



General

Safety (pressure relief) valves are made by Caleffi S.p.A. in compliance with the essential safety requirements laid down by Directive 97/23/CE of the European Parliament and the Council of the European Union for harmonisation of member States with regard to pressurised equipment. The instructions given below are in compliance with Article 3.4, Appendix 1 of Directive 97/23/CE and are supplied with the products when offered for sale on the market.

TÜV Approval

with larger outlet according to TRD 721
VdTUV Standard for Safety Valves **SV100 7.7**
Approval No. TÜV Rheinland/Berlin-Brandenburg: **SV 07 2009 · SOL · 50 · p**

Function and Use

For sealed solar heating systems using water or water solutions to DIN Standard 4757 Sheet 1 as the carrying fluid, and using a diaphragm expansion vessel. The Series 253 diaphragm safety valve is designed exclusively for solar heating systems. The diaphragm safety valve only opens the discharge when the system pressure exceeds the rated calibration of the valve. The diaphragm safety valve discharges the heating power of the solar system in the form of hot water and steam.

Technical and Constructional Characteristics

Body and inner assembly: DIN EN 12165 CW 617N
Nominal pressure: PN10
Max. allowable working temperature: 160°C
Fluid used: Water/glycol solution, max. 50%
PED Category: IV

Article	Calibration	Sizes	
253042	2,5 bar	1/2" F inlet	3/4" F outlet
253043	3 bar	1/2" F inlet	3/4" F outlet
253044	4 bar	1/2" F inlet	3/4" F outlet
253046	6 bar	1/2" F inlet	3/4" F outlet
253048	8 bar	1/2" F inlet	3/4" F outlet
253040	10 bar	1/2" F inlet	3/4" F outlet

Installation

Diaphragm safety valves should be installed vertically, in line with the direction of the arrow. The connecting pipework should be a maximum of 1 m long without any bends. Filters and other restrictions should be avoided in the connecting pipework to the solar safety valve. The cross-section of the connecting pipe must be at least equal to the inlet cross-section of the safety valve. Horizontal connections should be avoided, to prevent the build up of dirt and debris.

These safety valves should be installed in the coldest part of the solar heating system, without interfering with the solar manifolds, and must be accessible. It is also advisable to install the valves near the solar control station. The diameter of the discharge pipework must correspond to the valve outlet diameter; the maximum length should not exceed 2 m, and not more than two bends are permitted. If these maximum values are unavoidably exceeded (2 bends, 2m of piping), the next diameter up must be selected for the discharge pipework. However, on no account are more than 3 bends and 4 metres of pipework permitted. If the discharge piping of the safety valve is connected via a tundish, the cross-section of the valve discharge pipework should be at least double the cross-section of the valve discharge itself.

Water/glycol solutions must be collected in a container of suitable dimensions under the safety valve discharge pipe.

The discharge piping must be installed with a downward slope; the outlet of the pipework must be open and inspectable and positioned in such a way that nobody is endangered during a discharge.

Commissioning

When commissioning the solar heating system, the system is filled until the calculated pressure value is reached. Accurate sizing of the expansion vessel is necessary to prevent undesirable discharging of the valve.

The calibration pressure value of the safety valve is marked on the tamper-proof plate on top of the black knob.

Guarantee

These safety valves are produced with the greatest possible precision and, of course, subjected to strict inspection. However, in the unlikely event of a fault, our guarantee covers material and manufacturing defects. If the tamper-proof plate is damaged or the valve is found to have been used incorrectly or damaged due to wear and tear, the guarantee will become invalid. In order to claim against the guarantee, the complete valve must be returned to the manufacturer.



Safety

If these safety valves are not installed, commissioned and maintained correctly in accordance with the instructions contained in this document, then they may not operate correctly and may endanger the user.

Ensure that all connections are water-tight.

When making hydraulic connections, ensure that the valve body thread is not mechanically overstressed. Breakage may be caused over time causing water leaks, harmful to property and/or individuals.

Water temperatures higher than 50°C can cause serious burns. When installing these safety valves, make all necessary arrangements to ensure that such temperatures do not endanger individuals.