

# Self-operated Temperature Regulator

## Series 43



### Type 43-2 N

#### Application

Temperature regulators for plants which require heating · Especially suitable for local heat supply and large heating networks · Valve closes when temperature increases · Temperature set points from **0 to 100 °C** · Nominal size **DN 15** · Nominal pressure **PN 16** · For treated water **up to 120 °C**



#### Special features

- Self-operated P regulators which require little maintenance
- Process medium: water
- Especially suitable for local heat supply and large heating networks
- Single-seated valve, soft-sealed without balanced plug
- Typetested according to DIN 14597

#### Versions

The regulator consists of a valve and a control thermostat with set point adjuster, a capillary tube and a temperature sensor working according to the adsorption principle.

**Type 43-2N** · Temperature Regulator with Type 2432 N Valve · Nominal size DN 15 with connecting thread according to ISO 228/1 - G 3/4 B on both sides for attachment of threaded ends G 1/2, weld-on fittings or soldering ends · Type 2430 K Control Thermostat

#### Special version

With fast-responding thermostat according to the vapor pressure principle · Set point range +45 to 65 °C

#### Accessories

- Threaded ends G 1/2, weld-on fittings, soldering ends
- Thermowells  
Copper or CrNiMo steel (1.4571), PN 40, G 1/2

Versions according to **ANSI** on request

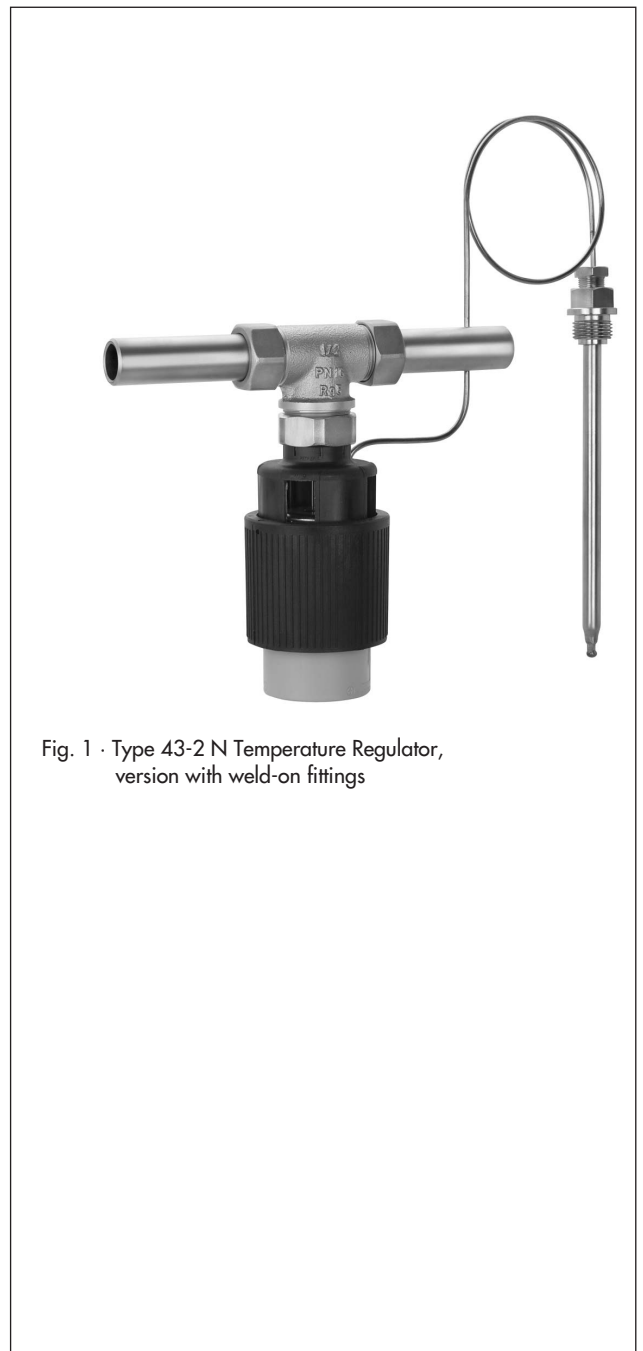


Fig. 1 · Type 43-2 N Temperature Regulator, version with weld-on fittings

### Principle of operation

The medium temperature creates a pressure according to the actual value in the measuring sensor (thermostat). This pressure is transmitted onto the operating element (8) through the connection line (10) and converted into a positioning force. Depending on the set point adjustment, the positioning force acts on the valve plug (3) via the operating element pin (9) and the plug stem (4).

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

### Special version

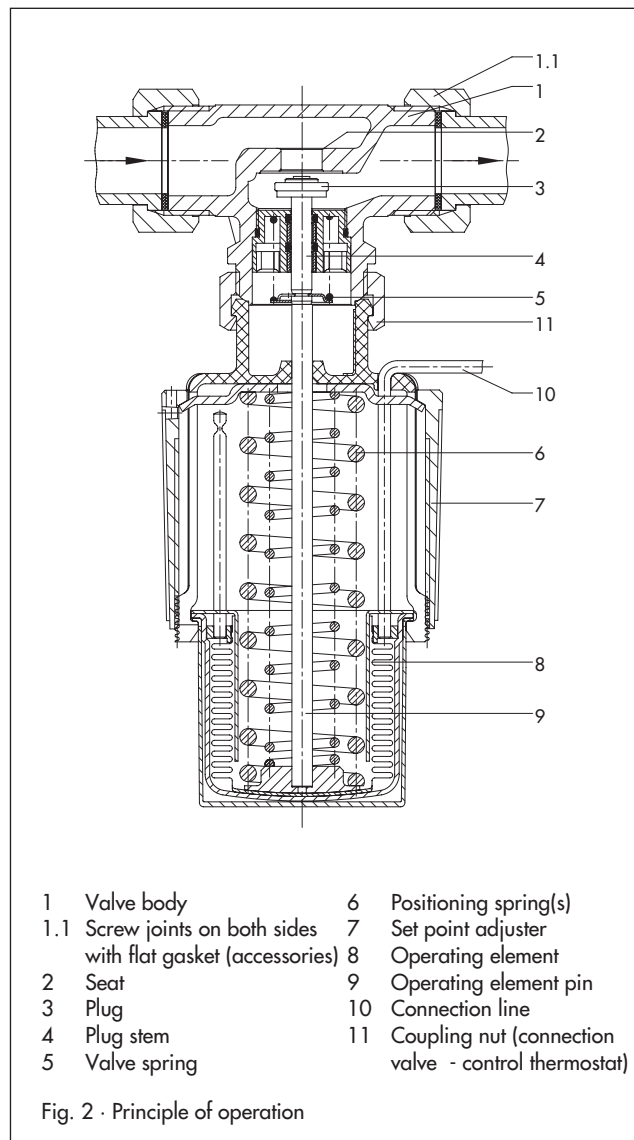
**Vapor pressure thermostat** with short time constant of approx. 3 s. The temperature sensor is filled with a liquid which evaporates depending on the temperature. As a result, a pressure in proportion to the temperature is created in the sensor. This pressure is transmitted onto the operating bellows through the connection line and converted into a positioning force. This force moves the valve plug according to the set point adjustment.

**Table 1 · Technical data** · All pressures as gauge pressure in bar

Type 2432 N Valve	
Nominal size	DN 15
Connection	ISO 228/1 - G 3/4 B
Type of connection	Threaded ends G 1/2 · Weld-on fittings · Soldering ends
K <sub>VS</sub> value	2.5
Nominal pressure	PN 16
Max. perm. diff. pressure Δp	6 bar
Max. perm. 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 (special version: 5 m)
Sensor connection	Stuffing box G 1/2
Max. permissible ambient temperature range	-20 to +80 °C

**Table 2 · Materials** · Material no. according to DIN EN

<b>Valve body</b>	CW602N
Plug	1.4301 and CW617N with EPDM sealing ring
Plug stem	1.4305
Seat	CW602N
Valve spring	1.4310 K
<b>Thermostat</b>	
Sensor, capillary tube	Copper
Set point adjuster	PETP, glass-fiber reinforced
<b>Accessories</b>	
Weld-on fittings	S235JR (St 37-2)
Threaded ends	Brass
Soldering ends	Red casting brass
Thermowell	Copper or stainless steel 1.4571



- |                                                                  |                                                            |
|------------------------------------------------------------------|------------------------------------------------------------|
| 1 Valve body                                                     | 6 Positioning spring(s)                                    |
| 1.1 Screw joints on both sides<br>with flat gasket (accessories) | 7 Set point adjuster                                       |
| 2 Seat                                                           | 8 Operating element                                        |
| 3 Plug                                                           | 9 Operating element pin                                    |
| 4 Plug stem                                                      | 10 Connection line                                         |
| 5 Valve spring                                                   | 11 Coupling nut (connection<br>valve - control thermostat) |

Fig. 2 · Principle of operation

### Flow diagram for water

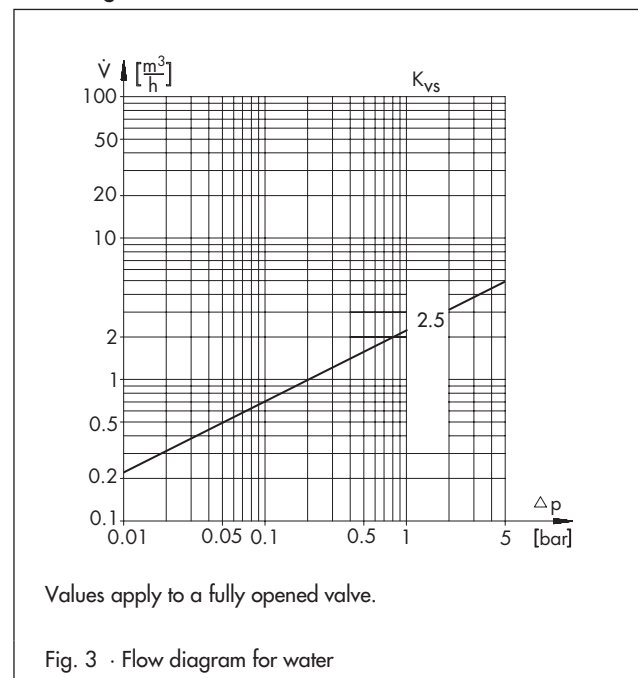
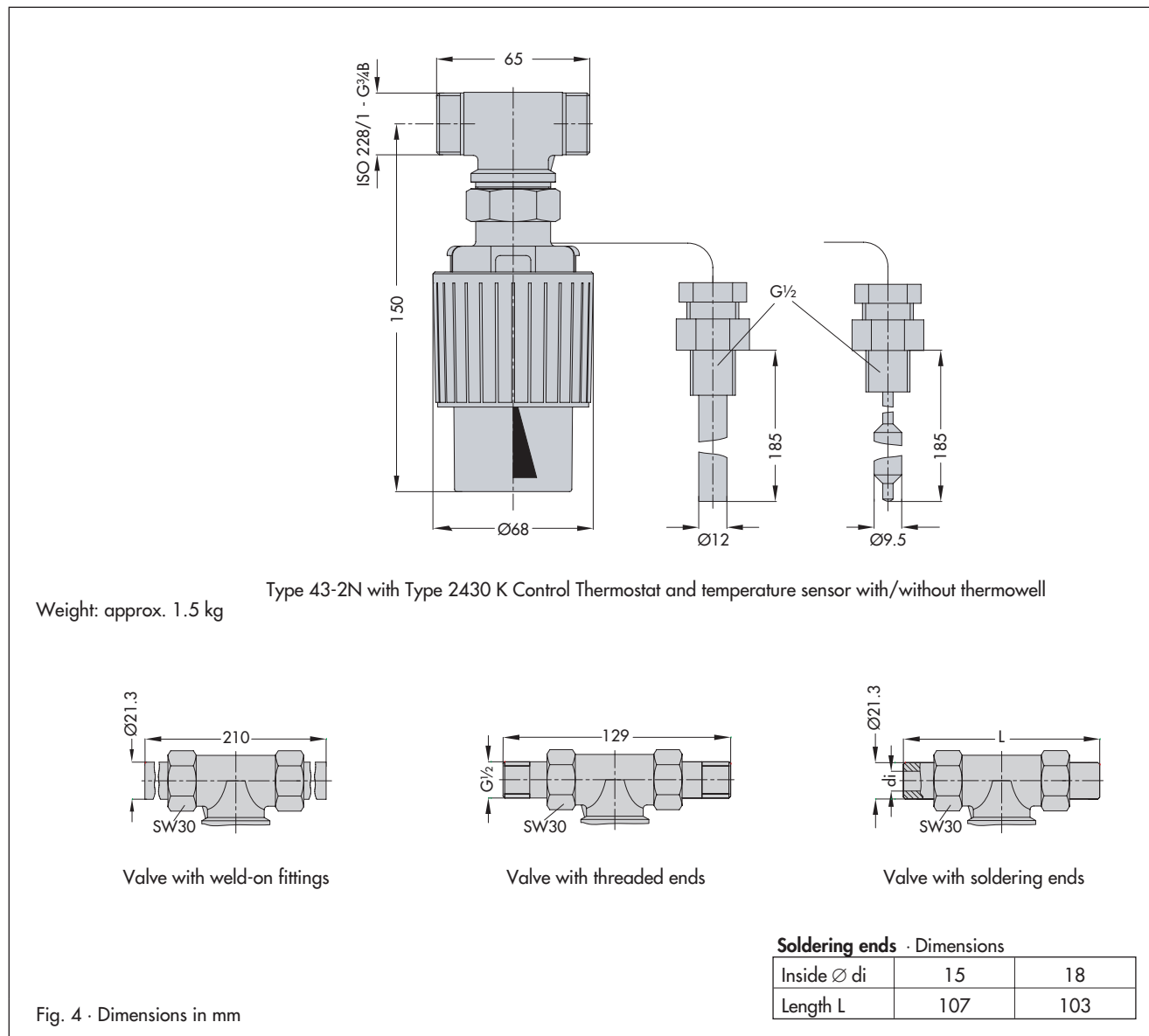


Fig. 3 · Flow diagram for water

## Dimensions



### Installation

#### Valves

- Any mounting position, preferably with the thermostat vertically suspended,
- Flow direction according to the arrow on the body.

#### Connection pipe

- Make sure the permissible ambient temperature range is not exceeded in the section near the connection pipe,
- Avoid mechanical damage,
- The smallest possible bending radius is 50 mm.

#### Temperature sensor

- Any mounting position. Note special mounting instructions for vapor pressure thermostats,
- Choose appropriate point of installation to avoid overheating and noticeable dead time,
- The sensor must immerse in the process medium with its full length.

#### Application with a thermowell:

- Only use SAMSON thermowells,
- Only combine materials of the same kind, e. g. heat exchangers of stainless steel in combination with thermowells of stainless steel 1.4571.

#### Ordering text

Type 43-2 N Temperature Regulator

Standard version without accessories

#### Accessories:

Screw joints on both sides with threaded ends G ½ / weld-on fittings / soldering ends (di = 15 or 18 mm)  
Thermowells of copper/CrNiMo steel

Specifications subject to change without notice.



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