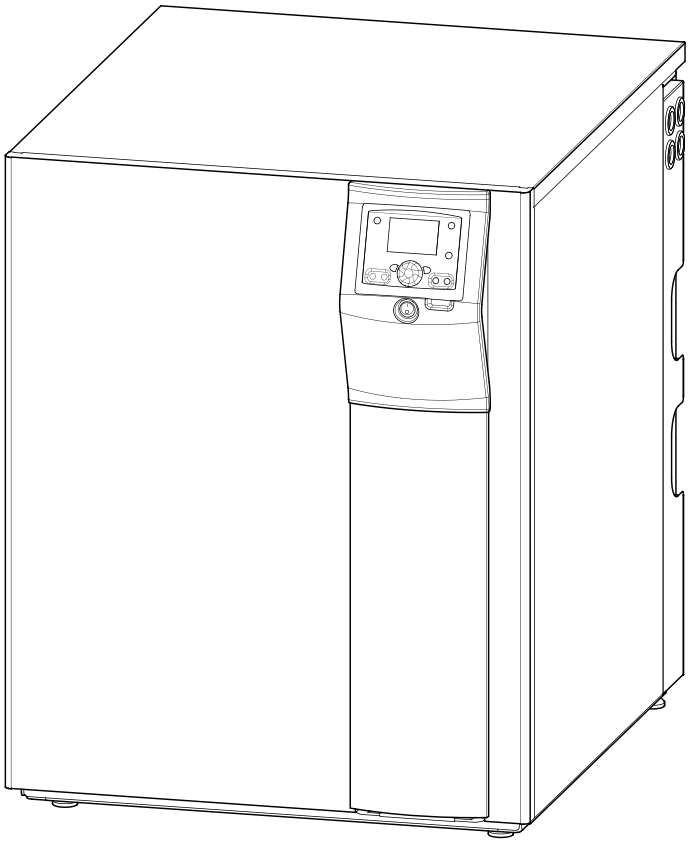
atlantic geolia

Ground source heat pump
water/water and brine/water

atlantic geolia 13
atlantic geolia 17



atlantic

Document n° 1641-20 ~ 21/11/2022

FR EN NL DE IT

Installation and operating manual

intended for professionals

To be saved for future consultation

atlantic-comfort.com

Contents

Packing list

Heat pump (HP)		*Hydraulic unit*	*Hydraulic accessories kit*
Model	*Code*	*Model*	*Code*
atlantic geolia 13	522973	023423	074085
atlantic geolia 17	522974	023424	

Optional equipment

- ***Dirt separator*** (code 074090)
  to protect the heating circuit of the HP
  (to be placed on the heating circuit return).
- ***2nd circuit kit*** (code 074076)
  for connecting 2 heating circuits.
- ***Separate DHW tank kit*** (code 074074)
  for connecting a separate DHW tank (with built-in electrical back-ups) & sensor.
- ***DHW tank kit*** (code 027992)
  for connecting a DHW tank (with built-in electrical back-up) 300 liters (PECS P300)
- ***Boiler connection kit*** (code 074075)
  for connecting a boiler to the heat pump.
- ***Room thermostat T55*** (code 073951),
  Wireless room thermostat T58 (code 075313)
  for correcting the ambient temperature.
- ***Room control unit T75*** (code 073954),
  Wireless room control unit T78 (code 074061)
  for correcting the ambient temperature and programming the heat pump.
- ***Swimming pool kit*** (code 074088).
- ***Cooling kit*** (code 074087).

Scope of application

This heat pump provides:

- Heating in winter,
- Control of two heating circuits*,
- Production of domestic hot water* (if DHW tank is installed),
- Installation with boiler connection* as a supplementary heating for the coldest days.
- Cooling in summer* (for floor heating-cooling system or fan-convectors).
- Heating the swimming pool*.

* : These options require the use of additional kits (see section "Optional equipment").

1 Description of the unit

1.1 Packaging

- **1 package** : Heat pump and outdoor sensor.
- **1 package** : Flexible connections, filter valves, insulation valves, Brine circuit expansion vessel, Heating circuit expansion vessel, nipples and joints.

1.2 Definitions

- Water/water / Brine/water : The heat contained in the ground (soil, rock or a ground water) is the source of energy. This energy is collected by the brine circuit (in which circulates the glycol water) and then transmitted to the water of the heating circuit.
- Brine circuit : The recovery of heat from the ground (soil, rock or a ground water) takes place by means of a brine in a closed circuit containing glycol water. There are two main types of brines in the ground: horizontal brine circuit or boreholes.
- COP (coefficient of performance): This is the ratio between the energy transmitted to the heating circuit and the electrical energy input. Outdoor temperature has little influence on COP of ground source heat pump.

1.3 Specifications

Model	atlantic geolia		13	17
Nominal heating performances (brine temperature/ heating circuit temperature)				
Heating capacity				
[4] +10°C +7°C / +30°C +35°C	- Floor heating system	kW	16.78	22.13
0°C -3°C / +30°C +35°C	- Floor heating system	kW	12.63	16.63
[4] +10°C +7°C / +40°C +45°C	- Low temperature radiator	kW	15.99	21.40
0°C -3°C / +40°C +45°C	- Low temperature radiator	kW	12.12	16.01
[4] +10°C +7°C / +47°C +55°C	- Radiator	kW	15.59	20.14
Input power				
[4] +10°C +7°C / +30°C +35°C	- Floor heating system	kW	2.94	4.25
0°C -3°C / +30°C +35°C	- Floor heating system	kW	2.91	3.86
[4] +10°C +7°C / +40°C +45°C	- Low temperature radiator	kW	3.68	5.08
0°C -3°C / +40°C +45°C	- Low temperature radiator	kW	3.46	4.56
[4] +10°C +7°C / +47°C +55°C	- Radiator	kW	4.68	5.69
Coefficient of performance (COP)	**[4] (+10°C +7°C / +30°C + 35°C)**		**5.70**	**5.21**
Electrical characteristics				
Supply voltage (50 HZ)		V	400	
Maximum current for HP		A	10.00	13.50
Max. current of the electrical back-up heater		A	3 x 6.50 (19.5 sur N)	
Maximum current for appliance (HP + Electrical back-up) /phase		A	16.50	20.00
Heating capacity of electrical back-up		kW	3 x 1,5 kW	
Effective power input of Heating circulating pump		W	50	
Effective power input of Brine circulating pump		W	130	
Hydraulic circuit				
Maximum operating pressure (Heating et Brine)		MPa (bar)	0.3 (3)	
Heating circuit flow rate Δt=10°C (nominal conditions)		l/h	1300	1700
Brine flow rate Δt=5°C (nominal conditions)		l/h	1700	2200
Mini water volume of Heating circuit		l	200	250
Other items				
Sound power level at 0/55°C according EN 12102 [2]		dB (A)	54.8	
Weight of HP (empty / full of water)		Kg	175/ 180	185/ 190
Heating circuit expansion vessel		l	18	
Brine expansion vessel		l	18	
Heating system operation limits				
Min / max temperature of Brine return:				
- for a Heating circuit max. flow temperature 55°C		°C	-7 / 0	
- for a Brine circuit max. flow temperature 60°C		°C	0 / 25	
Refrigeration circuit				
Diameter (Heating circuit / Brine circuit)		Inch	1'1/4 (36/42)	
Factory load of refrigerant R410A [3] (CO2 equivalent)		g (t)	1700 (3.549)	2300 (4.801)
Maximum operating pressure		MPa (bar)	4.2 (42)	

[2] The sound power level is a laboratory measurement of the emitted sound power, it doesn't correspond to the measure of the felt.

[3] Refrigerant R410A according to NF EN 378.1.

[4] The tests for evaluating the performance of heat pumps have been made without intermediate heat exchanger. if you use an intermediate heat exchanger in the installation, performances will be reduced and data published are not certified.

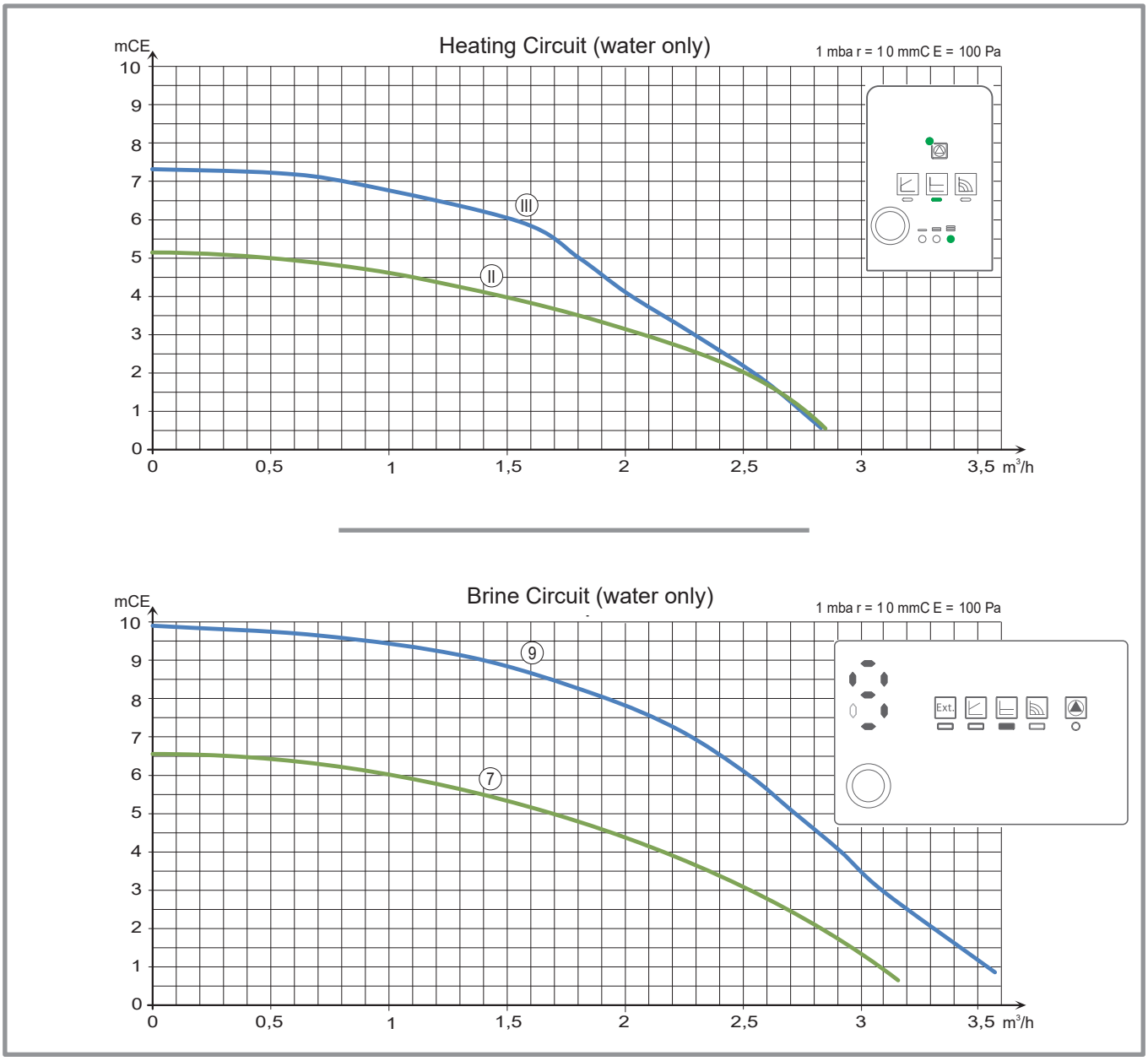


figure 2 - Hydraulic pressures and available flow rates

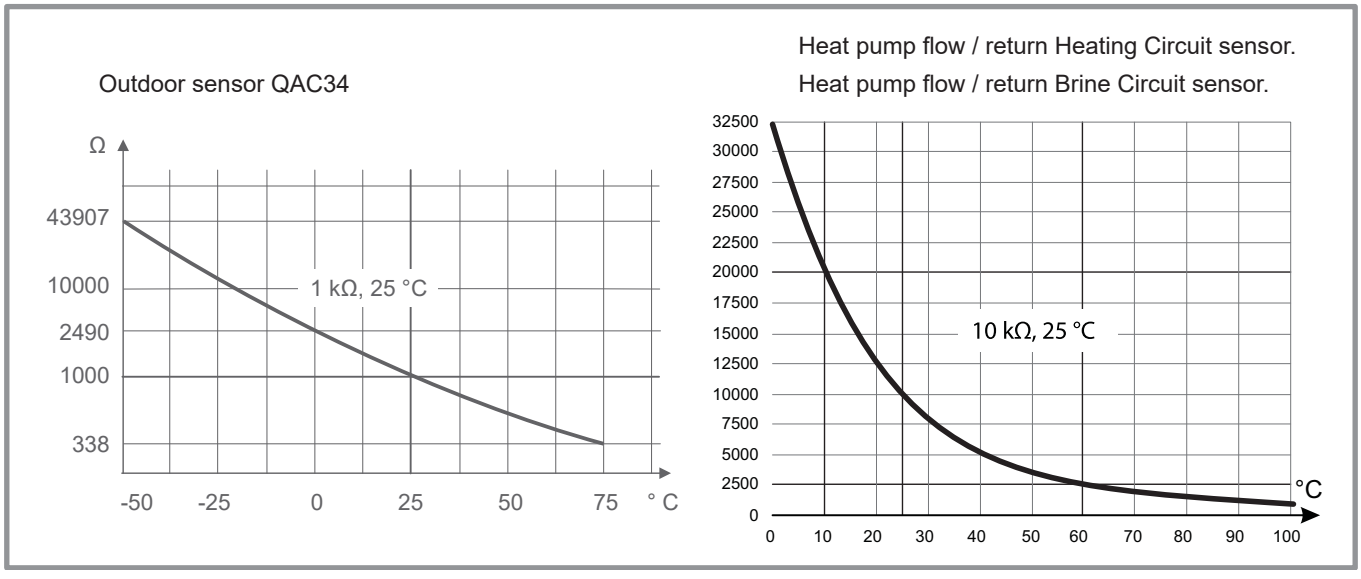
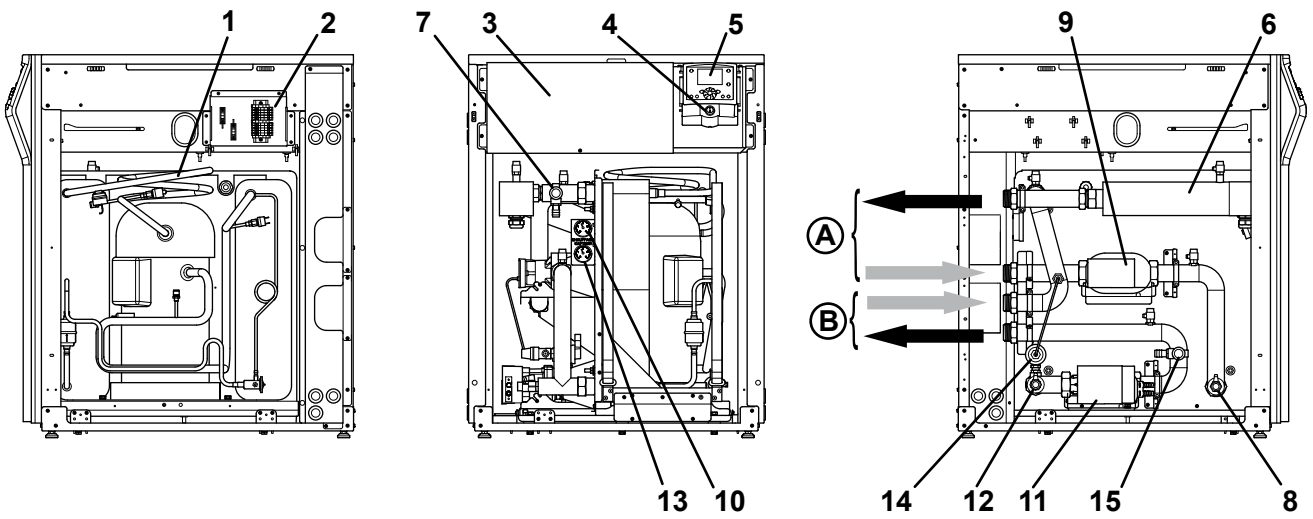


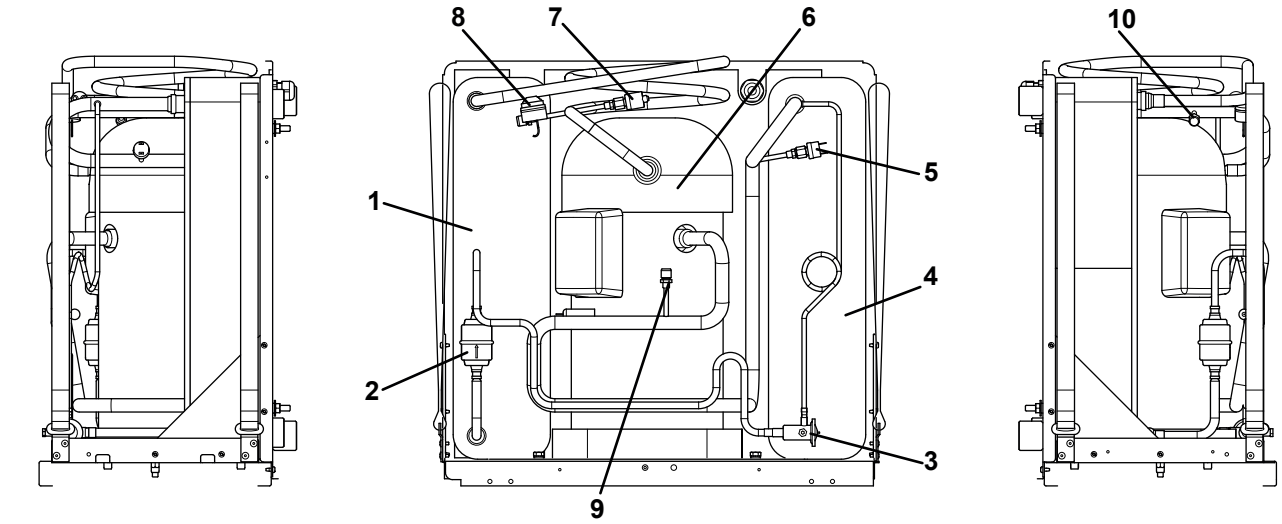
figure 3 - Ohmic values of the sensors (Heating pump)



Caption :

1 - Refrigerant unit
2 - Supply terminal block
3 - Electric box
4 - Start/stop switch
5 - User interface
6 - Electrical back-up (AE)
7 - Heating circuit safety valve
8 - Heating circuit drain valve
9 - Heating circuit pump (CC)
10 - Heating circuit manometer
11 - Brine circuit pump (CCpt)
12 - Brine circuit drain valve
13 - Brine circuit manometer
14 - Flow pressure controller Brine circuit (PCpt)
15 - Brine circuit safety valve
A - Flow / return Heating circuit
B - Flow / return Brine circuit

figure 4 - Heat pump components



Caption :

1 - Condenser (Cn)
2 - Deshydrator filter
3 - Expansion valve (Dt)
4 - Evaporator(Ev)
5 - Low pressure sensor (BP)
6 - Compressor (Cp)
7 - High pressure sensor (HP)
8 - Compressor safety thermostat (TSCp)
9 - Low pressure nozzle (BP)
10 - High pressure nozzle (HP)

figure 5 - Refrigerant unit components

1.4 Operation principle

The ground source heat pump uses the energy stored in rock, ground or water to provide heat to a building and to sanitary water.

A ground source heat pump is made of 3 main components:

- The heat pump itself,
- The brine circuit,
- The heating emitters (radiators, heating floor…).

• In the brine circuit: energy is taken from the rock, ground or water by the brine and then released to the refrigerant circuit. Brine circuit can be a surface collector or several bore holes collector.

• The heat pump is made of a refrigerant circuit (ref. **1**, figure 4, page 7) which contains the following components :

- Evaporator (ref. **Ev,** figure 7, page 9) : The heat removed from the ground by the brine is released to the refrigerant. Refrigerant boiling point is lower than the brine temperature, the refrigerant moves from liquid to gaseous states.
- Compressor (ref. **Cp,** figure 7, page 9) : Pressure and temperature of the refrigerant are increased.
- Condenser (ref. **Cn,** figure 7, page 9) : The refrigerant releases its energy to the heating circuit water. The refrigerant moves from gaseous to liquid states.
- Expansion valve (ref. **Dt,** figure 7, page 9) : Pressure and temperature of the refrigerant are lowered.

• The heat pump is equipped with a control system that set the heating circuit water temperature according to outdoor temperature. (heating curves). Room sensor (optional) can be installed; it corrects the water temperature according to indoor temperature when needed.

• The heat pump is equipped with a back-up heater that provides additional heat when needed.

• The heat pump, as an option, can be ducted to a boiler which will provide the additional heat when needed.

• Control system function

- The average leaving water temperature of the heating circuit is controlled by the heating curve.
- Indoor temperature can be scheduled (week/day), several temperatures can be set.
- Switching from winter/summer operation modes is automatic.
- Management of back up heater
- Management of ducted boiler* (optional)
- Room sensor*: corrective action on heating curve.
- 2nd heating circuit control
- Domestic hot water: heating schedule, management of DHW circulating pump.
- Buffer tank* control (mandatory with radiators or several heating zones / 15l/kW).

* in case heat pump is equipped with the correct option or kit.

• Fan-coil with integrated control system

Do not use a room sensor in the area equipped with fan coils.

• Protection functions

- Anti-legionella cycle for domestic hot water*.
- Anti-freeze protection: when leaving water temperature of the heating circuit reaches 5°C, anti-freeze protection is activated (provided power supply is on).

• Domestic hot water (DHW) operation*

2 DHW temperatures can be set : nominal temperature (line 1610, 55°C) and reduced temperature (line 1612, 40°C).

Factory schedule for DHW operation (lines 560, 561, 562) set nominal temperature from 0:00 to 5:00 and from 14:30 to 17:00. Reduced temperature is set the rest of the day. This schedule optimises the electrical energy consumption and insures hot water availability and heating comfort.

Setting of reduced temperature can be useful to provide often witch on of the DHW production.

DHW production is activated when DHW temperature is 12°C below the set temperature.

DHW heating can be completed by water tank back-up heater when needed.

To insure DHW temperature higher than 45°C, it is necessary to connect water tank back up heater.

Depending on the DHW schedule (line 1620), comfort temperature will be maintained 24h/day or only during the night or as defined in the schedule.

DHW production takes priority over heating. Nevertheless, in case of simultaneous demand for DHW and heating, the control system manages both heating times to insure comfort.

A function to switch from “reduced” to “comfort” is available on the user interface (see ref. **8**, figure 33, page 30).

Anti-legionella cycles can be scheduled.

1.5 Performances

1.5.1 Running-in period

Compressor needs a running-in period.

Rating performances will be reached after a minimum of 48 hours running operation.

1.5.2 Expansion valve setting

Your appliance has been factory set to insure safe operation and optimum performance

Interventions on refrigerant load or expansion valve setting could be authorised only in case of extremely stable hot or cold sources and under manufacturer control.

☞ **Do not proceed to any changes without agreement from manufacturer. Any mishandling can cause serious damages.**

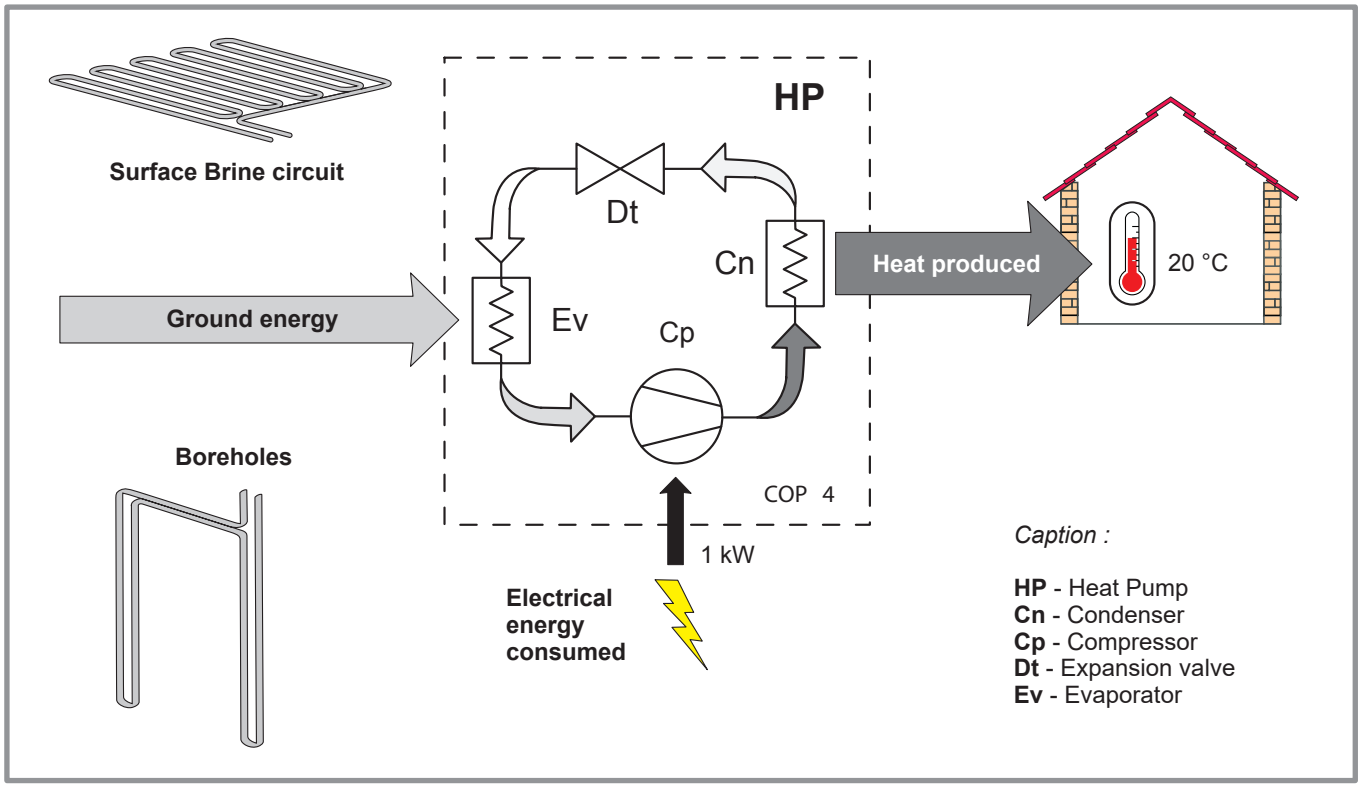


figure 6 - Heat pump operation principle

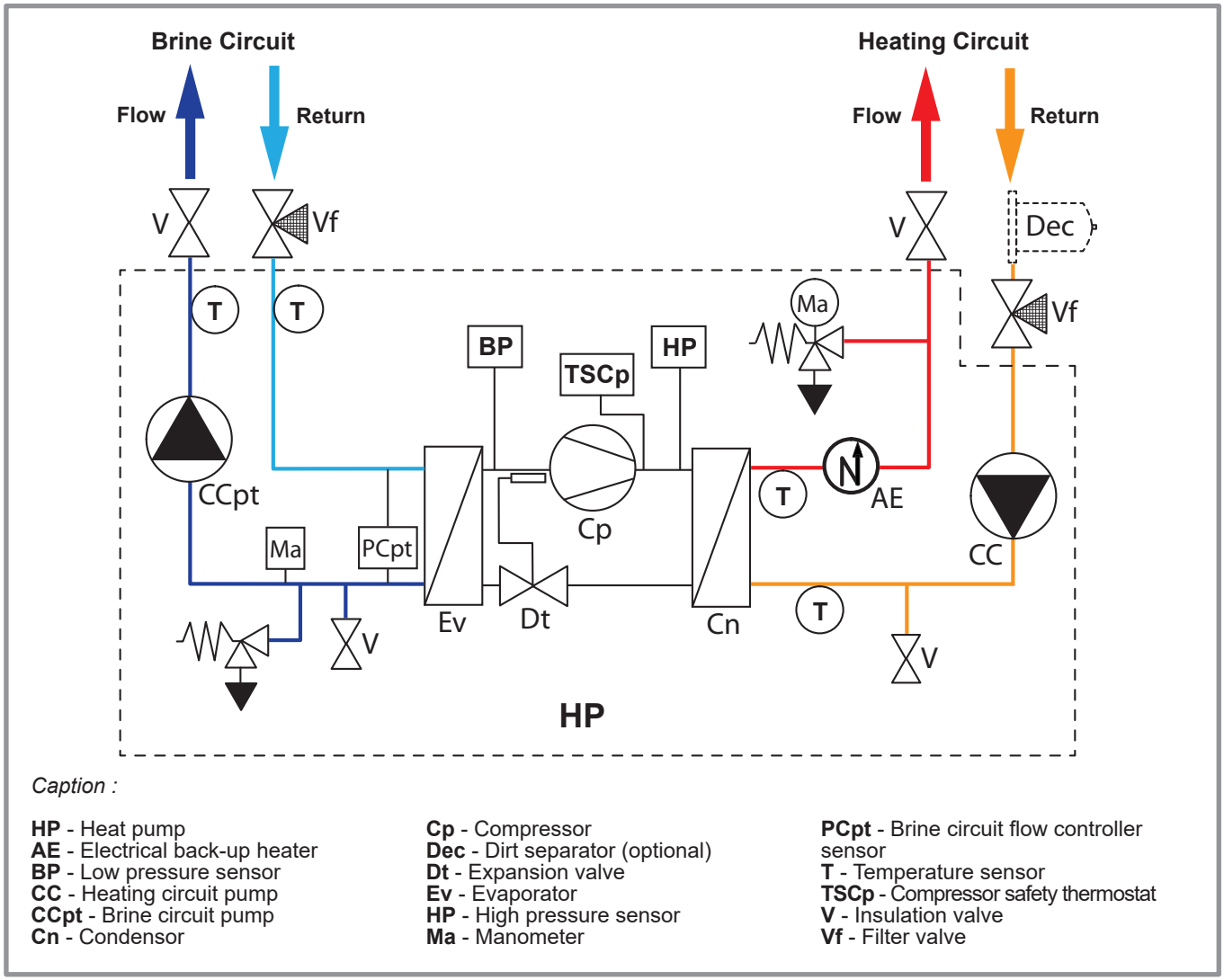


figure 7 - Principle layout of the Heat pump

2 Installation

2.1 Installation rules and maintenance conditions

The appliance must be installed and maintained by an approved professional in accordance with the prevailing regulations and state of the arts, in particular:

- The legislation on the handling of refrigerants.
- Heating installation with floor heating system.
- Low voltage electrical installations - Rules.

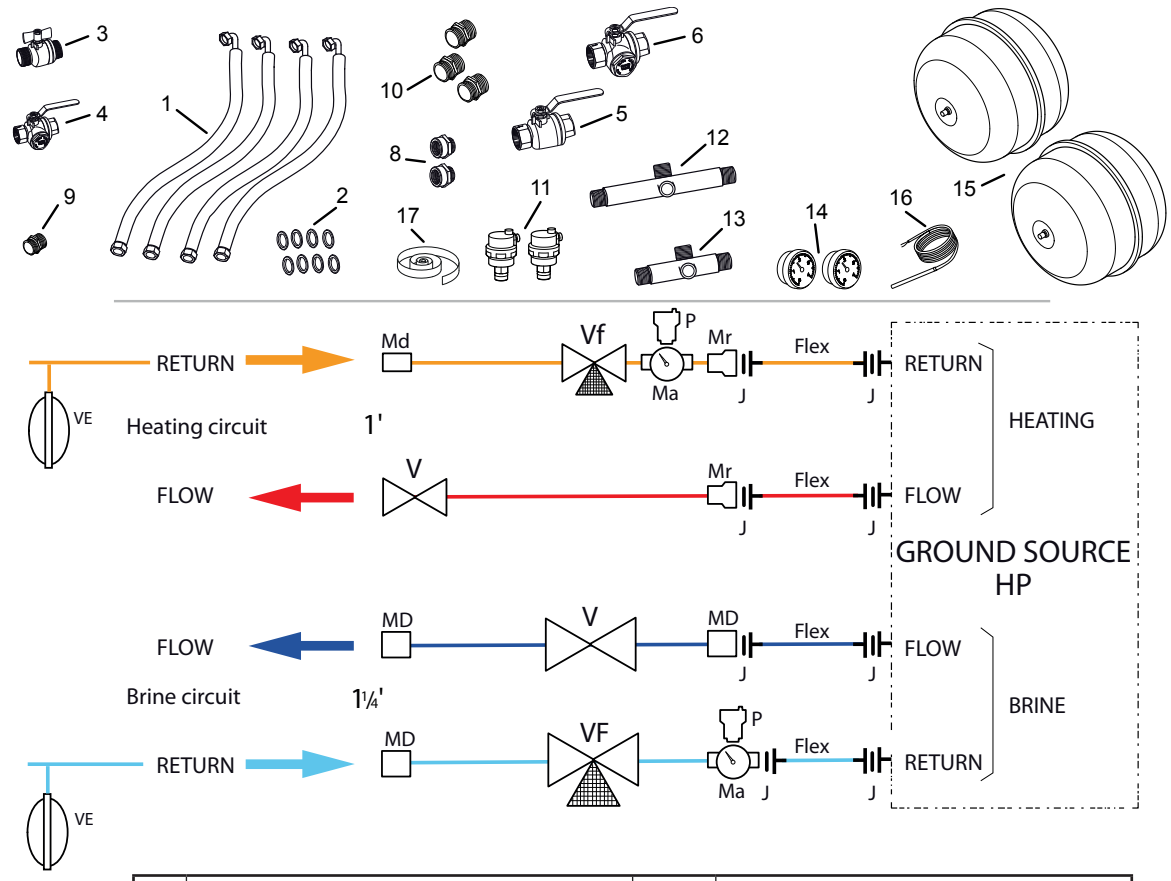
2.2 Unpacking and reservations

2.2.1 Reception

Carefully check, in the carrier's presence, the general appearance of the appliance and check that it has not been laid on its side or back.

In the case of any doubt, state any appropriate reservations to the carrier in writing within 48 hours and send a copy of this letter to the After-Sales service.

2.2.2 Provided accessories



1	Flexible hose	**(Flex)**	**4**	for connection of the HP to the Brine circuit and Heating circuit
2	Gaskets 33 x 42	**(J)**	**8**	
3	Valve 1'	**(V)**	**1**	
4	Filter valve 1'	**(Vf)**	**1**	
5	Valve 1'1/4	**(V)**	**1**	
6	Filter valve 1'1/4	**(VF)**	**1**	
8	Reduced nipple 1' / 1'1/4	**(Mr)**	**2**	
9	Nipple 1'	**(Md)**	**1**	
10	Nipple 1'1/4	**(MD)**	**3**	
11	Drainer	**(P)**	**2**	
12	Brine circuit pipe		**1**	
13	Heating circuit pipe		**1**	
14	Manometer	**(Ma)**	**2**	
15	Expansion vessel	**(VE)**	**2**	
16	Buffer sensor		**1**	for buffer (optional)
17	Adhesive insulating tape		**1.3 m**	to insulate the Brine fitting

2.2.3 Handling

The ground source heat pump should not be laid down during transportation. Lying down transportation may damage internal pipes and compressor suspension. Any damage caused by lying down transportation are not covered by the warranty. On short distances, it is possible to use a hand truck without exceeding a 45° angle.

If necessary, the ground source heat pump can be tilted only when manual handled (to go through a door, use a staircase). This operation must be conducted very carefully and the appliance must be immediately restored to upright position.

2.3 Installation location

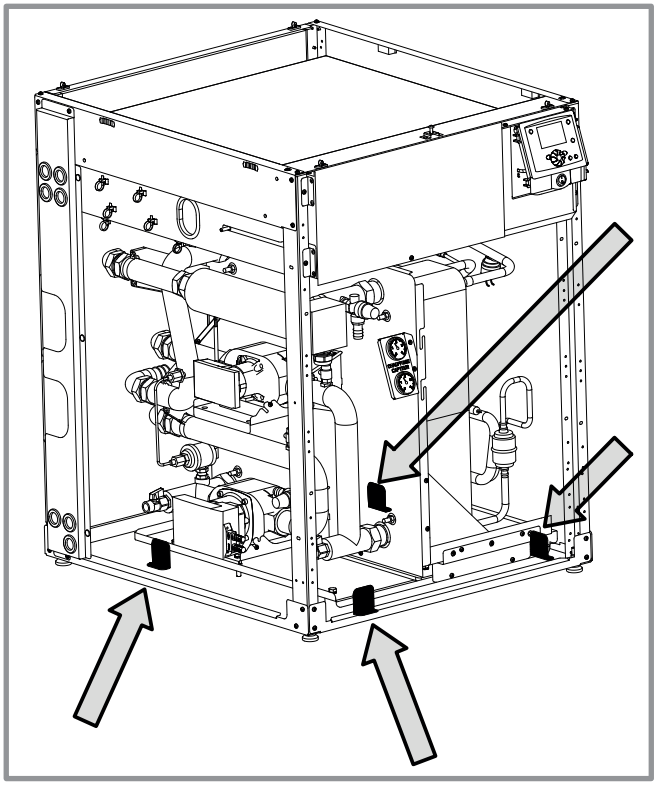
The choice of the location for installation is particularly important insofar as any later movement is a tricky operation requiring the intervention of a qualified person.

Choose the location of the heat pump after discussion with the customer.

The heat pump should be placed on a clean level slab to support the weight of the machine.

2.4 Safety transport paws

☞ **Remove safety transport paws.**



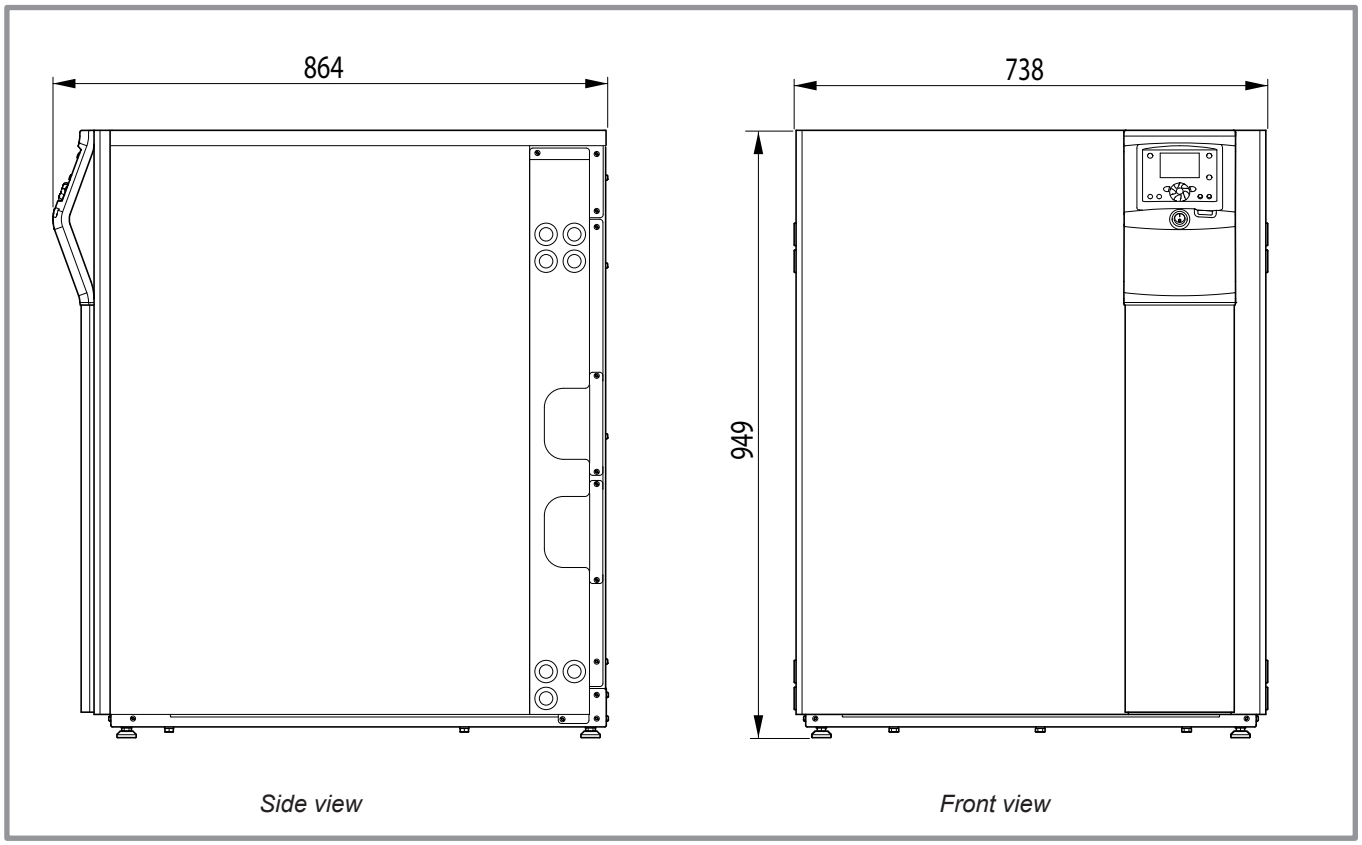


figure 8 - Dimensions in mm

2.5 Brine circuit Installation

2.5.1 Dimensioning of the brine circuit

• Refer to the instructions supplied with the Brine circuit kit.

The Brine circuit must be sized to pass the flow rate and collect the calories according to the ground source HP characteristics.

☞ **The length of the Brine circuit can vary depending on soil type, climate zone, or heating system (radiators, heated floor, etc..).**

With the Brine circuit kit, according to the available surface, the soil or earthmoving equipment available, it is possible to realize different geometries. Likewise if the length of delivered tube corresponds to the worst case (excluding extreme cases such as dry sand, pozzolan, etc..), according to the type of the soil it is possible to modulate the loop surface and the total length used.

The diameter of the pipe between the heat pump and the brine circuit collector, must be at least to 1'1/4 inch (33x42 mm).

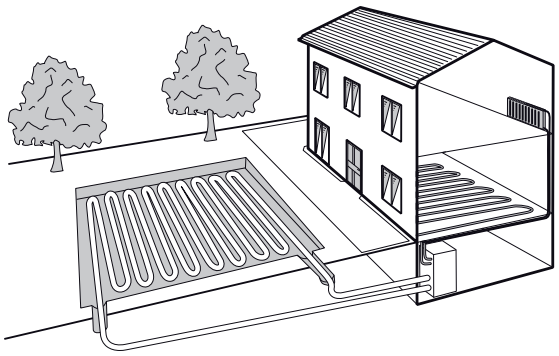
Calculate the pipes diameter according to the flow rates and lengths of hydraulic networks.

Tightening torque : 15 to 35 Nm.

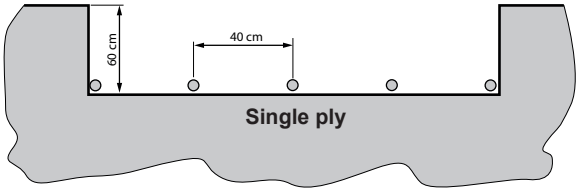
The use of glycol is mandatory. Use monopropylene glycol only. The recommended concentration is 30% minimum.

Never use monoethylene glycol.

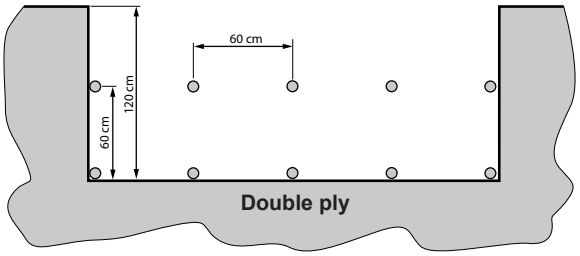
2.5.2 Surface Brine circuit



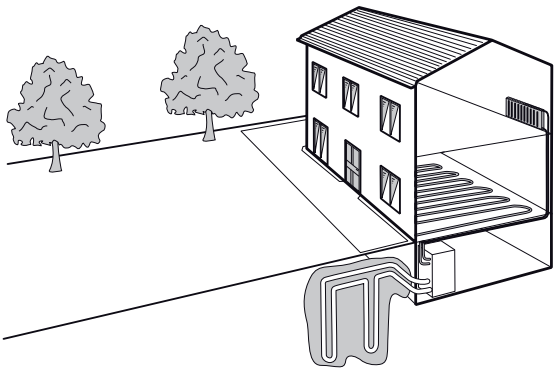
Surface Brine circuit single ply



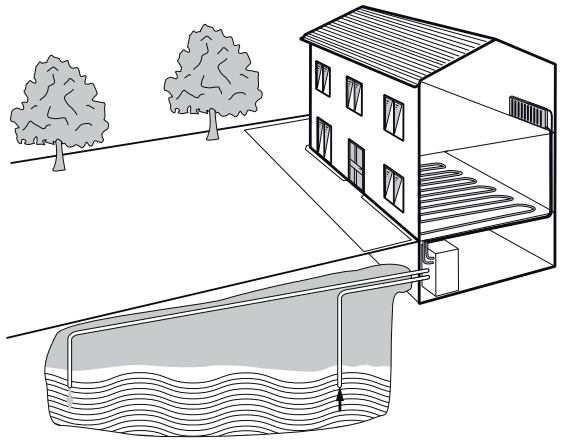
Surface Brine circuit double ply



2.5.3 Boreholes



2.5.4 Ground water



An intermediate heat exchanger is required to protect the heat pump exchanger of the impurities. The intermediate heat exchanger must be installed as close as possible to the heat pump. Limit the quantity of elbows to a minimum.

The ground water pump or solenoid valve (booster compressor) is connected to intermediate heat exchanger terminal (terminals **N** & **L**, figure 16, page 21) via an external relay (not supplied).

2.5.5 Connection of the Brine circuit

The Brine circuit pump is integrated to the heat pump.

- **Insulate pipes inside the house** to prevent condensation using the supplied self-adhesive insulating tape.
- Install insulation valves as close as possible to the heat pump. Install the filter valve on the Brine circuit return in the recommended sense.

  ☞ **Valves shall remain open out of maintenance period.**
- Install the expansion vessel on the Brine Circuit.
- Check the pressure of the expansion vessel (precharge 1 bar).
- Check that the pressure of Brine Circuit is higher than 1 bar.

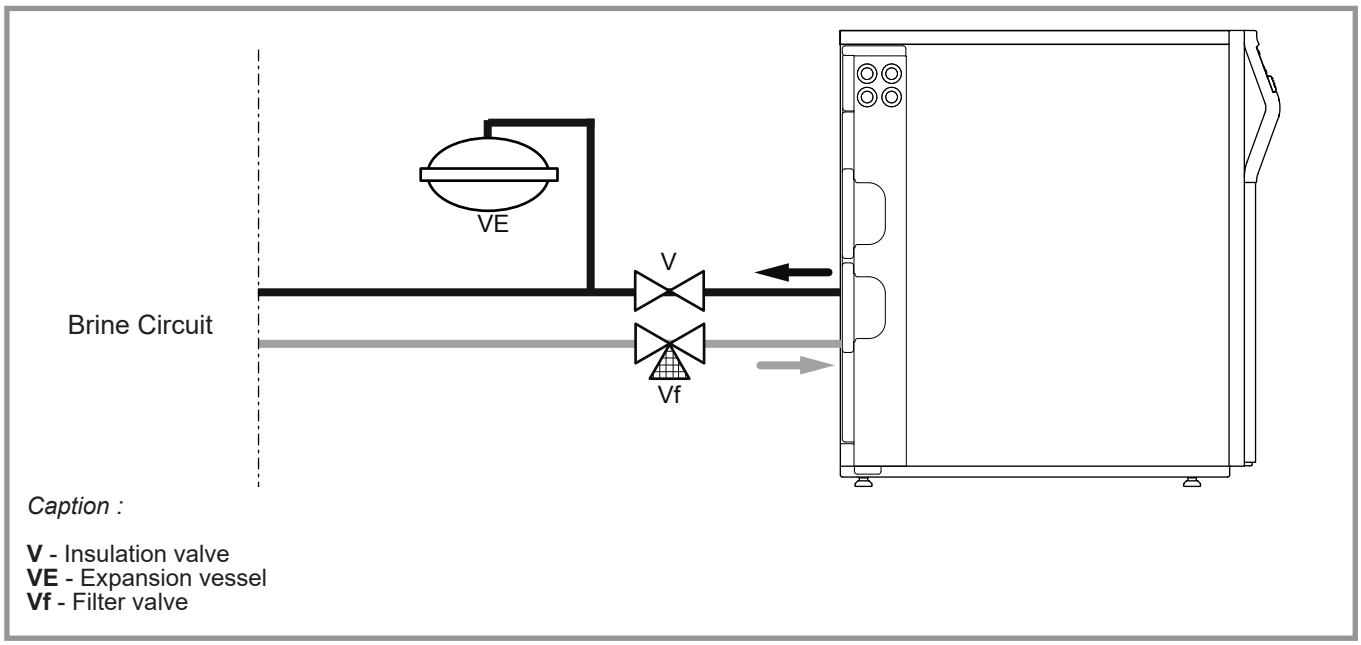


figure 9 - Principle of connection of the Brine Circuit

2.6 Installation of the Heat Pump

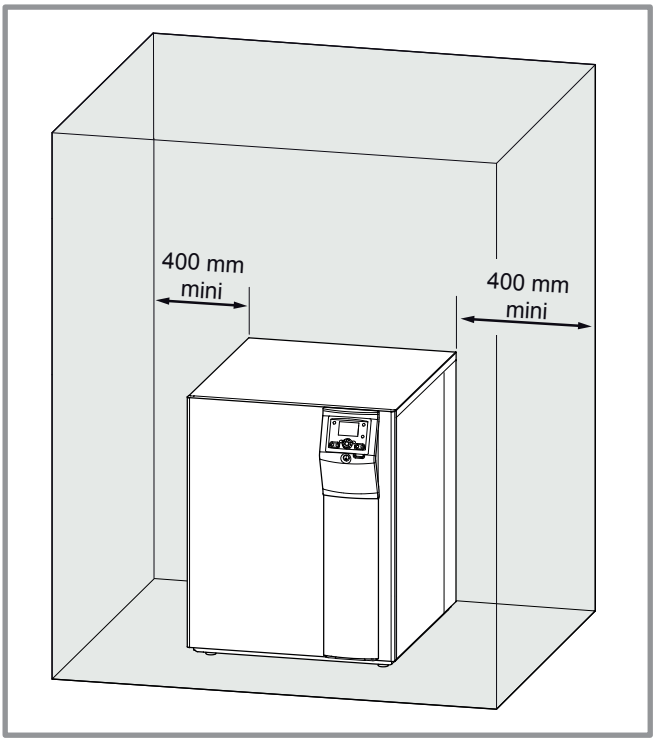
2.6.1 Installation precautions

In accordance with EN 378-1 -2017 standard (Refrigerating systems and heat pumps - Safety and environmental requirements), the system's hydraulic unit and all refrigeration connections passing through inhabited areas must comply with the minimum room volume requirements shown hereafter.

The minimum volume of a room (in m^3) is calculated using the formula: "fluid fill load" (in kg) / 0.39.

Alternatively, you must ensure that :

- The location has natural ventilation through another room where the combined volume of the two rooms is greater than "liquid fill load" (in kg) / 0.39 kg/m^3. The opening between the two rooms must have a door clearance of at least 1 cm.
- Or that the location is mechanically ventilated.



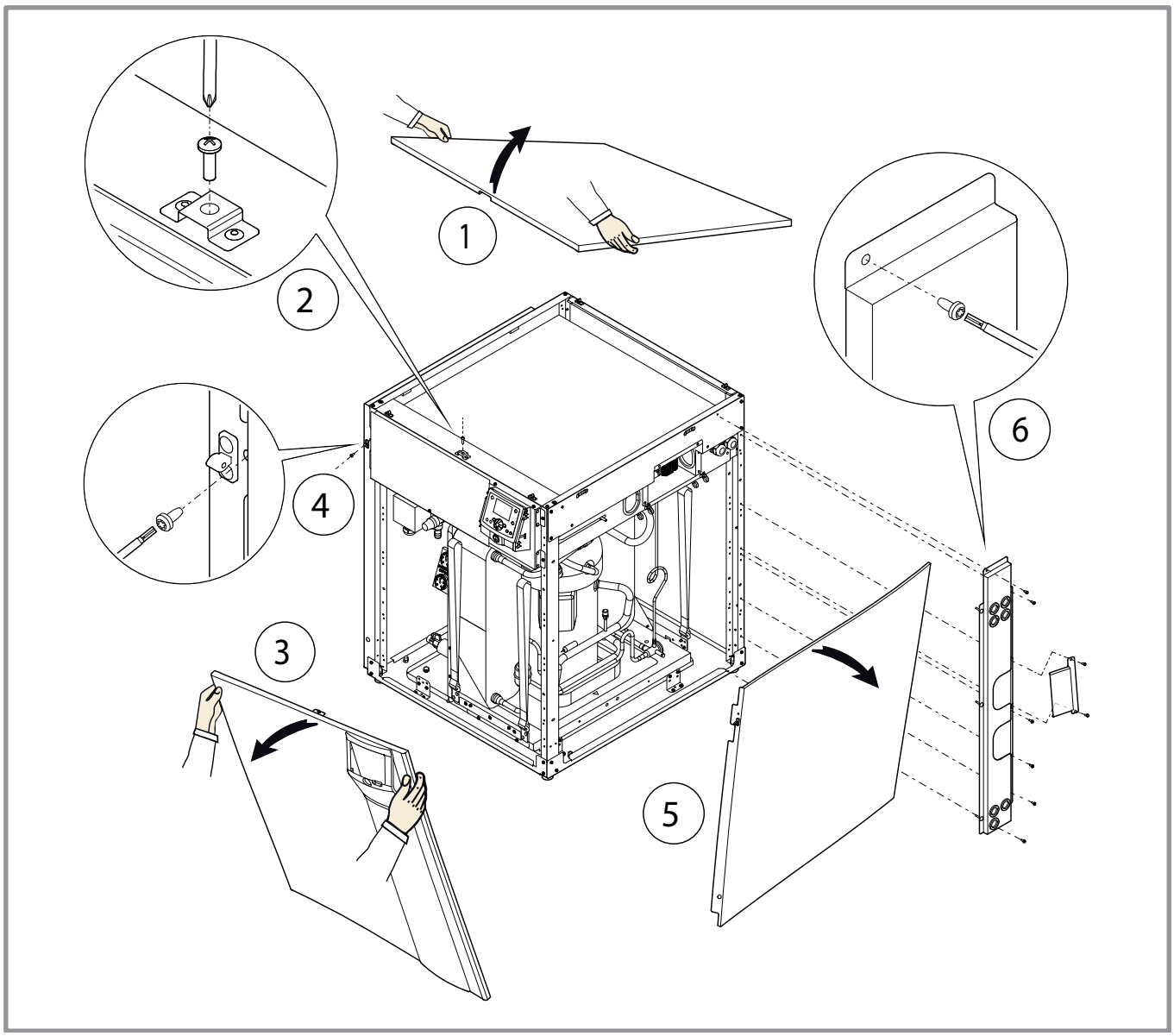
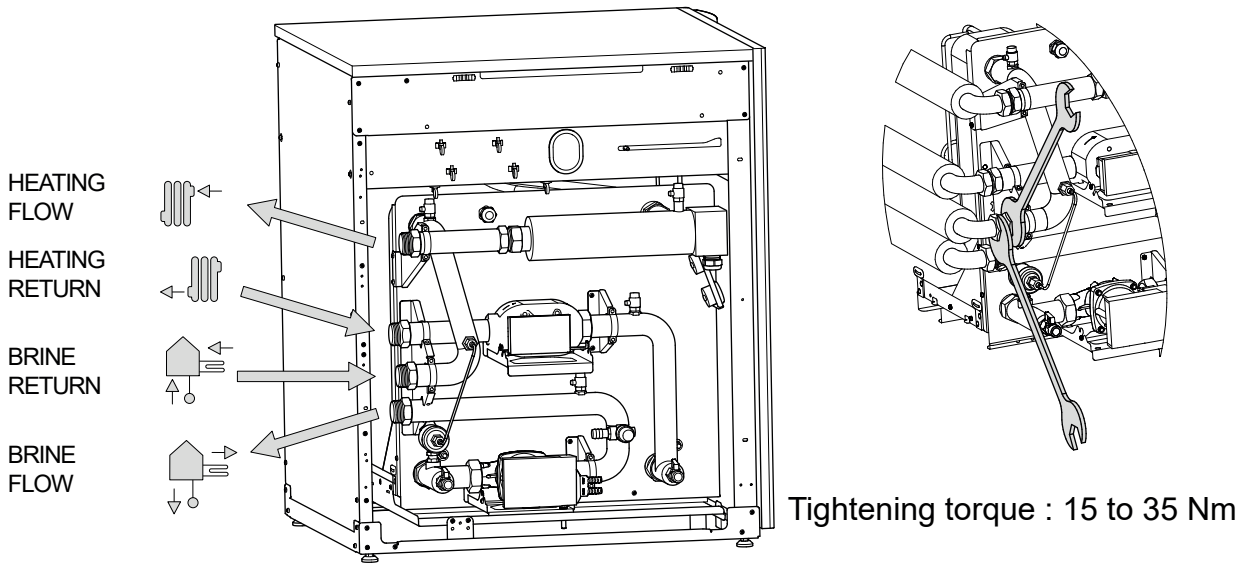


figure 10 - Remove the panel

- Be careful not to bring flammable gas near by the heat pump during its installation, in particular when brazing is required. The appliances are not fireproof and should therefore not be installed in a potentially explosive atmosphere.
- To facilitate maintenance and to allow access to the main components, we recommend that you leave sufficient space all around the Heat Pump.

2.6.2 Access to the HP connections

- Remove the front panel.
- Remove the left-hand panel (or right).
- Use the included connection hoses.
- Install the filter valve on the return Brine Circuit and dirt separator (optional) and filter valve on the Heating Circuit return as suggested.



☞ **Use the included connection hoses included.**
Install the filter valve on the Brine Circuit return,
dirt separator (optional) and filter valve on the Heating Circuit return.

figure 12 - Connections (Brine & Heating Circuit)

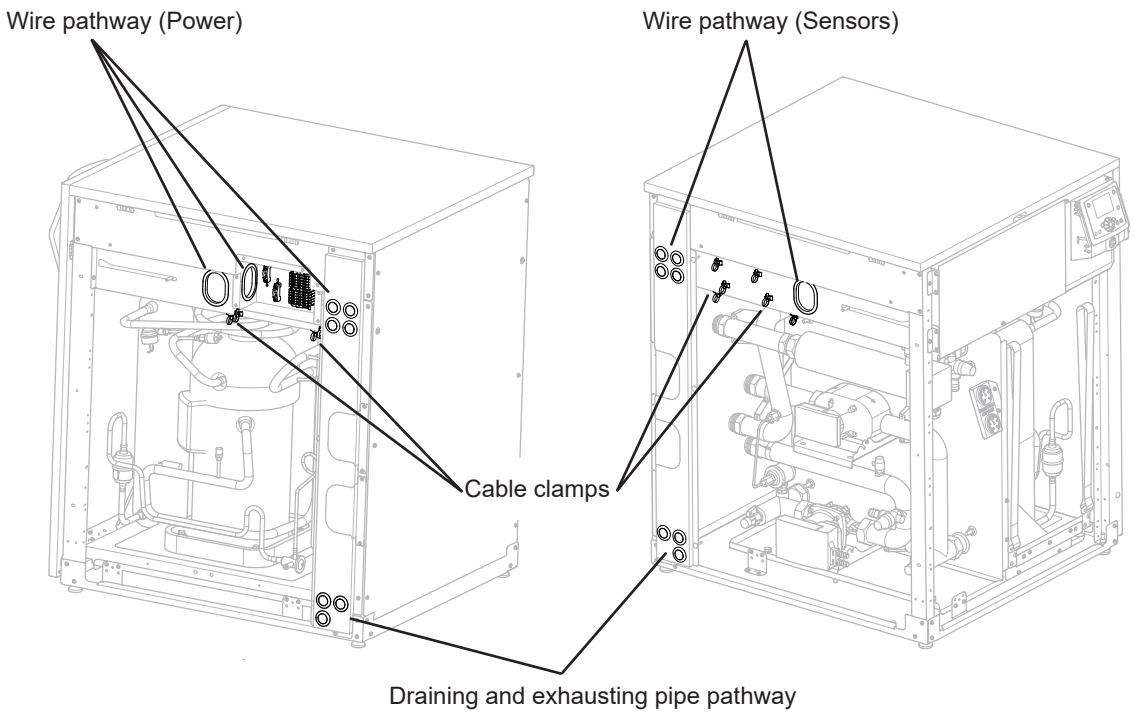


figure 11 - Cables & pipes pathway

2.7 Hydraulic connection of the heating circuit

2.7.1 General

The tightness operation shall follow the plumbing state of the art:

- Use suitable seals (fibre seals, o-rings).
- Use Teflon tape or hemp.
- Use sealing paste (synthetic depending on the case).

The use of glycol is not necessary (except in special cases).

If you are using a glycol/water mix, an annual check of the quantity of glycol is necessary. Use monopropylene glycol only. The recommended concentration is 30% minimum. **Never use monoethylene glycol.**

☞ **In some installations, the presence of different metals can cause corrosion problems; the formation of metal particles and sludge in the hydraulic circuit can appear.**

☞ **In this case, it is advisable to use a corrosion inhibitor in the proportions indicated by its manufacturer.**

- Please refer to the chapter "Treatment of domestic and heating water" in our price catalogue.

☞ **It is also necessary to ensure that the treated water does not become aggressive.**

2.7.2 Rinsing out the installation

Before connecting the heat pump to the heating circuit, rinse out the heating system correctly to eliminate any particles that may affect the appliance's correct operation.

Do not use solvents or aromatic hydrocarbons (petrol, paraffin, etc.).

Add an alkaline product to the water and a dispersant.

Rinse the installation several times before filling it definitively.

2.7.3 Connection

The heating circuit pump is integrated to the heat pump.

- Connect the central heating pipes on the heat pump in accordance with the flow direction.

The pipe diameter between the heat pump and the heat collector must be at least one inch (26x34 mm).

Calculate the diameter of the pipes according to the flow rates and the lengths of the hydraulic systems.

Tightening torque: 15 to 35 Nm.

- Use connection hoses to avoid transmitting noise and vibrations to the building.
- Install the filter valve on the Heating return circuit in the recommended sense.
- Install dirt separator (optional) on the Heating circuit return.
- Install the expansion vessel of the heating circuit.
- Connect the drains from the drain valve and the safety valve to the main sewer system (except when glycol is used).

2.7.4 Filling and venting the installation

Check the pipe connection, the tightness of the connectors and the stability of the heat pump.

Check the direction in which the water is circulating and that all the valves are opened.

Proceed the installation filling.

Do not run the circulating pump while filling. Open all the drain valves in the installation and the bleeder valve for the hydraulic unit (**P**) to remove the air contained in the pipes.

Close the drain and bleeder valves and add water until the pressure in the hydraulic circuit reaches 1 bar.

Check that the hydraulic circuit has been correctly vented.

Check there is not a leak.

After the "Commissioning", page 24, once the machine has started, vent again.

2.7.5 Connection of Fan-coil or Dynamic radiator circuit

☞ **A buffer tank shall be installed (minimum capacity 15l/kW).**

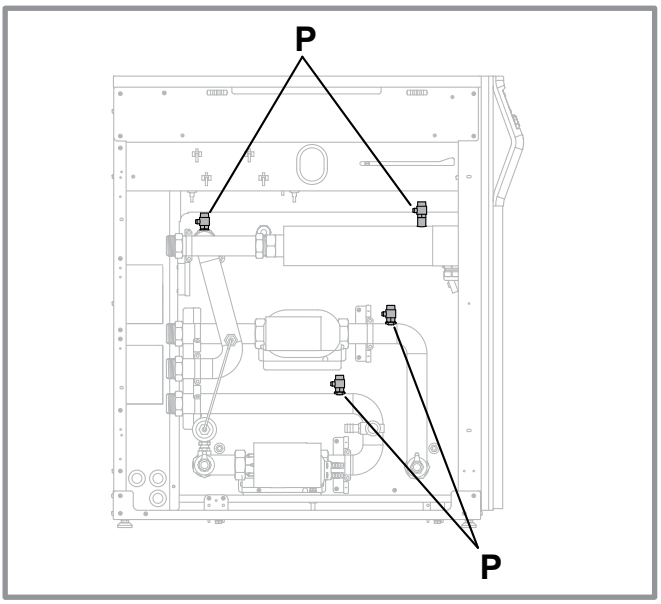


figure 13 - Hydraulic module drain valve

2.8 Electrical connections

Ensure that the general electrical power supply has been cut off before starting any repair work.

2.8.1 Characteristic of the electrical supply

The electrical installation must be conducted in accordance with the prevailing regulations.

The electrical connections must only be made when all the other fitting operations have been completed (fixing, assembly, etc.).

☞ **Warning !**

The contract concluded with the energy supplier must be sufficient not only to cover the heat pump's input power but also the combined sum of all the appliances likely to be operating at the same time. When the power is too low, check with your energy supplier the value subscribed to in your contract.

Never use a socket for the power supply.

The heat pump must be supplied directly (without external switch) with power by special protected leads from the electric panel via 2-pole circuit breakers specially dedicated to the heat pump, Curve D for the outdoor unit, curve C for the electrical back-up and domestic water back-up (see tables page 19).

The electrical installation must necessarily be equipped with a 30mA differential protection.

This appliance is designed to operate under a nominal voltage of 400V - 50 Hz.

2.8.2 General remarks on electrical connections

It is essential to maintain the live-neutral polarity when making the electrical connections.

Tighten the screws on the terminal blocks tightly. Unsufficient tightening can cause overheating, leading to breakdown or even fire.

All outgoing cables of the electrical box **must pass through** a cable gland or a cable clamp.

Electrical box shall be **fully open** during connections process.

Tighten the cables using the cable glands to prevent the conductors from disconnecting accidentally.

Ensure that the ground wire is long enough to prevent accidental disconnections.

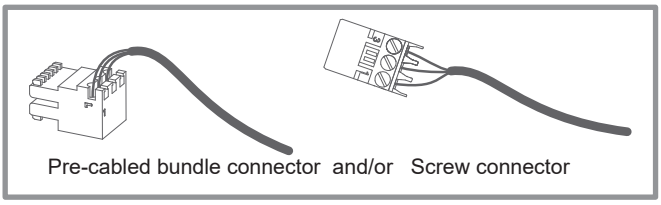
Connection to Earth and Earth bonding continuity are essential.

• Connecting to electronic board

Flexible wires

H07RNF type (or superior quality) flexible wire can be used with certain precautions:

- Strip away around 10 mm from the end of the wire.
- Remove the corresponding connector and make the connection.

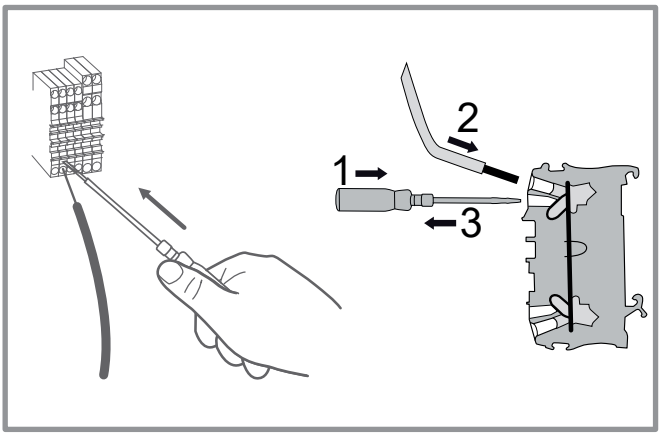


• Connection to spring terminals

☞ **The use of round terminal or the ends is prohibited**

Rigid wires are always preferable for fixed installations, particularly in building.

- Always select a wire that complies with the prevailing standards.
- Strip away around 14 mm from the end of the wire.
- Push the spring with a screwdriver so that the wire enters the cage.
- Slide the wire into the opening provided for this purpose.
- Remove the screwdriver and then check that the wire is jammed in the cage by pulling on it.



2.8.3 Overview of all the electrical connections

The wiring diagram for the hydraulic unit is shown in detail on figure 18, page 22.

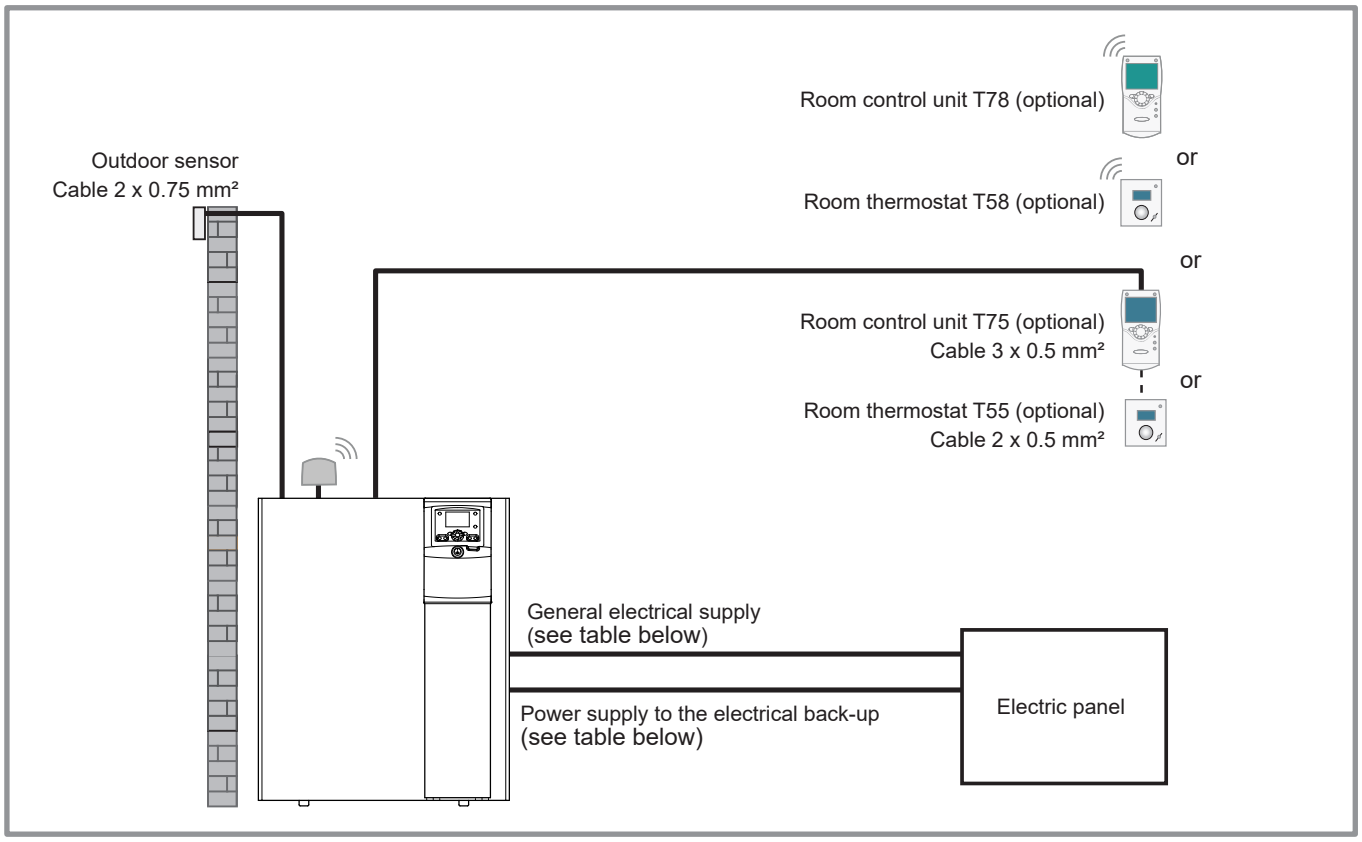


figure 14 - Overall layout of the electrical connections for a simple installation (1 heating circuit)

2.8.4 Cable section and protection rating

The cable sections are given for information purposes only and do not exempt the installer from checking that these sections meet the requirements and comply with the prevailing standards.

• Power supply to Heat Pump

Heat pump (HP)		*Electricity supply 230 V - 50 Hz*	
Model	*Maxi. input power*	*Cable connection (phase, neutral, earth)*	*Curve D circuit breaker size*
atlantic geolia 13	10.00 A	5 G 2.5 mm²	20 A
atlantic geolia 17	13.50 A		

• Power supply to the electrical back-up

The heat pump contains two stages of electrical back-up.

Heat pump (HP)	*Electrical back-up*		*Power supply to the electrical back-up 400 V - 50 Hz*	
Model	*Power*	*Nominal current*	*Cable connection (phase, neutral, earth)*	*Curve C circuit breaker size*
atlantic geolia 13, 17	3 x 1500 W	6.50 A / phase (19.5 on N)	5 G 6 mm²	25 A

☞ **Ensure that the general electrical power supply has been cut off before starting any repair work.**

2.8.5 Electrical connections of HP

Access to the connection terminals:

- Remove the front panel and the right side panel of the HP.
- Remove the front panel of the electrical box.
- Make the connections in accordance with the diagram figure 17, page 21.
- All outgoing cables of the electrical box **must pass through** a cable gland or a cable clamp.
- Electrical box shall be **fully open** during connections process.

Do not install the sensor wires and the power supply wires in parallel in order to avoid interferences due to voltage points in the power supply.

Ensure that all the electrical cables are housed in the spaces provided for this purpose.

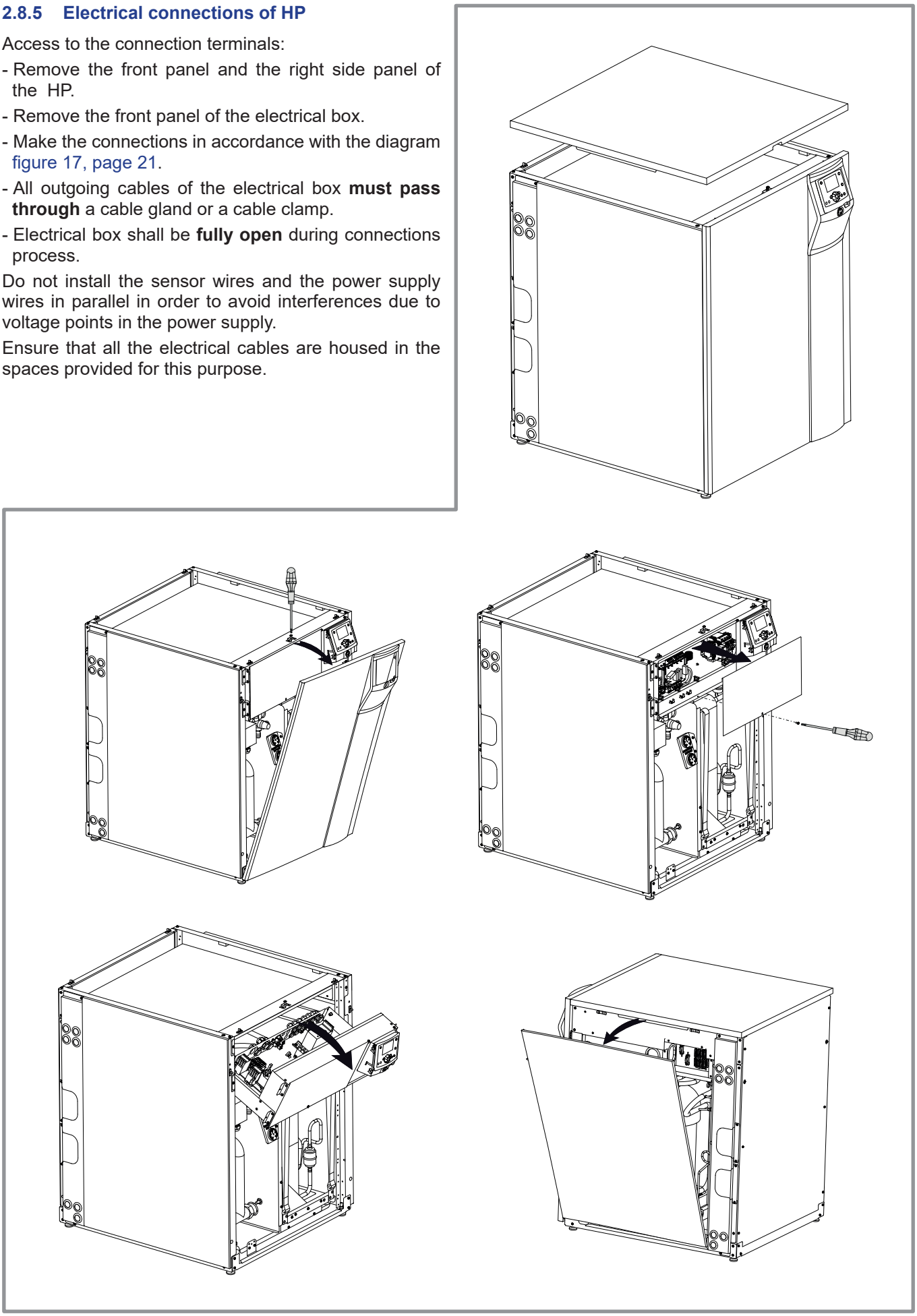


figure 15 - Access to Electrical box terminal block

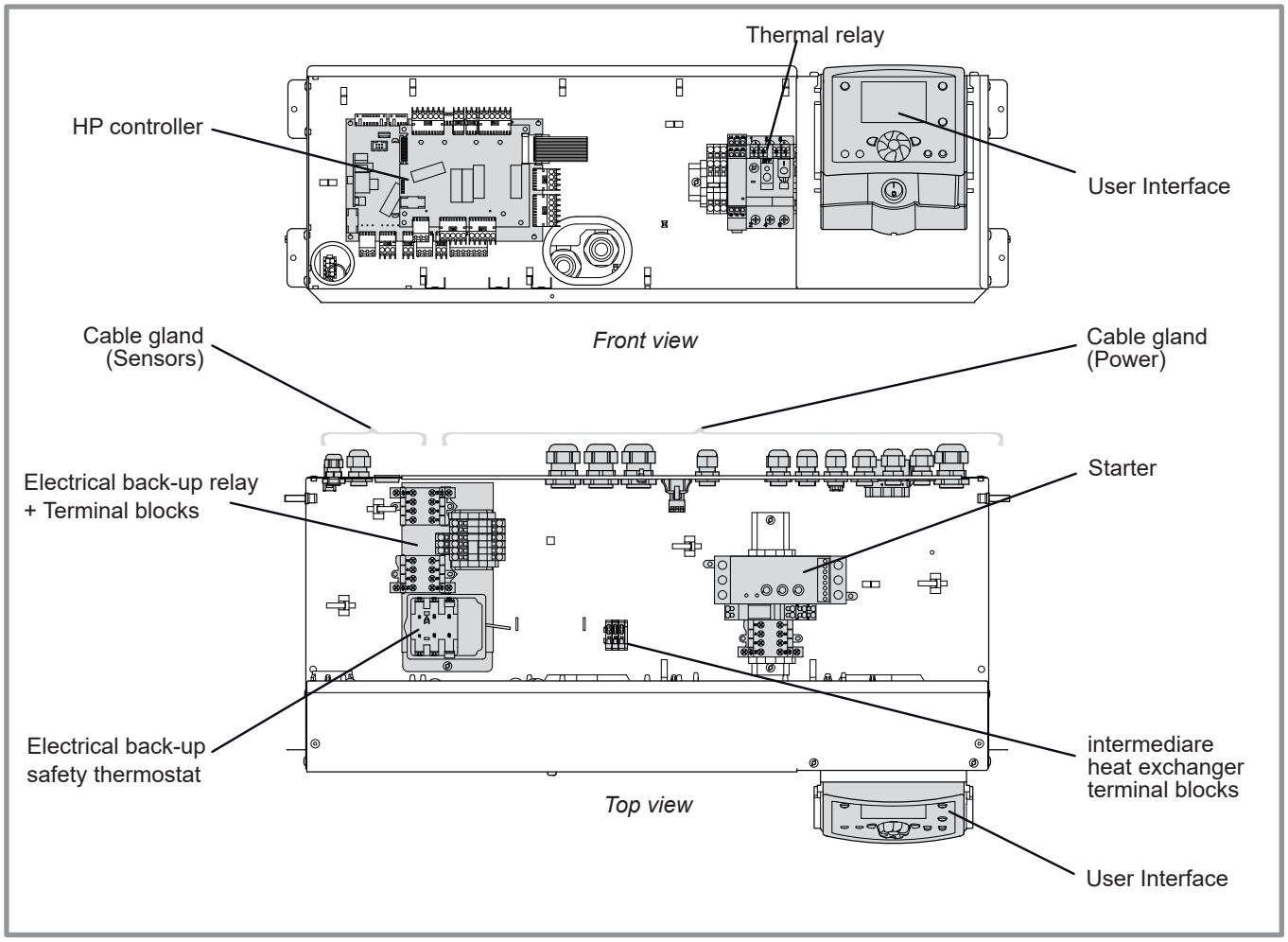


figure 16 - Electrical box description

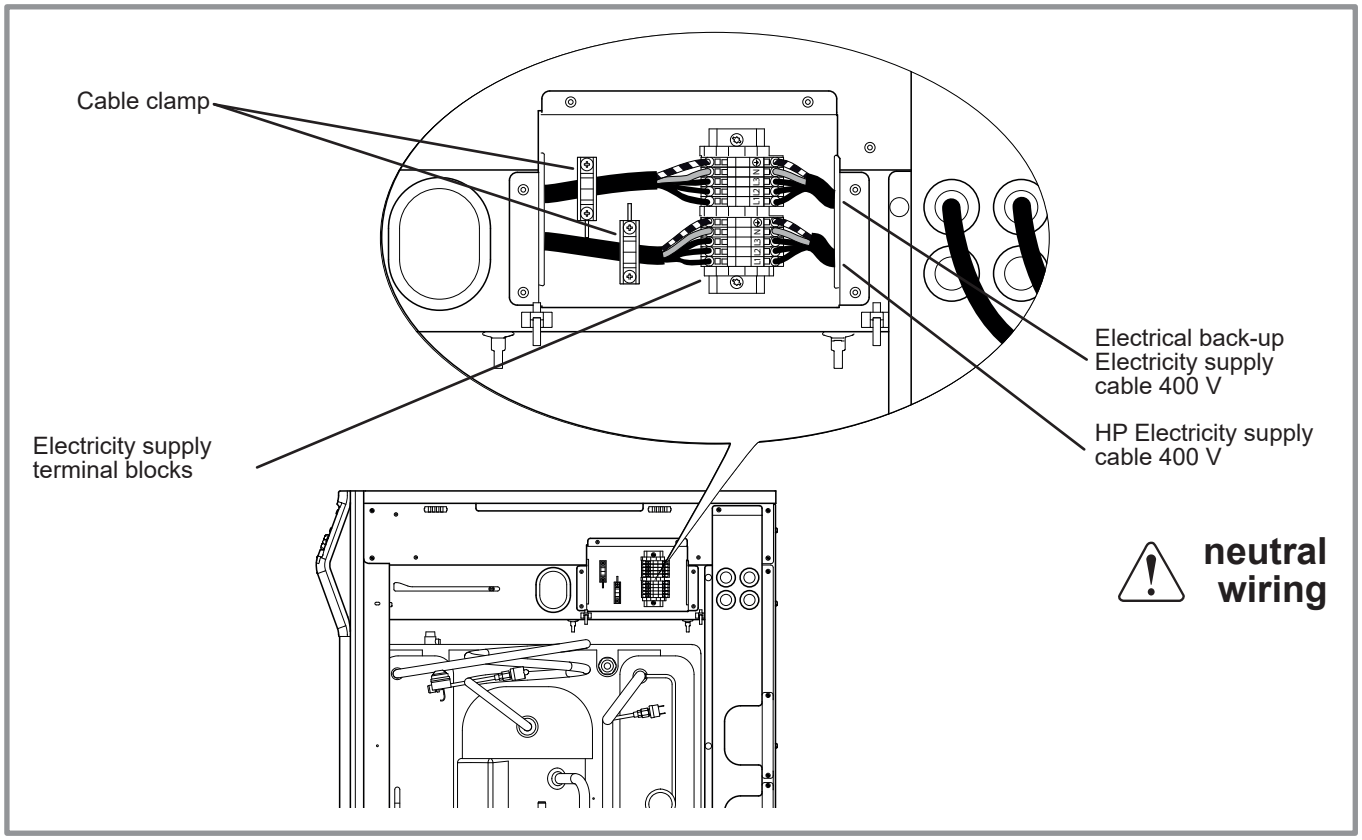


figure 17 - Connection to supply terminal block (Right side view)

2.9 Heat Pump Electrical wiring

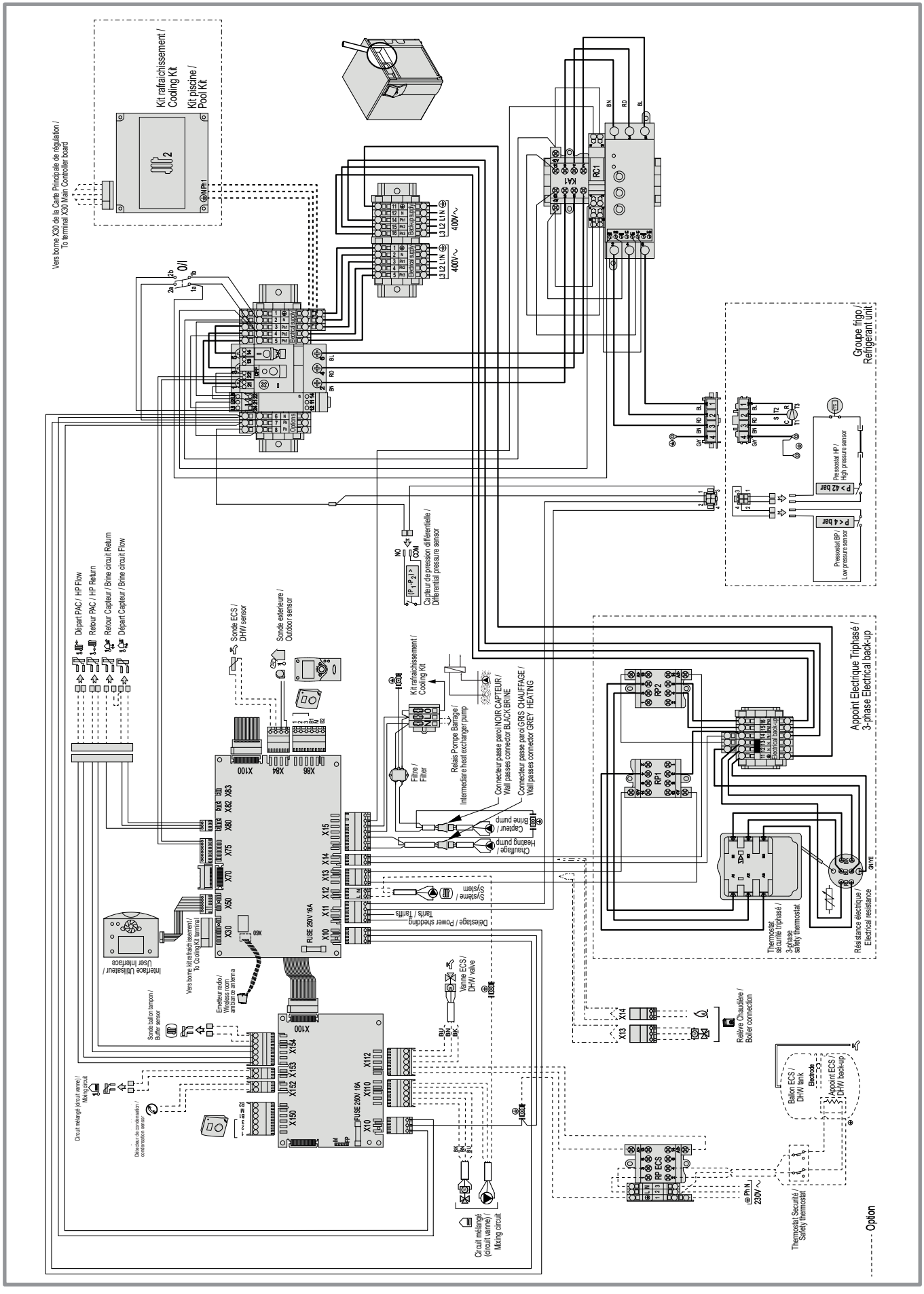


figure 18 - Electrical wiring

• Boiler connection (optional)

☞ **If the boiler connection option is used, the electric boost option must be disconnected.**

- Please refer to the instructions supplied with boiler connection kit.
- Please refer to the instructions supplied with the boiler.

• Second heating circuit (optional)

- Please refer to the instructions supplied with second circuit kit.

• DHW tank with electrical back-up heating (optional)

If a DHW tank equipped with an electrical back-up heater is installed:

- Please refer to the instructions supplied with the DHW kit.
- Please refer to the instructions supplied with the DHW tank.

• Contract with the power supplier

The heat pump's operation can be controlled to suit special contracts (e.g. off-peak, day/night). In particular, domestic hot water (DHW) at Nominal temperature will be produced during the off-peak hours when electricity is cheaper.

- Connect the "Power supplier" contact to input EX2.
- Set the parameter (1620) to "Off-peak hours".

• 230V on input EX2 = "Peak hours" information activated.

• Power shedding or EJP (peak day removal)

Power limitation is intended to reduce electrical consumption when it is too high compared to the contract with the power supplier.

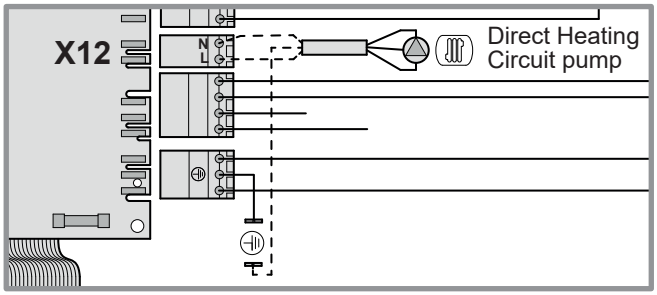
- Connect the power limiting device to input EX1, the back-up for the heat pump and the DHW stop in the event of over-consumption by the dwelling.

• 230 V on input EX1 = power limitation in progress.

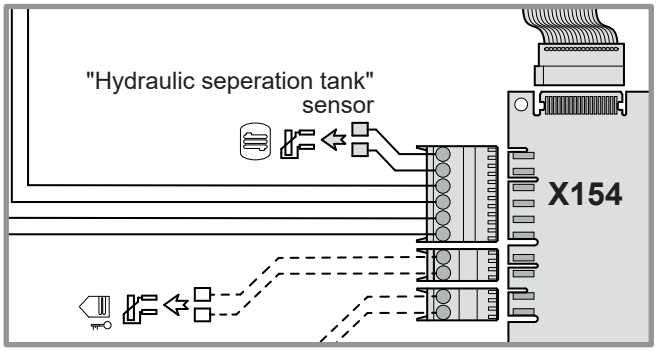
• Buffer (see Overall hydraulic layout page 50)

☞ **If the water volume of the installation is less than the volume recommended (see page 5), a buffer tank shall be installed to respect water volume installation 15l/kW.**

- Connect the circulating pump (not supplied) of the Direct heating circuit on **X12** (terminals **L** and **N**). Do not forget to connect the earth.

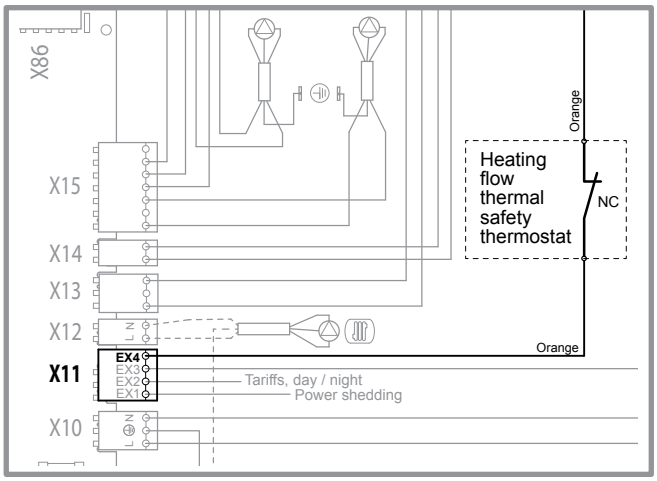


- Connect the sensor buffer tank on **X154** (terminals **5** and **6**) if it is used as "hydraulic seperation tank". If it is used as "serie tank", do not connect the sensor.



• Heating flow

Insert the heating floor thermal safety on terminal **EX4** of **X11** connector (contact 230v).



2.10 Outdoor sensor

The outdoor sensor is required to allow correct operation of the heat pump.

Consult the installation instructions on the packaging.

Place the sensor on the coldest side of the building, generally the northern or north-eastern side.

In any case, it must not be exposed to the morning sun.

It must be installed so as to be easily accessible but at least 2.5 m from the floor.

It is essential that it will not be exposed to any sources of heat such as flues, the upper parts of doors and windows, proximity to extraction vents, the underneath of balconies and under-eave areas, which would isolate the sensor from variations in the outdoor air temperature.

- Connect the outdoor sensor to the connector **X84** (terminals **M** and **B9**) on the heat pump control board.

2.11 Room thermostat and/or room control unit

The room thermostat (room control unit) is optional.

Consult the installation instructions on the packaging.

The sensor must be installed in the living room area on a very uncluttered wall. It must be installed so as to be easily accessible.

Avoid direct sources of heat (chimney/flue, television, cooking hobs), draughty areas (ventilation, door, etc.).

Air leaks in the seals of the buildings are often translated into cold air blowing through the electrical conduits. Lag the electrical conduits if there is a cold draught on the back of the room sensor.

2.11.1 Installation of a room thermostat

• Room thermostat T55

- Connect the room thermostat to the connector **X86** on the HP controller board using the supplied connector (terminals **1**, **2**).

• Wireless room thermostat T58

- Connect the wireless room thermostat to the connector **X60**.

2.11.2 Installation of a room control unit

• Room control unit T75

- Connect the room control unit to the connector **X86** on the HP controller board using the supplied connector (terminals **1**, **2** et **3**).

• Wireless room control unit T78

- Connect the wireless room control unit to the connector **X60**.

2.12 Commissioning

- Close the installation's main circuit breaker.
- Check that the phase-neutral polarity is respected.
- Check that the HP circuit breaker is closed.
- Engage the HP start/stop switch.

During the controller initialisation, the display shows all the symbols and then "Data, update" and then "State heat pump"

- Make all the specific setting (Installation configuration):
- Press OK.
- Hold on the key i for 3s and select the level of access by turning the knob.
- Confirm with the OK.
- Set the heat pump's setting (Consult the settings' list page 34).

☞ **If the error 370 is displayed and the yellow LED of the phase controller is not lit (figure 19), reverse two phases on the HP 3-phases power cable.**

When commissioning, the electrical back-up heaters are liable to start up even if the outdoor temperature at the time is above the heaters' trigger temperature.

The control system uses an average initial outdoor temperature of 0°C and requires some time to update this temperature.

To avoid this situation, the sensor must be connected correctly. Re-initialise parameter 8703 (commissioning level, consumer diagnostic menu).

The heat pump compressor may wait for several minutes before starting even if the symbol "compressor" is displayed.

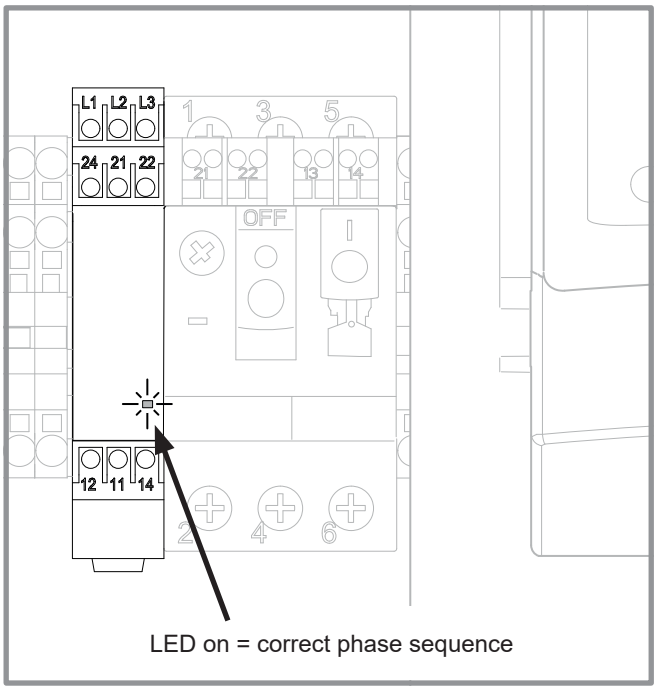
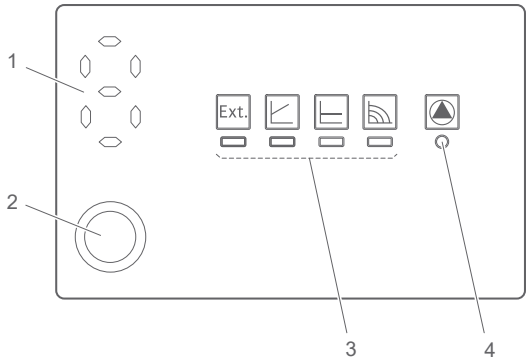


figure 19 - LED on the phase controller

2.12.1 Brine circuit pump: speed settings



1. Characteristic curve
2. Control key
3. Regulation mode:
   - Ext. - Not used
   - Not used
   - **Constant differential pressure (Δp-c)**
   - Not used
4. Status LED

figure 20 - Display on the pump housing

atlantic geolia 13	**7**
atlantic geolia 17	**9**

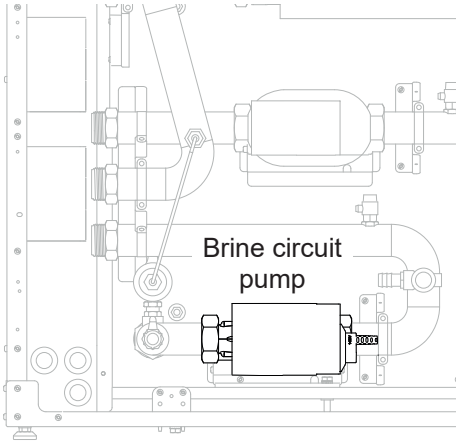


figure 21 - Recommended settings for Brine circuit pump

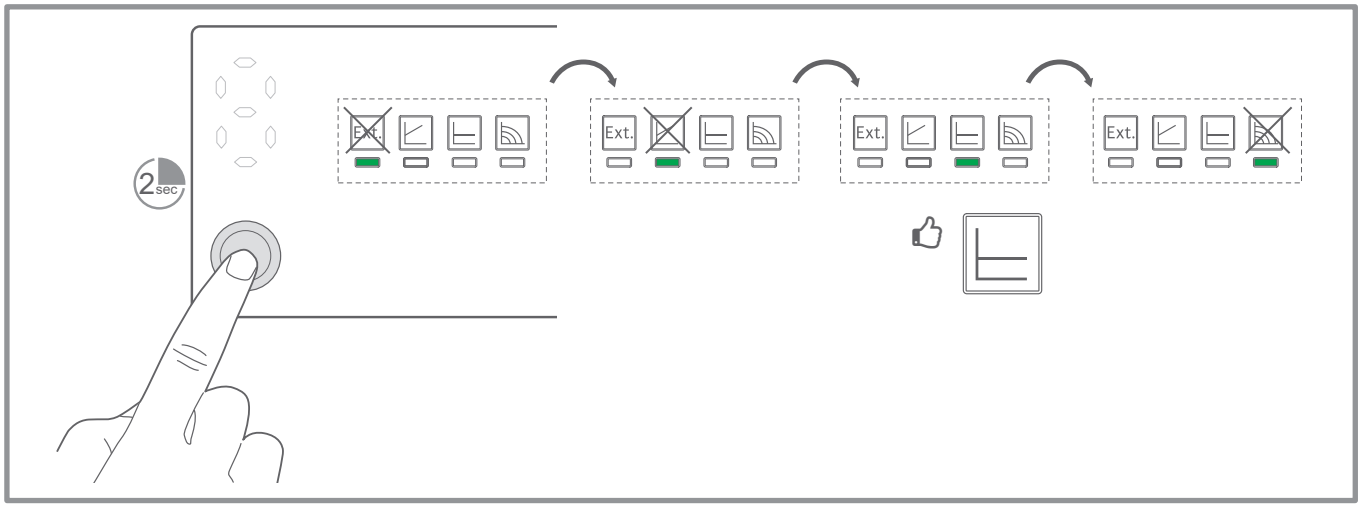


figure 22 - Regulation mode

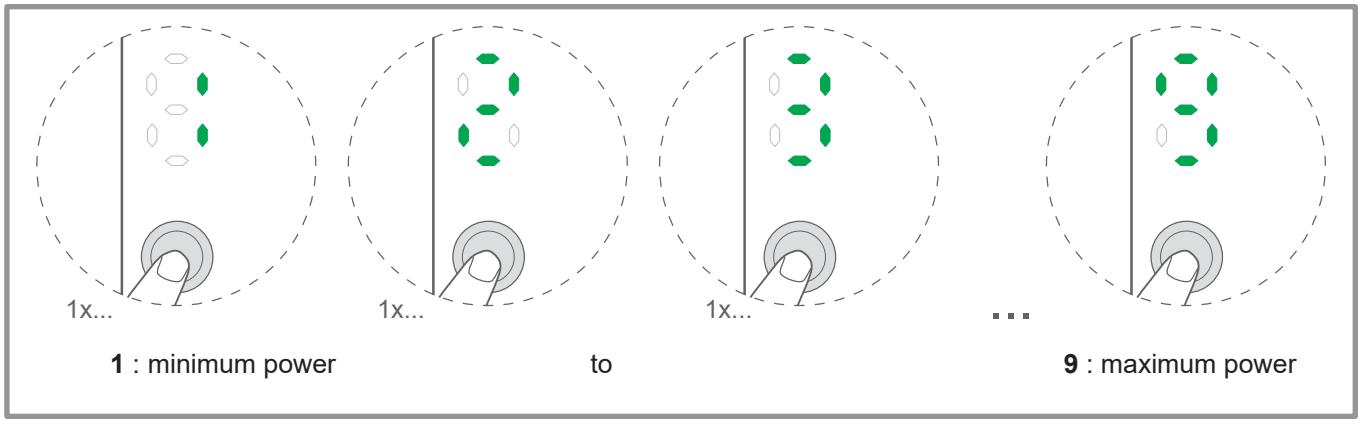


figure 23 - Characteristic curve

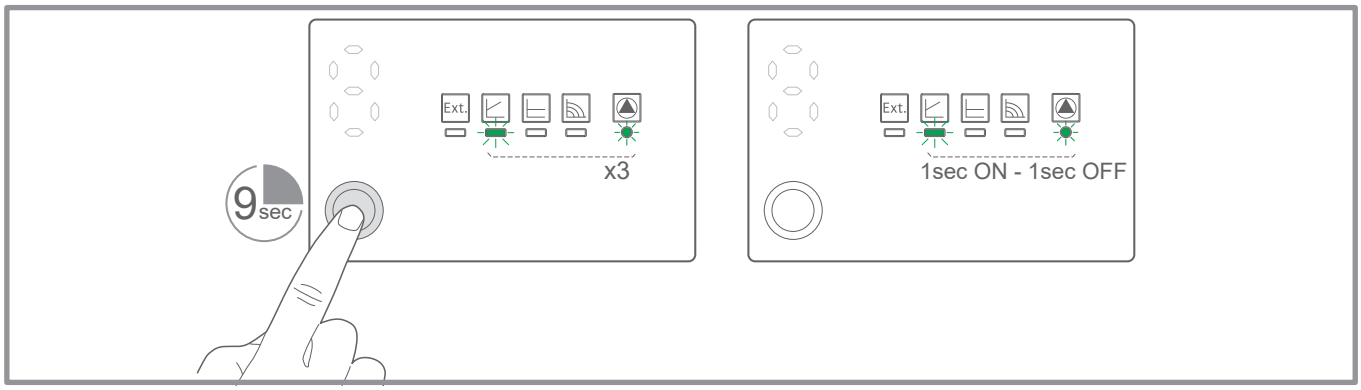


figure 24 - Locking & unlocking settings

2.12.2 Heating circuit pump: speed settings

atlantic geolia 13	II
atlantic geolia 17	III

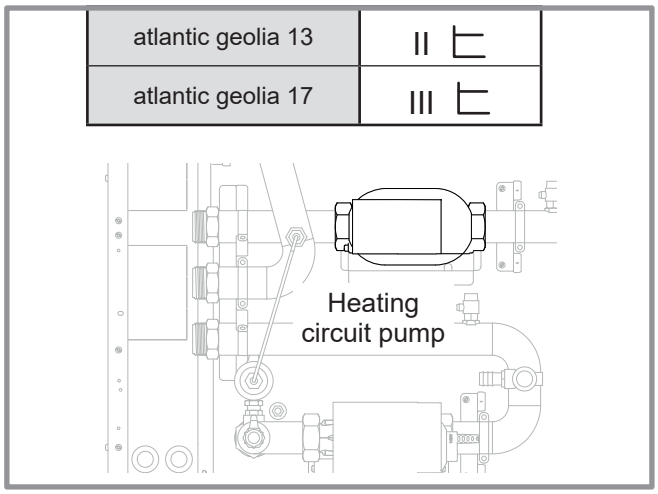


figure 30 - Recommended settings for heating circuit pump

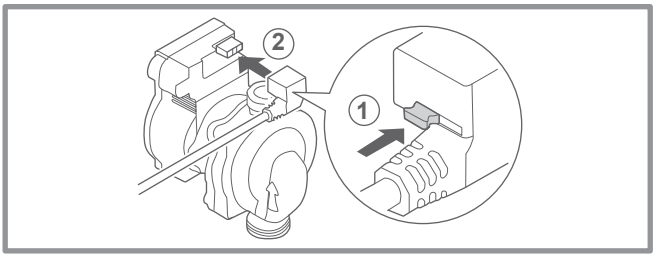


figure 26 - Pump connection

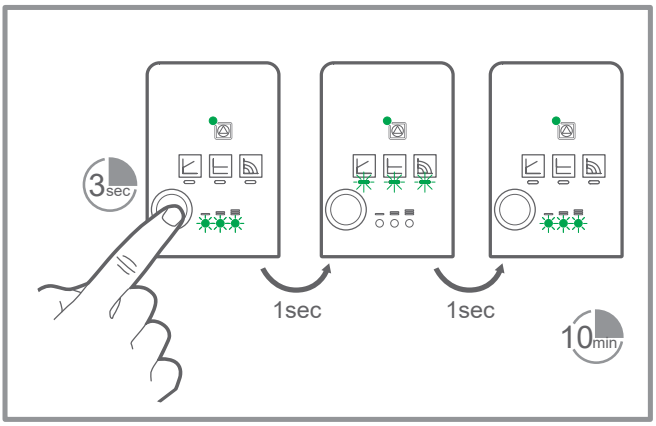


figure 28 - Gas venting mode

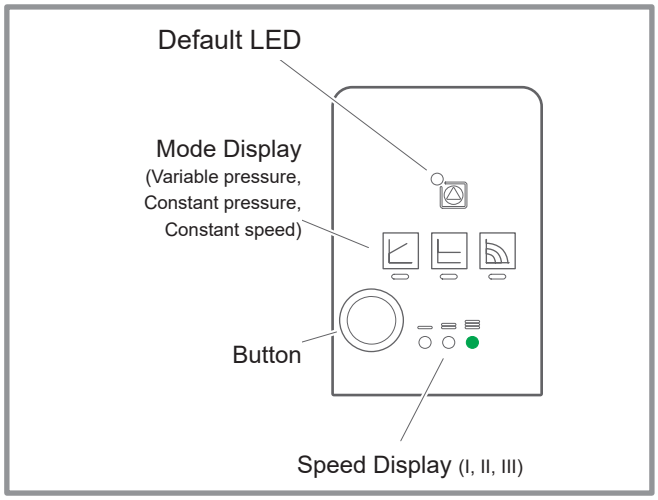


figure 25 - Display on the pump housing

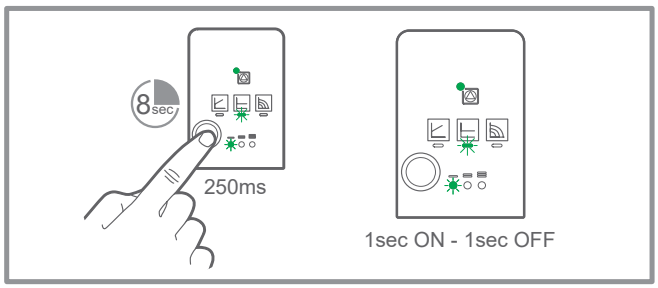


figure 27 - Locking & unlocking pump settings

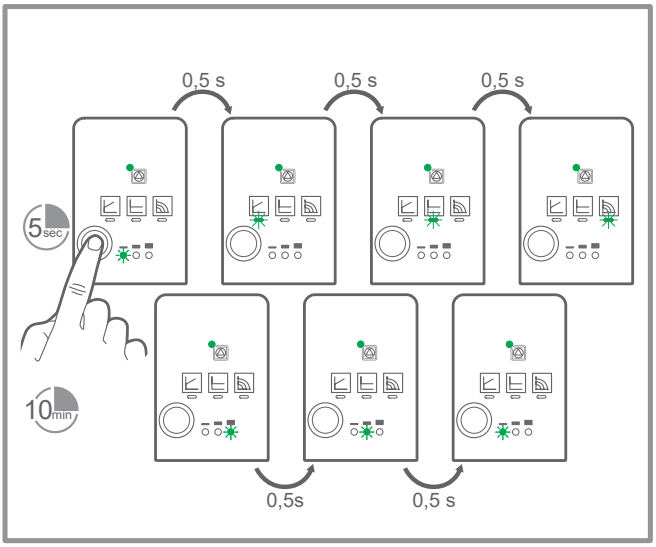
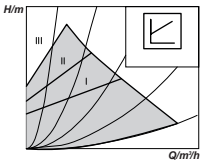


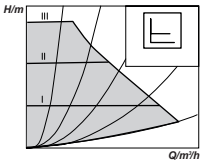
figure 29 - Manual restart of the pump



☞ Variable pressure

The circulation pump varies the water pressure depending on the flow rate.

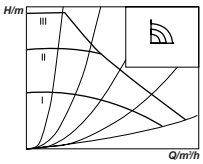
Recommended for an installation fitted with **radiators** (particularly any system with thermostatic valves or zone solenoids).



☞ Constant pressure

The circulation pump maintains a constant water pressure whatever the flow rate.

Recommended for an installation with constant pressure drops such as an **underfloor heating system**.



☞ Constant speed

The circulation pump maintains a constant water pressure whatever the flow rate.

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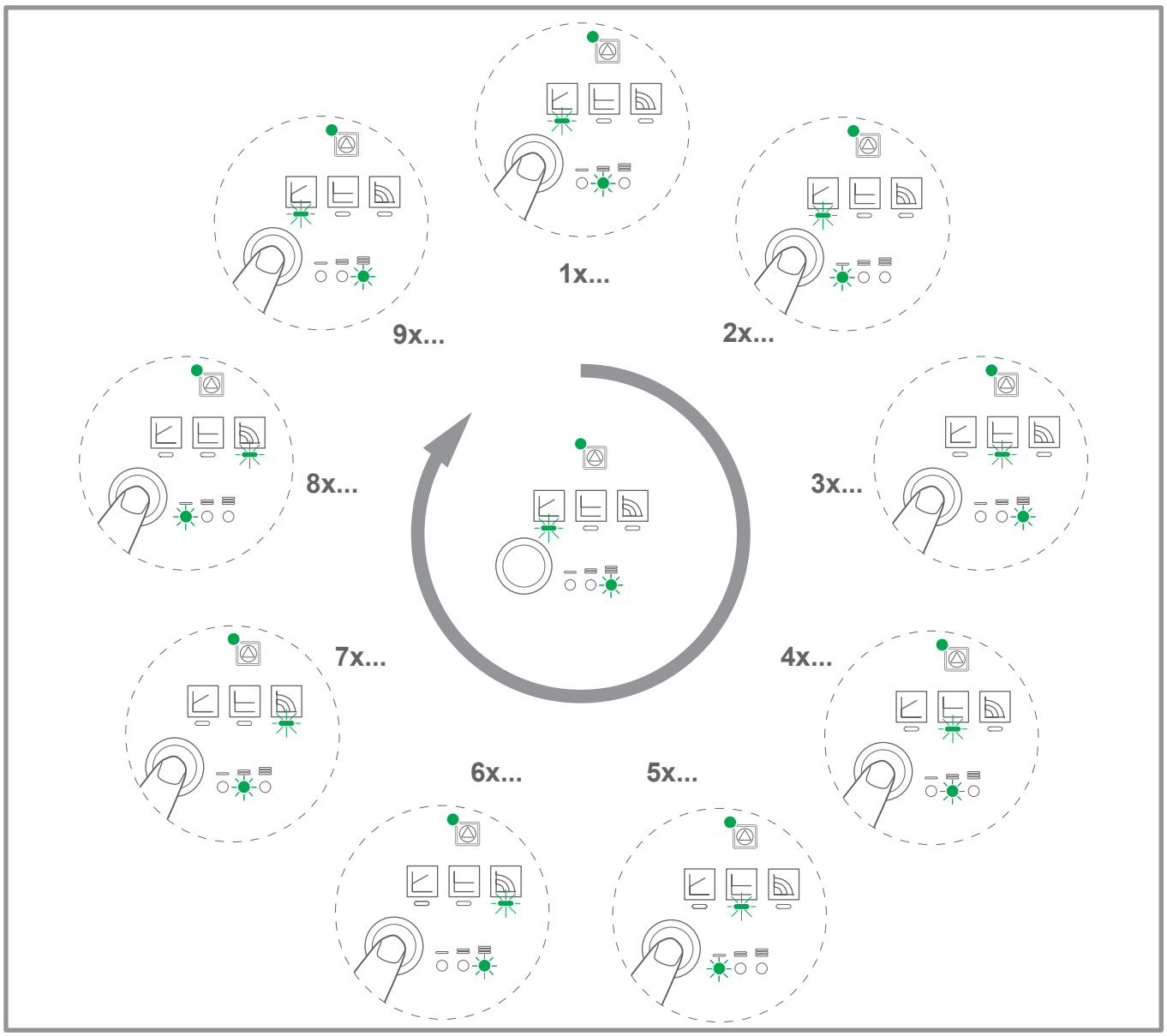


figure 31 - Pump Settings

In order to correctly vent the Brine circuit and Heating circuit, run circulating pumps in "test mode".

Brine Circuit :

- Set the 7700 parameter on 6 (QX5: Brine Pump).
- Vent the Brine circuit.

Heating Circuit :

- Set the 7700 parameter on 5 (QX4 : Heating Pump).
- Vent the Heating circuit.

☞ **Do not forget to adjust the parameter 7700 on 0 after venting.**

2.12.3 Filter valves cleaning

(see figure 32)

After commissioning, it is advised to clean the filter valves.

- Close the valve.
- Unscrew the cap.
- Disassemble the clips using a clip applier.
- Clean the filter.

2.12.4 Electrical back-up operation test

The electrical back-up can be engaged by setting the "emergency operation" on "On" (parameter 7141 on "On").

☞ **Do not forget to reset the parameter 7141 to "Off" after the test.**

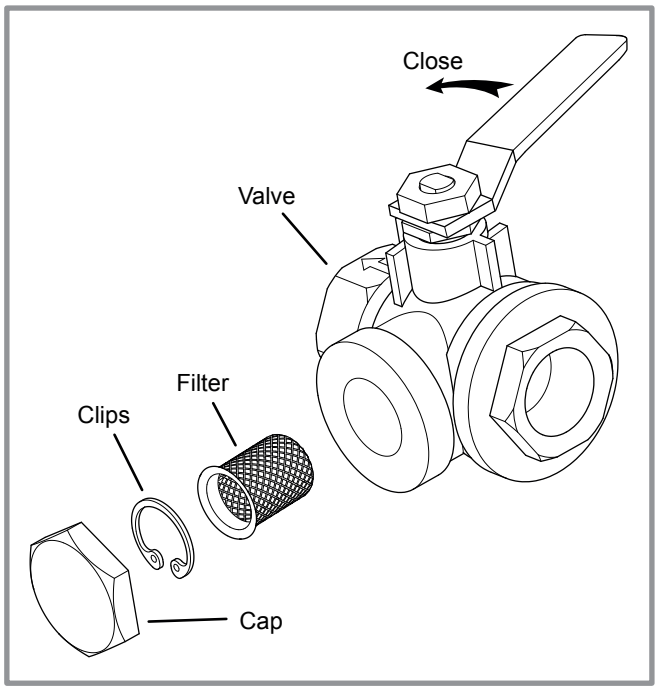


figure 32 - Filter disassembly

2.13 Configuration of room thermostat (T58)

To configure the room thermostat and connect it to the appropriate heating zone:

- Hold on the presence key for more than 3 seconds. The room thermostat displays RU and a number flashes.
- Turn the knob to choose the zone (1, 2).
- **If the installation is equipped with 2 room thermostats,**
  First connect one room thermostat and configure it in zone 2,
  Then connect the other room thermostat and set it as default in zone 1.
- Hold on the presence key; the room thermostat displays P1 and a flashing number.
  1: Automatic recording: any correction of values made via the knob can be confirmed by pressing the mode key. in any case, the correction will be adopted without any particular confirmation (time out).
  2: Recording with confirmation: a correction of the setting made via the knob is not adopted until the mode key is pressed.
- Press the presence key again; the room thermostat displays P2 and a flashing number.

0: OFF: all the operating elements are engaged.

1: ON: the following operating elements are locked:

- Switch over the heating circuit's operating mode,
- Adjust the comfort setting,
- Change the operating level.

The room thermostat displays OFF for 3 seconds when the locked button is pressed.

2.14 Configuration of room control unit (T78)

During commissioning, after an initialisation period of approx. 3 minutes, the user's language shall be set:

- Press OK.
- Choose menu "Operator section".
- Choose language.
- Select the language (**English**, Deutsch, Français, Italiano, Nederlands, Español, Português, Dansk…)..

☞ **In the case of 2 heating circuits:**

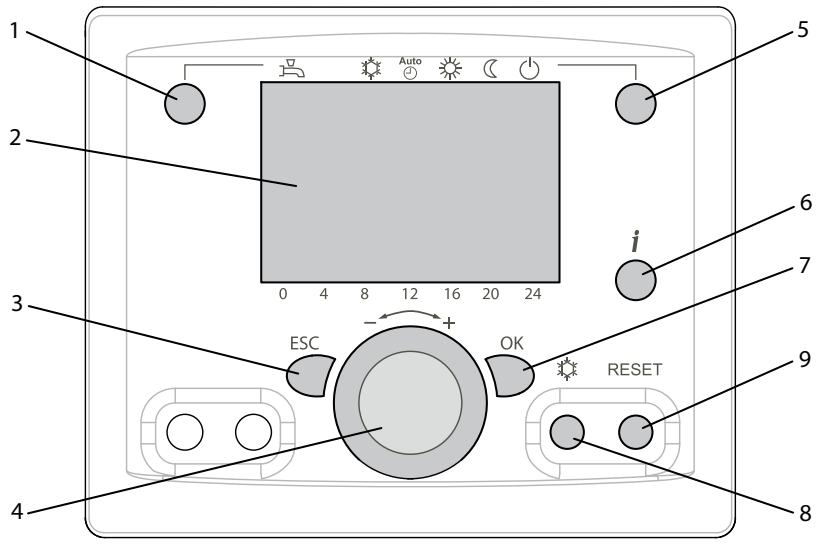
- Choose the allocation of the room control unit (room appliance 1 or 2…) line 40* (see page 34).
- According to the allocation selected check and, if necessary, modify the settings for lines **42***, **44***, **48*** (see page 34).

Line		*Function*	*Setting range or display*	*Setting increment*	*Basic setting*
40	I	Use as...	Room appliance 1, 2, P, User interface 1, 2, P, Service appliance		**Room appliance 1**
		This line regulates the use of the room control unit. Depending on how it is used, other settings will be necessary (lines 42, 44, 48).			
42	I	Appliance allocation 1	Heating circuit 1, Heating circuit 1 & 2, Heating circuit 1 & P, All the heating circuits		**Heating circuit 1**
44	I	Operation HC2 (command HC2)	Commonly with HC1, Independent		**Commonly with HC1**
		This function enables you to choose whether you wish the room thermostat (as an option) to act on both zones or just a single zone.			
48	I	Occupancy control switch function	Without, Heating circuit 1, Heating circuit 2, Common		

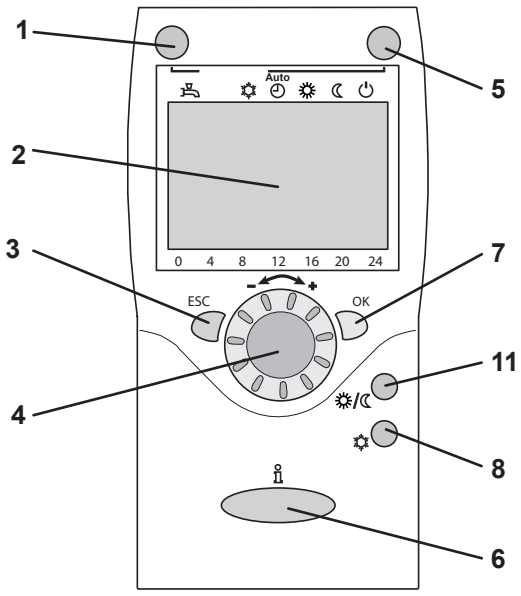
**** These parameter lines are only accessible from the room control unit.***

3 Controller

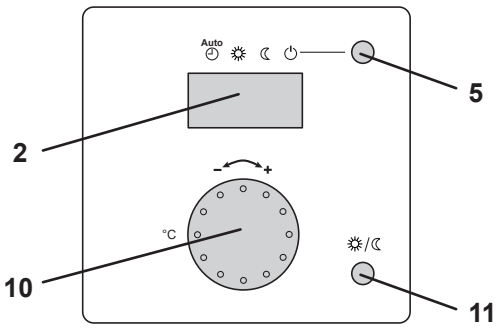
3.1 User interface, Room control unit (optional) and Room thermostat (optional)



User interface



Remote control T75 / T78 (wireless)



Room thermostat T55 / T58 (wireless)

figure 33 -

Ref.	*Function*	*- Definitions*
1	Selecting of the DHW operating mode (Domestic hot water) On Off	If the installation is fitted with a DHW tank. - **On**: Production of DHW according to the time program. - **Off**: Preparing the domestic hot water for stopping with the anti-frost function active. - **Manual start button**: Hold down the DHW key for 3 seconds. Switch from "reduced" to "comfort" until the next time the ECS timer switches over.
2	Digital display	- Operating control. Readout of the current temperature, of the heating mode and of any faults . - View the settings.
3	Exit "ESC"	- Quit the menu.
4	Navigation and setting	- Selecting the menu. - Setting parameters. - Adjusting the ambient temperature setpoint.
5	Selecting the heating mode	- Auto Heating operating according to the heating programme (Summer/winter mode switchover is automatic). - Constant comfort temperature. - Constant reduced temperature. - Stand-by mode with anti-frost protection (Provided that the heat pump's electrical power supply is not interrupted).
6	Information display	- Various data (please see page 61). - Reading error codes (please see page 60). - Information concerning maintenance, special mode.
7	Confirm "OK"	- Input into the selected menu. - Confirmation of the parameter settings. - Confirmation of the adjustment to the comfort temp. setting.
8	Selecting cooling mode	If the installation is fitted with the cooling kit: - Cooling operating according to the heating programme (Summer/winter mode switchover is automatic).
9	RESET button (Brief press)	- Reinitialising the parameters and cancelling error messages. **Do not use during normal operation.**
10	Control knob	- Adjusting the ambient temperature setpoint.
11	Presence key	- Comfort / Reduced switchover.

3.2 Description of the display

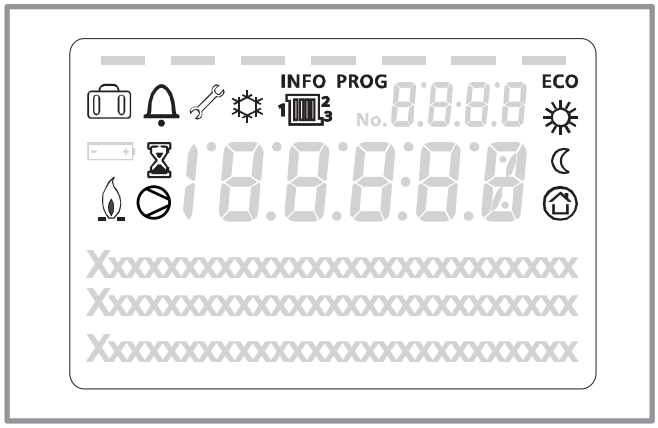


figure 34 - User interface display

Symbols	Definitions
	- Heating mode active with reference to the heating circuit.
	- Heating in comfort mode.
	- Heating in reduced mode.
	- Heating in "standby" mode (freeze protection).
	- Cooling mode active.
	- Holiday mode activated.
	- Process in progress.
	- Compressor operation.
	- Burner operation.
	- Default message.
	- Service / Special operation.
INFO	- Information level activated.
PROG	- Programme activated.
ECO	- ECO mode activated (Heating temporarily stopped).
	- Hour / Parameter number / Setpoint value.
	- Room temperature / Setpoint value.
	- Setpoint information / Parameter Information.

3.3 Temperature control

The heat pump operation is managed by the temperature control.

The set temperature for the water in the heating circuit is adjusted according to the outdoor temperature.

If there are thermostatic valves on the installation, these must be fully opened or adjusted at higher level than the set temperature.

3.3.1 Adjustment

During installation, the temperature control must be parametered according to the heating emitters and the dwelling's insulation.

The temperature control' curves (figure 36) refer to an ambient setting of 20°C.

The slope of the temperature control (parameter 720) determines the impact of the variations in the outdoor temperature on the initial heating temperature variations.

The higher the slope, the more a slight reduction in the outdoor temperature causes a significant increase in the flow water temperature in the heating circuit.

The off-set in the temperature control (parameter 721) modifies the initial temperature of all the curves, without modification of the slope (figure 37).

The corrective actions in the case of any inconvenience are detailed in the table (figure 38).

☞ **Warning: On heating floor, due to the inertia of the floor slab, the corrections made will not take effect until several hours after the modification.**

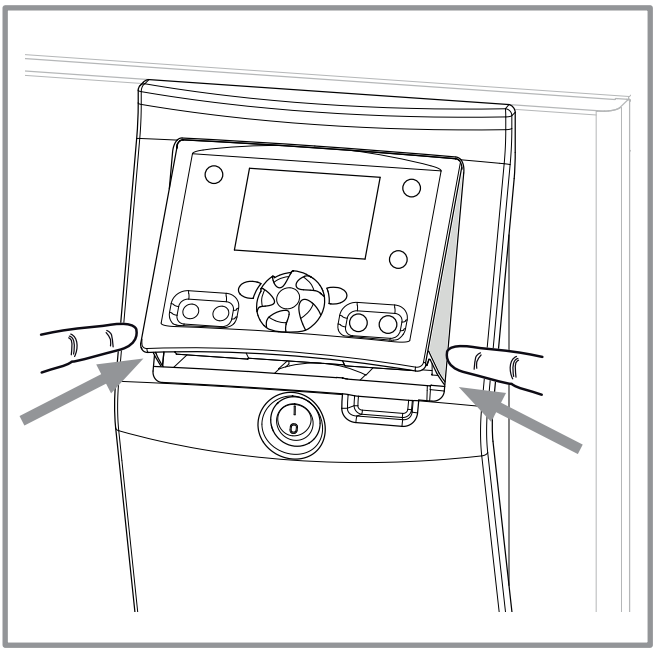


figure 35 - Closing the display

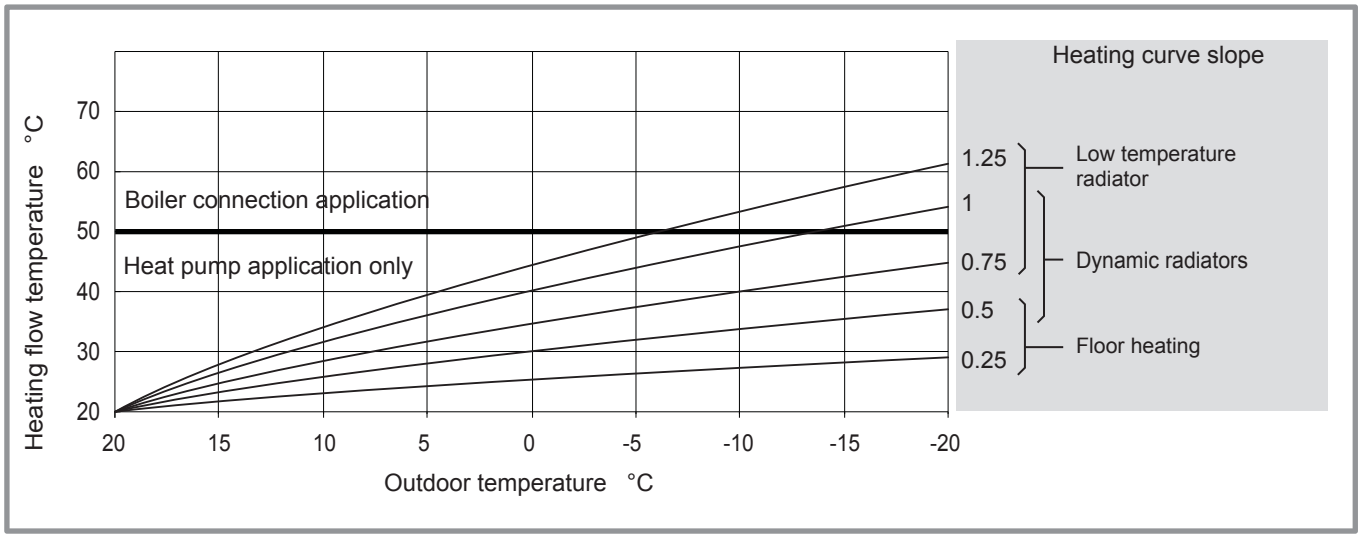


figure 36 - Heating curve slope (line 720)

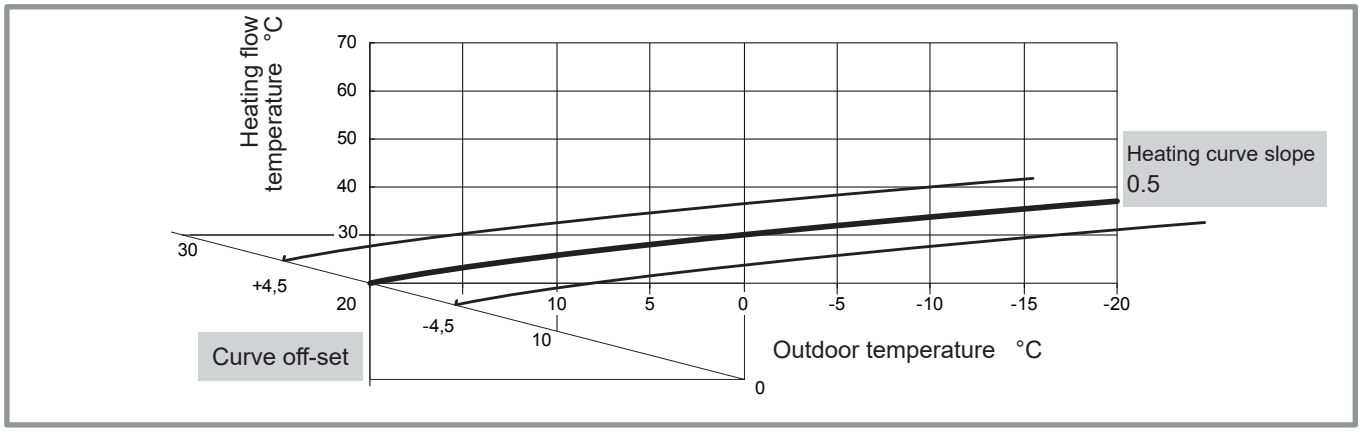


figure 37 - Off-set of the heating curve (line 721)

Feeling... ...in mild weather		...in cold weather	→ Corrective actions on the temperature control: Curve slope (line **720**)	Curve off-set (line **721**)
OK	&	OK	No correction	No correction
Cold	&	Hot	−	+
Cold	&	OK	−	+
Cold	&	Cold	No correction	+
OK	&	Hot	−	No correction
OK	&	Cold	+	No correction
Hot	&	Hot	No correction	−
Hot	&	OK	+	−
Hot	&	Cold	+	−

figure 38 - Corrective actions in the case of discomfort

3.4 Setting Parameters

3.4.1 General

Only the parameters accessible to levels:

U - End user.

I - Commissioning level.

S - Engineer level.

Are described in this document.

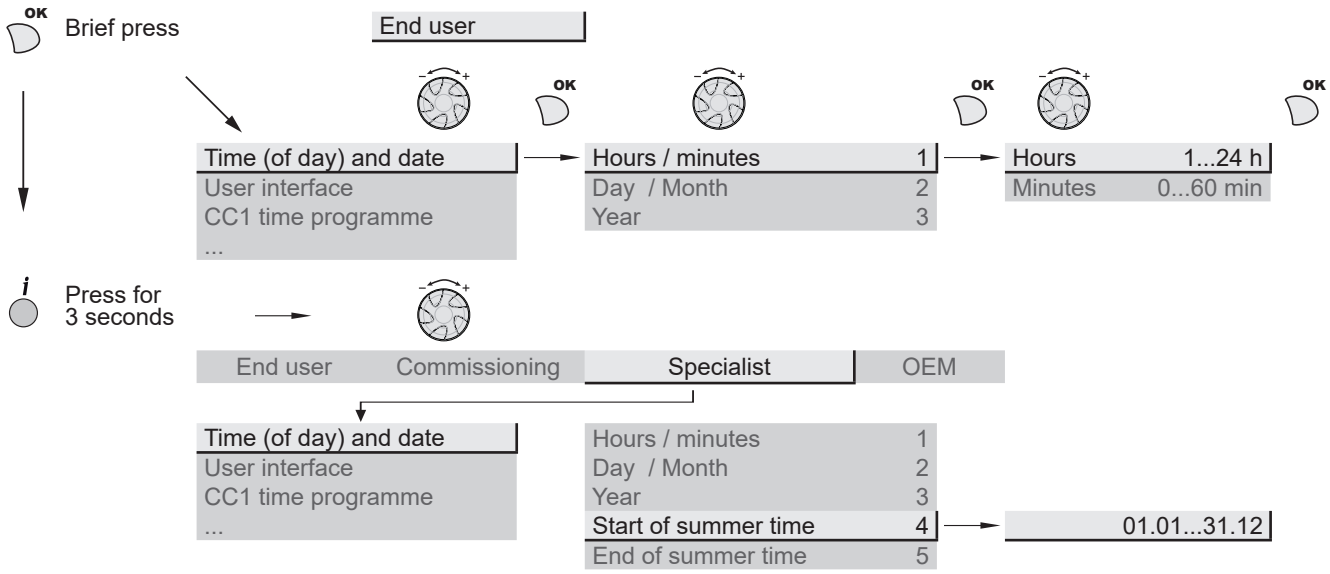
The access levels are specified in the second column of the table by means of the letters **U**, **I** and **S**.

The OEM parameters are not described and require a manufacturer's access code.

3.4.2 Setting parameters

- Choose the desired level.
- Scroll the menu list.
- Choose the desired menu.
- Scroll the function lines.
- Choose the desired line.
- Adjust the parameter.
- Check the setting by pressing **OK**.
- To return the menu, press **ESC**.

If no setting is made for 8 minutes, the screen returns automatically to the basic display.



3.4.3 List of function (settings, diagnosis, status)

Line		*Function*	*Setting range or display*	*Setting increment*	*Basic setting*
Date and time					
1	**U**	Hours / Minutes	00:00... 23:59	1	
2	**U**	Day / Month	01.01... 31.12	1	
3	**U**	Year	1900... 2099	1	
5	**S**	Start of Summer time (Day / Month)	01.01... 31.12	1	**25.03**
6	**S**	End of Winter time (Day / Month)	01.01... 31.12	1	**25.10**
		The change of hour will appear at 3:00 first Sunday after the regulated date.			
User interface					
20	**U**	Language	English, Français, Italiano, Nederlands...		**English**
22	**S**	Info	Temporary, Permanent		**Temporary**
26	**S**	Operation locking	On, Off		**Off**
27	**S**	Programming locking	Off, On		**Off**
28	**I**	Direct adjustment	automatic storage, ...with confirmation		**...with confirmation**
29	**I**	Temperature units Pressure units	°C, °F bar, psi		**°C** **bar**
70	**S**	Display software version			

Line		*Function*	*Setting range or display*	*Setting increment*	*Basic setting*
Heating time programme, circuit 1					
500	**U**	Pre-selection (Day / Week)	Mon-Sun, Mon-Fri, Sat-Sun, Monday, Tuesday, …		**Mon-Sun**
501	**U**	1st phase On (start)	00:00... --:--	10 min	**6:00**
502	**U**	1st phase Off (end)	00:00... --:--	10 min	**22:00**
503	**U**	2nd phase On (start)	00:00... --:--	10 min	**--:--**
504	**U**	2nd phase Off (end)	00:00... --:--	10 min	**--:--**
505	**U**	3rd phase On (start)	00:00... --:--	10 min	**--:--**
506	**U**	3rd phase Off (end)	00:00... --:--	10 min	**--:--**
516	**U**	Standard values, Circuit 1	No, Yes		**No**
		Yes + OK: The standard values memorised in the controller replace and cancel the customised heating programmes. Your customised settings are therefore lost.			
Heating time programme, circuit 2					
		Only with the 2nd circuit kit option.			
520	**U**	Pre-selection (Day / Week)	Mon-Sun, Mon-Fri, Sat-Sun, Monday, Tuesday, …		**Mon-Sun**
521	**U**	1st phase On (start)	00:00... --:--	10 min	**6:00**
522	**U**	1st phase Off (end)	00:00... --:--	10 min	**22:00**
523	**U**	2nd phase On (start)	00:00... --:--	10 min	**--:--**
524	**U**	2nd phase Off (end)	00:00... --:--	10 min	**--:--**
525	**U**	3rd phase On (start)	00:00... --:--	10 min	**--:--**
526	**U**	3rd phase Off (end)	00:00... --:--	10 min	**--:--**
536	**U**	Standard values, Circuit 2	No, Yes		**No**
		Yes + OK: The standard values memorised in the controller replace and cancel the customised heating programmes. Your customised settings are therefore lost.			
Time programme 4 / DHW					
		If the installation is fitted with the DHW kit.			
560	**U**	Pre-selection (Day / Week)	Mon-Sun, Mon-Fri, Sat-Sun, Monday, Tuesday, …		**Mon-Sun**
561	**U**	1st phase On (start)	00:00... --:--	10 min	**00:00**
562	**U**	1st phase Off (end)	00:00... --:--	10 min	**05:00**
563	**U**	2nd phase On (start)	00:00... --:--	10 min	**14:30**
564	**U**	2nd phase Off (end)	00:00... --:--	10 min	**17:00**
565	**U**	3rd phase On (start)	00:00... --:--	10 min	**--:--**
566	**U**	3rd phase Off (end)	00:00... --:--	10 min	**--:--**
576	**U**	Standard values	No, Yes		**No**
		Yes + OK: The standard values memorised in the controller replace and cancel the customised heating programmes. Your customised settings are therefore lost.			

Line		Function	Setting range or display	Setting increment	Basic setting
Time programme 5 / Cooling					
		If the installation is fitted with the cooling kit (Only with the cooling kit option).			
600	**U**	Pre-selection (Day / Week)	Mon-Sun, Mon-Fri, Sat-Sun, Monday, Tuesday, …		**Mon-Sun**
601	**U**	1st phase On (start)	00:00... --:--	10 min	**8:00**
602	**U**	1st phase Off (end)	00:00... --:--	10 min	**20:00**
603	**U**	2nd phase On (start)	00:00... --:--	10 min	**--:--**
604	**U**	2nd phase Off (end)	00:00... --:--	10 min	**--:--**
605	**U**	3rd phase On (start)	00:00... --:--	10 min	**--:--**
606	**U**	3rd phase Off (end)	00:00... --:--	10 min	**--:--**
615	**U**	Copy			
616	**U**	Standard values	No, Yes		**No**
		Yes + OK: The standard values memorised in the controller replace and cancel the customised heating programmes. Your customised settings are therefore lost.			
Holidays, heating circuit 1 (For the Holiday program is active, the heating mode should be on AUTO).					
641	**U**	Preselection	Period 1 to 8		**Period 1**
642	**U**	Period Start (Day / Month)	01.01... 31.12	1	
643	**U**	Period End (Day / Month)	01.01... 31.12	1	
648	**U**	Operating level	Frost protection, Reduced		**Frost protection**
Holidays, heating circuit 2 (For the Holiday program is active, the heating mode should be on AUTO).					
		If the installation consists of 2 heating circuits (Only with the 2nd circuit kit option).			
651	**U**	Preselection	Period 1 to 8		**Period 1**
652	**U**	Period Start (Day / Month)	01.01... 31.12	1	
653	**U**	Period End (Day / Month)	01.01... 31.12	1	
658	**U**	Operating level	Frost protection, Reduced		**Frost protection**
Heating, circuit 1					
710	**U**	Comfort setpoint	Reduced setpoint… Comfort setpoint maximum	0,5 °C	**20 °C**
712	**U**	Reduced setpoint	Frost protection setpoint… Comfort setpoint	0,5 °C	**19 °C**
714	**U**	Frost protection setpoint	4 °C… Reduced setpoint	0,5 °C	**8 °C**
716	**S**	Comfort setpoint max	20 °C... 35 °C	1 °C	**28 °C**
720	**I**	Heating curve slope (figure 36, page 33)	0,1... 4	0,02	**0,5**
721	**I**	Heating curve displacement (figure 37, page 33)	-4,5 °C... 4,5 °C	0,5 °C	**0 °C**
726	**I**	Heating curve adaption	Off, On		**Off**
		Warning! Not to modify, let "Off".			
730	**I**	Summer / Winter heating limit	8 °C... 30 °C	0,5 °C	**18 °C**
		When the average of the outside temperatures over the past 24 hours reaches 18°C, the controller switches off the heating (as an economy measure). During summer mode, the display shows "Eco". This function is only active in automatic mode.			

Line		Function	Setting range or display	Setting increment	Basic setting
732	S	24-hour heating limit	-10 °C... 10 °C	1 °C	**-2 °C**
		This function enables you partially to offset the automatic summer/winter switchover during the intermediate seasons. Increasing the value delays the switchover to summer mode.. Decreasing the value advances the switchover to summer mode. This function is only active in automatic mode.			
740	I	Flow temp setpoint min	8 °C... Flow temp setpoint max	1 °C	**17 °C**
		(with dynamic radiator, adjust from 30 to 35°C)			
741	I	Flow temp setpoint max	Flow temp setpoint min... 70 °C	1 °C	**55 °C**
		Floor heating system = 50 °C / Radiators = 65 °C. **Important Note :** Maximum temperature limitation is not a safety function as required by ground heating.			
750	S	Room influence	1%... 100%	1%	**50%**
		If the installation is fitted with a room thermostat: This function enables you to choose the ambient temperature's influence on the setting. If no value is entered, the setting is made based on the temperature control. If the parameter is set at 100%, the setting is only based on the ambient temperature.			
780	S	Quick setback	Off, Down to reduced setpoint, Down to frost prot setpoint		**Down to reduced setpoint**
790	S	Optimum start control max (Early start to switch to the comfort setting.)	0... 360 min	10 min	**180 min**
791	S	Optimum stop control max (Early stop to switch from the comfort setting to the reduced setting.)	0... 360 min	10 min	**60 min**
800	S	Reduced setpoint increase start	-30... 10 °C	1 °C	**--**
801	S	Reduced setpoint increase end	-30... 10 °C	1 °C	**-5 °C**
830	S	Mixing valve boost	0... 50 °C	1 °C	**0 °C**
834	S	Actuator running time	30... 873 s	1 s	**240 s**
850	I	Floor curing function (figure 1)			**Off**

- Off: Early interruption of the current program, program inactive.
- Functional heating.
- Heating ready for occupation.
- Functional heating + Curing heating.
- Curing heating + Functional heating.
- Manually: Manual mode enables you to programme your own concrete slab drying time.The function ends automatically after 25 days.

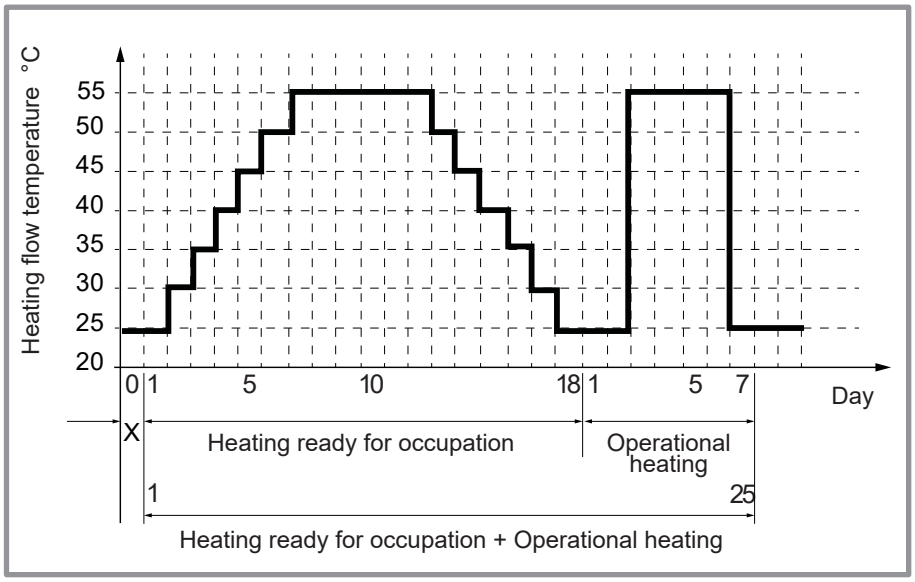


figure 1 - Diagram of the concrete slab drying programmes

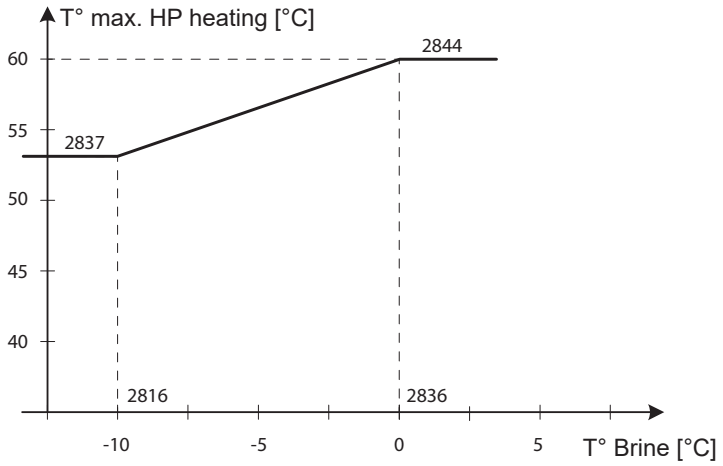
☞ **Please comply with the standards and instructions of the manufacturer of the building ! A good performance of this function is only possible with an installation correctly implemented (hydraulic, electricity and adjustments) ! This function can be stopped by anticipation when setting the adjustment on "Stop".**

Line		*Function*	*Setting range or display*	*Setting increment*	*Basic setting*
851	**I**	Floor curing setpoint manually (if line 850 = manual)	0... 95 °C	1 °C	**25 °C**
		This function enables you to set the custom concrete slab drying temperature. This temperature remains fixed. The concrete slab-drying program stops automatically after running for 25 days.			
856	**I**	Floor curing day current	0... 32		
857	**I**	Floor curing day completed	0... 32		
900	**S**	Operating mode changeover	None, Protection mode, Reduced, Comfort, Automatic	1	**Reduced**
		Operating mode at end of concrete slab curing period			
Cooling circuit 1 (Only with the cooling kit option)					
901	**U**	Operating mode	Off, Automatic		**Off**
902	**U**	Comfort cooling setpoint	17... 40 °C	0,5 °C	**24 °C**
907	**U**	Release	24h/day, Time program HC, Time program 5 / Refresh		**Time program 5**
		If the installation is fitted with a DHW tank, set the parameter 907 to " Time program 5 / Cooling" (In order to activate cooling only during the day and leave the DHW system to operate during the night).			
908	**I**	Flow temp setp at OT° 25°C	6... 35 °C	0,5 °C	**20 °C**
909	**I**	Flow temp setp at OT° 35°C	6... 35 °C	0,5 °C	**16 °C**
912	**I**	Cooling limit at OT°	8... 35 °C	0,5 °C	**24 °C**
913	**S**	Lock time at end of heating	8... 100	1 h	**24 h**
918	**S**	Summer comp start at OT°	20... 50 °C	1 °C	**26 °C**
919	**S**	Summer comp end at OT°	20... 50 °C	1 °C	**40 °C**
920	**S**	Summer comp setp increase	1... 10 °C	1 °C	**4 °C**
923	**S**	Flow temp setp min OT° 25°C	6... 35 °C	0,5 °C	**18 °C**
924	**S**	Flow temp setp min OT° 35°C	6... 35 °C	0,5 °C	**18 °C**
928	**S**	Room influence	1... 100 %	1 %	**80 %**
		If the installation is fitted with a room thermostat: This function enables you to choose the ambient temperature's influence on the setting. If no value is entered, the setting is made based on the temperature control. If the parameter is set at 100%, the setting is only based on the ambient temperature.			
932	**S**	Room temp limitation	0,5... 4 °C	0,5 °C	**0,5 °C**
938	**S**	Mixing valve decrease	0... 20 °C	1 °C	**0 °C**
941	**S**	Actuator running time	30... 873 s	1 s	**240 s**
945	**S**	Mixing valve in heating mode	Control, Open		**Control**
946	**S**	Lock time dewpoint limiter	10... 600 min	10 min	**60 min**
963	**S**	With prim contr / system pump	No, Yes		**No***
		*Basic setting : 1 circuit = No ; 2 circuits = Yes.			
969	**S**	Operating mode changeover	No, Off, Automatic		**Off**

Line		Function	Setting range or display	Setting increment	Basic setting
Heating, circuit 2					
		Only with the 2nd circuit kit option (If the installation consists of 2 heating circuits).			
1010	**U**	Comfort setpoint	Reduced setpoint… Comfort setpoint maximum	0,5 °C	**20 °C**
1012	**U**	Reduced setpoint	Frost protection setpoint… Comfort setpoint	0,5 °C	**19 °C**
1014	**U**	Frost protection setpoint	4 °C… Reduced setpoint	0,5 °C	**8 °C**
1016	**S**	Comfort setpoint maximum	Comfort temp... 35 °C	1 °C	**28 °C**
1020	**I**	Heating curve slope (figure 36, page 33)	0,1... 4	0,02	**0,5**
1021	**I**	Heating curve displacement (figure 37, page 33)	-4,5... 4,5 °C	0,5 °C	**0 °C**
1026	**S**	Heating curve adaption	Off, On		**Off**
		Warning! Not to modify, let "Off".			
1030	**I**	Summer / Winter heating limit	8... 30 °C	0,5 °C	**18 °C**
		When the average of the outside temperatures over the past 24 hours reaches 18°C, the controller switches off the heating (as an economy measure). During summer mode, the display shows "Eco". This function is only active in automatic mode.			
1032	**S**	24-hour heating limit	-10 °C... 10 °C	1 °C	**-2 °C**
		This function enables you partially to offset the automatic summer/winter switchover during the intermediate seasons. Increasing the value delays the switchover to summer mode.. Decreasing the value advances the switchover to summer mode. This function is only active in automatic mode.			
1040	**S**	Flow temp setpoint min	8 °C... Flow temp setpoint max	1 °C	**17 °C**
		(with dynamic radiator, adjust from 30 to 35°C)			
1041	**S**	Flow temp setpoint max	8... 70 °C	1 °C	**55 °C**
		Floor heating system = 50 °C / Radiators = 65 °C. **Important Note :** Maximum temperature limitation is not a safety function as required by ground heating.			
1050	**S**	Room influence	1 %... 100 %	1 %	**50 %**
		If the installation is fitted with a room thermostat: This function enables you to choose the ambient temperature's influence on the setting. If no value is entered, the setting is made based on the temperature control. If the parameter is set at 100%, the setting is only based on the ambient temperature.			
1080	**S**	Quick setback	Off, Down to reduced setpoint, Down to frost prot setpoint		**Down to reduced setpoint**
1090	**S**	Optimum start control max	0... 360 min	10 min	**180 min**
1091	**S**	Optimum stop control max	0... 360 min	10 min	**60 min**
1100	**S**	Reduced setpoint increase start	-30... 10 °C, --°C	1 °C	**--**
1101	**S**	Reduced setpoint increase end	-30... 10 °C, --°C	1 °C	**-5 °C**
1130	**S**	Mixing valve increase	0... 50 °C	1 °C	**0 °C**
1134	**S**	Actuator running time	30... 873 s	1 s	**240 s**
1150	**I**	Floor curing function (figure 1, page 37)			**Off**
		- Off: Early interruption of the current program, program inactive. - Functional heating. - Heating ready for occupation. - Functional heating + Curing heating. - Curing heating + Functional heating. - Manually: Manual mode enables you to programme your own concrete slab drying time.The function ends automatically after 25 days.			

Line		*Function*	*Setting range or display*	*Setting increment*	*Basic setting*
1151	**I**	Floor curing setpoint manually (if line 1150 = manual)	0... 95 °C	1 °C	**25 °C**
		This function enables you to set the custom concrete slab drying temperature. This temperature remains fixed. The concrete slab-drying program stops automatically after running for 25 days.			
1156	**I**	Floor curing day current	0... 32		
1157	**I**	Floor curing day completed	0... 32		**0**
1200	**S**	Operating mode changeover	None, Protection mode, Reduced, Comfort, Automatic		**Reduced**
		Operating mode at end of concrete slab drying period.			
Domestic hot water					
		If the installation is fitted with the DHW kit.			
1610	**U**	Nominal setpoint	Reduced setpoint (line 1612)… 65 °C	1	**55 °C**
		The electrical back-up system is required to reach this level.			
1612	**U**	Reduced setpoint	8 °C... Nominal setpoint (line 1610)	1	**40 °C**
1620	**I**	Release (of DHW load)	24h / day Time program HCs Time program 4 / DHW Low-tariff (Off-peak) T°prog 4 / DHW or Low-tariff		**Time program 4 / DHW**
		24h / day: The temperature of the DHW is constantly maintained at the DHW comfort setting.			
		Time program HCs: The DHW is produced according to the programming for the ambient temperature (with 1 hour in advance when switched on).			
		Time program 4 / DHW: The DHW program is separate form the heating circuit program.			
		Low-tariff* : The electrical back-up heating is only authorised to operate during the off-peak period.			
		T'prog 4/DHW or low-tariff *: The electrical back-up heating is authorised to operate during the comfort period or off peak.			
		* - Connect the "Power Provider" contact to input EX2 (see figure 18, page 22). In the case of a day /night contract, the electrical back-up for the DHW tank are subject to the power supplier's tariffs. Switching on the electrical back-up for the DHW tank is only authorised during off-peak hours.			
1640	**I**	Legionella function	Off, Periodically (depending line setting 1641), Fixed weekday (depending line setting 1642)		**Off**
1641	**S**	Legionella function periodically	1 to 7	1 day	**7**
1642	**S**	Legionella function weekday	Monday, Tuesday,...		**Sunday**
Swimming pool circuit (Only with swimming pool kit option)					
1952	**S**	Swimming pool release source heating	None, 24h/day, Time program 5		**None**
1959	**S**	Flow temp. setpoint pool	8... 120 °C		**45 °C**
1960	**S**	Frost protection plant swimming pool pump	Off, On		**Off**
Swimming pool (Only with swimming pool kit option)					
2056	**U**	Pool setpoint producer heating	8... 35 °C		**22 °C**

Line		*Function*	*Setting range or display*	*Setting increment*	*Basic setting*
Heat pump (HP)					
2816	**I**	Source temperature mini brine (Mini. HP evaporator temperature glycol water/Water)	-30... 50 °C	1 °C	**-10 °C**
		If water/water HP, set the parameter to 8 ° C (when the Brine temperature is less than this value HP stops).			
2817	**S**	Switching differential source protection	1... 10 °C	1 °C	**3 °C**
2821	**S**	Source startup time max.	1... 10 min	1 min	**5 min**
2822	**S**	Time limitation temperature mini brine	1... 24 h	1 h	**1 h**
2836	**S**	Start reduction temperature cutoff	-30... 20 °C	1 °C	**0 °C**
2837	**S**	Max temperature reduced cutoff	8... 100 °C	1 °C	**53 °C**
		If water/water HP, set the parameter to -- .			
2840	**S**	Switching differential return temperature	1... 20 °C	1 °C	**4 °C**
2842	**S**	Compressor run time mini	1... 30 min	1 min	**5 min**
2843	**S**	Compressor Off time mini	0... 120 min	1 min	**5 min**
2844	**S**	Switch-off temperature max	8... 100 °C	1 °C	**60 °C**



2880	**S**	Use electric flow	Substitute, Complem operation HP		**Complem operation HP**
2882	**S**	Release integral electric flow	0... 500 °Cmin	1 °Cmin	**100 °Cmin**
2884	**S**	Release electric flow below outdoor temperature	-30... 30 °C	1 °C	**2 °C**
2886	**S**	Compensation heat deficit	Off, On, Only with floor curing fct		**Off**
2910	**S**	HP release above outdoor temperature	-30... 30 °C	1 °C	**--**
2911	**S**	For forced buffer charging	Locked, Released		**Released**
2912	**S**	Full changing buffer	Off, On		**On**
2920	**S**	With electrical utility lock (EX1)	Locked (Blocked on standby), Released		**Released**

Released : HP = ON _ Back-up DHW = off _ 1st back-up HP = off _ 2nd back-up HP = off _ Boiler = ON.
Locked (Blocked on standby) : HP = off _ Back-up DHW = off _ 1st back-up HP = off _ 2nd back-up HP = off _ Boiler = ON.

Line		*Function*	*Setting range or display*	*Setting increment*	*Basic setting*
Supplementary source (Boiler connection)					
3700	**S**	Release below outdoor temperature	-50... 50 °C	1 °C	**2 °C**
3701	**S**	Release above outdoor temperature	-50... 50 °C	1 °C	**--**
3705	**S**	Overrun time	0... 120 min	1 min	**20 min**
3720	**S**	Switching integral (for boiler relief)	0... 500 °Cmin	1 °Cmin	**100 °Cmin**
3723	**S**	Locking time	1... 120 min	1 min	**30 min**
Buffer tank (only with the sensor buffer tank connected).					
4705	**S**	Forced charging	Off, Demand, Always		**Off**
4709	**S**	Forced charging setpoint heating mini	20... 80 °C	1 °C	**35 °C**
4710	**S**	Forced charging setpoint heating max.	20... 80 °C	1 °C	**50 °C**
4711	**S**	Forced charging time	00:00... 23:50	10 min	**--**
4712	**S**	Forced charging duration max.	1... 20 h	1 h	**4 h**
4721	**S**	Automatic heating generator lock differential	0... 20 °C	1 °C	**5 °C**
4722	**S**	Temperature differential buffer/HP	-20... 20 °C	1 °C	**2 °C**
DHW storage tank					
		If the installation is fitted with the DHW kit.			
5024	**S**	Swithching differential	0... 20 °C	1 °C	**12 °C**
		DHW tank Mileo / Mileo + = 20 °C			
5030	**S**	Charging time limitation	10... 600 min	10 min	**90 min**
5061	**S**	el immersion heaterrelease	24h/day, DHW release, Time program 4/DHW		**DHW release**
Installation configuration					
5700	**I**	Pre-setting	1,2,3,... 8	1	**1**
		This control enables you to choose one of the 8 pre-selected installation configurations. The hydraulic layouts for the various configurations are detailed in the section: "Installation Configurations". - Pre-setting 1 : 1 heating circuit with or without DHW tank, with or without buffer. - Pre-setting 2 : 2 heating circuits with or without DHW tank, with or without buffer. - Pre-setting 3 : Boiler connection and 1 heating circuit with or without DHW tank, with or without buffer. - Pre-setting 4 : Boiler connection and 2 heating circuits with or without DHW tank, with or without buffer. - Pre-setting 5 : Cooling and 1 heating circuit with or without DHW tank, with or without buffer. - Pre-setting 6 : Cooling and 2 heating circuits with or without DHW tank, with or without buffer. - Pre-setting 7 and more : not used.		
5710	**S**	Heating circuit 1	Off, On		**On**
5715	**S**	Heating circuit 2	Off, On		**On**
5981	**S**	Contact type input EX1	Normally-closed contact (NC) Normally-opened contact (NO)		**NO**
5983	**S**	Contact type input EX2	Normally-closed contact (NC) Normally-opened contact (NO)		**NC**
6100	**S**	Readjustment outdoor sensor	-3... 3 °C	0,1 °C	**0 °C**
6120	**S**	Frost protection plant	On, Off		**On**
6205	**S**	Reset to default parameters	No, Yes		**No**
6220	**S**	Software version (RVS)	0... 99		**--**
6420	**S**	Function input H33 (= contact in X152)	1... 56		**1**
		(1) Mode changeover HC+DHW - (2) Mode changeover DHW - (3) Mode changeover HC - (4) Mode changeover HC1 - (5) Mode changeover HC2 - (6) to (7) Not used - (8) Error/alarm message - (9) to (10) Not used - (11) Mode changeover Heating Swimming pool - (12) Not used - (13) Swimming pool release, solar - (14) to (25) Not used - (26) Condensation sensor - (27) Flow temp setting incr hygro - (28) to (59) Not used.			
6421	**S**	Contact type H33	Normally-closed contact (NC) Normally-opened contact (NO)		**NO**

Line		*Function*	*Setting range or display*	*Setting increment*	*Basic setting*
Fault					
6711	**U**	Reset HP	No, Yes		**No**
6800	**S**	History 1	Time, Date, Error code		
6802	**S**	History 2	Time, Date, Error code		
6804	**S**	History 3	Time, Date, Error code		
6806	**S**	History 4	Time, Date, Error code		
6808	**S**	History 5	Time, Date, Error code		
6810	**S**	History 6	Time, Date, Error code		
6812	**S**	History 7	Time, Date, Error code		
6814	**S**	History 8	Time, Date, Error code		
6816	**S**	History 9	Time, Date, Error code		
6818	**S**	History 10	Time, Date, Error code		
Service / special operation					
7070	**S**	HP interval	--, 1... 240	1 month	**--**
7071	**S**	HP time since maint Reset ? (no, yes)	0... 240	1 month	**0**
7073	**S**	Cur starts compr1/hrs run (since the 6 last weeks) Reset ? (no, yes)	0... 12		**0**
7141	**U**	Emergency operation	Off, On		**Off**
		Off: Heat pump functions normally (with boosters if necessary). On: Heat pump uses the electric boost system or the boiler connection. Use the “On” position only in Assist mode or Test mode: may result in high power bills.			
7142	**S**	Emergency operating function type	Manual, Automatic		Manual
		Manual: Emergency mode is not active when a fault occurs (Emergency mode = OFF). Automatic: Emergency mode is active when a fault occurs (Emergency mode = ON). In "Automatic" position, the energy cost can be onerous if the error is not detected and eliminated.			
7150	**I**	Simulation outdoor temperature	-50... 50 °C	0,5	**--**
Inputs / outputs test					
7700	**I**	Relay test			**0**
		This consists of instructing the controller's relays one by one and checking their outputs. This enables you to check that the relays are working and that the cabling is correct. Check that each appliance in the installation is operating correctly. (0) No test, (1) Everything Off, (2) Relay output QX1 : Heat pump Q14 (buffer tank), (3) Relay output QX2 : Electrical back-up (1st stage) or Boiler connection distribution valve, (4) Relay output QX3 : Electrical back-up (2nd stage) or Boiler connection contact, (5) Relay output QX4 : Heating pump,(6) Relay output QX5 : Brine pump, (7) Relay output QX6 : Compressor K1, (15) Relay output QX31 : Mixing valve open, (16) Relay output QX32 : Mixing valve close, (17) Relay output QX33 : Heating pump mixing circuit , (18) Relay output QX34 : DHW Electrical back-up, (19) Relay output QX35 : DHW distribution valve, (20) Relay output QX21 module 1 : Cooling kit, Active/Passive switching relay, (21) Relay output QX22 module 1 : Cooling kit, ON/OFF switching relay, (22) Relay output QX23 module 1 : Swimming pool valve, (23) Relay output QX21 module 2, (24) Relay output QX22 module 2, (25) Relay output QX23 module 2, (26) Relay output QX21 module 3, (27) Relay output QX22 module 3, (28) Relay output QX23 module 3.			
		The display shows the “Key” symbol. Pressing the Info button displays "Error 368". **Warning: The component being tested is receiving electrical power throughout the test.**			
7804	**I**	Sensor temperature BX1 (Brine circuit return temp.)	-28... 350 °C		**--**
7805	**I**	Sensor temperature BX2 (Brine circuit flow temp.)	-28... 350 °C		**--**
7806	**I**	Sensor temperature BX3 (DHW sensor / Cascade flow sensor)	-28... 350 °C		**--**
7807	**I**	Sensor temperature BX4 (Outdoor temp.)	-28... 350 °C		**--**
7808	**I**	Sensor temperature BX5	-28... 350 °C		**--**
7809	**I**	Sensor temperature BX6	-28... 350 °C		**--**

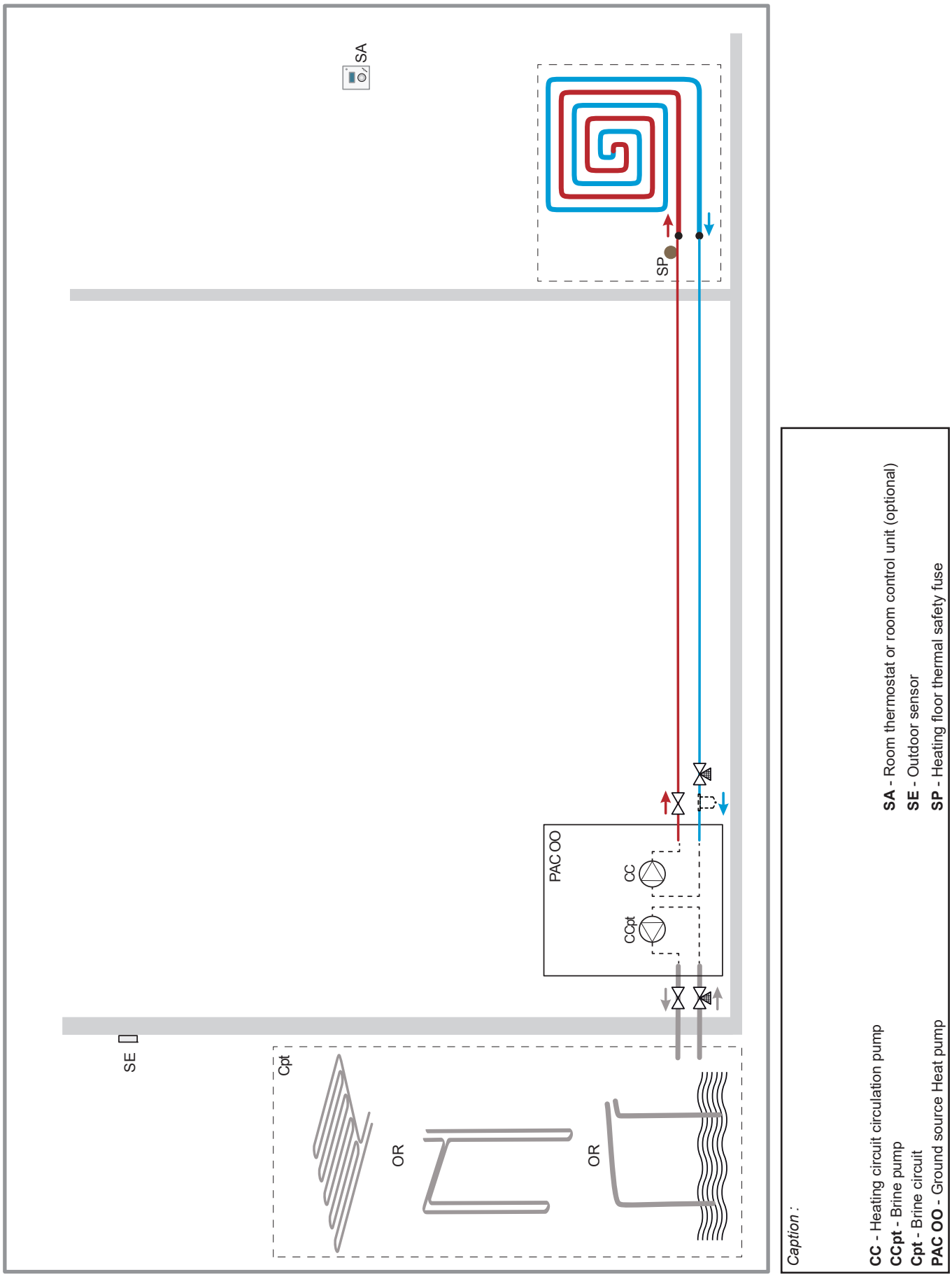
Line		*Function*	*Setting range or display*	*Setting increment*	*Basic setting*
7830	**I**	Sensor temperature BX21 module 1	-28... 350 °C		**--**
7831	**I**	Sensor temperature BX22 module 1	-28... 350 °C		**--**
7845	**I**	Input signal H2, module 1	None, Close/open, Impulsions, Frequency, Voltage		**None**
7911	**I**	Input EX1	0, 230 V		**--**
7912	**I**	Input EX2	0, 230 V		**--**
7913	**I**	Input EX3	0, 230 V		**--**
7914	**I**	Input EX4	0, 230 V		**--**
7973	**I**	Sensor temperature BX31 (Mixing circuit temp.)	-28... 350 °C		**--**
7974	**I**	Sensor temperature BX32 (Heating flow temp.)	-28... 350 °C		**--**
7975	**I**	Sensor temperature BX33 (Heating return temp.)	-28... 350 °C		**--**
7976	**I**	Sensor temperature BX34 (Buffer temp.)	-28... 350 °C		**--**
7977	**I**	Sensor temperature BX35	-28... 350 °C		**--**
7978	**I**	Sensor temperature BX36	-28... 350 °C		**--**
7999	**I**	Input signal H33	None, Close/open, Impulsions, Frequency, Voltage		**None**
State					
8000	**I**	State heating circuit 1			**--**
8001	**I**	State heating circuit 2			**--**
8003	**I**	State DHW			**--**
8006	**I**	State heat pump			**--**
8010	**I**	State buffer			
8011	**I**	State swimming pool			**--**
8022	**I**	State supplementary source			**--**
Diagnostics heat generation					
8400	**I**	Compressor 1	Off, On		**Off**
8402	**I**	El imm heater flow 1	Off, On		**Off**
8403	**I**	El imm heater flow 2	Off, On		**Off**
8404	**I**	Source pump	Off, On		**Off**
8405	**S**	Speed of source pump	0... 100 %		**--**
8406	**I**	Condenser pump	Off, On		**Off**
8410	**U**	Return temperature HP	0... 140 °C		**--**
		Setpoint (flow) HP			**--**
8412	**U**	Flow temperature HP	0... 140 °C		**--**
		Setpoint (flow) HP			**--**
8425	**I**	Temperature diff. condenser	-50... 140 °C		**--**
8426	**I**	Temperature diff. evaporator	-50... 140 °C		**--**
8427	**U**	Source inlet temperature	-50... 50 °C		**--**
8428	**I**	Source inlet temperature mini	-50... 350 °C		**--**
8429	**U**	Source outlet temperature	-50... 50 °C		**--**
8430	**I**	Source outlet temperature mini	-50... 350 °C		**--**
8440	**I**	Remain stage 1 OFF time mini	0... 255 min		**--**
8442	**I**	Remain stage 1 ON time mini	0... 255 min		**--**

Line		*Function*	*Setting range or display*	*Setting increment*	*Basic setting*
8444	**I**	Remain limit source temperature	0... 2730 h		**--**
8450	**S**	Hours run compressor 1 Reset ? (no, yes)	0... 2730 h		**--**
8451	**S**	Start counter compressor 1 Reset ? (no, yes)	0... 65535		**--**
8454	**S**	Locking time HP Reset ? (no, yes)	0... 2730 h		**--**
8455	**S**	Counter number of locks HP Reset ? (no, yes)	0... 65535		**--**
8456	**S**	Hours run electrical flow Reset ? (no, yes)	0... 2730 h		**--**
8457	**S**	Start counter electrical flow Reset ? (no, yes)	0... 65535		**--**
8585	**S**	Temperature setpoint	0... 140 °C		**--**
		Supplementary source temperature setpoint	0... 140 °C		**--**
Diagnostics consumers					
8700	**U**	Outdoor temperature	-50... 50 °C		**--**
8701	**U**	Outdoor temperature mini Reset ? (no, yes)	-50... 50 °C		**--**
8702	**U**	Outdoor temperature max Reset ? (no, yes)	-50... 50 °C		**--**
8703	**I**	Outdoor temperature attenuated Reset ? (no, yes)	-50... 50 °C		**--**
		This is the average of the outside temperature over a 24-hour period. This value is used for automatic Summer / Winter switchover (line 730).			
8704	**I**	Outdoor temperature composite	-50... 50 °C		**--**
		The mixed outside temperature is a combination of the current outside temperature and the average outside temperature calculated by the controller. This value is used for calculating the initial temperature.			
8730	**I**	Heating circuit pump 1	Off, On		**Off**
8731	**I**	Heating Circuit mixing valve 1 open	Off, On		**Off**
8732	**I**	Heating Circuit mixing valve 1 close	Off, On		**Off**
8740	**U**	Room temperature 1	0... 50 °C		**--**
		Room setpoint 1			**20 °C**
8743	**U**	Flow temperature 1	0... 140 °C		**--**
		Flow temperature setpoint 1			**--**
8749	**U**	Room thermostat 1	No request, Request		**No request**
8760	**I**	Heating circuit pump, circuit 2	Off, On		**Off**
8770	**I**	Room temperature 2	0... 50 °C		**--**
		Room setpoint 2			**20 °C**
8773	**U**	Flow temperature 2	0... 140 °C		**--**
		Flow temperature setpoint 2			**--**
8779	**U**	Room thermostat 2	No request, Request		**No request**
8820	**I**	DHW pump	Off, On		**Off**
8821	**I**	El imm heater DHW	Off, On		**Off**
8830	**U**	DHW temperature 1	0... 140 °C		**--**
		DHW temperature setpoint			**55 °C**

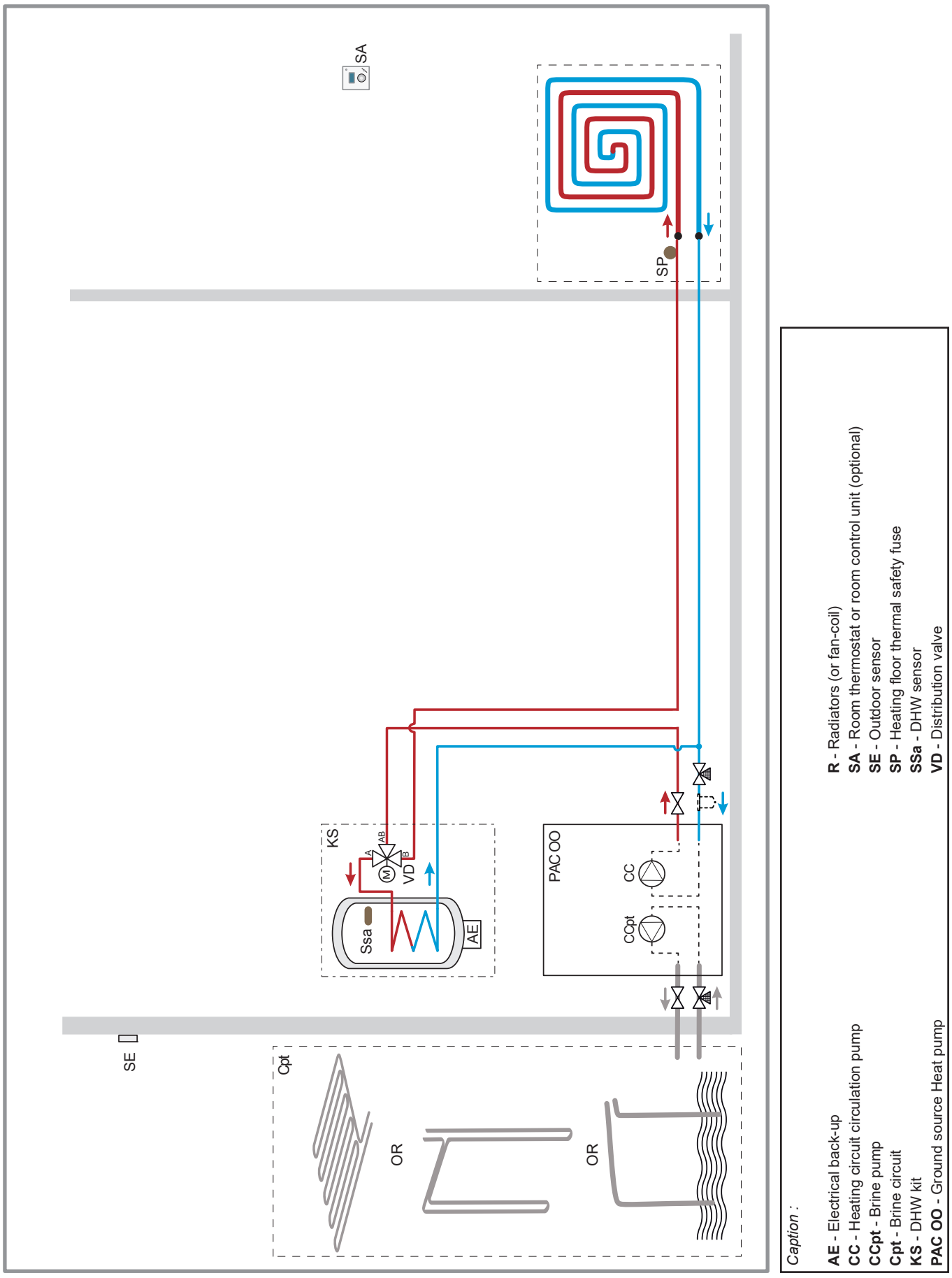
Line		*Function*	*Setting range or display*	*Setting increment*	*Basic setting*
8840	**S**	Hours run DHW pump Reset ? (no, yes)	0... 2730 h		**--**
8841	**S**	Start counter DHW pump Reset ? (no, yes)	0... 199999		**--**
8842	**S**	Hours run electric DHW Reset ? (no, yes)	0... 2730 h		**--**
8843	**S**	Start counter electric DHW Reset ? (no, yes)	0... 65535		**--**
8875	**I**	Temperature flow setpoint circ. cons1	5... 130 °C		**0 °C**
8885	**I**	Temperature flow setpoint circ. cons2	5... 130 °C		**0 °C**
8895	**I**	Temperature flow setpoint pool	5... 130 °C		**5 °C**
8900	**U**	Temperature pool (B13)	0... 140 °C		**--**
		Setpoint pool	0... 140 °C		**24 °C**
8950	**I**	Common flow temperature	0... 140 °C		**--**
		Common flow temperature setpoint	0... 140 °C		**--**
8957	**I**	Common flow setpoint, refrigeration	0... 140 °C		**--**
8962	**I**	Common output setpoint	0... 140 °C		**--**
8970	**I**	El imm heater buffer	Off, On		**Off**
8980	**I**	Buffer temperature 1 (B4)	0... 140 °C		**--**
8981	**I**	Buffer setpoint	0... 140 °C		**--**
9031	**I**	Relay output QX1	Off, On		**On**
9032	**I**	Relay output QX2	Off, On		**On**
9033	**I**	Relay output QX3	Off, On		**On**
9034	**I**	Relay output QX4	Off, On		**Off**
9035	**I**	Relay output QX5	Off, On		**Off**
9036	**I**	Relay output QX6	Off, On		**Off**
9050	**I**	Relay output QX21 module 1	Off, On		**Off**
9051	**I**	Relay output QX22 module 1	Off, On		**Off**
9052	**I**	Relay output QX23 module 1	Off, On		**Off**
9071	**I**	Relay output QX31	Off, On		**Off**
9072	**I**	Relay output QX32	Off, On		**Off**
9073	**I**	Relay output QX33	Off, On		**Off**
9074	**I**	Relay output QX34	Off, On		**Off**
9075	**I**	Relay output QX35	Off, On		**Off**

4 Overall hydraulic layout

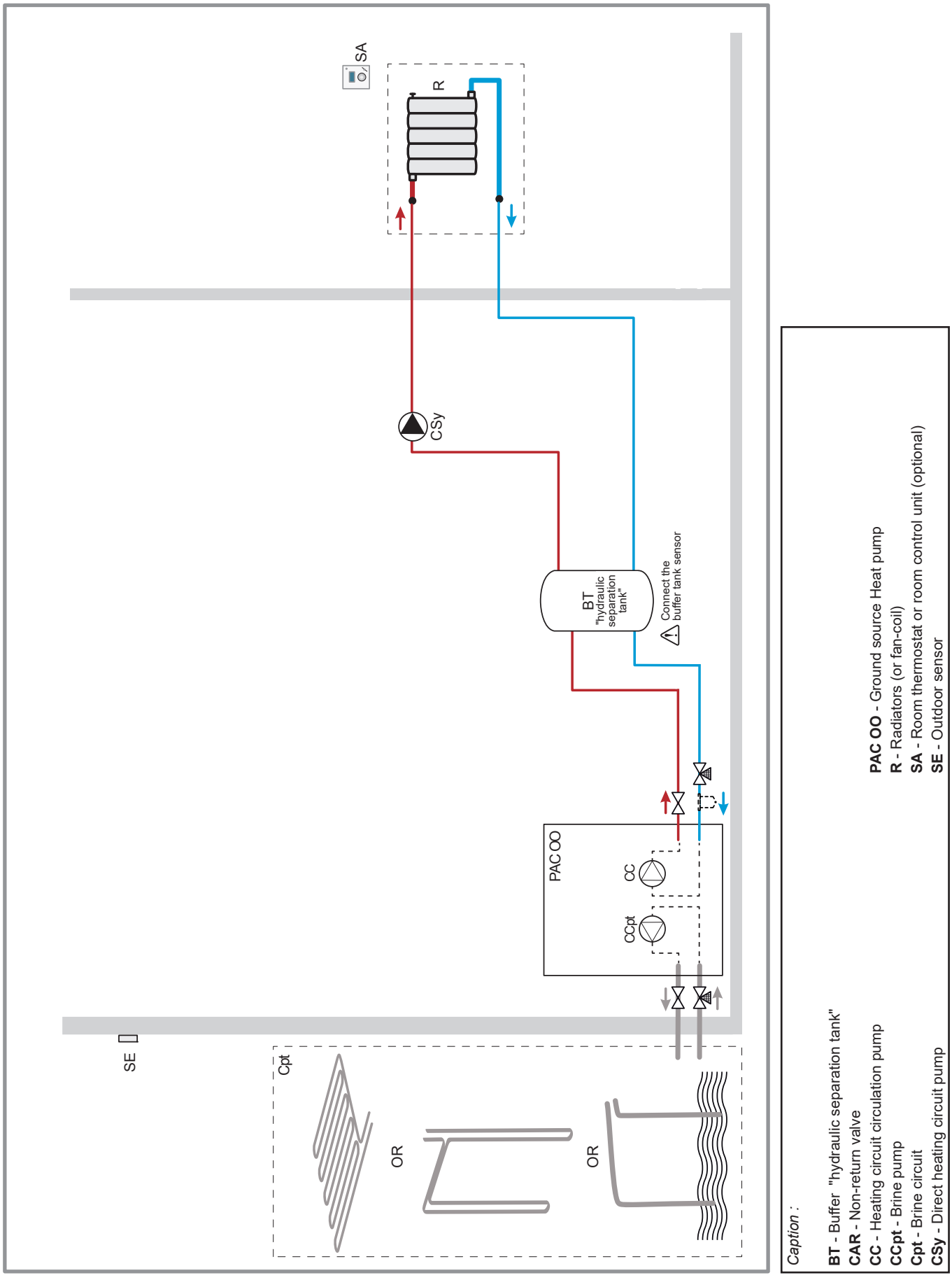
• Configuration 1: 1 heating circuit / Heating/cooling floor



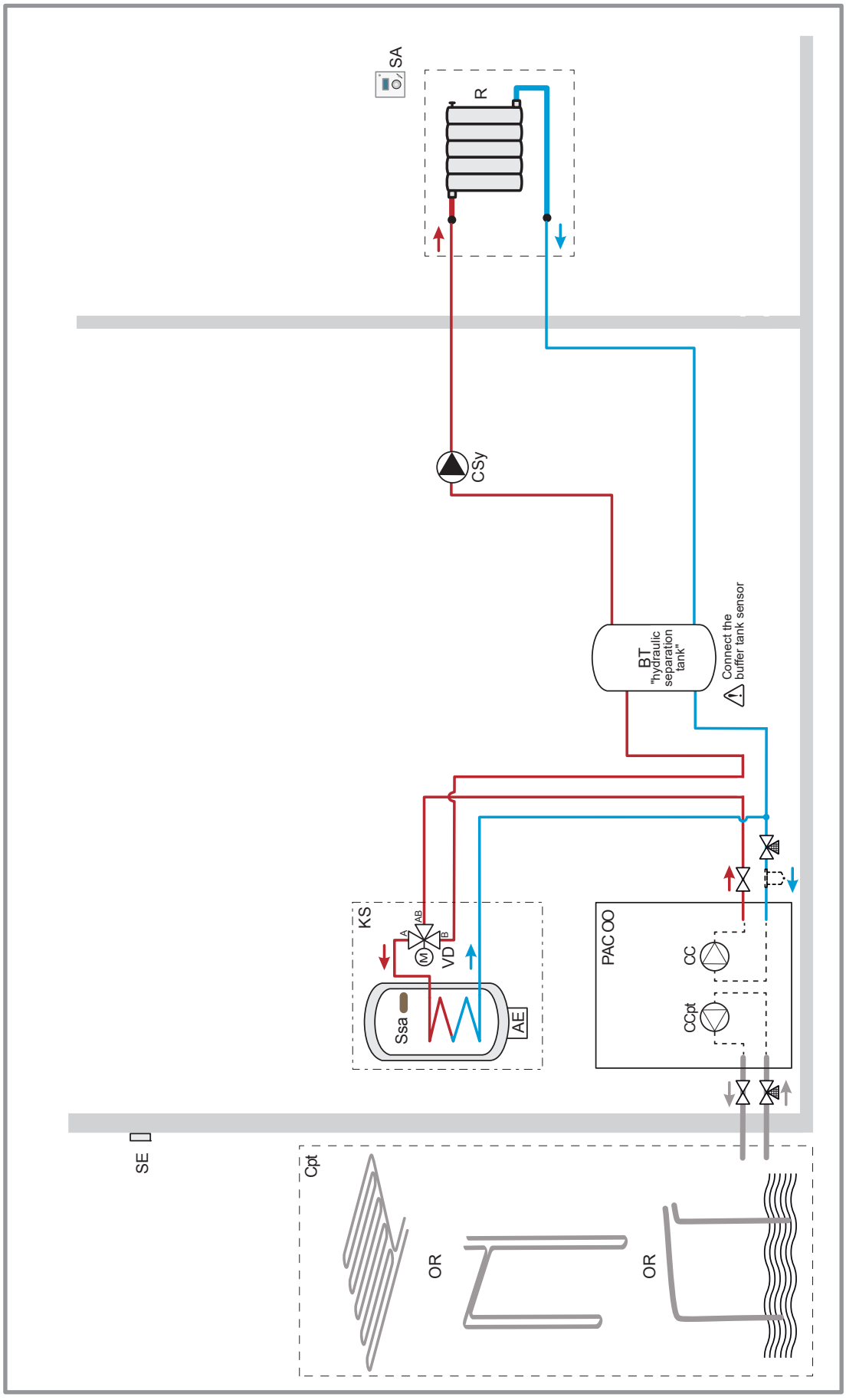
• Configuration 1: heating circuit / Heating/cooling floor and DHW tank (with electrical back-up)



• **Configuration 1: 1 heating circuit / Radiators (buffer** like "hydraulic separation tank")



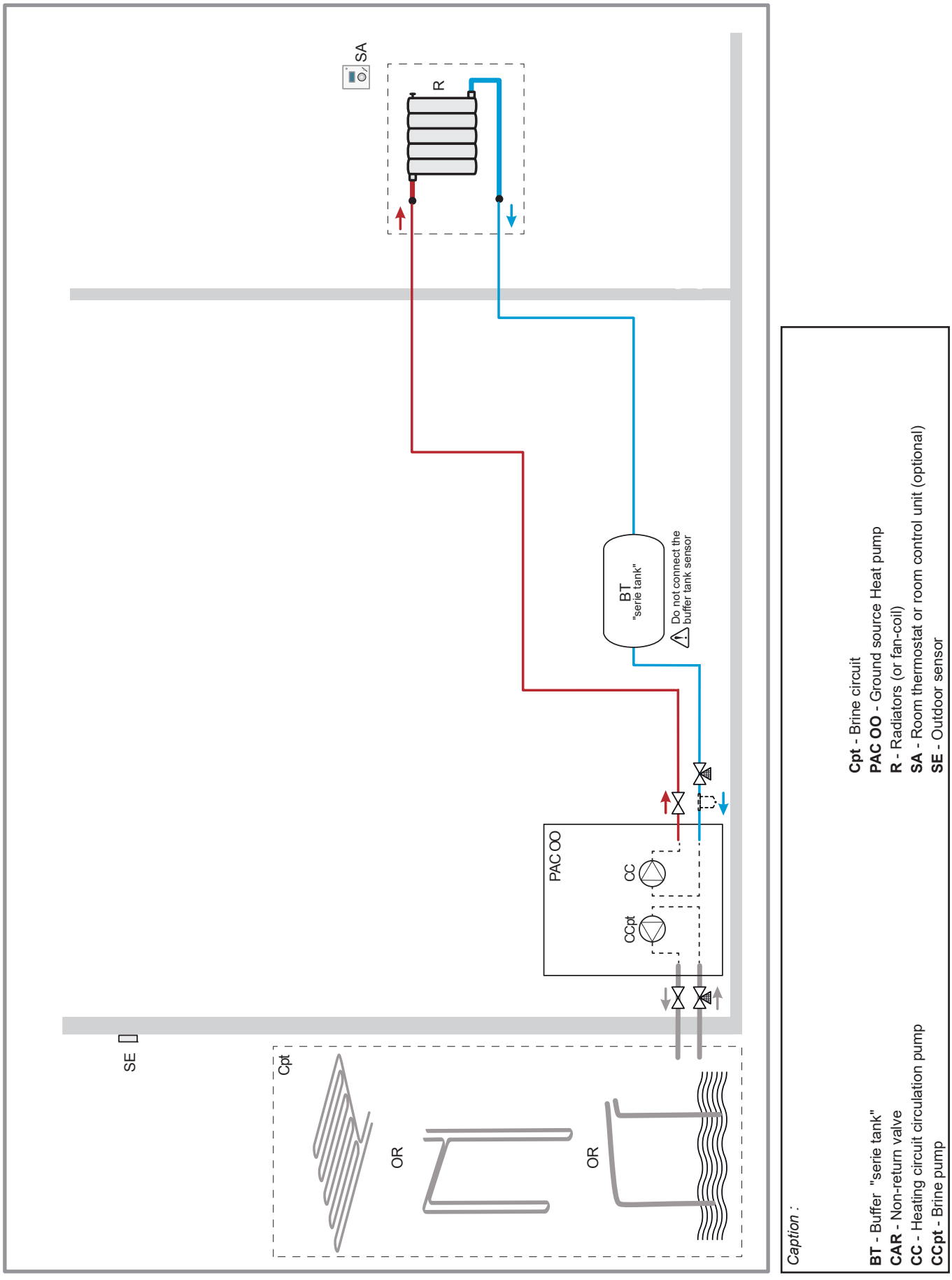
• **Configuration 1: 1 heating circuit / Radiators & DHW tank (buffer** like "hydraulic separation tank")



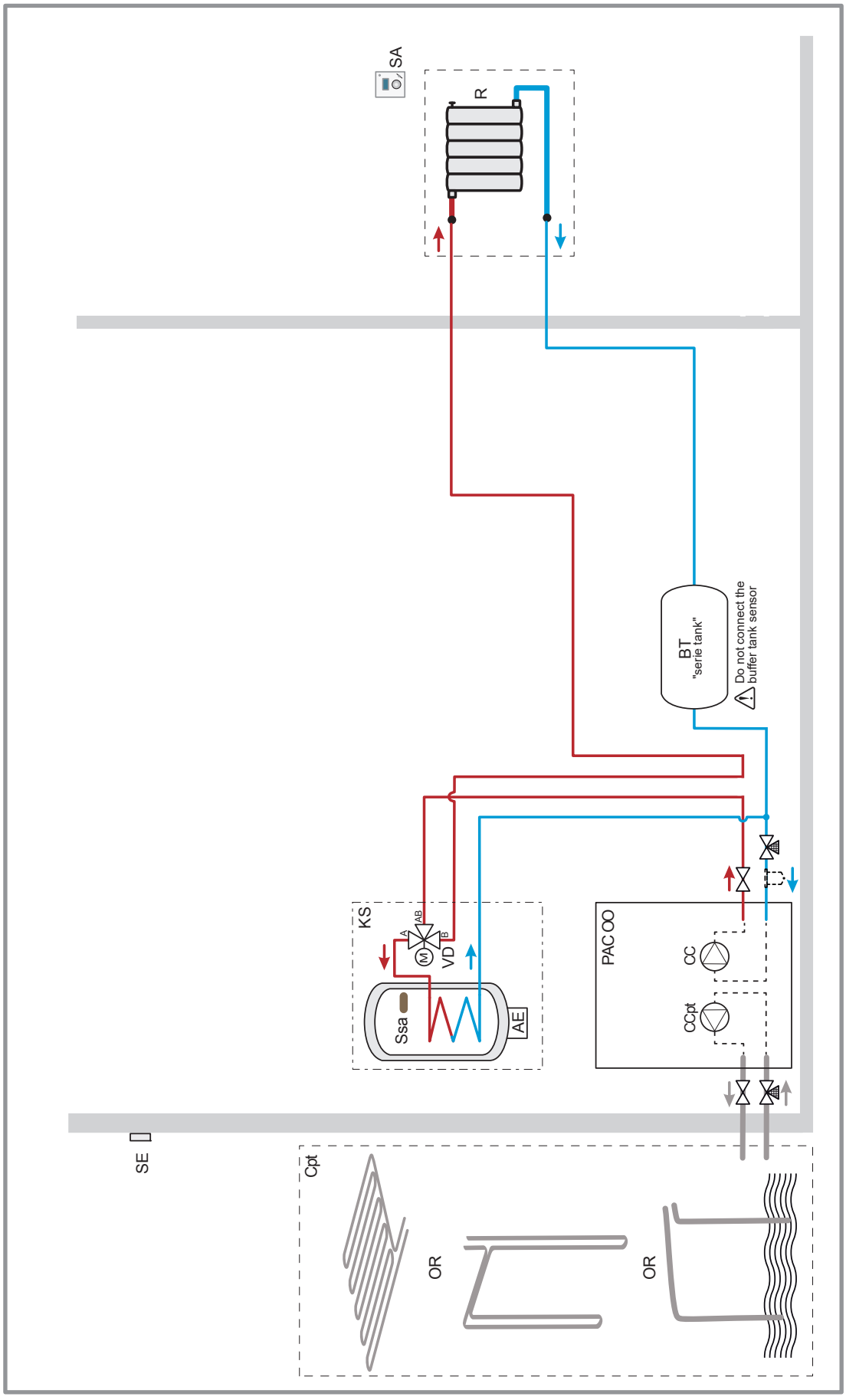
Caption :

AE - Electrical back-up
BT - Buffer "hydraulic separation tank"
CAR - Non-return valve
CC - Heating circuit circulation pump
CCpt - Brine pump
Cpt - Brine circuit
CSy - Direct heating circuit pump
KS - DHW kit
PAC OO - Ground source Heat Pump
R - Radiators (or fan-coil)
SA - Room thermostat or room control unit (optional)
SE - Outdoor sensor
SSa - DHW sensor
VD - Distribution valve

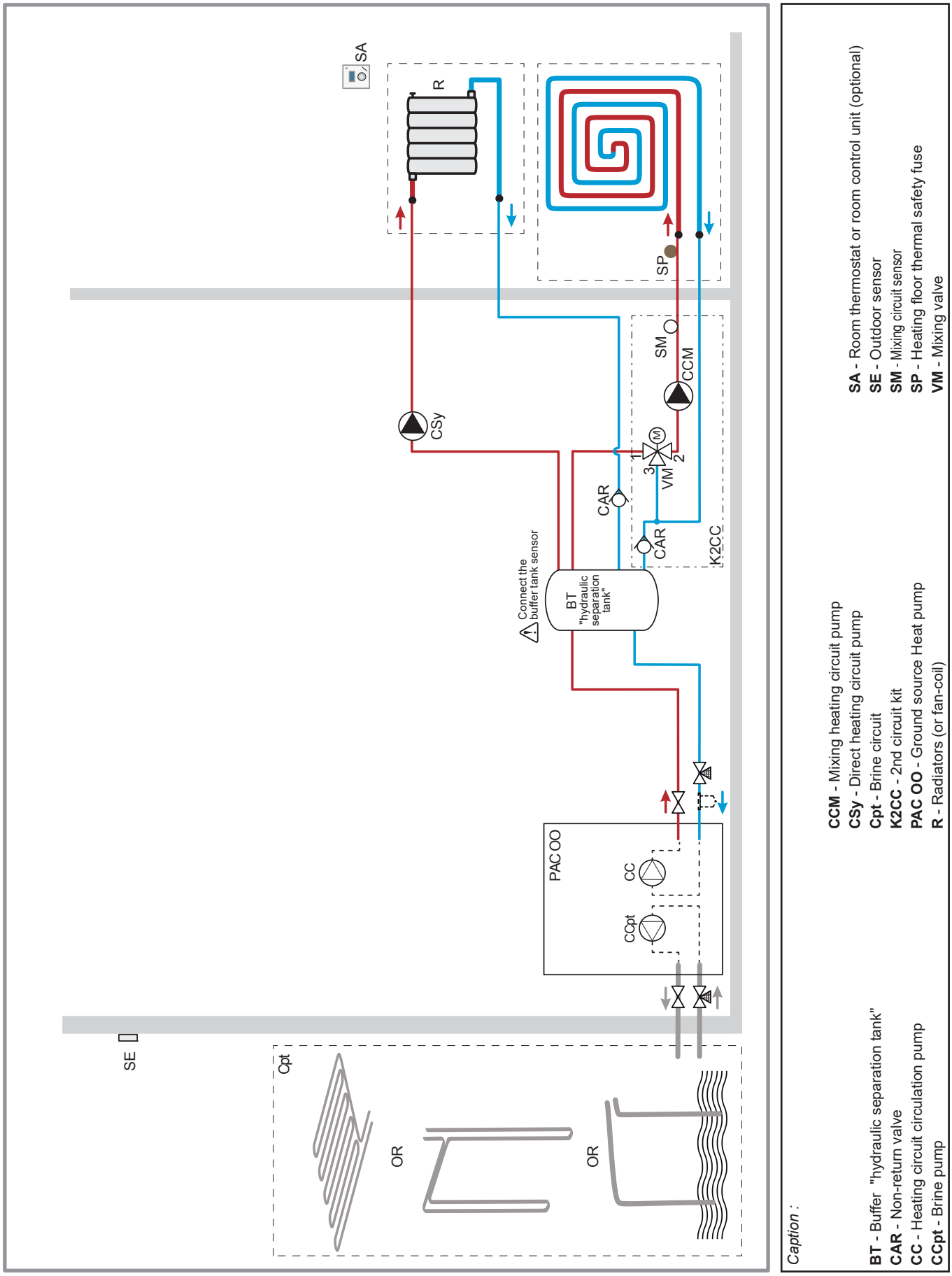
• **Configuration 1: 1 heating circuit / Radiators (buffer** like "serie tank")



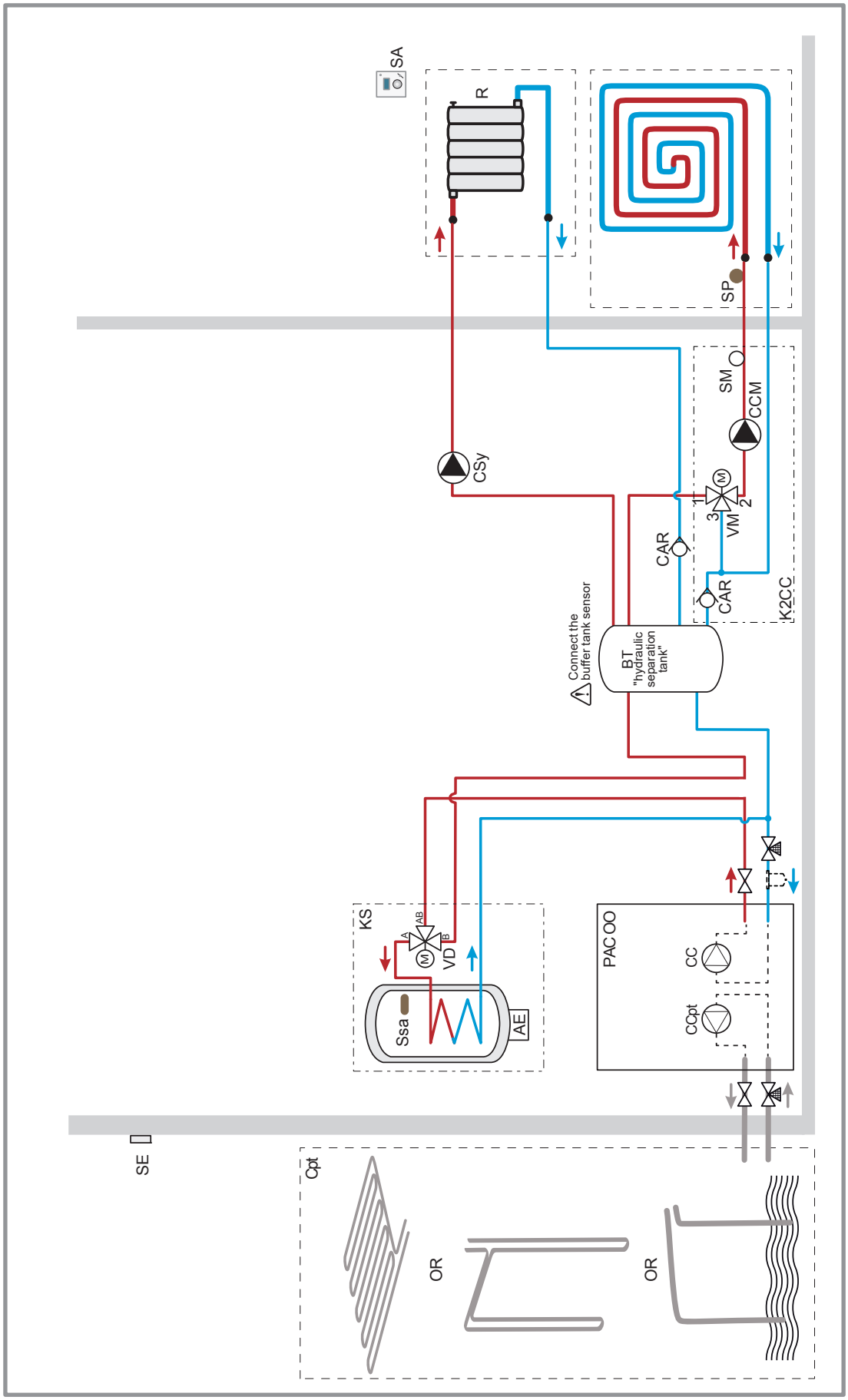
• **Configuration 1: 1 heating circuit / Radiators & DHW tank (buffer** like "serie tank")



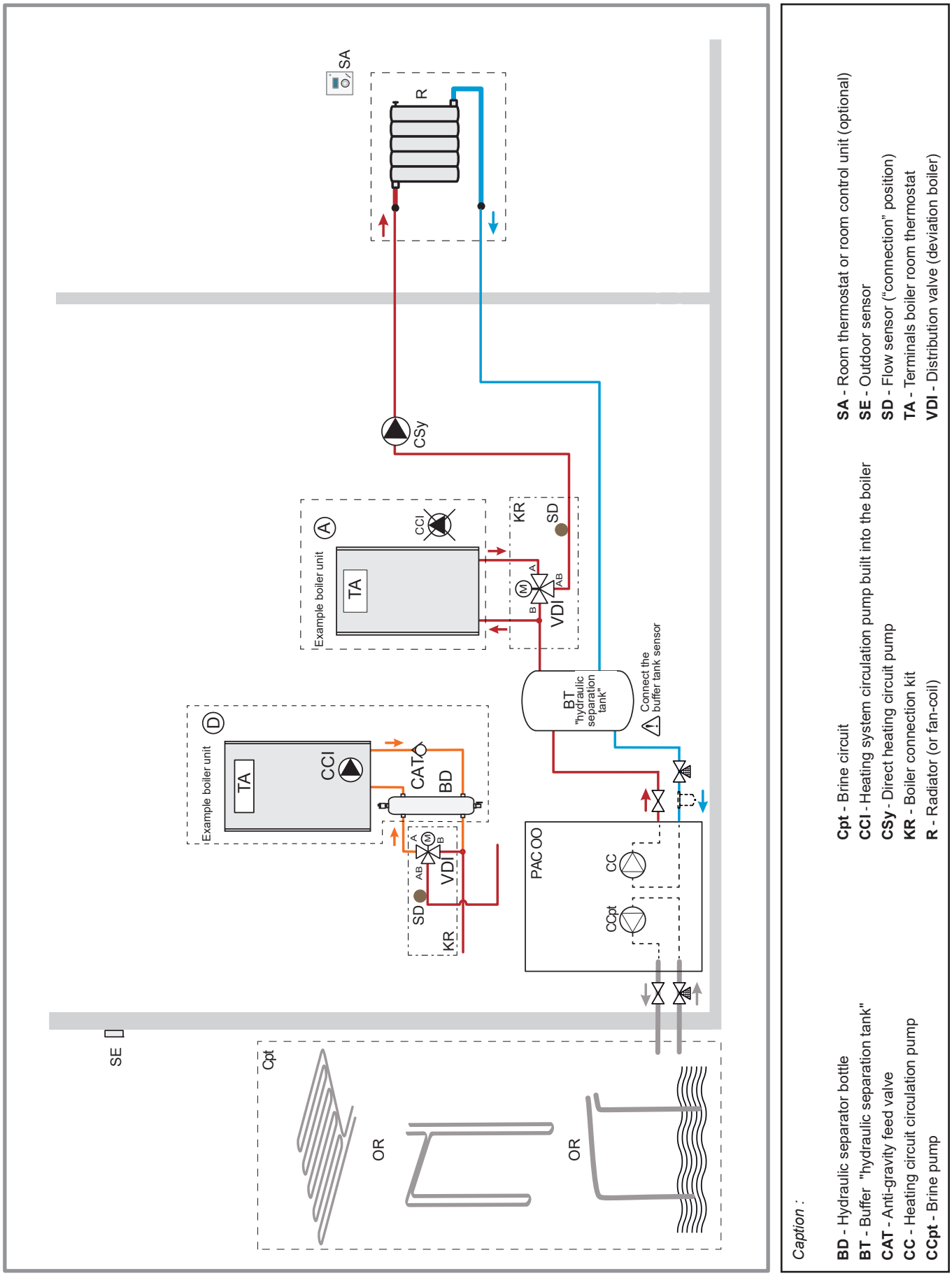
• Configuration 2: 2 heating circuits



• Configuration 2: 2 heating circuits and DHW tank (with electrical back-up)



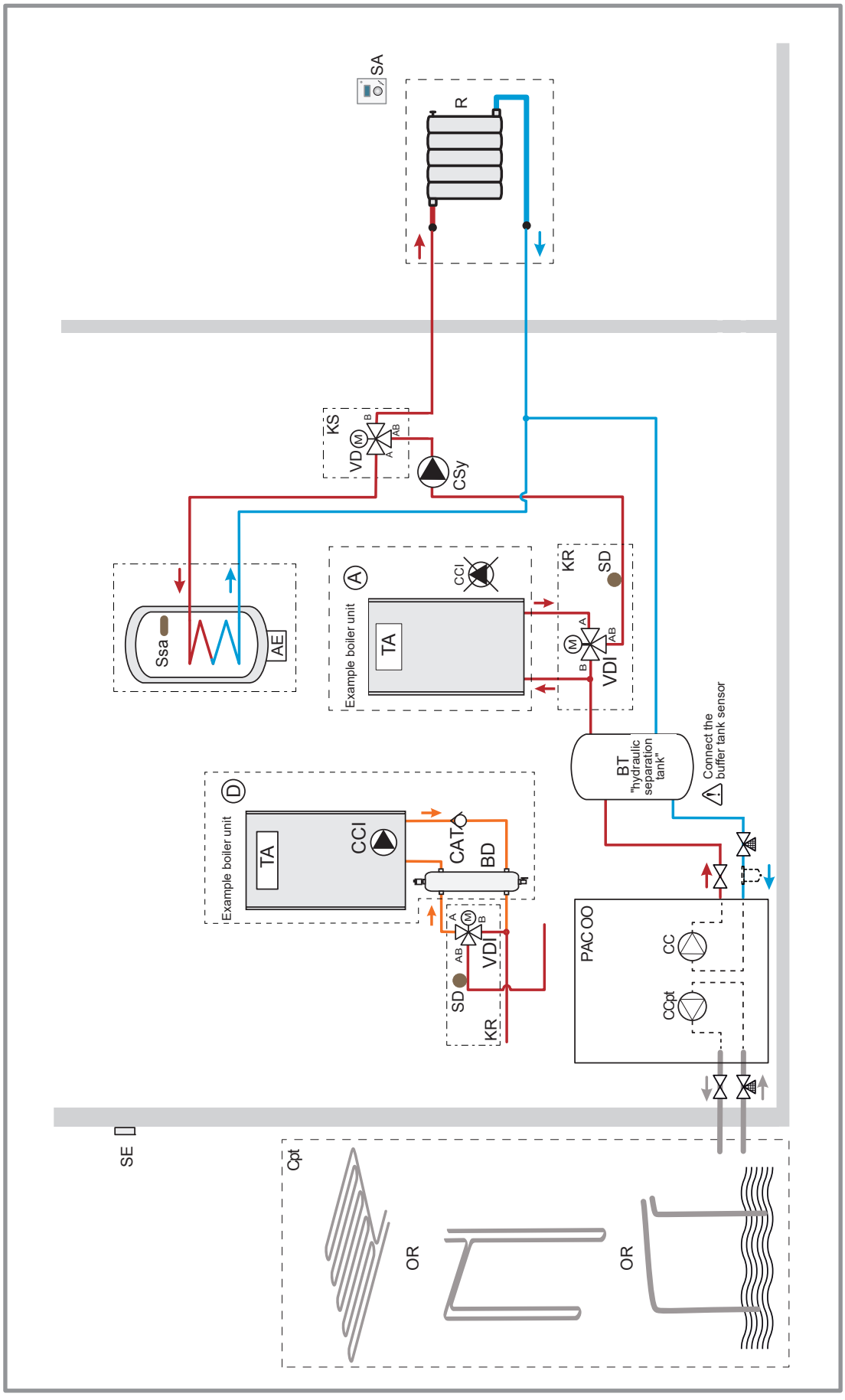
• Configuration 3: 1 heating circuit & boiler connection



Caption :

BD - Hydraulic separator bottle
BT - Buffer "hydraulic separation tank"
CAT - Anti-gravity feed valve
CC - Heating circuit circulation pump
CCpt - Brine pump
Cpt - Brine circuit
CCI - Heating system circulation pump built into the boiler
CSy - Direct heating circuit pump
KR - Boiler connection kit
R - Radiator (or fan-coil)
SA - Room thermostat or room control unit (optional)
SE - Outdoor sensor
SD - Flow sensor ("connection" position)
TA - Terminals boiler room thermostat
VDI - Distribution valve (deviation boiler)

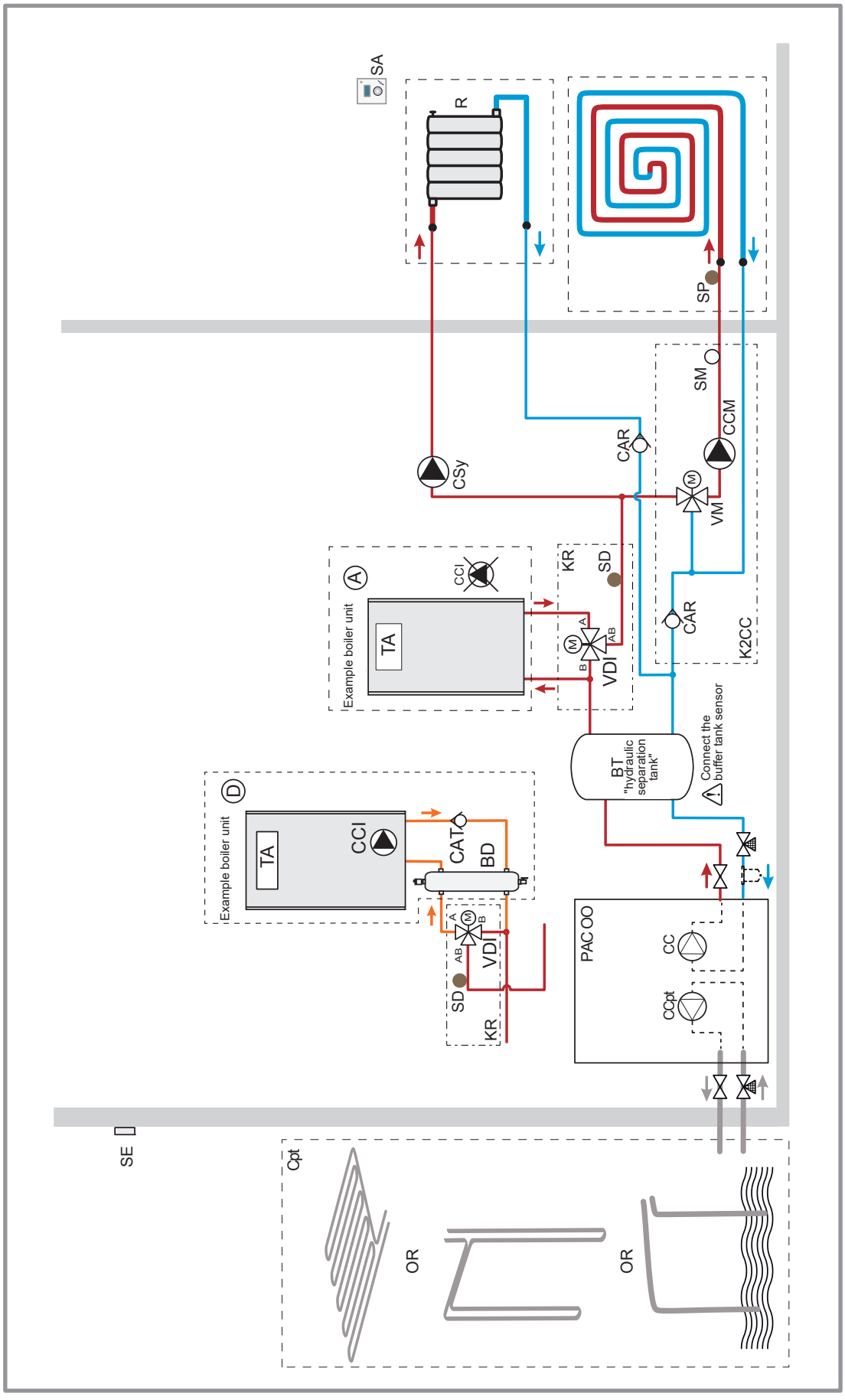
• Configuration 3: 1 heating circuit, DHW tank & boiler connection



Caption :

AE - Electrical back-up
BD - Hydraulic separator bottle
BT - Buffer "hydraulic separation tank"
CAT - Anti-gravity feed valve
CC - Heating circuit circulation pump
CCpt - Brine pump
Cpt - Brine circuit
CCI - Heating system circulation pump built into the boiler
CSy - Direct heating circuit pump
KR - Boiler connection kit
KS - DHW kit
R - Radiator (or fan-coil)
SA - Room thermostat or room control unit (optional)
SE - Outdoor sensor
SD - Flow sensor ("connection" position)
SSa - DHW sensor
TA - Terminals boiler room thermostat
VD - Distribution valve
VDI - Distribution valve (deviation boiler)

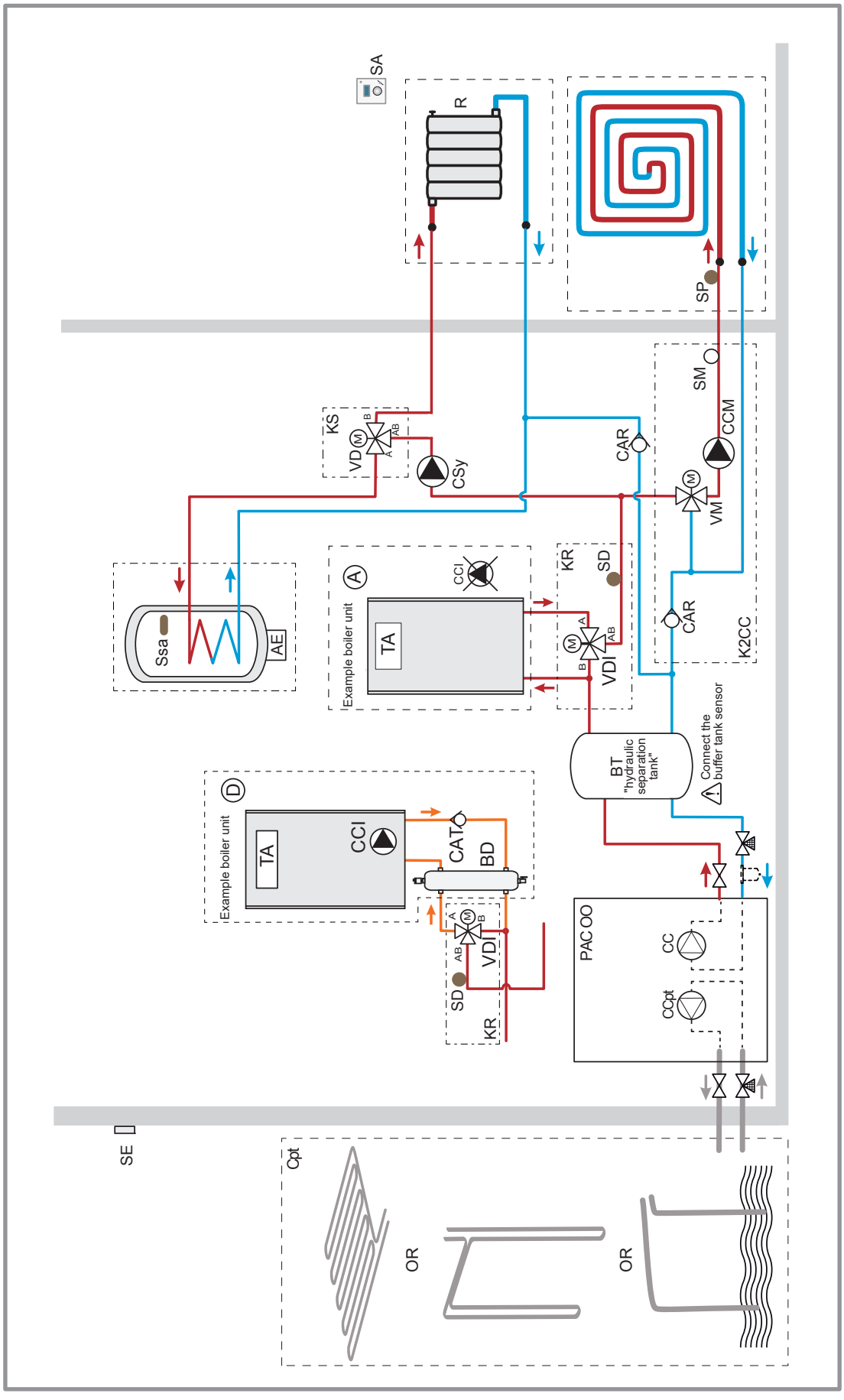
• Configuration 4: 2 heating circuits & boiler connection



Caption :

BD - Hydraulic separator bottle
BT - Buffer "hydraulic separation tank"
CAT - Anti-gravity feed valve
CC - Heating circuit circulation pump
CCpt - Brine pump
Cpt - Brine circuit
CCI - Heating system circulation pump built into the boiler
CCM - Mixing heating circuit pump
CSy - Direct heating circuit pump
K2CC - 2nd circuit kit
KR - Boiler connection kit
KS - DHW kit
R - Radiator (or fan-coil)
SA - Room thermostat or room control unit (optional)
SE - Outdoor sensor
SD - Flow sensor ("connection" position)
SM - Mixing circuit sensor
TA - Terminals boiler room thermostat
VDI - Distribution valve (deviation boiler)
VM - Mixing valve

• Configuration 4: 2 heating circuits, DHW tank & boiler connection



Caption :

AE - Electrical back-up
BD - Hydraulic separator bottle
BT - Buffer "hydraulic separation tank"
CAT - Anti-gravity feed valve
CC - Heating circuit circulation pump
CCpt - Brine pump
Cpt - Brine circuit
CCI - Heating system circulation pump built into the boiler
CCM - Mixing heating circuit pump
CSy - Direct heating circuit pump
K2CC - 2nd circuit kit
KR - Boiler connection kit
SA - Room thermostat or room control unit (optional)
SE - Outdoor sensor
SD - Flow sensor ("connection" position)
SSa - DHW sensor
TA - Terminals boiler room thermostat
VD - Distribution valve
VDI - Distribution valve (deviation boiler)
VM - Mixing valve

5 Troubleshooting

The errors may be displayed on the digital screen.

5.1 Errors displayed on the HP

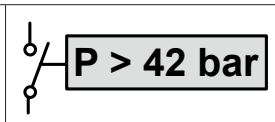
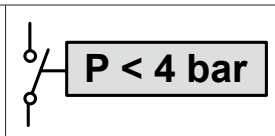
Errors or breakdowns on the hydraulic unit are indicated by the display on the user interface.

The display shows the symbol.

Press the key for more details on the origin of the errors.

When the error has been solved, the errors are re-initialised to zero automatically.

Errors visible on the digital display.

Nr.	*Devices concerned*	*Control*	*Heat pump operation despite the error*
-	No connection.	Failure to comply with room thermostat's polarity.	No
10	Outdoor sensor.	Check the sensor & the conncetor X84 (B9).	Yes
50	DHW temperature sensor (optional).	Check the sensor & the conncetor X84 (B3).	Yes
60	Room temperature sensor 1.	Check the sensor & the conncetor X86.	Yes
65	Room temperature sensor 2.	Check the sensor & the conncetor X150.	Yes
105	Maintenance message.		Yes
121	Flow temperature for HC1 not reached.		Yes
122	Flow temperature for HC2 not reached.		Yes
127	Anti-legionella temperature not reached.		Yes
138	Heating return sensor error.	Check the sensor & the conncetor X154, terminals 3 & 4 (B71).	Yes
222	High Pressure pressostat error or Compressor safety thermostast.	Check the HP pressostat state, the compressor safety thermostat & the connector X11, terminal EX4. 	No
		Check purge of the Heating circuit, the filter of the filter valve of the Heating circuit, the pump of the Heating circuit.	
225	Low Pressure pressostat error or Flow controller pressostat.	Check the LP pressostat state, the flow controller pressostat & the connector X11, terminal EX3. 	No
		Check purge of the Brine circuit, the filter of the filter valve of the Brine circuit, the pump of the Brine circuit.	
361	Brine return sensor error.	Check the sensor & the conncetor X80, terminals 2 & 3 (B91).	Yes
370	Thermodynamic generator.	Check the starter or the thermal relay (triggered) (figure 16, page 21).	No

☞ **Ensure that the general electrical power supply has been cut off before starting any repair work.**

☞ **When the HP is not under tension, protection frost-free is not assured.**

5.2 Information displayed

Various data can be displayed when pressing the i key.

Depending on the type of unit, configuration and operating state, some of the info lines listed below may not appear.

- Possible error messages from the error code list (see table, page 60).
- Possible service messages from the maintenance code list.
- Possible special mode messages.
- Various data (see below).

Designation	*Line*
Floor drying current setpoint .	-
Current drying day.	-
State heat pump.	8006
State supplementary source (optional).	8022
State buffer.	8010
State DHW (optional).	8003
State heating circuit 1.	8000
State heating circuit 2 (optional).	8001
Outdoor temperature.	8700
Room temperature 1 (optional).	8740
Room setpoint 1.	
Flow temperature 1.	8743
Flow temperature setpoint1.	
Room temperature 2 (optional).	8770
Room setpoint 2 (optional).	
Flow temperature 2 (optional).	8773
Flow temperature setpoint 2 (optional).	
DHW temperature (optional).	8830
Buffer temperature	8980
Heat pump return temperature.	8410
Setpoint (return) HP.	
Heat pump flow temperature.	8412
Setpoint (flow) HP.	
Minimum remaining stop time for compressor 1.	-
Minimum remaining running time for compressor 1.	-

5.3 Operation signals with the circulator

	LED Off	The pump does not work, no electrical power.
	Green LED on	The pump works normally
	Green/Red LED blink	Circulation pump operation in “alert” mode (under unusual conditions such as: dry running, motor overload due to impurities in the water, etc.).
	Red LED blink	Operating error due to a persistent external fault (abnormal voltage/current, external pump blockage, reverse flow, etc.). Circulation pump stops. The circulation pump restarts once the issue is resolved.
	Red LED on	Operating error / Permanent shutdown. Circulation pump replacement.

6 Maintenance of the installation

Ensure that the general electrical power supply has been cut off before starting any repair work.

6.1 Heating circuit checks

☞ **Warning : If frequent water refilling are required it is essential that you look for any leaks. If filling and re-pressurization are required, check what type of fluid has been used initially.**

Periodically check the water pressure in the Heating circuit :

- **Radiator Circuit :** pressure between 1.5 & 2 bar.
- **Heating Floor Circuit :** the pressure in the floor system when it is cold and when HP is stopped must be 1.5 bars. If filling and re-pressurization are required, check what type of fluid has been used initially.

Each year,

- Check and clean the filter of the filter valve on the return Heating circuit.
- Vent the dirt separator (optional).
- Check the pressure of the expansion vessel (precharge 1 bar) and the good functioning of the safety valve.

If the installation is equipped with a DHW tank :

- Check the safety device on the cold water supply inlet. Make it works as prescribed by the manufacturer.
- Check the shut-off.

6.2 Brine circuit checks

Periodically check the brine pressure in the Brine circuit :

- **Brine Circuit :** Check that the pressure Brine circuit is higher than 1 bar.

Each year,

- Check glycol (Ph + Refracto) once a year. Use monopropylene glycol only. The recommended concentration is 30% minimum. **Never use monoethylene glycol.**
- Check and clean the filter of the filter valve on the return Brine circuit.
- Check the pressure of the expansion vessel (precharge 1 bar) and that the safety valve runs properly.

6.3 Refrigerant circuit checks

When the refrigerant load is higher than 2kg (atlantic geolia 17), it is compulsory to have an approved after sales service (with a certificate of capacity for the handling of refrigerants) check of the refrigeration circuit every year.

- Check that there is no leak (connections, valves…).

6.4 Electrical checks

- Check connections and possible tightening.
- Check the cables connection and electronic boards.

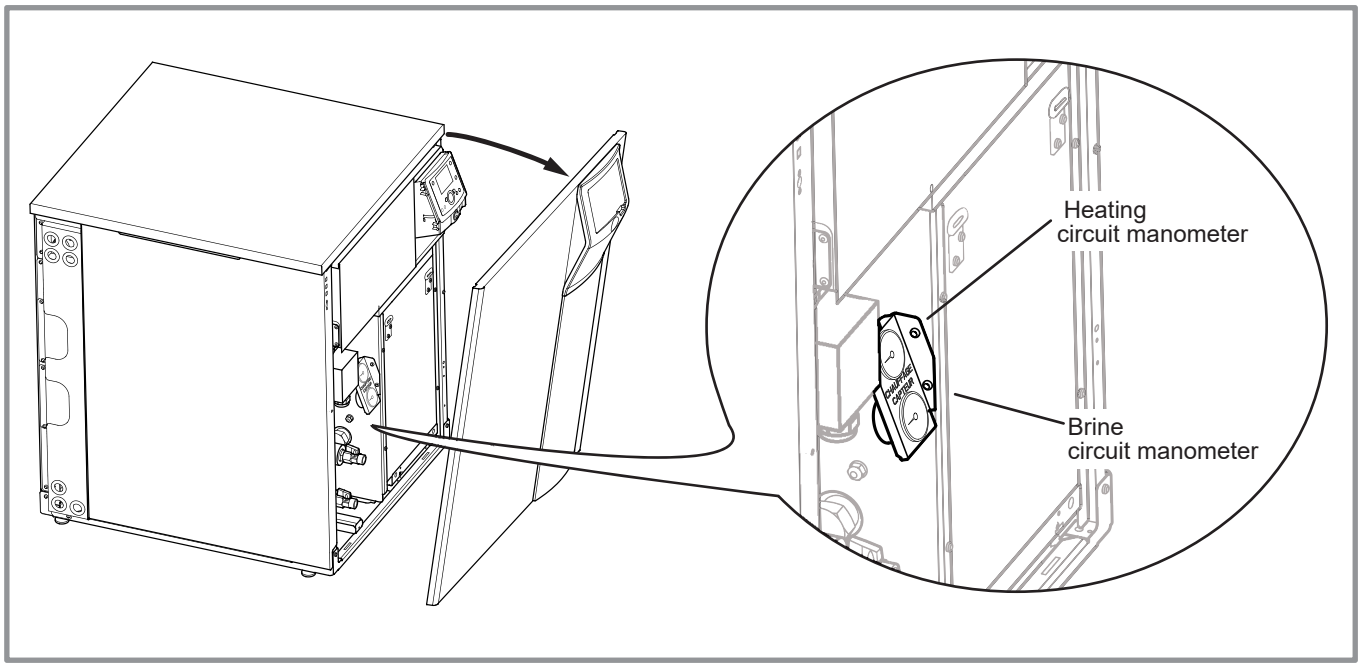


figure 39 - Manometer access

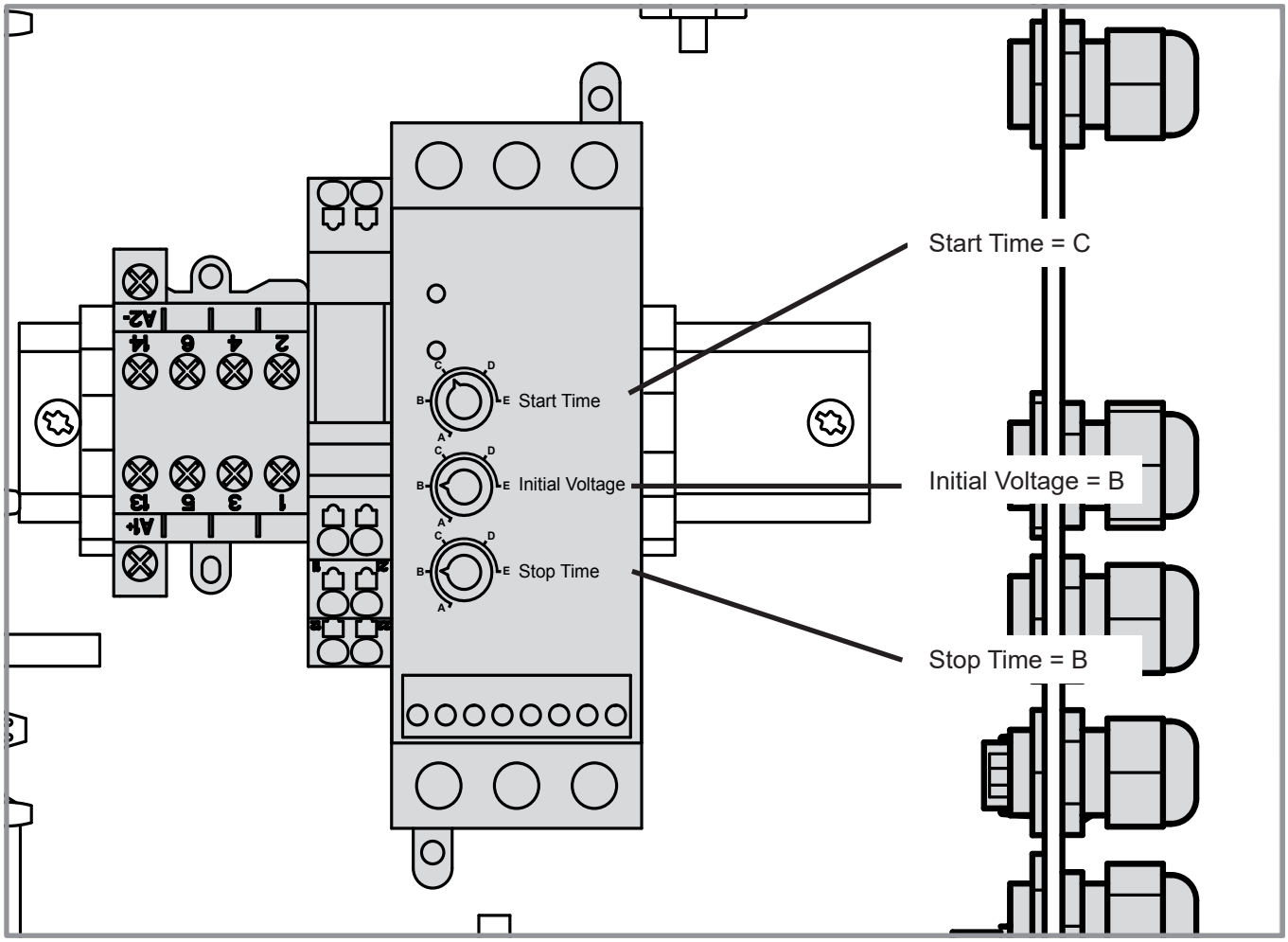


figure 40 - Starter (factory setting)

7 Quick-start procedure

Before switching on the Heat pump:

7.1 Start-up check-list

7.1.1 Before starting-up

• Sight check and hydraulic checks

(see chapiter "Installation of the Heat Pump", page 14).	OK	Non compliant	
Location and fittings, evacuation.			
Connection of pipes, filter valves and pumps (Heating circuit, Brine circuit, DHW).			
Water volume of the installation (expansion vessel of adequate capacity ?).			
No leaks.			
Heating circuit, Brine circuit pressure.			

• Electrical checks

(see chapiter "Electrical connections", page 18).	OK	Non compliant	Value
Main power supply 400v.			
Protection by rated circuit breaker (HP + back-up).			
Cable cross-section (HP + back-up).			
Earth connection.			
Sensors connection (positioning and connections).			
Distribution valves (boiler connection & DHW) & circulation pump.			

7.1.2 Starting-up

• Switching On

(see chapiter "Commissioning", page 24).	OK	Non compliant	
DISENGAGE the compressor thermal relay.			
Turn ON the start/stop switch => Initialisation for a few seconds.			
Set Time, Date and Time programs for HC1, (HC2), if different than default values (settings 500 – 576).			
Configure the hydraulic circuit (setting 5700).			
Ajust the heating curve slope (720; 1020).			
Adjust the maximum start setpoint (741 and 1041).			
Adjust the mini. HP evaporator temperature setpoint (2816).			
ENGAGE the compressor thermal relay.			
Operation of pumps.			
Operation of the compressor (after few minutes).			
Current measurement.			
After few minutes, measurement of Brine temperature delta.			
After few minutes, measurement of Heating temperature delta.			
After 15 minutes, measurement of Brine temperature delta.			
After 15 minutes, measurement of Heating temperature delta.			
Operation of heating, mixing valve, electrical back-up / boiler back-up, …			
DHW priority (switching of selection valve).			

• Room control

(see chapiter "Configuration of room thermostat (T58)", page 29).	OK	Non compliant	
Settings, handling, checks.			
Set the scheduled periods for heating (500 to 516 / 520 to 536).			
Adjust the heating circuit setpoints if different than default values (710-714 ; 1010-1014).			
Setpoint display.			
Explanations on use.			

The heat pump is ready for operation !

7.2 Settings sheet

Setting	Description	Set to.	Menus
Preliminary settings			
20	language		Operator section
1	hour / minutes		Time & date
2	day / month		Time & date
3	year		Time & date
5700	installation config.		Configuration
Heating circuit No. 1 if 2 circuits = the least warm one (e.g.: floor)			
710	comfort setpoint		HC1 adjust.
712	reduced setpoint		HC1 adjust.
720	heating curve slope		HC1 adjust.
741	flow temp setpoint max		HC1 adjust.
750	room influence		HC1 adjust.
790 / 791	optimis. at switch-on / off		HC1 adjust.
850 / 851	floor drying		HC1 adjust.
Heating circuit No. 2 (with 2nd circuit option) = the warmest one (e.g.: radiators)			
1010	comfort setpoint		HC2 adjust.
1012	reduced setpoint		HC2 adjust.
1020	heating curve slope		HC2 adjust.
1041	flow temp setpoint max		HC2 adjust.
1050	room influence		HC2 adjust.
1090 / 1091	optimis. at switch-on / off		HC2 adjust.
1150 / 1151	floor drying		HC2 adjust.
Domestic Hot Water (if DHW kit)			
1610	nominal DHW temp. setpoint		DHW
1612	reduced DWH temp. setpoint		DHW
1620	DHW release		DHW
1640 to 1642	legionella cycle		DHW
5024	DHW switch-on differ.		DHW tank
5030	charging time limitation		DHW tank
5061	heater release		DHW tank

Setting	Description	Set to.	Menus
Boiler back-up (si boiler connection kit)			
3700	OT.switch-on authoris.		Addit. gen.
3705	swith-off delay		Addit. gen.
Miscellaneous			
6420	input H33 function	1	Configuration
6100	OT sensor correction		Configuration
6120	frost protection on/off		Configuration
6205	reset settings		Configuration
6220	software version		Configuration
Faults (if a fault occurs, press"Info" key)			
No. 10	outdoor sensor		
No. 60	room sensor 1		
No. 65	room sensor 2		
No. 105	maintenance message		
No. 121	HC1 flow T not reached		
No. 122	HC2 flow T not reached		
No. 127	leg. prot. T not reached		
N° 138	heating circuit return sensor		
N° 223	High Pressure Pressostat / Compressor safety thermostat		
N° 225	low pressure pressostat / flow controller pressostat		
N° 361	brine circuit return sensor		
N° 370	thermodynamic generator		
Heat pump			
2844	switch-off temp max		Heat pump
2884	OT auth. to start elec. aux.		Heat pump
2920	Pk day clear (EX1) rel / lock		Heat pump

8 ErP performance values

Energy performance data is available in the user manuals.

9 Instructions for the end user

Explain to the end user how his installation operates, in particular the functions of the room thermostat and the programs accessible to him from the user interface.

Emphasise that a heating floor has a significant inertia and that therefore any adjustments must be made progressively.

Also explain to the end user how to check the filling of the heating circuit.

☞ **End of life of the device**

Disassembly and recycling shall be handled by a qualified body.

Wild disposal and domestic garbage is stricly prohibited.

At the end-of-life of the equipment, please contact your installer or any local representant to proceed to disassembly and recycling.

This equipment complies with:

- Low Voltage Directive 2014/35/EC in accordance with NF EN 60335-1, NF EN 60335-2-40, NF EN 60529, NF EN 60529/A2 (IP) standards,
- Electromechanical Compatibility Directive 2014/30/EC,
- Machines Directive 2006/42/EC,
- Pressure Equipment Directive 2014/68/EC in accordance with NF EN 378-2 standard,
- Ecodesign Directive 2009/125/EC,
- Energy Labelling Directive 2010/30/EC.

This appliance also conforms to:

- Decree No. 92-1271 (and its modifications) on refrigeration fluids used in refrigeration and air conditioning equipment.
- Regulation 842/2006 of the european parliament on fluorinated greenhouse gases.
- The standards relating to the product and the testing methods used: Air-conditioners, refrigeration units and heat pumps with compressor driven by electric motor for heating and refrigeration EN 14511-1, 14511-2, 14511-3, and 14511-4.
- To standard EN12102 : Air-conditioners, heat pumps and dehumidifiers with compressor driven by electric motor. Measurement of airborne noise. Determination of acoustic power level.

012

Keymark Certification :
012-C700082 - ATLANTIC GEOLIA 13
012-C700083 - ATLANTIC GEOLIA 17

This appliance is marked with this symbol. This means that electrical and electronic products shall not be mixed with general household waste.
European Community countries(*), Norway, Iceland and Liechtenstein should have a dedicated collection system for these products.
Do not try to dismantle the system yourself as this could have harmful effects on your health and on the environment.
The dismantling and treatment of refrigerant, oil and other parts must be done by a qualified installer in accordance with relevant local and national regulations.
This appliance must be treated at a specialized treatment facility for re-use, recycling and other forms of recovery and shall not be disposed of in the municipal waste stream.
Please contact the installer or local authority for more information.
* subject to the national law of each member state

Date of installation :

Contact of your heating technician or your after-sales service.

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