

T 2186 EN

Type 43-2 N Temperature Regulator

Series 43 Self-operated Temperature Regulators



Application

Temperature regulators for plants to be heated · Especially suitable for local heat supply and large heating networks
The valve closes as the temperature increases · Temperature set points from **0** to **100 °C** · Nominal size **DN 15**
Nominal pressure **PN 16** · Suitable for treated water up to **120 °C**

Special features

- Low-maintenance proportional regulators requiring no auxiliary energy
- Suitable for water
- Particularly suitable for local heat supply and large heating networks
- Single-seated valve with soft-seated unbalanced plug
- Tested according to DIN EN 14597

Versions

The regulators consist of a valve and a control thermostat with set point adjuster, a capillary tube and temperature sensor operating according to the adsorption principle.

Type 43-2 N · Temperature regulator with Type 2432 N Valve made of bronze · Nominal size DN 15 with connecting thread according to ISO 228/1-G 3/4 B on both sides for attachment of welding ends or G 1/2 threaded ends · Type 2430 K Control Thermostat

Special version

With fast-response thermostat according to the vapor pressure principle · Set point range +45 to 65 °C · 5 m capillary tube
Small K_{VS} coefficient · Oil-resistant internal parts

Accessories

- Threaded ends G 1/2 · Welding ends
- Thermowells
Copper or CrNiMo steel (1.4571), PN 40, G 1/2



Fig. 1: Type 43-2 N Temperature Regulator · Version with welding ends

Principle of operation

The temperature of the medium creates a pressure in the temperature sensor which is proportional to the measured temperature. This pressure is transferred through the capillary tube (10) to the operating element (8) and converted into a positioning force. Depending on the set point adjustment, the positioning force acts on the valve plug (3) over the pin of the operating element (9) and the plug stem (4).

By turning the set point adjuster (7), the point of response is changed in such a way that allows the valve plug to pass through its travel in a temperature range measured by the sensor.

Special version

Vapor pressure thermostat with short time constant of approx. 3 s.

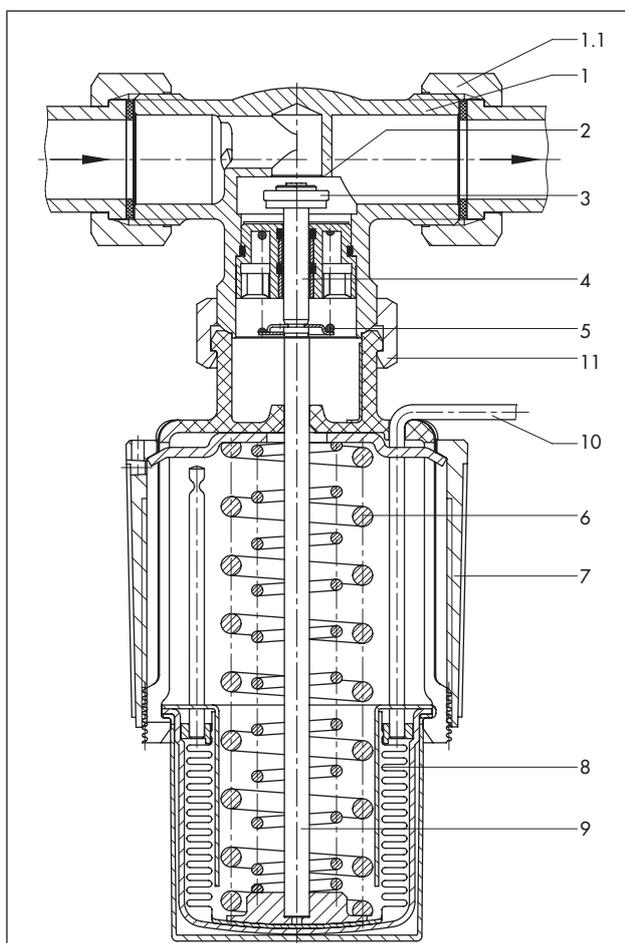
The temperature sensor is filled with a liquid which evaporates depending on the temperature. As a result, a pressure in proportion to the temperature is created in the sensor. This pressure is transmitted to the operating bellows through the capillary tube and converted into a positioning force. This force moves the valve plug according to the set point adjustment.

Table 1: Technical data · All pressures (gauge)

Type 2432 N Valve	
Nominal size	DN 15
Connection	ISO 228/1- G ¾ B
Type of connection	Threaded ends G ½ · Welding ends
K_{VS} coefficient	2.5
Nominal pressure	PN 16
Max. perm. differential pressure Δp	6 bar
Max. permissible temperature	120 °C
Type 2430 K Control Thermostat	
Set point range	Continuously adjustable 0 to 35 °C, 25 to 70 °C, and 40 to 100 °C
Capillary tube	2 m (5 m as special version)
Sensor connection	G ½ screw gland
Permissible ambient temperature range	-20 to +80 °C

Table 2: Materials · Material numbers according to DIN EN

Valve body	CW602N
Plug	1.4301 and CW617N with EPDM seal
Plug stem	1.4305
Seat	CW602N
Valve spring	1.4310 K
Thermostat	
Sensor, capillary tube	Copper
Set point adjuster	PTFE, glass fiber reinforced
Accessories	
Welding ends	S235JR (St 37-2)
Threaded ends	Brass
Thermowell	Copper or stainless steel 1.4571



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|-----|--|----|--|
| 1 | Valve body | 7 | Set point adjuster |
| 1.1 | Screw joint on both sides with flat gasket (accessories) | 8 | Operating element |
| 2 | Seat | 9 | Pin of operating element |
| 3 | Plug | 10 | Capillary tube with temperature sensor |
| 4 | Plug stem | 11 | Coupling nut (connection valve/control thermostat) |
| 5 | Valve spring | | |
| 6 | Set point springs | | |

Fig. 2: Functional diagram

Flow rate diagram for water

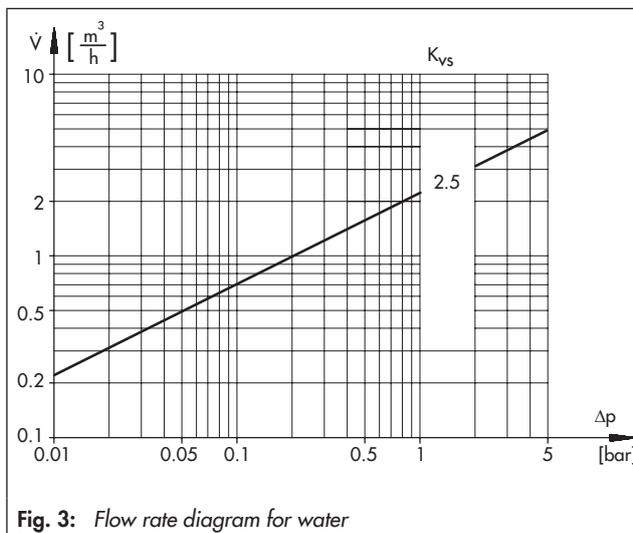
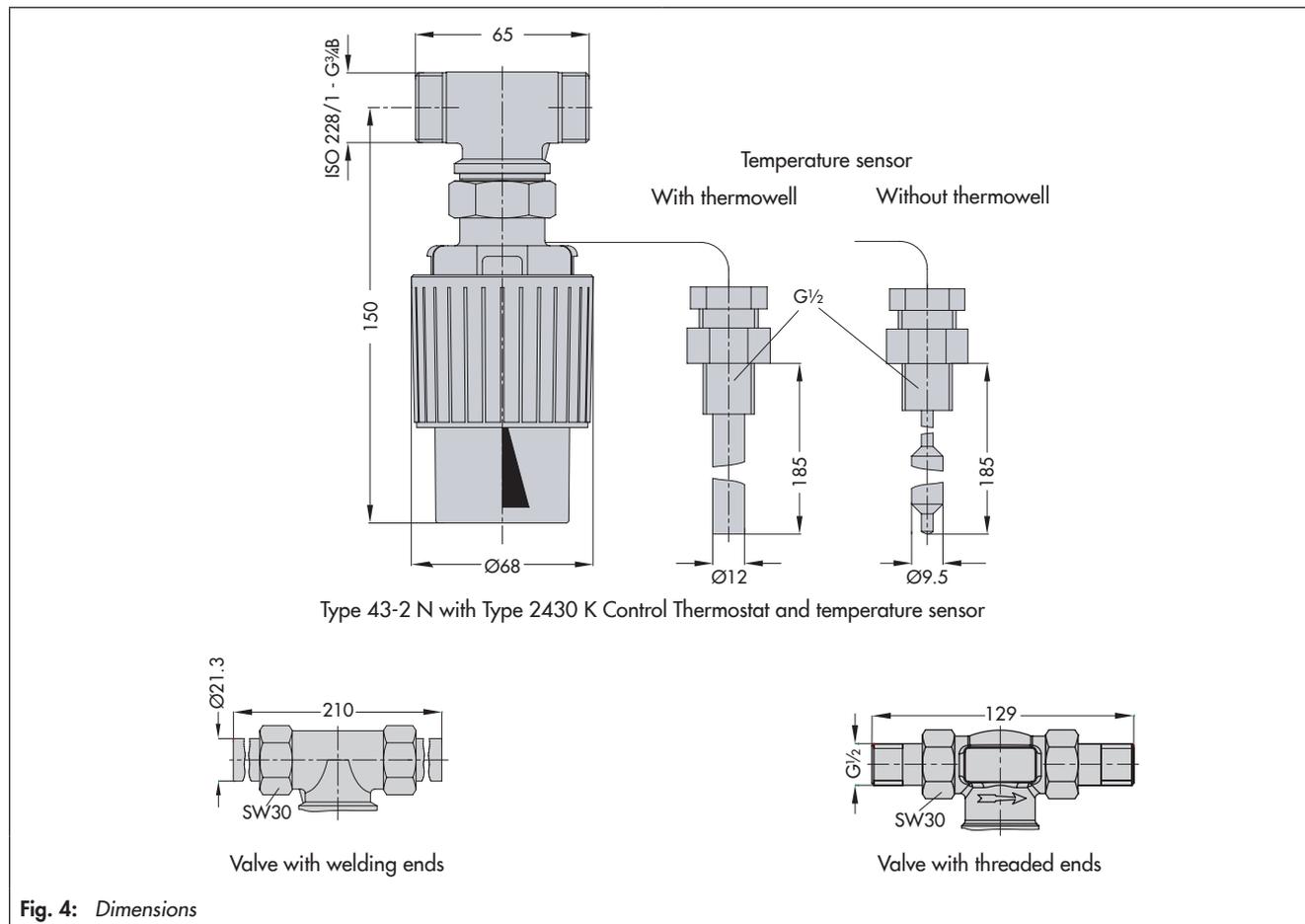


Fig. 3: Flow rate diagram for water

Dimensions



Installation

Valve

- Any mounting position is possible. However, preferably with the thermostat suspended downward.
- The direction of flow must match the direction indicated by the arrow on the body.

Capillary tube

- Make sure that the ambient temperature does not fall below or exceed the permissible range.
- The capillary tube must be run in such a way that it cannot be damaged.
- The smallest permissible bending radius is 50 mm.

Temperature sensor

- Any mounting position is possible. Read the special installation instructions for the thermostats working according to the vapor pressure principle.
- It must be installed in a location where overheating or considerable idling times cannot occur.
- The entire sensor must be immersed in the process medium.

When using a thermowell, the following points must be observed:

- Only use SAMSON thermowells.
- Only the combination of the same kind of materials is permitted, e.g. a stainless steel heat exchanger with thermowells made of stainless steel 1.4571.

Ordering text**Type 43-2 N** Temperature Regulator

Standard version without accessories

Accessories:

- Connecting threads on both sides, with G ½ threaded ends
- Welding ends
- Thermowells made copper/CrNiMo steel