

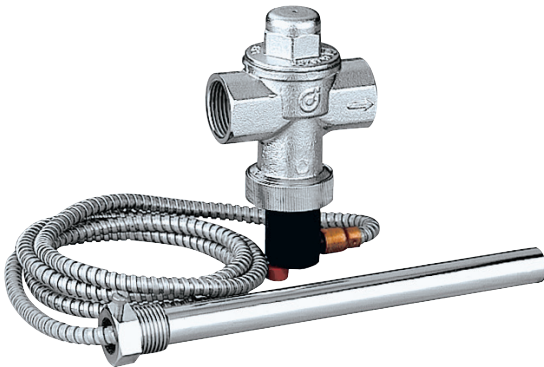
Temperature safety relief valve



543 series

01057/23 EN

replaces dp 01057/16



General description

Temperature safety relief valves are manufactured by Caleffi S.p.A. in compliance with the essential requirements contained in Directive 2014/68/EU 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 multifuel or non-pulverized solid fuel generators equipped with built-in storage or emergency heat exchanger.

When the setting temperature in the generator is reached the valve begins to discharge the quantity of domestic water required to maintain the temperature of the generator within the safety limits.

Its use is specified by INAIL regulations – collection “R”, issued in 2009: chapter R.3.C, paragraph 1, point 1.4

chapter R.3.C, paragraph 2, point 2.1, letter i2

chapter R.3.C, paragraph 3, point 3.1, letter i and point 3.3.

The valve complies with EN 14597. It can be coupled with non-pulverized solid fuel generators, with thermal power lower than 100 kW, according to system prescriptions by standards EN 12828 and EN 303-5.



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

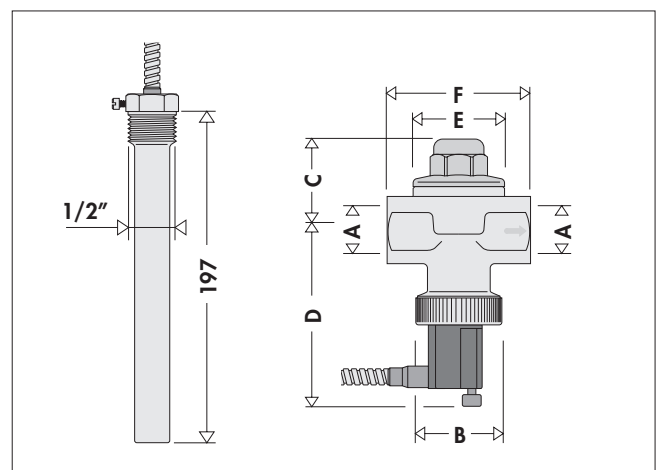
Performance:

Max. working pressure: 10 bar
 Setting temperature: 98 °C (+0°C -4°C)
 Working 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 (certified - double sensor - 5000 cycle test)

Max. temperature of the sensor: 130 °C
 Medium: water
 PED category: IV

Connections: 3/4" F x 3/4" F
 Probe pocket: 1/2" M
 Capillary length: 1300 mm

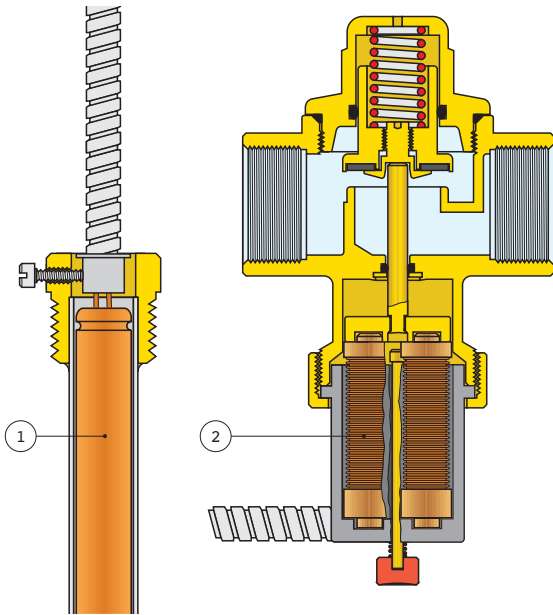
Dimensions



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

Operating principle

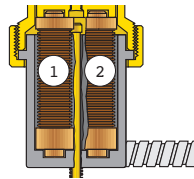
When the temperature rises, the fluid contained within the sensor (1) undergoes a change of state from liquid to gas. The consequent volume increase creates a mechanical movement causing the expandable bellows (2), inside the valve, to push on the obturator and lift it up.



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.

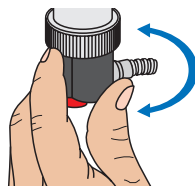


Pocket and capillary tubes

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.

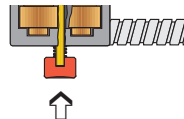
Bellows holder support

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



Drain

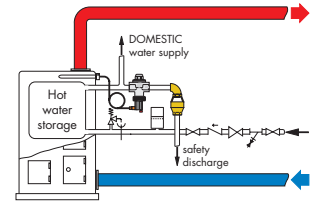
The lower part of the valve contains a button in order to drain the system.



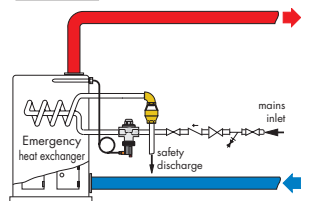
Installation

Note: it is recommended to respect current standards concerning the installation of solid fuel boilers with open or closed expansion vessel: EN 12828, EN 303-5, UNI 10412-2, Raccolta R I.S.P.E.S.L..

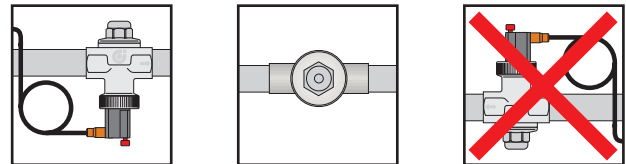
Installation of the temperature safety relief valve in boilers with built-in heater.



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

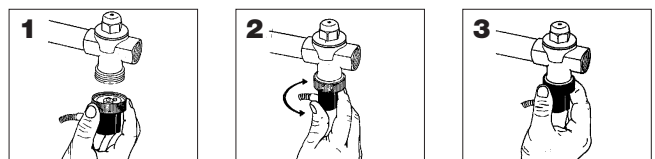


The valve should be installed only on horizontal pipe, with the obturator axis in vertical position. It is allowed the installation of the valve laying on the side (with the obturator axis in horizontal position) but never upside down.



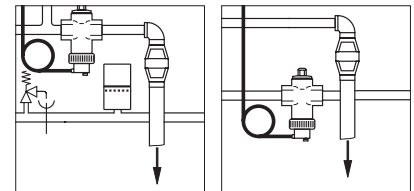
Depending on the fuel stoking system and the open or closed expansion vessel, the sensor of the temperature safety relief valve should be installed on board the machine (with the pocket immersed into the heating medium) or on the flow pipe before any shut-off device (as close as possible to the generator or within the distance where specified by the applicable standard).

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. Double safety sensor. Connections 3/4" F. Brass body, chrome plated. Stainless steel spring. EPDM seals. Medium water. Working temperature range 5–110 °C. Setting temperature 98 °C (+0°C -4 °C). Ambient temperature range 0–80 °C. Maximum temperature of the sensor 130 °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 make changes and improvements to the products and related data in this publication, at any time and without prior notice. The website www.caleffi.com always has the most up-to-date version of the document, which should be used for technical verifications.