

Technical brochure

Thermostatic Valve Type BVTS



The Thermostatic Valve BVTS is designed for protection of boilers and fire stoves.

It prevents overheating by discharging water from heat generator, condensing coil or heat exchanger.

The BVTS valve is used also to prevent backburning in the fuel store of biomass boilers by flooding the fuel in case of excessive temperature.

The BVTS is self-acting, i.e. it operates without supply of auxiliary energy such as electricity or compressed air.

Features

- Needs no power supply – self acting
- Opens on rising sensor temperature
- Can be mounted on cold water inlet or hot water outlet of the boiler
- Can be mounted in any position
- Brass and other wetted materials suitable for drinking water
- Integrated sensor and valve body to eliminate risk of setting change
- Double sensor to ensure fail-safe operation
- Capillary tube protected against kinking by steel sheath
- Space saving compact design

Approvals

CE marked according to PED 97/23/EC,
category IV, safety equipment,
EN 14597 (DIN 3440)

Materials

| | |
|----------------------------|-----------------|
| Valve body | forged brass |
| Spring | stainless steel |
| Sensor | copper |
| Capillary tube | copper |
| Sensor pocket | brass |
| O-rings and gaskets | EPDM, NBR |
| Activating button | ABS |
| Other metal parts | forged brass |

Technical data

| | |
|---------------------------------------|---|
| Media | Water |
| Maximum Working Pressure | 10 bar |
| Ambient temperature | 0 to 80°C |
| Max. temperature of the sensor | 125°C |
| Media temperature | 5 to 110°C |
| Opening temperature | 95°C ± 2°C (fixed) |
| Hysteresis | 6°C |
| Flow capacity | 2.6 m ³ /h at min. 1 bar flow pressure |
| Connection size | G ¾ pipe thread ISO 228 |
| Length of capillary tube | 1.3 m or 4 m |

Ordering

| Connection ISO228 | Opening temperature [°C] | kv value (m³/h at Δp = 1 bar and sensor temp. 110 °C) | Capillary tube length [m] | Code no. |
|------------------------------|-------------------------------------|---|--|-----------------|
| G ¾ | 95 ± 2 (fixed) | 2.6 | 1.3 | 003N3300 |
| G ¾ | 95 ± 2 (fixed) | 2.6 | 4.0 | 003N3301 |

) Other Opening temperatures available on request.

Accessory

| Description | Connection ISO228 | Sensor pocket length [mm] | Code no. |
|-------------------------------|------------------------------|--------------------------------------|-----------------|
| BVTS sensor pocket spare part | G ½ | 140 | 003N3370 |

Design and function

The Thermostatic Valve type BVTS is actuated by temperature increase.

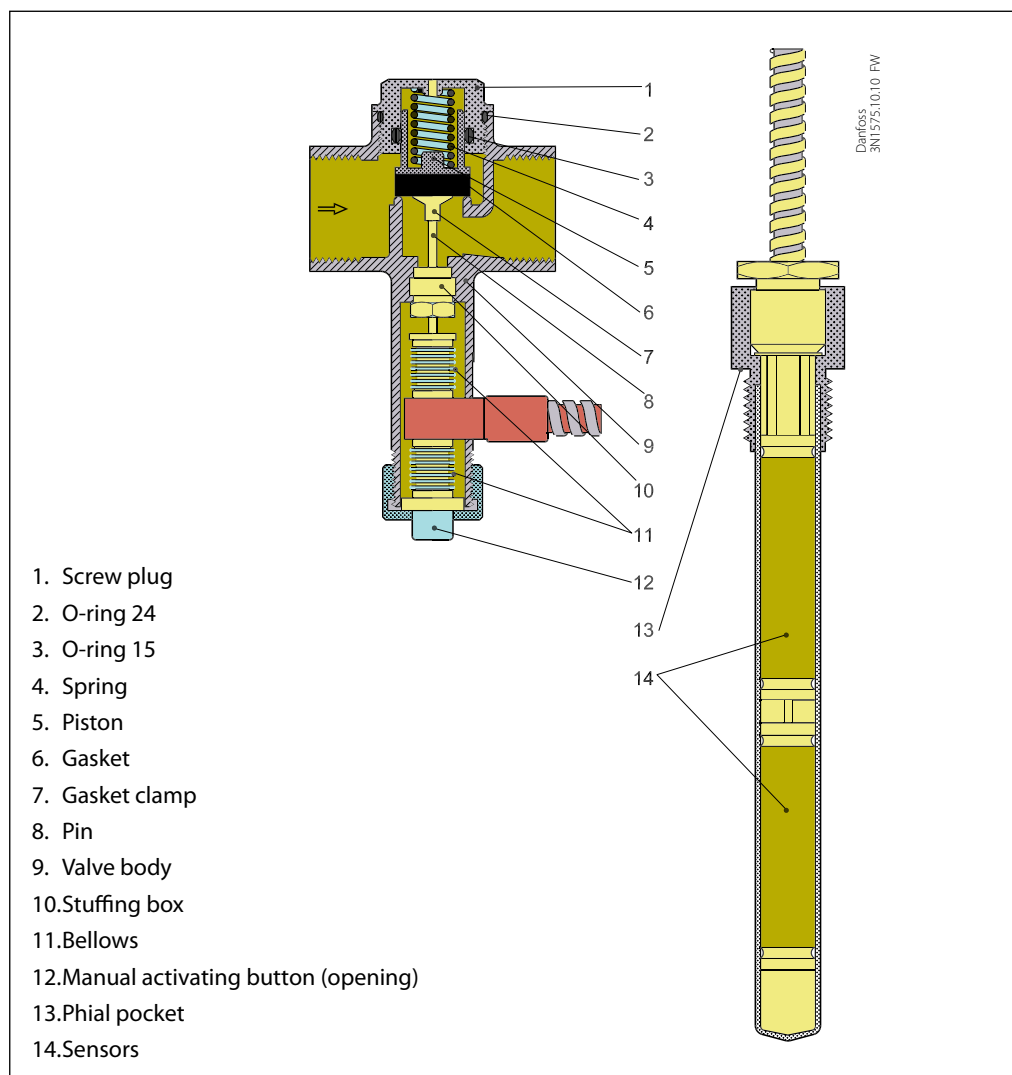
The valve consists of two integrated elements:

- spring loaded valve
- hermetically sealed thermostatic element with bellows, sensor and charge inside

The valve is adjusted to open at sensor temperature of $95^{\circ}\text{C} \pm 2^{\circ}\text{C}$.

This setting is fixed and cannot be changed by user.

When the temperature around sensor increases the charge inside the sensor heats up building up the pressure. This pressure is transferred to the valve via the capillary tube and bellows. At sensor temperature of $95^{\circ}\text{C} \pm 2^{\circ}\text{C}$ the pressure in bellows becomes greater than the spring load so the pin lifts up and the valve opens.



1. Screw plug
2. O-ring 24
3. O-ring 15
4. Spring
5. Piston
6. Gasket
7. Gasket clamp
8. Pin
9. Valve body
10. Stuffing box
11. Bellows
12. Manual activating button (opening)
13. Phial pocket
14. Sensors

Fail-Safe function

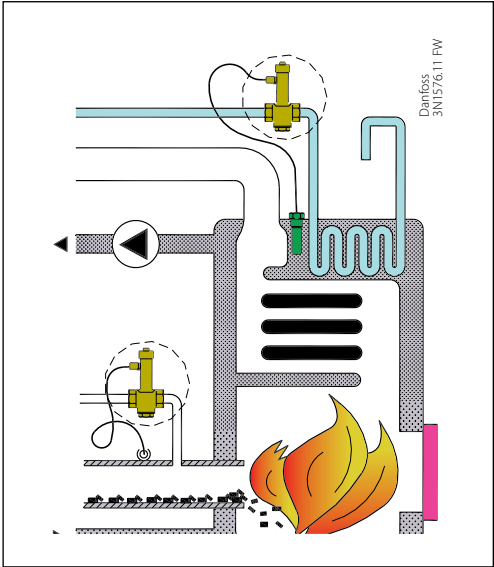
Fail-safe function is ensured by two separate and independent sensing elements. Each of them has its own sensor and bellows.

If one of the sensing elements fails the other is still able to open the valve.

Manual button

The BVTS valve is fitted with activating button which enables to manually open the flow on the valve.

Applications



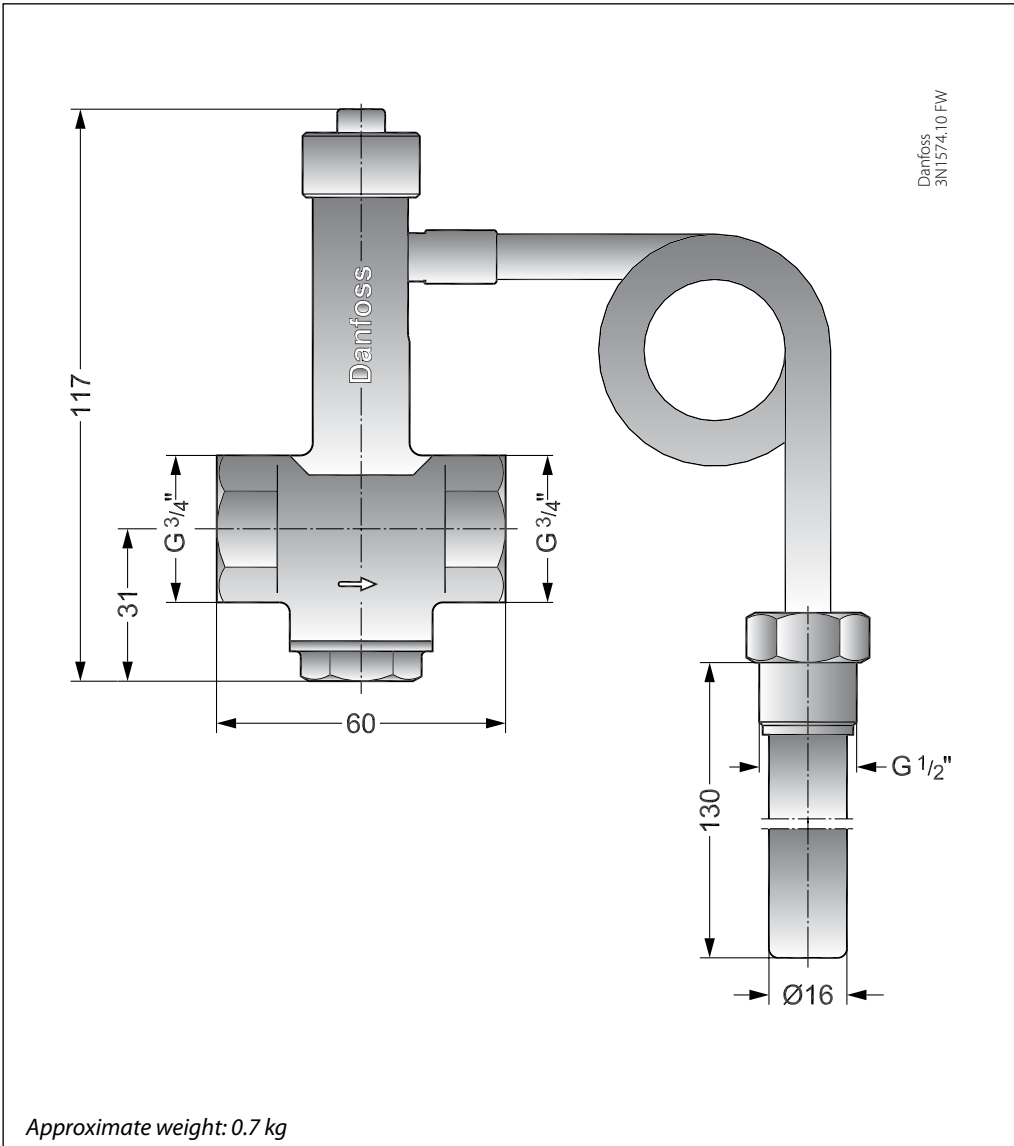
Overheating protection:

If the water temperature rises, the valve will open and let cold water through the heat exchanger system; thus quickly and efficiently lowering the temperature.

Back-burning protection:

If the temperature in the fuel feed system rises above 95°C ± 2°C, the valve will dispense a sufficient amount of water to extinguish fire.

Dimensions



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