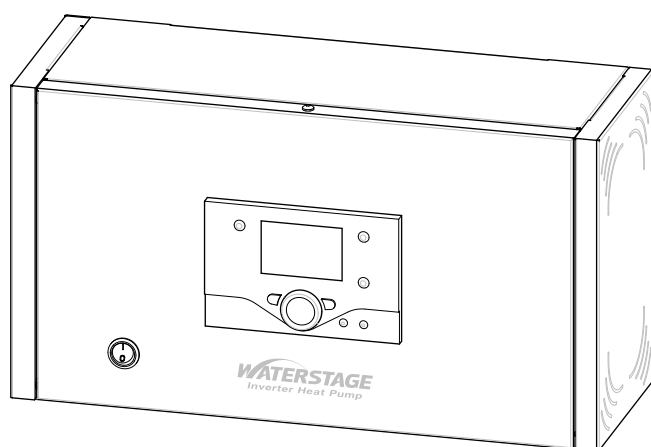


EN




Control Box UTW-SCBYA



Installation and operating manual intended for professionals

To be saved for
future consultation


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Subject to modifications without notice.
Non contractual document.



Complies with:

- Low voltage directive 73/23/CEE, under standard EN 60335-1.
- Electromagnetic compatibility Directive 89/336/CEE

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1 Description of the unit

1.1 Designation

Control system for heating and domestic hot water, depending on weather conditions and room temperature.

This control box is suitable for a heating system consisting of a monobloc heat pump (see table below), a heating circuit and a domestic hot water circuit.

References of heat pump

Monobloc heat pump		Control Box
Model	Output	Code
WPYA080LA	8 kW	UTW-SCBYA
WPYA100LA	10 kW	

Optional equipment

- DHW kit (UTW-KDWXA)
 - for connecting a DHW tank (with built-in electrical backups).
- Boiler connection kit (UTW-KBSXA)
 - for connecting a boiler to the heat pump.
- Room thermostat (UTW-C55XA)
 - For correcting the ambient temperature.
- Room control unit (UTW-C75XA)
 - For correcting the ambient temperature and programming the heat pump.
- Swimming pool kit (UTW-KSPXA)

Scope of application

This regulation allows :

- Heating in winter.
- Production of domestic hot water* (provided that combined with a DHW tank).
- Cooling in summer (for floor heating-cooling system or fan-convectors).
- Installation with boiler connection as a supplementary heating for the coldest days.

* : These options require the use of additional kits.

1.2 Package

1.2.1 Control box

- 1 package :
 - Control box (regulator, user interface).
 - Outdoor sensor QAC34.

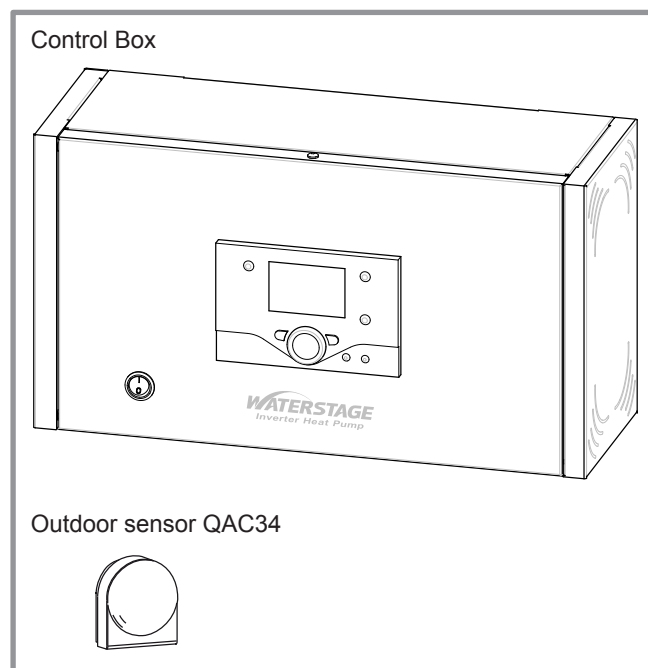


figure 1 - Description

1.3 Specifications

Regulator :

- Supply voltage : 230 V~ +/- 10 %.
- Nominal frequency : 50 Hz.

Ohmic value of the outdoor sensor QAC34.

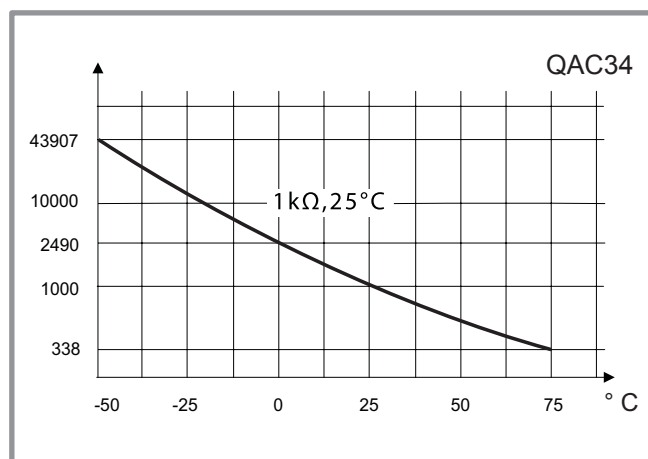


figure 2 - Ohmic value of the outdoor sensor

1.4 Description

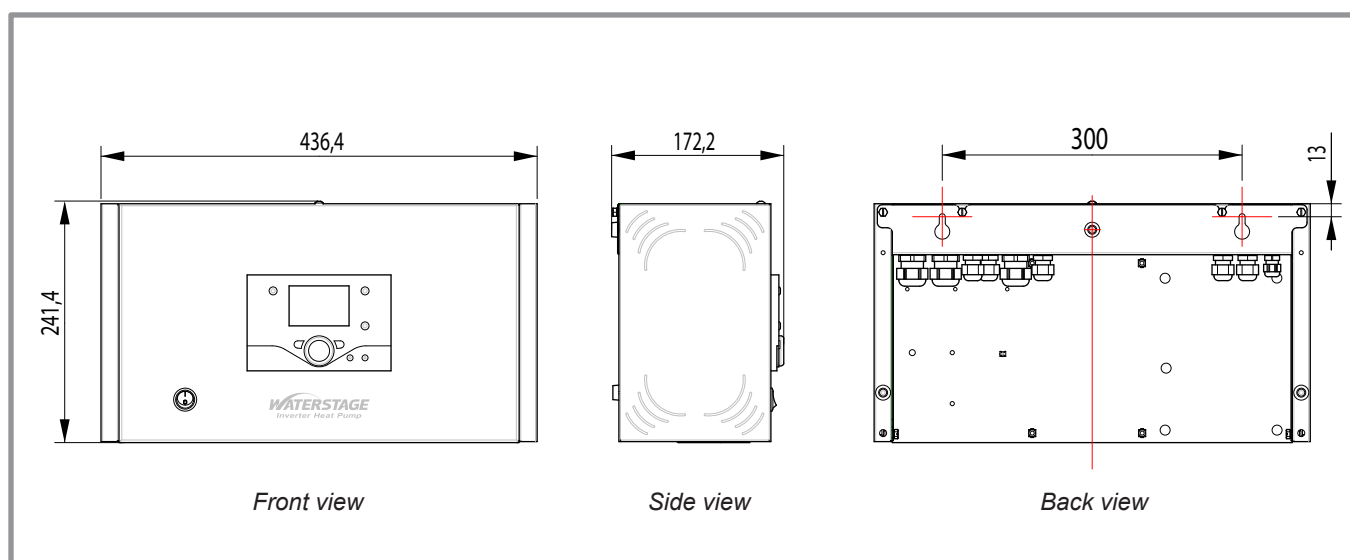


figure 3 - Dimensions in mm

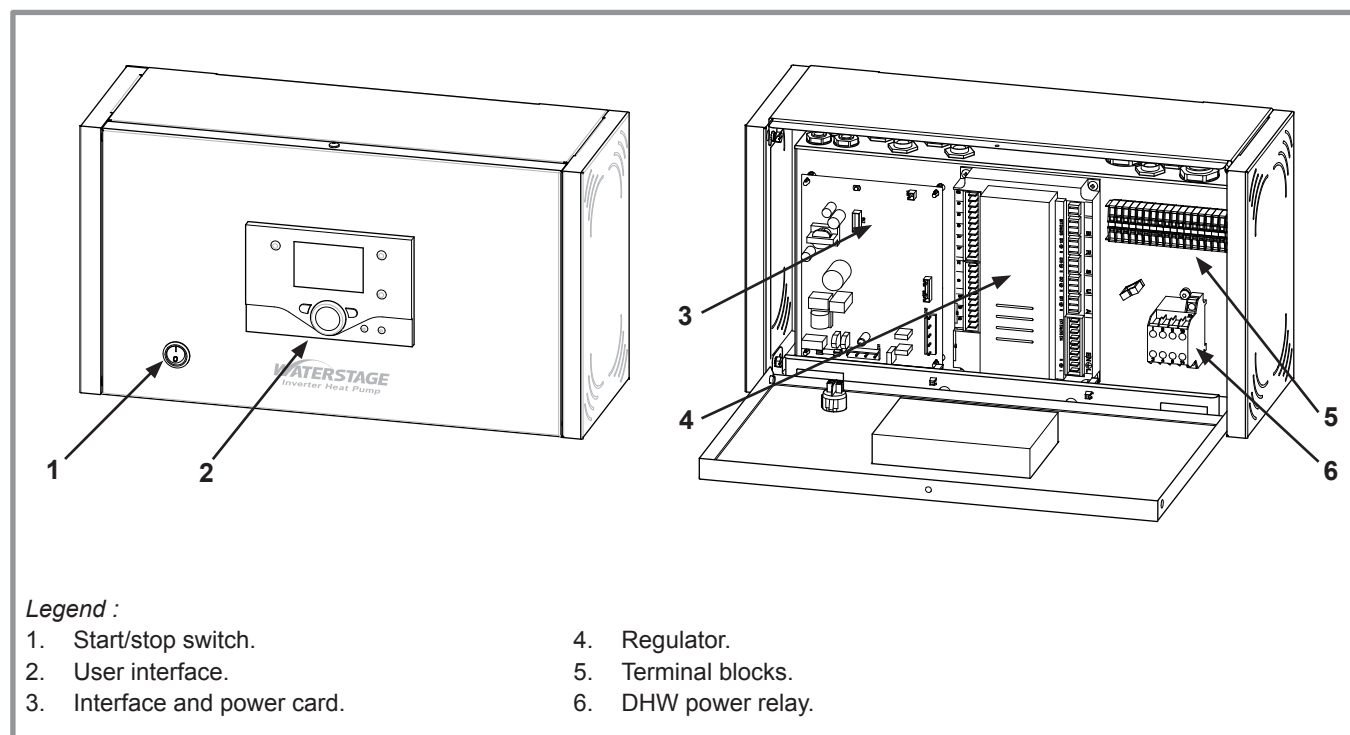


figure 4 - Control box components

1.5 Operating principle

The regulation controls the internal temperature based on the outdoor temperature measurement and governed by the temperature control. The room thermostat (optional) provides a corrective action for the temperature control.

• Regulation functions

- The heating circuit's initial temperature is controlled by the temperature control.
- The power of the heat pump is modulated according to flow heating temperature via the "inverter" compressor.
- The daily timer program enables you to define the periods for comfortable or reduced ambient temperature.
- Summer/winter mode switchover is automatic.
- Control of the supplementary boiler*.
- The room thermostat* (optional) provides a corrective action for the temperature control.
- Domestic hot water* : Heating time programme, control of the operation of the DHW circulation pump.
- Managing the cooling.

• Protection functions

- Anti-legionella cycle for domestic hot water.
- The frost protection works in all modes of operation and has priority over other functions.

* If the heat pump is equipped with optional equipment and the associated kits.

• Domestic hot water (DHW) operating principle

Two domestic hot water (DHW) temperatures can be parametered : nominal temperature (line 1610 to 50 °C) and reduced temperature (line 1612 to 25 °C).

The default heat pump program (line 560, 561 and 562) is set for nominal temperature from 0.00 to 5.00h and for reduced temperature for the rest of the day.

This optimizes electrical consumption while ensuring comfortable availability of hot water.

Setting for reduced temperature can be useful to prevent the DHW from switching on too often and for too long during the day.

The production of domestic hot water (DHW) is triggered when the temperature in the tank falls 7°C (setting from line 5024) below the set temperature.

The heat pump produces the domestic hot water, which is then additively heated, if required, by electrical backup heating inside the tank.

Depending on how the parameter (1620) is set, nominal temperature can be reached 24h/day or only at night or depending on the heat pump programme.

The regulating of the temperature of domestic hot water has priority over the heating circuit by switching the directional valve.

The production of DHW takes priority over heating; nevertheless the production of DHW is controlled by cycles that control the times assigned to the heating and the production of DHW in the event of simultaneous demand.

A function to switch from "reduced" to "nominal" is provided on the front of the user interface.

(see [ref. 1, figure 9, page 12](#)).

If the heating installation is equipped with a DHW circulation pump, the pump's operation during DHW cycles can be parametered.

Anti-legionella cycles can be programmed.

2 Installation instructions

2.1 Installation

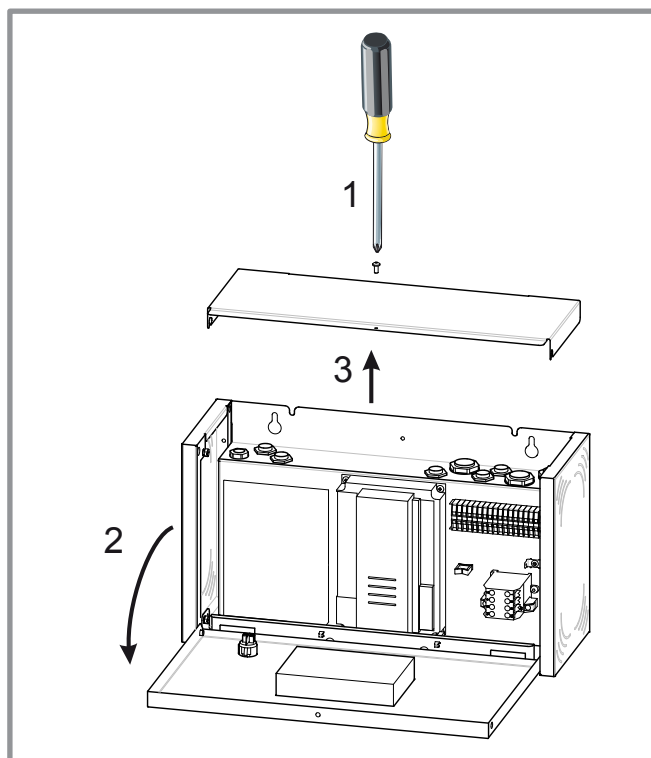


figure 5 - Access

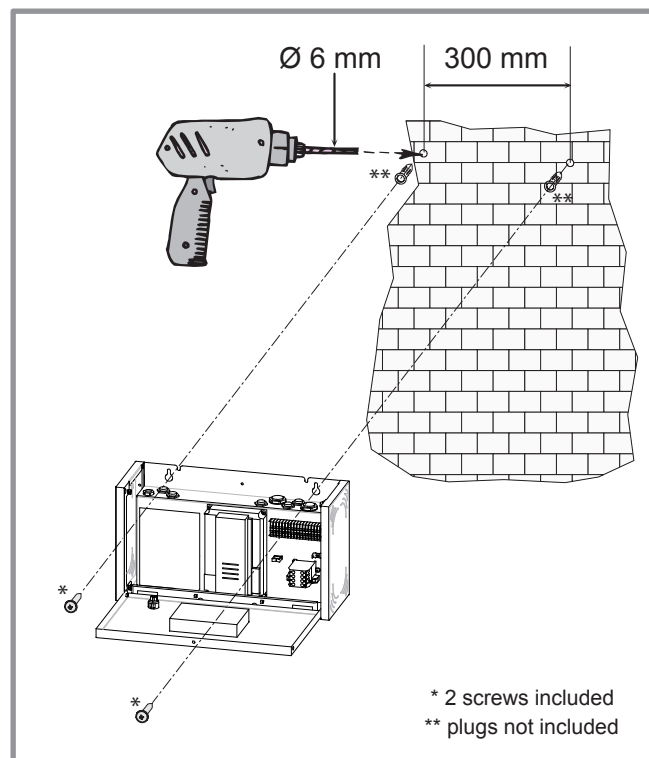


figure 6 - Installing the box

2.1.1 Installation of the control box

Install at a place that can withstand the weight of the control box and install positively so that the box will not topple or fall.

2.1.2 Outdoor sensor

The outdoor sensor is required for the heat pump to operate correctly.

Consult the fitting instructions on the packaging.

Place the sensor on the coldest part, 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 avoid 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 M and B9 terminals on the heat pump control board (see figure 8).

2.1.3 Room thermostat (option)

Consult the fitting instructions on the packaging.

The sensor must be installed in the living room area on a very uncluttered wall, 1.5 m above the floor.

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

Air leaks in the seals in the constructions 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 IR sensor.

- Connect the sensor to one of the **CL+** and **CL-** terminals (see figure 8).

2.1.4 Room control unit (option)

Consult the fitting instructions on the packaging.

The room control unit must be installed in the living area to approximately 1,5 m above the ground, a wall well clear.

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

Air leaks in the seals in the constructions 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 IR sensor.

- Connect the room control unit : terminals **CL+** on (1), **CL-** on (2) and **G+** on (3)

2.1.5 DHW sensor

If the installation is equipped with a DHW tank (with electric back-up) :

- Place the domestic hot water sensor in the housing for the cylinder sensors.
- Connect the domestic hot water sensor to terminal BX1 and M (see figure 8).

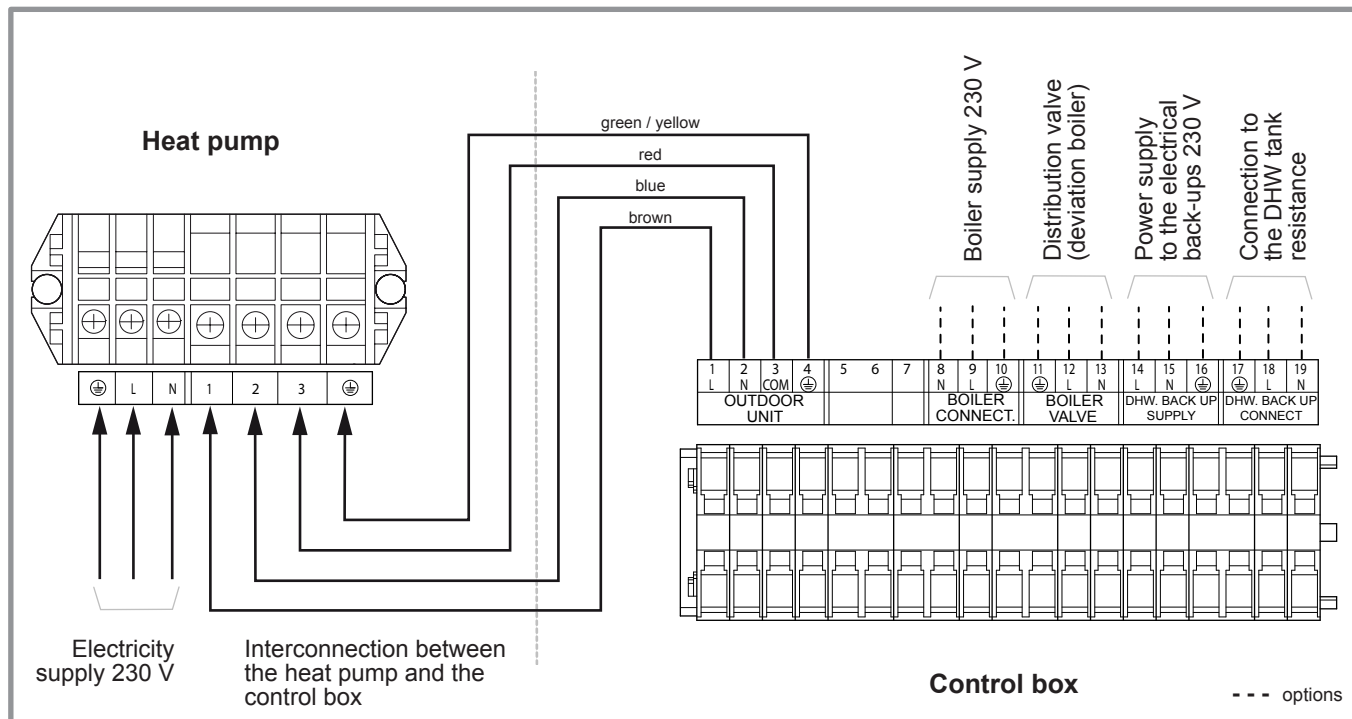


figure 7 - Connections to terminals

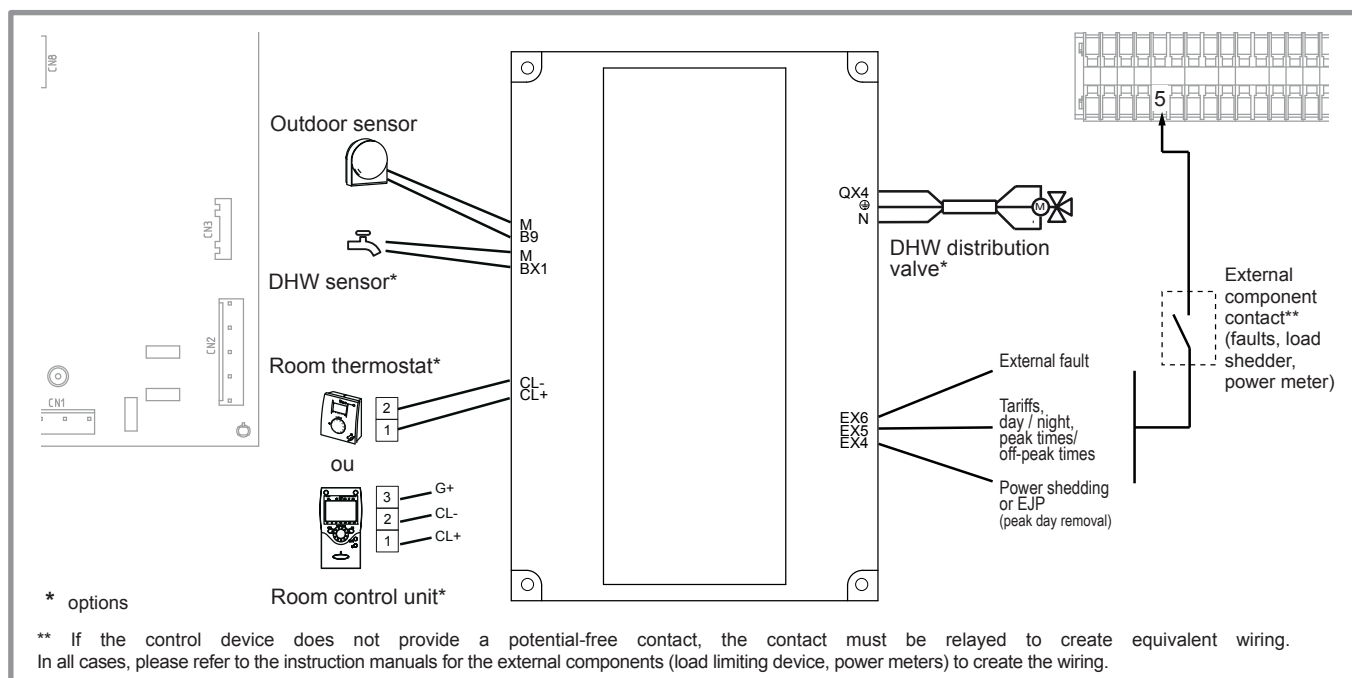


figure 8 - Connections to regulator (accessories and options)

• Cable section for outdoor sensor, room thermostat and room control unit

For the outdoor sensor, use a 2 x 0,75 mm² cable.

For the room thermostat, use a 2 x 0,5 mm² telephone type cable.

For the room control unit, use a 3 x 0,5 mm² telephone type cable.

2.2 Electrical connections

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.).

The heat pump must be supplied with power by special protected leads from the electric panel via 2-pole circuit breakers specially dedicated to the heat pump : Curve D.

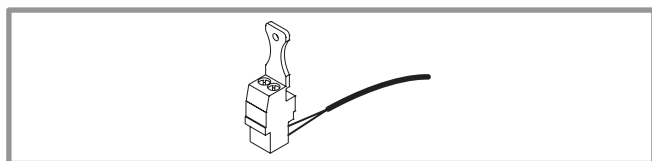
The electrical installation must necessarily be equipped with a 30mA differential protection.

- Ensure that the general electrical power supply has been cut off before starting any repair work.
- It is essential to maintain the live-neutral polarity when making the electrical connections.
- Tighten the cables using the cable glands to prevent the conductors from disconnecting accidentally.
- Ensure that the ground wire is longer to prevent accidental disconnections.

☞ **Do not place the sensor lines and the sector supply lines in parallel in order to avoid interferences due to voltage points in the sector supply.**

• Connecting to regulation cards

- Remove the corresponding connector and make the connection.



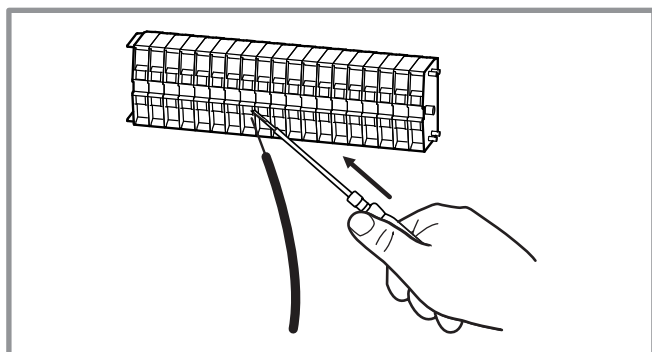
• Connecting to spring terminals :

Rigid wires

- Strip away around 10 mm from the end of the wire.
- Slide the wire into the opening provided for this purpose.
- Push the spring with a screwdriver so that the wire enters the cage.
- Remove the screwdriver and then check that the wire is jammed in the cage by pulling on it.

Flexible wires

- Use the ends and proceed as before.



2.2.1 Electrical connections on the control box side

• Make the connections in accordance with the diagram figure 7.

- Connect the interconnection cable between terminals 1, 2, 3 and 4 (earth) of the control box and the terminals 1, 2, 3 and earth of the heat pump.

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

- Connect the distribution valve to connector QX4, earth and N.
- Connect the domestic water sensor to terminal BX1 and M.
- Connect the DHW back-up to terminals 17 (earth), 18 and 19.
- Connect the back-up electrical supply to terminals 14, 15 and 16 (earth).

• Boiler connection :

- Connect the distribution valve (deviation boiler) to the terminals 11 (earth), 12 and 13.
- Connect the boiler supply to terminals 8, 9 and 10 (earth).

• Floor heating system

Heated floor thermal safety fuse.

- The installer is responsible for connecting the heated floor's safety system. Thermal safety will stop the heat pump if the temperature in the floor is too high. The heated floor's safety system must cut the electrical supply of the heat pump with a relay.

• Contract with the power provider :

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 Provider" contact to input EX5.
- Set the parameter (1620) to "Off-peak hours".

- 230V on input EX5 = "Peak hours" information activated (Basic setting / Modification possible line 5989, menu Configuration).

• Power limitation or EJP (peak day removal) :

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

- Connect the power limiting device to input EX4, the back-ups for the heat pump and the DHW stop in the event of over-consumption by the dwelling.

- 230 V on input EX4 = power limitation in progress. (Basic setting / Modification possible line 5987, menu Configuration). (Operating line 2920)

• External faults the heat pump :

Any component of carryforward of information (thermostat, pressure switch, etc.) may signal an external problem and stop the heat pump.

- Connect the external component to input EX6.
- 230 V on input EX6 = stoppage of heat pump (the system displays Error 369).

2.3 Start-up

- Ensure that the startup switch of the control box is set to **0**.

- Close the installation's main circuit breaker.

On first commissioning (or in winter), in order to allow the compressor to pre-heat, engage the installation's main circuit breaker (power supply to the heat pump) some hours before starting up the tests.

- Switch-on the startup switch of the control box (**position 1**).



To ensure that inputs EX4, EX5 and EX6 operate correctly : Check that the live-neutral polarity of the electrical supply is correct.


When the power is switched on and every time that the ON/OFF button is switched off and then switched on again, the heat pump will take approximately 4 minutes to start up, even if the setting is requesting heating.

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

- Make all the specific adjustments to the setting (Installation configuration) :

- Press the key OK .

- Hold down the key  for 3s and select the level of access used with the aid of the knob .

- Confirm with the key OK .

Parameter the heat pump's setting (consult the settings' list [page 16](#)).

In case of error 10, the regulating 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).

2.4 Configuring room thermostat

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

- Hold down the presence key for more than 3 seconds. The room thermostat displays RU and a number flashes.

- Turn the wheel to choose the zone 1.

- Hold down the presence key, the room thermostat displays P1 and a flashing number.

1 : Automatic recording: a correction of the setting with the button is adopted without any particular confirmation (timeout) or by pressing the mode key.

2 : Recording with confirmation: a correction of the setting with the button 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 :

Switching over the heating circuit's operating mode


Adjusting the comfort setting

Changing the operating level

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

2.5 Configuring room control unit

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

- Press the key OK .

- Choose menu "Operator section".

- Choose language.

- Select the language (**English**, Deutsch, Français, Italiano, Nederlands, Español, Português, Dansk...)



3 Regulation system

3.1 User interface, room control unit (option) and room thermostat (option)

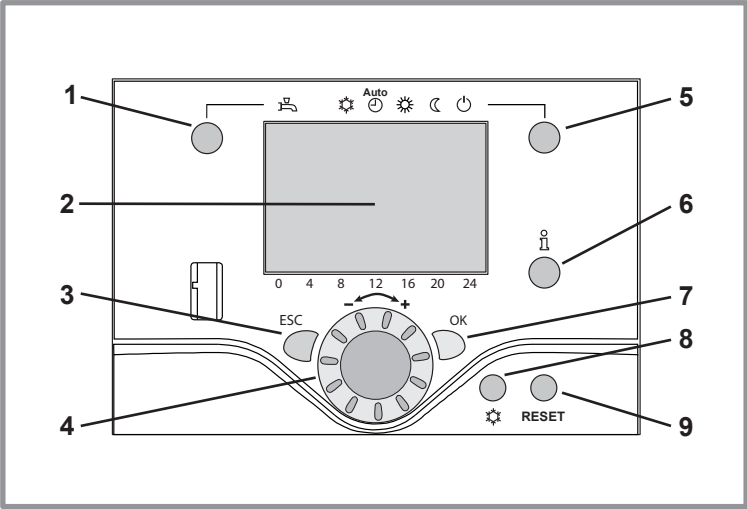


figure 9 - User interface of the control box

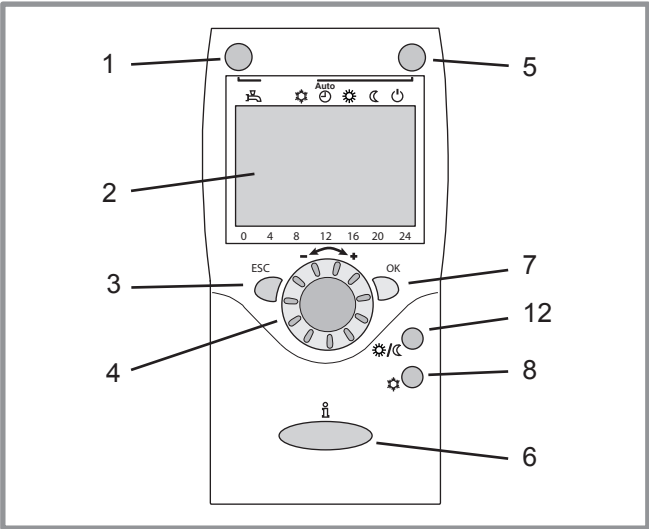


figure 10 - Room control unit (option)

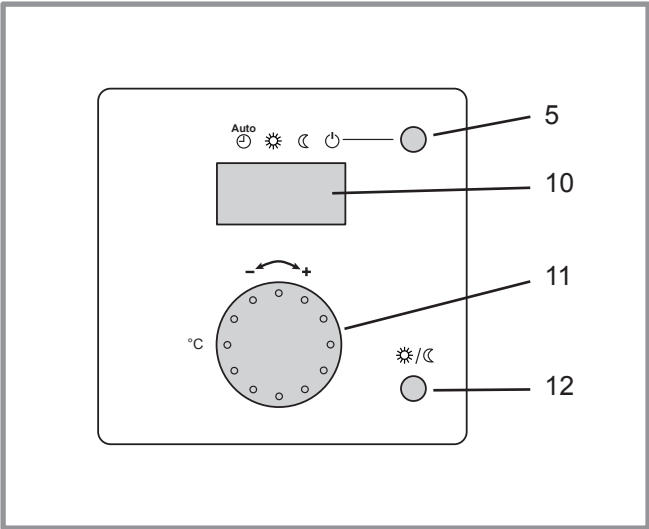














figure 11 - Room thermostat (option)

Ref.	Function	- Definitions
1	Selecting the DHW operating mode (Domestic hot water)	<ul style="list-style-type: none"> - If the installation is fitted with a DHW tank. - On : Production of DHW according to the time program. - Off : No domestic hot water heating, anti-frost function is active. - Manual start button : Hold down the DHW key for 3 seconds (Switch from "reduced" to "nominal" until the next time the DHW timer switches over).
	 On  Off	
2	Digital display	<ul style="list-style-type: none"> - Operating control, readout of the current temperature, of the heating mode and of any faults . - View the settings.
3	Exit "ESC"	<ul style="list-style-type: none"> - Quit the menu.
4	Navigation and setting	<ul style="list-style-type: none"> - Selecting the menu. - Setting parameters. - Adjusting the ambient temperature setpoint.
5	Selecting the heating mode	<p>Auto</p> <ul style="list-style-type: none"> -  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	<ul style="list-style-type: none"> - Various data (page 35). -  Reading error codes. -  Information concerning maintenance, special mode.
7	Confirm "OK"	<ul style="list-style-type: none"> - Input into the selected menu. - Confirmation of the parameter settings. - Confirmation of the adjustment to the comfort temperature setting.
8	Selecting cooling mode	<ul style="list-style-type: none"> -  Cooling operating according to the heating programme (Summer/winter mode switchover is automatic).
		
9	Reset (hold down the key for 3 sec)	<ul style="list-style-type: none"> - Reinitialising the parameters and cancelling error messages. - Do not use during normal operation.
10	Digital display	<ul style="list-style-type: none"> - Operating control, readout of the current temperature, of the heating mode and of any faults .
11	Control knob	<ul style="list-style-type: none"> - Adjusting the ambient temperature setpoint.
12	Presence key	<ul style="list-style-type: none"> - Comfort / Reduced switchover.

3.2 Setting the slope of heating

3.2.1 Temperature control

The heat pump's operation is subject to the temperature control.

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

The temperature control may be chosen automatically by the machine (self-adaptation) or set manually by the installer (Parameters 720, 721 and 726).

If there are thermostatic valves on the installation, these must be fully open or adjusted for higher than the normal set temperature.

3.2.2 Manual adjustment

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

The temperature control' curves (figure 12) 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 13) .

The corrective actions in the case of any inconvenience are detailed in the table (figure 14).

3.2.3 Self-adaptation

When this function is active (parameter 726), the temperature control is automatically adjusted; it is therefore futile to modify the slope or the off-set in the temperature control (parameters 720 and 721).

When this function is first activated, the end user may experience some inconvenience for a few days. This period of no more than a week is required by the regulator to determine the slope and off-set in the temperature control. We advise against changing the temperature settings during this period.

The following instructions must be observed for the self-adaptation system to operate correctly :

- A room thermostat must be connected.
- The influence of the ambient temperature (parameter 750) must be set between 1 and 100%.
- Depending on the installation, the room thermostat may have a greater or lesser influence on the temperature control. The room in which the room thermostat is installed must not contain any thermostatic valves. If this is the case, the valves must be open fully.

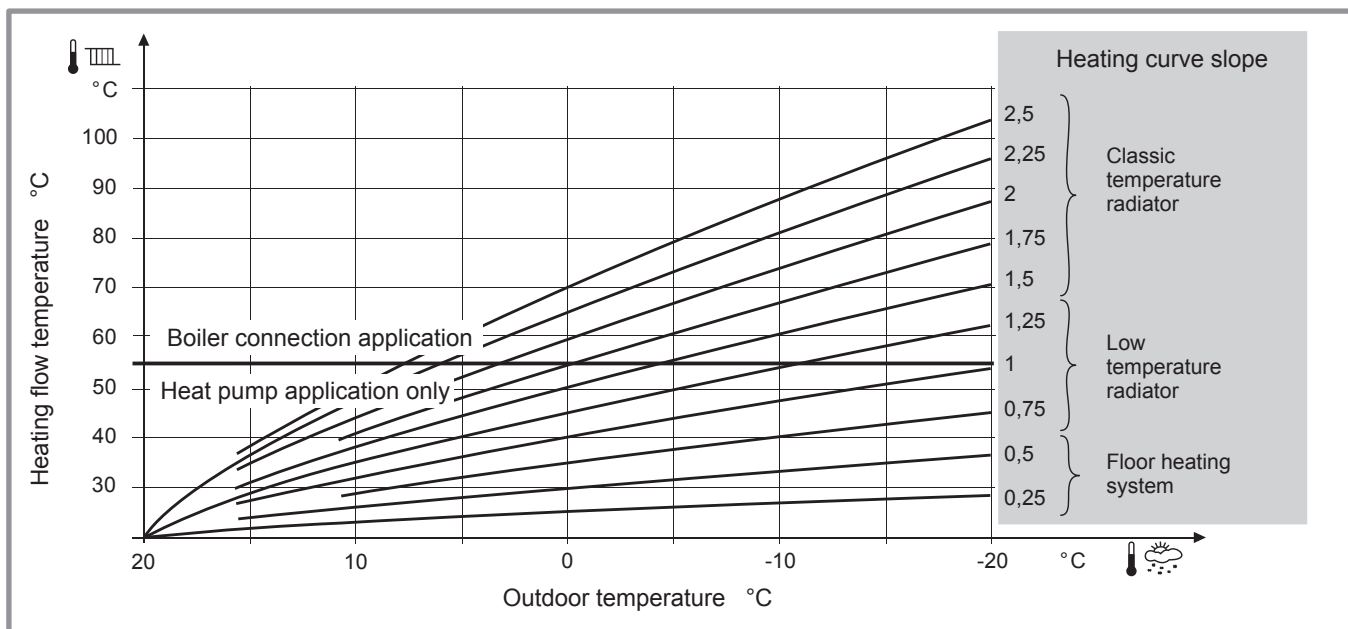


figure 12 - Heating curve slope (line 720)

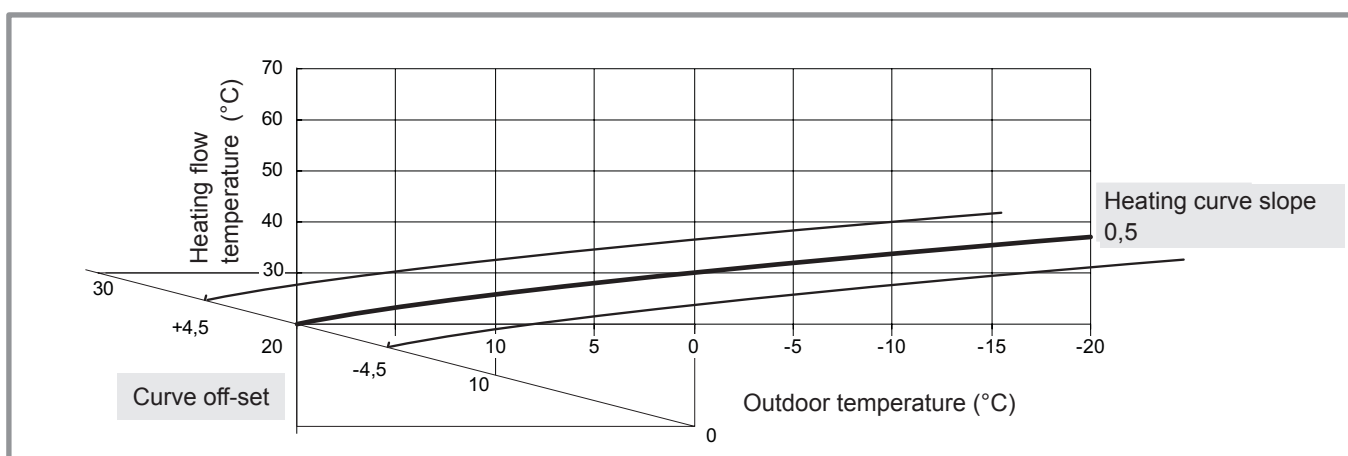


figure 13 - Heating curve displacement (line 721)

Sensations...		Corrective actions on the temperature control :	
...in mild weather	...in cold weather	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 14 - Corrective actions in the case of discomfort

3.3 Parametering the setting

3.3.1 General

Only the parameters accessible to levels :

- U - End user.
- I - Commissioning level.
- S - Engineer level.

Are described in this document.

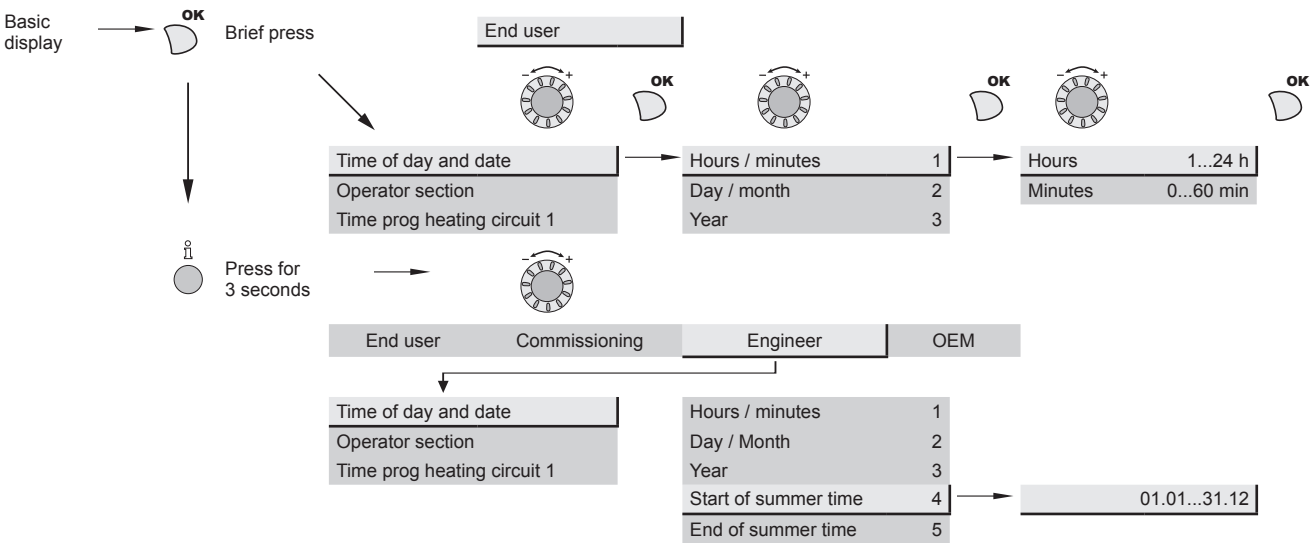
The access levels are specified in the second column of the table by means of the letters **U**, **I** and **S**.

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

3.3.2 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 List of function lines (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 summer time (Day / Month)	01.01... 31.12	1	25.10
The change of hour will appear at 3:00 am first Sunday after the regulated date.				
Operator section				
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... Storage with confirmation		Storage with confirmation

Line		Function	Setting range or display	Setting increment	Basic setting
46	I	Operation HCP (domestic hot water pump command, output QX2)			Commonly with HC1
		Commonly with HC1 or Independent (if independent, see timer program 3 / HCP)			
70	S	Software version (Display)			
Heating time programme, circuit 1					
500	U	Pre-selection (Day / Week) Mon-Sun Mon-Fri Sat-Sun Monday Tuesday...			Mon-Sun
501	U	1 st phase On (start)	00:00... --:--	10 min	6:00
502	U	1 st phase Off (end)	00:00... --:--	10 min	22:00
503	U	2 nd phase On (start)	00:00... --:--	10 min	--:--
504	U	2 nd phase Off (end)	00:00... --:--	10 min	--:--
505	U	3 rd phase On (start)	00:00... --:--	10 min	--:--
506	U	3 rd phase Off (end)	00:00... --:--	10 min	--:--
516	U	Default values, Circuit 1	No, Yes		No
		Yes + OK : The default values memorised in the regulator replace and cancel the customised heating programmes. Your customised settings are therefore lost.			
Programme 3/ HCP (Only with the DHW kit option)					
		Domestic hot water pump program, lines 540 to 556.			
Time programme 4 / DHW					
		If the installation is fitted with a DHW tank. (Only with the DHW kit option).			
560	U	Pre-selection (Day / Week) Mon-Sun Mon-Fri Sat-Sun Monday Tuesday...			Mon-Sun
561	U	1 st phase On (start)	00:00... --:--	10 min	00:00
562	U	1 st phase Off (end)	00:00... --:--	10 min	05:00
563	U	2 nd phase On (start)	00:00... --:--	10 min	--:--
564	U	2 nd phase Off (end)	00:00... --:--	10 min	--:--
565	U	3 rd phase On (start)	00:00... --:--	10 min	--:--
566	U	3 rd phase Off (end)	00:00... --:--	10 min	--:--
576	U	Default values	No, Yes		No
		Yes + OK : The default values memorised in the regulator replace and cancel the customised heating programmes. Your customised settings are therefore lost.			
Time programme 5 / Cooling					
600	U	Pre-selection (Day / Week) Mon-Sun Mon-Fri Sat-Sun Monday Tuesday...			Mon-Sun
601	U	1 st phase On (start)	00:00... --:--	10 min	8:00
602	U	1 st phase Off (end)	00:00... --:--	10 min	20:00
603	U	2 nd phase On (start)	00:00... --:--	10 min	--:--
604	U	2 nd phase Off (end)	00:00... --:--	10 min	--:--
605	U	3 rd phase On (start)	00:00... --:--	10 min	--:--
606	U	3 rd phase Off (end)	00:00... --:--	10 min	--:--
616	U	Default values	No, Yes		No
		Yes + OK : The default values memorised in the regulator replace and cancel the customised heating programmes. Your customised settings are therefore lost.			

<i>Line</i>	<i>Function</i>	<i>Setting range or display</i>	<i>Setting increment</i>	<i>Basic setting</i>
Holidays, heating circuit 1				
641	U Preselection	Period 1 to 8		Period 1
642	U Start (Day / Month)	01.01... 31.12	1	
643	U End (Day / Month)	01.01... 31.12	1	
648	U Operating level (during the holidays)	Frost protection, Reduced		Frost protection
Heating, circuit 1				
710	U Comfort heating setpoint	from reduced setpoint to 35°C	0,5 °C	20 °C
712	U Reduced setpoint	from frost protection setpoint... to comfort setpoint	0,5 °C	18 °C
714	U Frost protection setpoint	from 4°C... to 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 (See figure 12).	0,1... 4	0,02	0,5
721	I Heating curve displacement	-4,5 °C... 4,5 °C	0,5 °C	0
726	I Heating curve adaption (see § 3.2.3)	Off, On		Off
730	I Summer / Winter heating limits	8 °C... 30 °C	0,5 °C	18 °C
	When the average of the outdoor temperatures over the past 24 hours reaches 18°C, the regulator switches off the heating (as an economy measure). During summer mode, the display shows "Eco". This function is only active in automatic mode.			
732	S 24-hour heating limit	-10 °C... 10 °C	1 °C	-3 °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 regime. Decreasing the value advances the switchover to summer regime. This function is only active in automatic mode.			
740	S Flow temp setpoint min (for fan convectors)	8... 95 °C	1 °C	8 °C
741	S Flow temp setpoint max	8... 95 °C	1 °C	55 °C
	Floor heating system = 50 °C / Higher temperature radiator = 65 °C			
750	S Room influence	1%... 100%	1%	20%
	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.			
790	S Optimum start control max (Early start to switch to the comfort setting.).	0... 360 min	10 min	120 min
791	S Optimum stop control max (Early stop to switch from the comfort setting to the reduced setting.).	0... 360 min	10 min	120 min
800	S Reduced setp increase start	-30... 10 °C	1 °C	--
801	S Reduced setp increase end	-30... 10 °C	1 °C	-5 °C
830	S Mixer valve boost	0... 50 °C	1 °C	0
834	S Actuator running time	30... 873 s	1 s	240 s

Line	Function	Setting range or display	Setting increment	Basic setting
850	I Floor curing function (figure 15) - Off : Early interruption of the current programme, programme inactive - Functional heating - Curing heating - 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.			Off
851	I Floor curing setp manually (if line 850 = manual) This function enables you to set the custom concrete slab drying temperature. This temperature remains fixed. The concrete slab-drying programme stops automatically after running for 25 days.	0... 95 °C	1 °C	25 °C
856	I Floor curing day current	0... 32		
857	I Days complete.current	0... 32		
900	S Operating mode changeover Operating mode at end of concrete slab drying period	None, Protection mode, Reduced, Comfort, Automatic	1	Protection mode

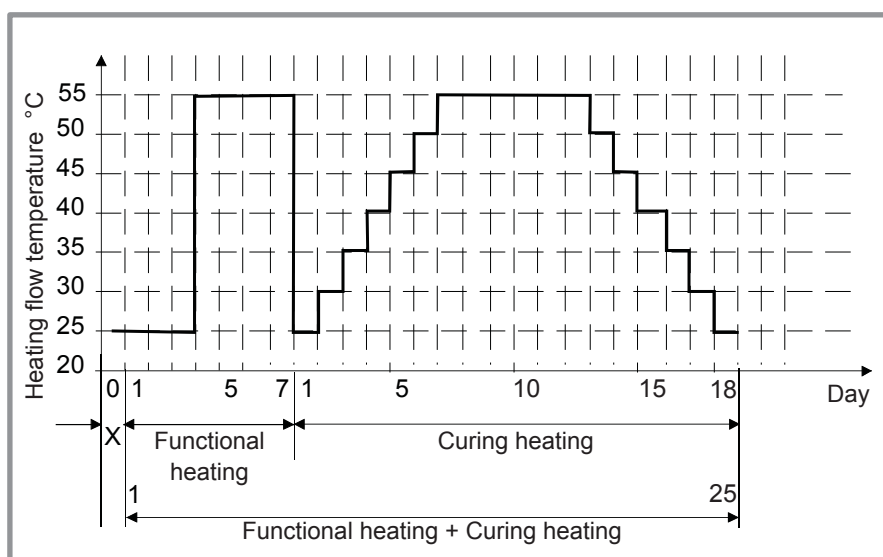


figure 15 - Diagram of the concrete slab drying programmes

☞ 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
Cooling circuit 1				
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 / Cooling		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
Starting cooling temperature setting for an outdoor temperature of 25 °C.				
909	I Flow temp setp at OT 35°C	6... 35 °C	0,5 °C	16 °C
Starting cooling temperature setting for an outdoor temperature of 35 °C.				

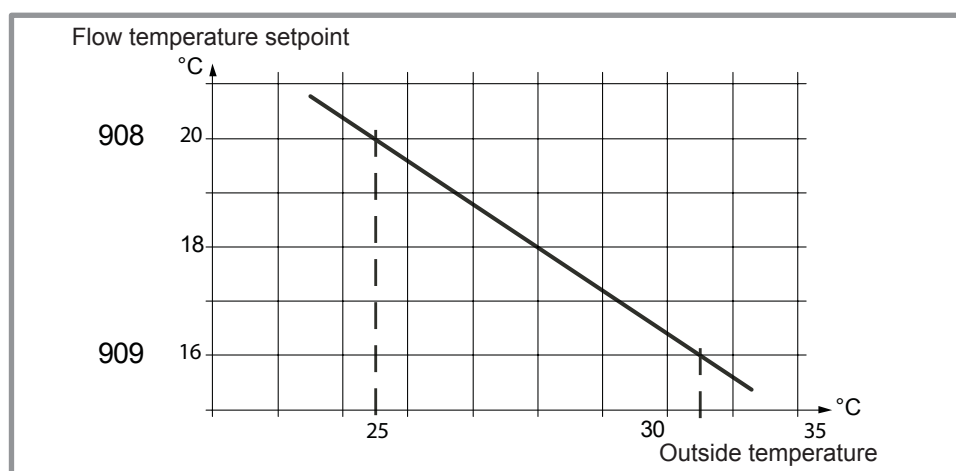


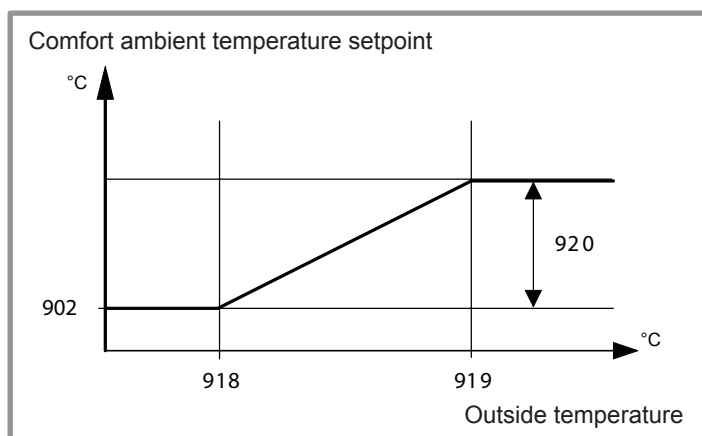
figure 16 - Slope of the cooling curve

912	I Cooling limit at OT	--, 8... 35 °C	0,5 °C	24 °C
If the outdoor temperature is lower than this reading, cooling mode is deactivated.				
913	S Lock time at end of heating	--, 8... 100	1 h	24 h
The time delay for operating in cooling mode after having operated in heating mode and vice versa.				
918	S Summer comp start at OT	20... 50 °C	1 °C	26 °C
The comfort setting (902) is increased in line with the outdoor temperature rising above this reading.				
919	S Summer comp end at OT	20... 50 °C	1 °C	40 °C
Above this reading, the comfort setting (902) is no longer affected by an increase in the outdoor temperature.				
920	S Summer comp setp increase	--, 1... 10 °C	1 °C	4 °C
Maximum increase in the comfort setting (902).				

figure 17 - Compensation for the comfort setting

In summer, the comfort setting for cooling (Line 902) is offset upwards in line with the increase in outdoor temperature. The saves on cooling power and prevents too great a differential between the ambient indoor and outdoor temperatures.

Remark : Summer compensation explains the difference between the value set on Line 902 (or on the setting knob) and the reading on line 8740.



Line	Function	Setting range or display	Setting increment	Basic setting
923	S Flow temp setp min OT 25°C The lowest starting temperature for cooling for an outdoor temperature of 25 °C.	6... 35 °C	0,5 °C	18 °C
924	S Flow temp setp min OT 35°C The lowest starting temperature for cooling for an outdoor temperature of 35°C.	6... 35 °C	0,5 °C	18 °C

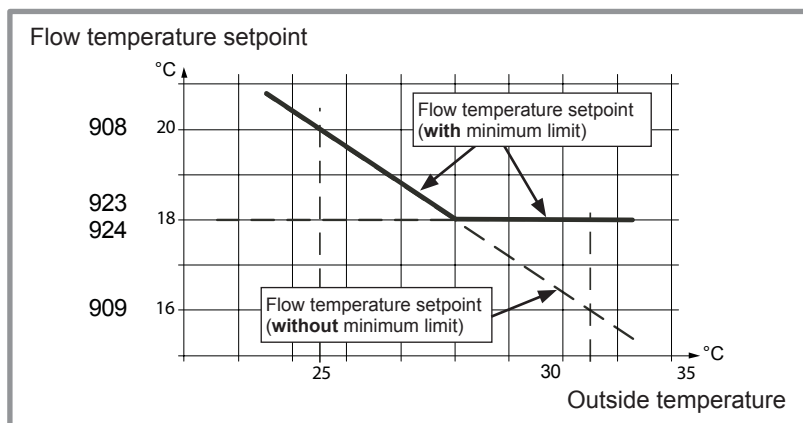
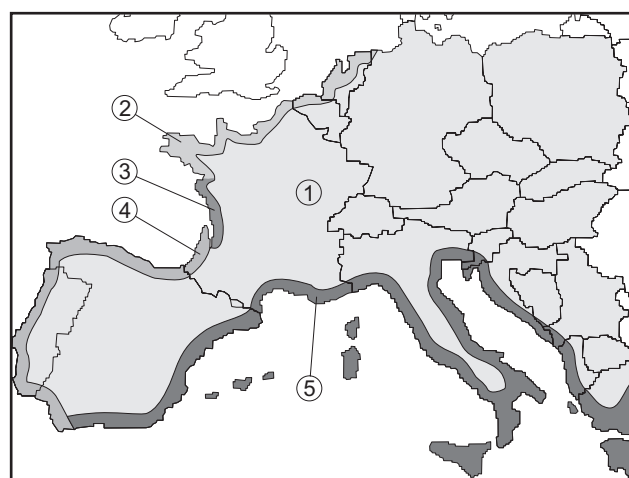


figure 18 - Limitations on the starting temperature setting

928	S Room influence If the installation is fitted with an room sensor : 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.	--, 1... 100 %	1 %	80 %
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
947	S Flow temp setp incr hygro	--, 1... 20 °C	1 °C	10 °C
948	S Flow setp incr start at r.h.	0... 100 %	1 %	60 %
950	S Flow temp diff dewpoint	--, 0... 5 °C	1 °C	2 °C
963	S With prim contr / system pump	No, Yes		No
969	S Operating mode changeover	No, Off, Automatic		Off

figure 19 - Water start temperature limit

Geographical area	Water start temperature limit (line 923 & 924)
① Internal area	18°C
② Coastal area (width 30 km)	19°C
③ Coastal area (width 50 km)	20°C
④ Coastal area (width 50 km)	21°C
⑤ Coastal area (width 50 km)	22°C



The water temperature must be restricted to a value set according to the geographical area. Setting to the lowest temperatures runs the risk of causing condensation on the floor, together with all the other risks this may engender.

If the limit temperatures are not observed, the manufacturer may not be held responsible for any physical injuries or damage to equipment that may be caused.

Line		Function	Setting range or display	Setting increment	Basic setting
Domestic Hot Water (Only with the DHW kit option)					
1610	U	Nominal setpoint	Reduced setting (line 1612)... to 65 °C	1	50 °C
		The backup electrical system is required to reach this level.			
1612	U	Reduced setpoint	8 °C... to Nominal setpoint (line 1610)	1	25 °C
1620	I	Release (of DHW load)	24h / day Time programs HCs Time program 4/DHW Low-tariff T'prog 4/DHW or low-tariff		Time program 4/DHW
		24h / day : The temperature of the DHW is constantly maintained at the DHW nominal setting.			
		Time programs 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 programme is separate form the heating circuit programme.			
		Low-tariff * : The electrical backup heating is only authorised to operate during the off-peak period.			
		T'prog 4/DHW or low-tariff * : The electrical backup heating is authorised to operate during the nominal period or off peak.			
		* - Connect the "Power Provider" contact to input EX5 or EX4. (See figure 8, page 8). In the case of a day /night contract, the electric back-ups for the DHW tank are subject to the power supplier's tariffs. Switching on the electric back-up for the DHW tank is only authorised during off-peak hours			
1640	I	Legionella function	Off, Periodic (depending on the line setting 1641) Set day of the week (depending on the line setting 1642)		Off
1641	I	Legionella funct periodically	1 to 7	1 day	7
1642	I	Legionella funct weekday	Monday, Tuesday,...		Saturday
1644	I	Legionella funct time	--:-- , 00:00... 23:50		--:--
		If no value is entered, no anti-legionella cycle has been run.			
1645	I	Legionella funct setpoint	55 °C... 95 °C		65 °C
1646	I	Legionella funct duration	--:-- , 10 min... 360 min		30
1647	I	Legionella funct circ pump	On, Off		On
1660	I	Release of circulating pump	Time program 3/HCP, DHW release, Time program 4/DHW		DHW release
Swimming pool (Only with swimming pool kit option)					
2056	U	Setpoint source heating	8... 35 °C		22 °C
Heat pump					
2844	S	Switch-off temp max	8... 100 °C	1 °C	55 °C
		Floor heating system = 55 °C / Higher temperature radiator = 65 °C			
2882	S	Release integr electric flow	0... 500 °Cmin	1 °Cmin	100 °Cmin
		Electric back-up for the heat pump is not equipped in the heat pump.			
2884	S	Release el flow below OT (Electrical release - start-up with outdoor temperature)	-30... 30 °C		2 °C
		Electric back-up for the heat pump is not equipped in the heat pump.			
2910	S	Release above outside temp	-30... 30 °C		--
2920	S	With electrical utility lock (EX4)	Locked (Blocked on standby), Released		Released
		Released : HP = On _ Back-up DHW = Off _ Boiler = On Locked (Blocked on standby) : HP = Off _ Back-up DHW = Off _ Boiler = On			

<i>Line</i>	<i>Function</i>	<i>Setting range or display</i>	<i>Setting increment</i>	<i>Basic setting</i>
Additional generator (Boiler connection)				
3700	S Release under outdoor temperature	--, -50... 50 °C	0,5 °C	2 °C
3705	S Overrun time	0... 120 min	1 min	20
3720	S Switching integral (for boiler relief)	0... 500 °Cmin	1 °Cmin	100 °Cmin
Domestic hot water (DHW) (Only with the DHW kit option)				
5020	S Flow setpoint boost	0... 30 °C	1 °C	5 °C
5024	S Switching diff	0... 20 °C	1 °C	7 °C
5030	S Charging time limitation	10... 600 min	10 min	90 min
5060	S Electrical resistance regime	Substitute, Summer, Always, Cooling mode		Substitute
5061	S Electrical resistance release	24h / day, Release of DHW, Programme 4 / DHW		Release of DHW
Installation configuration				
5700	I Pre-setting	1,2,3,... 12	1	1
	<p>This control enables you to choose one of the 4 pre-selected installation configurations. The hydraulic layouts for the various configurations are detailed in the section : "Installation Configurations".</p> <ul style="list-style-type: none"> - Pre-setting 1 : 1 heating circuit - Pre-setting 2 : 1 heating circuit and DHW tank. - Pre-setting 5 : Boiler connection and 1 heating circuit. - Pre-setting 7 : Boiler connection, 1 heating circuit and DHW tank. - Pre-setting 3, 4, 6, 8 to 12 : Do not use for monobloc heat pump. 			
5711	S Cooling circuit 1	Off, 4-pipe system, 2-pipe system		Off
	4-pipe system is not compatible with the heat pump. Select 2-pipe system to activate cooling operation			
5870	S Combi storage tank	No, Yes		No
5987	S Cont type input EX4	Normally-closed contact (NC) Normally-opened contact (NO)		NO
5989	S Cont type input EX5	Normally-closed contact (NC) Normally-opened contact (NO)		NC
6046	I Function input H2 1 - Operating mode change HCs + DHW 2 - Operating mode change HCs 3 - Operating mode change HC1 6 - Error/alarm message 9 - Dew point monitoring 16 - Swimming pool release	1... 16	1	9
6047	I Contact type H2	NC - Normally-closed, NO - Normally-opened		NO
6048	S Function value contact H2	0... 130 °C	1 °C	45 °C
6100	S Readjustm outside 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		
Fault				
6711	U Reset HP	No, Yes		No
6740	S Flow temp HC1 alarm	--, 10... 240 min	10 min	--
6745	S DHW charging alarm	--, 1... 48 h	1 h	--
6746	S Flow temp cooling 1 alarm	--, 10... 240 min	10 min	--

<i>Line</i>	<i>Function</i>	<i>Setting range or display</i>	<i>Setting increment</i>	<i>Basic setting</i>
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
7072	S Max starts compr1/hrs run	--, 0,1... 12	0,1	--
7073	S Cur starts compr1/hrs run (since the 6 last weeks) Reset ? (No, Yes)	0... 12		0
7076	S Diff condens max/week	--, 1... 250	1	--
7077	S Cur diff condens max/week Reset ? (No, Yes)	0... 250		0
7078	S Diff condens min/week	--, 1... 250	1	---
7079	S Cur diff condens min/week Reset ? (No, Yes)	0... 250		0
7090	S DHW storage tank interval	--, 1... 240	1 month	---
7091	S DHW stor tank since maint Reset ? (No, Yes)	0... 240		0
7141	U Emergency operation	Off, On		Off
	Off : The heat pump does not use the boiler connection when a fault occurs (error 370) On : The heat pump uses the boiler connection when a fault occurs (error 370). In the "On" position, the energy costs can be onerous if the error is not eliminated.			
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 outside temp	---, -50... 50 °C	0,5	--
7181	I Phone no. responsibility 1	0... 255		
7183	I Phone no. responsibility 2	0... 255		

Inputs / outputs test

7700	I Relay test			No test
	This consists of instructing the regulator'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. No test _ Everything is on STOP _ Relay output QX23, QX22, QX21 module 1 _ Relay output QX1 to QX6 _ Relay output QX23, QX21, QX22 module 2 _ Relay output QX7. 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.			

<i>Line</i>	<i>Function</i>	<i>Setting range or display</i>	<i>Setting increment</i>	<i>Basic setting</i>
7710	I Output (Ux) test	--, 0... 100%	1	--
7711	I Voltage (Ux) value	0... 10 Volt		0
7720	I Digital outputs test 0 = No test 1 = Everything is on STOP 2 = Digital output DO1 3 = Digital output DO2			No test
7721	I Digital output DO1	Cooling mode, Heating mode		Heating mode
7722	I Digital output DO2	Off, On		Off
7730	I Outdoor temperature (B9)	-50... 50 °C		0
7820	I Sensor temperature BX1	-28... 350 °C		0
7823	I Sensor temperature BX4	-28... 350 °C		0
7824	I Sensor temperature BX5	-28... 350 °C		0
7830	I Sensor temperature BX21 module 1	-28... 350 °C		0
7831	I Sensor temperature BX22 module 1	-28... 350 °C		0
7832	I Sensor temperature BX21 module 2	-28... 350 °C		0
7833	I Sensor temperature BX22 module 2	-28... 350 °C		0
7841	I Contact status H1	Open, Closed		Open
7846	I Contact status H2	Open, Closed		Open
7855	I Contact status H3	Open, Closed		Open
7914	I Input EX4	0, 230 V		0
7915	I Input EX5	0, 230 V		0
7916	I Input EX6	0, 230 V		0
State				
8000	I State heating circuit 1			0
8003	I State DHW			0
8004	I State cooling circuit 1			0
8006	I State heat pump			0
8022	I State supplementary source			0
8050	I History 1	Time, Date, State code		
8052	I History 2	Time, Date, State code		
8054	I History 3	Time, Date, State code		
8056	I History 4	Time, Date, State code		
8058	I History 5	Time, Date, State code		
8060	I History 6	Time, Date, State code		
8062	I History 7	Time, Date, State code		
8064	I History 8	Time, Date, State code		
8066	I History 9	Time, Date, State code		
8068	I History 10	Time, Date, State code		

<i>Line</i>		<i>Function</i>	<i>Setting range or display</i>	<i>Setting increment</i>	<i>Basic setting</i>
Diagnostics heat generation					
8402	I	Electrical resistance flow 1	Off, On		Off
		Electric back-up for the heat pump is not equipped in the heat pump.			
8403	I	Electrical resistance flow 2	Off, On		Off
		Electric back-up for the heat pump is not equipped in the heat pump.			
8406	I	Condenser pump	Off, On		Off
8410	U	Return temp HP	0... 140 °C		
		Setpoint (flow) HP	0... 140 °C		
8412	U	Flow temp HP	0... 140 °C		
		Setpoint (flow) HP	0... 140 °C		
8413	U	Compressor modulation	0... 100%		
8425	I	Temp diff condensor	-50... 140 °C		
8454	S	Locking time Heat Pump 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		
Diagnostics consumers					
8700	U	Outside temperature	-50... 50 °C		
8701	U	Outside temp min Reset ? (No, Yes)	-50... 50 °C		
8702	U	Outside temp max Reset ? (No, Yes)	-50... 50 °C		
8703	I	Outside temp attenuated Reset ? (No, Yes)	-50... 50 °C		
		This is the average of the outdoor temperature over a 24-hour period. This value is used for automatic Summer / Winter switchover (line 730).			
8704	I	Outside temp composite	-50... 50 °C		
		The composite outdoor temperature is a combination of the current outdoor temperature and the average attenuated temperature calculated by the regulator. This value is used for calculating the initial temperature.			
8730	I	Heating circuit pump, circuit 1	Off, On		Off
8731	I	Mixer valve HC1 open	Off, On		Off
8732	I	Mixer valve HC1 closed	Off, On		Off
8740	U	Room temperature 1	0... 50 °C		20 °C
		Room setpoint 1	4... 35 °C		20 °C
8743	U	Flow temperature 1	0... 140 °C		50 °C
		Flow temperature setpoint 1	0... 140 °C		50 °C
8756	U	Flow temp cooling 1	0... 140 °C		0
		Flow temp setpoint cooling 1	0... 140 °C		0
8820	I	DHW pump	Off, On		Off
8821	I	DHW electrical resistance K6	Off, On		Off

<i>Line</i>	<i>Function</i>	<i>Setting range or display</i>	<i>Setting increment</i>	<i>Basic setting</i>
8830	U DHW (domestic hot water) temperature	0... 140 °C		
	DHW temperature setpoint	5... 80 °C		50 °C
8840	S Time counter DHW pump	0... 2730 h		
8841	S Start counter DHW pump	0... 2730 h		
8842	S Hours run electric DHW	0... 2730 h		
8843	S Start counter electric DHW	0... 65535		
8900	U Swimming pool temperature	0... 140 °C		
	Swimming pool temperature setpoint	0... 35 °C		22 °C
8950	I Common flow temperature	0... 140 °C		
	Common flow temperature setpoint	0... 140 °C		0
8957	I Common flow setpoint, refrigeration	0... 140 °C		
9031	I Relay output QX1	Off, On		Off
9032	I Relay output QX2	Off, On		Off
9033	I Relay output QX3	Off, On		Off
9034	I Relay output QX4	Off, On		Off
9035	I Relay output QX5	Off, On		Off
9036	I Relay output QX6	Off, On		Off
9037	I Relay output QX7	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
9053	I Relay output QX21 module 2	Off, On		Off
9054	I Relay output QX22 module 2	Off, On		Off
9055	I Relay output QX23 module 2	Off, On		Off

4 Configuring the installation

All kits must be connected in of the house as shown on the figures (page 30, 31, 32 and 33).

☞ optional DHW kit.

DHW tank control (with electrical back-up) requires the use of the DHW kit.

Warning : The DHW tank must be fitted with an electric back-up, particularly for anti-legionella cycles.

☞ optional boiler connection kit.

The connection of an oil or gas boiler to the heat pump requires the installation of the boiler connection kit.

☞ Swimming pool kit option

Please refer to the instructions supplied with the swimming pool kit.

Configuration (Parameter 5700)	Type of installation	Page
Pre-setting 1	1 heating circuit.	30
Pre-setting 2	1 heating circuit and DHW tank.	31
Pre-setting 3	Do not use for monobloc heat pump. Reserved only for 2 circuits installation.	
Pre-setting 4		
Pre-setting 5	Boiler connection and 1 heating circuit.	32
Pre-setting 6	Do not use for monobloc heat pump. Reserved only for 2 circuits installation.	
Pre-setting 7	Boiler connection, 1 heating circuit and DHW tank.	33
Pre-setting 8	Do not use for monobloc heat pump. Reserved only for 2 circuits installation.	
Pre-setting 9	Do not use for monobloc heat pump. Reserved only for heat pump 2 services.	
Pre-setting 10		
Pre-setting 11		
Pre-setting 12		

☞ Please consult us regarding any other installation configuration.

4.1 Configuration 1, 2, 5 or 7 :

Parameter 5700

Configuration 1 : 1 heating circuit (see [page 30](#)).

Configuration 2 : 1 heating circuit and DHW tank (see [page 31](#)).

Configuration 5 : Boiler connection and 1 heating circuit (see [page 32](#)).

Configuration 7 : Boiler connection, 1 heating circuit and DHW tank (see [page 33](#)).

- DHW tank control (with electrical back-up) requires the use of the DHW kit.
- The management of a boiler is required to install a boiler connection kit.

4.1.1 Hydraulic connections

☞ In the case of a mixed DHW tank.

- Install the distribution valve on the heating circuit.

☞ in the case of a boiler connection.

- Removing the boiler's circulation pump.
- For boilers where the heating system's circulation pump has not been removed, a disconnection bottle must be installed.
- Install the elements from the boiler connection kit.

4.1.2 Electrical connections

- **1** - Supply of the heat pump.
- **2** - Interconnection between the heat pump and the control box.
- **4** - Outdoor sensor.
- **5** - Room thermostat and/or room control unit (option).

☞ In the case of a mixed DHW tank.

Please refer to the instructions supplied with the DHW kit.

- **7** - Distribution valve.
- **8** - DHW sensor.
- **9** - Resistance of the back-up unit.
- **10** - Electrical supply of DHW back-up. Maximal current of DHW back-up is 20 A.

☞ In case of a boiler connection.

- **15** - Distribution valve (deviation boiler).
- **16** - Boiler supply (or if used with room thermostat, connect a relay of control boiler).
- **17** - Connect the boiler flow sensor to the connector (instead of the existing sensor).

☞ In the case of a heated floor.

Heated floor thermal safety fuse.

- **20** - The installer is responsible for connecting the heated floor's safety system. Thermal safety will stop the heat pump if the temperature in the floor is too high. Please refer to section "Electrical connections".

4.1.3 Parametering the setting

- Adjust the configuration : **1, 2, 5 or 7**, line **5700**.
- Adjust the DHW programme (line **1610** to **1661**).
- Adjust the heating curve slope (line **720**).

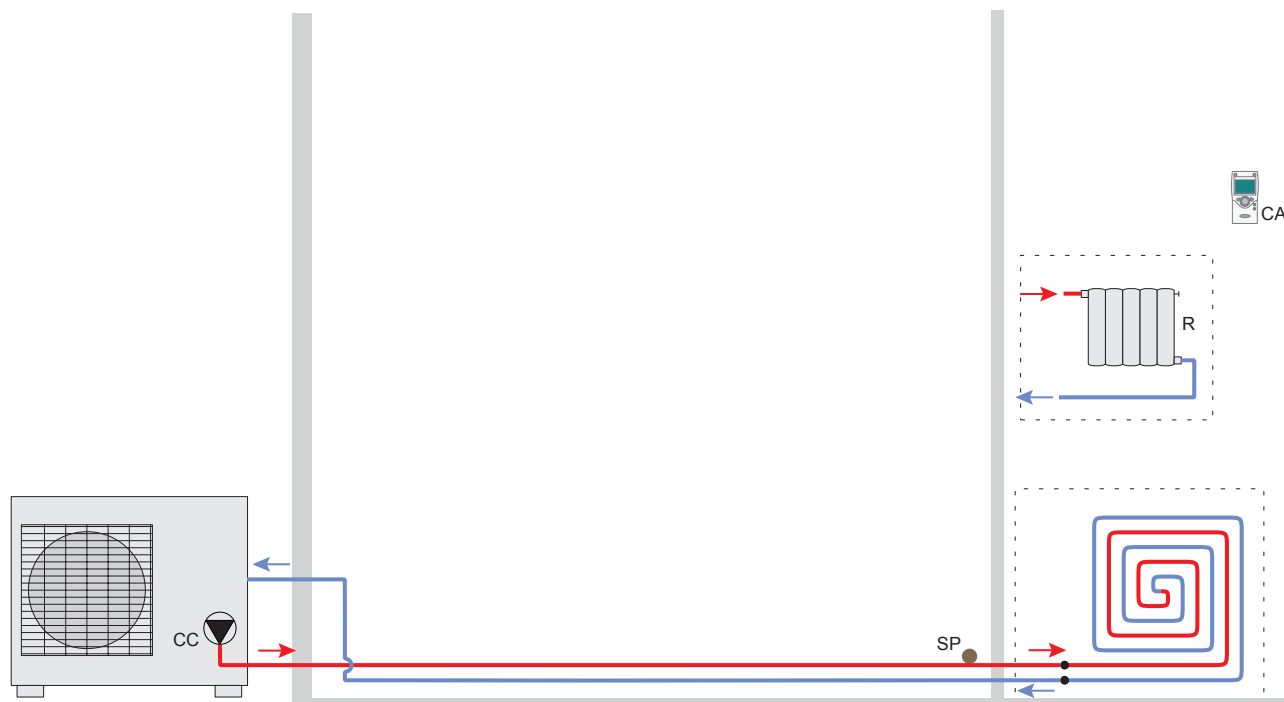
4.1.4 Special cases

Please consult us regarding any other installation configuration.

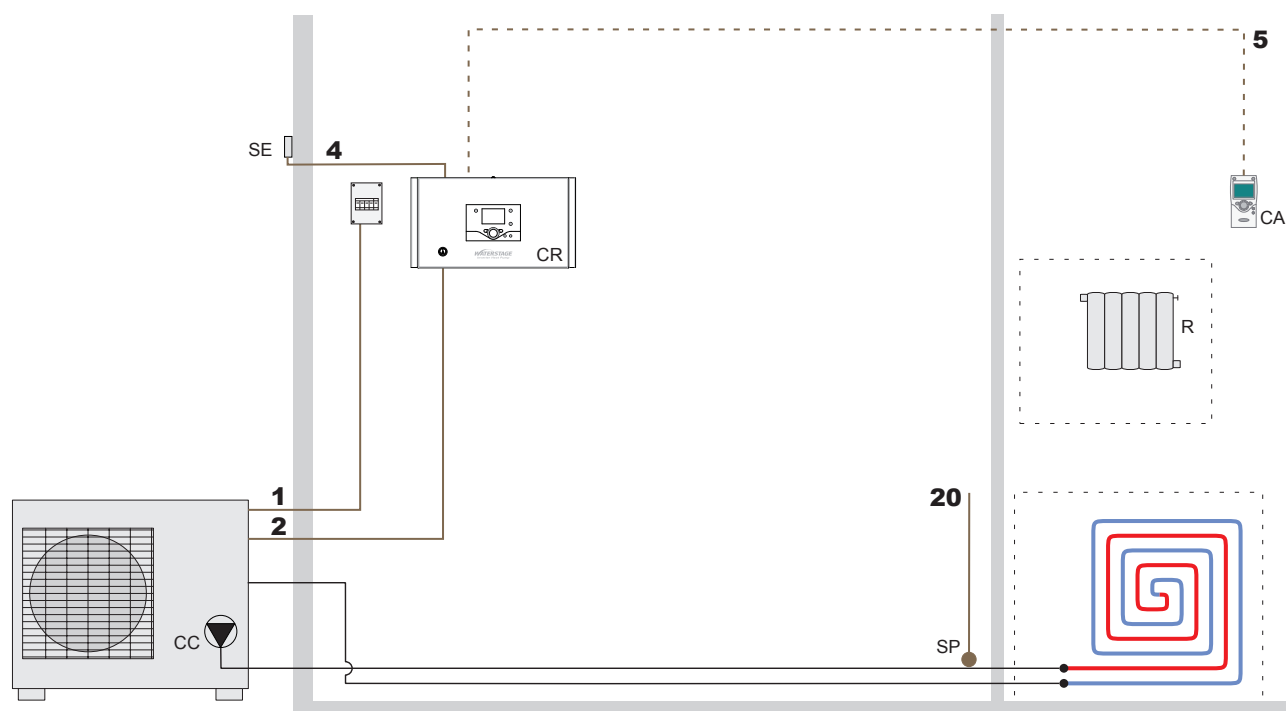
Configuration 1 :
1 heating circuit.

☞ See detailed instructions on [page 28](#).

Overall hydraulic layout



Overview of all the electrical connections



Legend

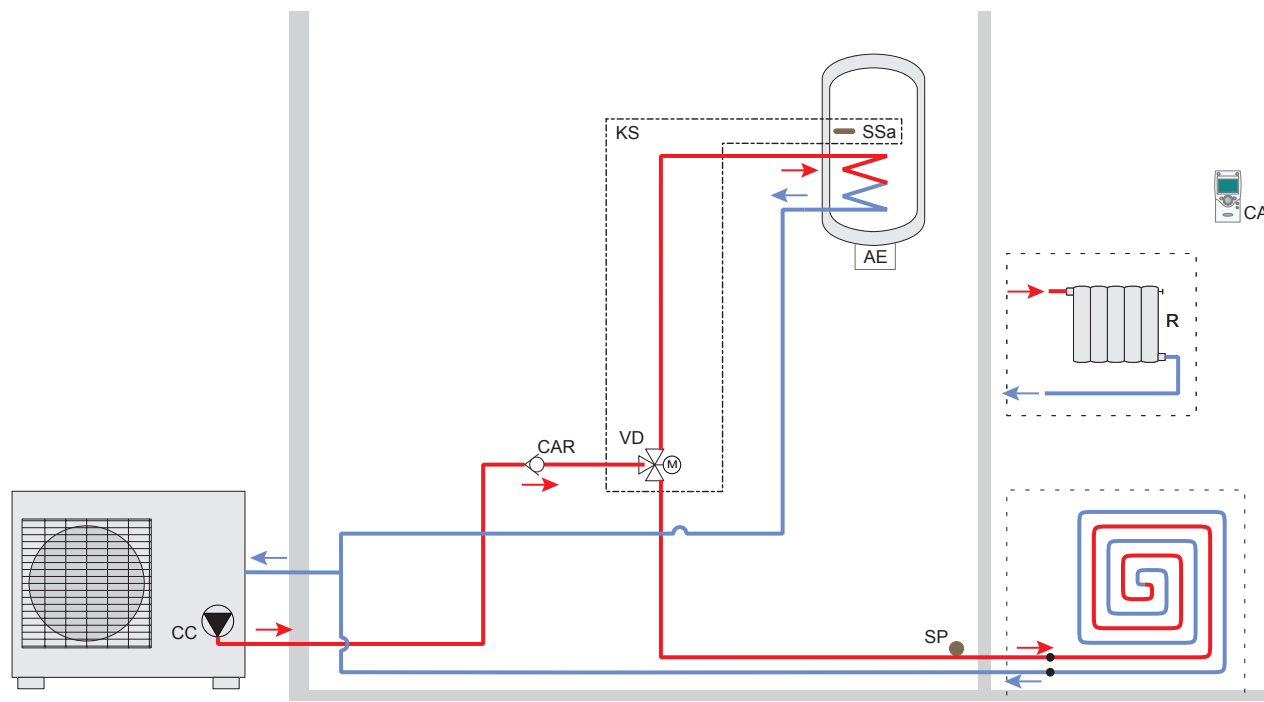
CC - Heating circulation pump
CR - Regulation Control Box
R - Radiators (or fan convectors)

CA - Room control unit or Room thermostat (option)
SE - Outdoor sensor
SP - Heated floor thermal safety fuse

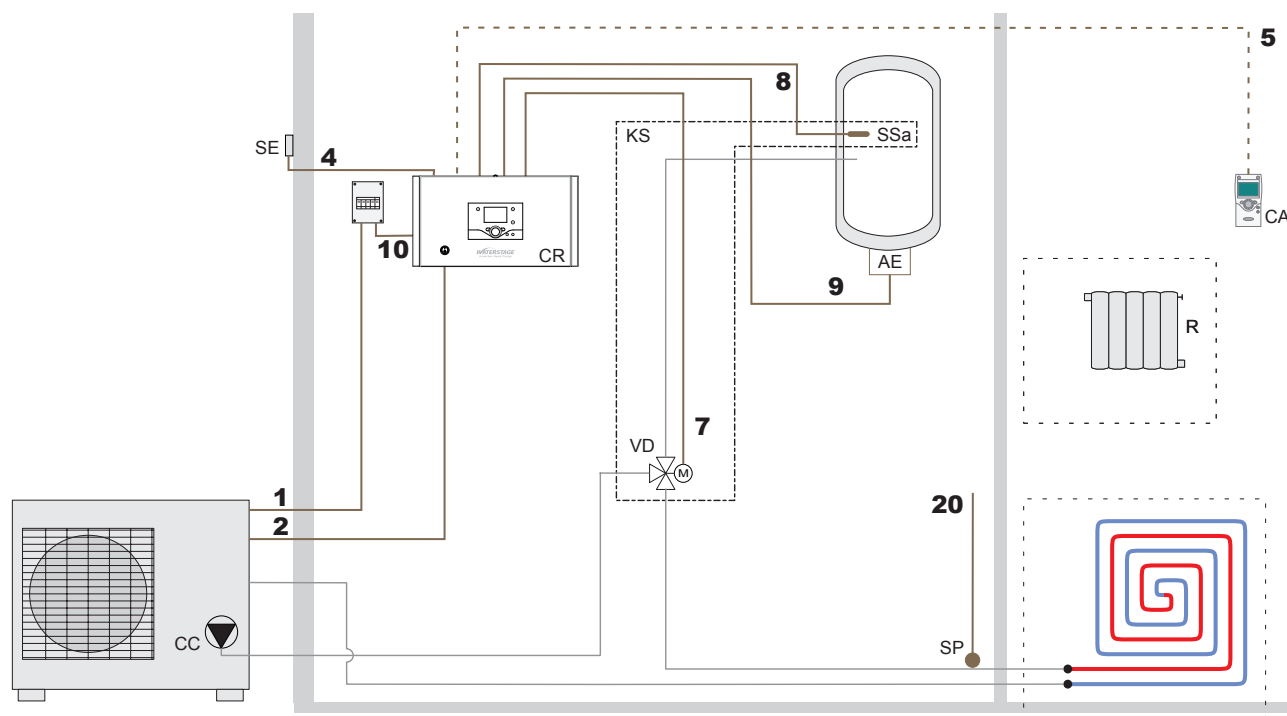
Configuration 2 :
1 heating circuit and DHW tank.

See detailed instructions on [page 28](#).

Overall hydraulic layout



Overview of all the electrical connections



Legend

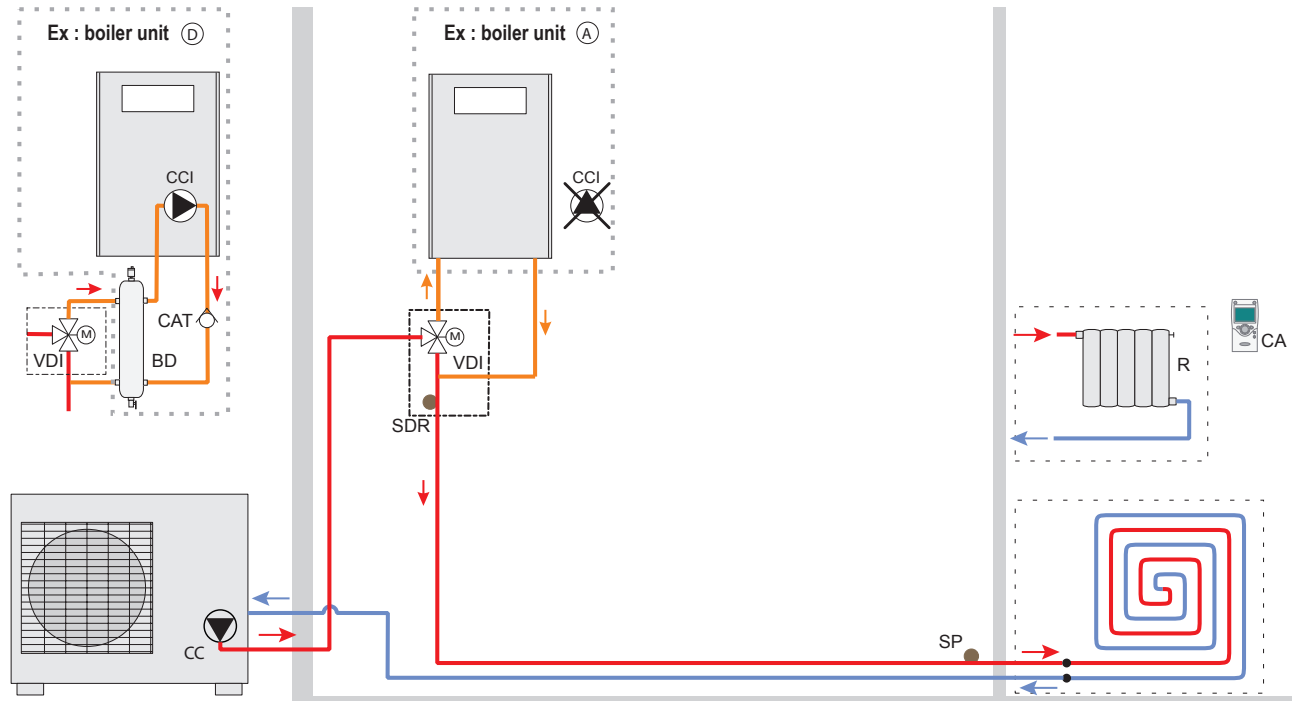
AE - Electric back-up
CAR - Non-return valve
CC - Heating circulation pump
CR - Regulation Control Box
KS - DHW kit

R - Radiators (or fan convectors)
CA - Room control unit or Room thermostat (option)
SE - Outdoor sensor
SP - Heated floor thermal safety fuse
SSa - DHW sensor
VD - Distribution valve

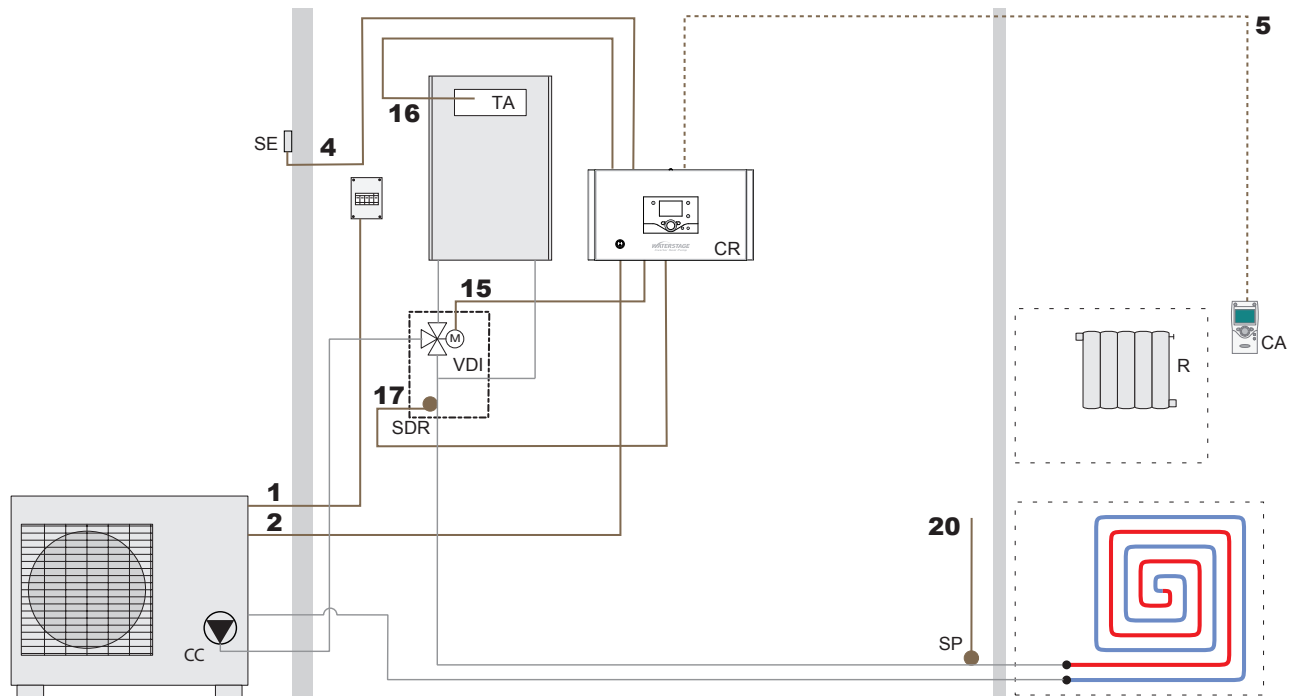
Configuration 5 :
Boiler connection and 1 heating circuit.

See detailed instructions on [page 28](#).

Overall hydraulic layout



Overview of all the electrical connections



Legend

BD - Disconnection bottle

CAT - Anti-gravity feed valve

CCI - Heating system circulation pump built into the boiler

CC - Heating circulation pump

CR - Regulation Control Box

R - Radiators (or fan convectors)

CA - Room control unit

or Room thermostat (option)

SE - Outdoor sensor

SDR - Boiler connection valve flow sensor

SP - Heated floor thermal safety fuse

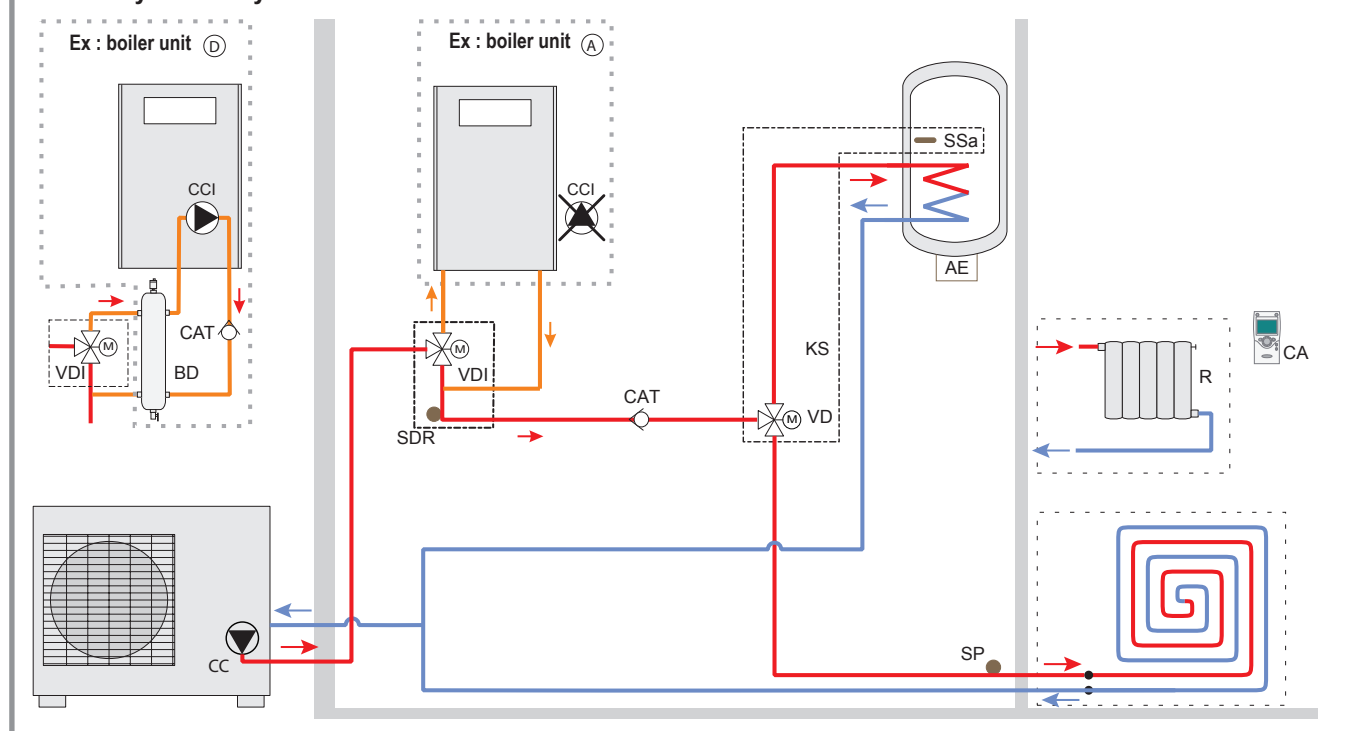
TA - Boiler supply of boiler unit

VDI - Distribution valve (deviation boiler)

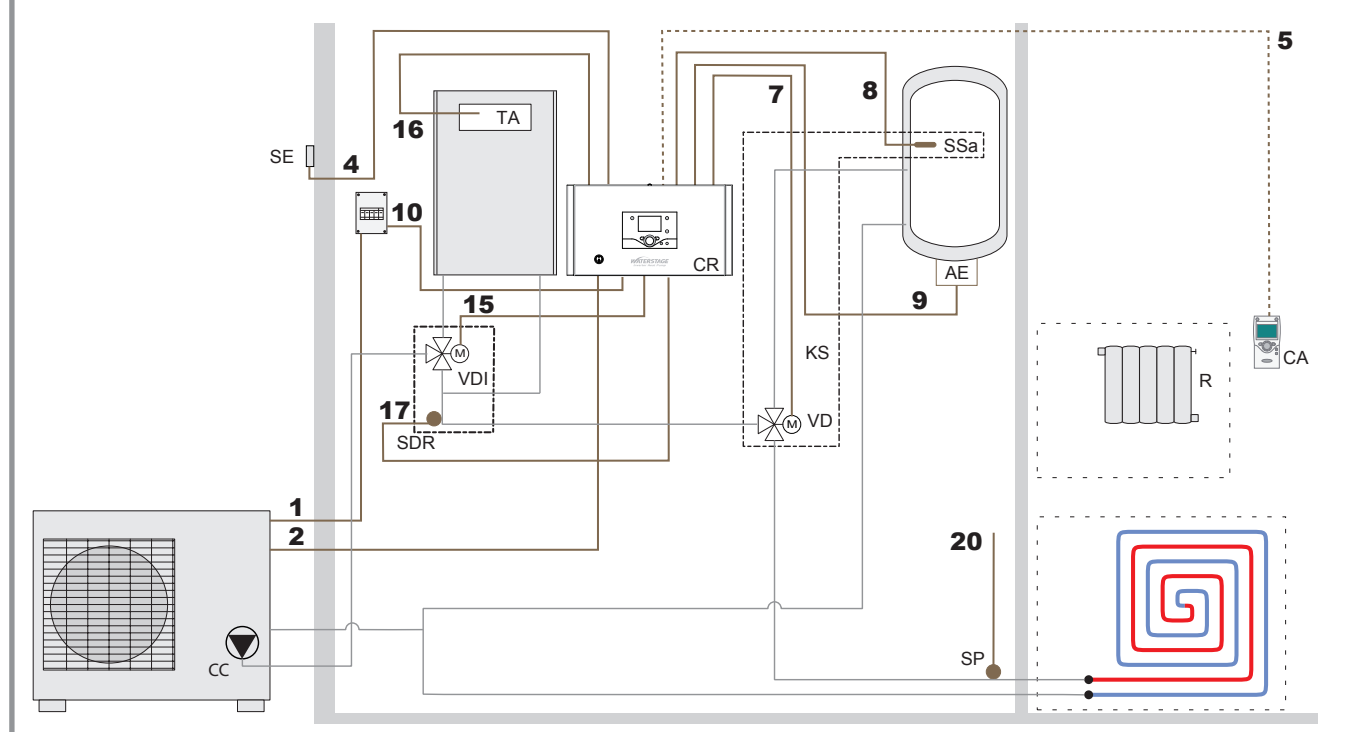
Configuration 7 : Boiler connection, 1 heating circuit and DHW tank.

See detailed instructions on [page 28](#).

Overall hydraulic layout



Overview of all the electrical connections



Legend

AE - Electric back-up

BD - Disconnection bottle

CAT - Anti-gravity feed valve

CCI - Heating system circulation pump built into the boiler

CC - Heating circulation pump

CR - Regulation Control Box

R - Radiators (or fan convectors)

CA - Room control unit
or Room thermostat (option)

KS - DHW kit

SE - Outdoor sensor

SDR - Boiler connection valve flow sensor

SSa - DHW sensor

SP - Heated floor thermal safety fuse

TA - Boiler supply of boiler unit

VD - Distribution valve

VDI - Distribution valve (deviation boiler)

5 Electrical wiring diagram

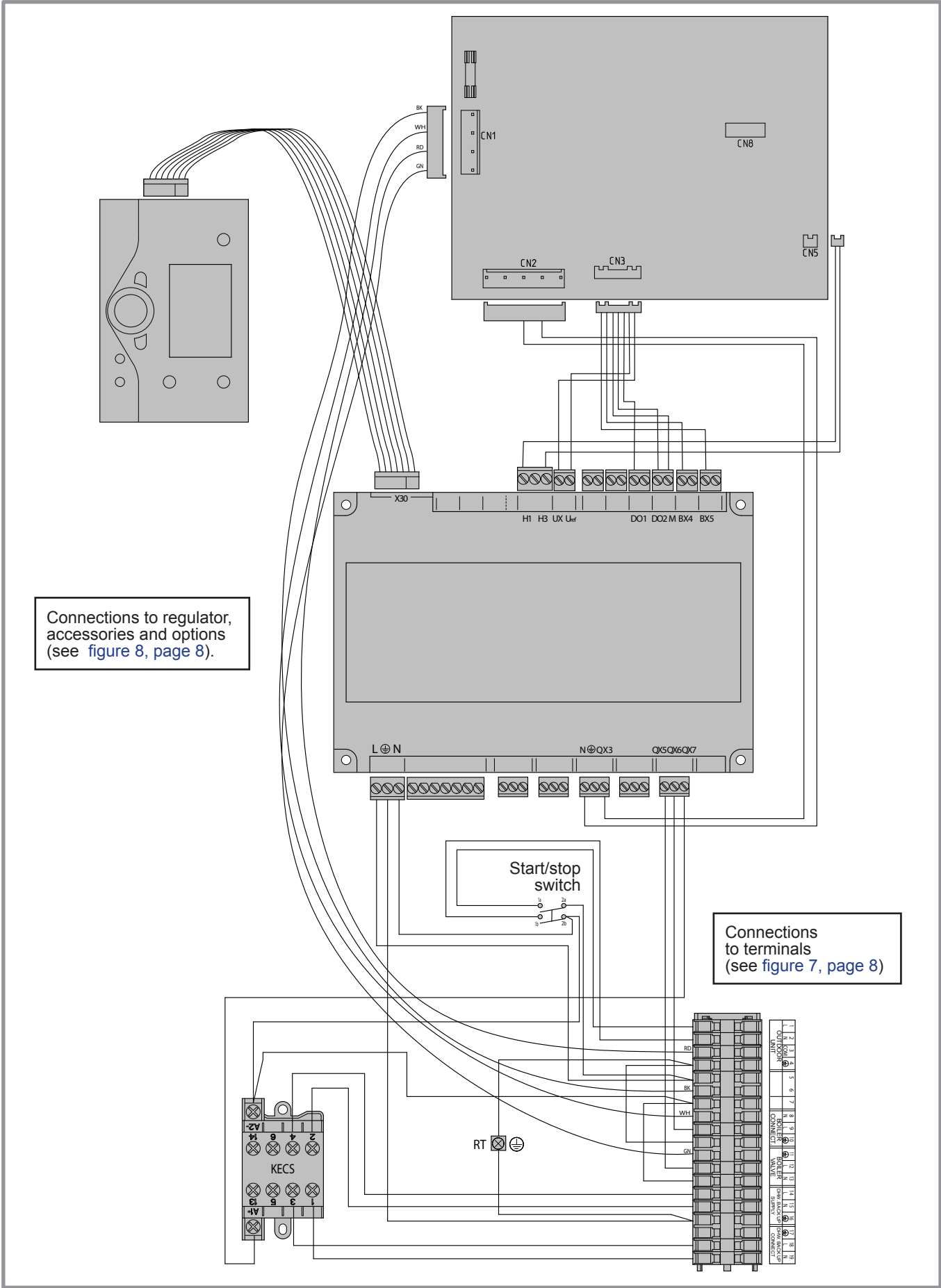


figure 20 - Electrical wiring of Control Box (except installer's connections)

6 Troubleshooting

Depending on whether the fault comes from the hydraulic circuit or refrigerant circuit, the fault may be indicated by the digital display or the diode on the heat pump.

6.1 Faults displayed on the control box

Faults or breakdowns on the hydraulic circuit are indicated by the display on the user interface of the control box.

Control box : Fault visible on the digital display


Error number	Error contents	Error location	Heat pump operation despite the error
-	No connection.	Failure to comply with room thermostat's polarity.	No
10	Outdoor sensor.	B9	Yes with OT = 0 °C
33	Heat pump initial temperature sensor error.	B21	Yes
44	Heat pump return temperature sensor error.	B71	Yes
50	DHW temperature sensor.	B3	Yes
60	Ambient temperature sensor 1.		Yes
105	Maintenance message.		Yes
121	Flow temperature for (HC1) not reached.		Yes
127	Anti-legionella temperature not reached.		Yes
369	External fault (safety component).		No
370	Heat pump error (Refer to the service manual of the heat pump).		No


6.2 Information display

Various data can be displayed by pressing the info button .

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.
- Possible service messages from the maintenance code list.
- Possible special mode messages.
- Various data (see below).

The display shows the "Bell" symbol .

Press the Info key  for more details on the origin of the fault.

When the error has been resolved, the faults are re-initialised at zero automatically.

Designation	Line
Floor drying current setpoint .	-
Current drying day.	-
Terminated drying days.	-
State heat pump.	8006
State supplementary source.	8022
State DHW.	8003
State swimming pool.	8011
State heating circuit 1.	8000
State cooling circuit 1.	8004
Outdoor temperature.	8700
Room temperature 1.	8740
Room setpoint 1.	
Flow temperature 1.	8743
Flow temperature setpoint1.	
DHW (domestic hot water) temperature.	8830
Heat pump return temperature.	8410
Setpoint (return) HP.	
Heat pump flow temperature.	8412
Setpoint (flow) HP.	
Swimming pool temperature.	8900
Swimming pool temperature setpoint.	

- ☞ 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.

7 Quick-start procedure

Before switching on the control box :

- Check the electric wiring.
- Check the pressure of the hydraulic circuit (1-2 bar), check that the heat pump is purged, and the rest of the installation.

7.1 Start-up

- Turn **ON** the start/stop switch.
- Configure the hydraulic circuit (setting 5700) :
Presettings :
 1. 1 heating circuit (by default).
 2. 1 heating circuit and DHW tank.
 3. Boiler backup and 1 heating circuit.
 4. Boiler backup, 1 heating circuit and DHW tank.
- Time, Date and time programs for HC1, DHW if different than default values (settings 500 – 576).
- Adjust the heating curve slope (720) and curve off-set (721).

You can also :

1. Adjust the heating circuit setpoints if different than default values (710 – 714).
2. Adjust the DHW setpoints if different than default values (1610-1612).
3. Start a legionella cycle (1640-1647).
4. Perform floor drying (850-857).

The heat pump is ready for operation !

7.2 Start-up check-list

7.2.1 Before starting-up

• Sight checks

Heat pump.	OK	Non compliant	
Location and fittings, condensate evacuation.			
Compliance with distances from obstacles.			

• Hydraulic checks

	OK	Non compliant	Value
Connection of pipes, valves and pumps (1 circuit, DHW).			
Installation water volume (expansion vessel of adequate capacity ?).			
No leaks.			
Main system pressure and degassing (0,3bar > expansion vessel pre-loading).			

• Electrical checks

heat pump.	OK	Non compliant	Value
Main power supply heat pump 230v .			
Protection by rated circuit breaker.			
Cable cross-section.			
Earth connection.			

Control box (see chapter "Electrical connections" page 9).	OK	Non compliant	
Connection with outdoor unit (3 + Earth).			
Sensors connection (positioning and connections).			
3 way valve and circulators connections.			
Power supply and protection of electric auxiliary.			

7.2.2 Starting-up

• Switching On

(see chapter "Star-up" [page 10](#)).

	OK	Non compliant	
Switching On.			
Initialisation for a few seconds.			
Operation of the pumps.			
Outdoor unit starts after 3 mins.			

• Heat pump checks

	OK	Non compliant	Value
Operation of fan(s), compressor.			
Current measurement.			
After a few minutes, measurement of air temp. delta.			
Check condensation and evaporation pressure/temperature.			
After 15 mins of operation.			
Primary water temp. delta.			
DHW priority (switching of selection valve).			
Operation of heating, mixing valve, boiler backup, ...			
Control settings.			

• Room control

(see chapter "Configuring the room thermostat" [page 10](#)).

	OK	Non compliant	
Settings, manipulations, checks.			
Setpoint display.			
Explanations on use.			

7.3 Settings sheet

Setting	Description	Set to.	Menus
Preliminary settings			
20	language		<i>operator section</i>
1	hour / minutes		<i>time & date</i>
2	day / month		<i>time & date</i>
3	year		<i>time & date</i>
5700	installation config.		<i>configuration</i>
Heating circuit No. 1			
710	comfort setpoint		<i>HC1 adjust.</i>
712	reduced setpoint		<i>HC1 adjust.</i>
720	heating curve slope		<i>HC1 adjust.</i>
741	flow temp setpoint max		<i>HC1 adjust.</i>
750	room influence		<i>HC1 adjust.</i>
790 / 791	optimis. at switch-on / off		<i>HC1 adjust.</i>
834	servomotor travel time		<i>HC1 adjust.</i>
850 / 851	floor drying		<i>HC1 adjust.</i>
501 to 516	time programs		<i>HC1 program.</i>
642 to 648	holiday programs		<i>HC1 hol pgm.</i>
Domestic Hot Water (if DHW kit)			
1610	nominal DHW temp. setpoint		<i>DHW</i>
1612	reduced DWH temp. setpoint		<i>DHW</i>
1620	DHW release		<i>DHW</i>
1640 to 1647	legionella cycle		<i>DHW</i>
1660	release DHW circulation		<i>DHW</i>
5020	flow temp. increase		<i>DHW tank</i>
5024	DHW switch-on differ.		<i>DHW tank</i>
5030	charging time limitation		<i>DHW tank</i>
5060	heater operation mode	fill.	<i>DHW tank</i>
5061	heater release		<i>DHW tank</i>
5870	tank present (if DHW kit)		<i>configuration</i>
561 to 576	time programs		<i>prog.4 DHW</i>

Setting	Description	Set to.	Menus
Boiler backup			
3700	OT.switch-on authoris.		<i>addit. gen.</i>
3705	switch-off delay		<i>addit. gen.</i>
Miscellaneous			
6046	input H2 function	9	<i>configuration</i>
6100	OT sensor correction		<i>configuration</i>
6120	frost protection on/off		<i>configuration</i>
6205	reset settings		<i>configuration</i>
6220	software version		<i>configuration</i>
6711	reset heat pump		<i>error</i>
7070 to 7183	maintenance		<i>maintenance</i>
7700 to 7916	input / output testing		<i>I/O testing</i>
8402 to 8457	generator diagnosis		<i>gen. diagn.</i>
8700 to 9055	consumer diagnosis		<i>cons. diagn.</i>
Cooling			
5711	cooling unit	2 pipes	<i>configuration</i>
901 to 969	cooling settings		<i>cooling circuit 1</i>
Faults (if a fault occurs, press "Info" key)			
No. 10	outdoor sensor		
No. 33	flow temp. sensor		
No. 44	return temp. sensor		
No. 50	DHW temp. sensor		
No. 60	room sensor 1		
No. 105	maintenance message		
No. 121	HC1 flow T not reached		
No. 127	leg. prot. T not reached		
No. 369	external fault (EX6)		
No. 370	outdoor unit connect error		
6740 to 6746	alarm timeout		<i>error</i>
6800 to 6818	last 10 alarms history		<i>error</i>
6711	reset heat pump		<i>error</i>
Heat pump			
2844	switch-off temp max		<i>heat pump</i>
2884	OT auth. to start elec. aux. (not available)		<i>heat pump</i>
2920	Pk day clear (EX4) rel / lock		<i>heat pump</i>
Swimming pool (with "swimming pool" kit option)			
2056	generator setpoint		<i>Sw pool</i>
Control box faults (see page 35)			

7.4 Start-up data sheet

Site				Installer			
Heat pump	serial No.			Control box	serial No.		
	model				model		
Refrigerant type				Refrigerant charge			
						kg	

Checks				Operating voltage & current on outdoor unit			
Compliance with positioning distances				L/N	V		
Condensate evacuation correct							
Electric connections / connections tightness							
No GAS leaks (unit ID No. :)				L/E	V		
Installation of refrigeration connection correct (length : m)							
Reading in HEATING operating mode							
Compressor discharge temperature		°C		N/E	V		
Liquid line temperature		°C		Icomp	A		
Condensation temperature	HP = bar	°C		sub-cooling		°C	
Water output temperature		°C		ΔT condensation		°C	
Water input temperature		°C		ΔT secondary		°C	
Evaporation temperature	LP = bar	°C					
Suction temperature		°C		Overheating		°C	
Battery air input temperature		°C		ΔT evaporation		°C	
Battery air output temperature		°C		ΔT battery		°C	

Hydraulic system of hydraulic unit					
Secondary system	Low temp. heating floor		}	Circulator brand	Type
	LT Radiators			Circulator brand	Type
	fan coils			Circulator brand	Type
Domestic hot water ; tank type					
Estimated water volume of secondary system			L		

Options & accessories :					
Power supply for connected electric auxiliary					
Operation in cooling mode possible				Room thermostat C55	
Location of room sensor correct				Room control unit C75	
Swimming pool kit			Boiler kit		
DHW kit			Details		

Control settings			
Configuration type			
Essential settings			

8 Instructions for the user

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

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

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

This appliance also conforms to:

- Regulation 842/2006 of the european parliament on certain 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 XP ENV 12102: Air-conditioners, heat pumps and dehumidifiers with compressor driven by electric motor. Measurement of airborne noise. Determination of acoustic power level..