

T 0500 EN

Type 5 D Boiler Controller Self-operated Regulators



Application

Flow temperature control in hot water boilers using solid fuels
Horizontal or vertical installation

The controllers are tested according to DIN EN 14597 for plants according to DIN EN 12828.

Version

The regulators operate according to the liquid expansion principle. Any temperature changes at the thermostat result in a proportional change in lever travel.

The lever causes the supply air damper at the boiler to close, reducing the energy supply.

The boiler controllers consist of a thermostat, set point adjustment knob, actuating lever and chain.

Principle of operation (Fig. 2)

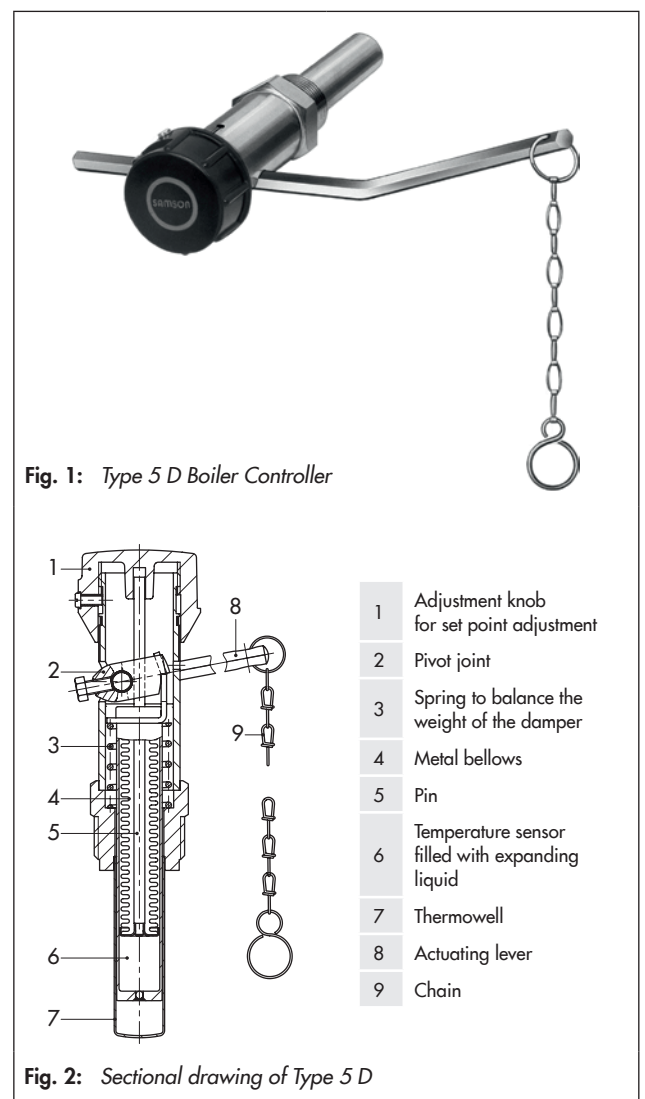
The thermowell contains the liquid-filled thermostat (6), which senses the water supply temperature in the boiler. A pin (5) fastened to the bottom of the metal bellows (4) projects out of the thermostat and is fixed inside the knob (1) used to adjust the temperature. The system consisting of the thermostat and the pin is pressed by the spring (3) against a bearing in the knob. This allows the set point to be adjusted.

The thermostat is connected to a pivot joint (2), to which the actuating lever (8) to control the damper position is fastened. The force of the spring (3) is calculated such that the weight of the control damper is balanced and does not cause a change in the boiler. The spring also acts as a safeguard against excess temperatures.

When the flow temperature rises, the liquid in the temperature sensor (6) expands and pushes the thermostat down since the pin (5) is fixed inside the knob (1). The pivot joint moves and turns the actuating lever axially. The chain (9) causes the damper to close accordingly. In this way, the energy supplied to the boiler is reduced and the boiler temperature falls.

If the flow temperature is reduced, the damper opens according to the set point adjustment.

The temperature set point is changed by turning the set point adjustment knob. This causes the thermostat and pin to move axially. For example, a higher temperature set point causes the damper to open until the adjusted set point is reached.



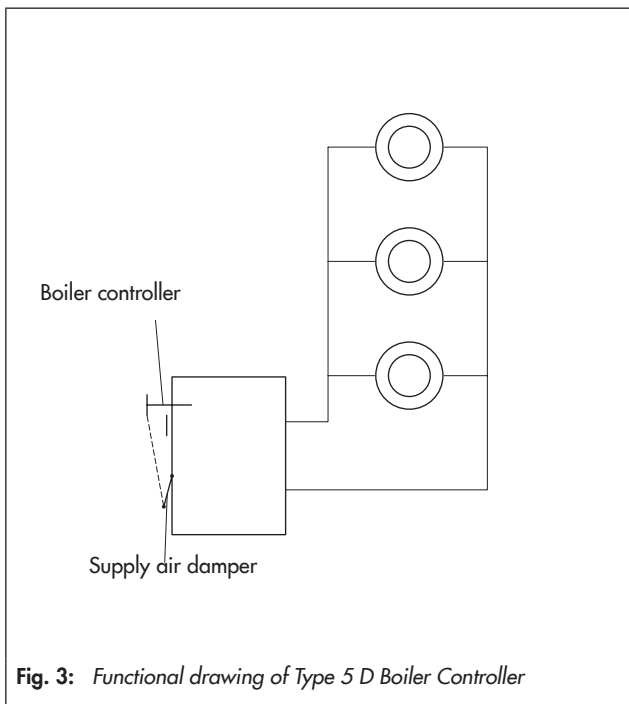


Fig. 3: Functional drawing of Type 5 D Boiler Controller

Table 1: Technical data · All pressure stated as gauge pressure

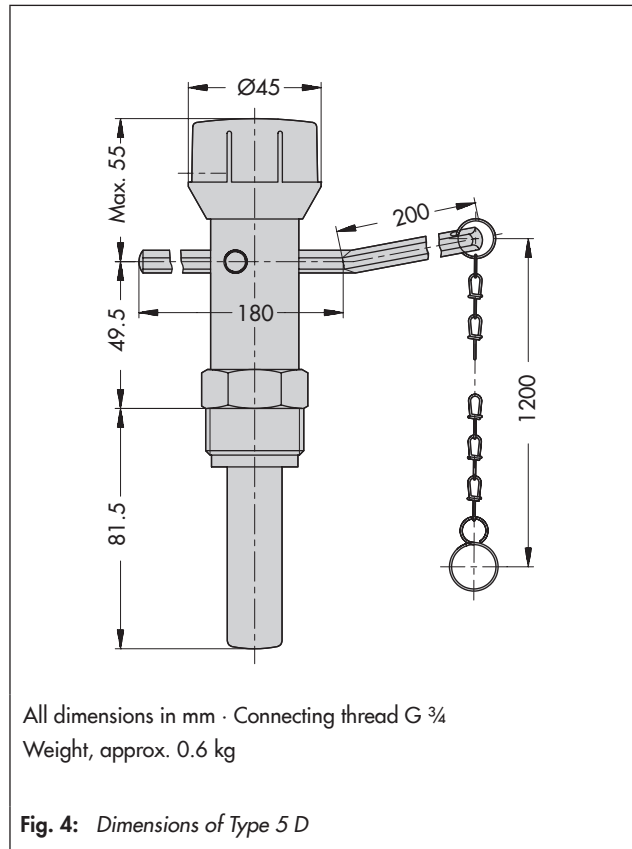
Type 5 D Boiler Controller	
Functioning principle according to DIN EN 14597	Type 1
Connecting thread	G ¾ · ¾ NPT ¹⁾
Set point range	30 to 100 °C
Excess temperature safeguard	50 °C above the adjusted set point
Max. permissible temperature	130 °C
Max. perm. pressure at sensor	10 bar
Transfer coefficient	0.3 °C/K
Torque	1.9 Nm
Max. travel	85 mm

¹⁾ Without testing according to DIN EN 14597

Table 2: Materials

	Material
Thermowell	Brass
Set point adjustment knob	Plastic
Actuating lever	Painted steel
Chain	Zinc-coated steel (gloss finish)

Dimensions and weights



All dimensions in mm · Connecting thread G ¾
Weight, approx. 0.6 kg

Fig. 4: Dimensions of Type 5 D

Installation

Suitable for horizontal or vertical installation

The red inscription on the set point adjustment knob apply when the controller is installed horizontally and the white inscription when it is installed in the upright position.

Ordering text

Type 5 D Boiler Controller

G ¾ connecting thread