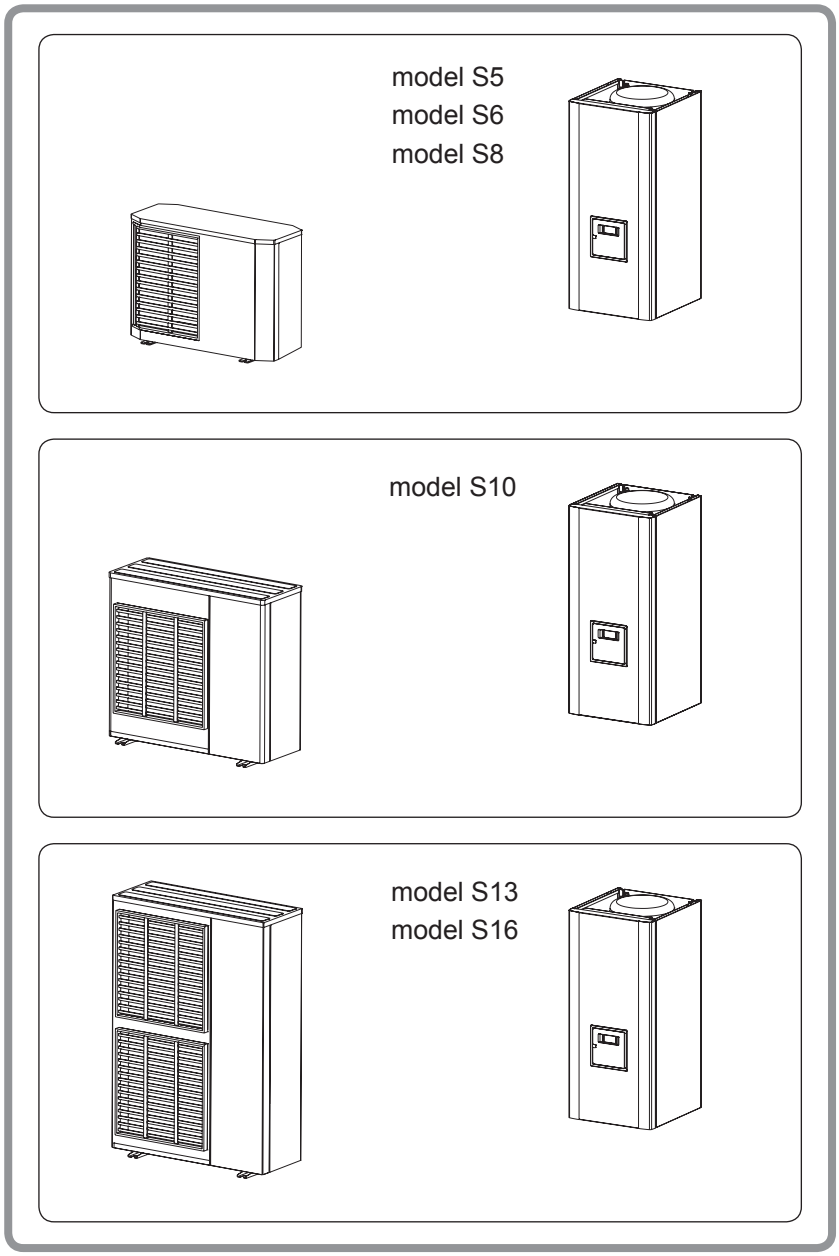
alféa S

Heat pump air/water split single service



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Document n° 1303-17 ~ 16/09/2011

FR | EN | IT | NL | DE
ES | PT

Installation and operating manual

intended for professionals

To be saved for future consultation

www.atlantic.fr

☞ **This device requires for its installation, the intervention of qualified personnel with a certificate of capacity for handling refrigerants.**

Contents

Packing list

Heat pump		*Outside unit*		*Hydraulic module*	
Designation	*Réf.*	*Model*	*Code*	*Model*	*Code*
Model S5	522604	AOYA18LALL	700718	MH-S5	023108
Model S6	522605	AOYA18LALL	700718	MH-S6	023109
Model S8	522606	AOYA24LALL	700724	MH-S8	023107
Model S10	522607	AOYA30LBTL	700730	MH-S10	023106
Model S13	522608	AOYA45LBTL	700845	MH-S13	023105
Model S16	522609	AOY54LJBYL	700054	MH-S16	023104

Optional equipment

• 2nd circuit kit (code 073952)

- for connecting 2 heating circuits.

• DHW kit (code 073950)

- for connecting a DHW tank (with built-in electrical backups).

• Boiler connection kit (code 073948)

- for connecting a boiler to the heat pump.

• Room thermostat T55 (code 073951)

- For correcting the ambient temperature.

• Room control unit T75 (code 073954), Room control unit T78 (code 074061)

- For correcting the ambient temperature and programming the heat pump.

• Anti-vibration blocks (code 523574).

• White PVC floor support (code 809532).

• Cooling kit MS 5-6-8-10 (code 073949).

• Swimming pool kit (code 073958).

• High flow rate circulating pump kit (code 073959)

- For the installation of 1 circuit floor heating with model S13 and S16.

• Cooling kit MS 13-16 (code 073956) compatible with high flow rate circulating pump 073959.

Scope of application

This heat pump provides :

Heating in winter,

- Control of two heating circuits*,
- 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.
- Heating the swimming pool*.

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

1 Description of the unit

1.1 Package

• 1 package : Outside unit.

• 1 package : hydraulic module and outdoor sensor.

1.2 Definitions

Split: The heat pump consists of two elements (an outside unit for outside and a hydraulic module for inside the dwelling).

Air/water: The surrounding air is the energy source. This energy is transmitted to the water in the heating circuit by the heat pump.

Inverter: the fan and compressor speeds are modulated according to the heating requirements.

This technology enables you to save on energy and operate on a single-phase power supply, whatever the heat pump's output, by avoiding heavy intensities on start-up.

COP (coefficient of performance): this is the relationship between the energy transmitted to the heating circuit and electrical energy consumed.

1.3 Specifications

Designation, model		S5	S6	S8	S10	S13	S16
Nominal heating performances (outside temperature/ initial temperature)							
Heat output							
+7 °C / +35 °C - Floor heating system	kW	4,60	6,50	8,00	10,30	13,70	16,20
-7 °C / +35 °C - Floor heating system	kW	4,80	5,60	6,65	8,10	11,55	12,40
+7 °C / +45 °C - Low temperature radiator	kW	4,17	5,40	6,20	8,30	9,70	13,30
-7 °C / +45 °C - Low temperature radiator	kW	4,05	5,10	5,78	7,00	9,20	11,00
Power absorbed							
+7 °C / +35 °C - Floor heating system	kW	1,07	1,63	2,11	2,58	3,42	4,15
-7 °C / +35 °C - Floor heating system	kW	1,77	2,24	2,89	3,52	4,37	4,77
+7 °C / +45 °C - Low temperature radiator	kW	1,23	1,61	2,07	2,51	2,98	4,20
-7 °C / +45 °C - Low temperature radiator	kW	1,78	2,32	2,97	3,33	4,30	5,37
Nominal coefficient of performance (COP)							
(+7 °C / + 35 °C)	-	4,30	4,00	3,80	4,00	4,00	3,90
Electrical characteristics							
Supply voltage (50 HZ)	V	230	230	230	230	230	230
Maximum current of the appliance	A	15	15	15	17	20	26
Nominal intensity	A	8,3	8,3	10,6	11,7	16,7	20,6
Maximum current of the electrical back-ups	A	13	13	13	26,1	26,1	26,1
Power of the electrical back-ups	kW	3	3	3	6	6	6
Real power absorbed							
- By the fan	W	54	54	65	103	2x103	2x103
- By the circulation pump	W	113	113	113	113	151	151
Maximum power absorption							
- By the outside unit	W	3450	3450	3450	3910	4600	5980
Hydraulic circuit							
Maximum operating pressure	bar	3	3	3	3	3	3
Hydraulic system flow rate 4°C<Δt<8°C (nominal conditions)							
- minimum	l/h	540	600	860	1000	1380	1670
- maximum	l/h	1100	1400	1700	2100	2700	3300
Various							
Weight of outside unit	kg	40	40	44	64	98	105
Noise level at 5 meters (outside unit)	dB	39	39	40	41	40	40
Weight of hydraulic module (empty/full of water)	kg	52,5/77,5	52,5/77,5	52,5/77,5	52,5/77,5	52,5/77,5 52,5/77,5	
Water capacity of the hydraulic module	l	25	25	25	25	25	25
Heating system operating limits							
Outdoor temperature mini/maxi	°C	-15/+24	-15/+24	-15/+24	-15/+24	-15/+24	-15/+24
Initial max. heating water temperature							
- Floor heating system	°C	45	45	45	45	45	45
- Low temperature radiator	°C	52	52	52	52	52	52
Flow min. heating water temperature	°C	8	8	8	8	8	8
Refrigeration circuit							
Diameter of gas pipes	inches	1/2	1/2	5/8	5/8	5/8	5/8
Diameter of fluid pipes	inches	1/4	1/4	1/4	3/8	3/8	3/8
Factory charge of refrigerant R410A*	g	1250	1250	1700	2100	3350	3400
Maximum operating pressure	bar	45	45	45	45	45	45
Minimum length of pipes	m	5	5	5	5	5	5
Maximum length of pipes**	m	15	15	15	20	20	20
Maximum length of pipes***	m	20	20	30	40	40	40
Maximum level difference***	m	15	15	20	30	30	30

* Refrigerant R410A (as per the standard EN 378.1)

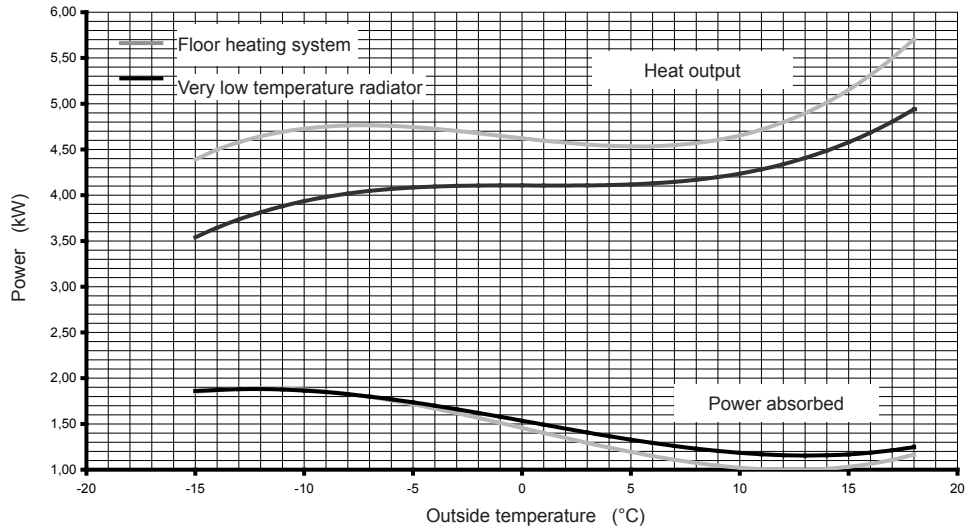
** Factory charge of refrigerant R410A.

*** Taking into account the possible additional load of refrigeration fluid R410A (see page 22).

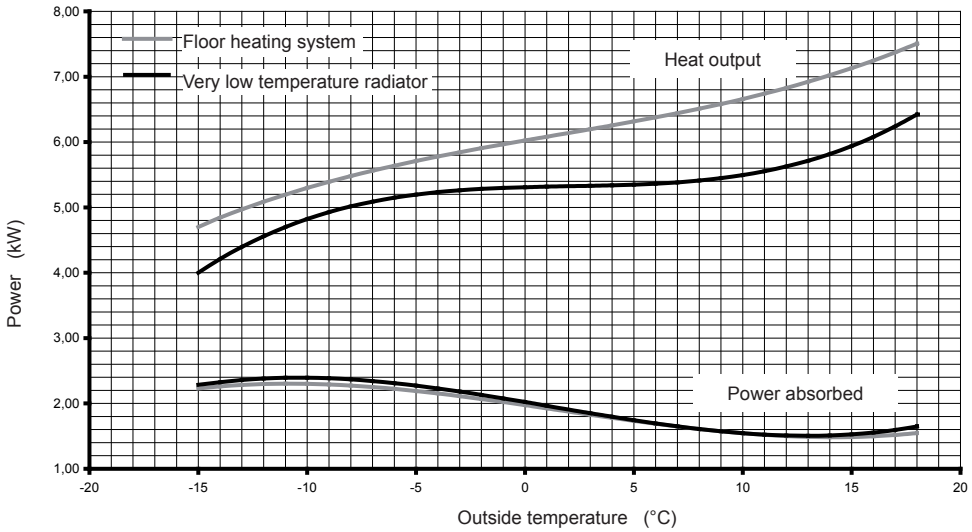
1.4 Heating power curve

Values according to standard EN 14511, for which it is necessary to add the power absorbed by the heating circulation pump.

S5



S6



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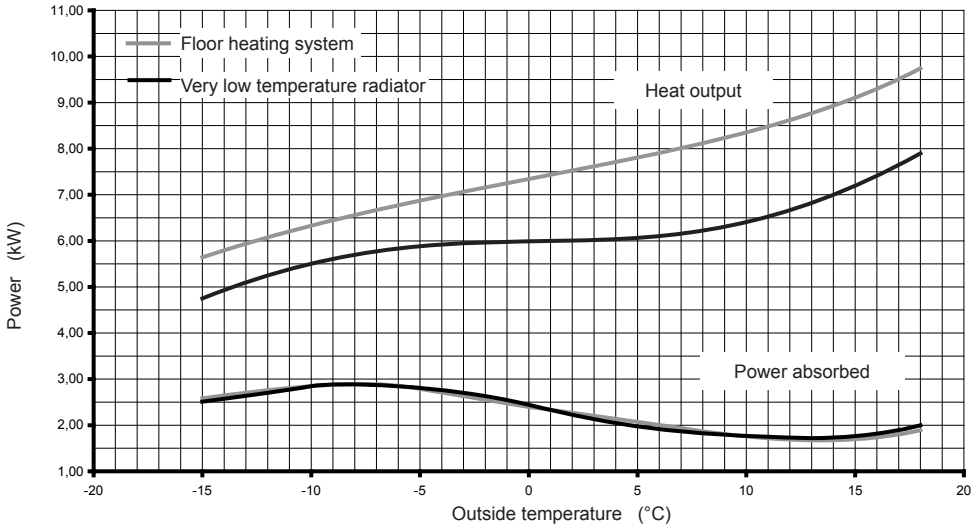
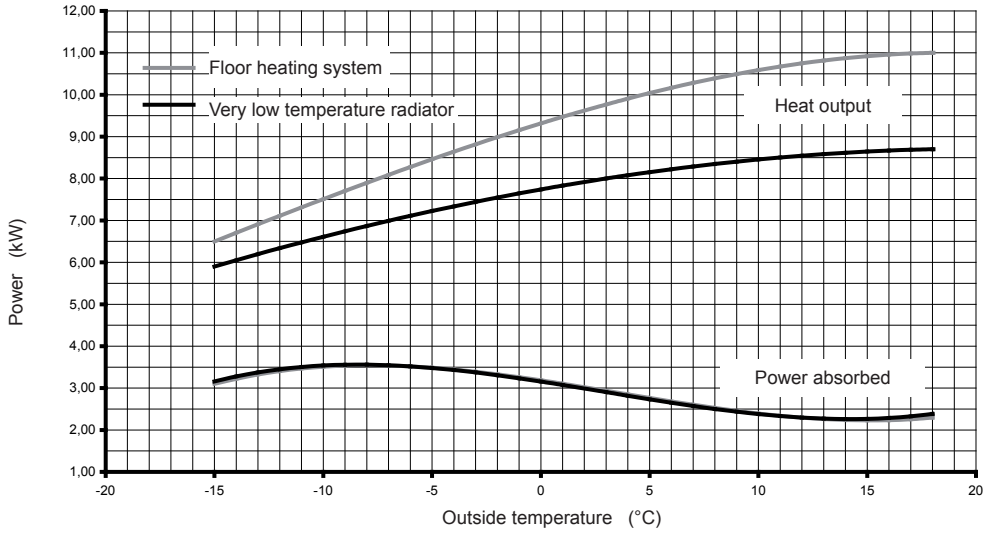
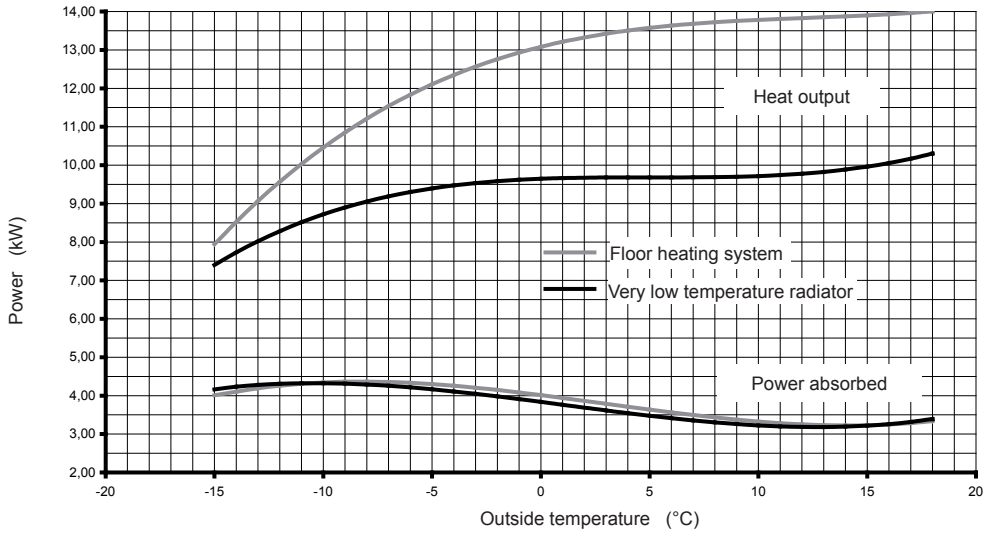


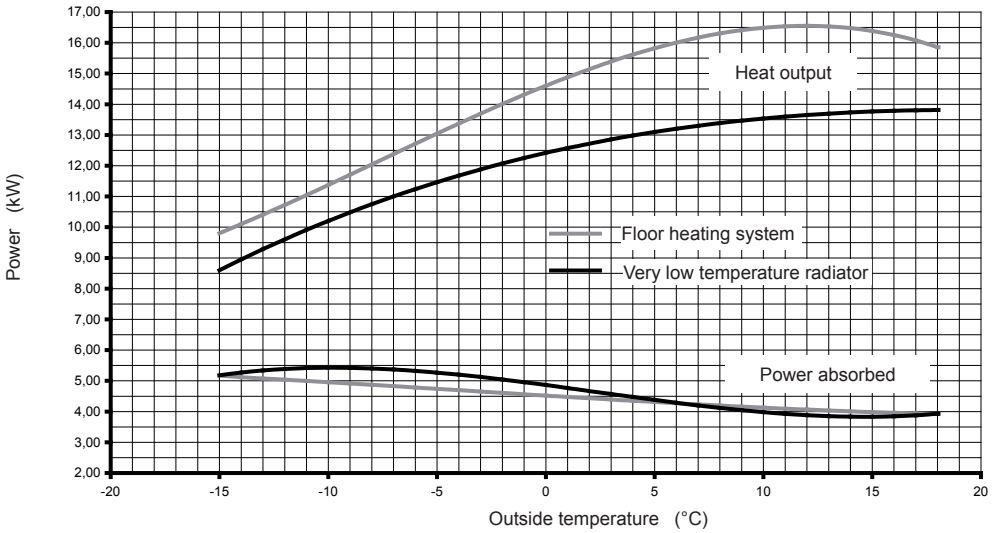
S10


Floor heating system
Very low temperature radiator
Heat output
Power absorbed
Power (kW)
Outside temperature (°C)
12,00
11,00
10,00
9,00
8,00
7,00
6,00
5,00
4,00
3,00
2,00
1,00
-20
-15
-10
-5
0
5
10
15
20

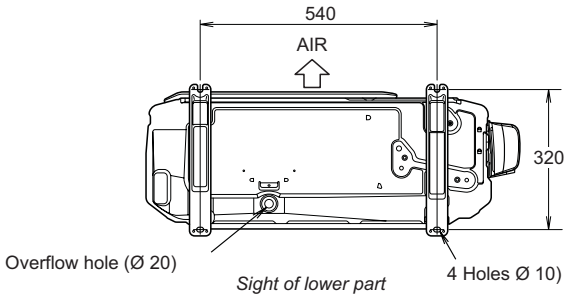
S13


Heat output
Floor heating system
Very low temperature radiator
Power absorbed
Power (kW)
Outside temperature (°C)
14,00
13,00
12,00
11,00
10,00
9,00
8,00
7,00
6,00
5,00
4,00
3,00
2,00
-20
-15
-10
-5
0
5
10
15
20

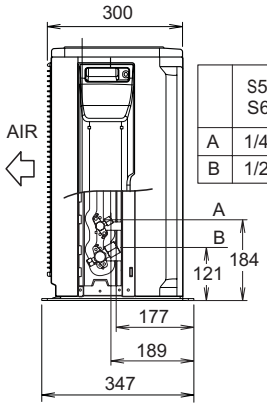
S16


Heat output
Floor heating system
Very low temperature radiator
Power absorbed
Power (kW)
Outside temperature (°C)
17,00
16,00
15,00
14,00
13,00
12,00
11,00
10,00
9,00
8,00
7,00
6,00
5,00
4,00
3,00
2,00
-20
-15
-10
-5
0
5
10
15
20

☞ Outside unit, Model S5, S6, S8

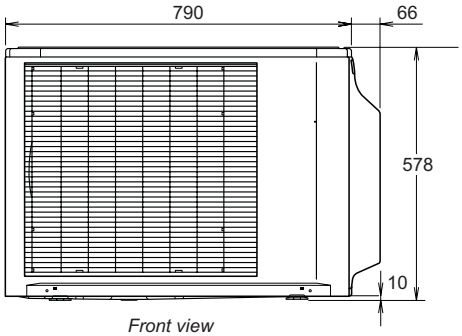


Sight of lower part

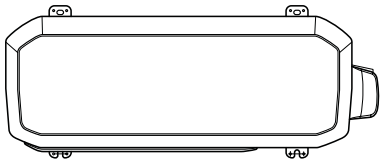


	S5 S6	S8
A	1/4"	1/4"
B	1/2"	5/8"

Side view

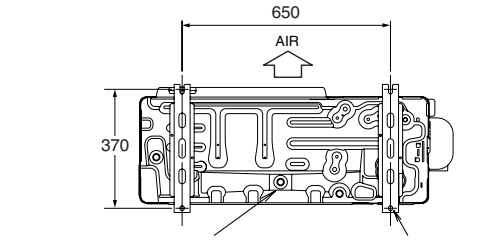


Front view

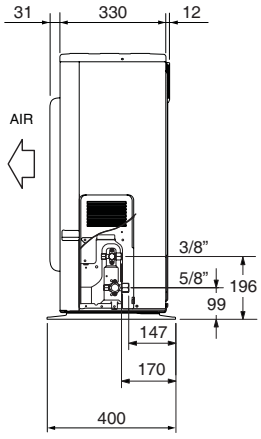


Top view

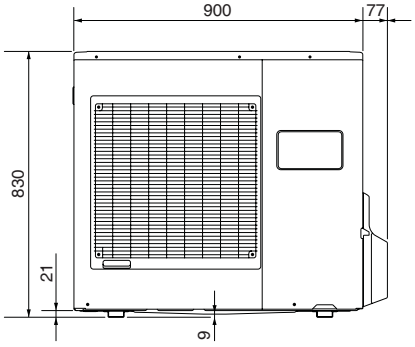
☞ Outside unit, Model S10



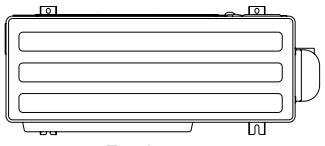
Sight of lower part



Side view



Front view



Top view

Figure 1 - Dimensions in mm

☞ **Outside unit, Model S13, S16**

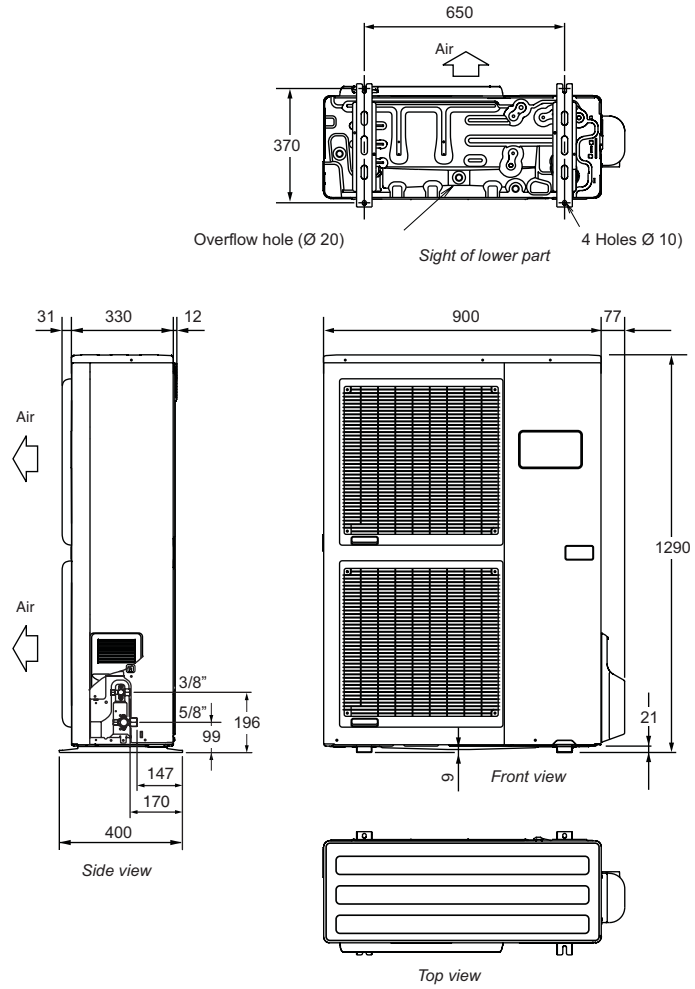


Figure 2 - Dimensions in mm

☞ **Hydraulic module**

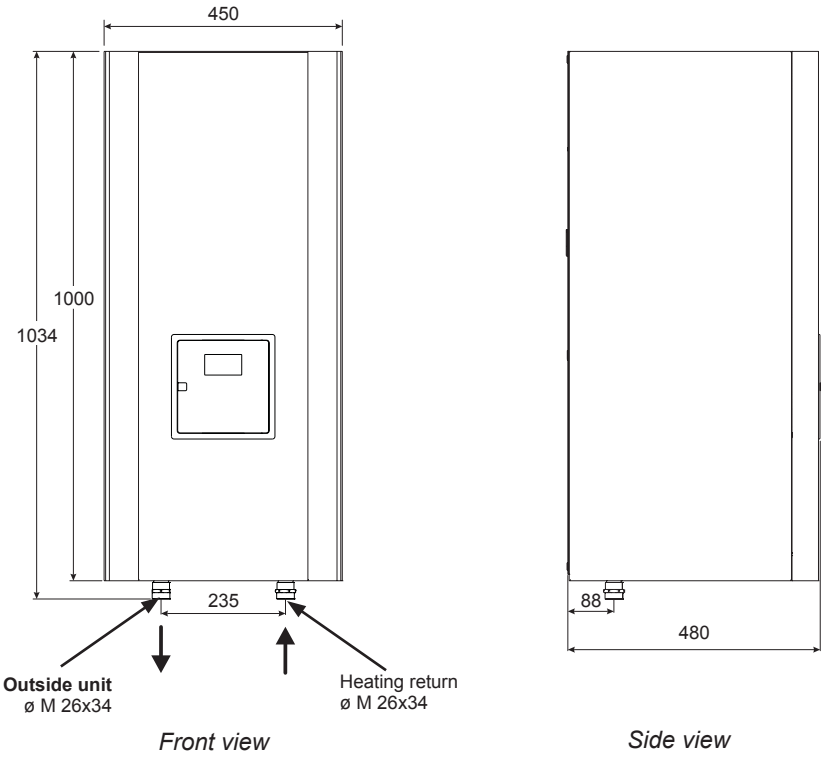


Figure 3 - Dimensions in mm

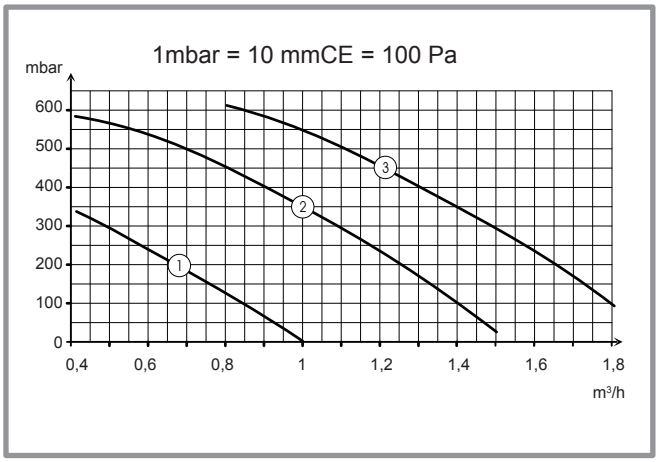


Figure 4 - Hydraulic pressures and flow rates available

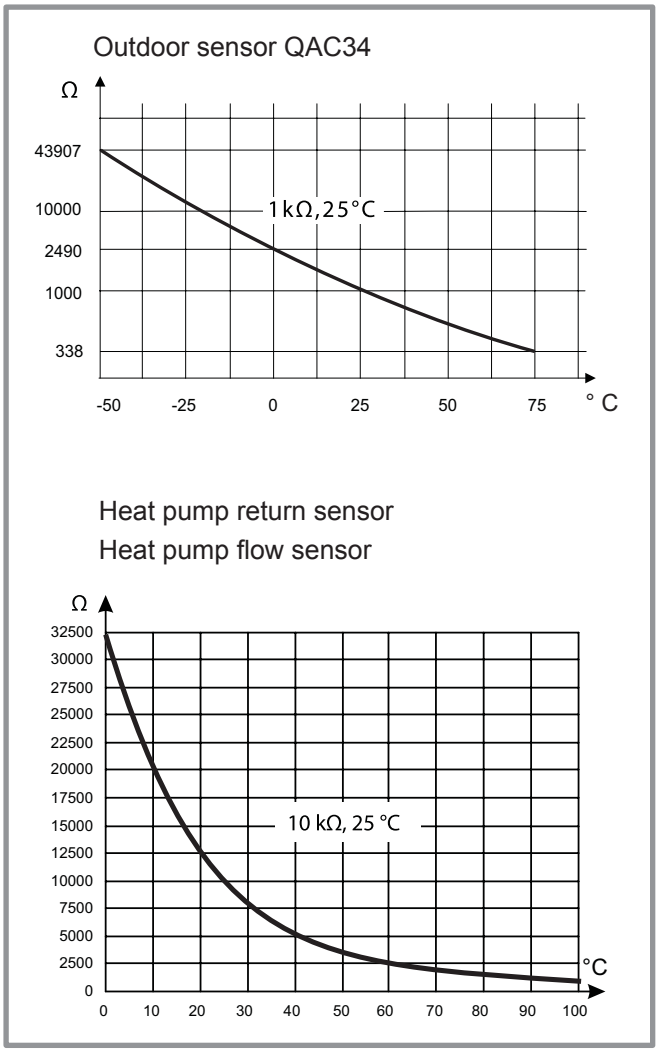


Figure 5 - Ohmic values of the sensors (Hydraulic module)

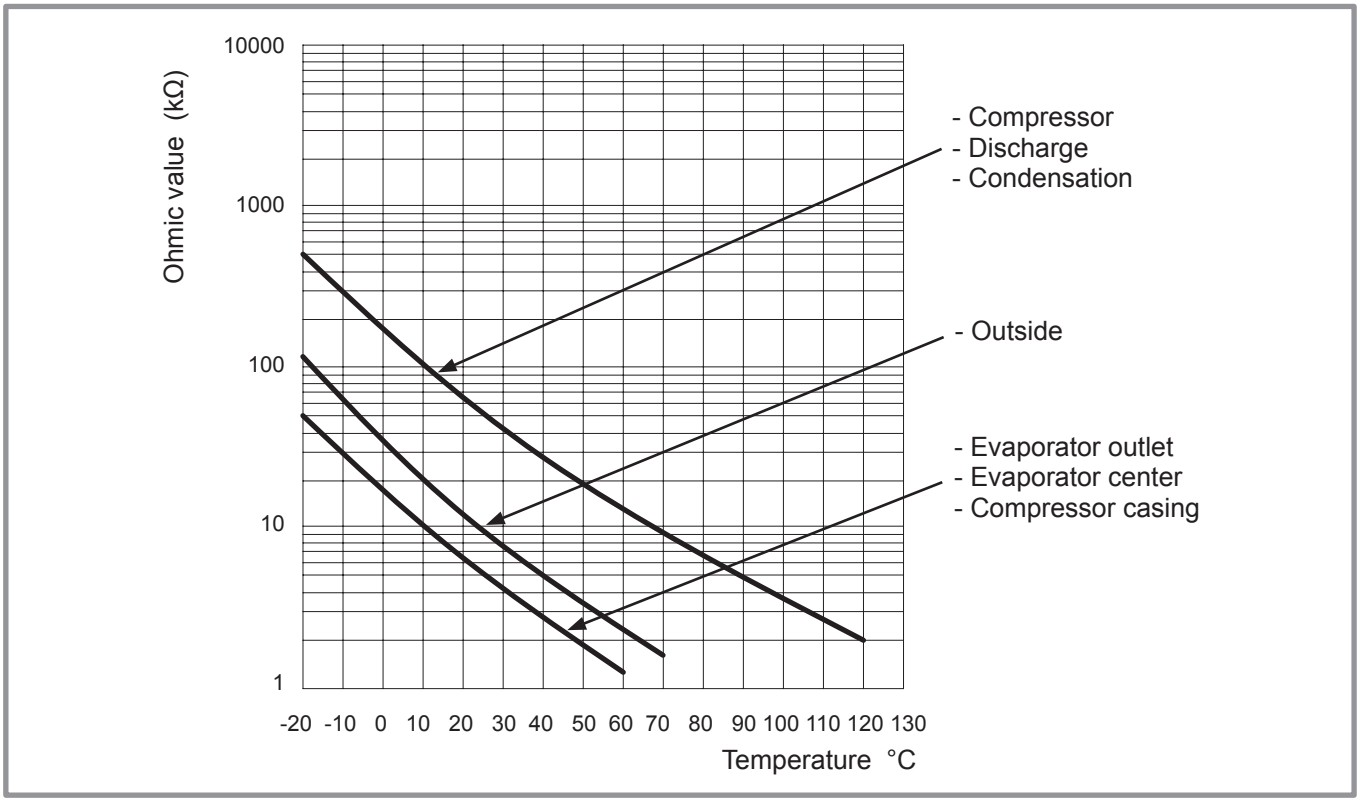
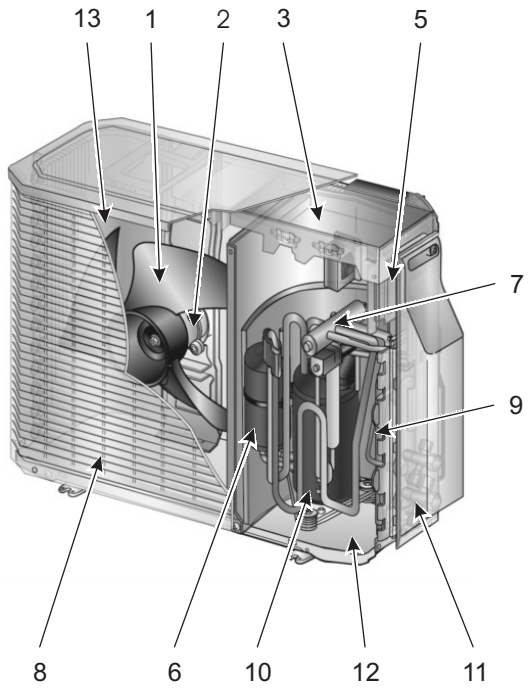


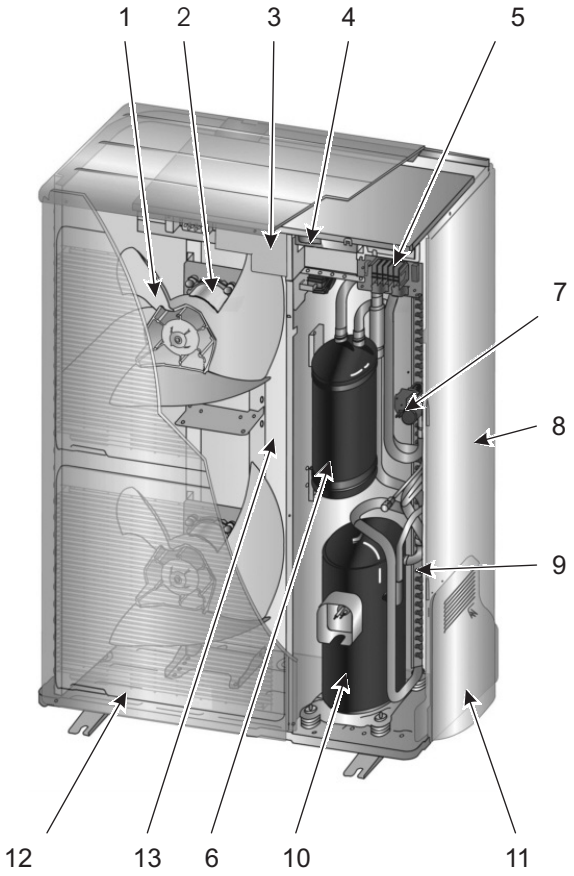
Figure 6 - Ohmic values of the sensors (outside unit)

1.5 Description

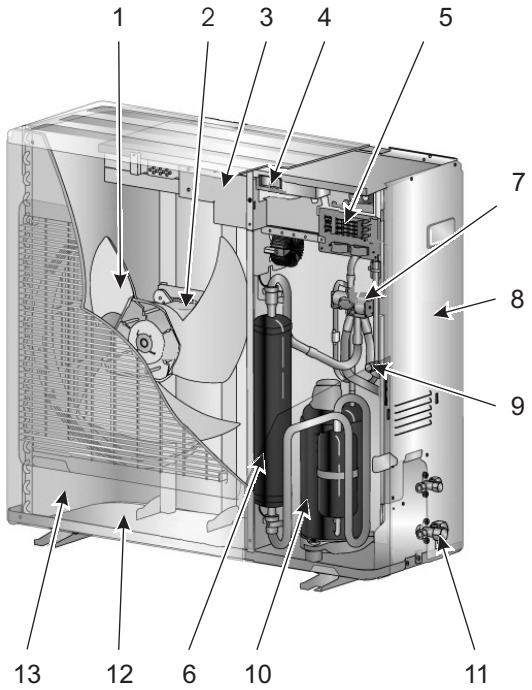
☞ **Model S5, S6, S8**



☞ **Model S13, S16**



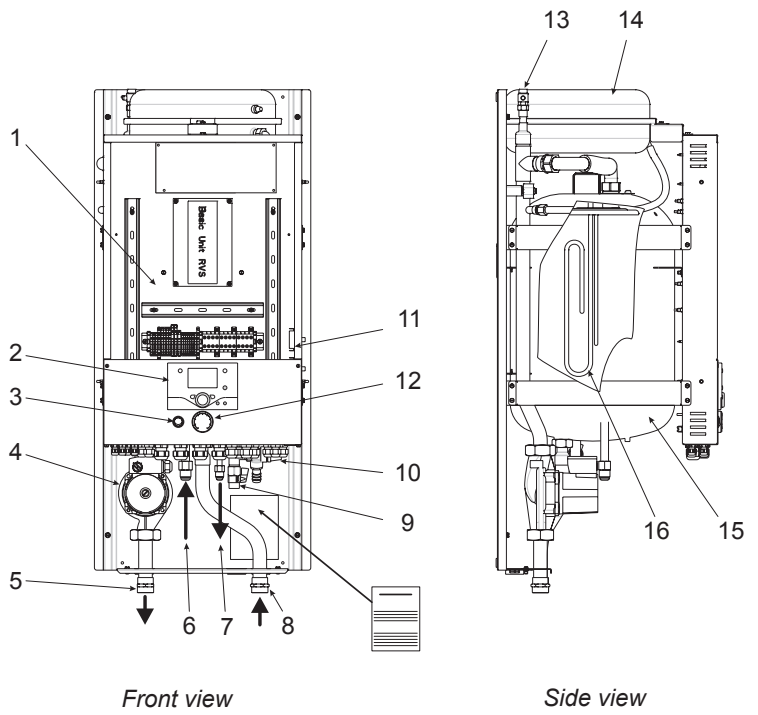
☞ **Model S10**



Legend :

1 - Low-noise, high-output coil.
2 - Electric variable speed "inverter" motor.
3 - "Inverter" control module.
4 - Vacuum start (pump down) and control light.
5 - Connection terminal blocks (power and interconnection).
6 - Refrigerant accumulator bottle.
7 - Cycle reversing valve.
8 - Anti-corrosion treated bodywork.
9 - Electronic expansion valve.
10 - Noise and temperature insulated "inverter" compressor.
11 - Refrigeration connection valves (flared connectors) with protective caps.
12 - Holding tank with condensate drain hole.
13 - High-performance exchange surface evaporator ; anti-corrosion treated hydrophilic aluminium fins and grooved copper tubes.

Figure 7 - Outside unit components



Legend :

1 - Electric box.
2 - Regulator / User interface.
3 - Start/stop switch.
4 - Heating circulation pump.
5 - Initial heating.
6 - Gas refrigeration connection.
7 - Fluid refrigeration connection.
8 - Heating return.
9 - Drain valve.
10 - Safety valve.
11 - Safety thermostat.
12 - Manometer.
13 - Manual drainer.
14 - Expansion vessel.
15 - Condenser.
16 - Electric back-ups.

Figure 8 - Hydraulic module components

1.6 Operating principle

The heat pump transmits the energy contained in the surrounding air into the dwelling to be heated.

The heat pump consists of four main elements, in which a refrigerant fluid (R410A) circulates.

- In the evaporator (rep. 13, figure 7, page 11) : The energy is taken from the surrounding air and is transmitted to the refrigerant. Because it has a low boiling point, it changes from the liquid state to the vapour state, even in cold weather (down to -15 °C outside temperature).
- In the compressor (rep. 10, figure 7 , page 11) : The vaporised refrigerant brought to high pressure and takes on more calories.
- In the condenser (rep. 15, figure 8, page 12) : The energy in the refrigerant is transmitted to the heating circuit. The refrigerant returns to liquid state.
- In the expansion valve (rep. 9, figure 7, page 11) : The liquefied refrigerant is brought back to low pressure and returns to its initial temperature and pressure.

The heat pump is equipped with a controller, which controls the internal temperature based on the outside temperature measurement and governed by the temperature control.

The room thermostat (optional) provides a corrective action for the temperature control.

The hydraulic module is equipped with an electric back-ups system, which is triggered to provide additional heat during the coldest periods.

Regulation functions

- The heating circuit's initial temperature is controlled by the temperature control.
- The power of the outside unit is modulated according to initial heating temperature via the "inverter" compressor.
- Control of the electric back-up heating.
- 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 electric back-ups are deactivated).
- The room thermostat* (optional) provides a corrective action for the temperature control.
- Control of a second heating circuit*.
- Domestic hot water: Heating time programme, control of the operation of the DHW circulation pump.
- Control of swimming pool heating*.
- Managing the cooling.

Protection functions

- Anti-legionella cycle for domestic hot water.

* 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: comfort temperature (line 1610 to 50 °C) and reduced temperature (line 1612 to 25 °C).

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 supplemented, if required, by electrical backup heating from the tank.

To ensure a DHW setting over 45°C, the electrical backup heating or the boiler must be left on.

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

If the contract concluded with the energy provider includes a subscription to day/night tariff, the electrical backup is subordinate to the supplier's power tariff and the comfort temperature may only be reached at night.

If no particular contract is concluded, the comfort temperature can be reached at any time, including during the day.

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 "comfort" is provided on the front of the user interface (see ref. 1, figure 39, page 31).

This DHW boost enables the DHW to be heated to the comfort temperature at any time during the day. The boost function is cancelled automatically when the demand for hot water has been met.

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.

• Fan convectors with integrated control system

Do not use a room sensor in the area.

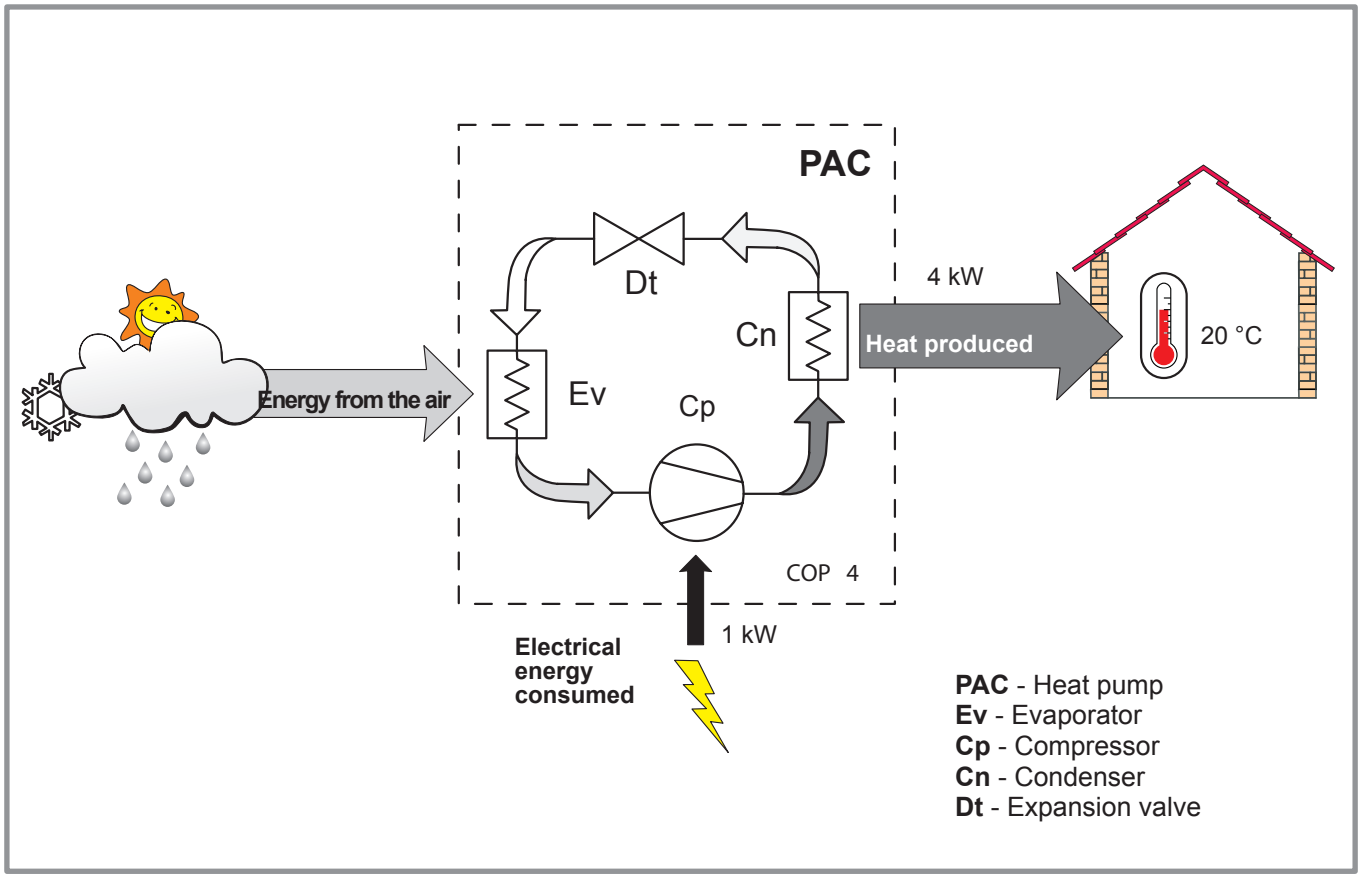


Figure 9 - Heat pump operating principle

2 Installation

2.1 Regulation installation and maintenance conditions

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

The legislation on the handling of refrigerants.

2.2 Unpacking and reservations

2.2.1 Receipt

Carefully check, in the carrier's presence, the general appearance of the appliances and check that the outside unit is not laid on its side or back.

In the case of any dispute, 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 Handling

The outside unit should not be laid on its side or back during transport.

Laying the unit down during transport is likely to damage the internal tubes and the compressor suspensions.

Any damage caused by transportation of the unit lying down is not covered by the warranty.

If necessary the outside unit may be tilted only during manual handling (to go through a door or use a staircase).

This operation must be conducted very carefully and the appliance must be immediately restored to upright position.

2.2.3 Accessories provided

Accessories provided with the outside unit (figure 10).

Accessories provided with the hydraulic module (figure 11).

2.3 Installation position

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

Choose the site of the outside unit and the hydraulic module after discussion with the customer.

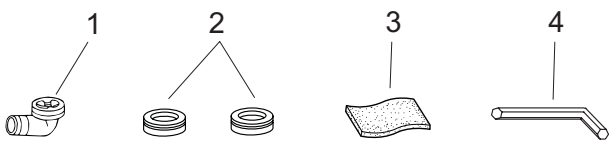
Observe the maximum and minimum distances between the hydraulic module and the outside unit (figure 13); the guarantee of the performances and the system's service life depend on this.

2.4 Installation of the outside unit

2.4.1 Installation precautions

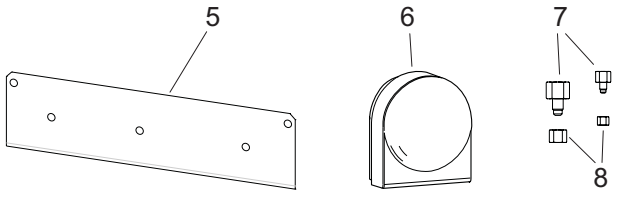
☞ **The outside unit must only be installed outside (outdoors). If a shelter is required, it must have broad openings on the 4 walls and observe the installation clearances (figure 12).**

- Choose a site that is preferably sunny and sheltered from strong cold predominant winds (mistral, tramontana, etc…).
- The unit must be easily accessible for future installation and maintenance work (figure 12).
- Ensure that it is possible to make the connections to the hydraulic module easily.
- The outside unit is able to withstand bad weather but avoid installing in a position where it is likely to be exposed to significant dirt or flowing water (under a defective gutter for example).



1	Elbow	For draining away the condensates
2	Plug (x 2) (Depending on the model)	
3	Flexible insulation plate	For filling the empty space at the input to the interconnection cable
4	Hex / Allen key	To open the valves

Figure 10 - Accessories provided with the outside unit



5	Bracket	To secure the hydraulic model
6	Outdoor sensor	To monitor the outside temp
7	Adaptater 1/2" - 5/8" and/or 1/4" - 3/8"	To connect the flared connection and the hydraulic model
8	Nut 1/2" and/or 1/4"	

Figure 11 - Accessories provided with the hydraulic module

- Water may drain away from the outside unit when it is operating. Do not install the appliance on a paved terrace; choose a well-drained place (e.g. gravel or sand). If the installation is in an area where the temperature can be lower than 0°C for a long period, check that the presence of ice does not present any danger. A drainage pipe can also be connected to outside unit (see para 2.4.3, page 16).
- Nothing should obstruct the air circulation through the evaporator and from the fan (figure 12).
- Keep the outside unit away from heat sources and inflammable products.
- Make sure the appliance not disturb the surrounding area or users (noise level, draught generated, low temperature of the air being blown out, with the risk of freezing plants in its path).
- The surface supporting the outside unit should :

- be permeable (soil, gravel, etc),
- support its weight easily,
- provide a solid fixing and
- not transmit any vibration to the dwelling.

Anti-vibratory blocks are available, please consult your retailer.

- The wall brackets is strongly discouraged due to vibration.

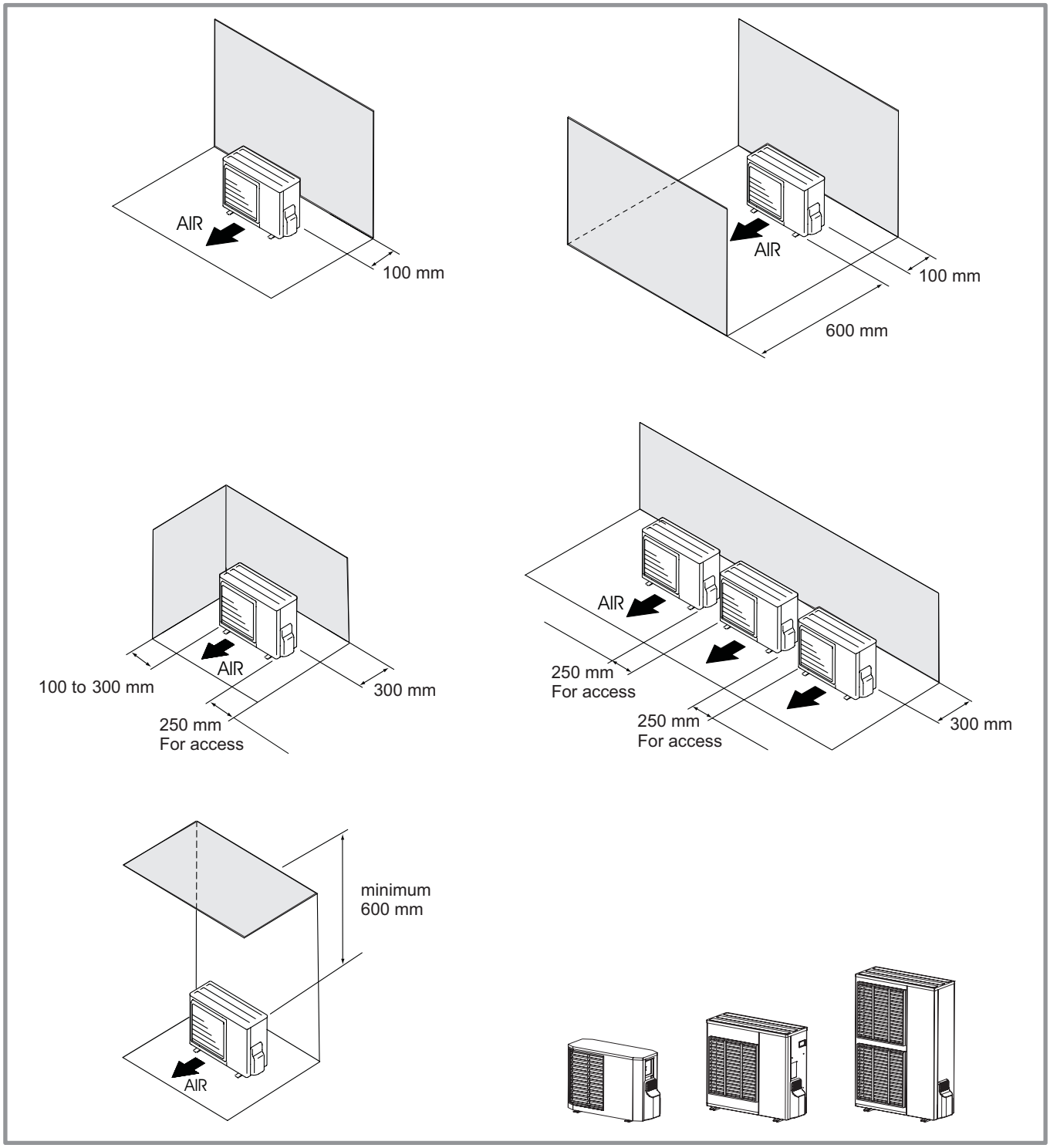
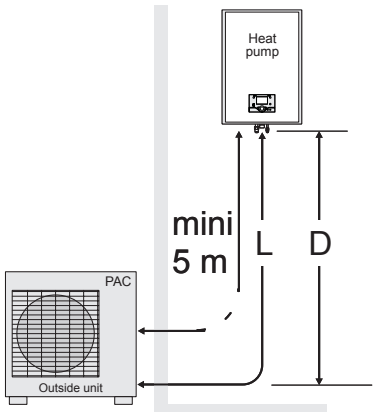


Figure 12 - Minimum installation clearances around outside unit (all models)



Heat pump Model	Gas and fluid conduits				
	Gas	Fluid	Minimum length (L)	*Maximum length (L)	**Maxi level difference (D)
S5 S6	1/2"	1/4"	5	15	15
S8	5/8"				20
S10 S13 S16	5/8"	3/8"	5	20	30

* : Without additional charge of R410A.

** : Taking into account the possible additional load of refrigeration fluid R410A (see § 2.7.3, page 22).

Figure 13 - Pipe diameters (in inches) and permissible lengths (in metres)

2.4.2 Outside unit positioning

The outside unit must be raised at least 50 mm above ground level. In areas prone to snow, this height should be increased but should not exceed 1,5 m (figure 14).

- Fasten the outside unit by means of screws and rubber tightening or toothed lock washers to avoid their coming loose.

2.4.3 Condensate drain hose

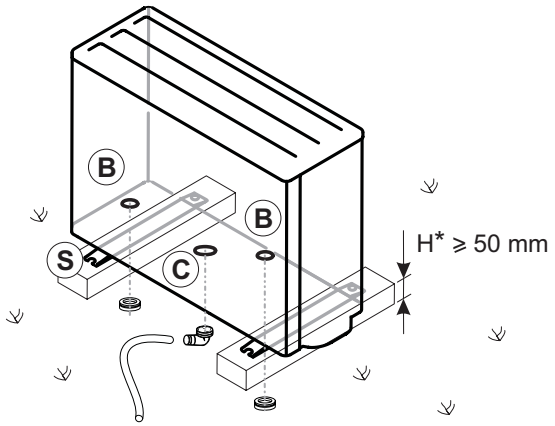
(see figure 14).

If the use of a discharge pipe is imperative :

- Use the elbow provided (**C**) to connect a 16mm diameter hose for draining away the condensate.
- Use the stopper or stoppers provided (**B**) to block the opening of the condensate tank.

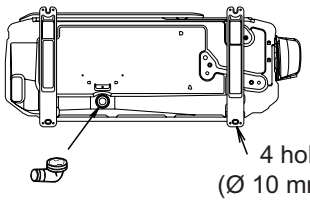
Allow for the condensate to flow away under the force of gravity (waste water, rain water, gravel bed).

☞ **If the installation is made in an area where the temperature can be lower than 0°C for a long period, provide the drain pipe with a trace resistance to avoid it icing up. The trace resistance must heat not only the pipe but also the bottom of the appliance's condensate collection tank.**



* In regions subject to frequent snow, (H) must be greater than the average snow layer .

Depending on the model



Depending on the model

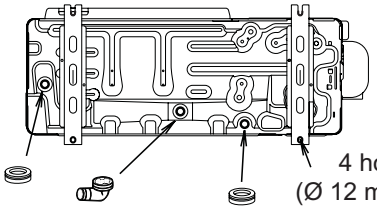


Figure 14 - Positioning of the outside unit, draining away the condensate

2.5 Installing the hydraulic module

2.5.1 Installation precautions

- The room in which the appliance operates must comply with the prevailing regulations.
- To facilitate maintenance and to allow access to the various components, we recommend that you provide sufficient space all around the hydraulic module (figure 15).
- Be careful not to bring inflammable gas near to the heat pump during its installation, in particular when it requires brazing.

The appliances are not fireproof and should not therefore be installed in a potentially explosive atmosphere.

2.5.2 Positioning the hydraulic module

- **1**, **2**, **3** : Remove the front panel (2 screws **A**, figure 16).
- **4**, **5** : Remove the sides (4 screws **B**, figure 17).
- Fix the support solidly (3 screws and plugs) to a flat, hard-wearing wall (not a light partition) ensuring that it is correctly levelled.
- Hook the appliance onto its support.
- Refit the sides.
- Refit the front facing.

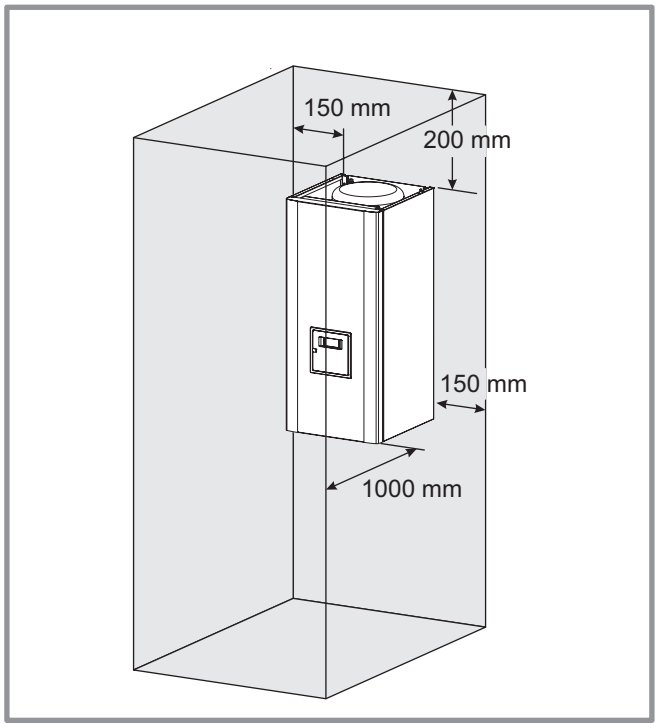


Figure 15 - Minimum installation clearances around the hydraulic module and distances to the combustible partitions

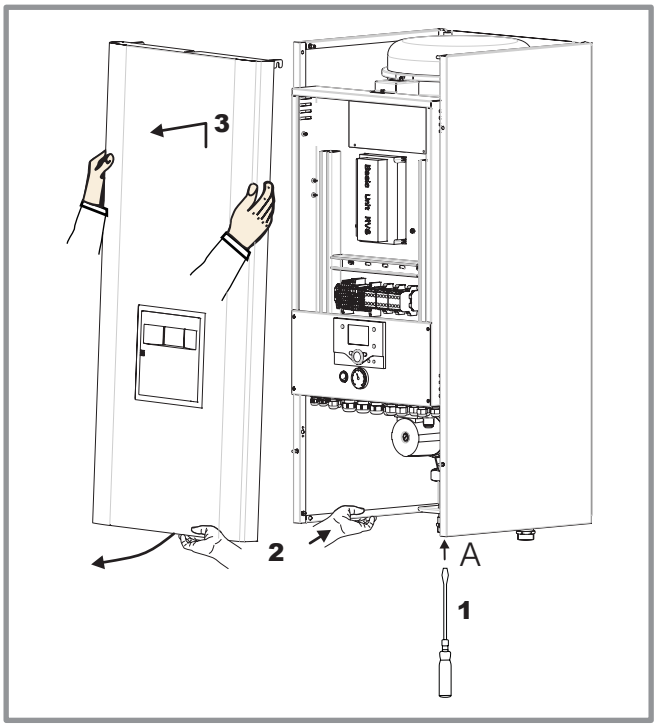


Figure 16 - Removing the front facing

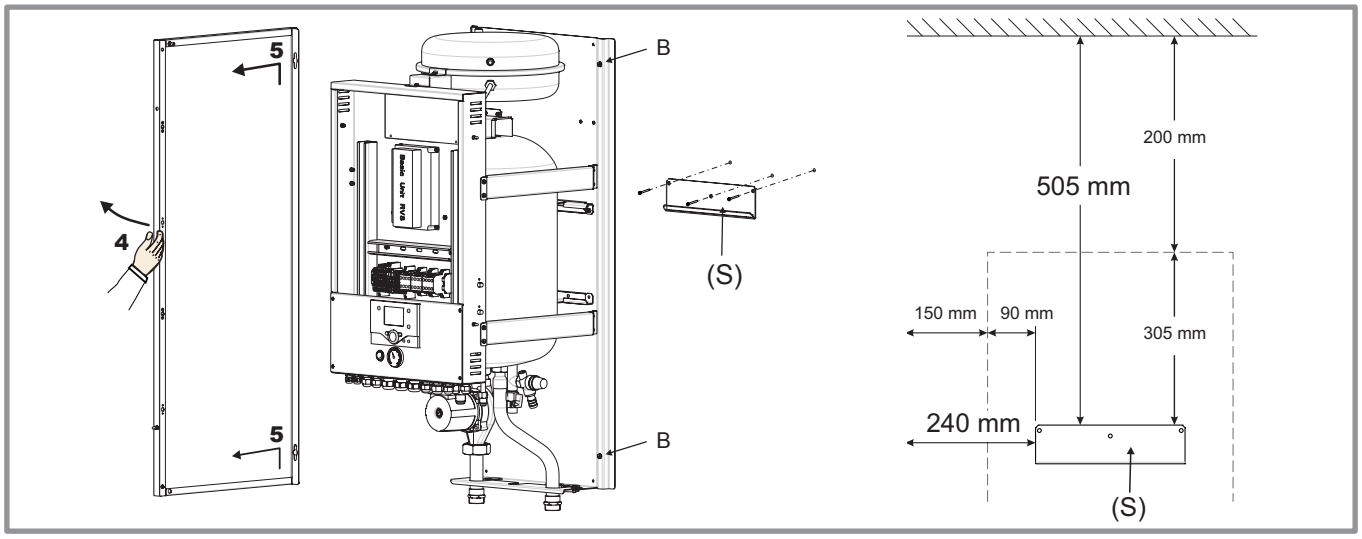


Figure 17 - Removing the sides and fixing the support (S)

2.6 Refrigeration connections

☞ **This appliance uses refrigerant R410A.**

Comply with the legislation for handling refrigeration fluids.

2.6.1 Rules and precautions

• After every intervention on the refrigeration circuit and before final connection, take care to replace the plugs in order to avoid any pollution from the refrigeration circuit.

• ***Tools***

- Set of manometers with hoses exclusively reserved for HFCs (Hydrofluorocarbons).
- Vacuum pump specially for HFCs.
- Provision on using tools that have been in contact with HCFCs (R22 for example) or CFCs.
- Use of a traditional vacuum pump is authorized if, and only if, it is fitted with a non-return valve on the suction side.

The manufacturer declines any liability with regard to the guarantee if the above instructions are not observed.

• ***Flared connections***

☞ **Lubrication with mineral oil (for R12, R22) is forbidden.**

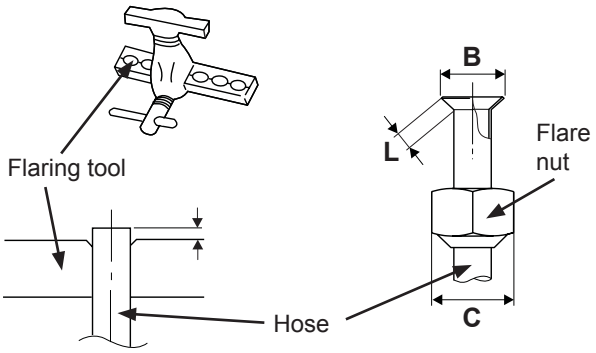
- Only lubricate with polyolester refrigeration oil (POE). If POE is not available, fit without lubrication.

• ***Brazing on the refrigeration circuit (if necessary)***

- Silver brazing (40% minimum recommended).
- Brazing only under dry nitrogen internal flux.

• To eliminate any filings in the pipes, use dry nitrogen to avoid introducing any humidity that may adversely affect the appliances operation. In general, take every precaution to avoid humidity penetrating into the appliance.

• Use pipe insulators resistant to temperatures over 120°C. In addition if the humidity level in areas where the refrigeration pipes are installed is expected to exceed 70%, protect the pipes with pipe insulators. Use an insulating material thicker than 15mm if the humidity level is 70~80%, and an insulating material thicker than 20mm if the humidity exceeds 80%. If the recommended thicknesses are not observed under the conditions described above, condensation will form on the surface of the insulation material. Lastly, take care to use pipe insulators whose thermal conductivity is 0.045 W/mK or less when the temperature is 20°C. The insulation must be impermeable to resist the passage of steam during the defrosting cycles (fibreglass wool is prohibited).



ø Hose	dimensions in mm		
	L	B $^{0}/_{-0,4}$	C
6,35 (1/4")	1,8 à 2	9,1	17
9,52 (3/8")	2,5 à 2,7	13,2	22
12,7 (1/2")	2,6 à 2,9	16,6	26
15,88 (5/8")	2,9 à 3,1	19,7	29

Figure 18 - Flaring for flare connections

2.6.2 Refrigeration connections

The outside unit must be connected to the hydraulic module with copper pipes and connections (refrigeration quality), insulated separately.

Comply with the pipe diameters and the permitted pipe lengths (figure 13).

The minimum length of the refrigeration connections is 5m for correct operation (except model S5 and S6, see figure 13).

The appliance will be excluded from guarantee if it is used with refrigeration connections less than 5m long (models S8, S10, S13, S16).

Manipulate the pipes and take them through walls with protective plugs in place.

If the distance between the outside unit and the hydraulic module exceeds the length of the maximum conduits indicated in the table, an additional charge of R410A must be loaded.

The quantity of R410A added must be adapted to the length of the refrigeration circuit in order to the heat pump's performance without damaging the compressor (figure 23).

2.6.3 Creating the flarings

- Cut the pipe to an appropriate length with a pipe-cutter without deforming it.
- Carefully deburr it, holding the pipe towards the bottom to avoid introducing filings into the pipe.
- Remove the flared connection nut situated on the valve to be connected and slip the pipe into the nut.
- Proceed to flare, letting the pipe overflow the flaring tool.
- After flaring, check the condition of the working radius (**L**). This must not show any scratch or trace of any fracturing. Also check the dimension (**B**).

2.6.4 Shaping the refrigeration pipes

The refrigeration pipes must be shaped only on a bending machine or with a bending spring in order to avoid any risk of crushing or breaking them.

☞ **Warning**

- Remove the insulation material locally to bend the pipes.
- Do not bend the copper to any angle over 90°.
- Never bend pipes more than 3 times in the same position otherwise traces of fracturing may appear (from strain-hardening the metal).

2.6.5 Connecting the flared connections

☞ **The small pipe must always be connected before the large one.**

☞ **Take particular care positioning the tube opposite its connector so as not to risk damaging the threads. A carefully aligned connector can be fitted easily by hand without much force being required.**

☞ **The refrigeration circuit is very sensitive to dust and humidity: check that the area around the connection is clean and dry before removing the plugs protecting the refrigeration connectors.**

		Outside unit connections	*Diameter of refrigeration connections*	*Male-female adapter (reduction)*	*Hydraulic module connections*
Model S5 Model S6	Gas	1/2"	(D1) 1/2"	(R1) 1/2" - 5/8"	5/8"
	Fluid	1/4"	(D2) 1/4"	(R2) 1/4" - 3/8"	3/8"
Model S8	Gas	5/8"	(D1) 5/8"	none	5/8"
	Fluid	1/4"	(D2) 1/4"	(R2) 1/4" - 3/8"	3/8"
Model S10 Model S13 Model S16	Gas	5/8"	(D1) 5/8"	none	5/8"
	Fluid	3/8"	(D2) 3/8"	none	3/8"

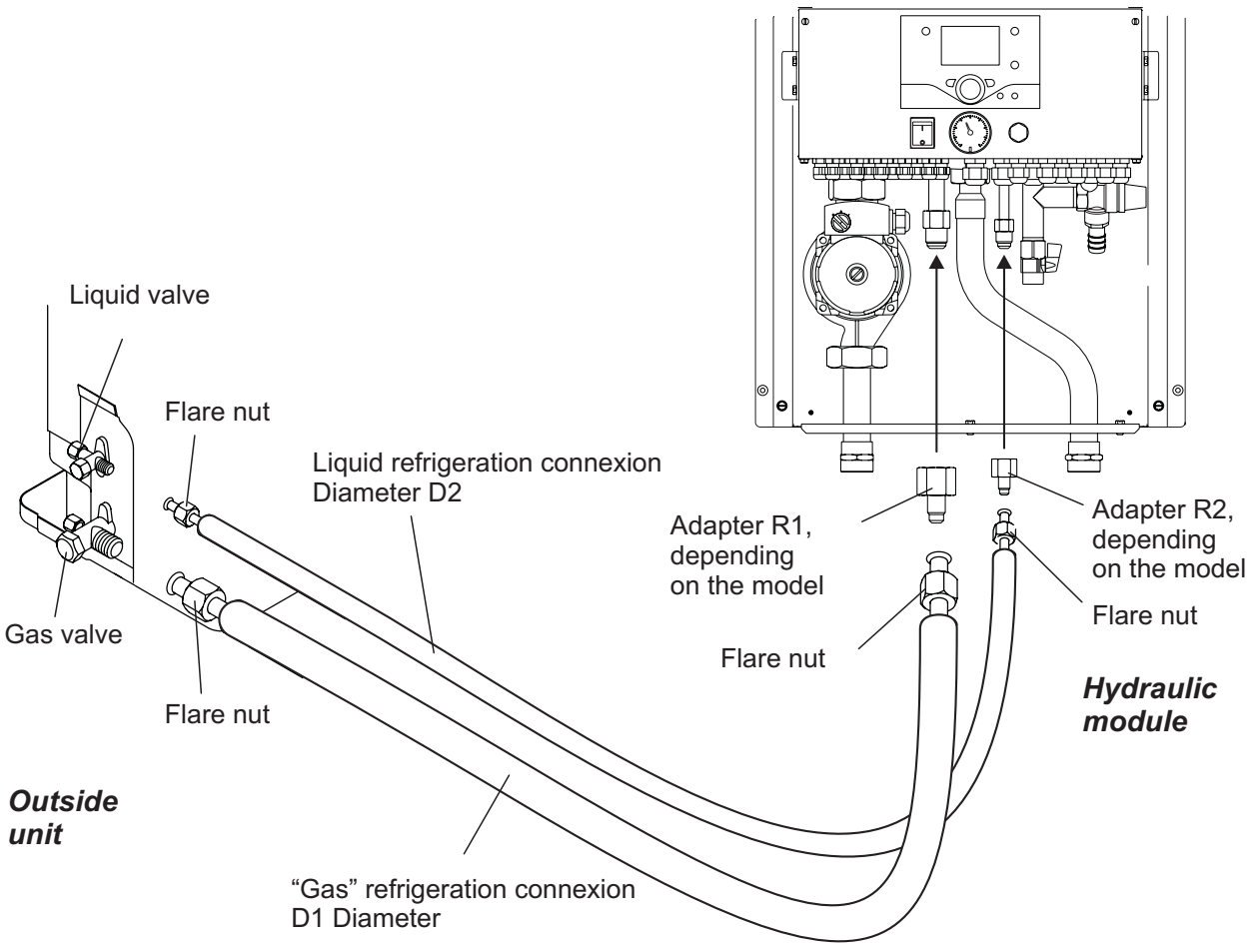
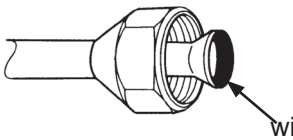


Figure 19 - Connecting the flared connections

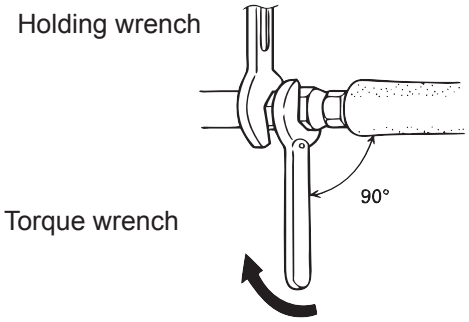
- Depending on the case, connect an adapter (reducer) 1/4''- 3/8'' or 1/2''- 5/8'' (see figure 19).
- Remove the plugs from the pipes and the refrigeration connections.
- Present the pipe to the flared connector and screw the nut by hand while holding the connector with a wrench until contact.
- Comply with the recommended tightening torques (see figure 21).



Coat the flared surface with **POE refrigeration oil.**

Do not use mineral oil.

Figure 20 - Prevention of gas leaks



Designation	*Tightening torque*
Flare nut 6,35 mm (1/4")	14 to 18 Nm
Flare nut 9,52 mm (3/8")	33 to 42 Nm
Flare nut 12,7 mm (1/2")	50 to 62 Nm
Flare nut 15,88 mm (5/8")	63 to 77 Nm
Plug (A) 3/8", 1/4"	20 to 25 Nm
Plug (A) 1/2"	25 to 30 Nm
Plug (A) 5/8"	30 to 35 Nm
Plug (B) 3/8", 5/8"	10 to 12 Nm
Plug (B) 1/2", 1/4"	12,5 to 16 Nm

Figure 21 - Tightening torque

2.7 Filling the installation with gas

☞ **This operation is reserved for installers familiar with the legislation for handling refrigeration fluids.**

☞ **Creating a vacuum with a vacuum pump is essential.**

☞ **Never use equipment used beforehand with any refrigerant other than a HFC.**

2.7.1 Example of commissioning procedure

(see figure 22).

• First seal test

- Remove the protective plugs (**B**) from the charging hole (Schrader) in the gas valve (large diameter).
- Connect the hose to the manifold,
- Connect the bottle of nitrogen to the manifold,
- Pressurize the refrigerant circuit to 10 bar with nitrogen.
- Leave the circuit under pressure for half a day.
- Check that the pressure has not fallen,
- Look for and repair any leaks, and then recommence the test.
- Once the pressure has remained steady for a few hours, empty the nitrogen.

• Extraction under vacuum and gassing

- Connect the vacuum pump to the manifold.
- Create a vacuum until the residual pressure in the circuit falls below 0,01 bar.
- Let the pump continue to operate for another 30 minutes after reaching the vacuum.
- Close the blue valve on the set of manometers and then stop the vacuum pump **without disconnecting any of the hoses in place**.
- Leave for at least half a day.

  If after this time the pressure has risen, there is a leak. Find and repair the leak and then recommence vacuum testing.

  When the pressure remains steady for a few hours after stopping the vacuum pump, the circuit can be considered airtight.
- Remove the access plugs (**A**) from the valve controls.

☞ **If an additional charge is requires, add the additional charge before filling the hydraulic unit with gas. Please refer to the section "Additional charge", page 22.**

- First of all fully open the small valve and then the large one using a hex key (counterclockwise direction) without forcing excessively against the stop.
- Remove the blue hose rapidly.
- Refit the 2 plugs and tighten them to the recommended tightening torque. (see figure 21).

The outdoor unit does not contain any additional refrigerant, enabling the installation to be purged.

Flushing is strictly forbidden.

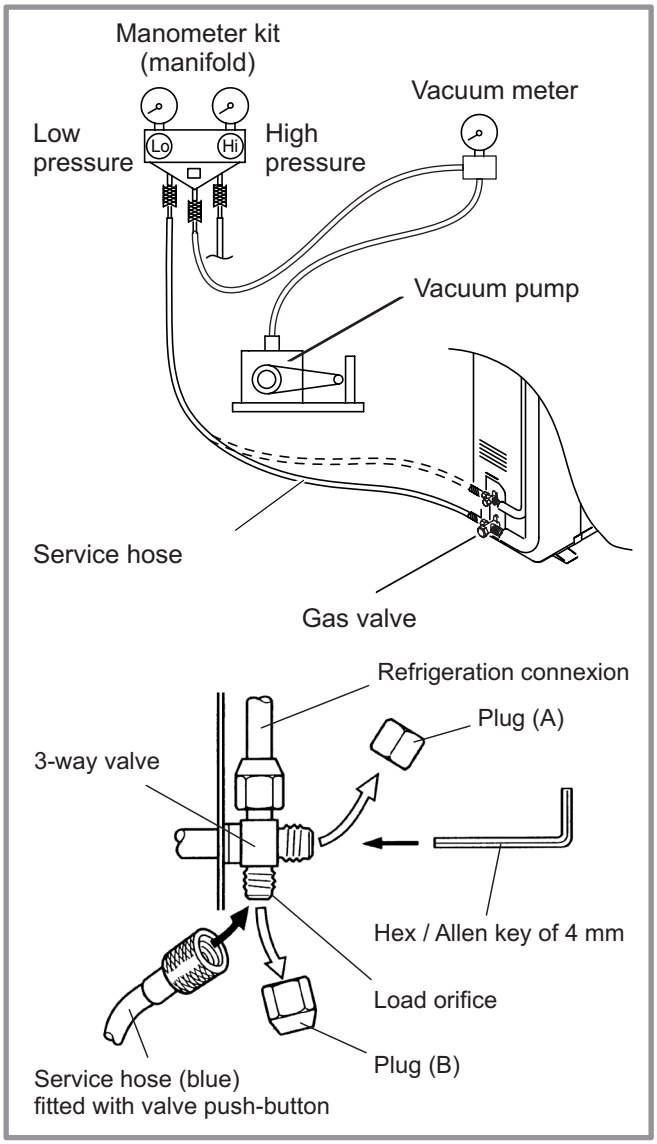


Figure 22 - Extraction under vacuum and gassing

2.7.2 Sealing test

Once the refrigeration circuit has been gassed as described above, check that all the refrigeration connectors are gas-tight:

6 connectors for models S5 and S6, 5 connectors for model S8 and 4 connectors for models S10, S13 and S16.

The sealing test must be performed with an approved gas detector. If the flarings have been made correctly, there should be no leaks.

☞ **If there is a leak:**

- Bring the gas into the outdoor unit (pump down),
- Make the connection again,
- Repeat the commissioning procedure.

Model S5 - Model S6	*20 g of R410A per additional meter*	
Length of the connections	15 m	20 m
Additional charge	none	100 g

Model S8	*20 g of R410A per additional meter*			
Length of the connections	15 m	20 m	25 m	30 m
Additional charge	none	100 g	200 g	300 g

Model S10	*40 g of R410A per additional meter*			
Length of the connections	15 m	20 m	30 m	40 m
Additional charge	none	200 g	600 g	1000 g

Model S13	*50 g of R410A per additional meter*		
Length of the connections	20 m	30 m	40 m
Additional charge	none	500 g	1000 g

Model S16	*40 g of R410A per additional meter*		
Length of the connections	20 m	30 m	40 m
Additional charge	none	400 g	800 g

Figure 23 - Additional charge

2.7.3 Additional charge

The charge in the outside units corresponds to the maximum distances between the outside unit and the hydraulic module defined in figure 13. If the distances are greater, an additional charge of R410A is required. The additional charge depends on the distance between the outside unit and the hydraulic module for each type of appliance (figure 23). The additional charge of R410A must necessarily be made by an approved refrigeration engineer.

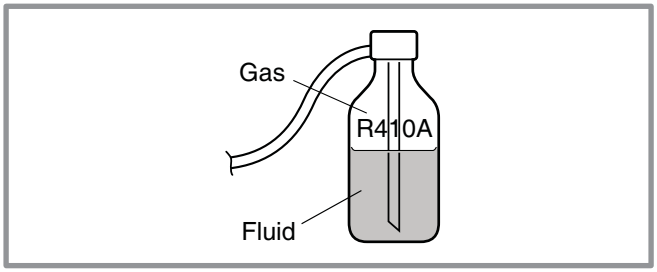


Figure 24 - Gas bottle R410A

• Example for a heat pump model S16

An outside unit 32m away from the hydraulic module will require an additional charge of :

Additional charge = (32 - 20) x 40 = 480 g.

The charge must be introduced after creating the vacuum and before the hydraulic module is filled with gas, as follows :

- Disconnect the vacuum pump (yellow hose) and connect a bottle of R410A instead **in the fluid extraction position**.
- Open the bottle's valve.
- Bleed the yellow hose by loosening it slightly on the manifold side.
- Place the bottle on scales with a minimum accuracy of 10g. Note the weight.
- Carefully open the blue valve slightly and check the value shown on the scales.
- As soon as the value displayed has dropped by the value for the calculated additional charge, close the bottle and disconnect it.
- Then rapidly disconnect the hose connected to the appliance.
- Proceed to fill the hydraulic module with gas.

☞ **Warning**

- Only use R410A !
- Only use tools suitable for R410A (set of manometers).
- Always charge in the fluid phase.
- Never exceed the length or the maximum difference in level.

2.8 Connecting the heating circuit hydraulically

2.8.1 General

The connection must comply with good trade practice according to local building regulations.

The heating circulating pump is built into the hydraulic module.

Connect the central heating pipes to the hydraulic module, complying with the direction of circulation.

The diameter of the pipes between the hydraulic module and the heating collector must be at least 1 inch (26x34mm).

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

Tightening torque : 15 to 35 N.m.

Use union connectors to facilitate removing the hydraulic module.

Preferentially use connection hoses to avoid transmitting noise and vibrations to the building.

Connect the drains from the drain valve and the safety valve to the main sewer system.

Reminder: Seal everything when fitting in accordance with prevailing trade practice for plumbing work :

- 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. If you are using a glycol/water mix, provide for an annual check on the quantity of glycol.

In certain installations, the presence of different metals can cause corrosion problems; the formation of metal particles and sludge in the hydraulic circuit is then seen.

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

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

2.8.2 Rinsing out the installation

Before connecting the hydraulic module to the installation, 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.).

In the case of an old installation, provide a sufficiently large decanting pot with a drain on the return from the boiler and at the lowest point in the system in order to collect and remove the impurities.

Add an alkaline product to the water and a dispersant.

Rinse the installation several times before filling it definitively.

2.8.3 Filling and purging the installation

Check the pipe fixings, the tightness of the connectors and the stability of the hydraulic module.

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

Proceed to fill the installation.

Do not operate the circulating pump while filling. Open all the drain valves in the installation and the bleed valve for the hydraulic module to remove the air contained in the conduits.

Close the drain and bleed valves and add water until the pressure in the hydraulic circuit reaches 1.5 bar.

Check that the hydraulic circuit has been purged correctly.

Check that there are no leaks and that the circulating pumps are not seized (if need be, release them).

After the "Start-up" stage (see page 30), once the machine has started, purge the hydraulic module again (2 liters of water).

2.8.4 Connecting the Fan convector circuit

Heat pump > 11 kW: It must be installed on this circuit a buffer tank (minimum capacity: 50 liters).

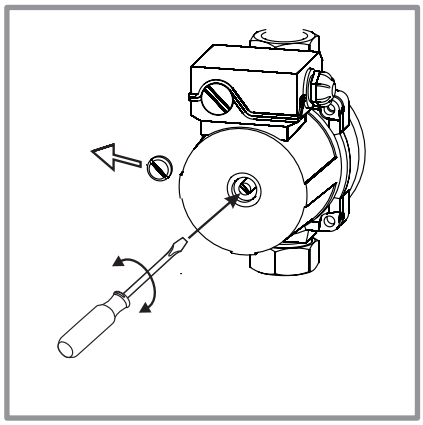


Figure 25 - Release of the circulation pump

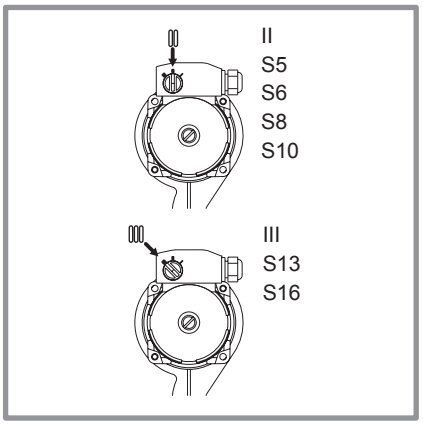


Figure 26 - Recommended circulation speed (for radiator)

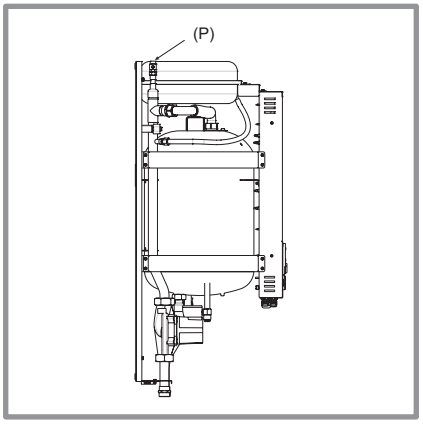


Figure 27 - Hydraulic module bleeder valve

2.9 Electrical connections

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

2.9.1 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 provider must be sufficient not only to cover the heat pump's 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 provider the value subscribed to in your contract.

Never use a socket for the power supply.

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 for the outside unit, curve C for the electric heating and domestic water back-ups (see tables on page 25).

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

This appliance is intended to operate under a nominal voltage of 230V +/- 10%, 50 Hz.

2.9.2 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 perfectly. Unsufficient tightening can cause overheating, leading to breakdown or even a fire.

Use cable clamps to prevent the conductors from being disconnected accidentally.

Connection to Earth and Earth bonding continuity are essential.

• Connecting to screw terminals

Rigid wires (**A**, figure 28).

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

- Always select a wire that complies with the prevailing standards.
- Strip away around 25 mm from the end of the wire.
- With round end pliers, form a loop with a diameter corresponding to the tightening screws on the terminal.
- Tighten the terminal screw firmly onto the loop created.

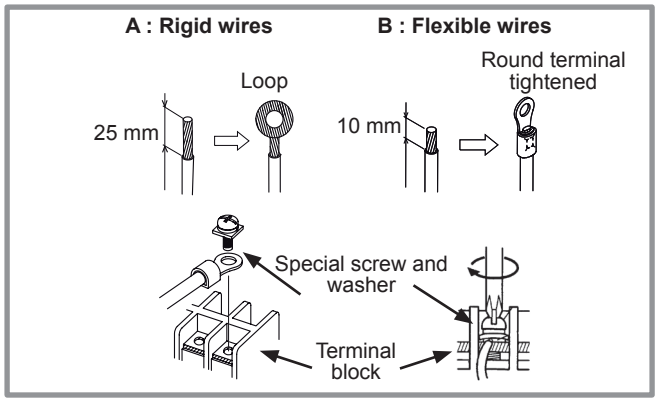


Figure 28 - Outside unit terminal block

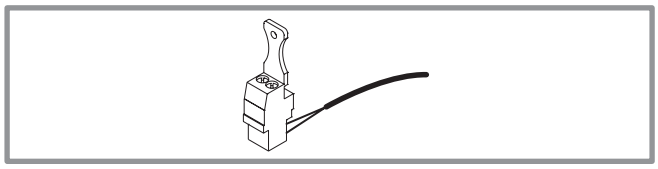


Figure 29 - Regulation connector

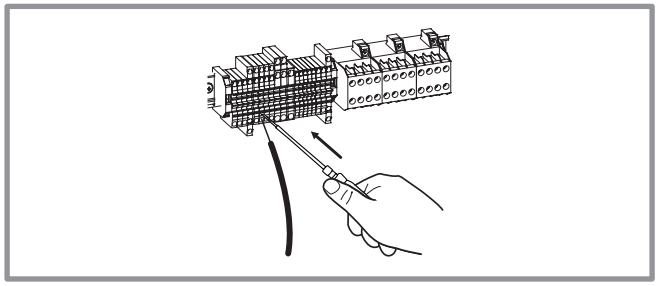


Figure 30 - Hydraulic module terminal block

Flexible wires (**B**, figure 28)

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

- Strip away around 10mm from the end of the wire.
- With tightening pliers, fit a round tag with a diameter corresponding to the terminal screw's diameter on the end of the wire.
- Tighten the tag firmly onto the terminal with a screwdriver.
- We strongly advise against using flexible wires without round tags.
- Always protect the cables when passing them through cable clamps with PVC protective conduit 0.5 to 1mm thick.

• Connecting to regulation cards

- Remove the corresponding connector and make the connection.

• Connecting to spring terminals (figure 30)

Rigid wires

- Strip away around 10mm 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.

2.9.3 Overview of all the electrical connections

The wiring diagram for the hydraulic module is shown in detail on page 56.

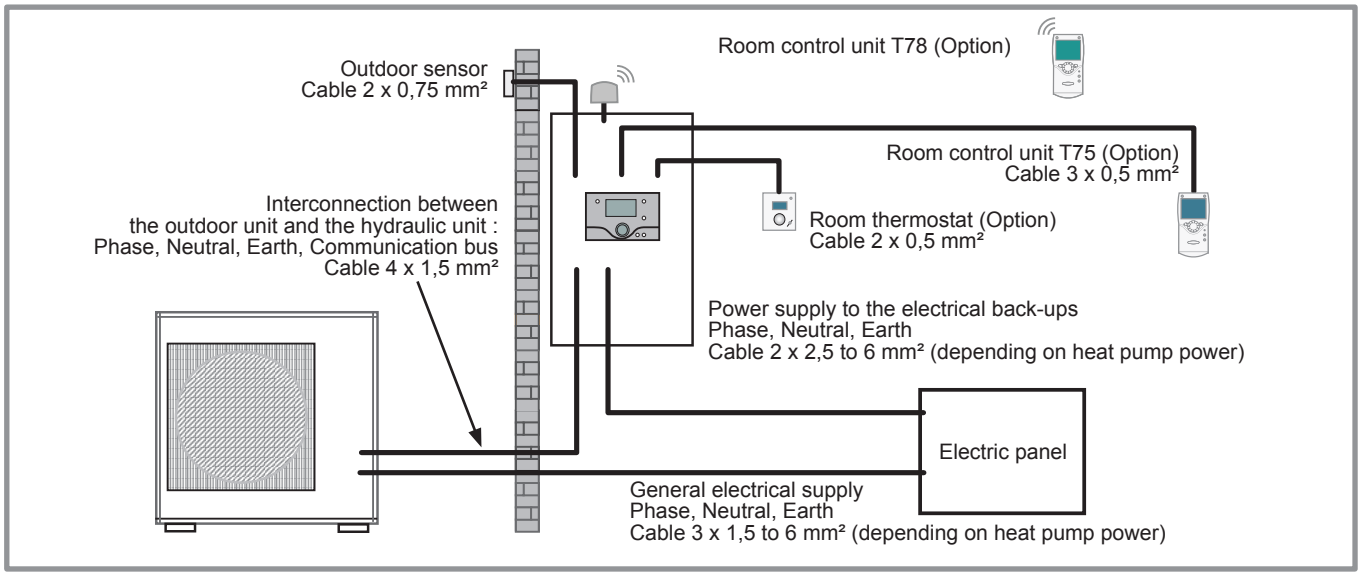


Figure 31 - Overall layout of the electrical connections for a simple installation (1 heating circuit)

2.9.4 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 correspond to the requirements and comply with the prevailing standards.

• Power supply to outside unit

Heat pump		*Electricity supply 230 V - 50 Hz*	
Model	***Maximum power absorption***	***Cable connection (Phase, Neutral, Earth)***	***Curve D circuit breaker size***
S5, S6	3450 W	3 x 1,5 mm²	16 A
S8	3450 W	3 x 2,5 mm²	16 A
S10	3910 W	3 x 2,5 mm²	20 A
S13	4600 W	3 x 4 mm²	25 A
S16	5980 W	3 x 6 mm²	32 A

• Interconnection between the outside unit and the hydraulic module. The hydraulic module is powered by the outside unit by means of a 4 x 1.5 mm² cable (Phase, Neutral, Earth, Communication bus).

• Power supply to the electrical back-ups

The hydraulic module contains two stages of electrical back-ups installed in a heat exchange cylinder.

Heat pump	*Electric back-ups*		*Power supply to the electrical back-ups*	
Model	***Power***	***Nominal intensity***	***Cable connection (Phase, Neutral, Earth)***	***Curve C circuit breaker size***
S5, S6, S8	2 x 1,5 kW	13 A	3 x 2,5 mm²	16 A
S10, S13, S16	2 x 3 kW	26,1 A	3 x 6 mm²	32 A

• 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.

2.9.5 Electrical connections on outside unit side

Access to the connection terminals.

• Model S5, S6, S8.

- Remove the cap (figure 32).

• Model S10, S13, S16.

- Remove the front panel.
- Remove the cap (figure 34).

Make the connections in accordance with the diagram(s) (figure 33).

Use cable clamps to prevent the conductors from being disconnected accidentally.

Fill in the space where the cables enter the outside unit with the insulating plate (figure 35).

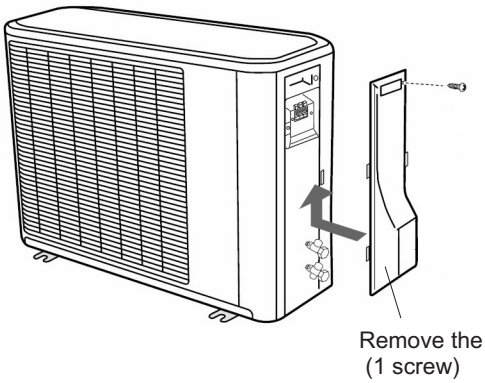


Figure 32 - Access to outside unit's terminal block (model S5, S6, S8)

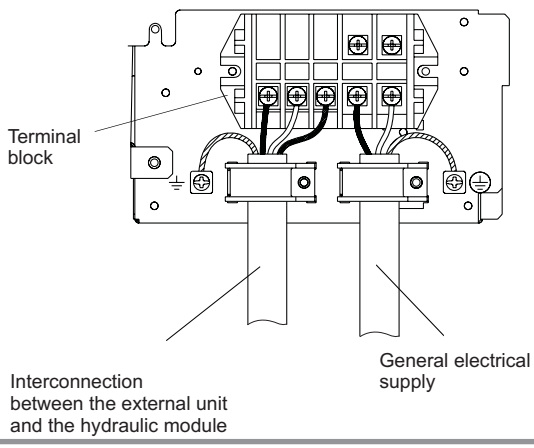


Figure 33 - Connections to outside unit's terminal block

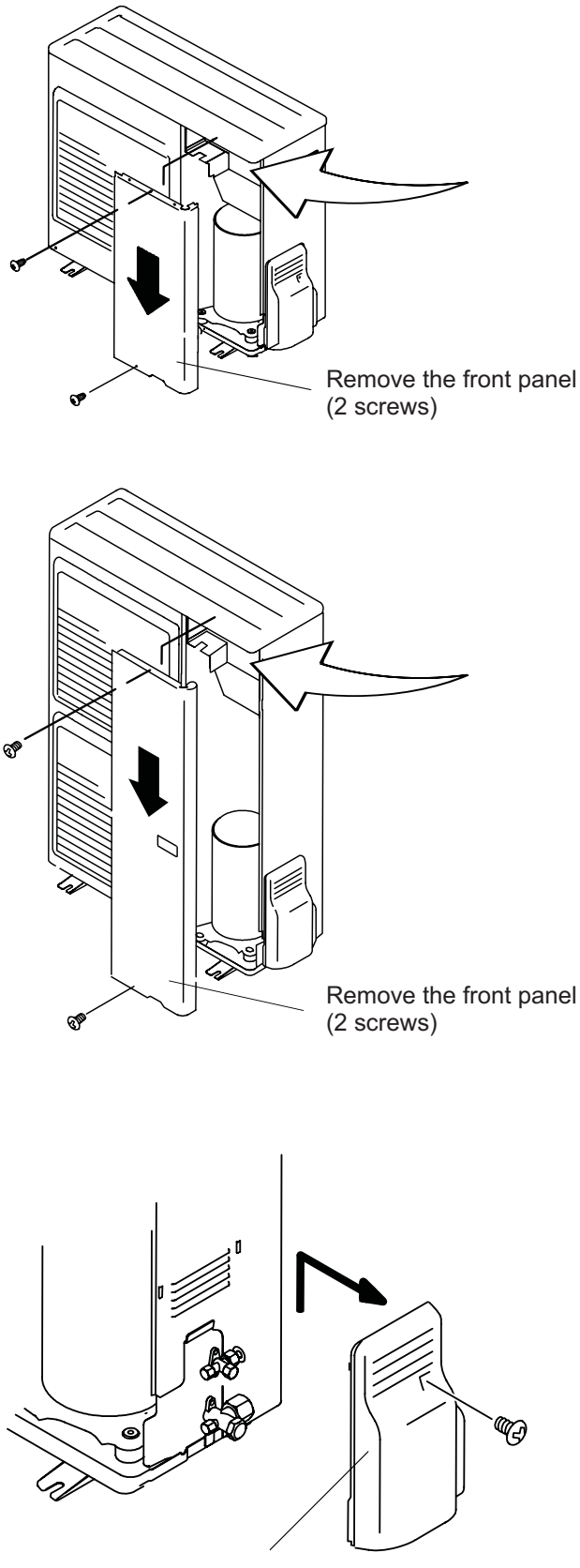


Figure 34 - Access to outside unit's terminal block (model S10, S13, S16)

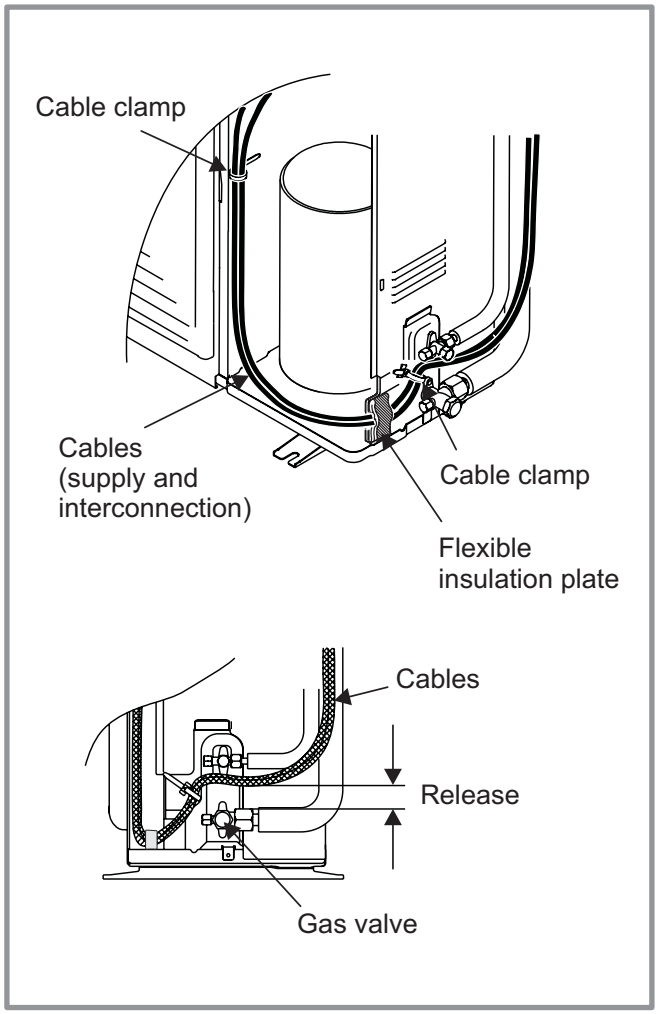


Figure 35 - Finalisation of connection to outside unit

2.9.6 Electrical connections on the hydraulic module side

Access to the connection terminals.

- Remove the front panel (2 screws) (figure 19, page 17).
- Remove the cover of the electric box.
- Make the connections in accordance with the diagram(s) figure 37.

Do not place the sensor lines and the sector supply lines in parallel in order to avoid causing inadvertent interference due to voltage points in the sector supply.

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

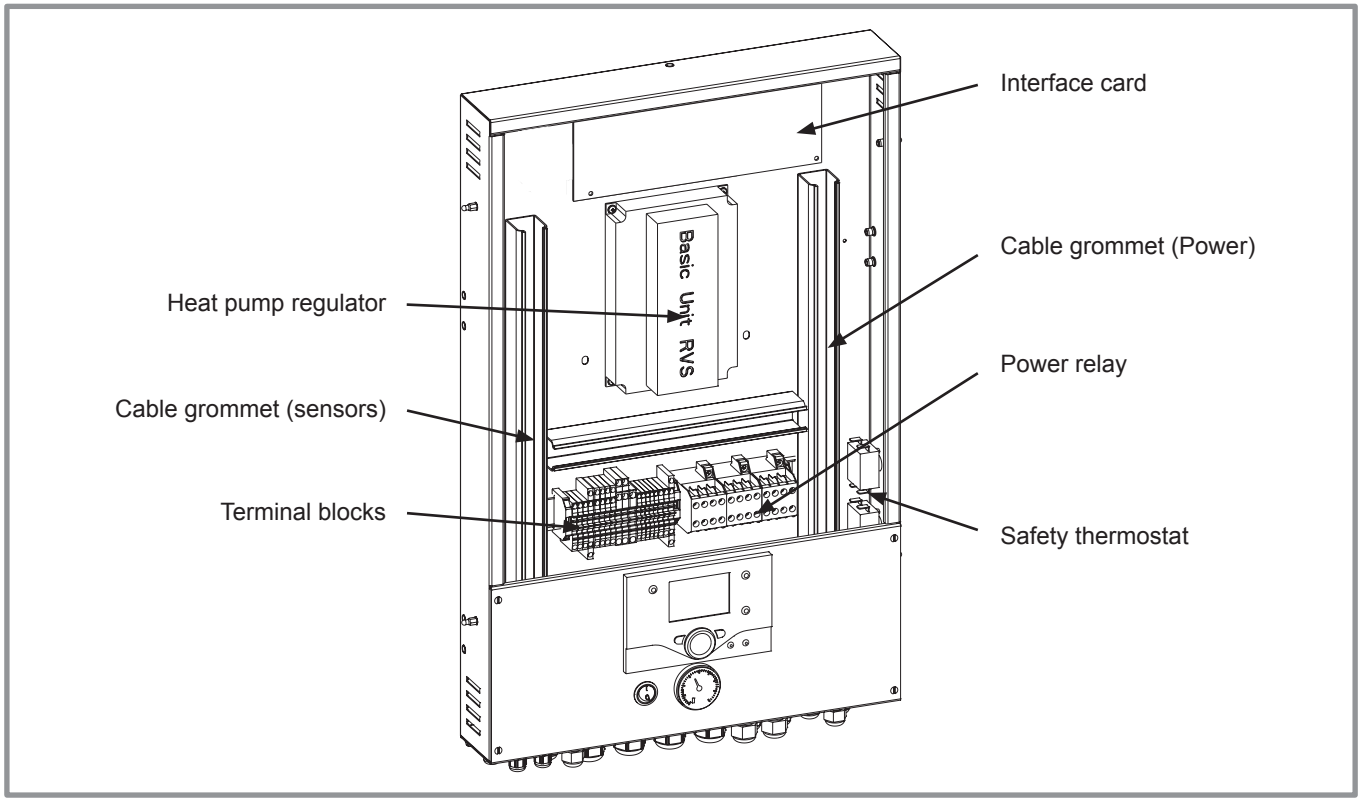


Figure 36 - Access to hydraulic model electric box and description

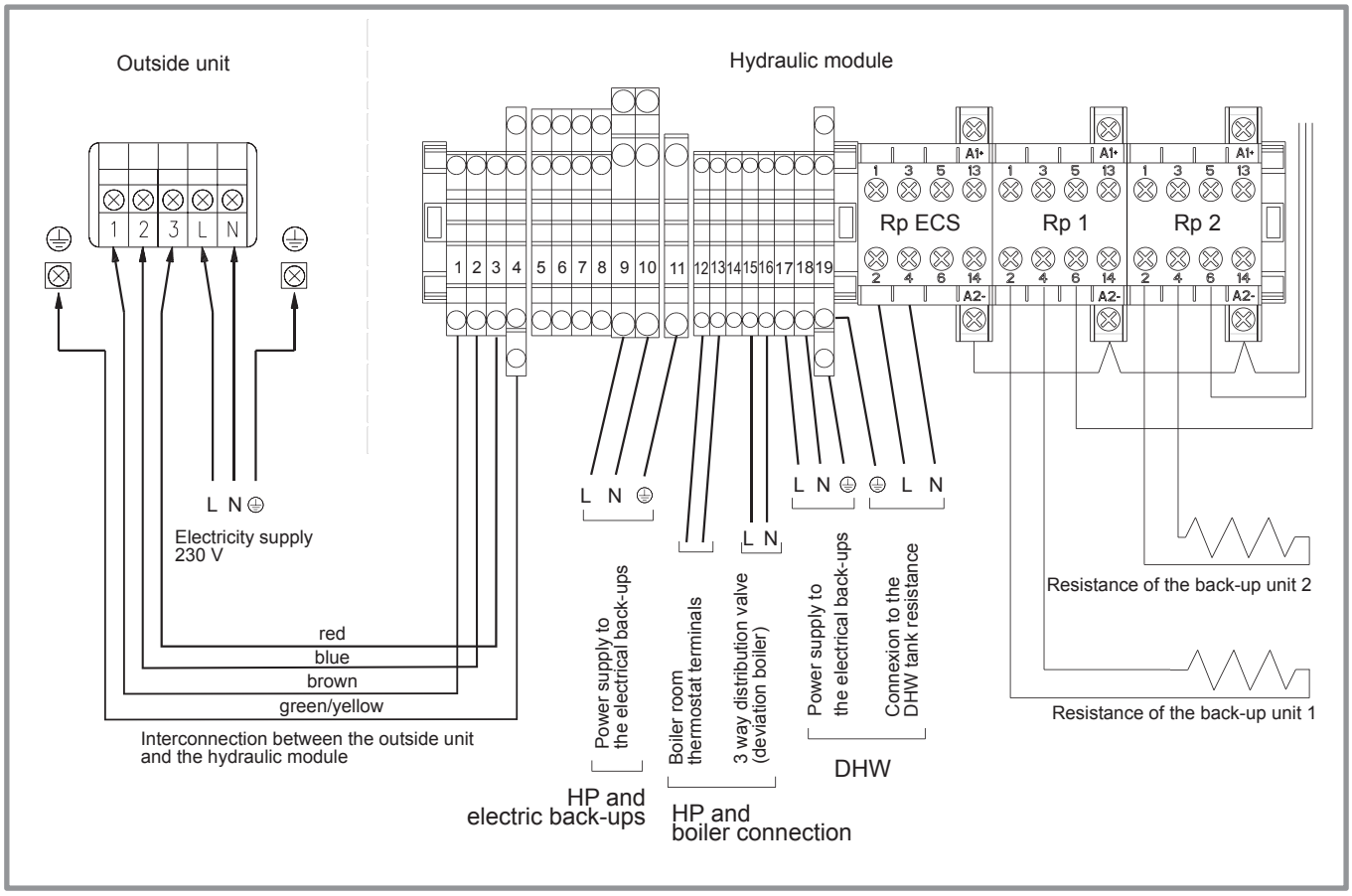


Figure 37 - Connection to terminal block and power relays

• Interconnection between the outside unit and the hydraulic module

Comply with the correspondence between the markings on the hydraulic module's terminals and those on the outside unit when connecting the interconnection cables.

A connection error could cause the destruction of one or other of the units.

• Electric back-ups

If the heat pump is not installed with a boiler connection :

- Connect the electrical supply for the back-ups (terminals 9, 10 and 11) to the electrical panel.

• Boiler connection

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

• Domectic hot water tank

If the installation is fitted with a DHW tank with electrical back-up heating :

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

• Second heating circuit

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

• 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 Comfort 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).

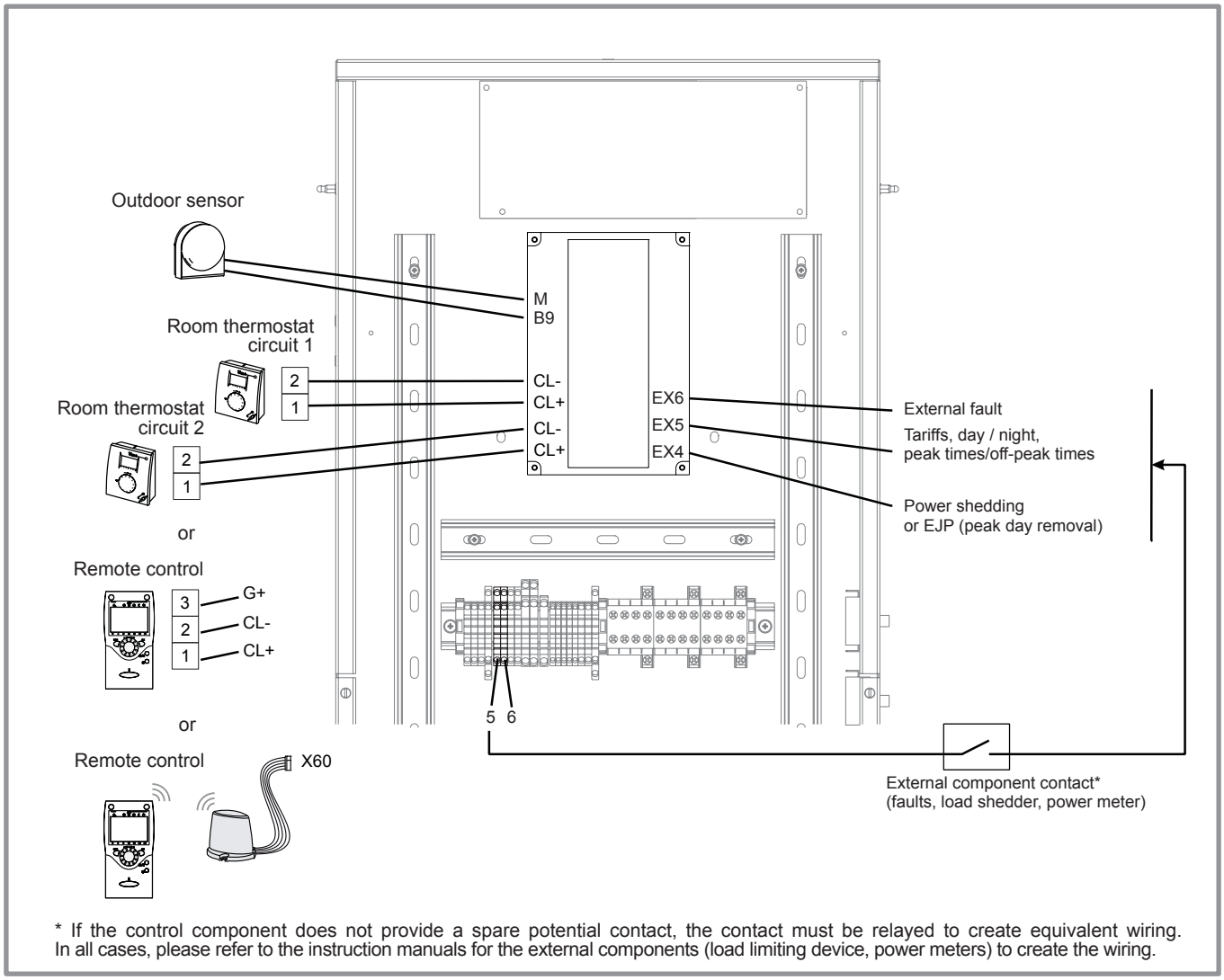


Figure 38 - Connections to the heat pump regulator (accessories and options)

• 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).

- In the case of a heated floor, Connect the floor heating safety device into the connector of the floor heating pump (QX3 - circuit 1, QX23 - circuits 2).

2.10 Outdoor sensor

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

Consult the fitting instructions on the sensor's 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 2.5m 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 outside air temperature.

- Connect the outdoor sensor to the M and B9 terminals on the heat pump control board (figure 38, page 29).

2.11 Room thermostat and/or room control unit

The room thermostat (room control unit) is optional.

Consult the fitting instructions on the sensor's packaging.

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

• Installation equipped with two room thermostats.

- Connect each of the sensors to one of the CL+ or CL-

terminals on the heat pump control board (figure 38, page 29) using the connector supplied.

• Installation equipped with a room thermostat and a room control unit.

- Connect the sensor to one of the CL+ or CL- terminals on the heat pump control board (figure 38, page 29).
- Connect the room control unit to the other CL+, CL- terminals and to G+.

2.12 Start-up

- 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 outside unit) some hours before starting up the tests.

- Engage the heat pump's ON/OFF button.

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 outside unit will take approximately 4 minutes to start up, even if the setting is requesting heating.

The display can show error 370 when the appliance (re)starts. Do not be concerned, the communication between the outdoor and hydraulic units will re-establish itself in a few moments.

- Make all the specific adjustments to the setting (configuring the installation).

- Press the key OK
- Hold down the key i 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 34).

On commissioning (or the case of error 10), the electrical backup heaters are liable to start up even if the outside temperature at the time is above the heaters' trigger temperature.

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

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

2.13 Configuring the 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, 2).

☞ **If the installation is fitted with 2 room thermostats,**
- First connect one room thermostat and configure it in zone 2.
- Then connect the other room thermostat and configure it as default in 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 regime key. 2 : Recording with confirmation : a correction of the setting with the button is not adopted until the regime 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.

2.14 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 "Interface utilisateur".
- Choose language (langue).
- Select the language (**english**, français, nederlands, español, etc).

3 Regulation system

3.1 User interface and room control unit (Option)

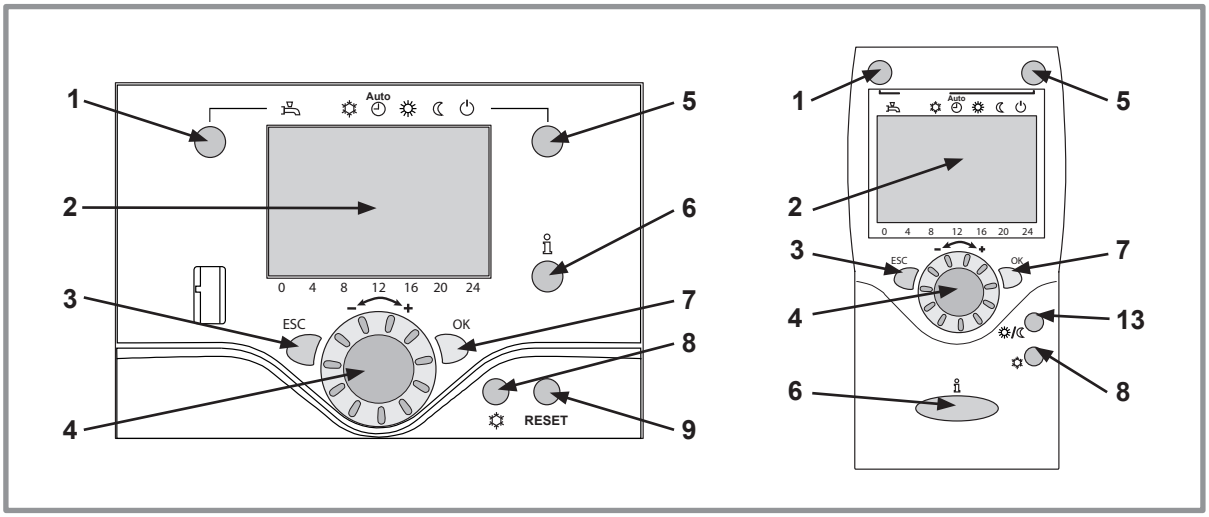


Figure 39 -

Ref.	*Functions*	*- 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	- 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 59). - Reading error codes (please see page 57). - 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 (Hold down the "RESET" key for 3 sec).	- Reinitialising the parameters and cancelling error messages. **Do not use during normal operation.**

3.2 Room thermostat (option)

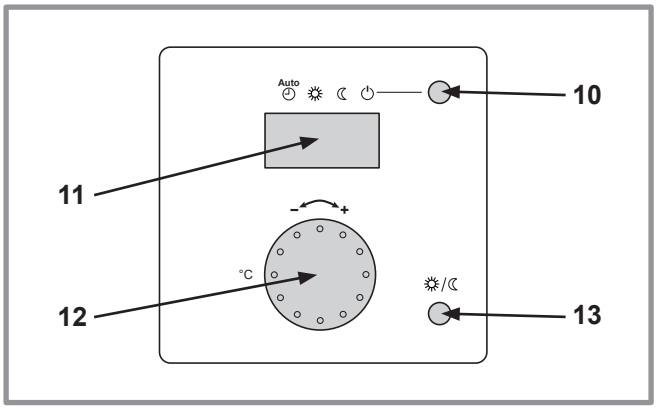


Figure 40 - Room thermostat (option)

Ref.	*Functions*	*- Definitions*
10	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 regime with anti-frost protection (Provided that the heat pump's electrical power supply is not interrupted).
11	Digital display	- Operating control. Readout of the current temperature, of the heating regime and of any faults 🔔 .
12	Control knob	- Adjusting the ambient temperature setpoint.
13	Presence key	- Comfort / Reduced switchover.

3.3 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 outside 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.

3.3.1 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 41) refer to an ambient setting of 20°C.

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

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

The off-set in the temperature control (parameter 721) alters the initial temperature of all the curves, without altering the slope (figure 42).

The corrective actions in the case of any inconvenience are detailed in the table (figure 43).

3.3.2 Self-adaptation

When this function is active (parameter 726), the temperature control are automatically adjusted; it is therefore futile to alter 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.

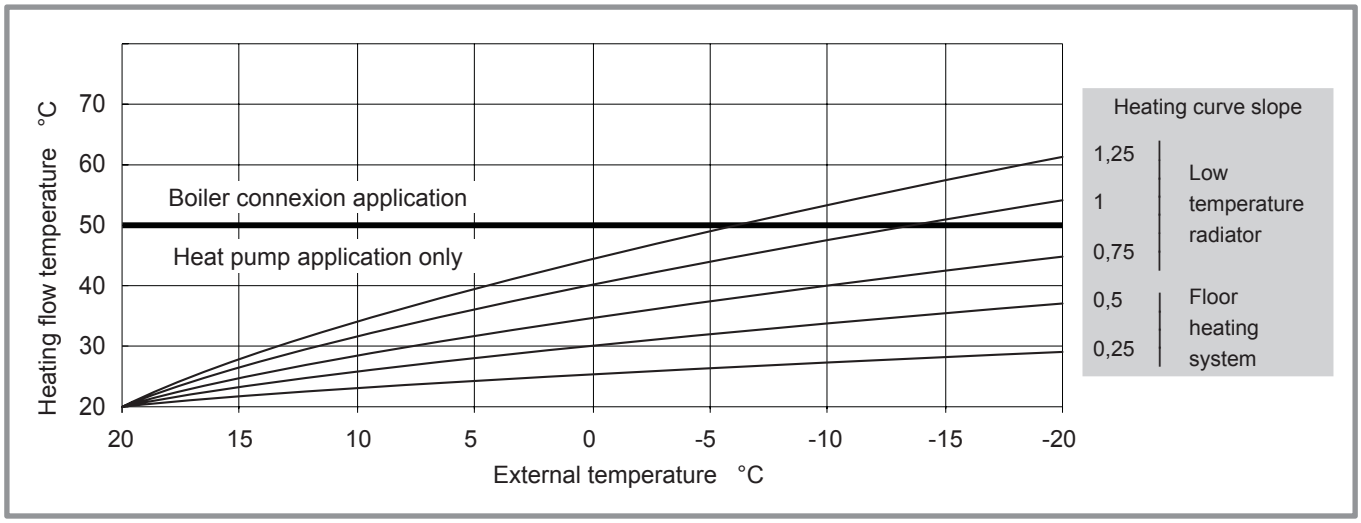


Figure 41 - Heating curve slope (line 720)

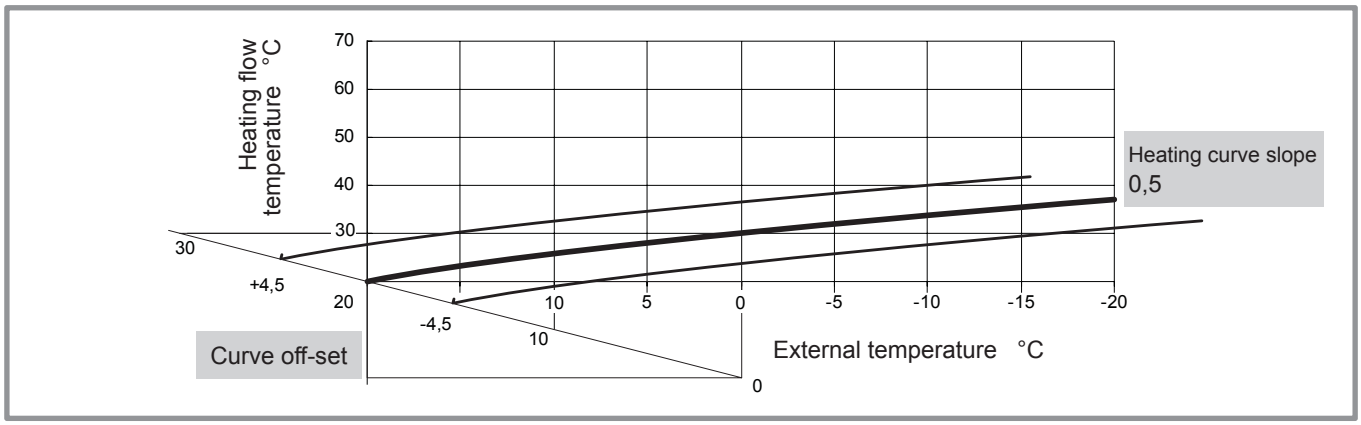


Figure 42 - Off-set of the heating curve (line 721)

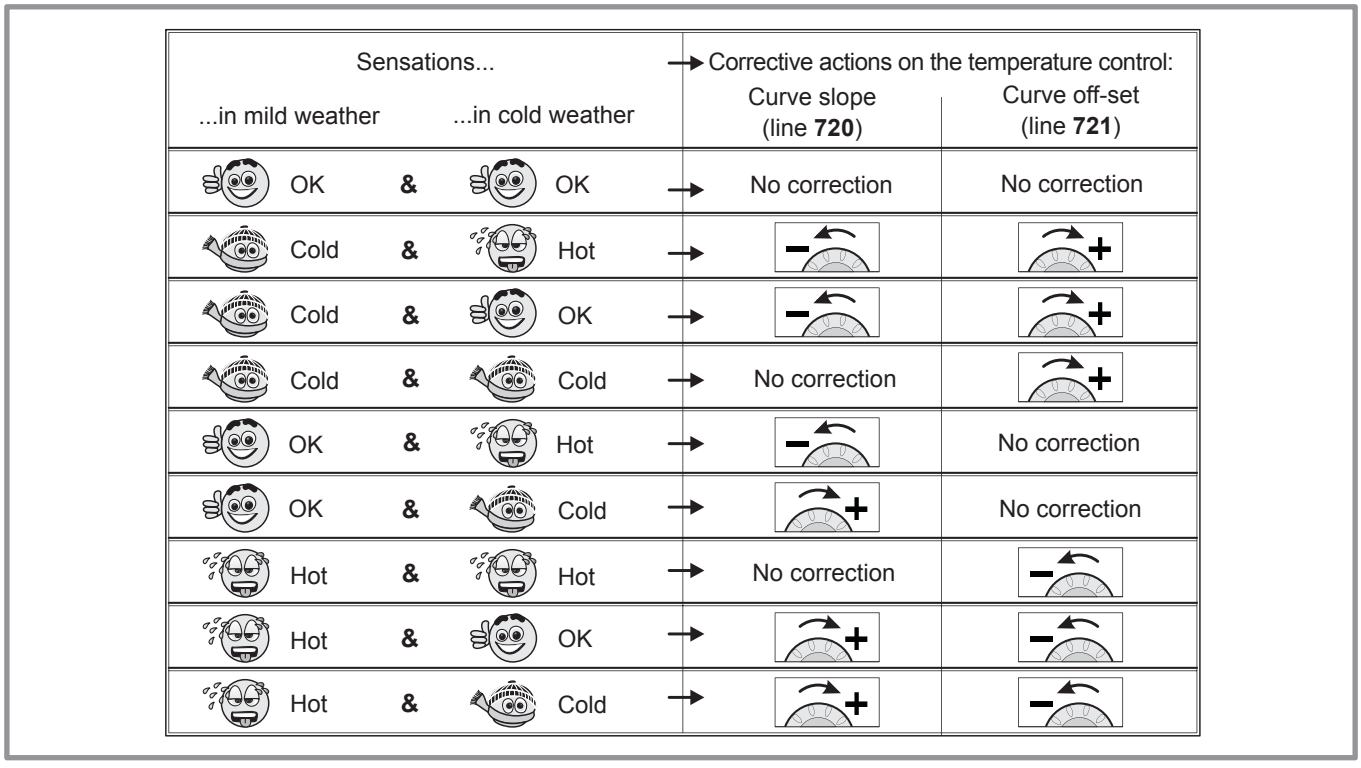


Figure 43 - Corrective actions in the case of discomfort

3.4 Parametering the setting

3.4.1 General

Only the parameters accessible to levels :

U - End user.

I - Commissioning level.

S - Engineer.

Are described in this document.

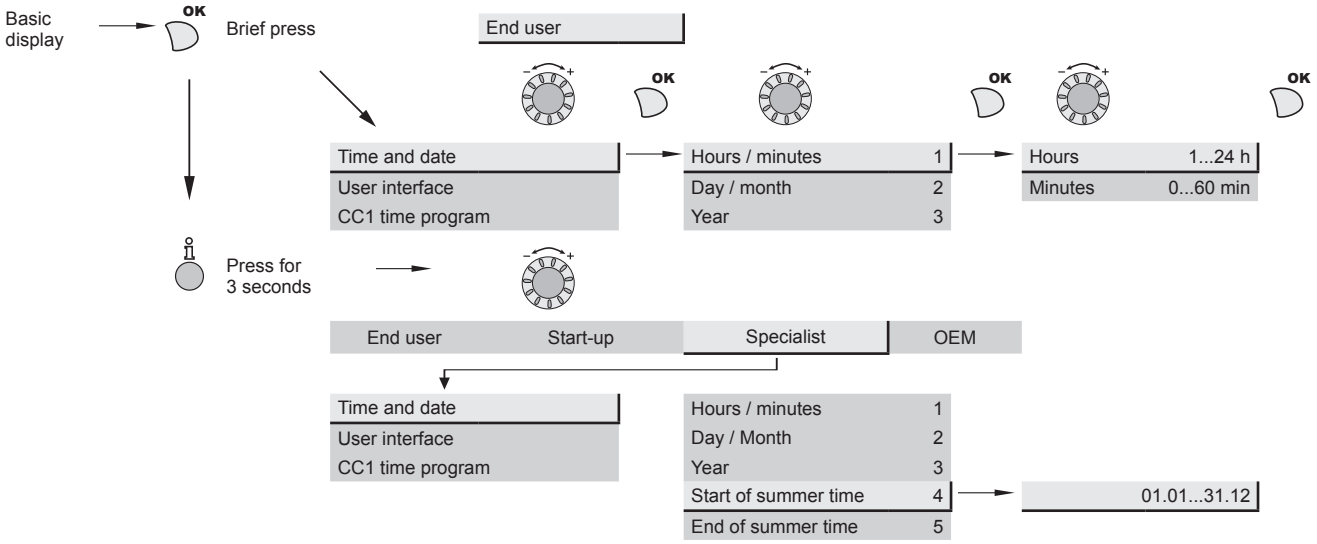
The access levels are specified in the second column of the table by means of the letters **U**, **I** and **S**.

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 lines (settings, diagnosis, status)

Line		*Function*	*Setting range or display*	*Setting increment*	*Base 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	**S**	Direct setting Saving...	...automatic | ...with confirmation		**...with confirmation**
44	**I**	Operation HC2 (command HC2)	Jointly with HC1, Independent		**Jointly with HC1**
		Jointly with HC1 or Independent : 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.			

Line		*Function*	*Setting range or display*	*Setting increment*	*Base setting*
46	**I**	Operation HCP (domestic hot water pump command, output QX2)			**Jointly with HC1**
		Jointly with HC1 or Independent (if independent, see timer program 3 / HCP)			
70	**S**	Display software version			
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 regulator 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 regulator replace and cancel the customised heating programmes. Your customised settings are therefore lost.			
Programme 3/ HCP					
		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**	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	**--:--**
564	**U**	2nd phase Off (end)	00:00... --:--	10 min	**--:--**
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 regulator replace and cancel the customised heating programmes. Your customised settings are therefore lost.			

Line		Function	Setting range or display	Setting increment	Base 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	**--:--**
616	**U**	Standard values	No, Yes		**No**
		Yes + OK: The standard values memorised in the regulator replace and cancel the customised heating programmes. Your customised settings are therefore lost.			
Holidays, heating circuit 1					
641	**U**	Preselection	Period 1 to 8		**Period 1**
642	**U**	Date holidays start (Day / Month)	01.01... 31.12	1	
643	**U**	Date holidays end (Day / Month)	01.01... 31.12	1	
648	**U**	Heating schedule during the holidays	Frost protection, Reduced		**Frost protection**
Holidays, heating circuit 2					
		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**	Date holidays start (Day / Month)	01.01... 31.12	1	
653	**U**	Date holidays end (Day / Month)	01.01... 31.12	1	
658	**U**	Heating schedule during the holidays	Frost protection, Reduced		**Frost protection**
Heating adjustment, circuit 1					
710	**U**	Comfort ambient temperature setpoint	from reduced temperature to 35°C	0,5 °C	**20 °C**
712	**U**	Reduced ambient temperature setpoint	from frost-free temp… to comfort temperature	0,5 °C	**18 °C**
714	**U**	Frost-free ambient temperature setpoint	from 4°C… to reduced temperature	0,5 °C	**8 °C**
716	**S**	Maximum comfort setpoint	20 °C... 35 °C	1 °C	**28 °C**
720	**I**	Heating curve slope (See figure 41).	0,1... 4	0,02	**0,5**
721	**I**	Off-set of the heating curve	-4,5 °C... 4,5 °C	0,5 °C	**0**
726	**S**	Auto-adaptation of the heating curve (voir § 3.3.2)	off, on		**Off**
730	**I**	Summer / Winter heating limits	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 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**	Limit of daily heating	-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	8... 95 °C	1 °C	**8 °C**

Line		Function	Setting range or display	Setting increment	Base setting
741	S	Flow temp setpoint max	8... 95 °C	1 °C	**55 °C**
		Floor heating system = 50 °C			
750	S	Influence of the ambient temperature	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	Maximum optimisation on switch-on (Early start to switch to the comfort setting.).	0... 360 min	10 min	**0**
791	S	Maximum optimisation on switch-off (Early stop to switch from the comfort setting to the reduced setting.)	0... 360 min	10 min	**0**
800	S	Start of increase in reduced functioning mode	-30... 10 °C	1 °C	**--**
801	S	End of increase in reduced functioning mode	-30... 10 °C	1 °C	**-5 °C**
830	S	Mixer valve boost	0... 50 °C	1 °C	**0**
834	S	Servomotor travel time	30... 873 s	1 s	**240 s**
850	I	Floor controlled drying (figure 44)			**Off**
		- Off: Early interruption of the current programme, programme inactive - Operational heating - Heating ready for occupation - Operational heating + ready heating - Ready heating + operational heating - Manual Manual mode enables you to programme your own concrete slab drying time.The function ends automatically after 25 days.			
851	I	Manual floor drying setpoint (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 programme stops automatically after running for 25 days.			
856	I	Current drying day	0... 32		
857	I	Terminated drying days	0... 32		
900	S	Change of regime	None, Protection mode, Reduced, Comfort, Automatic	1	**Protection mode**
		Operating mode at end of concrete slab drying period			

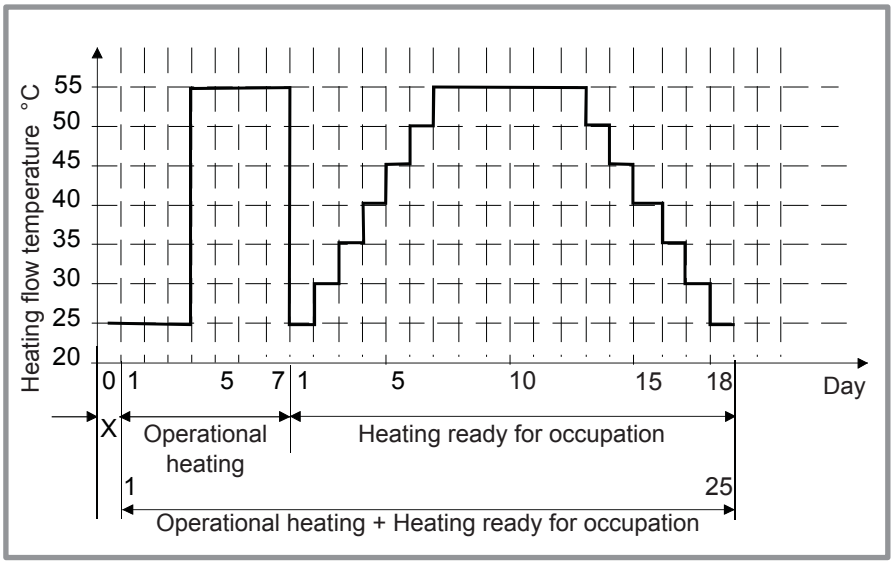


Figure 44 - Diagram of the concrete slab drying programmes

☞ **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*	*Base setting*
Cooling circuit 1					
901	**U**	Regime	Off, Automatic		**Off**
902	**U**	Comfort ambient temperature setpoint	17... 40 °C	0,5 °C	**24 °C**
907	**U**	Release	24h / day, Time program HC, Time program 5 / Refresh		**Time program 5**
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**	Influence of the ambient temperature	1... 100 %	1 %	**80 %**
		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.			
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**	Servomotor travel 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**	Change of regime	None, Off, Automatic		**Off**
Heating adjustment, Circuit 2 (Only with the 2nd circuit kit option)					
		If the installation consists of 2 heating circuits			
1010	**U**	Comfort ambient temperature setpoint	Reduced temp... 35°C	0,5 °C	**20 °C**
1012	**U**	Reduced ambient temperature setpoint	Frost-free temp… Comfort temperature	0,5 °C	**18 °C**
1014	**U**	Frost-free ambient temperature setpoint	4°C… Reduced temperature	0,5 °C	**8 °C**
1016	**S**	Maximum comfort setpoint	20... 35 °C	1 °C	**28 °C**
1020	**I**	Heating curve slope (figure 41)	0,1... 4	0,02	**0,5**
1021	**I**	Off-set of the heating curve	-4,5... 4,5 °C	0,5 °C	**0**
1026	**S**	Adaptation of the heating curve (see § 3.3.2)	Off, On		**Off**

Line		*Function*	*Setting range or display*	*Setting increment*	*Base setting*
1030	**I**	Summer / Winter heating limits	8... 30 °C	0,5 °C	**18 °C**
		When the average of the outside 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.			
1032	**S**	Limit of daily heating	-10... 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.			
1040	**S**	Flow temp setpoint min	8... 95 °C	1 °C	**8 °C**
1041	**S**	Flow temp setpoint max	8... 95 °C	1 °C	**55 °C**
		Floor heating system = 50 °C			
1050	**S**	Influence of the ambient temperature	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.			
1090	**S**	Maximum optimisation on switch-on	0... 360 min	10 min	**0**
1091	**S**	Maximum optimisation on switch-off	0... 360 min	10 min	**0**
1100	**S**	Start of increase in reduced functioning mode	-30... 10 °C, --°C	1 °C	**--**
1101	**S**	End of increase in reduced functioning mode	-30... 10 °C, --°C	1 °C	**-5 °C**
1130	**S**	Mixer valve increase	0... 50 °C	1 °C	**0**
1134	**S**	Servomotor travel time	30... 873 s	1 s	**240 s**
1150	**I**	Floor controlled drying (figure 44) - Off: Early interruption of the current programme, programme inactive - Operational heating - Heating ready for occupation - Operational heating + ready heating - Ready heating + operational heating - Manual Manual mode enables you to programme your own concrete slab drying time.The function ends automatically after 25 days.			**Off**
1151	**I**	Manual floor drying setpoint (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 programme stops automatically after running for 25 days.			
1156	**I**	Current drying day	0... 32		
1157	**I**	Terminated drying days	0... 32		
1200	**S**	Change of regime	None, Protection mode, Reduced, Comfort, Automatic		**Protection mode**
		Operating mode at end of concrete slab drying period			
DHW setting (domestic hot water) (Only with the DHW kit option)					
1610	**U**	Comfort setting	Reduced setting (line 1612)… 65 °C	1	**50 °C**
		The backup electrical system is required to reach this level.			
1612	**U**	Reduced setting	8 °C... Comfort setting (line 1610)	1	**25 °C**

Line		Function	Setting range or display	Setting increment	Base setting
1620	I	Release of DHW load	24h / day Heating circuit time programme Programme 4 / DHW Off-peak tariff (Off-peak) Programme 4 / DHW and Off-peak		**Programme 4 / DHW**
		24h / day : The temperature of the DHW is constantly maintained at the DHW comfort setting.			
		Heating circuit time programme : The DHW is produced according to the programming for the ambient temperature (with 1 hour in advance when switched on).			
		Programme 4 / DHW : The DHW programme is separate form the heating circuit programme.			
		Off-peak 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 comfort period or off peak.			
		* - Connect the "Power Provider" contact to input EX5 or EX4 (see figure 38 page 29). 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	Anti-legionella function	Off, Periodic (depending line setting 1641) Set day of the week (depending line setting 1642)		**Off**
1641	I	Intervals for the anti-legionella cycles	1 to 7	1 day	**7**
1642	I	Weekday anti-legionella cycle run	Monday, Tuesday,...		**Saturday**
1644	I	Hour of anti-legionella cycle run	00:00... 23:50		**--:--**
		If no value is entered, no anti-legionella cycle has been run.			
1645	I	Anti-legionella setting	55 °C... 95 °C		**65 °C**
1646	I	Duration of anti-legionella cycle	10 min... 360 min		**30**
1647	I	Circulating pump anti-legionella cycle	On... Off		**On**
1660	I	Release of circulating pump	Programme 3 / HCP, Release of DHW, Programme 4 / DHW		**Release of DHW**
Swimming pool (Only with swimming pool kit option)					
2056	U	Generator heating setting	8... 35 °C		**35**
Heat pump					
2843	S	Compressor off time min	0... 60 min	1 min	**20 min**
2844	S	Switch-off temp max	8... 100 °C	1 °C	**55 °C**
2862	S	Locking time stage 2	0... 40 min	1 min	**5 min**
2873	S	Compressor mod run time	10... 240 s	1 s	**240 s**
2882	S	Release integr electric flow	0... 500 °Cmin	1 °Cmin	**100 °Cmin**
2884	S	Release el flow below OT Electrical release - start-up with outside temperature	-30... 30 °C		**2 °C**
2886	S	Compensation heat deficit	Off, On, Only with floor curing fct		**Off**
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 _ 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*	*Base setting*
Additional generator (Boiler connection)					
3700	**S**	Release under outside temperature	--, -50... 50 °C	0,5 °C	**2 °C**
3705	**S**	Time delay on stopping	0... 120 min	1 min	**20**
3720	**S**	Release integr boiler connection	0... 500 °Cmin	1 °Cmin	**100 °Cmin**
3723	**S**	Locking time	1... 120 min	1 min	**30 min**
Domestic hot water (DHW) (Only with the DHW kit option)					
5020	**S**	Overheight initial setting	0... 30 °C	1 °C	**5 °C**
5024	**S**	Differential	0... 20 °C	1 °C	**7 °C**
5030	**S**	Limitation on load duration	10... 600 min	10 min	**90 min**
5060	**S**	Electrical resistance regime	Replacement, Summer, Always, Cooling regime		**Replacement**
5061	**S**	Release of electrical resistance	24h / day, Release of DHW, Programme 4 / DHW		**Release of DHW**
Installation configuration					
5700	**I**	Pre-setting	1,2,3,... 12	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 - Pre-setting 2 : 1 heating circuit and DHW tank. - Pre-setting 3 : 2 heating circuits. - Pre-setting 4 : 2 heating circuits and DHW tank. - Pre-setting 5 : Boiler connection and 1 heating circuit. - Pre-setting 6 : Boiler connection and 2 heating circuits - Pre-setting 7 : Boiler connection, 1 heating circuit and DHW tank. - Pre-setting 8 : Boiler connection, 2 heating circuits and DHW tank. - Pre-setting 9 to 12 : Do not use for heat pump single service. Reserved only for heat pump 2 services.			
5711	**S**	Cooling circuit 1	Off, System with 4 tubes, System with 2 tubes		**Off**
5870	**S**	Combined DHW tank	No, Yes		**No**
5987	**S**	Cont type input EX4	Normally-closed contact (NC) Normally-opened contact (NO)		**NO**
5989		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 4 - Operating mode change HC2 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**	Min flow temp setpoint H2	0... 130 °C	1 °C	**45 °C**
6100	**S**	Outside temperature sensor correction	-3... 3 °C	0,1 °C	**0 °C**
6120	**S**	Installation frost-free mode	On, Off		**On**
6205	**S**	Re-initialise parameters	No, Yes		**No**
6220	**S**	Software version (RVS)	0... 99		

Line		*Function*	*Setting range or display*	*Setting increment*	*Base setting*
Error					
6711	**U**	Heat pump Reset	No, Yes		**No**
6740	**S**	Temperature alarm initiation CC1	--, 10... 240 min	10 min	**--**
6741	**S**	Temperature alarm initiation CC2	--, 10... 240 min	10 min	**--**
6745	**S**	DHW load alarm	--, 1... 48 h	1 h	**--**
6746	**S**	Temperature alarm initiation Cold 1	--, 10... 240 min	10 min	**--**
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		
Maintenance / special regime					
7070	**S**	Interval time for maintenance HP	--, 1... 240	1 month	**--**
7071	**S**	Operating time HP since last maintenance. Reset ? (no, yes)	0... 240	1 month	**0**
7072	**S**	Maximum number of starting of the compressor 1, authorized per hour of operation.	--, 0,1... 12	0,1	**--**
7073	**S**	Average number of starts of the compressor per hour of operation, since the 6 last weeks. Reset ? (no, yes)	0... 12		**0**
7076	**S**	Maximum discrepancy condens / week	--, 1... 250	1	**--**
7077	**S**	Current maximum discrepancy condens / week Reset ? (no, yes)	0... 250		**0**
7078	**S**	Minimum discrepancy condens / week	--, 1... 250	1	**---**
7079	**S**	Current minimum discrepancy condens / week Reset ? (no, yes)	0... 250		**0**
7090	**S**	DHW tank period	--, 1... 240	1 month	**---**
7091	**S**	DHW tank since maintenance Reset ? (no, yes)	0... 240		**0**
7141	**U**	Emergency regime	Off, On		**Off**
		Off: The heat pump does not use the backup electrical heating system or the boiler connection when a fault occurs (error 370) On: The heat pump uses the backup electrical system or 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 service operating 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**	Outside temperature simulation	---, -50... 50 °C	0,5	**--**
7181	**I**	Contact's telephone 1	0... 255		
7183	**I**	Contact's telephone 2	0... 255		

Line		Function	Setting range or display	Setting increment	Base setting
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.**			
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 regime, Heating regime		**Heating regime**
7722	I	Digital output DO2	Off, On		**Off**
7730	I	Outside 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**
8001	I	State heating circuit 2			**0**
8003	I	State DHW			**0**
8004	I	State cooling circuit 1			**0**
8006	I	State heat pump			**0**
8011	I	State swimming pool			**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		

Line		*Function*	*Setting range or display*	*Setting increment*	*Base setting*
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		
Generator diagnosis					
8402	**I**	Electrical resistance flow 1	Off, On		**Off**
8403	**I**	Electrical resistance flow 2	Off, On		**Off**
8406	**I**	Condenser pump	Off, On		**Off**
8410	**U**	Heat pump return temperature	0... 140 °C		
		Setpoint (flow) HP	0... 140 °C		
8412	**U**	Heat pump flow temperature	0... 140 °C		
		Setpoint (flow) HP	0... 140 °C		
8413	**U**	Compressor modulation	0... 100%		
8425	**I**	Condenser temperature differenc	-50... 140 °C		
8454	**S**	Locking time Heat Pump Reset ? (no, yes)	0... 2730 h		
8455	**S**	Heat pump stops counter 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**	Minimum outside temperature Reset ? (no, yes)	-50... 50 °C		
8702	**U**	Maximum outside temperature Reset ? (no, yes)	-50... 50 °C		
8703	**I**	Attenuated outside temperature 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**	Mixed outside temperature	-50... 50 °C		
		The mixed outside temperature is a combination of the current outside temperature and the average outside temperature calculated by the regulator. This value is used for calculating the initial temperature.			
8730	**I**	Circulation 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**
		Ambient temperature setting 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**	Cooling flow temperature 1	0... 140 °C		**0**
		Cooling flow temperature setpoint 1	0... 140 °C		**0**

Line		*Function*	*Setting range or display*	*Setting increment*	*Base setting*
8760	**I**	Circulation pump, circuit 2	Off, On		**Off**
8761	**I**	Mixer valve HC2 open	Off, On		**Off**
8762	**I**	Mixer valve HC2 closed	Off, On		**Off**
8770	**U**	Room temperature 2	0... 50 °C		**20 °C**
		Ambient temperature setpoint 2	4... 35 °C		**20 °C**
8773	**U**	Flow temperature 2	0... 140 °C		**50 °C**
		Flow temperature setpoint 2	0... 140 °C		**50 °C**
8820	**I**	DHW pump	Off, On		**Off**
8821	**I**	DHW electrical resistance K6	Off, On		**Off**
8830	**U**	DHW (domestic hot water) temperature	0... 140 °C		
		DHW temperature setpoint	5... 80 °C		**50 °C**
8840	**S**	DHW pump operating times	0... 2730 h		
8841	**S**	DHW pump start-ups counter	0... 2730 h		
8842	**S**	DHW electric operating times	0... 2730 h		
8843	**S**	DHW electric start-ups counter	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

☞ Optional DHW kit

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

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

Please refer to section (Operating principle, page 13).

☞ Optional 2nd circuit kit

The control of 2 heating circuits requires the installation of the 2nd circuit.

If the installation consists of radiators (or fan-convectors) and a heated floor, zone 2 will correspond to the radiator (or fan-convectors) zone and **zone 1 to the heated floor zone.**

☞ Optional boiler connection kit

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

When a boiler is connected to the heat pump, the heat pump's electric back-ups must not be connected. It is the boiler that provides the heating back-up on the coldest days.

The boiler is controlled by the heat pump.

Please refer to the instructions supplied with 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.	48
Pre-setting 2	1 heating circuit and DHW tank.	49
Pre-setting 3	2 heating circuits.	50
Pre-setting 4	2 heating circuits and DHW tank.	51
Pre-setting 5	Boiler connection and 1 heating circuit.	Please refer to the instructions supplied with the boiler connection kit.
Pre-setting 6	Boiler connection and 2 heating circuits.	
Pre-setting 7	Boiler connection, 1 heating circuit and DHW tank.	
Pre-setting 8	Boiler connection, 2 heating circuits and DHW tank.	
Pre-setting 9	**Do not use for heat pump single service. 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, 3 or 4 : heat pumps with electric back-ups

☞ **Parameter 5700.**

Configuration 1 : 1 heating circuit (see figure page 48).

Configuration 2 : 1 heating circuit and DHW tank. (see figure page 49).

Configuration 3 : 2 heating circuits (see figure page 50).

Configuration 4 : 2 heating circuits and DHW tank. (see figure page 51).

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

The control of 2 heating circuits requires the installation of the 2nd circuit.

4.1.1 Hydraulic connections

☞ **In the case of a mixed DHW tank**

Install the directional valve on the heating circuit (on circuit 2 if it exists).

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

With the 2nd circuit kit, the hydraulic module's circulation pump (CC1) must be moved and installed in a box of the 2nd circuit kit (CC1).

4.1.2 Electrical connections

• **1** - Power supply to outside unit.
Please refer to section (Electrical connections on the outside unit side page 26).

• **2** - Interconnection between the outside unit and the hydraulic module (see figure 37 , page 28).

• **3** - Power supply to the electrical back-ups :

- Connect the electrical supply for the back-ups (terminals 9, 10 and 11) to the electrical panel. (see figure 37, page 28).

• **4** - Outdoor sensor (see figure 37, page 28).

• **5** - Air thermostat and/or room control unit (Option, see figure 38, page 29).

• **6** - Contract with the power provider :

- Connect the "Power Provider" contact to input EX5 or EX4. (see figure 38, page 29)

☞ **In the case of a mixed DHW tank**

Please refer to the instructions supplied with the DHW kit.

• **7** - Connect the directional valve to connector QX4, (see figure 38, page 29).

• **8** - Connect the domestic water sensor to terminal BX1 on the heat pump's control panel (see figure 38, page 29).

• **9** - Connect the back-up resistance to terminal 19 (Earth) and relay RP EPS to terminals 2 (L) and 4 (N). (see figure 37, page 28).

• **10** - Connect the electrical power supply for the domestic water back-up (terminals 17, 18 and 19) to the electric panel. (see figure 37, page 28).

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

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

• **11** - Circulation pump.

• **12** - Circulation pump.

• **13** - Mixer valve.

• **14** - Initial sensor.

() - Interconnection between RVS and AVS.

☞ **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.

4.1.3 Parametering the setting

Adjust the configuration: **1**, **2**, **3** or **4**, Line **5700**.

Adjust the DHW programme (Line **1610** to **1661**).

• 1 heating circuit.
Adjust the heating curve slope.
Line **720**.

• 2 heating circuits.
Adjust the heating curve slope.
Line **720** (Circuit 1).
Line **1020** (Circuit 2).

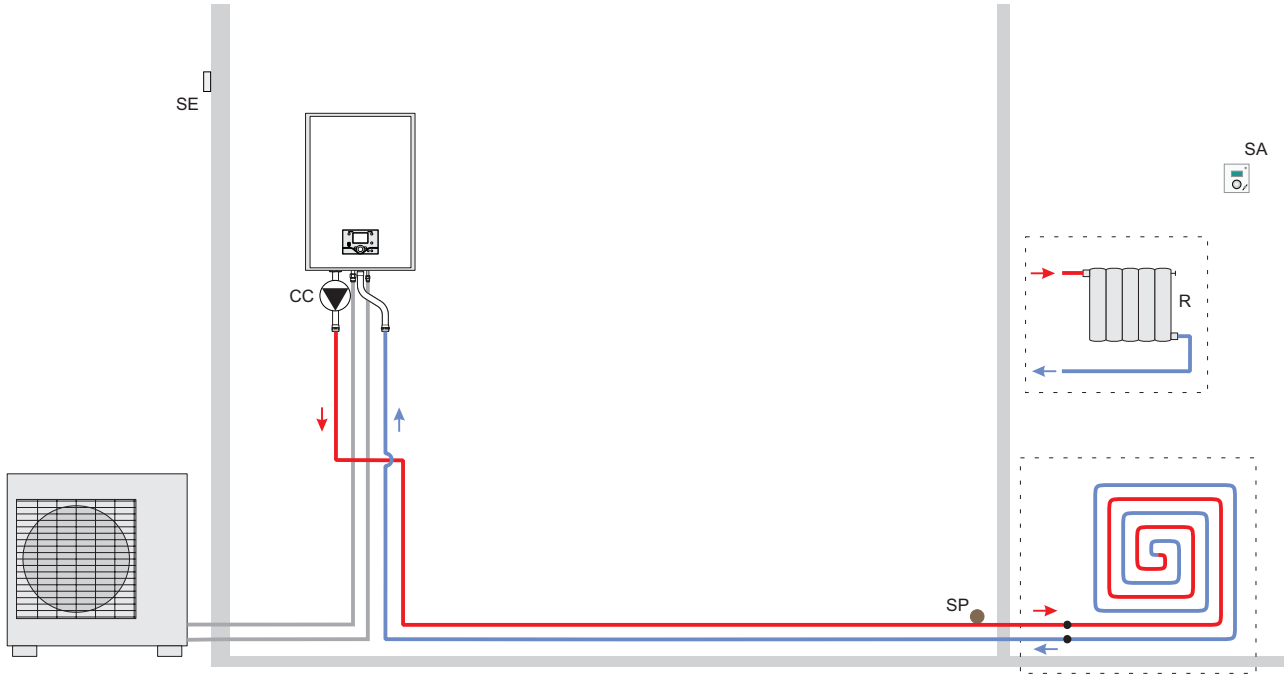
4.1.4 Special cases

Please consult us regarding any other installation configuration.

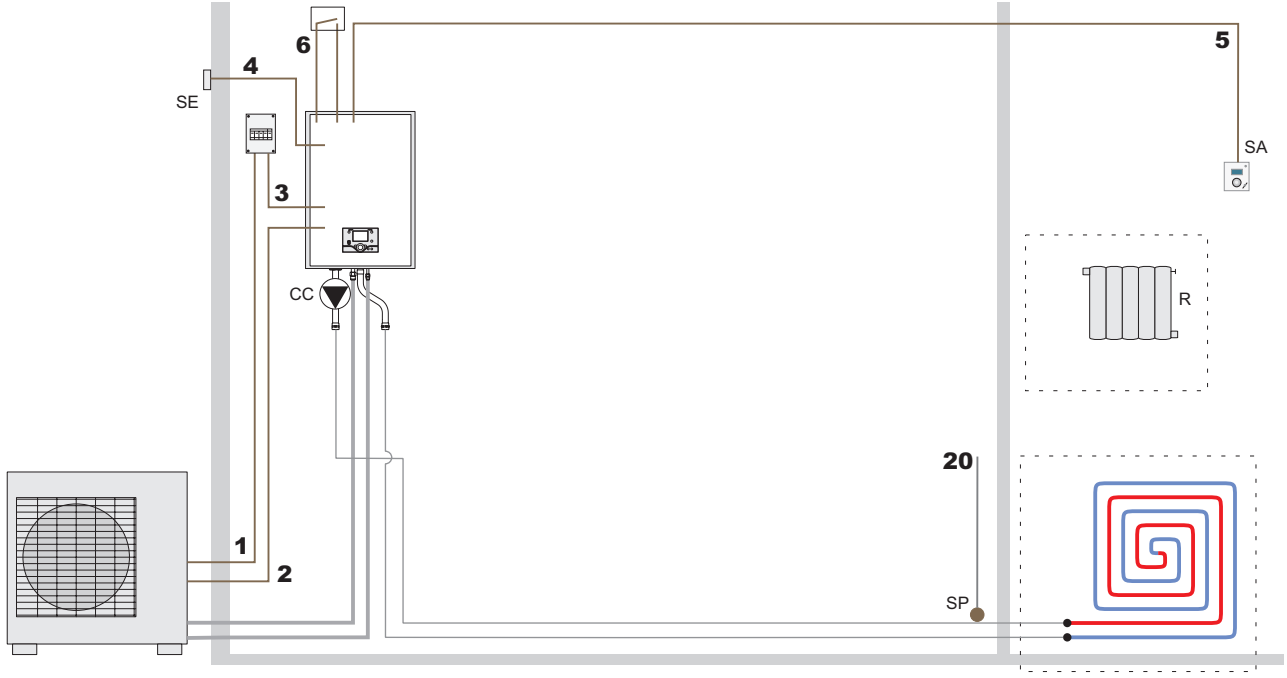
Configuration 1 :
1 heating circuit.

☞ **See detailed instructions on page 47.**

Overall hydraulic layout



Overview of all the electrical connections



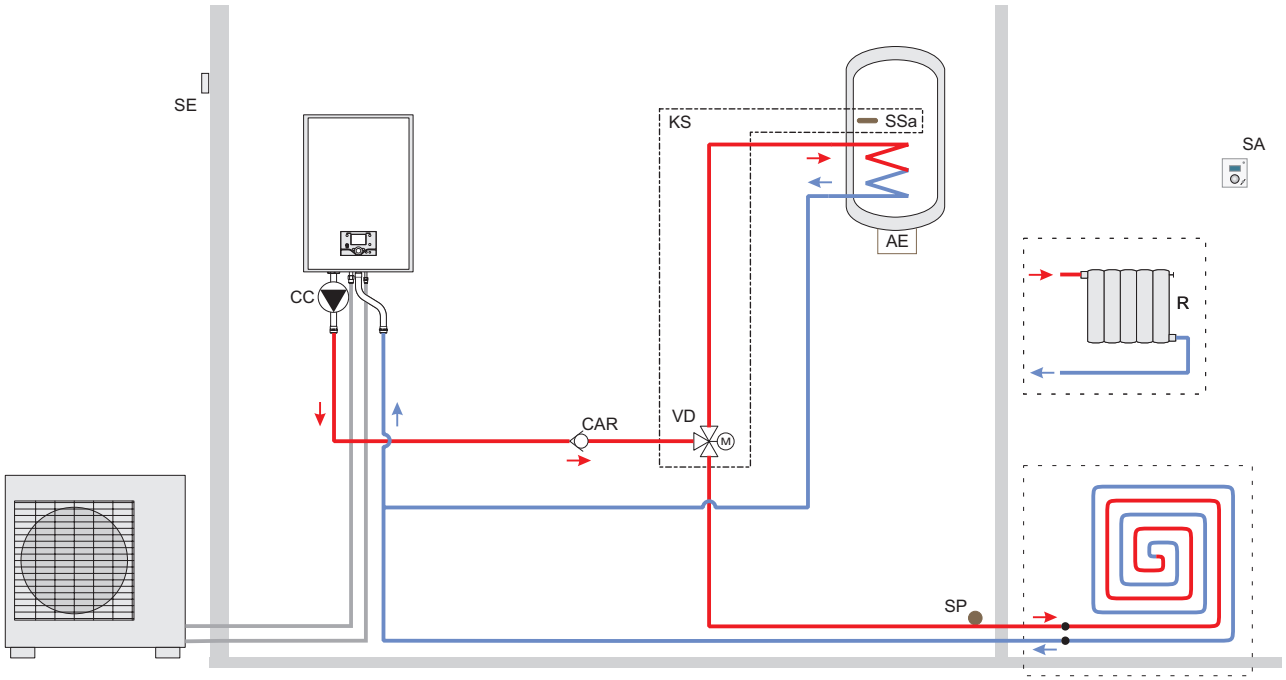
Legend

CC - Heating circulation pump
R - Radiators (or fan convectors)
SA - Room thermostat (option)
SE - Outdoor sensor
SP - Heated floor thermal safety fuse

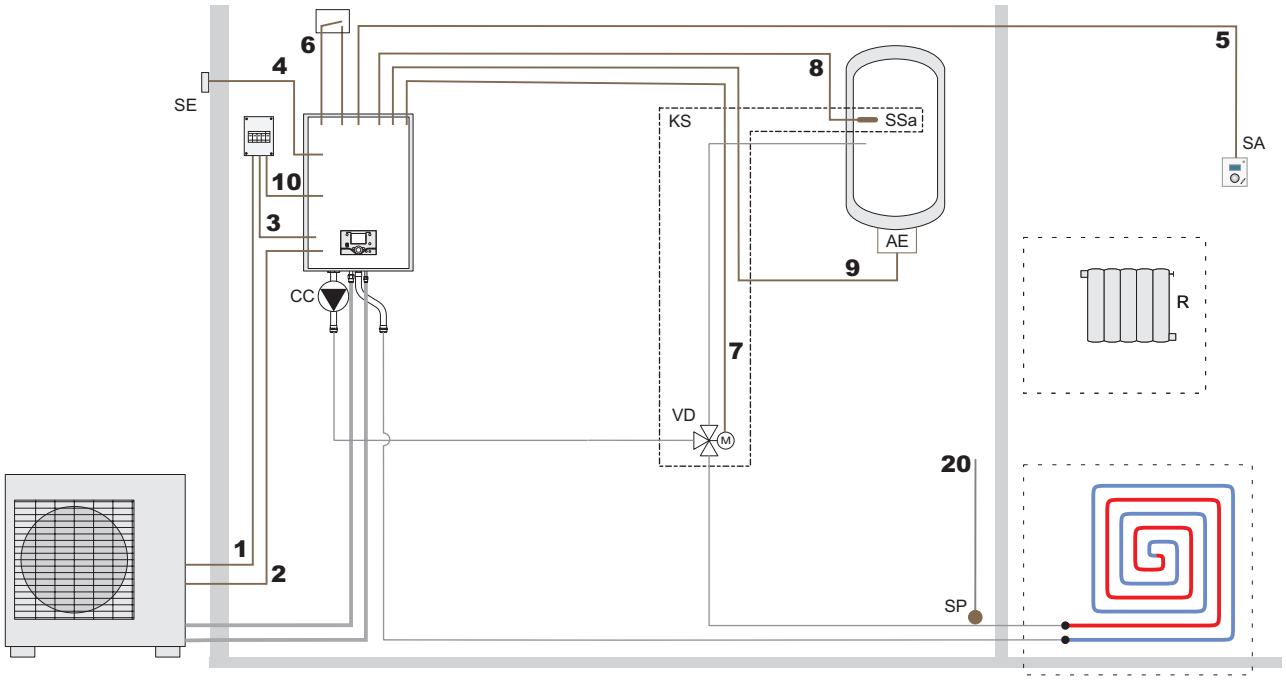
Configuration 2 :
1 heating circuit and DHW tank.

☞ **See detailed instructions on page 47.**

Overall hydraulic layout



Overview of all the electrical connections



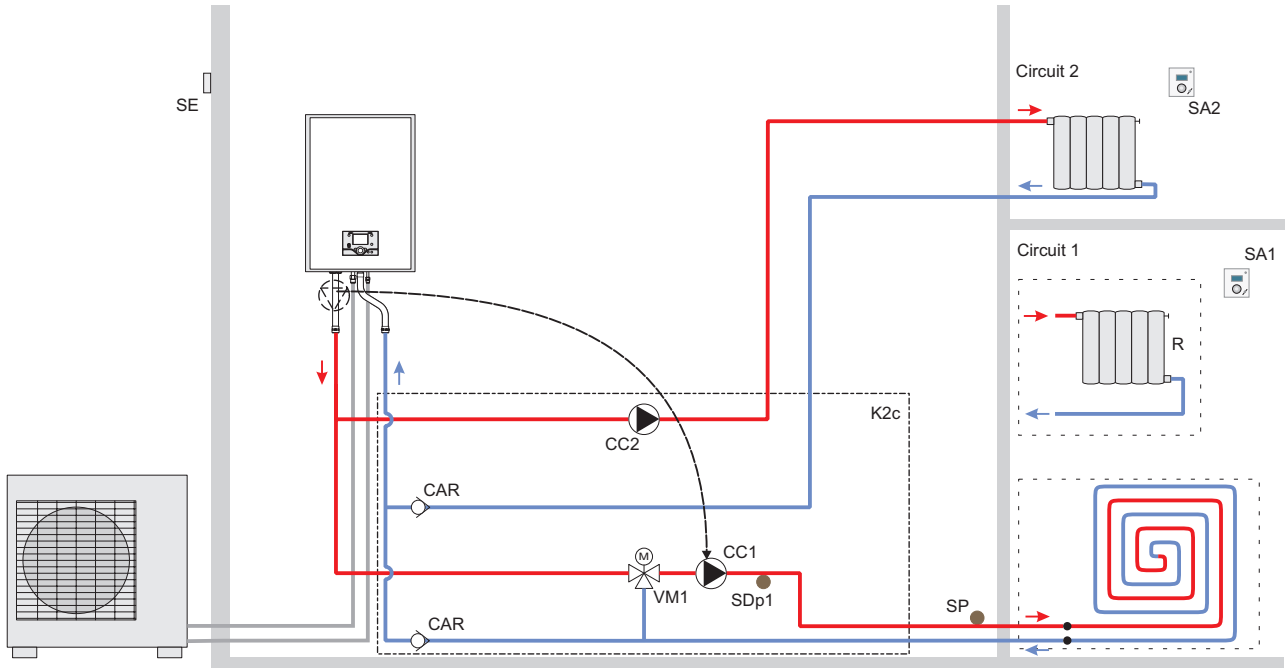
Legend

CAR - Non-return valve
AE - Electric back-up
CC - Heating circulation pump
KS - DHW kit
R - Radiators (or fan convectors)
SA - Room thermostat (option)
SE - Outdoor sensor
SP - Heated floor thermal safety fuse
SSa - DHW sensor
VD - Distribution valve

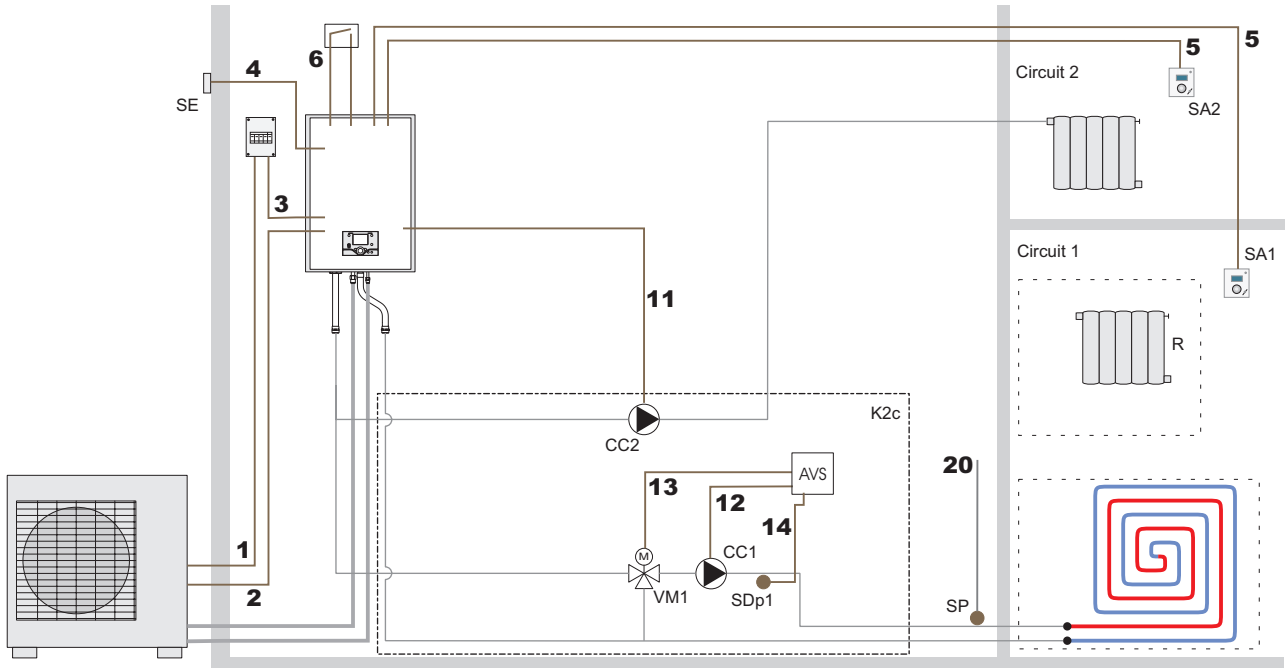
Configuration 3 :
2 heating circuits.

☞ **See detailed instructions on page 47.**

Overall hydraulic layout



Overview of all the electrical connections



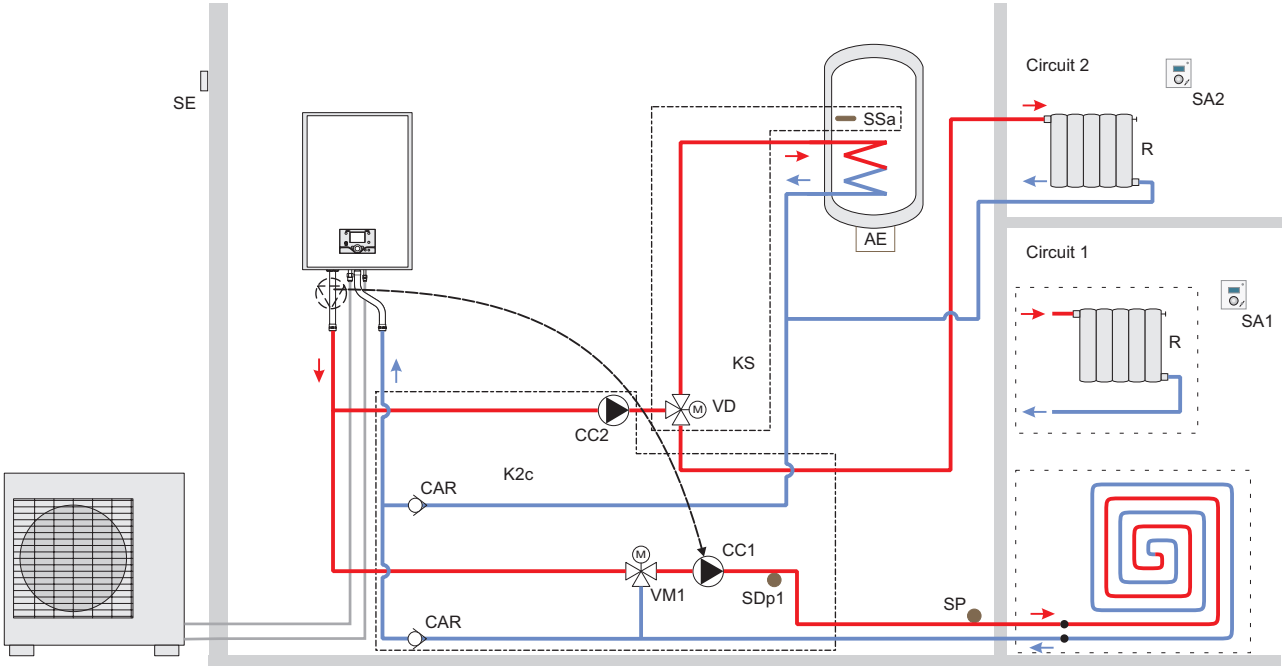
Legend

CAR - Non-return valve
CC1 - Heating circulation pump, Circuit 1 (Remote heat pump circulation pump)
CC2 - Heating circulation pump, Circuit 2
K2c - 2nd circuit kit
R - Radiators (or fan convectors)
SA1 - Room thermostat, Circuit 1 (option)
SA2 - Room thermostat, Circuit 2 (option)
SE - Outdoor sensor
SDp1 - Flow sensor, Circuit 1
SP - Heated floor thermal safety fuse
VM1 - Mixer valve, Circuit 1

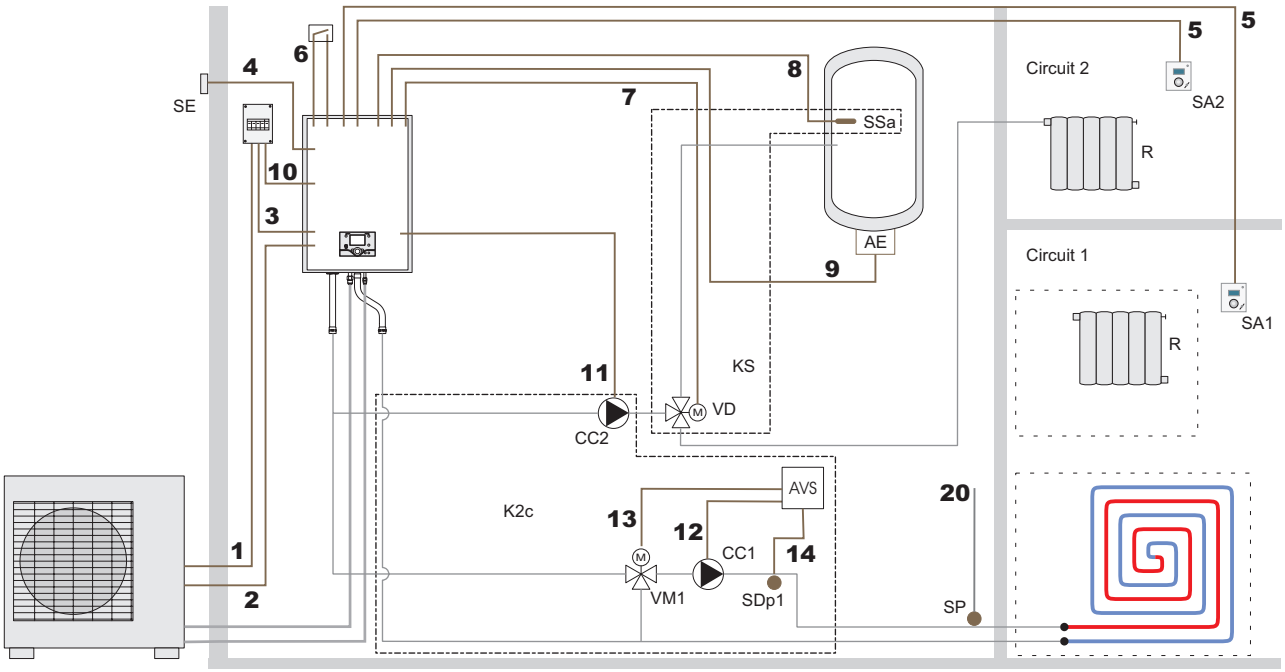
Configuration 4 :
2 heating circuits and DHW tank.

☞ **See detailed instructions on page 47.**

Overall hydraulic layout



Overview of all the electrical connections



Legend

AE - Electric back-up
CAR - Non-return valve
CC1 - Heating circulation pump, Circuit 1 (Remote heat pump circulation pump)
CC2 - Heating circulation pump, Circuit 2
KS - DHW kit
K2c - 2nd circuit kit
R - Radiators (or fan convectors)
SA1 - Room thermostat, Circuit 1 (option)
SA2 - Room thermostat, Circuit 2 (option)
SE - Outdoor sensor
SDp1 - Flow sensor, Circuit 1
SSa - DHW sensor
SP - Heated floor thermal safety fuse
VD - Distribution valve
VM1 - Mixer valve, Circuit

5 Electrical wiring diagrams

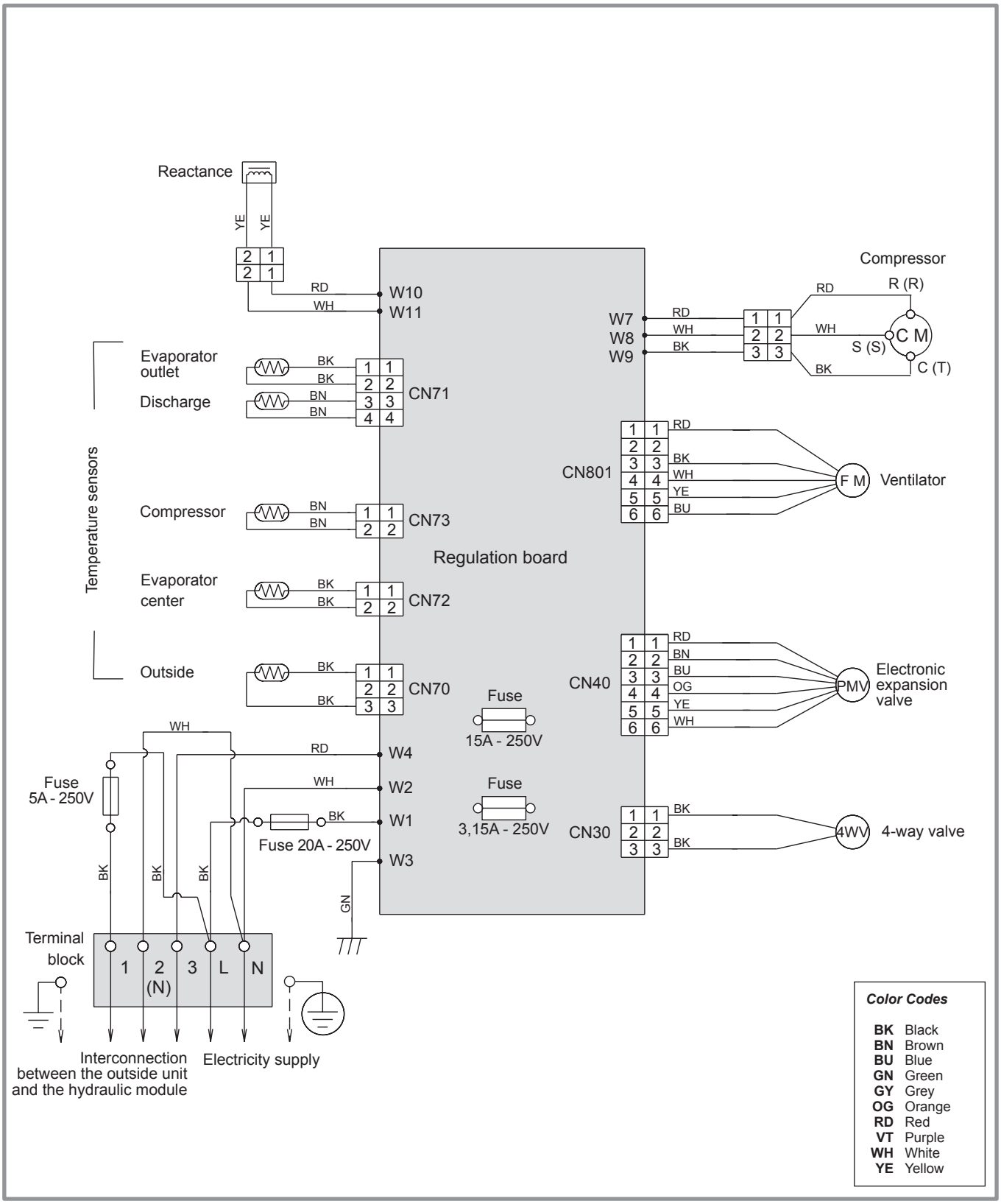


Figure 45 - Electrical wiring of outside unit (model S5, S6, S8)

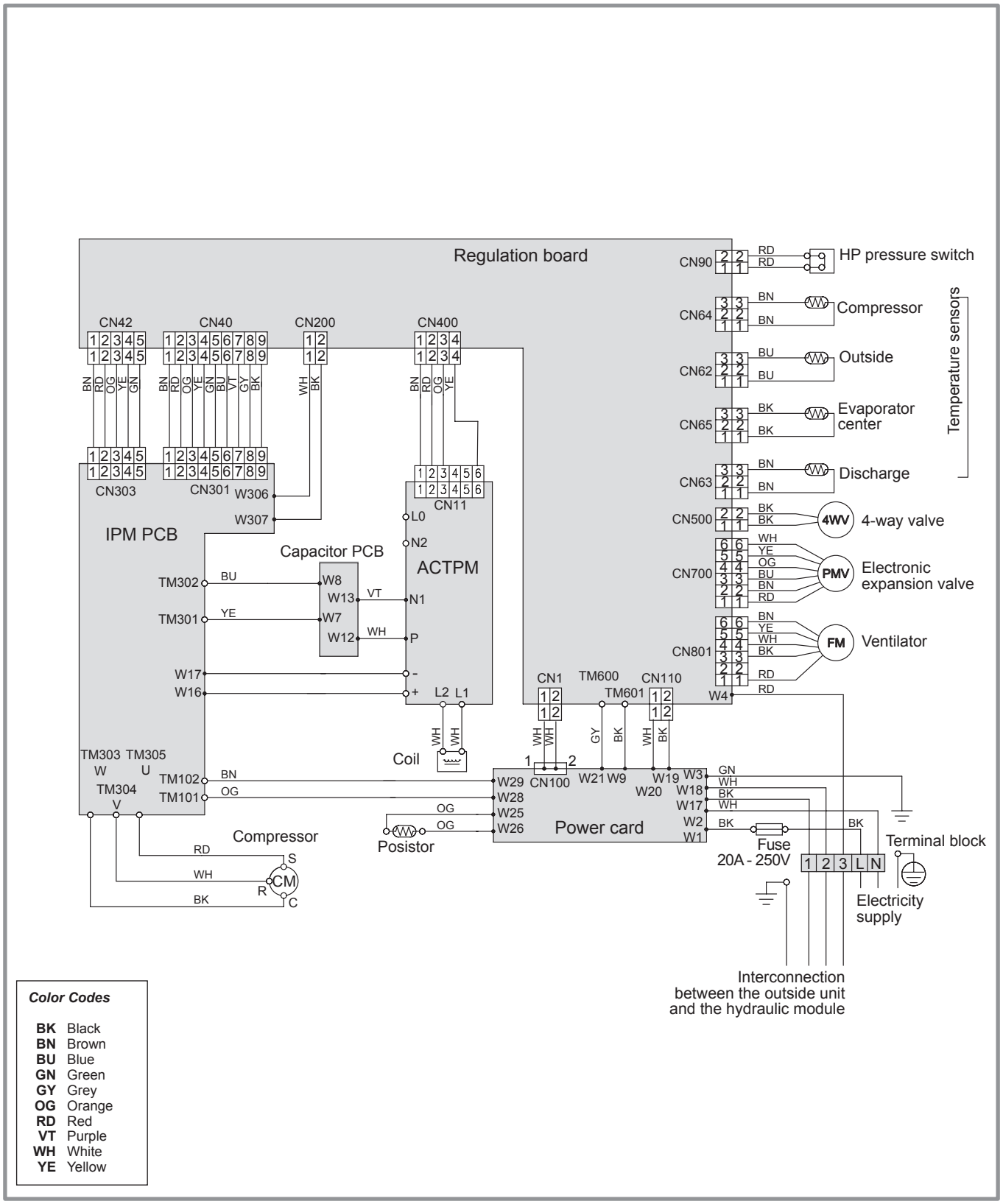


Figure 46 - Electrical wiring of outside unit (model S10)

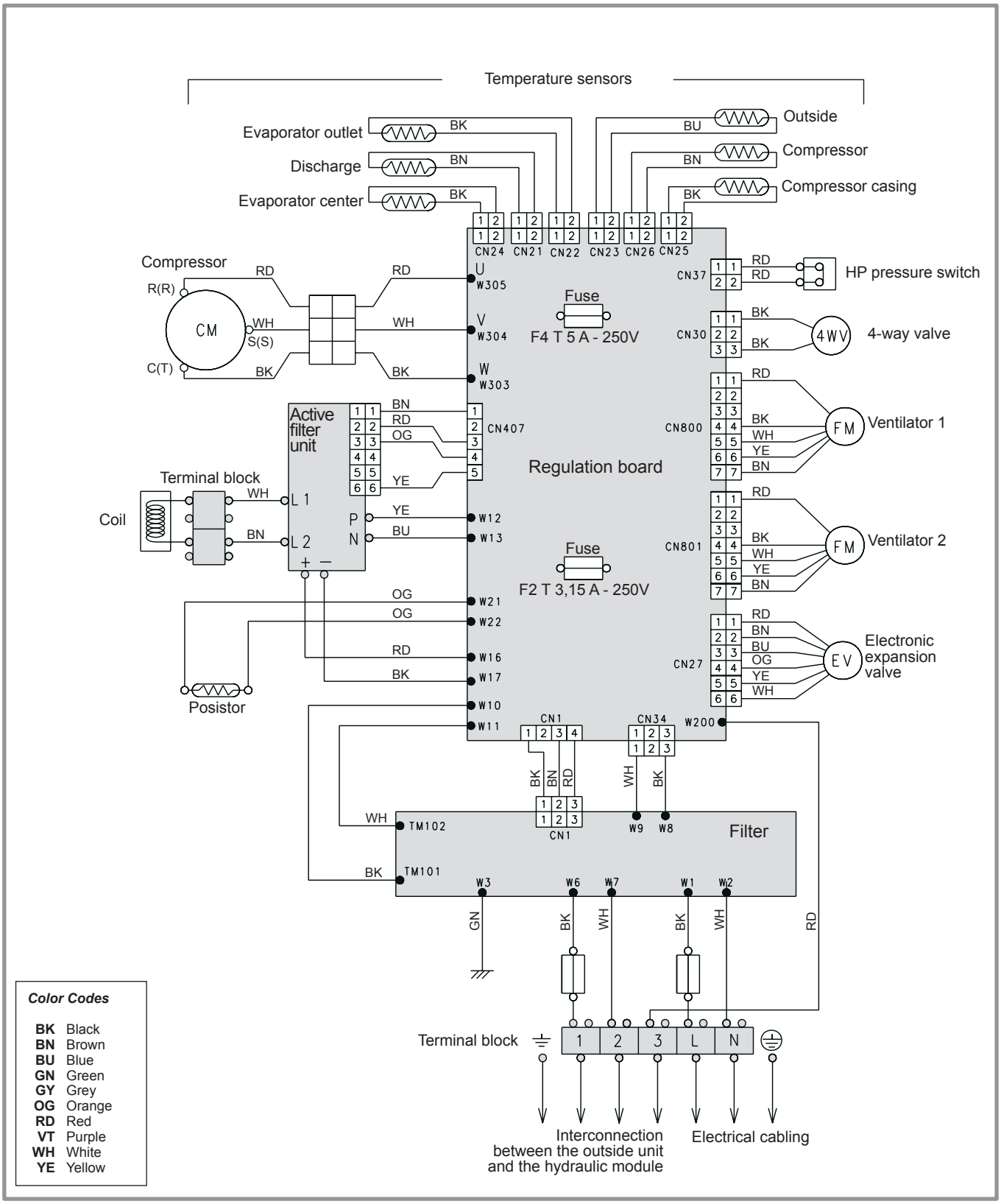


Figure 47 - Electrical wiring of outside unit (model S13)

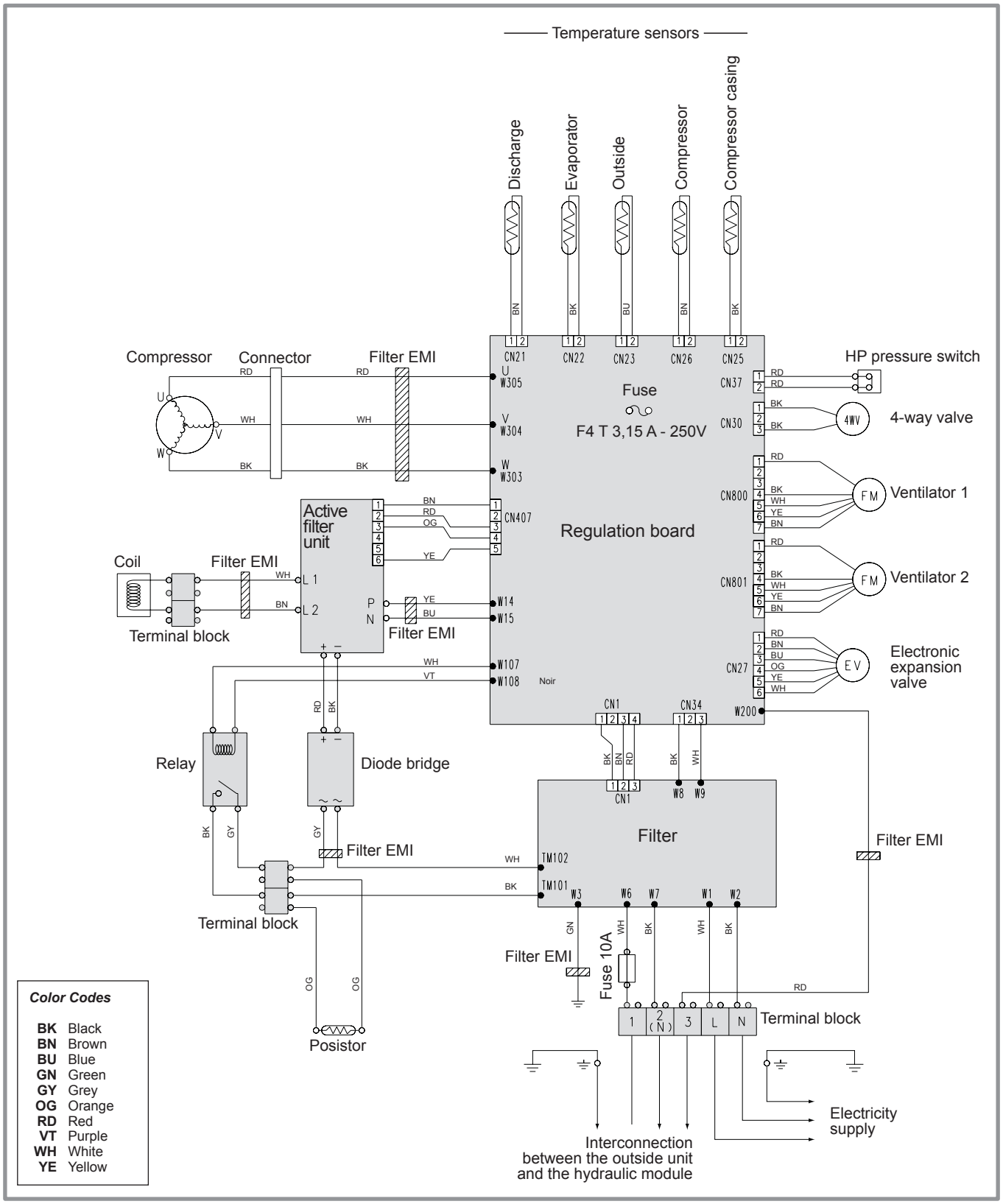


Figure 48 - Electrical wiring of outside unit (model S16)

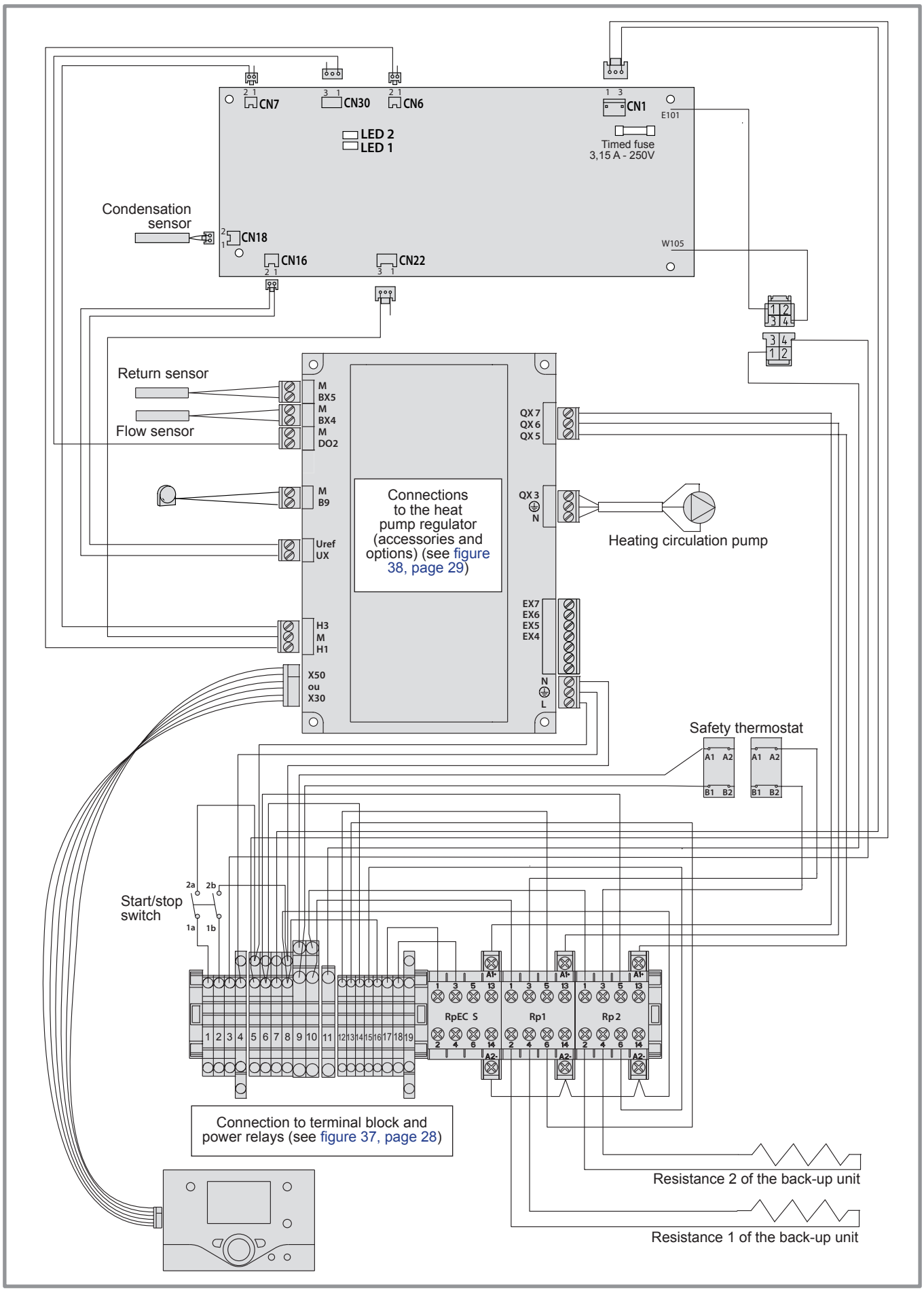


Figure 49 - Electrical wiring, Hydraulic module (Except installer's connections)

6 Troubleshooting

Depending on whether the fault comes from the outside unit or the hydraulic module, the fault may be indicated by the digital display or the diode on the interface cards.

6.1 Faults displayed on hydraulic module

Faults or breakdowns on the hydraulic mode are indicated by the display on the user interface.

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.

Hydraulic module : Fault visible on the digital display.

Error number	*Error description*	*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
65	Ambient temperature sensor 2.		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
369	External fault (safety component).		No
370	Outside unit connection error. (In the start phase, see the para. “Start-up”).	See below and page 58 and 59	No

Hydraulic module : Flashing of the diode visible on the interface card.

Diodes display		*Error contents*
LED 2 (green)	*LED 1 (red)*	
1 Flash	1 Flash	Communication error between Hydraulic unit and Outdoor unit.
4 Flashes	1 Flash	Heat pump capacity signal error (Open or short).
4 Flashes	2 Flashes	Hydraulic unit heat-exchange thermistor Error.
6 Flashes	3 Flashes	Inverter error.
6 Flashes	4 Flashes	Active filter error.
7 Flashes	1 Flash	Discharge thermistor error.
7 Flashes	2 Flashes	Compressor thermistor error.
7 Flashes	3 Flashes	Heat-exchange thermistor (outlet / intermediate) error.
7 Flashes	4 Flashes	Outdoor thermistor error.
7 Flashes	7 Flashes	Heat sink thermistor error.
7 Flashes	8 Flashes	Expansion valve thermistor error.
8 Flashes	4 Flashes	Current sensor error.
8 Flashes	6 Flashes	Pressure sensor error / Pressure switch error.
9 Flashes	4 Flashes	Current trip.
9 Flashes	5 Flashes	Detection of compressor position error / Compressor start up error.
9 Flashes	7 Flashes	Outdoor unit fan motor error.
10 Flashes	1 Flashes	Discharge temperature protection.
10 Flashes	3 Flashes	Compressor temperature protection.
10 Flashes	5 Flashes	Low pressure abnormal.
Continuous flashing (1 sec On / 1 sec Off)		Pump down operation.
Continuous lighting	Off	Defrosting.

6.2 Faults displayed on the outside unit

To access the electronic board, you must remove the front (right-hand) facing from the outside unit.
Faults are coded by diode flashes.

Outside unit, Ref. AOYA18LALL(Model S5 and S6).
Outside unit, Ref. AOYA24LALL (Model S8).

Diode display	*Erroneous element*
0,1 seconds lit and 0,1 seconds unlit.	Defective temperature sensor (see hydraulic module).
0,5 seconds lit and 0,5 seconds unlit.	Abnormal intensity detector error.
2 seconds lit and 2 seconds unlit.	Electric current circuit breaker error.
5 seconds lit and 5 seconds unlit.	Defective fan motor.
0,1 seconds lit and 2 seconds unlit.	Position of the compressor's rotor not detected.
5 seconds lit and 0,1 seconds unlit.	Abnormal PAM circuit voltage.
1 seconds lit and 0,1 seconds unlit.	Timer cut off.
2 seconds lit and 5 seconds unlit.	Abnormal compressor temperature.
5 seconds lit and 2 seconds unlit.	Active filter error.
Permanently lit.	Abnormal discharge temperature.

Outside unit, Ref. AOYA30LBTL (Model S10).

Diode display	*Erroneous element*
0,1 seconds lit and 0,1 seconds unlit.	Defective temperature sensor (see hydraulic module).
0,5 seconds lit and 0,5 seconds unlit.	Defective IPM card.
2 seconds lit and 2 seconds unlit.	Electric current circuit breaker error.
5 seconds lit and 5 seconds unlit.	Defective fan motor.
0,1 seconds lit and 2 seconds unlit.	Position of the compressor's rotor not detected.
5 seconds lit and 0,1 seconds unlit.	Defective ACTPM card.
Permanently lit.	Abnormal discharge temperature.

☞ **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.**

Outside unit, Ref. AOYA45LBTL (Model S13) and Ref. AOY54LJBYL (Model S16).

Diode display	*Erroneous element*
1 Flash.	Transmission error, "hydraulic module - outside unit".
2 Flashes.	Defective “discharge” temperature sensor.
3 Flashes.	Defective “evaporator” temperature sensor.
4 Flashes.	Defective “outside” temperature sensor.
5 Flashes (Model S13).	Defective “evaporator centre” temperature sensor.
6 Flashes (Model S13).	Abnormal discharge temperature.
7 Flashes.	Defective compressor temperature sensor.
8 Flashes.	Defective “compressor casing” temperature sensor.
9 Flashes.	Defective HP pressure switch.
10 Flashes (Model S13).	Abnormal compressor temperature.
12 Flashes.	Defective IPM card.
13 Flashes.	Position of the compressor’s rotor not detected.
14 Flashes.	Compressor is not operating.
15 Flashes.	Defective upper fan motor.
16 Flashes.	Defective lower fan motor.
5 seconds lit and 1 seconds unlit.	Switched to safety mode.
1 seconds lit and 1 seconds unlit (Model S13).	Switched to vacuum.
Permanently lit.	No error.

6.3 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 (see table, page 57).
- 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.	-
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.	8001
State heating circuit 2.	8004
Outside temperature.	8700
Room temperature 1.	8740
Room setpoint 1.	
Flow temperature 1.	8743
Flow temperature setpoint1.	
Room temperature 2.	8770
Room setpoint 2.	
Flow temperature 2.	8773
Flow temperature setpoint 2.	
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.	

7 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.

Complies with :

- Low voltage directive 2006/95/EC, under standard EN 60335-1.
- Electromagnetic compatibility Diretive 2004/108/EC,
- Directive 98/37/EC,
- Directive for pressurised equipment 97/23/EC.

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.

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.

www.atlantic.fr
Société Industrielle de Chauffage
SATC - BP 64 - 59660 MERVILLE - FRANCE