

Stainless steel buffer tank-hydraulic separator for hybrid systems



01380/24 EN

5485 series



Function

The stainless steel buffer tank-hydraulic separator for hybrid systems performs a dual function: it can be used to connect the boiler and heat pump while hydraulically separating the two primary circuits and the secondary utility circuit; it also guarantees, with its volume, the minimum amount of water required in the system for the heat pump to work properly.

This series is designed for wall installation and for heating-cooling operation.

European directive conformity

Produced, designed and manufactured in compliance with:
EN 2009/125/EC ErP;
EU No. 811/2013; 812/2013; 814/2013.

Product range

548551 series Stainless steel buffer tank-hydraulic separator for hybrid systems _____ volume 50 l (connections 1 1/4" F)

Technical specifications

Materials

Body: stainless steel AISI 304

Performance

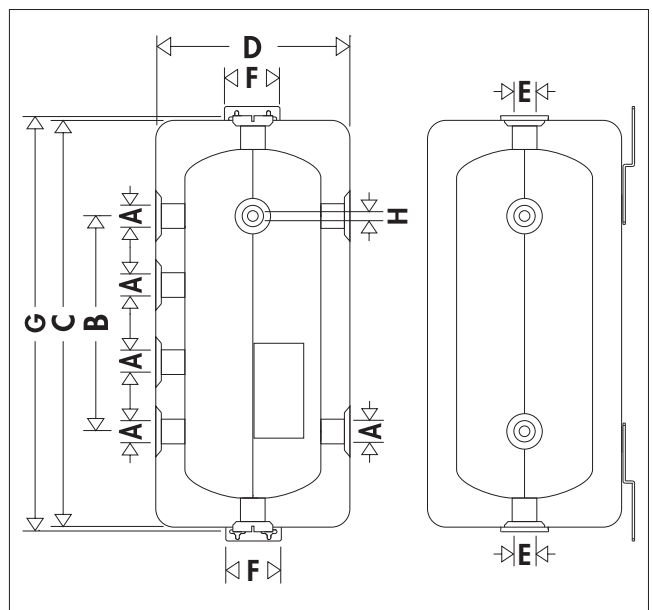
Medium: water, glycol solutions
Maximum percentage of glycol: 30 %
Maximum working pressure: 4 bar
Working temperature range: -10–95 °C
(without the formation of ice)

Connections: 1 1/4" F (ISO 228-1)
Front probe holder connection: 1/4" F (ISO 228-1)

Insulation

Material: EPP
Thickness: 45 mm (minimum)
Density: 30 g/l
Thermal conductivity (ISO 8301): - at 10 °C: 0,039 W/(m·K)
Working temperature range: 0–110 °C

Dimensions



Reg. EU No. 812/2013 App. IV.2.1				
Code	Volume [litres]	Useful volume [litres]	Energy class (ErP)	Dispersion [W]
548551	50	49	A	27

Code	A	B	C	D	E	F	G	H	Empty weight (g)
548551	1 1/4"	466	880	420	1 1/4"	68	888	1/4"	14,5

Sizing

The buffer tank-hydraulic separator should be sized in accordance with the maximum recommended flow rate value at the inlet. The selected value should be the sum of the primary circuit flow rates or the sum of the secondary circuit flow rates, whichever is greater.

The buffer tank-hydraulic separator volume depends on the minimum volume of water specified by the heat pump manufacturer to guarantee proper machine operation even during defrosting. This value is influenced by the features of the system, its extension and the management method, and should be guaranteed regardless of the water content of the delivery system: for example, with two-way zone regulation the water content of the delivery system should be excluded from the volume.

Code	Volume [litres]	Connections	Maximum flow rate [m ³ /h]	HP nominal power* [kWt]
548551	50	1 1/4"	5.5	up to 25

*Generally, with more modern heat pumps, it can assume an average value calculated on the basis of the machine power, which varies from 2.5 to 3.5 litres/kWt. In any case, it is essential to follow the heat pump manufacturer's instructions.

Construction details

Material AISI 304 stainless steel

The 5485 series buffer tank-hydraulic separator, made using AISI 304 stainless steel, helps to keep the thermal system clean. It therefore reduces the number of problems caused by the impurities generated by corrosion and, as a result, minimises maintenance costs for the entire system.

PPE insulation

The highly effective expanded PPE insulation allows the heat pump to run efficiently in both heating and air-conditioning modes. The special boxy geometry makes the buffer tank-hydraulic separator extremely compact and visually attractive.



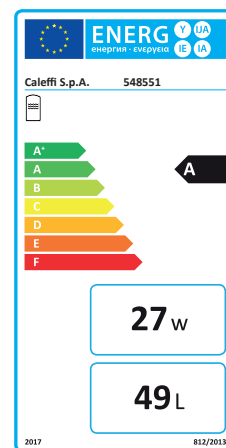
Front probe holder connection

The range of buffer tank-hydraulic separators comes with a 1/4" probe holder connection, which can be used to measure the temperature of the thermal medium with temperature probes or measurement temperature gauges.

Energy class

The 5485 series is designed for high energy efficiency.

Low losses ensure the buffer tank-hydraulic separator is in the best energy efficiency classes.

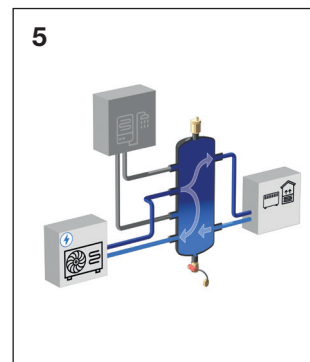
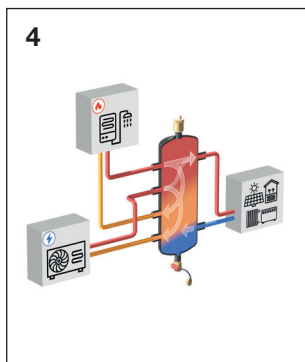
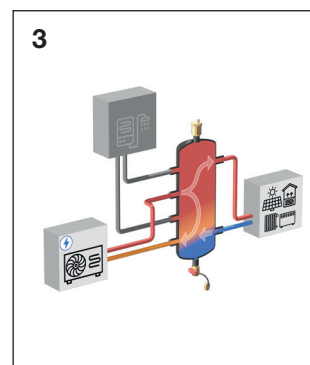
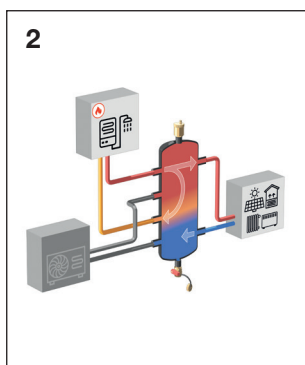
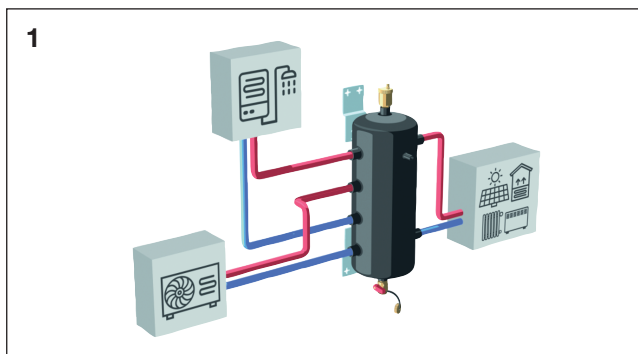


Operating principle

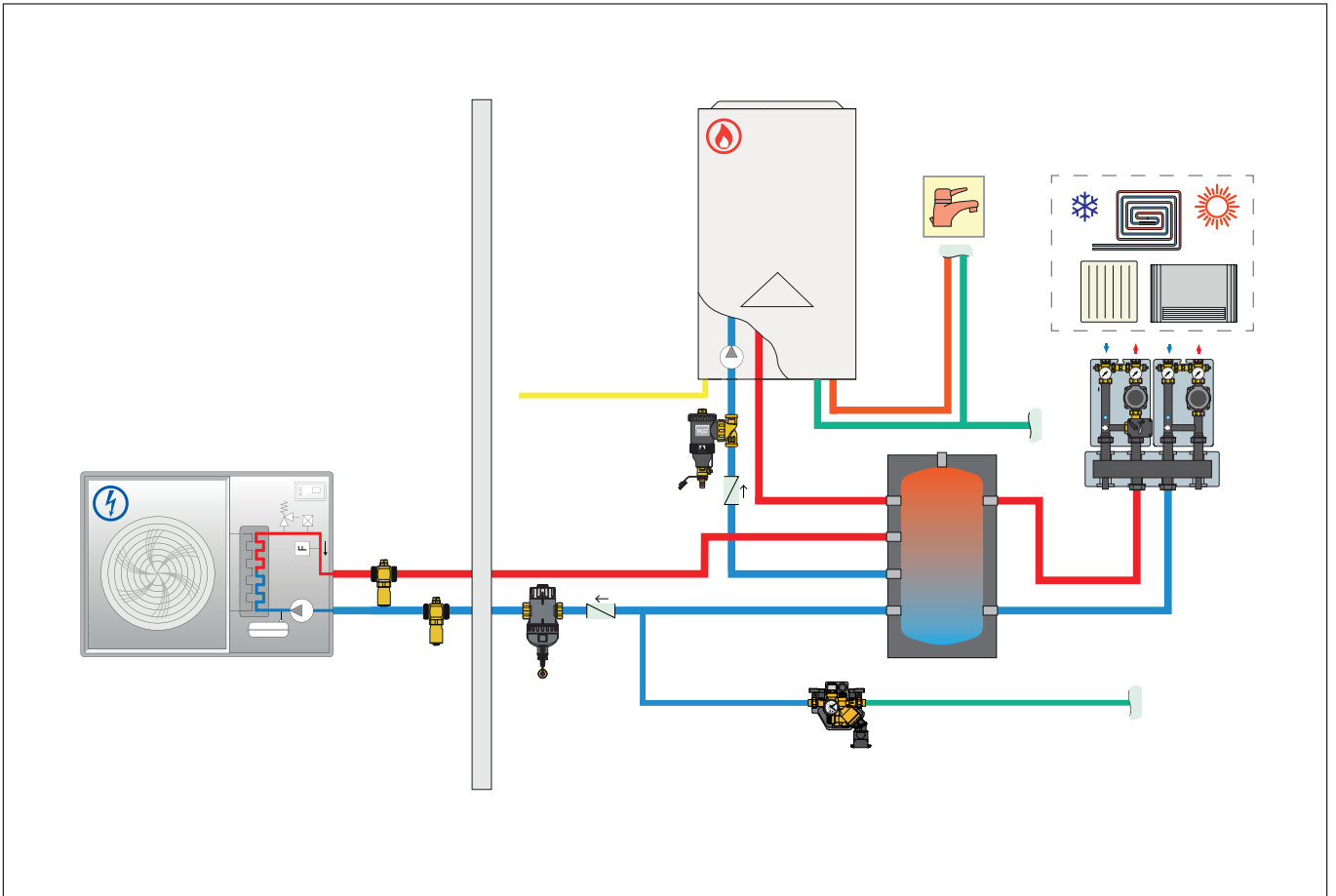
The separator should be connected to the boiler from the primary side, with the flow entering the topmost connection and the heat pump flow entering the connection underneath. The boiler return must be connected to the third connection from the top and the heat pump return to the connection at the very bottom.

The cooling circuit should be connected to the opposite side, as shown in figure 1.

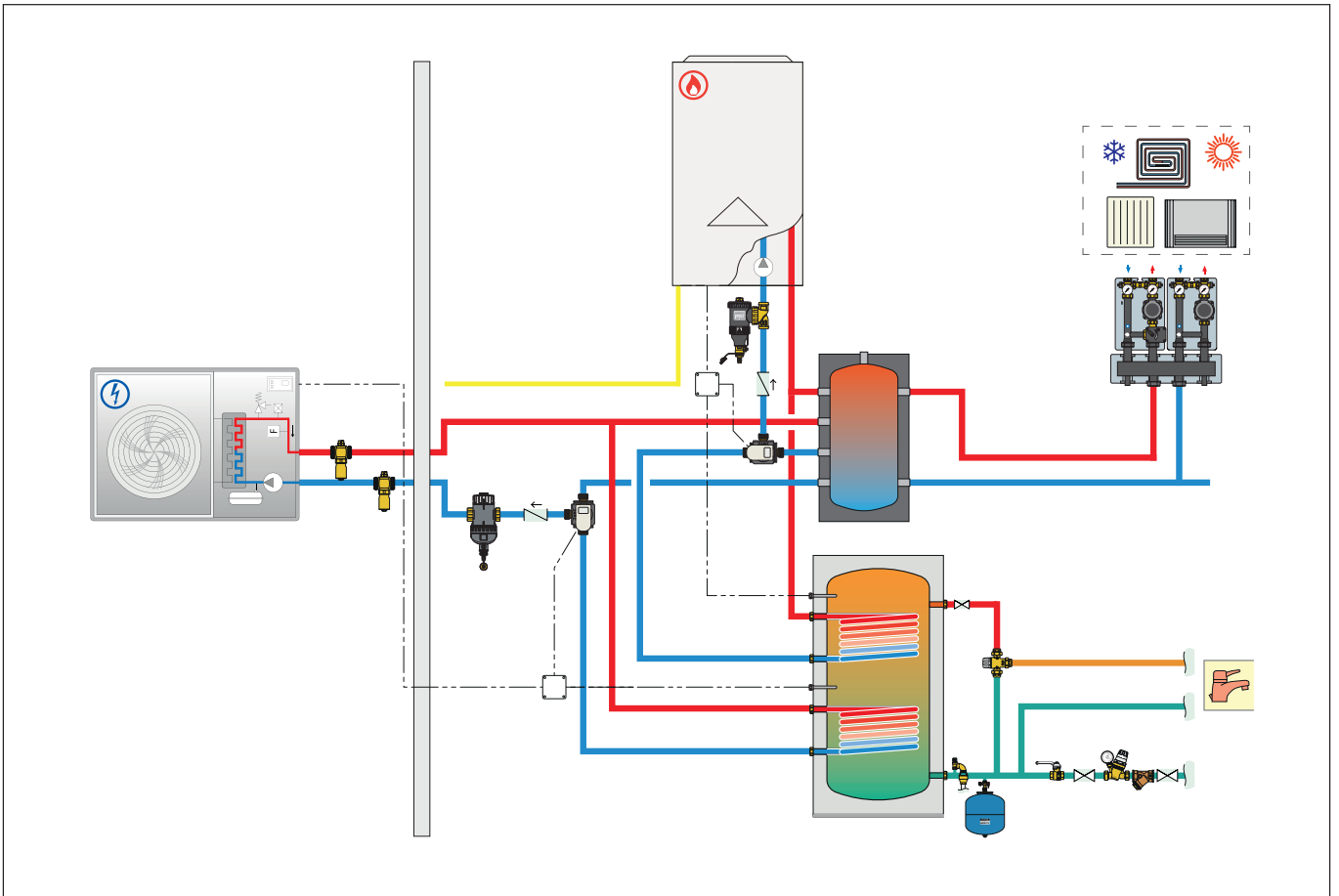
The separator allows the two generators to work individually (figure 2-3) or at the same time, in parallel (figure 4). In these modes an amount of the flow medium can be bypassed in the return circuit. In the case of cooling mode, only the heat pump supplies the user circuit (figure 5).



Hybrid system with boiler-only instant domestic hot water production



Hybrid system with storage type domestic hot water production



Accessories

Automatic air vent valves with insulation



5020 MINICAL®

Automatic air vent.
In hot stamped brass.
With hygroscopic safety cap.
With insulation.
Max. working pressure: 10 bar.
Max. discharge pressure: 2.5 bar.
Max. working temperature: 120 °C.



Code

502067 1" M



Connection fitting for air vent valve (code 502067) and buffer tank-hydraulic separator connection (code 548551).

Code

F001878 1 1/4" M x 1" F

Technical specifications

Materials

Body and cover:	brass EN 12165 CW617N
Float:	PP
Obturator control stem:	brass EN 12164 CW614N
Spring:	stainless steel
Seals:	EPDM
Shut-off cock seal:	PTFE

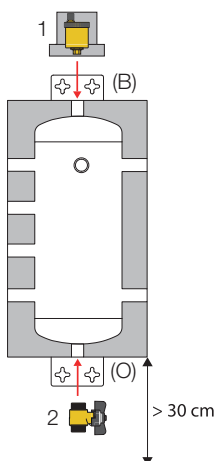
Performance

Medium:	water and glycol solutions
Max. percentage of glycol:	30 %
Maximum working pressure:	10 bar
Max. discharge pressure:	2.5 bar
Maximum working temperature:	±120 °C

Insulation

Material:	EPP
Density:	60 g/l
Thermal conductivity (ISO 8301):	- at 10 °C: 0,039 W/(m·K)
Working temperature range:	0–110 °C

Automatic air vent valve with insulation code 502067 (optional) and drain



We recommend installing an automatic air vent valve with insulation (optional, code 502067) (1) at the top connection of the buffer tank (B).

The drain (O) should have a shut-off valve (2). Leave a distance of at least 30 cm from the floor, to allow drainage and maintenance operations to be performed. The adapter must be used when installing the air vent valve.

SPECIFICATION SUMMARY

5485 series

Buffer tank-hydraulic separator for hybrid systems. Volume 50 l. Connections 1 1/4" F (ISO 228-1). AISI 304 stainless steel body. PPE insulation with a thickness of 45 mm (minimum) and density of 30 g/l. Medium water and glycol solutions; max. percentage of glycol 30 %. Maximum working pressure 4 bar. Working temperature range: -10–95 °C.

5020 series

Automatic air vent. 1" M threaded connection. Yellow. Brass body and cover, PP float, brass obturator control stem, EPDM O-Ring seals. PPE insulation with density of 60 g/l. Medium: water and glycol solutions. Max. percentage of glycol 30 %. Maximum working pressure 10 bar, maximum discharge pressure 2,5 bar. Maximum working temperature 120 °C. Complete with hygroscopic safety cap.

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