

Temperature safety relief valve



543 series



BSI EN ISO 9001:2000
Cert. n° FM 21654



UNI EN ISO 9001:2000
Cert. n° 0003

01057/07 GB

replaces dp 01057/05



General description

Temperature safety relief valves are manufactured by Caleffi S.p.A. in compliance with the essential requirements contained in Directive 97/23/EC of the European Parliament and of the Council of the European Union to harmonise member state regulations on pressure equipment.

Function

The temperature safety relief valves limit the temperature of water in multi-fuel or solid fuel boilers with either a boiler incorporated or an 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.

Its use is specified by I.S.P.E.S.L. regulations (collection "R" - pub-2005), it complies with EN 14597 and can be used on systems that comply with EN 12828, relating to solid fuel boilers with a power output of less than 100 kW.



Product range

Code **543513** Temperature safety relief valve

Size 3/4"

Technical specification

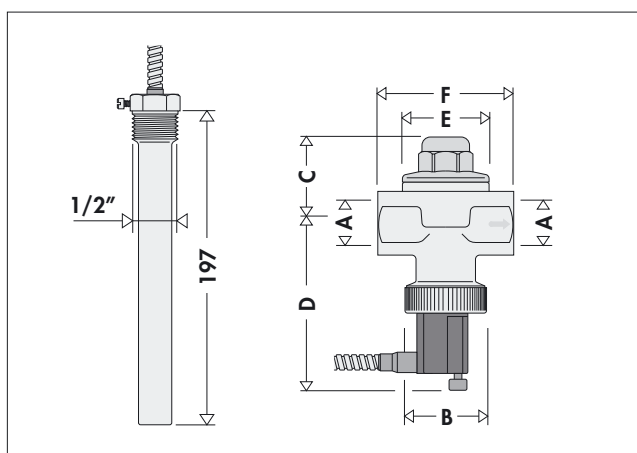
Materials:

Body: brass EN 12165 CW617N, chrome plated
Control spindle: brass EN 12164 CW617N
Obturator seal: EPDM
Seals: EPDM
Spring: stainless steel
Protection cover: POM

Performance:

Max. working pressure: 10 bar
Set temperature: 95°C
Temperature range: 5–110°C
Discharge flow rate at 110°C and Δp 1 bar: 3000 l/h
Ambient temperature range: 0–80°C
Action type (EN 14597): 2 KP
Max. temperature of the sensor: 130°C
Medium: water
PED category: IV
Connections: 3/4" F x 3/4" F
Probe connection: 1/2" M
Capillary length: 1300 mm

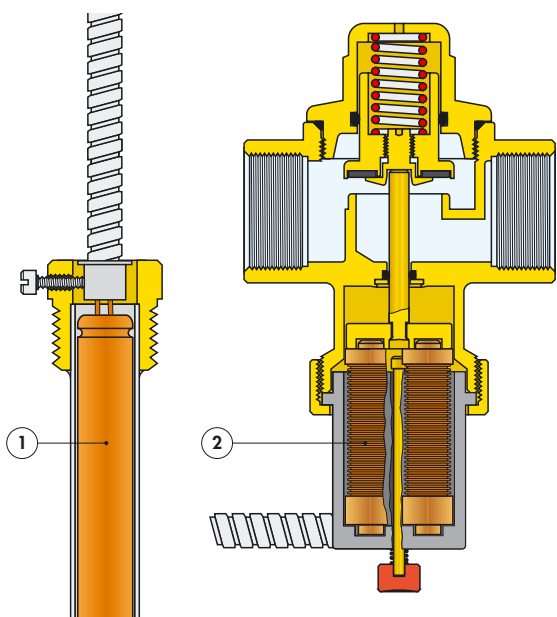
Dimensions



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

Operating principle

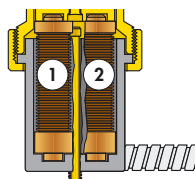
When the temperature rises, the fluid contained within the sensor (1) undergoes a change of state from liquid to gas. The consequent volume increase creates a mechanical movement causing the expandable bellows (2), inside the valve, to push on the obturator and lift it up.



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.

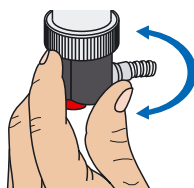


Pocket and capillary tubes

The size of the pocket 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.

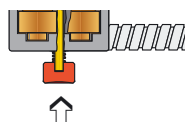
Bellows holder support

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



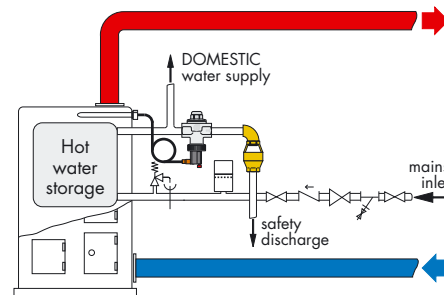
Drain

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

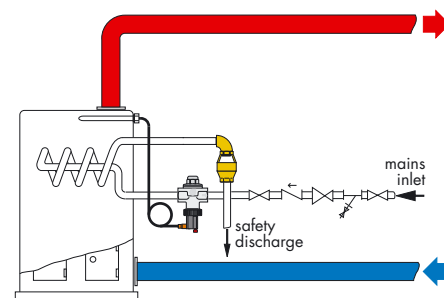


Installation

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

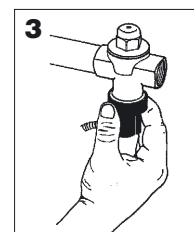
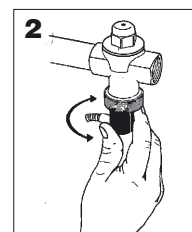
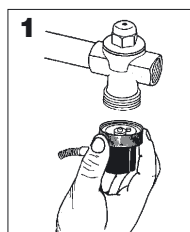


Installation of the temperature safety relief valve in the emergency heat exchanger.



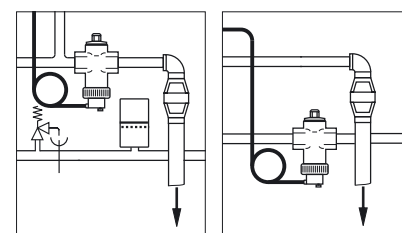
The sensor should be mounted at the top of the boiler or on the outlet piping upstream of any isolating device and at a maximum distance of 0,5 m.

1. After mounting the valve on the pipe, according to 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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