CALEFFI
Hydronic Solutions

Anti-freeze safety device

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ICECAL®

603 series

S012
C of C 40112

Function

The anti-freeze safety device prevents ice build-up in domestic water circuits, thereby avoiding possible damage to water storages and pipes in solar systems.
This device has been certified to Watermark to ATS 5200.012

Product range

603040 AUS   DN 15 / 1/2" F with nut

Technical specifications

Material

Body:	DZR alloy CR EN 12165 CW602N
Obturator stem:	brass EN 12164 CW614N
Seat:	stainless steel
Springs:	stainless steel
Seal elements:	EPDM
Strainers:	stainless steel

Performance

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Medium:	water
Max. working pressure:	1000 kPa
Ambient temperature range:	-30÷90°C
Opening temperature:	3°C
Closing temperature:	4°C
Accuracy:	±1°C
Connections:	1/2" F with nut

Operating principle

A thermostatic element (1) in contact with the ambient air controls a shut-off obturator fitted to a passage seat in contact with the water contained in the pipe (2).

When the ambient temperature drops to the minimum intervention value, the thermostat contracts. This causes the obturator to move and open a tiny passage so that water can drain out, allowing a small amount of water to flow in continuously; this prevents water from freezing inside the pipe.

Water from the supply network, which is usually warmer than the air temperature up to the intervention value, laps the thermostat and causes the opposite action: the channel closes again and normal circuit operating conditions are restored.

For optimal system operation without the risk of freezing, it is recommended that the part of the circuit in which the safety device is installed is connected to the water supply network and a suitable pressure level maintained.

Anti-freeze safety device closed   **Anti-freeze safety device open**
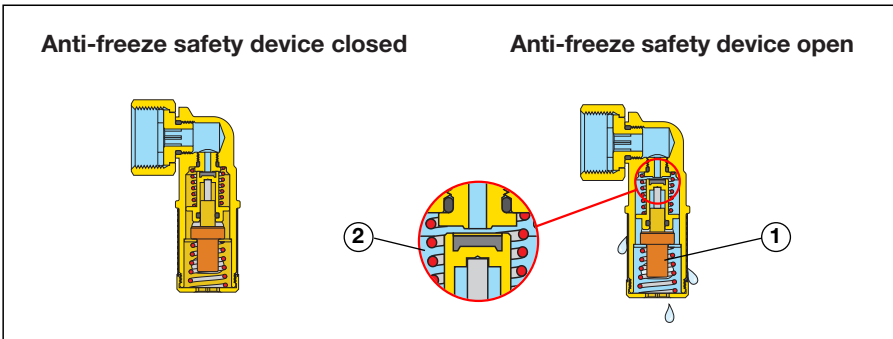
Volume of water drained

While the anti-freeze device is in operation, the drain outlet will drip as a result of the cyclical opening and closing phases taking place correctly. The amount of water drained out varies in accordance with the outdoor temperature, the temperature of the water in the pipe and the length of piping exposed to the air.

As a general guide, in the worst case conditions, the amount of water drained out is less than 0,5 l/h.