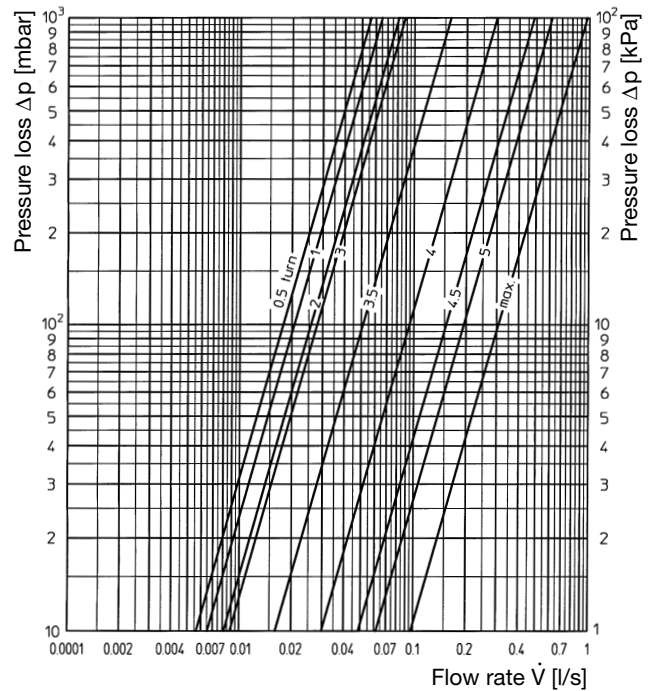


**Performance data:**

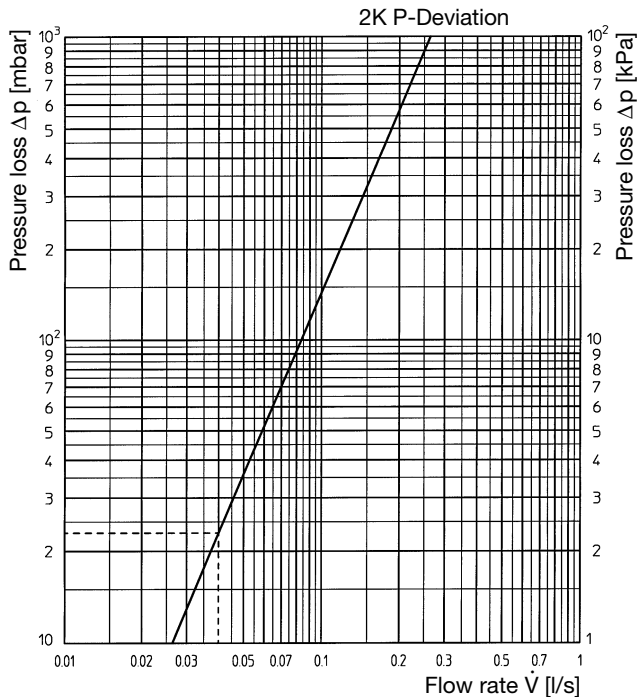
Bypass valve DN 20  
Item no. 102 76 66



Bypass valve DN 25  
Item no. 102 76 68



Straight pattern valves DN 15 and DN 20  
Item nos. 118 01 04 and 118 01 06



**Example:**

Given:

Floor surface	A = 70 m <sup>2</sup>
Heat demand including floor losses	P = 5,025 W
Flow temperature of heating circuit	t <sub>v</sub> = 70 °C
Temperature difference of the heating system	Δt <sub>1</sub> = 30 K (70/40 °C)
of the underfloor circuit	Δt <sub>2</sub> = 8 K (48/40 °C)

Solution:

Underfloor heating regulating set 1 is chosen as the floor area is < 85 m<sup>2</sup>.

Pressure loss straight pattern valve:

$$\text{Flow rate } \dot{V} = c \cdot \frac{P}{\Delta t_1} = \frac{0.86}{3,600} \cdot \frac{5,025}{30} \text{ l/s} = 0.04 \text{ l/s}$$

Pressure loss Δp = 2.3 kPa (taken from chart, dotted lines)

Pressure loss bypass valve:

$$\text{Flow rate } \dot{V} = c \cdot \frac{P}{\Delta t_2} = \frac{0.86}{3,600} \cdot \frac{5,025}{8} \text{ l/s} = 0.15 \text{ l/s}$$

Pressure loss Δp = 3.7 kPa (taken from chart, dotted lines), bypass valve completely open.

Subject to technical modification without notice.

Product range 2  
ti 106-1/20/10.2001/MW

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