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

Tender specification:

Oventrop temperature controller working without auxiliary energy.
Available with immersion sensor or contact sensor.
For use with two- and three-way valves.
Overheating reliability: 30 K above set value.
Higher values are obtained by turning the handwheel to higher figures.
The control range may be limited and locked.

Connection thread M 30 x 1.5

Temperature controller
with immersion sensor
Immersion pocket thread ½"

Control range	Capillary length	Item no.
20 - 50 °C	2 m	114 05 61
40 - 70 °C	2 m	114 05 62
50 - 80 °C	2 m	114 05 63
70 - 100 °C	2 m	114 05 64
20 - 50 °C	5 m	114 05 71
40 - 70 °C	5 m	114 05 72
70 - 100 °C	5 m	114 05 74

Temperature controller with contact sensor and heat transfer unit

Control range	Capillary length	Item no.
20 - 50 °C	2 m	114 28 61
30 - 60 °C	2 m	114 28 62
40 - 70 °C	2 m	114 28 63
50 - 80 °C	2 m	114 28 64

Scale: Temperature allocation

Control range	Handwheel scale 1	2	3	4	5	6	7
20-50°C	approx. 20	approx. 25	approx. 30	approx. 35	approx. 40	approx. 45	approx. 50°C
30-60°C	approx. 30	approx. 35	approx. 40	approx. 45	approx. 50	approx. 55	approx. 60°C
40-70°C	approx. 40	approx. 45	approx. 50	approx. 55	approx. 60	approx. 65	approx. 70°C
50-80°C	approx. 50	approx. 55	approx. 60	approx. 65	approx. 70	approx. 75	approx. 80°C
70-100°C	approx. 70	approx. 75	approx. 80	approx. 85	approx. 90	approx. 95	approx. 100°C

Application:

Temperature control for industrial installations, boilers, counterflow appliances, air heaters, dish washers, oil pre-heaters, air driers, water mixers, condensers, surface heating systems etc.

The temperature range amounts to 30 K, marking on the handwheel: Figure “1” to “7”, modification of the set value from figure to figure: 5 K.

Mode of operation when used with straight and angle pattern radiator valves, ⅜"-1¼", item nos. 118 .. ..:

With the temperature rising at the sensor, the valve is closed and with the temperature falling, the valve is opened.

Mode of operation when used with three-way diverting valves ”Tri-D”, item nos. 113 .. ..:

With the temperature rising at the sensor, the straight port is closed and the angle port is opened and vice versa.

The angle port is only closed if the nominal value is set at least 10 K above the lower value of the control range (i.e. setting between “3” and “7”).

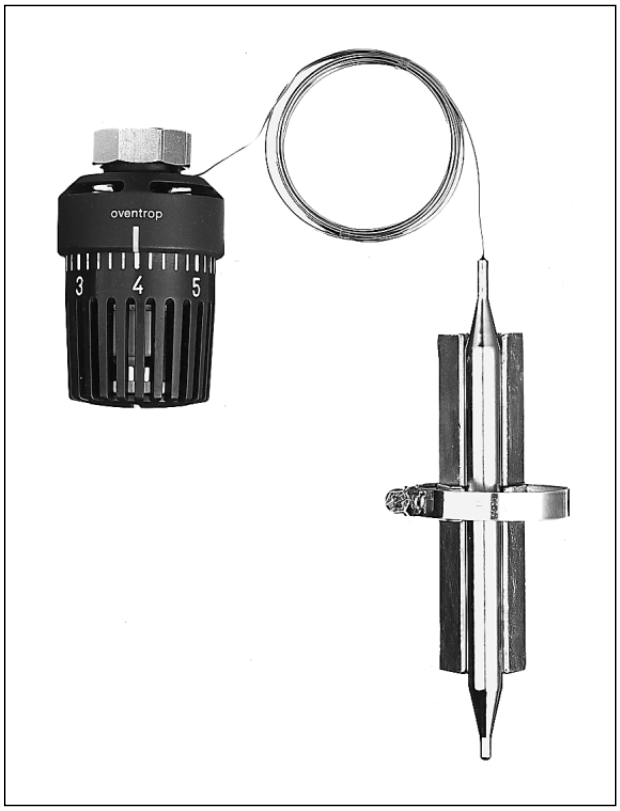
Mode of operation when used with three-way mixing valves ”Tri-M”, item nos. 113 .. ..:

With the temperature rising at the sensor, the straight port is opened and the angle port is closed and vice versa.

The straight port is only closed if the nominal value is set at least 10 K above the lower value of the control range (i.e. setting between “3” and “7”).

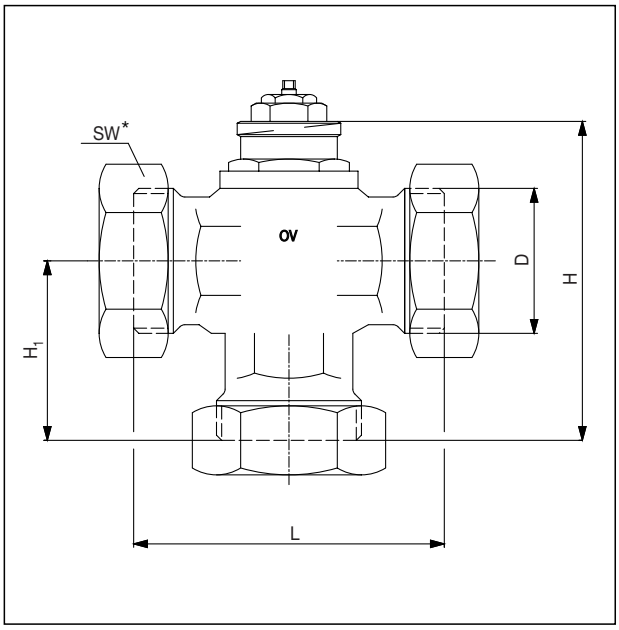
Advantages:

- exact control of set temperature
- constant temperature control
- high control range
- high overheating reliability
- simple installation and operation
- reliable functioning
- maintenance-free
- solid design
- varied applications



Temperature controller with contact sensor and heat transfer unit

Temperature controller with immersion sensor



Oventrop three-way mixing and diverting valves

DN	D ISO 228	L	H	H_1	SW*	Item no.
20	G 1	80	88	47	37	113 17 06
25	G 1¼	90	91	50	46	113 17 08
40	G 2	115	106	64	68	113 17 12

Three-way mixing valve "Tri-M"

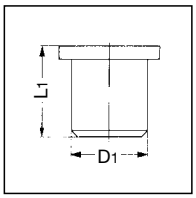
DN	D ISO 228	L	H	H_1	SW	Item no.
20	G 1	80	88	47	37	113 02 06
25	G 1¼	90	91	50	46	113 02 08
40	G 2	115	106	64	68	113 02 12

Three-way diverting valve "Tri-D"

* SW = spanner size

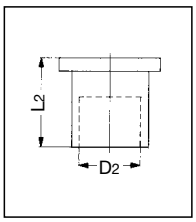
Accessories sets:

One set includes three tailpipes.



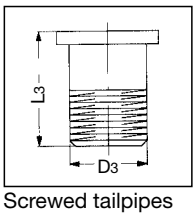
Weldable tailpipes

DN	D_1	L_1	Item no.
20	26	50	113 00 93
25	33	60	113 00 94
40	48.5	65	113 00 96



Solder tailpipes

DN	D_2	L_2	Item no.
20	15	20	113 01 92
20	18	23	113 01 93
20	22	24	113 01 94
25	28	27	113 01 95
40	35	40	113 01 96
40	42	32	113 01 97



Screwed tailpipes

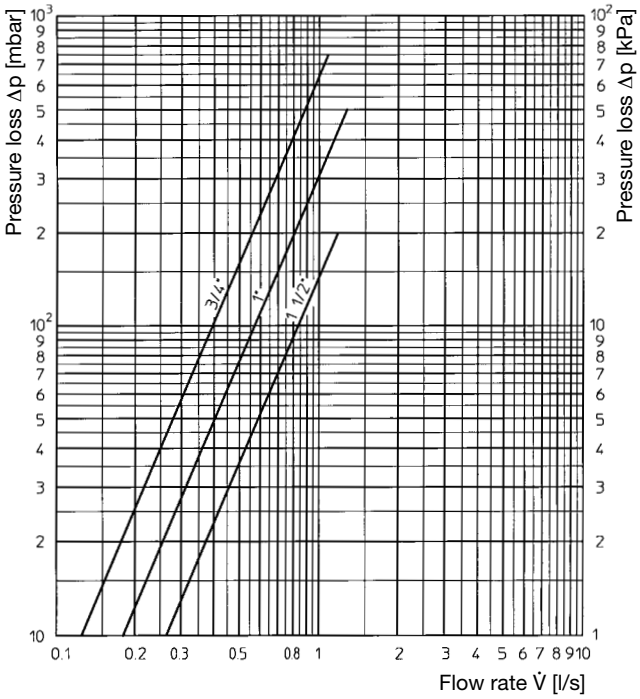
DN	D_3 EN 10226	L_3	Item no.
20	R ½	32	113 02 92
20	R ¾	34	113 02 93
25	R 1	40	113 02 94
40	R 1¼	40	113 02 95
40	R 1½	40	113 02 96

Performance data:

Flow chart 1

Temperature controller with three-way mixing and -diverting valves, item nos. 113 .. ..

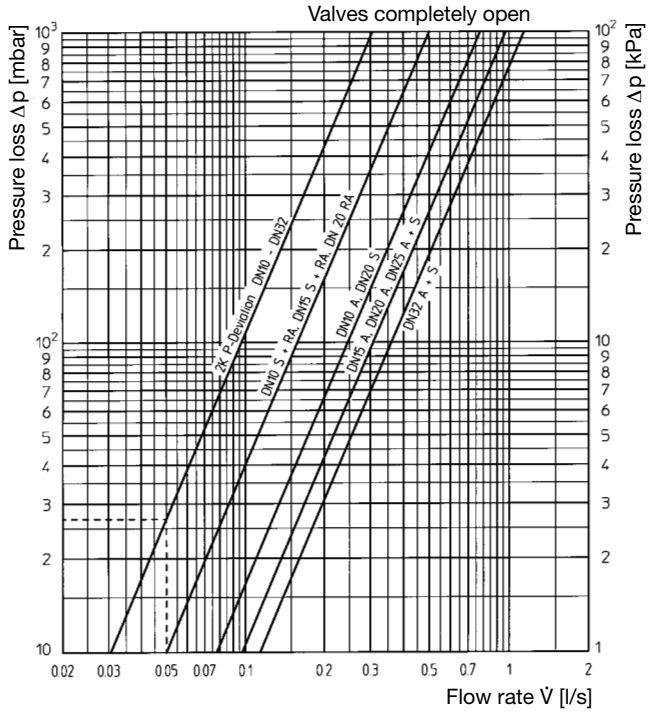
The total flow rate of the valves is indicated.



Permissible pressure difference: ¾" ≙ 750 mbar, 1" ≙ 500 mbar, 1½" ≙ 200 mbar (in final position of valve disc, i.e. tight closing).

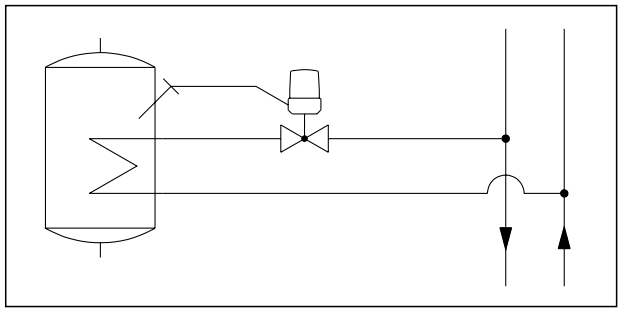
Flow chart 2

Temperature controller with valves, series AZ, angle and straight pattern ⅜"-1¼", item nos. 118 .. ..

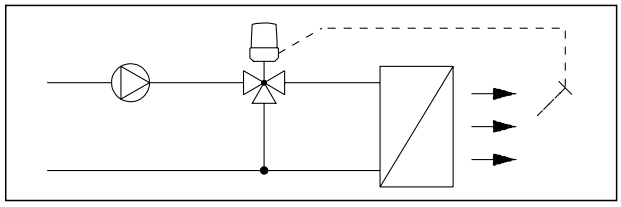


Permissible pressure difference: max. 1 bar
(tight closing of the valve)

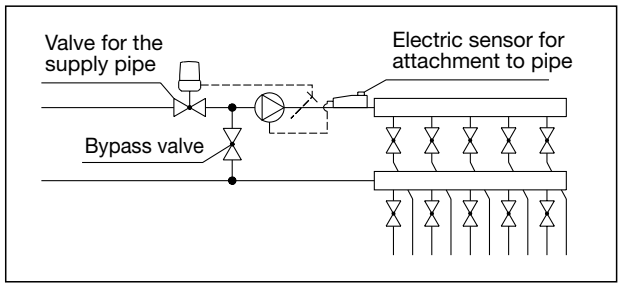
Examples of application:



Heating of domestic water with storage cylinder



Temperature regulation in air heaters



Flow temperature limiting

Installation as flow temperature limiter in combined radiator/ and surface heating systems. The installation is carried out according to the above drawing. The valve for the supply pipe and the bypass valve have to be phased.

Installation:

The Oventrop temperature controllers are directly screwed on the valve body. The immersion pocket has to be installed at the designed location. Afterwards, the sensor is introduced and fixed with the screw. As far as the model with contact sensor and heat transfer unit is concerned, the hose clamp supplied with the temperature controller is positioned around the pipe and the former is tightened after having introduced the heat transfer unit with the sensor.

Regulation:

The regulation is carried out with the bypass valve opened. The required flow temperature is set at the temperature controller. If the flow temperature does not reach the required 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 being about 5K above the nominal value of the temperature controller.

Presetting of the bypass valves:

First, the valve is closed by use of an Allen key and is reopened according to the presetting. The presetting corresponds to the number of turns in opening position.

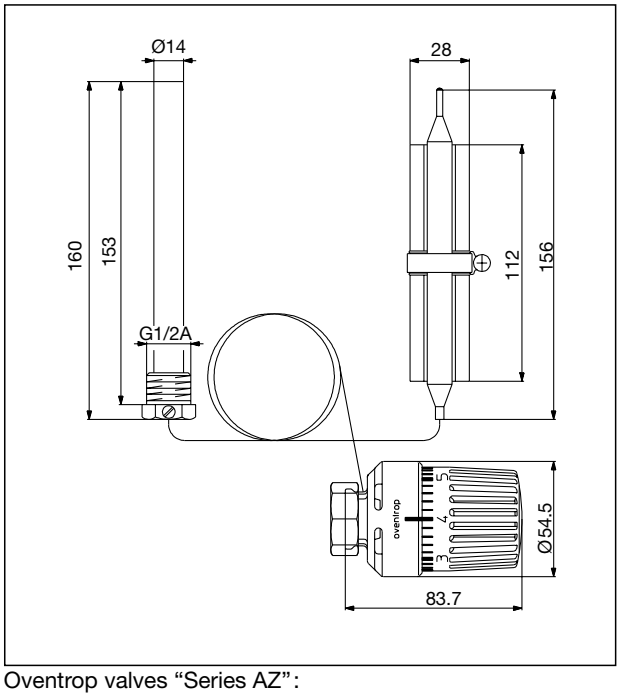
Bypass valves:

Size	Item no.
DN 15 ½"	102 76 64
DN 20 ¾"	102 76 66
DN 25 1"	102 76 68

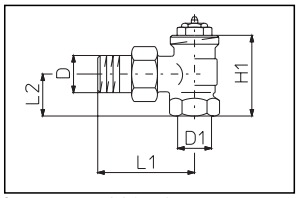
Dimensions:

Oventrop temperature controllers

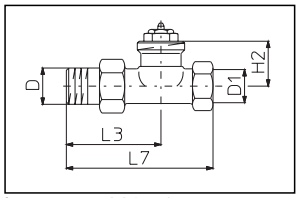
with immersion sensor with contact sensor



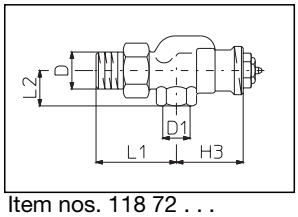
Oventrop valves “Series AZ”:



Item nos. 118 70 . . .



Item nos. 118 71 . . .



Item nos. 118 72 . . .

DN	D EN 10226	D_1 EN 10226	H_1	L_1	L_2	k_{vs}	Item no.
10	R ⅜	Rp ⅜	47.5	52	22	2.8	118 70 03
15	R ½	Rp ½	50	58	26	3.5	118 70 04
20	R ¾	Rp ¾	53	66	29	3.5	118 70 06
25	R 1	Rp 1	61	75	34	3.5	118 70 08
32	R 1¼	Rp 1¼	53	66	29	4.1	118 70 10

DN	D EN 10226	D_1 EN 10226	H_2	L_3	L_4	k_{vs}	Item no.
10	R ⅜	Rp ⅜	28.5	52	85	1.8	118 71 03
15	R ½	Rp ½	28.5	59	95	1.8	118 71 04
20	R ¾	Rp ¾	28.5	63	106	2.8	118 71 06
25	R 1	Rp 1	28.5	80	125	3.5	118 71 08
32	R 1¼	Rp 1¼	33.5	90	150	4.1	118 71 10

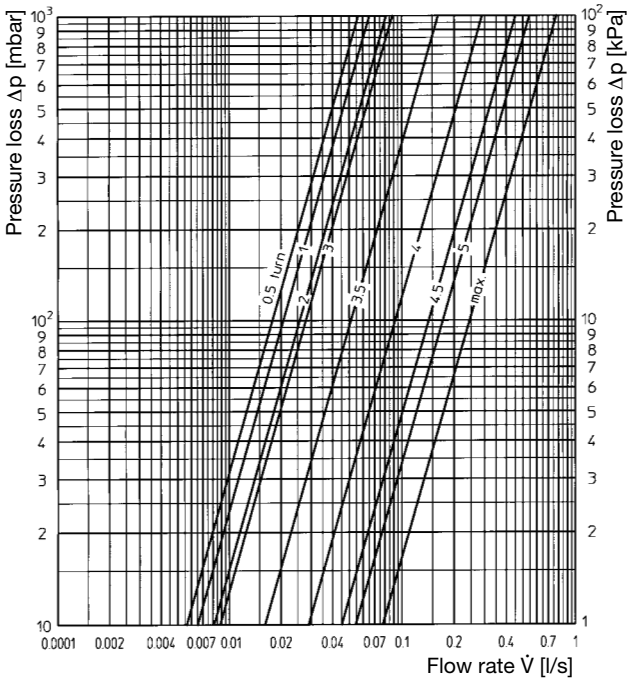
DN	D EN 10226	D_1 EN 10226	H_3	L_1	L_2	k_{vs}	Item no.
10	R ⅜	Rp ⅜	41.5	52	22	1.8	118 72 03
15	R ½	Rp ½	40	58	26	1.8	118 72 04
20	R ¾	Rp ¾	37	66	29	1.8	118 72 06

Performance data:

Flow chart 3

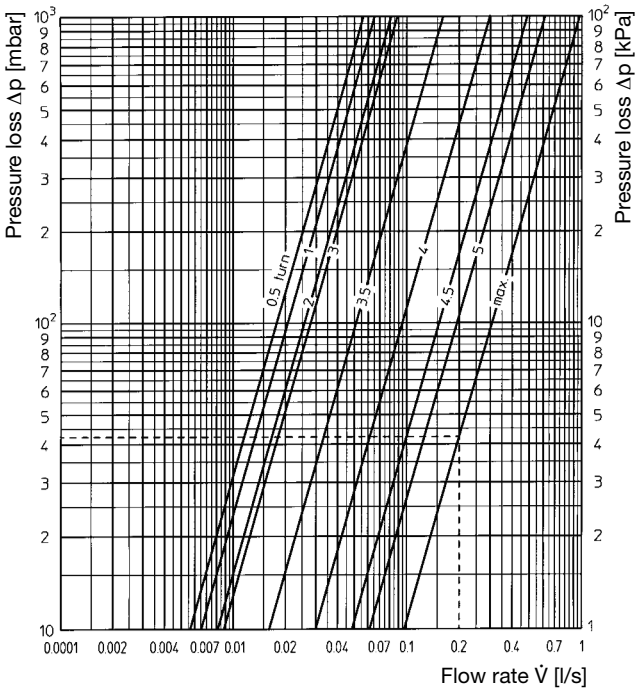
Bypass valves DN 15, DN 20

Item nos. 102 76 64, 102 76 66



Bypass valve DN 25

Item no. 102 76 68



Example:

Given:

Floor surface	A = 97 m²
Heat demand including floor losses	P = 6,800 W
Flow temperature of surface heating circuits	46 °C
Return temperature of surface heating circuits	38 °C
Flow temperature heating circuit	t_V = 70 °C
Temperature difference	Δt1 = 32K (70/38 °C)
of the surface heating circuit	Δt2 = 8 K (46/38 °C)

Solution:
Pressure loss of straight pattern valve:

$$\text{Flow rate } \dot{V} = c \cdot \frac{P}{\Delta t_1} = \frac{0.86}{3{,}600} \cdot \frac{6{,}800}{32} \text{ l/s} = 0.05 \text{ l/s}$$

Pressure loss Δp = 2.7 kPa (taken from chart 2, dotted lines), with 2 K P-deviation.

Pressure loss of bypass valve:

$$\text{Flow rate } \dot{V} = c \cdot \frac{P}{\Delta t_2} = \frac{0.86}{3{,}600} \cdot \frac{6{,}800}{8} \text{ l/s} = 0.2 \text{ l/s}$$

Pressure loss Δp = 4.2 kPa (taken from chart 3, dotted lines), bypass valve completely opened.

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