

Temperature safety relief valve

series 543



cert. n° 0003
ISO 9001



General description

Temperature safety relief valves are built by Caleffi S.p.A. to comply with the basic safety requirements of directive 97/23/EC issued by the European Parliament and the European Union Council, designed to standardise regulations on pressure equipment within the member countries.

Function

The temperature safety relief valve is a device that limits the temperature of the water in polycombustible or solid fuel boilers equipped with a built-in heater or emergency heat exchanger. When the temperature reaches 95°C, the valve starts to discharge the necessary amount of water to keep the boiler temperature within the safety limits.

The use of this device is governed by standard I.S.P.E.S.L. (collection "R" – version 1982, chapter R 3C.1.G2), and it is also certified to DIN 3440 and approved for use in systems meeting DIN 4751 standards part 1 and 2 for solid fuel boilers with an output of less than 100 kW.



Product range

Code 543513 Temperature safety relief valve Size 3/4"

Technical specification

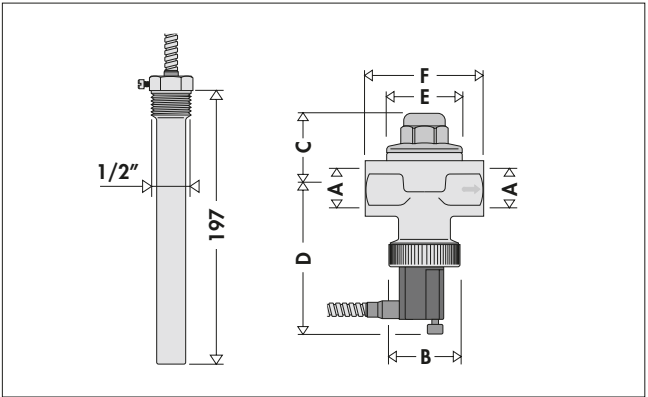
Materials: - Body: brass EN 12165 CW617N, chrome plated
 - Control stem: brass EN 12164 CW617N
 - Obturator seal: EPDM
 - Seals: EPDM
 - Spring: stainless steel
 - Bellows holder support: POM

Maximum working pressure: 10 bar
 Set temperature: 95°C
 Temperature range: 5 – 110°C
 Discharge capacity at 110°C with Δp of 1 bar: 3100 l/h
 Medium: water
 PED category: IV

Connections: - Inlet: 3/4"F
 - Outlet: 3/4"F
 - Probe pocket: 1/2"M

Length of capillary: 1300 mm

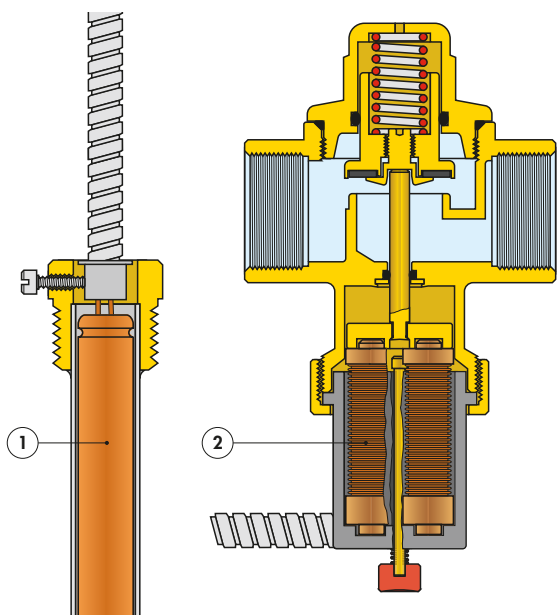
Dimensions



Code	A	B	C	D	E	F	Weight (kg)
543513	3/4"	Ø 40	42	86	Ø 42	70	1,06

Operating principle

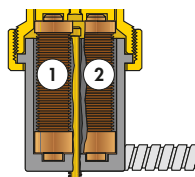
When the temperature rises, the fluid contained in the sensor (1) undergoes a change of state from liquid to gas which, by increasing in volume, creates a mechanical movement that causes the expandable bellows (2) inside the valve to push on the obturator and lift it up.



Construction details

Redundant expansion system

The entire expansion system has a built-in redundancy (1)-(2) to ensure maximum safety, so if one part of the sensor system fails the other part will perform the same functions as the entire sensor.

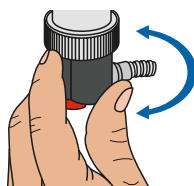


Pocket and capillary tubes

The size of the sump is such that it is always in contact with the sensors, which improves heat transmission and keeps thermal inertia to a minimum. The capillary tubes are protected by a galvanized sheath.

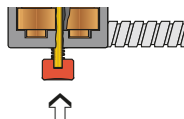
Bellows holder support

The bellows holder support is made of acetalic resin and can be repositioned by loosening the knurled lock nut.

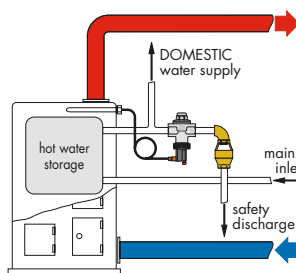


Drain

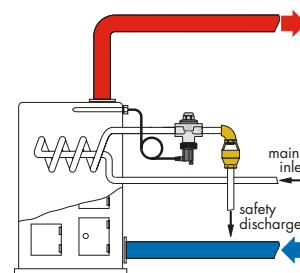
The lower part of the valve contains a button in order to drain the system.



Installation



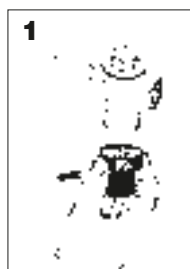
Installation of the temperature safety relief valve in boilers with built-in heater.



Installation of the temperature safety relief valve in the emergency heat exchanger.

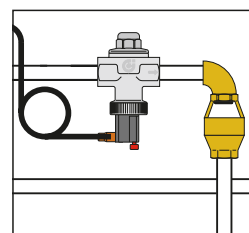
The sensor should be mounted at the top of the boiler or on the outlet piping upstream of any isolating device and at a maximum distance of 0,5 m.

1. After mounting the valve on the pipe in the flow direction indicated on the valve body, place the part connected to the sensor in its seat.
2. Loosely tighten the knurled lock nut.
3. Position the sheath outlet that connects the probe by turning the black cap. Completely tighten the knurled lock nut.



Accessories

We recommend inserting a visible discharge tundish (5521 series Caleffi) when connecting the device to the discharge pipe.



SPECIFICATION SUMMARIES

Code 543513

Temperature safety relief valve. EC certified and approved to German DIN standards. Redundant safety sensor. Connections 3/4" F. Chrome plated brass body. Stainless steel spring. EPDM seals. Temperature range 5 – 110°C. Nominal set temperature 95°C. Maximum working pressure 10 bar. Complete with 1/2" M remote probe with pocket. Length of capillary 1300 mm.

We reserve the right to change our products and their relevant technical data, contained in this publication, at any time and without prior notice.



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