Fixed point thermostatic regulating kit

The regulation of the water temperature in underfloor heating systems, often combined with zones heated in a traditional manner with high temperatures (radiators, fan coils), can be made with functional and cheap systems such as the fixed-point thermostatic regulation kit.



Description

The fixed-point thermostatic regulation kit consists of the following components:

1. Thermostatic head.
2. Three-way mixing valve, available in models DN 15 (1/2"), DN 20 (3/4") and DN 25 (1").
3. Safety thermostat.
4. Immersion probe with well.

Operation

The temperature of the supply water of the underfloor system is set on the thermostatic head (adjustable from 20 °C to 65 °C) and kept constant by the action of the same on the mixing valve. The thermostatic element of the head is connected to the immersion probe by means of a capillary tube, which detects the temperature of the fluid downstream of the circulator (see fig. A). By means of the pre-mixing by-pass with calibration lockshield, about 70-80% of the flow rate of the low temperature (25÷40 °C) system circulates in normal conditions, avoiding the oscillation of the three-way valve through which about 20-30% of the flow rate of the underfloor system circulates.
The temperature control in the environment is of the ON/OFF type, with a programmable thermostat that controls the circuit pump.

1. Thermostatic head
2. Three-way mixing valve
3. Safety thermostat
4. Immersion probe with well
5. By-pass calibration lockshield
6. Circulator
7. Check valve
8. Ambient thermostat
9. Main manifold
10. Hydraulic separator
11. Boiler
12. Pressure relief valve

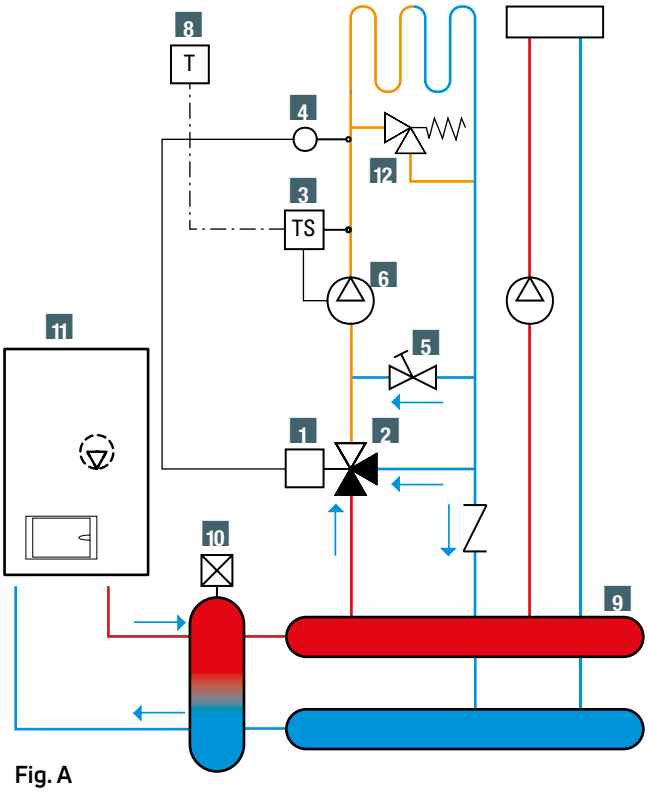


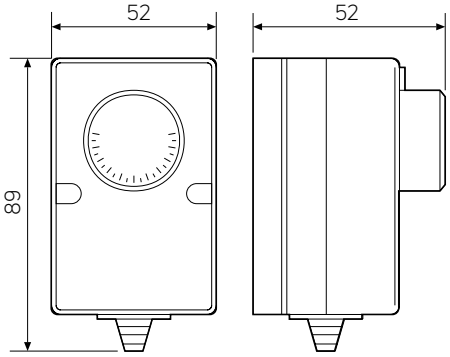
Fig. A

Safety thermostat

Set at 45/50°C (depending on the type of screed), it cuts off the electrical power supply to the circulator in the event of excessively high water temperature due to a malfunction of the regulation system.

Technical data
Adjustment field: 0÷60°C
Maximum temperature: 99 °C
Capacity of contacts: 250 Vac – 10(2) A



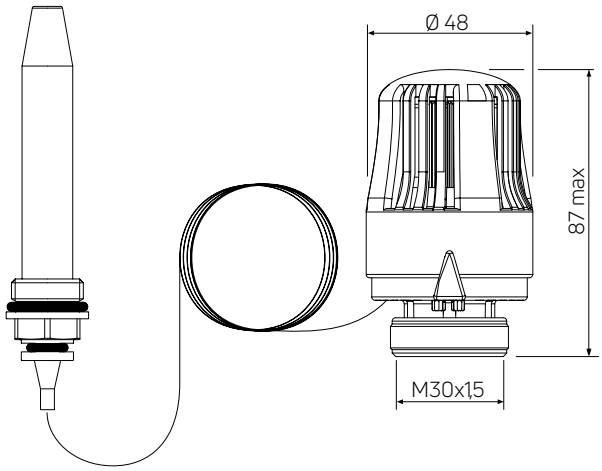


Thermostatic head

Technical data
Adjustment field: 20 ÷ 65 °C
Thermostatic sensor: liquid expansion
Maximum operating temperature: 80 °C
Maximum operating pressure: 10 bar

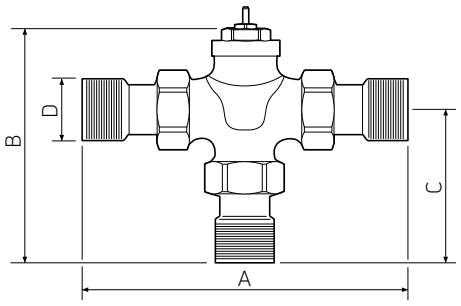
Immersion probe

Technical data
Material: Copper
Length of probe: 110 mm
Diameter of probe 11 mm
Capillary length: 2 m



Three-way mixing valve

Technical data
Class: PN16
Leakage: < 0.02 % of the kvs
Stroke: 2.5 mm
Fluids allowed: Water (max 110°C),
Water with glycol (max 30% vol.)
Valve body: Brass CW617N
Beam: Nickel plated brass
Springs: AISI 302
Shutter rubber: EPDM
Δp max operating (bar): 0.7 (DN 15) – 0.5 (DN 20) - 0.4 (DN 25)



	D	A [mm]	B [mm]	C [mm]
DN 15	G 1/2"	105	82	51
DN 20	G 3/4"	132	94	67
DN 25	G 1"	160	123	80

