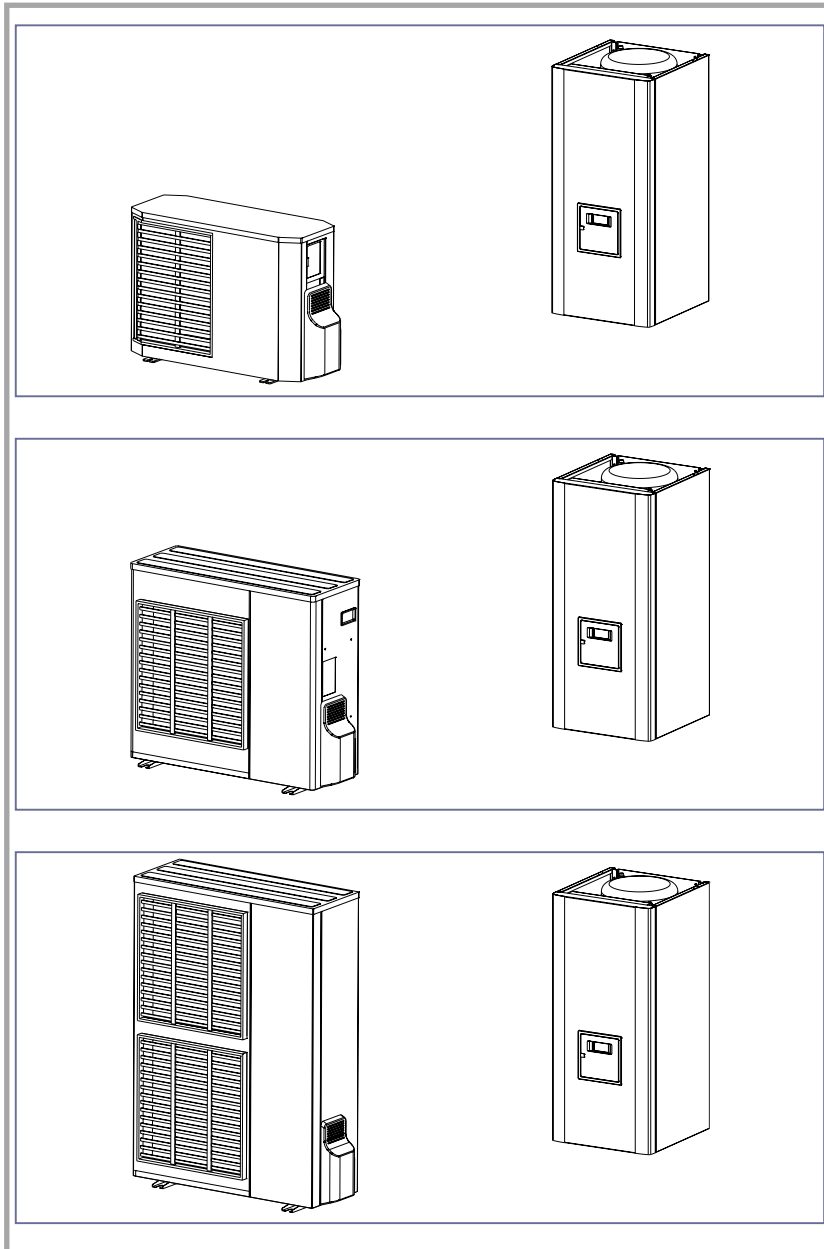


## Heat pump air/water split single service



### **Installation and operating manual** intended for professionals

To be saved  
for future consultation

**FUJITSU**

Fujitsu General (Euro) GmbH  
Wertstrasse 20  
40549 Düsseldorf - Germany

Subject to modifications without notice.  
Non contractual document.

## Packing list

Heat pump		Outside unit		Hydraulic module	
		Model		Model	Code
		AOYA18LALL		WSYA 050 DA	023600
		AOYA18LALL		WSYA 065 DA	023601
		AOYA24LALL		WSYA 080 DA	023602
		AOYA30LBTL		WSYA 095 DA	023603
		AOYA45LATL AOYA45LBTL		WSYA 128 DA	023604
		AOY54LJBYL		WSYA 155 DA	023605

### Optional equipment

- 2nd circuit kit (UTW-KZSXA)
  - for connecting 2 heating circuits
- DHW kit (UTW-KDWXA)
  - for connecting a DHW tank (with built-in electrical backups)
- Boiler connection kit (UTW-KBSXA)
  - for connecting a boiler to the heat pump
- Room thermostat (UTW-C55XA)
  - For correcting the ambient temperature
- Remote control (UTW-C75XA)
  - For correcting the ambient temperature and programming the heat pump.
- Cooling kit (UTW-KCLXA)
- Swimming pool kit (UTW-KSPXA)
- High flow rate circulating pump kit (UTW-PHFXA)
  - For the installation of 1 circuit floor heating with model 128 and 155
- Cooling kit (UTW-KCHXA) compatible with high flow rate circulating pump (128 and 155)

### 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\*.
- Installation with boiler connection as a supplementary heating for the coldest days\*.

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

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# 1 Description of the unit

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## 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

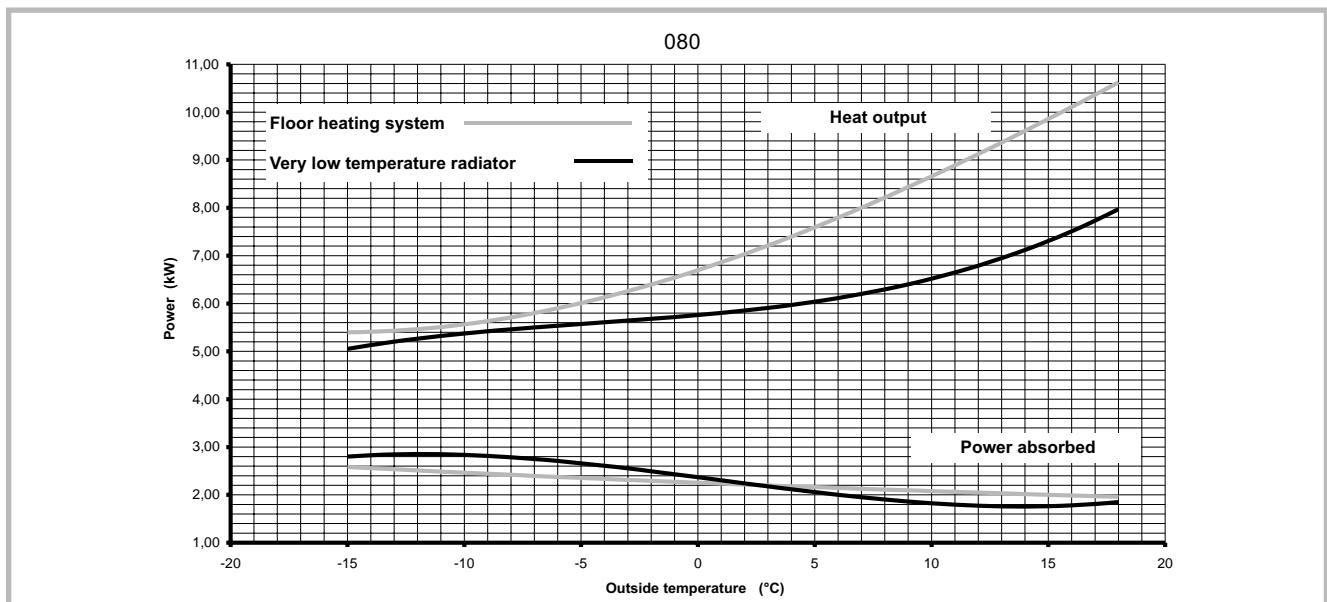
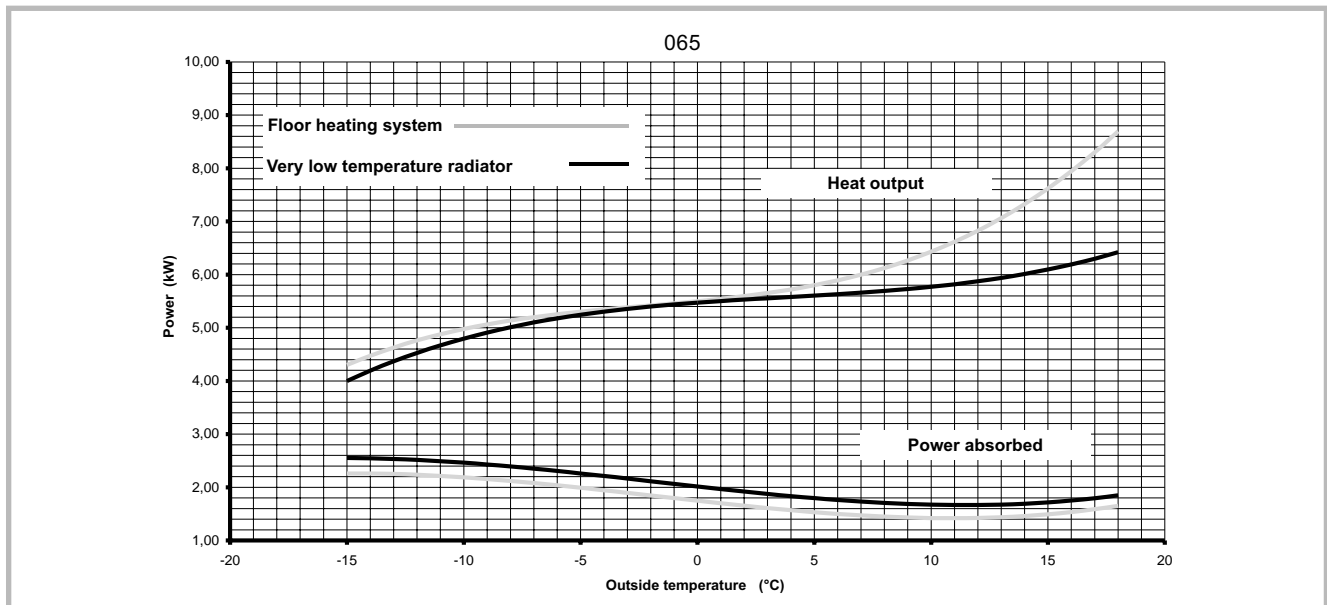
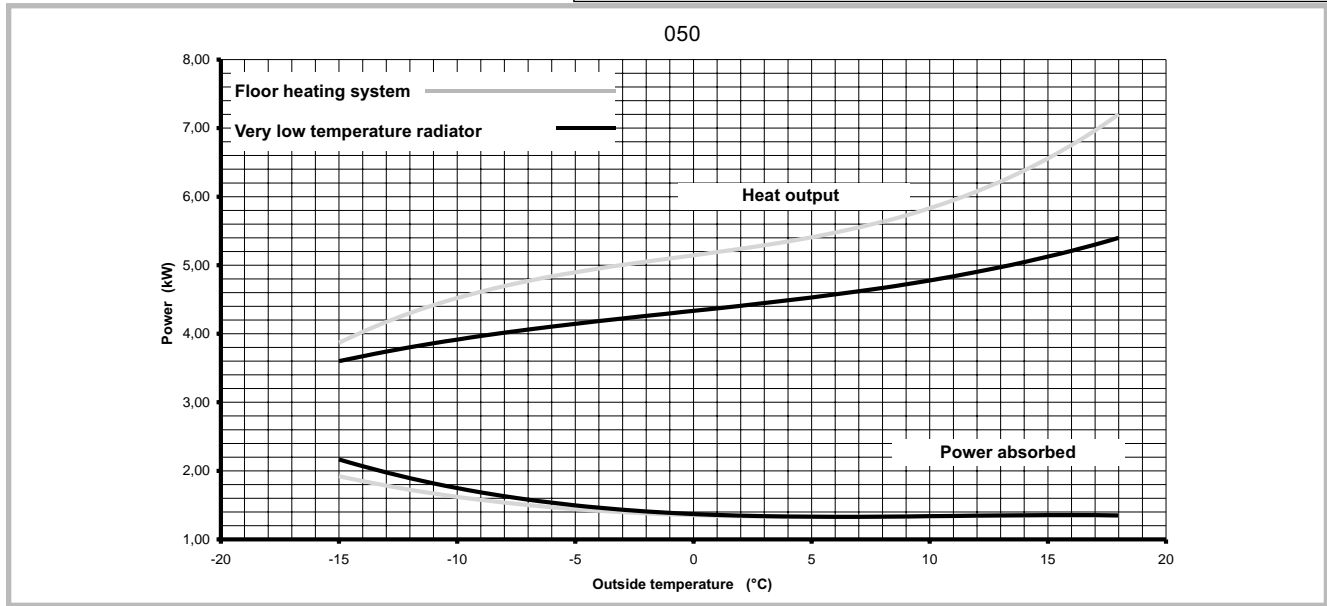
Designation, Model	050	065	080	095	128	155	
Nominal heating performances (outside temperature/ initial temperature)							
Heat output							
+7 °C / +35 °C - Floor heating system	kW	5	6,5	8	10,3	12,8	15,5
-7 °C / +35 °C - Floor heating system	kW	4,8	5,6	7	8,1	11	13,8
+7 °C / +45 °C - Low temperature radiator	kW	4,15	5,4	6,2	8,3	9,7	13,3
-7 °C / +45 °C - Low temperature radiator	kW	4,05	5,1	5,9	7,3	8,3	11
Power absorbed							
+7 °C / +35 °C - Floor heating system	kW	1,16	1,63	1,88	2,57	3,12	3,88
-7 °C / +35 °C - Floor heating system	kW	1,75	2,24	2,54	3,52	3,79	5,3
+7 °C / +45 °C - Low temperature radiator	kW	1,15	1,61	1,88	2,51	3,13	4,09
-7 °C / +45 °C - Low temperature radiator	kW	1,72	2,32	2,62	3,48	4,61	5,37
Nominal coefficient of performance (COP) (+7 °C / + 35 °C)							
		4,3	4	4,25	4	4,1	4
Electrical characteristics							
Supply voltage (50 HZ)	V	230	230	230	230	230	230
Maximum start-up current of the appliance	A	10,5	10,5	12,9	15,3	22,6	25,9
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	2600	2600	2930	3500	5150	5900
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							
Exterior temp 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
Initial 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	¼	¼	¼	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	0	0	5	5	5	5
Maximum length of pipes*	m	10	10	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

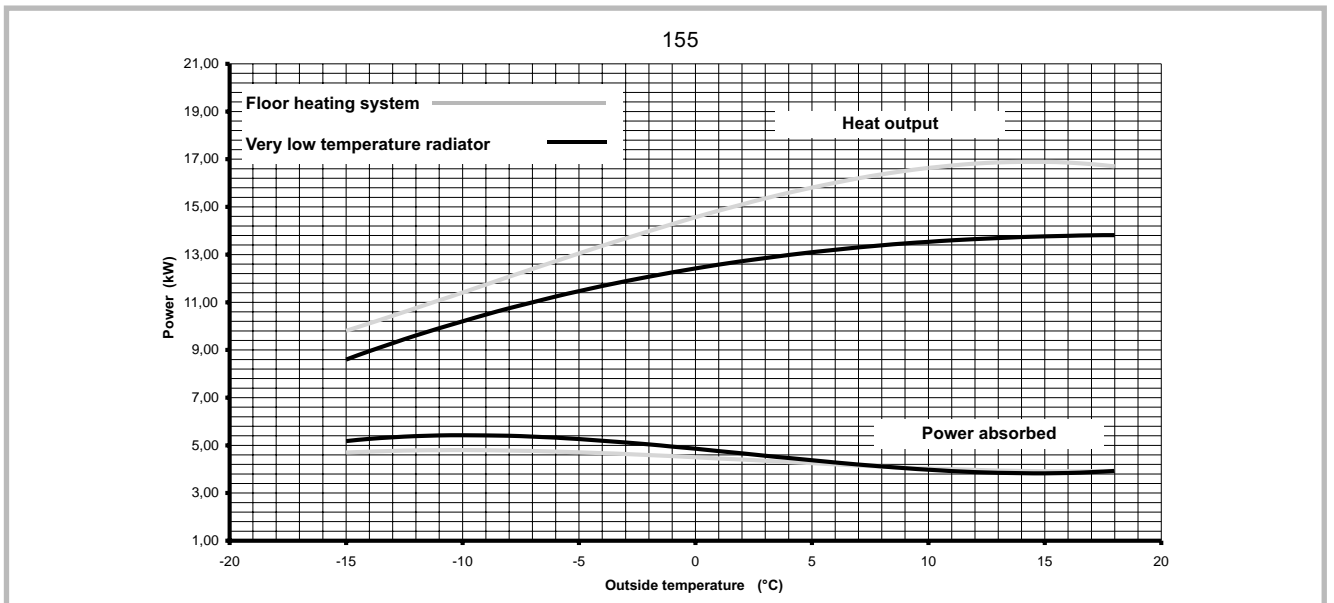
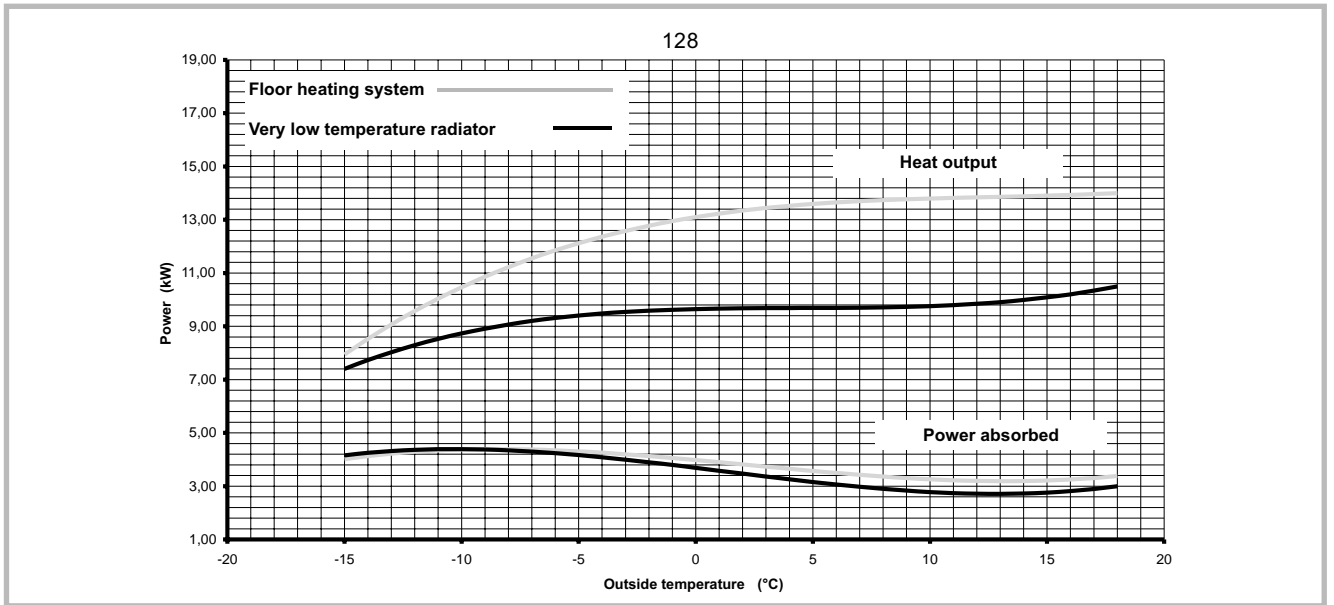
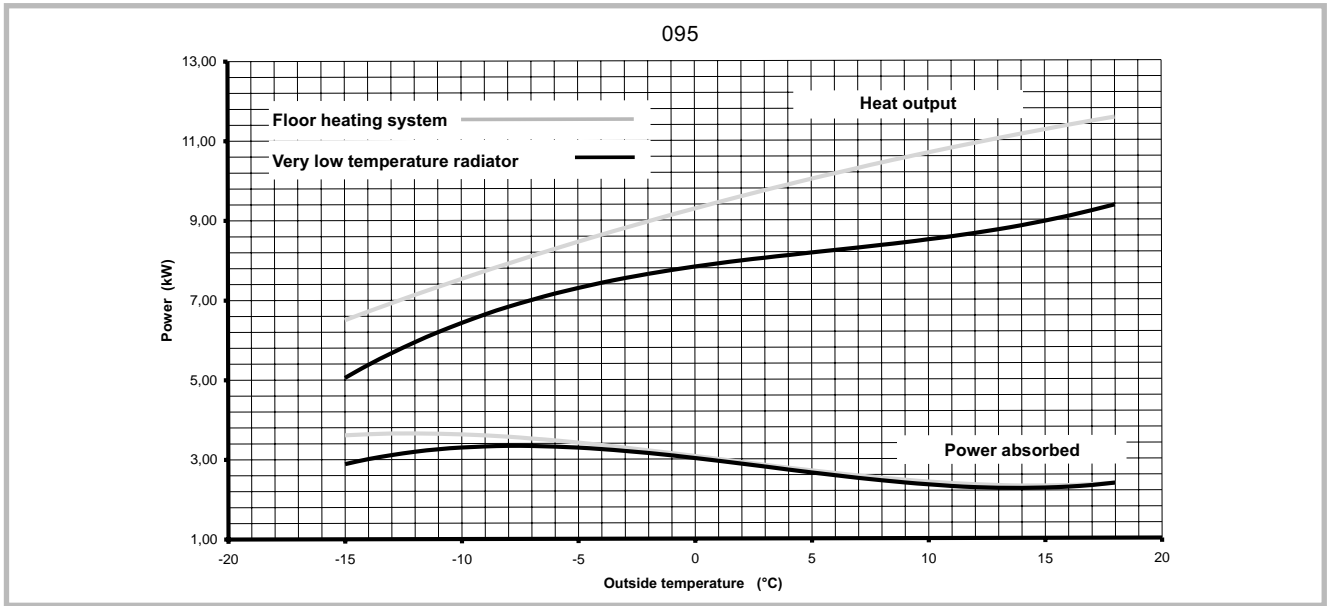
\* Factory charge of refrigerant R410A

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

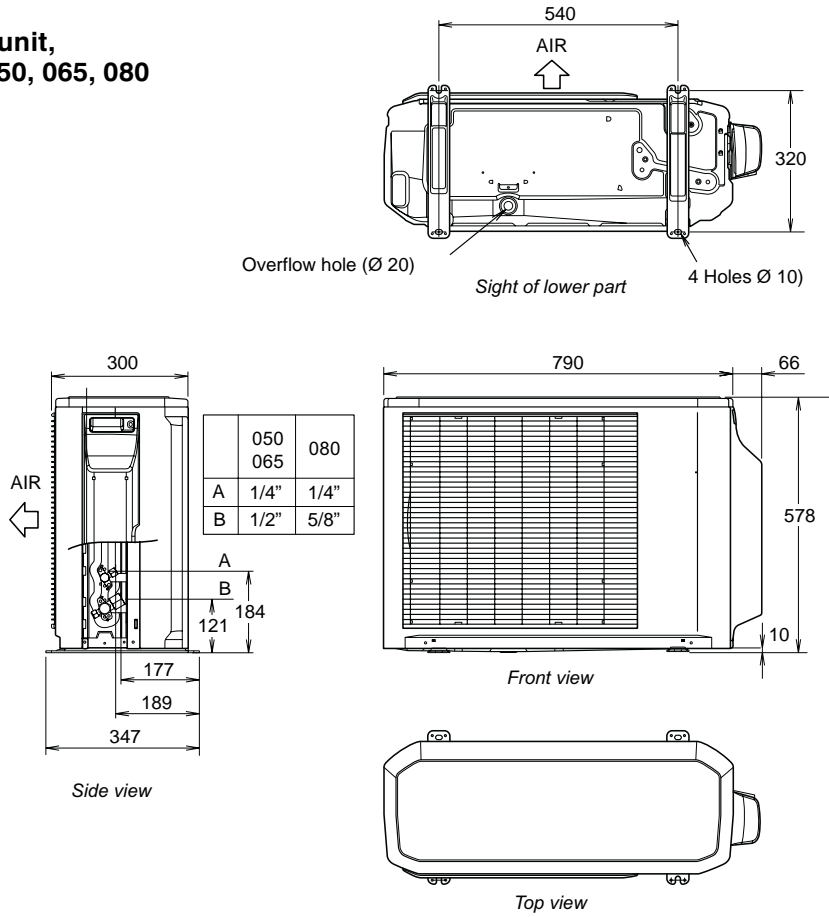
### 1.4 Heating power curve

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

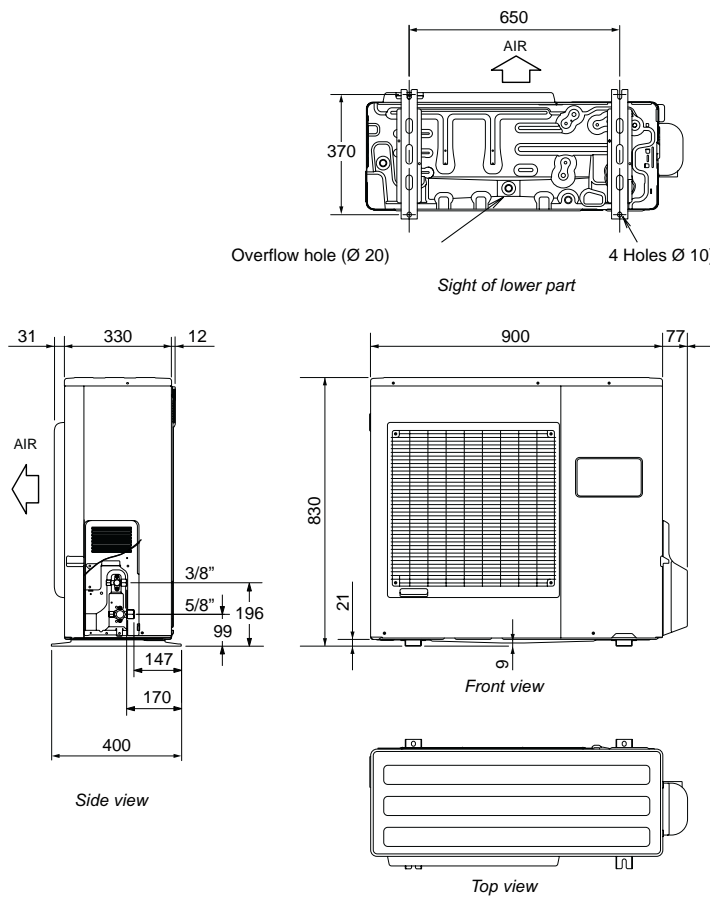




➤ **Outside unit,  
Model 050, 065, 080**



➤ **Outside unit,  
Model 095**



**Figure 1 - Dimensions in mm**



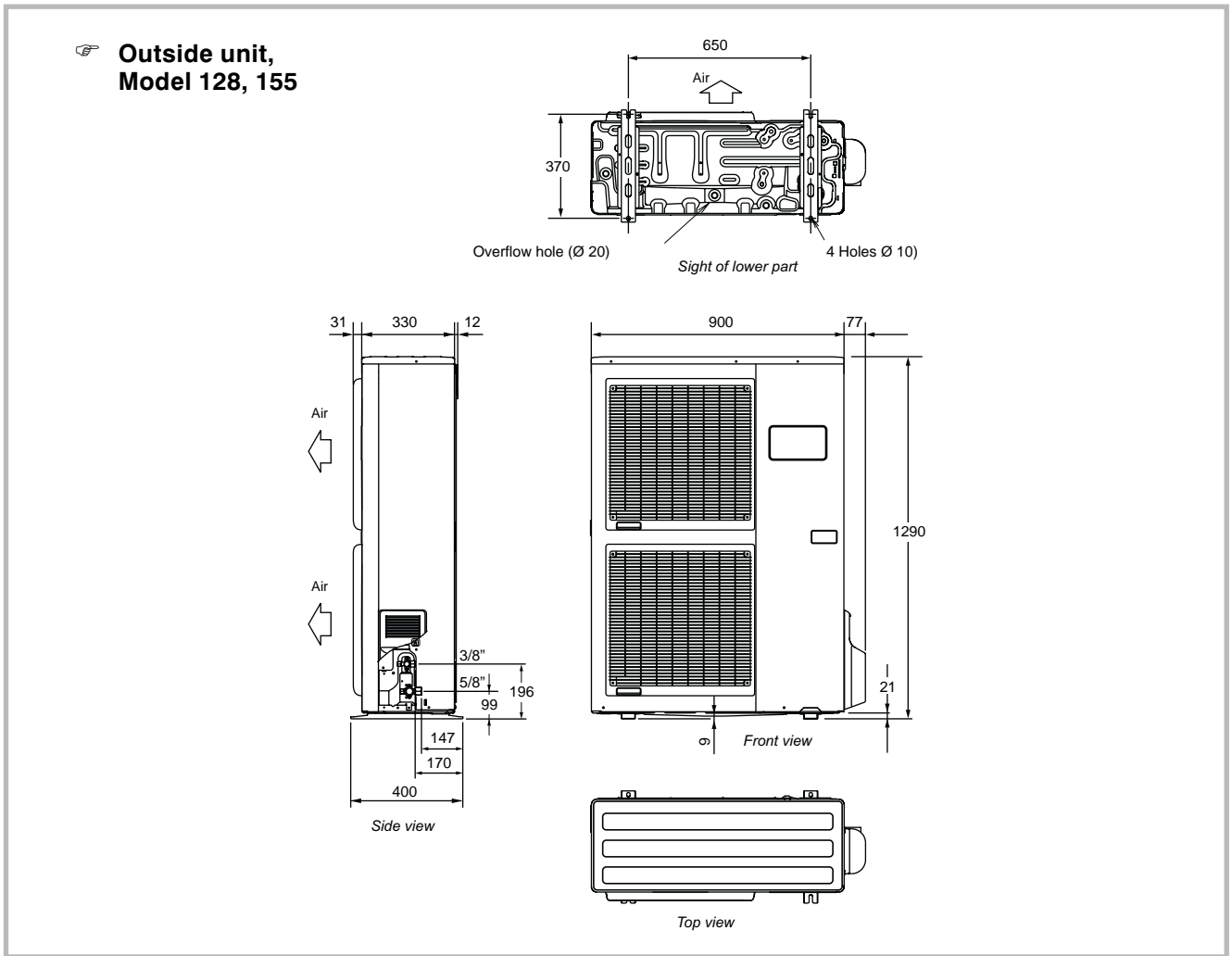


Figure 2 - Dimensions in mm

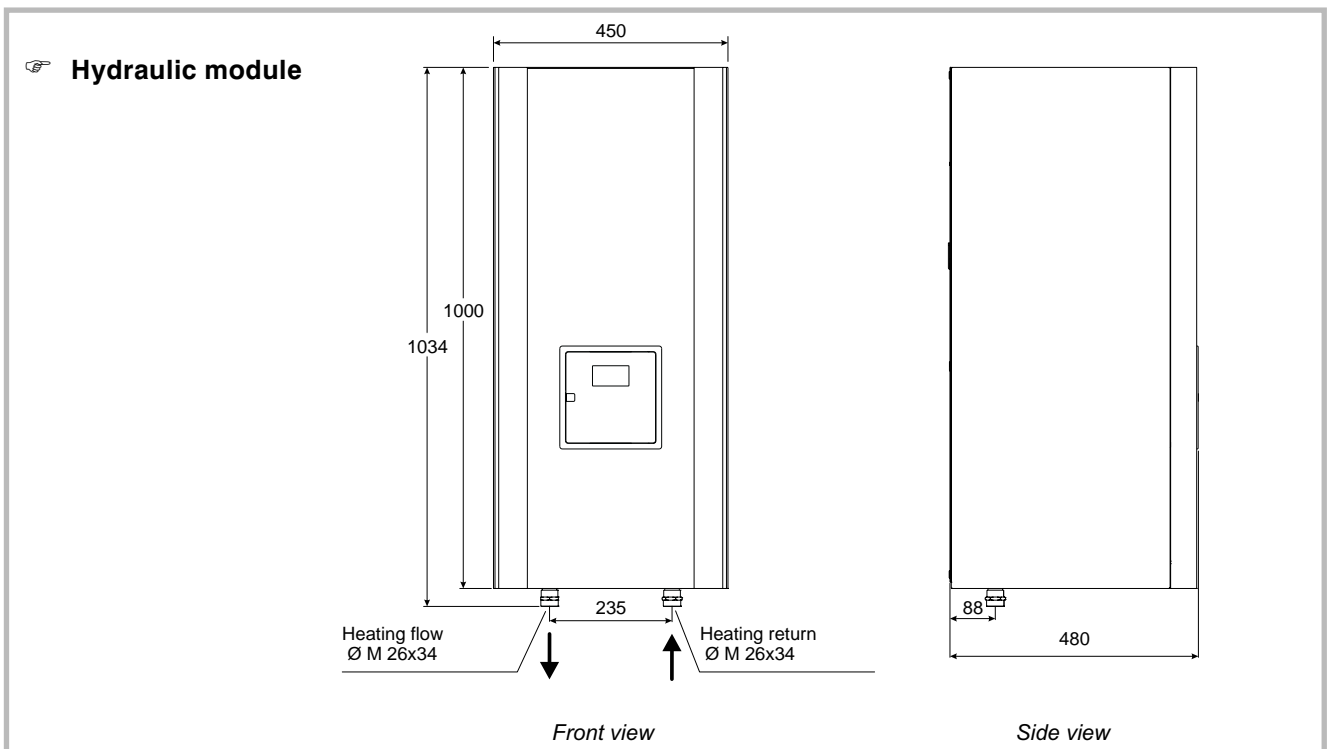


Figure 3 - Dimensions in mm

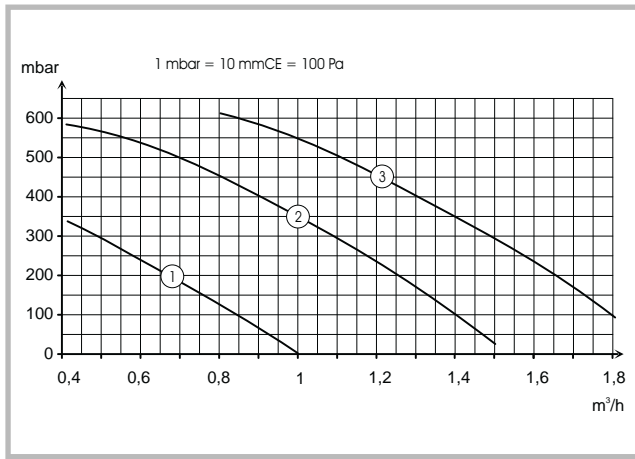


Fig. 4 - Hydraulic pressures and flow rates available

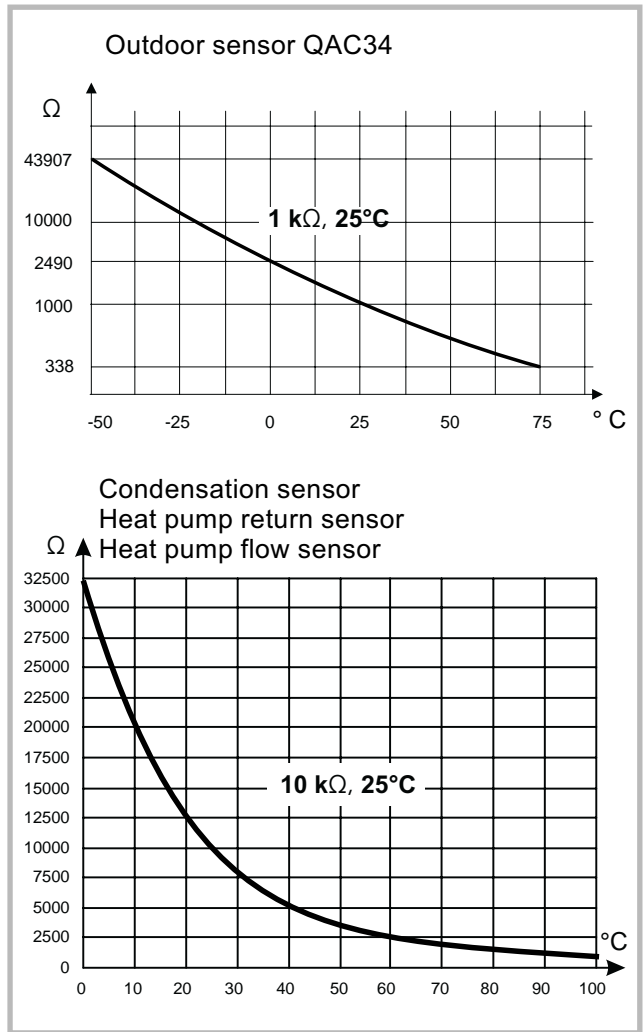


Fig. 5 - Ohmic values of the sensors (Hydraulic module)

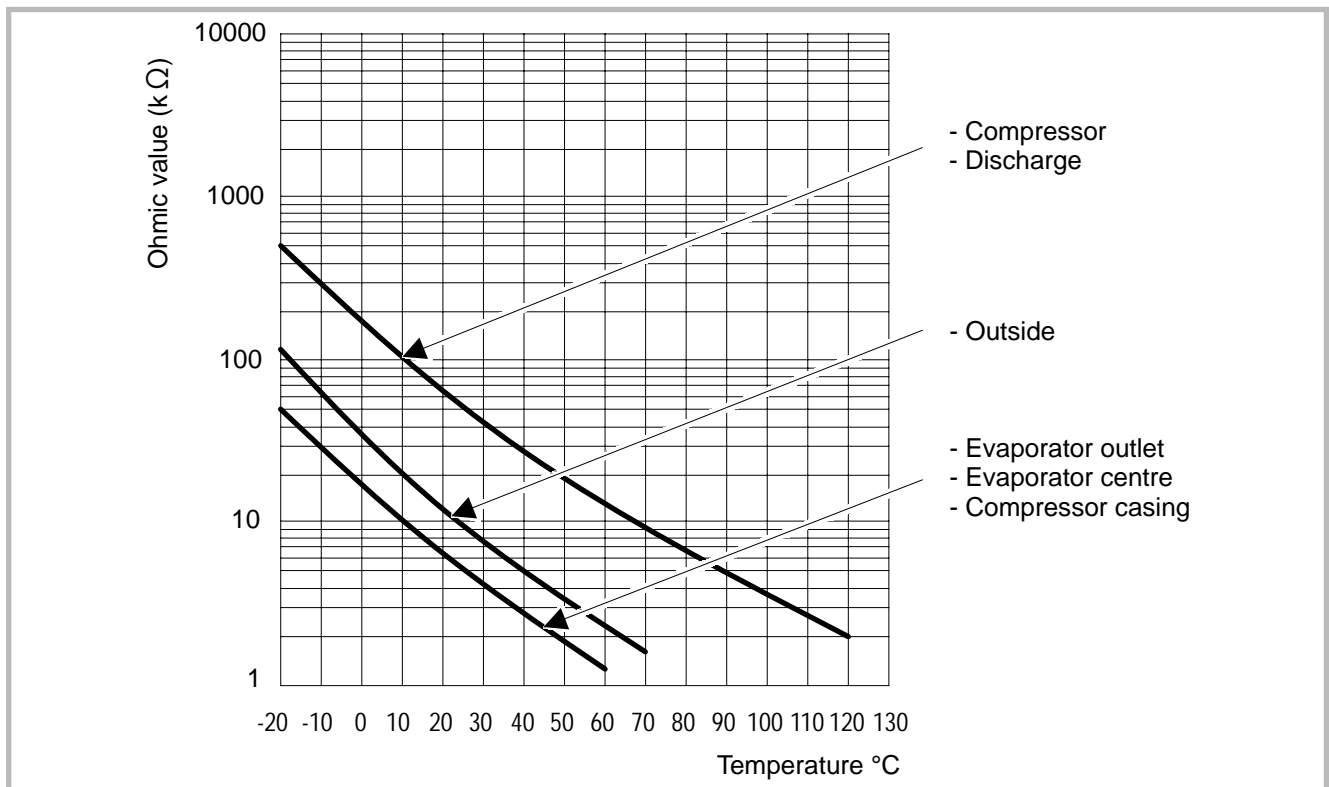
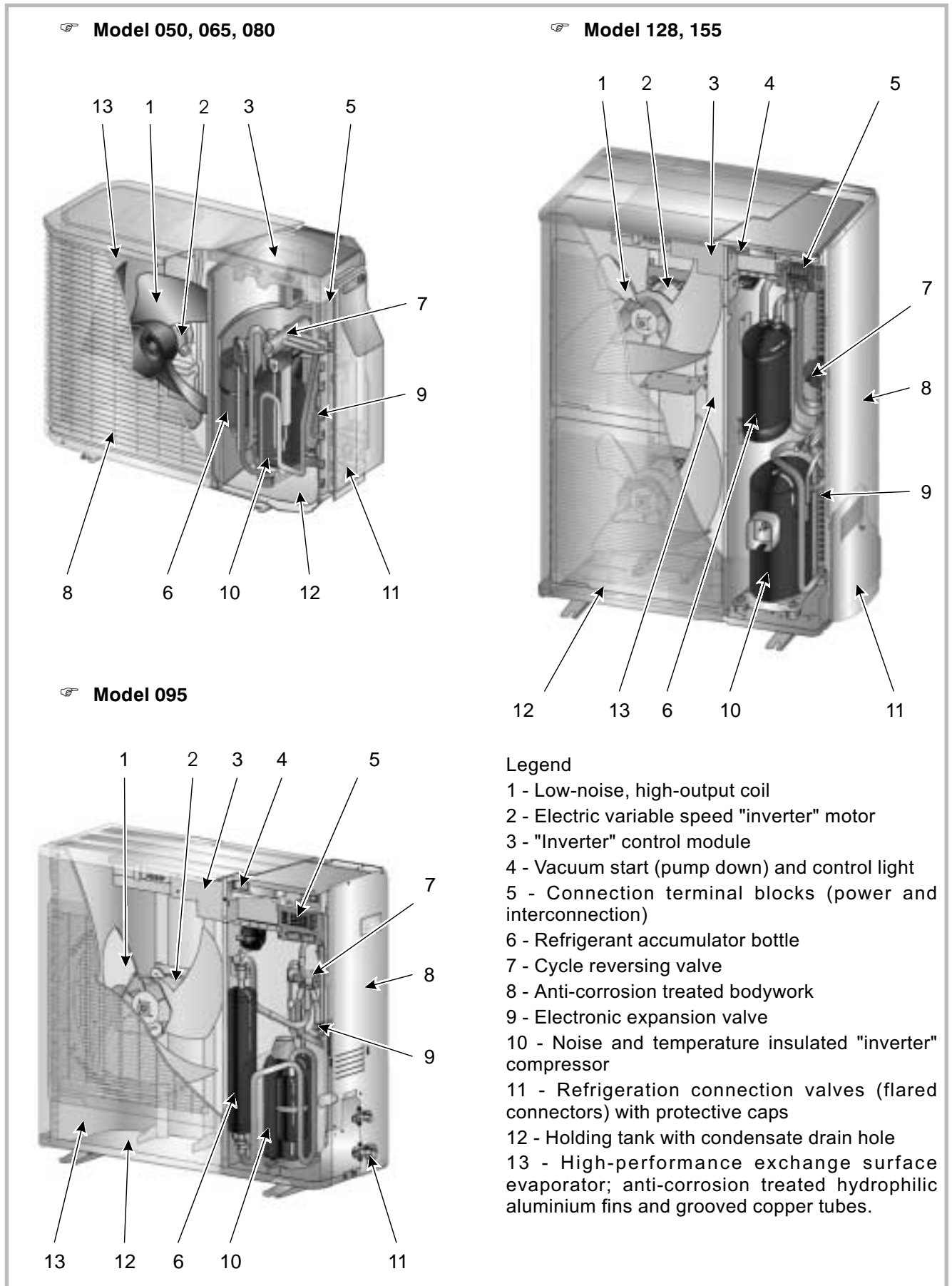
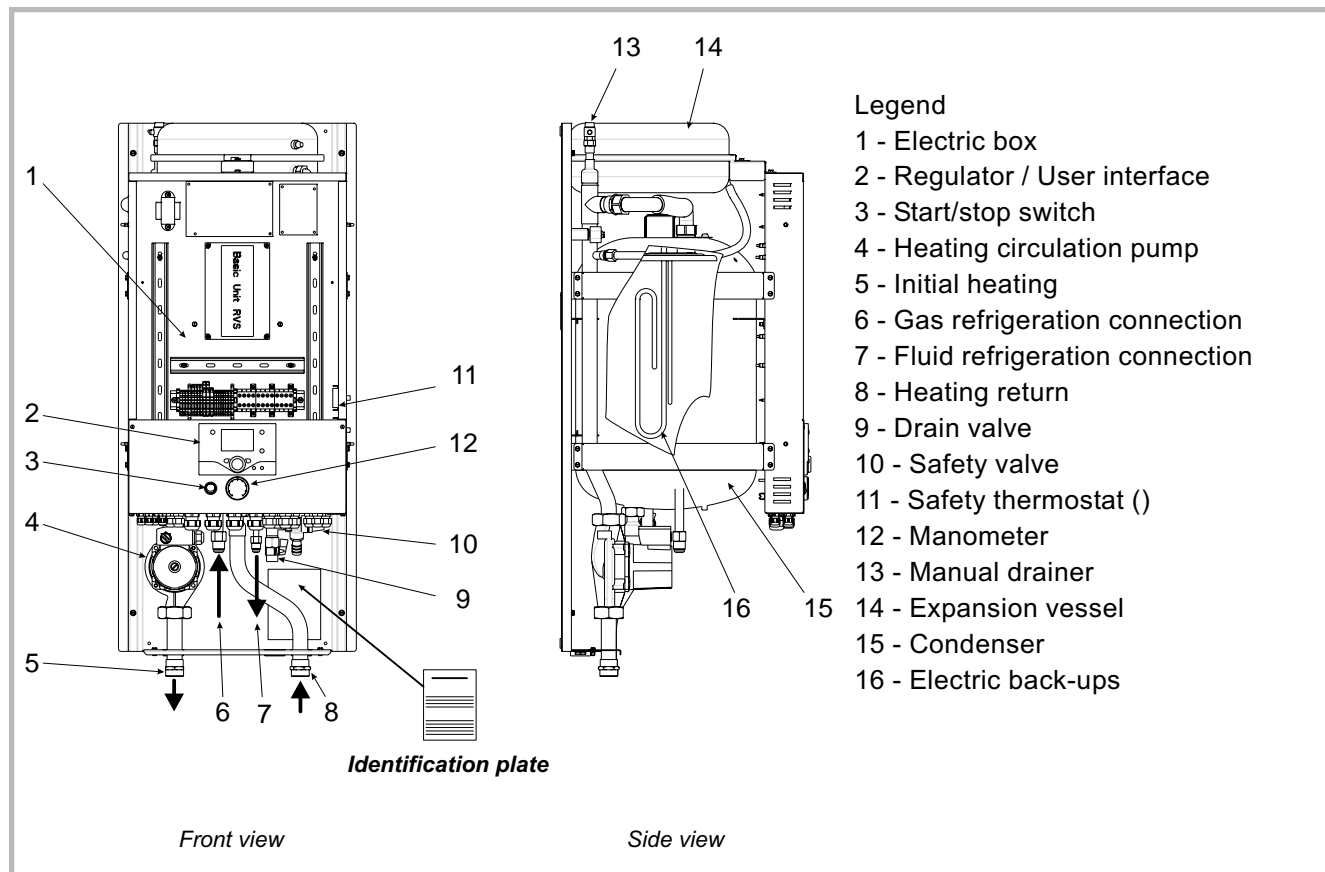


Fig.6 - Ohmic values of the sensors (outside unit)

## 1.5 Description



**Figure 7 - Outside unit components**



**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, fig 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, fig 7, page 11): The vaporised refrigerant brought to high pressure and takes on more calories.
- In the condenser (rep. 15, fig 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, fig 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\*.

### 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 60 °C) and reduced temperature (line 1612 to 40 °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.

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

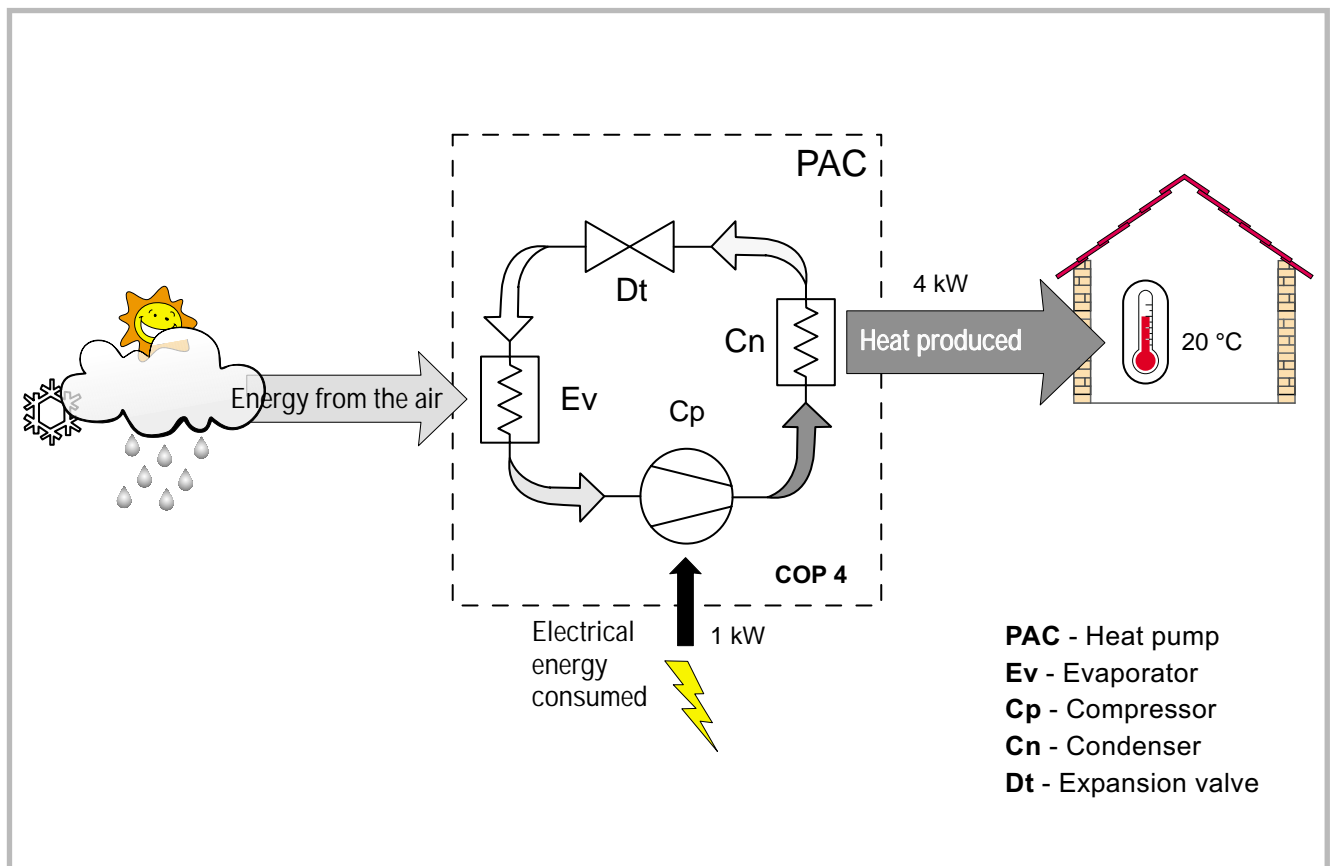
The production of DHW takes priority over heating; nevertheless the production of DHW is controlled by cycles that control the times assigned to the heating and the production of DHW in the event of simultaneous demand.

A DHW "boost" function is available on the front of the user interface (see ref. 1, fig. 39, p 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.



**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

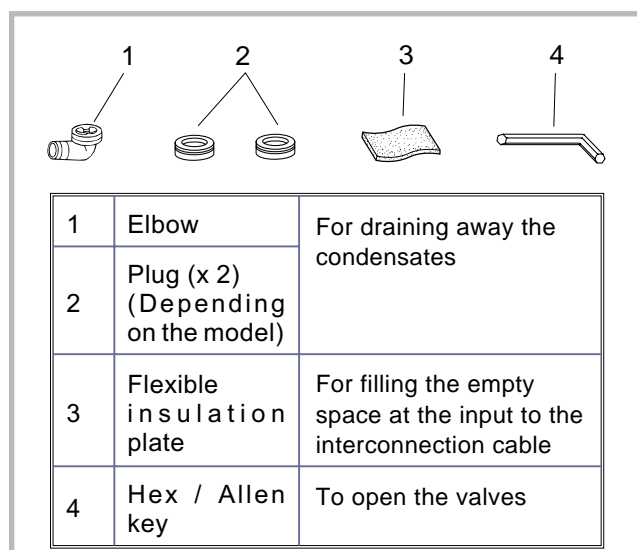
The outside unit should not be laid on its side or back during transport.

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.



**Figure 10 - Accessories provided with the outside unit**

### 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.

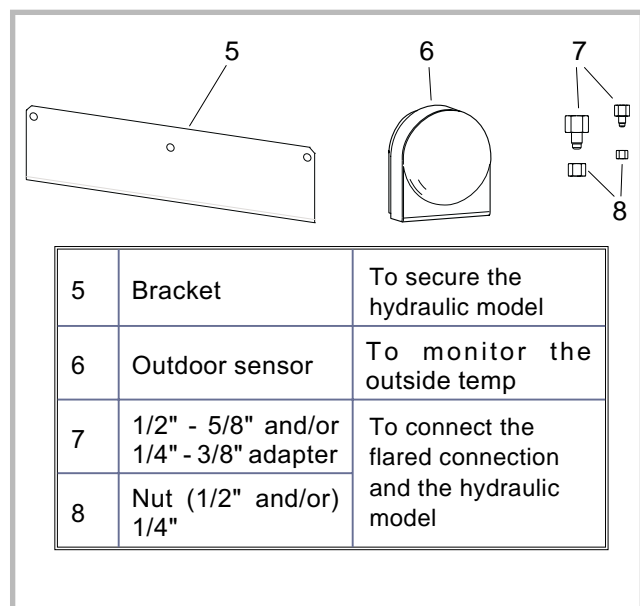
Observe the maximum and minimum distances between the hydraulic module and the outside unit (Figure 13); the guarantee of the performances and the system's service life depend on this.

### 2.4 Installation of the outside unit

#### 2.4.1 Installation precautions

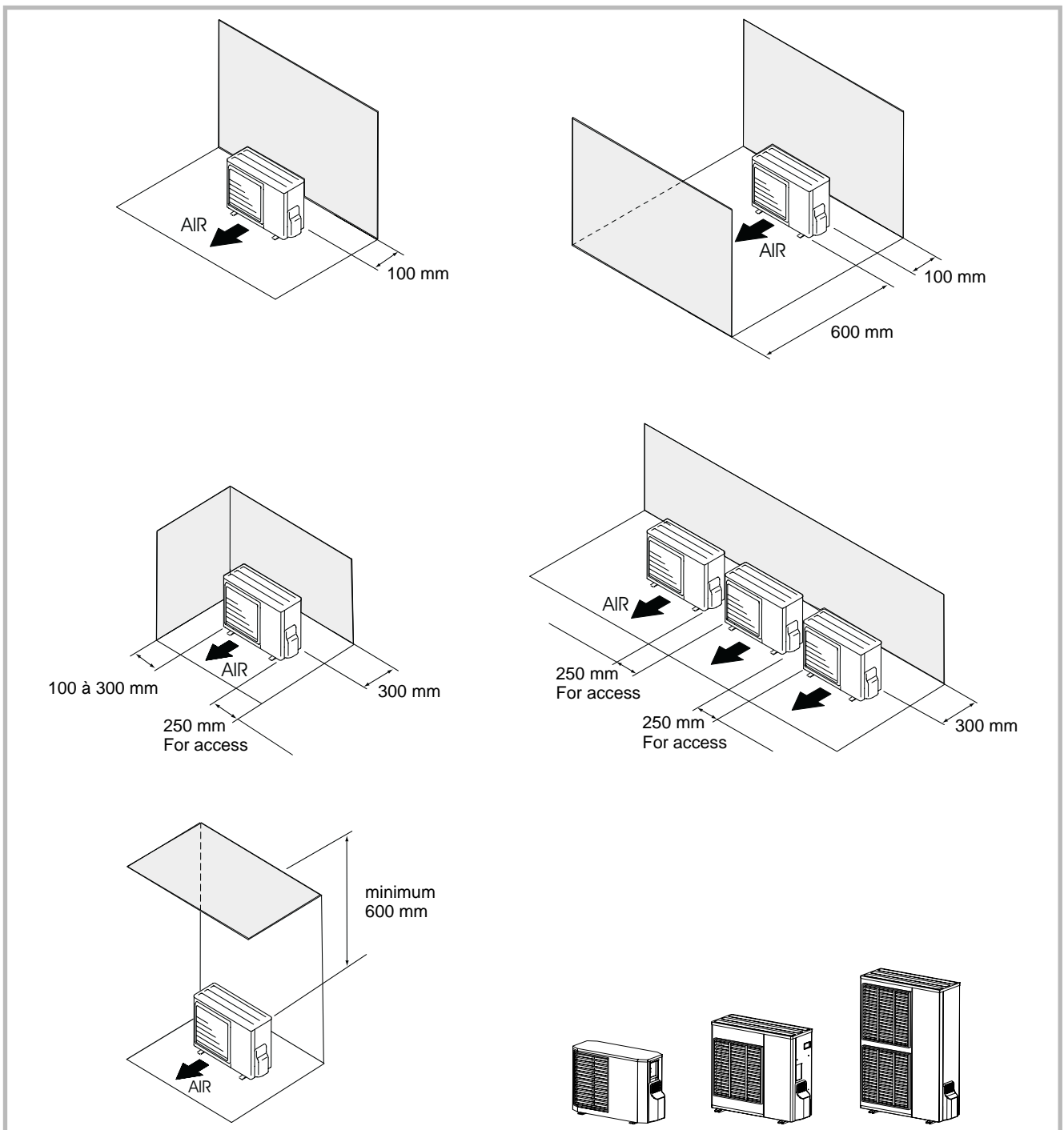
**The outside unit must only be installed outside (outdoors). If a shelter is required, it must have broad openings on the 4 walls and observe the installation clearances (fig. 12).**

- 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 (fig. 12).
- Ensure that it is possible to make the connections to the hydraulic module easily.



**Figure 11 - Accessories provided with the hydraulic module**

- 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).
- Water may drain away from the outside unit when it is operating. You can let this defrosted water run off over a gravel or sand bed or a concrete slab with a diamond point and a sinkhole in the ground. 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 § 2.4.3, page 16).
- Nothing should obstruct the air circulation through the evaporator and from the fan (fig. 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 receiving the outside unit must be able generally to support its weight; provide a solid fixing and do not transmit any vibration to the dwelling. Anti-vibratory blocks are available, please consult your retailer.



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

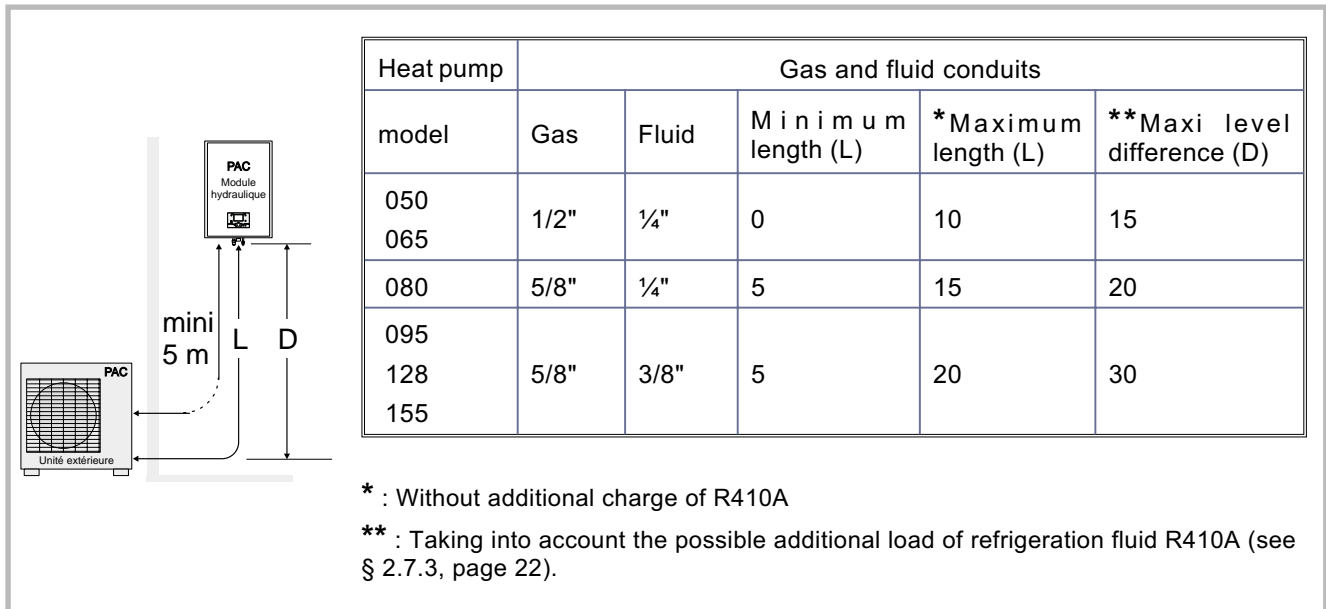


Figure 13 - Pipe diameters (in inches) and permissible lengths (in metres)

### 2.4.2 Outside unit positioning

The outside unit must be raised at least 50mm above the ground. In snowy areas, this height must be increased (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.**

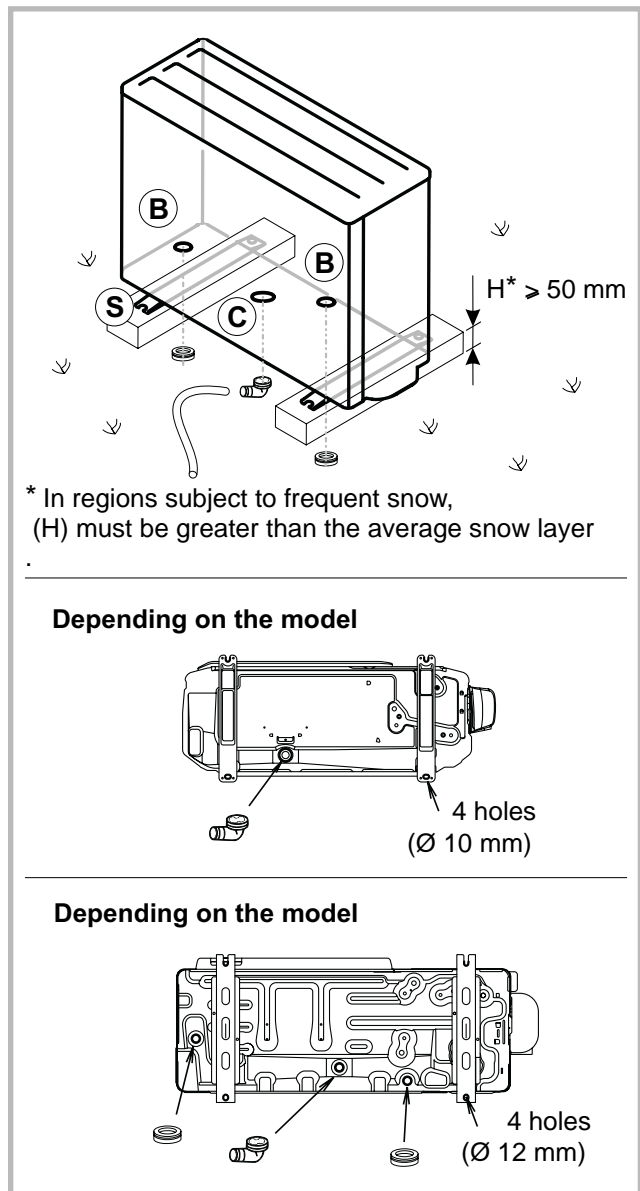


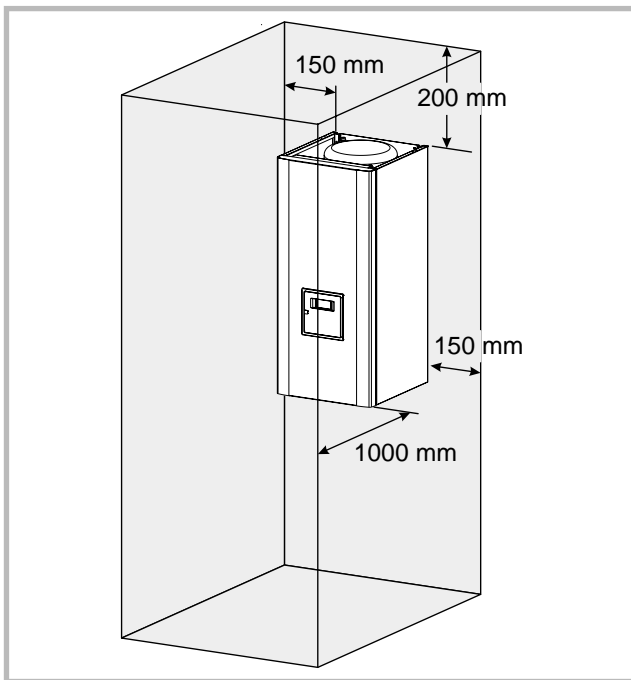
Figure 14 - Positioning of the outside unit, draining away the condensate



## 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

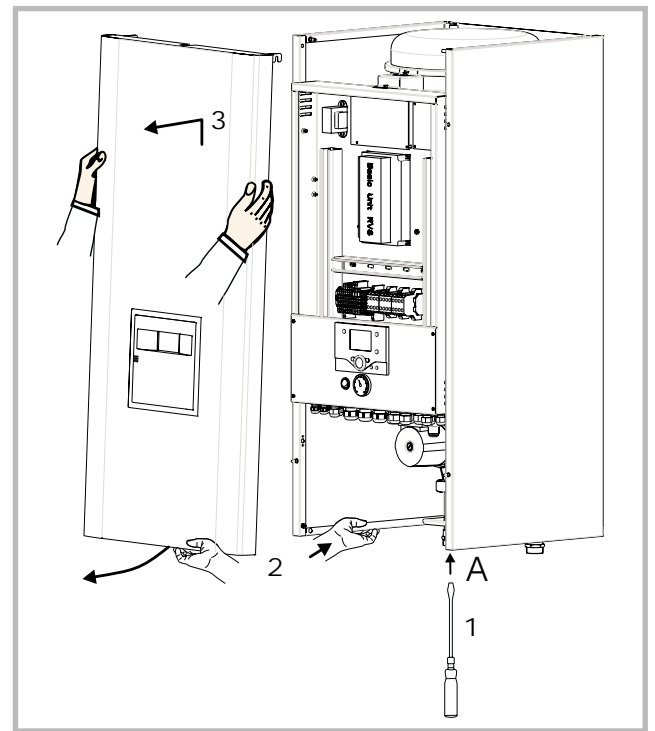


**Figure 15 - Minimum installation clearances around the hydraulic module and distances to the combustible partitions**

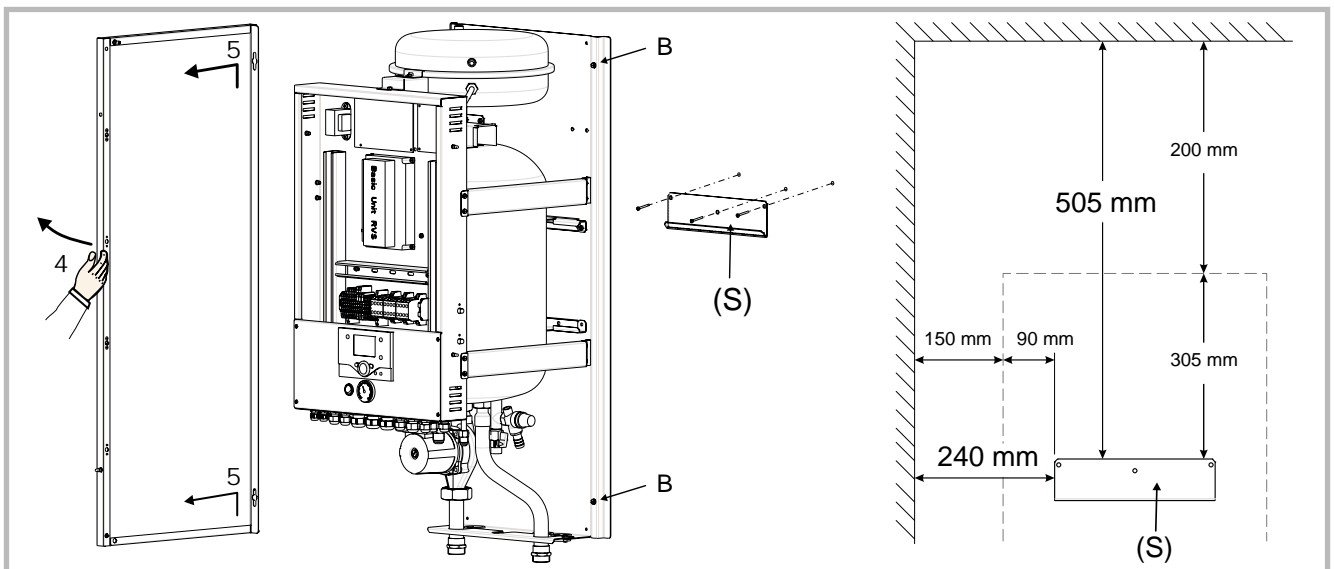
The appliances are not fireproof and should not therefore be installed in a potentially explosive atmosphere.

### 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 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.

- Proceed to insulate the gas and liquid pipes to avoid any condensation. Use insulating sleeves resistant to temperatures over 120°C. In addition if the humidity level in the areas where the refrigeration pipes pass risks exceeding 70%, protect the pipes with insulating sleeves. Use a sleeve thicker than 15mm if the humidity reaches 80%, and a sleeve 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 insulating sleeves 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).

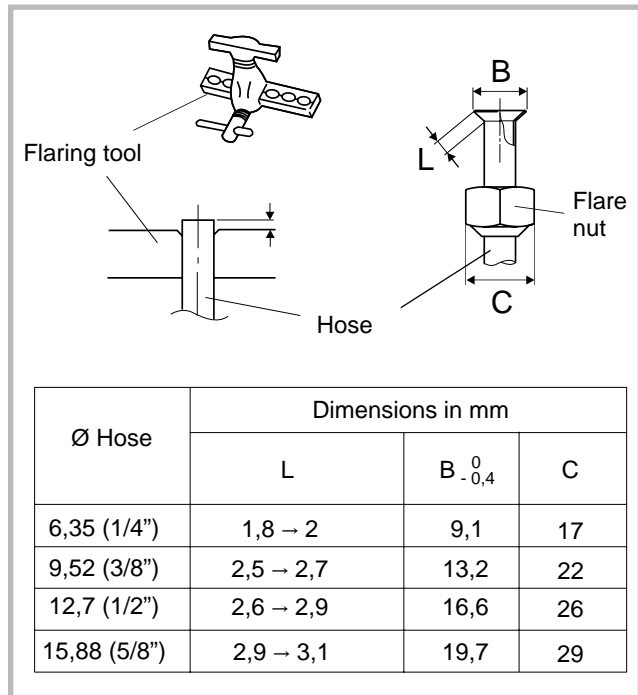


Figure 18 - Flaring for flare connections

### 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 050 and 065, see Figure 13).

The appliance will be excluded from guarantee if it is used with refrigeration connections less than 5m long (models 080, 095, 128, 155).

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 050	Gas	1/2"	(D1) 1/2"	(R1) 1/2"-5/8"	5/8"
Model 065	Fluid	1/4"	(D2) 1/4"	(R2) 1/4"-3/8"	3/8"
Model 080	Gas	5/8"	(D1) 5/8"	None	5/8"
	Fluid	1/4"	(D2) 1/4"	(R2) 1/4"-3/8"	3/8"
Model 095	Gas	5/8"	(D1) 5/8"	None	5/8"
Model 128	Fluid	3/8"	(D2) 3/8"	None	3/8"
Model 155					

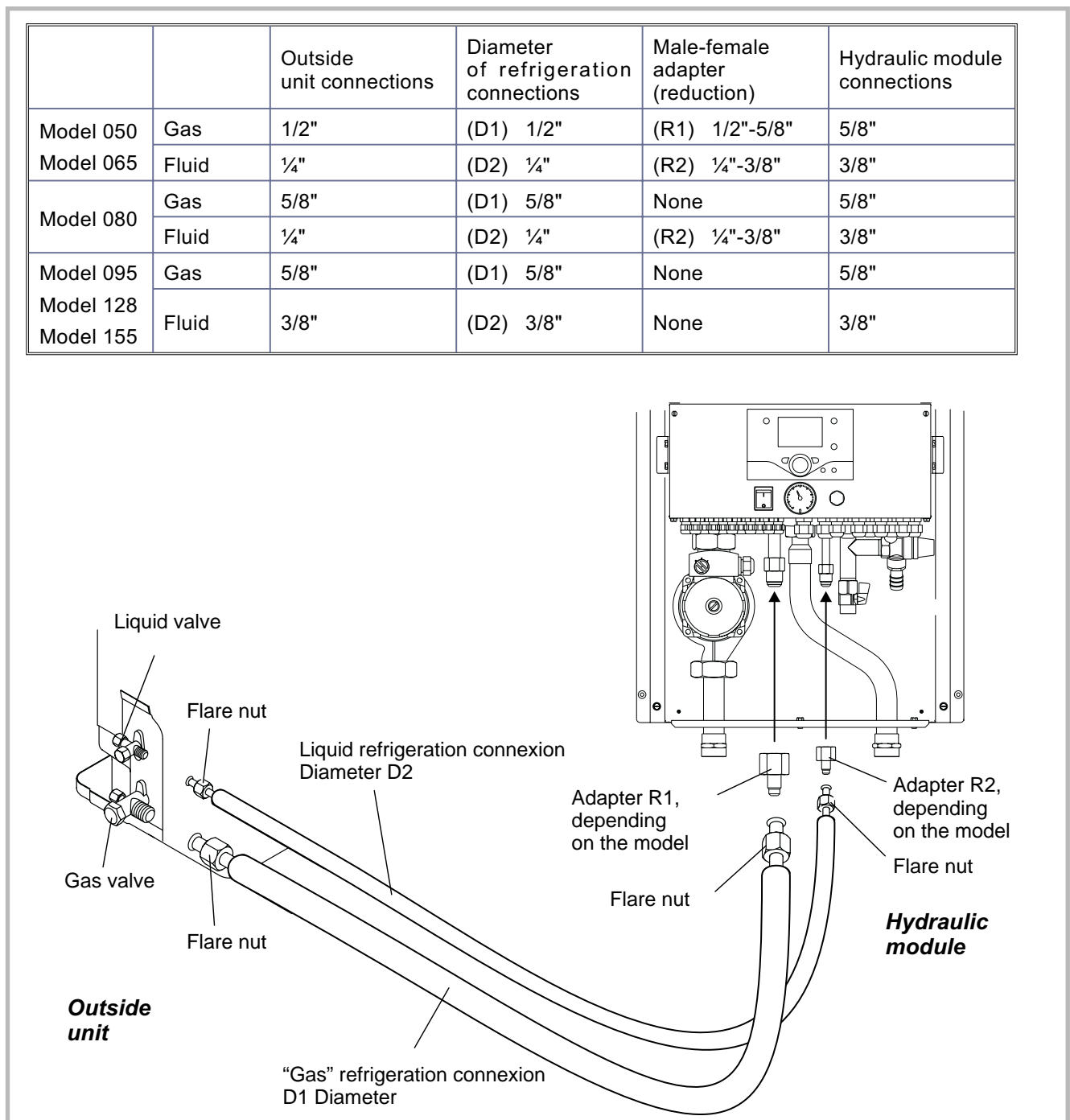


Figure 19 - Connecting the flared connections

- 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).

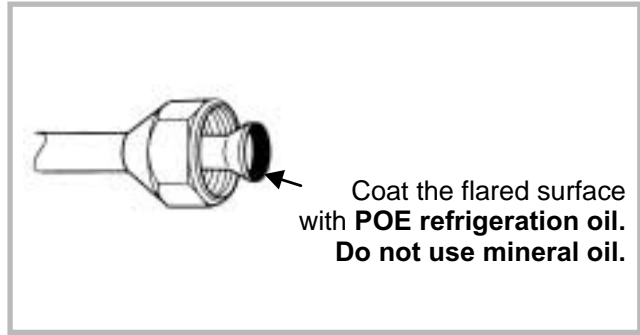


Figure 20 - Prevention of gas leaks

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 Creating a vacuum and filling the refrigeration connections with gas

(see figure 22).

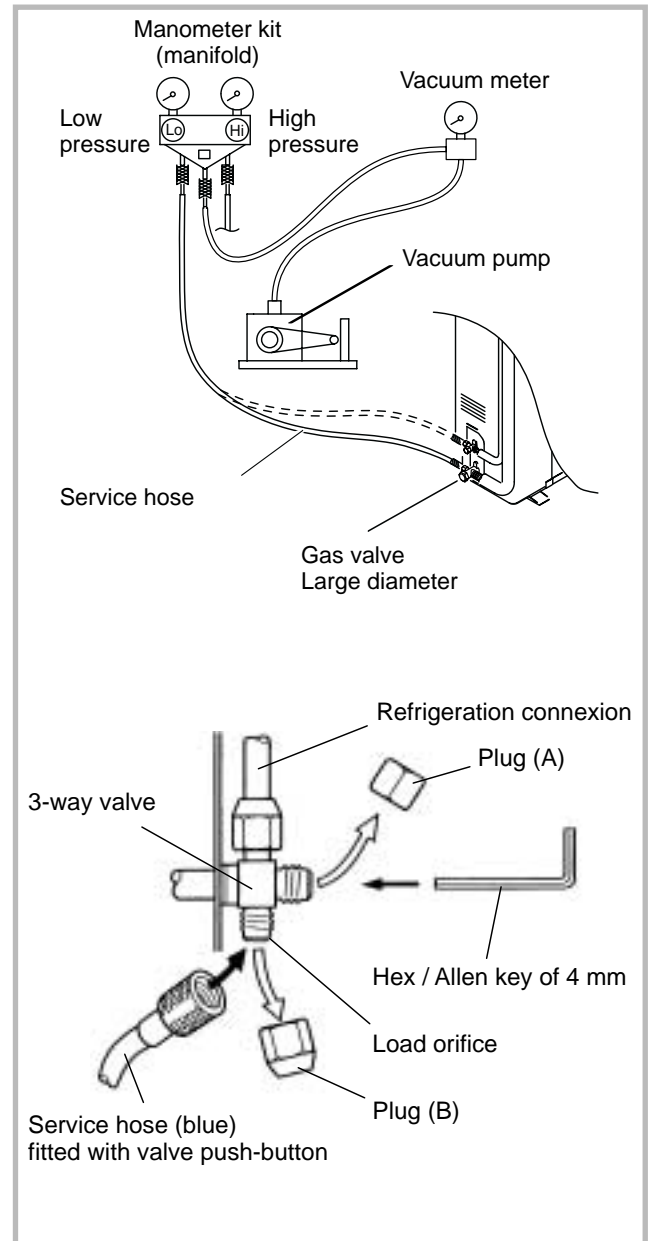
- Remove the protective plugs (B) from the charging hole (Schrader) in the gas valve (large diameter).
- Connect the blue hose (on the side with a valve pusher in good condition) from the set of manometers (manifold).
- Connect the yellow hose to a vacuum pump and open the blue valve on the set of manometers.
- Create a vacuum until the residual pressure in the circuit falls below 0.01 bar.
- Let the pump continue to operate for another 15 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**.
- Wait 10 minutes. If the pressure rises during this 10-minute period, there is a leak in the circuit. Trace it and repair it: then start again.
  - When the pressure has remained stable for 10 minutes after the vacuum pump stops, the circuit is considered to be gas-tight.
- Remove the access plugs (A) from the valve controls.

☞ **If an additional charge is required, add the additional charge before filling the hydraulic module 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 outside unit does not contain any additional refrigerant, enabling the installation to be purged. Flushing is strictly forbidden.

### 2.7.2 Sealing test

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



**Figure 22 - Extraction under vacuum and gassing**

6 connectors for models 050 and 065, 5 connectors for model 080 and 4 connectors for models 095, 128 and 155.

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, make the connection again.**

<b>Model 050 - Model 065</b>	<b>20 g</b> of R410A per additional meter		
Length of the connections	10 m	15 m	20 m
Additional charge	none	100 g	200 g
<b>Model 080</b>	<b>20 g</b> of R410A per additional meter		
Length of the connections	15 m	20 m	25 m
Additional charge	none	100 g	200 g
<b>Model 095</b>	<b>40 g</b> of R410A per additional meter		
Length of the connections	15 m	20 m	30 m
Additional charge	none	200 g	600 g
<b>Model 128</b>	<b>50 g</b> of R410A per additional meter		
Length of the connections	20 m	30 m	40 m
Additional charge	none	500 g	1000 g
<b>Model 155</b>	<b>40 g</b> 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 (Fig. 23). The additional charge of R410A must necessarily be made by an approved refrigeration engineer.

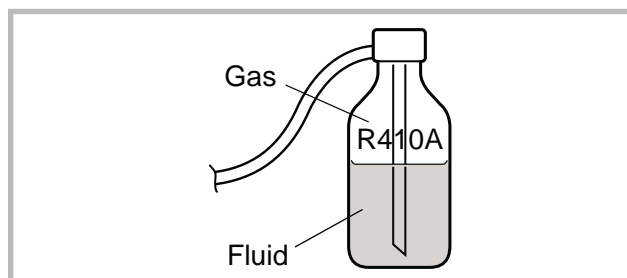
#### • Example for a heat pump model 155

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

$$\text{Additional charge} = (32 - 20) \times 40 = 480 \text{ g}$$

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.



*Figure 24 - Gas bottle R410A*

- 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 (24x36mm).

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.

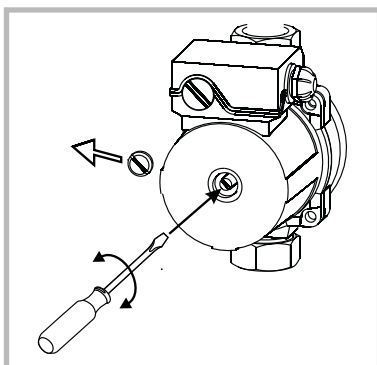
Close the drain and bleed valves and add water until the pressure in the hydraulic circuit reaches 1.5 bar.

If the pressure is lower than 0,5 bar, the Heat Pump stops and posts error 369.

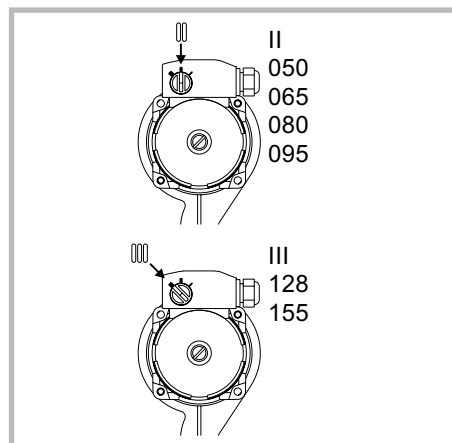
Check that the hydraulic circuit has been purged correctly.

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

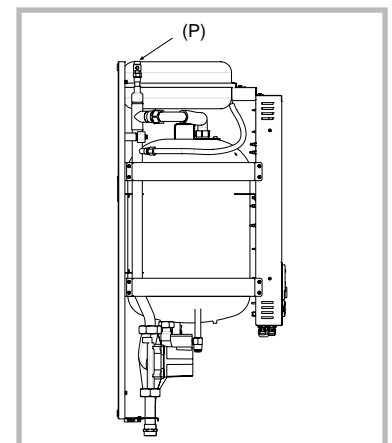
After the "Start-up" stage (see p. 30), once the machine has started, purge the hydraulic module again (2 litres of water).



**Figure 25 - Release of the circulation pump**



**Figure 26 - Recommended circulation speed (for radiator)**



**Figure 27 - (P) 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 voltage 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.

Use a flexible cable of H07 RN-F type.

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

### 2.9.2 General remarks on 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, fig. 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.

##### **Flexible wires** (B, fig. 28)

H07RNF type 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.

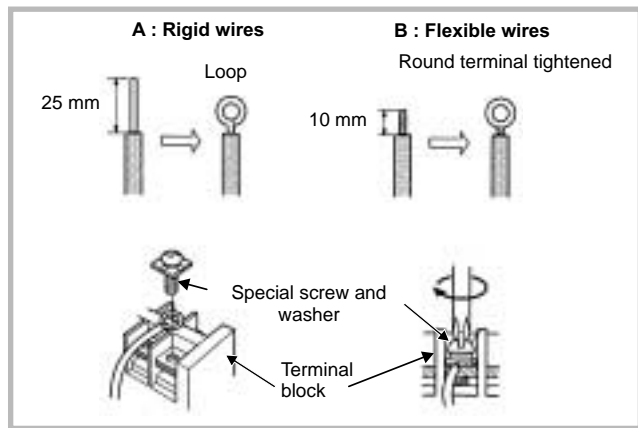


Figure 28 - Outside unit terminal block

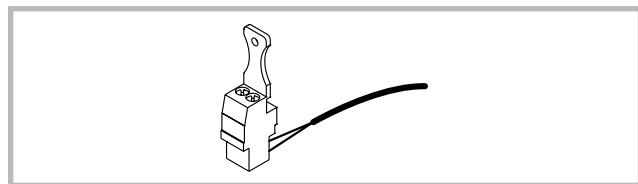


Figure 29 - Regulation connector

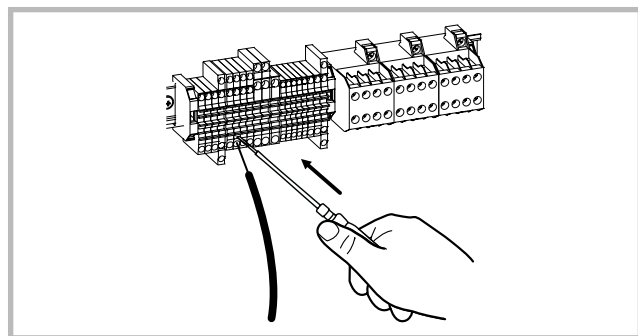


Figure 30 - Hydraulic module terminal block

- 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 (fig. 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.

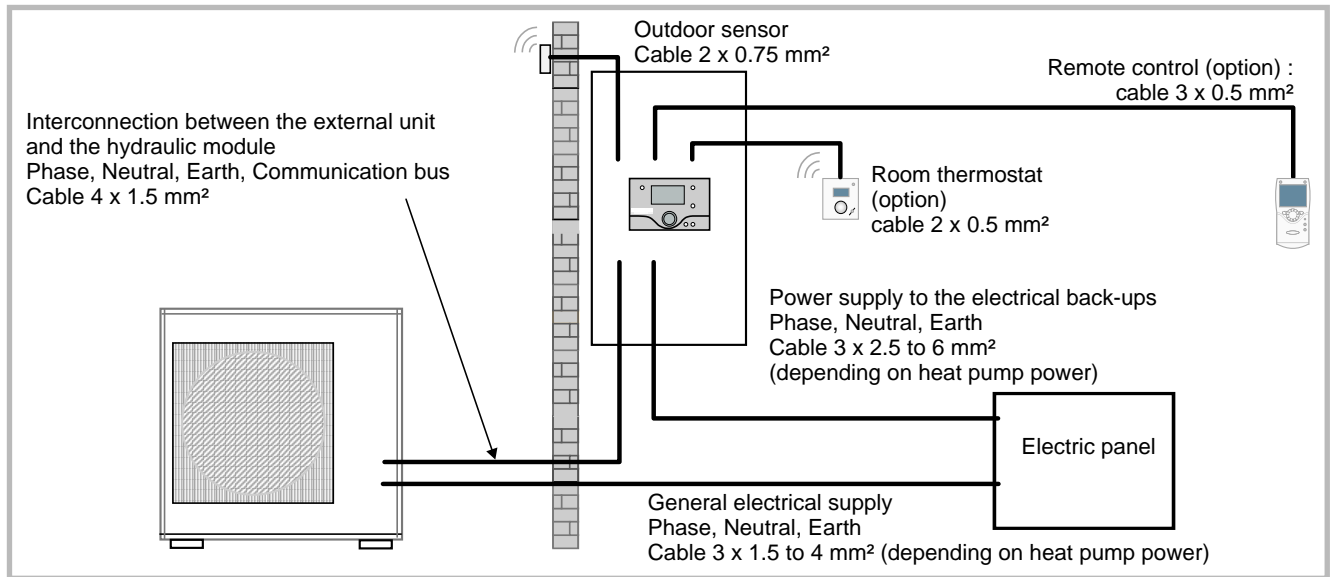


Figure 31 - Overall layout of the electrical connections for a simple installation (1 heating circuit)

### 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	Power absorbed	Cable connection (Phase, Neutral, Earth)	Curve D circuit breaker size (A)
050, 065	1860 W	3 x 1,5 mm <sup>2</sup>	16
080	2210 W	3 x 2,5 mm <sup>2</sup>	16
095	2680 W	3 x 2,5 mm <sup>2</sup>	20
128	3770 W	3 x 4 mm <sup>2</sup>	25
155	4700 W	3 x 4 mm <sup>2</sup>	32

• **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 mm<sup>2</sup> 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 (A)
050, 065, 080	2 x 1,5 kW	13 A	3 x 2,5 mm <sup>2</sup>	16
095, 128, 155	2 x 3 kW	26,1 A	3 x 4 mm <sup>2</sup> 3 x 6 mm <sup>2</sup>	32

#### • Outdoor sensor, room thermostat and remote control

- For the outdoor sensor, use a 2 x 0.75 mm<sup>2</sup> cable.
- For the room thermostat, use a 2 x 0.5 mm<sup>2</sup> telephone type cable.
- For the remote control, use a 3 x 0.5 mm<sup>2</sup> telephone type cable.

### 2.9.5 Electrical connections on outside unit side

Access to the connection terminals

• **Model 050, 065, 080**

- Remove the cap (figure 32).

• **Model 095, 128, 155**

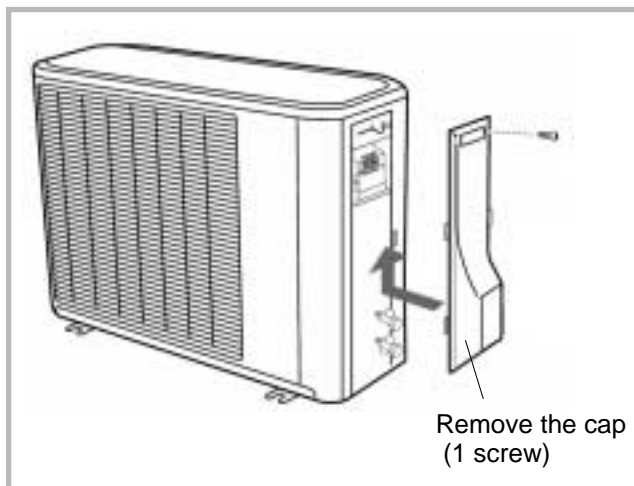
- Remove the front panel

- Remove the cap (figure 34).

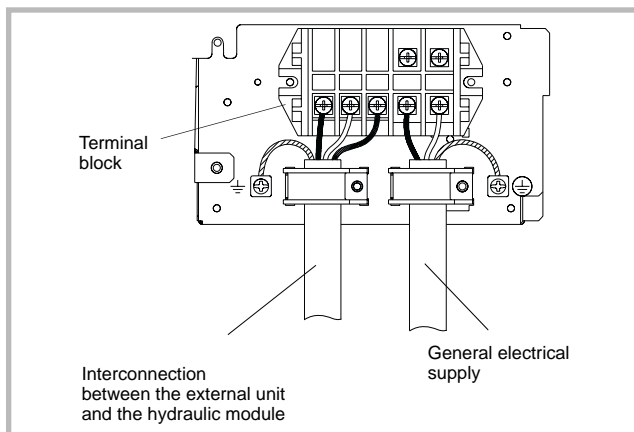
Make the connections in accordance with the diagram(s) Fig. 33.

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

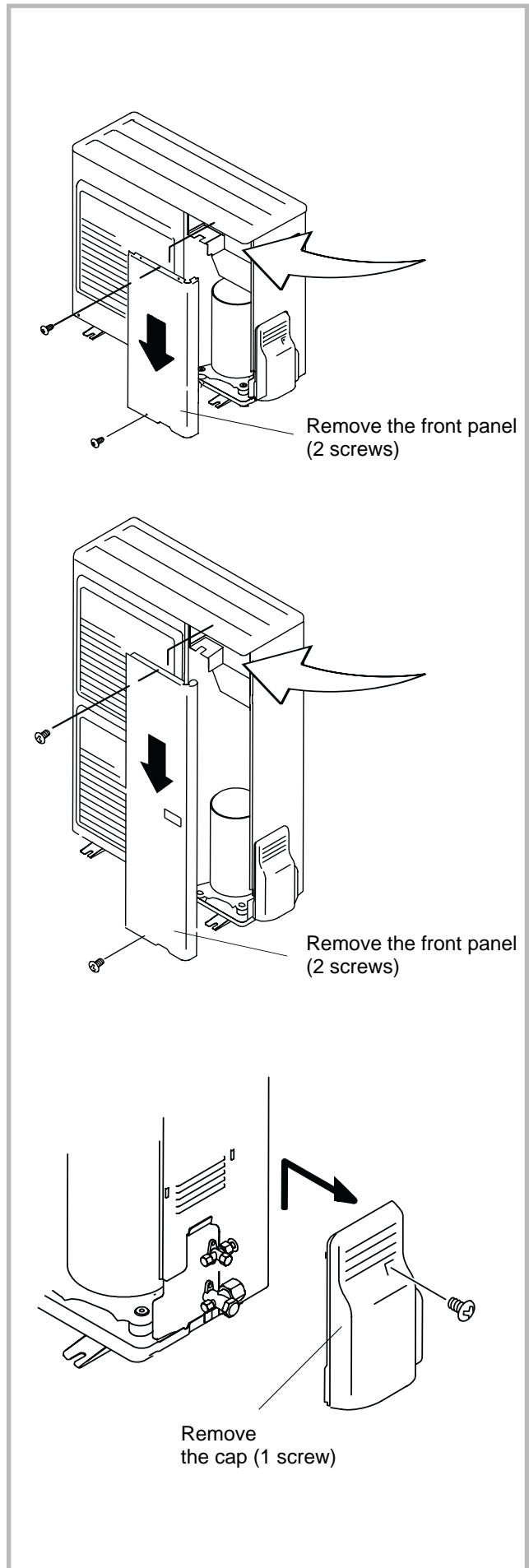
Fill in the space where the cables enter the outside unit with the insulating plate (fig. 35).



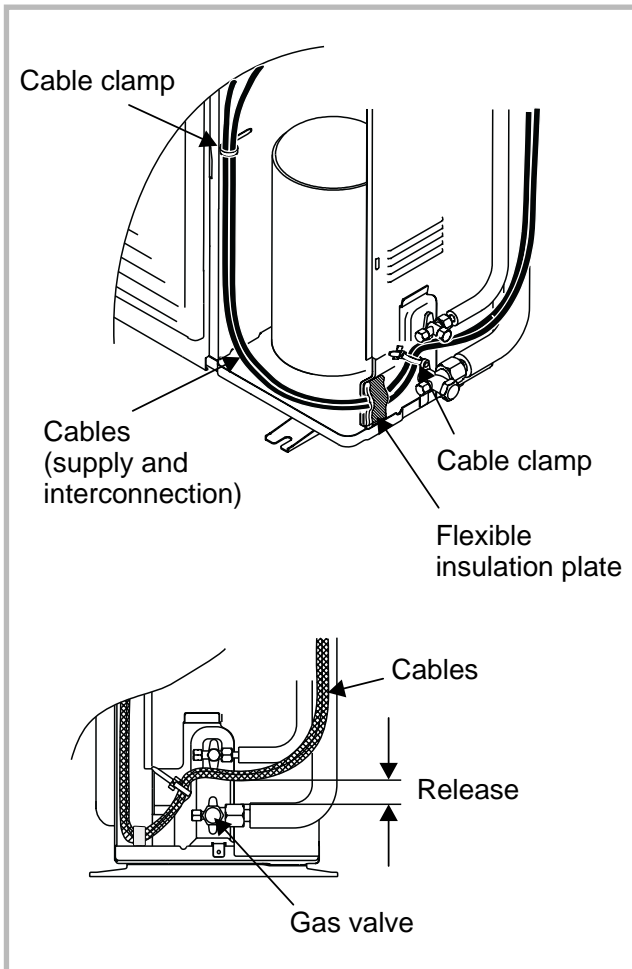
**Figure 32 - Access to outside unit's terminal block (model 050, 065, 080)**



**Figure 33 - Connections to outside unit's terminal block**



**Figure 34 - Access to outside unit's terminal block (model 095, 128, 155)**



**Figure 35 - Finalisation of connection to outside unit**

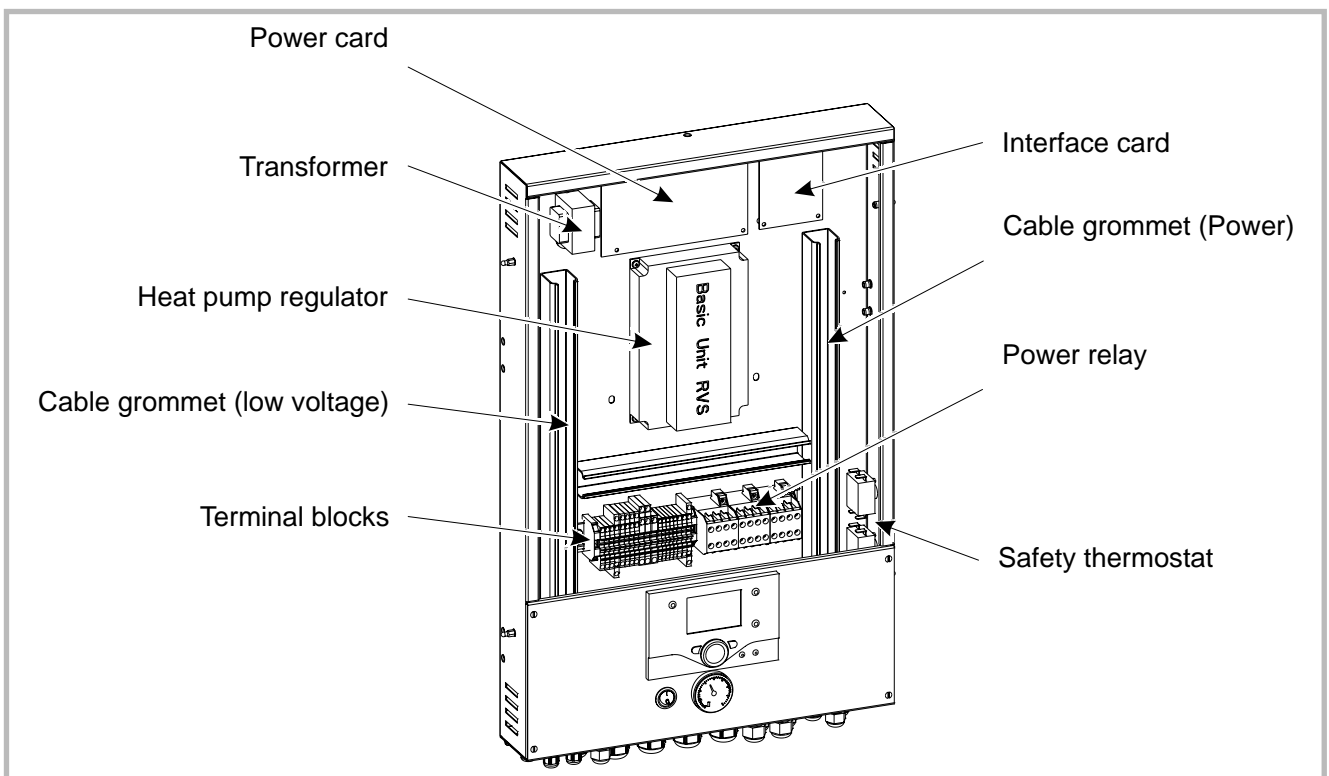
### 2.9.6 Electrical connections on the hydraulic module side

Access to the connection terminals

- Remove the front panel (2 screws) (fig. 16, p. 17)
- Remove the cover of the electric box.
- Make the connections in accordance with the diagram(s) Fig. 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**

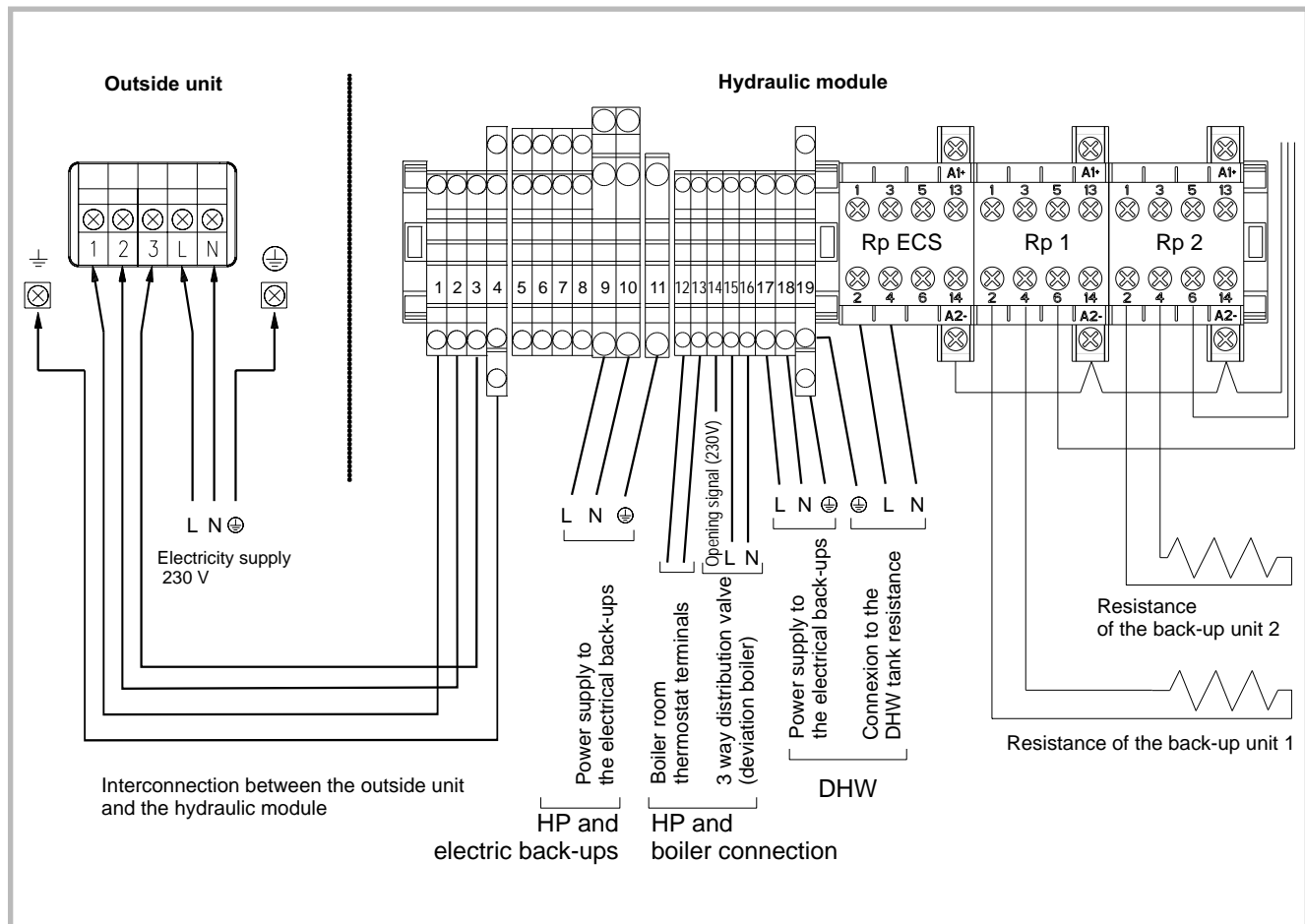


Figure 37 - Connection to terminal block and power relays

#### • 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.

#### • Domestic 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.

#### • 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. (Operating line 2920)

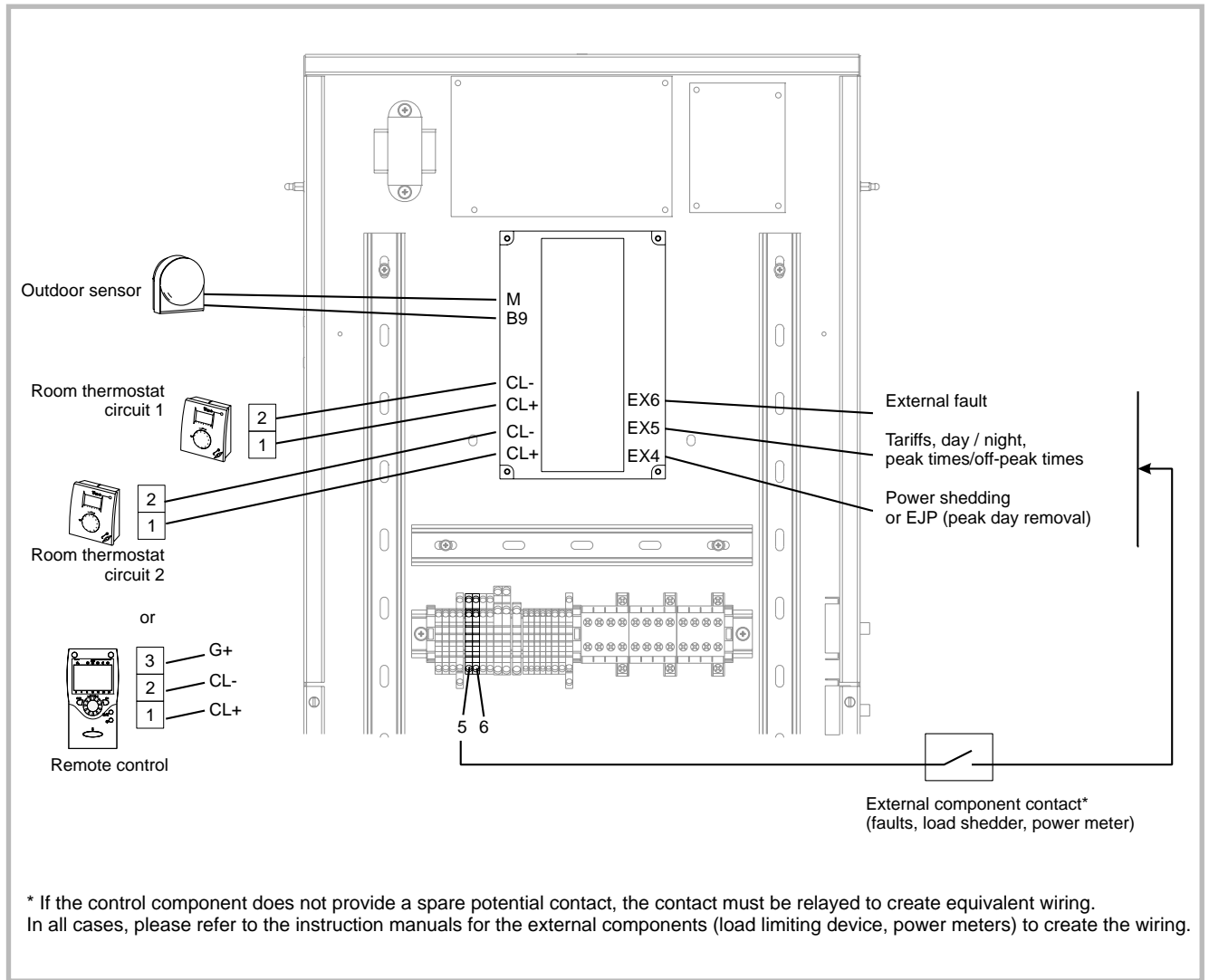


Figure 38 - Connections to the heat pump regulator (accessories and options)

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

**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 (fig. 38, p. 29).

**2.11 Room thermostat and/or remote control**

The room thermostat (remote control) 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 (fig. 38, p. 29) using the connector supplied.
- Installation equipped with a room thermostat and a remote control
  - Connect the sensor to one of the CL+ or CL- terminals on the heat pump control board (fig. 38, p. 29).
  - Connect the remote control 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.
- 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.
- Make all the specific adjustments to the setting (configuring the installation).

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

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

- Press the key "OK"
- Choose menu "Bedieneinheit"
- Choose language (Sprache)
- Select the language (**english**, français, nederlands, español, etc)

## 3 Regulation system

### 3.1 User interface and remote control (Option)

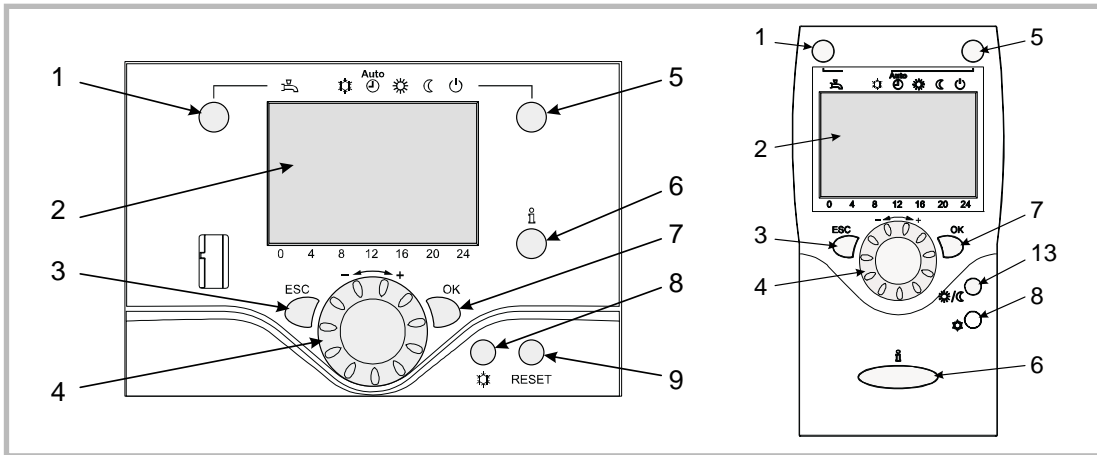












Figure 39

Ref.	Function	- Definitions
1	Selection of the DHW operating regime (Domestic hot water)	<ul style="list-style-type: none"> <li>- If the installation is fitted with a DHW tank.</li> <li>- ON: Production of DHW according to the time program.</li> <li>- Off: Preparing the domestic hot water for stopping with the anti-frost function active.</li> <li>- Boost: Hold down the DHW key for 3 seconds. Immediate DHW operation after use of the electrical back-ups until the DHW comfort setting has been reached</li> </ul>
	 ON	
	 Off	
2	Digital display	<ul style="list-style-type: none"> <li>- Operating control. Readout of the current temperature, of the heating regime and of any faults .</li> <li>- View the settings</li> </ul>
3	Exit "ESC"	- Quit the menu.
4	Navigation and setting	<ul style="list-style-type: none"> <li>- Selecting the menu.</li> <li>- Setting parameters.</li> <li>- Adjusting the ambient temperature setpoint.</li> </ul>
5	Selecting the heating regime	<ul style="list-style-type: none"> <li>-  Heating operating according to the heating programme (Summer/winter mode switchover is automatic).</li> <li>-  Constant comfort temperature.</li> <li>-  Constant reduced temperature.</li> <li>-  Stand-by regime with anti-frost protection (Provided that the heat pump's electrical power supply is not interrupted).</li> </ul>
6	Information display	<ul style="list-style-type: none"> <li>- Various data (please see page 59).</li> <li>-  Reading error codes (please see page 57).</li> <li>-  Information concerning maintenance, special regime.</li> </ul>
7	Confirm "OK"	<ul style="list-style-type: none"> <li>- Input into the selected menu.</li> <li>- Confirmation of the parameter settings.</li> <li>- Confirmation of the adjustment to the comfort temp. setting.</li> </ul>
8	Selecting cooling mode	<ul style="list-style-type: none"> <li>- If the installation is fitted with the cooling kit:</li> <li>-  Cooling operating according to the heating programme (Summer/winter mode switchover is automatic).</li> </ul>
9	RESET button (Hold down the "RESET" key for 3 seconds).	<ul style="list-style-type: none"> <li>- Reinitialising the parameters and cancelling error messages. Do not use during normal operation.</li> </ul>

### 3.2 Room thermostat (Option)

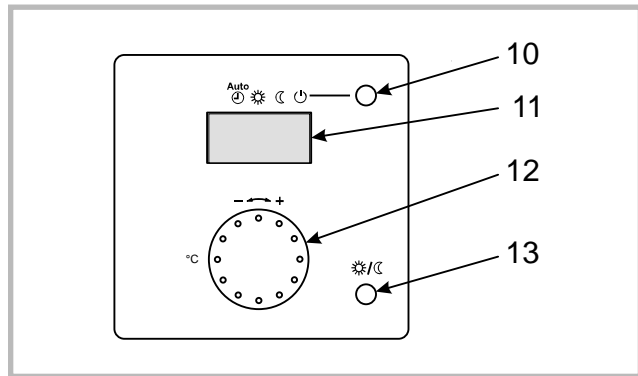







Figure 40 - Room thermostat (option)

Ref.	Function	- Definitions
10	Selecting the heating regime	<ul style="list-style-type: none"> <li>-  Heating operating according to the heating programme (Summer/winter mode switchover is automatic).</li> <li>-  Constant comfort temperature.</li> <li>-  Constant reduced temperature.</li> <li>-  Stand-by regime with anti-frost protection (Provided that the heat pump's electrical power supply is not interrupted).</li> </ul>
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.

### 3.4 Manual adjustment

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

The temperature control' curves (Fig. 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 (Fig. 42).

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

### 3.5 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.



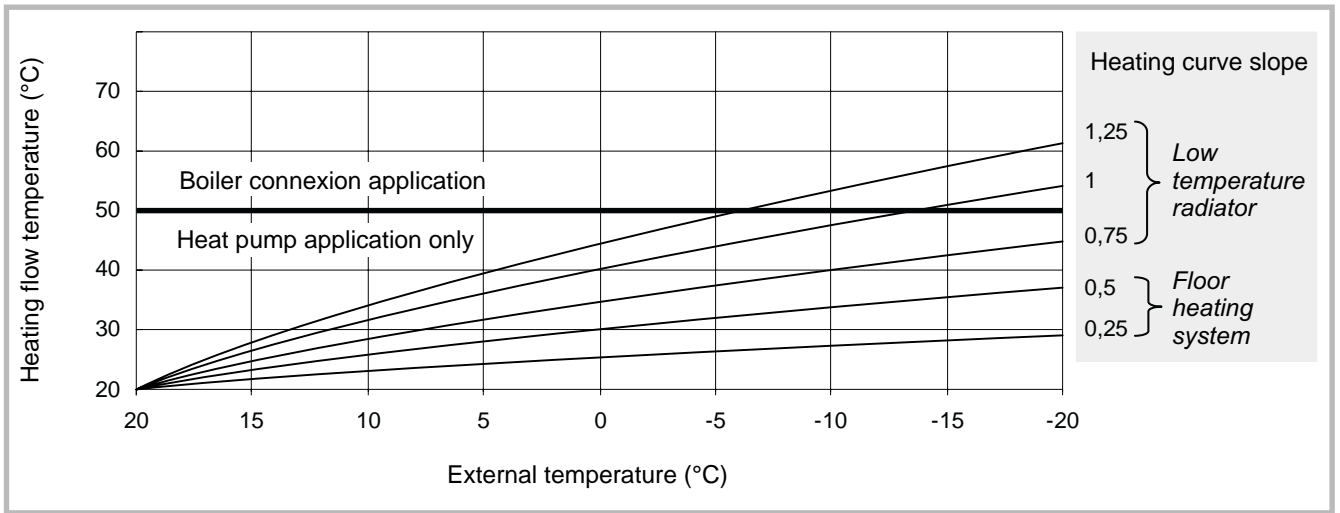


Figure 41 - Heating curve slope (line 720)

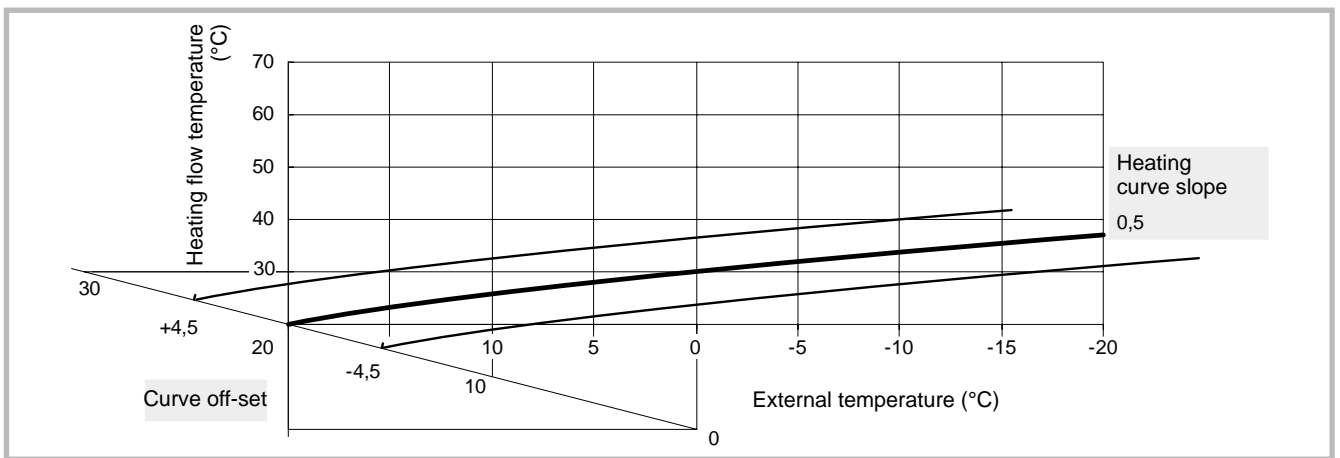


Figure 42 - Off-set of the heating curve (line 721)

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

Figure 43 - Corrective actions in the case of discomfort

### 3.6 Parametering the setting

#### 3.6.1 General

Only the parameters accessible to levels:

- U** End user
- I** Start-up
- S** Specialist

Are described in this document.

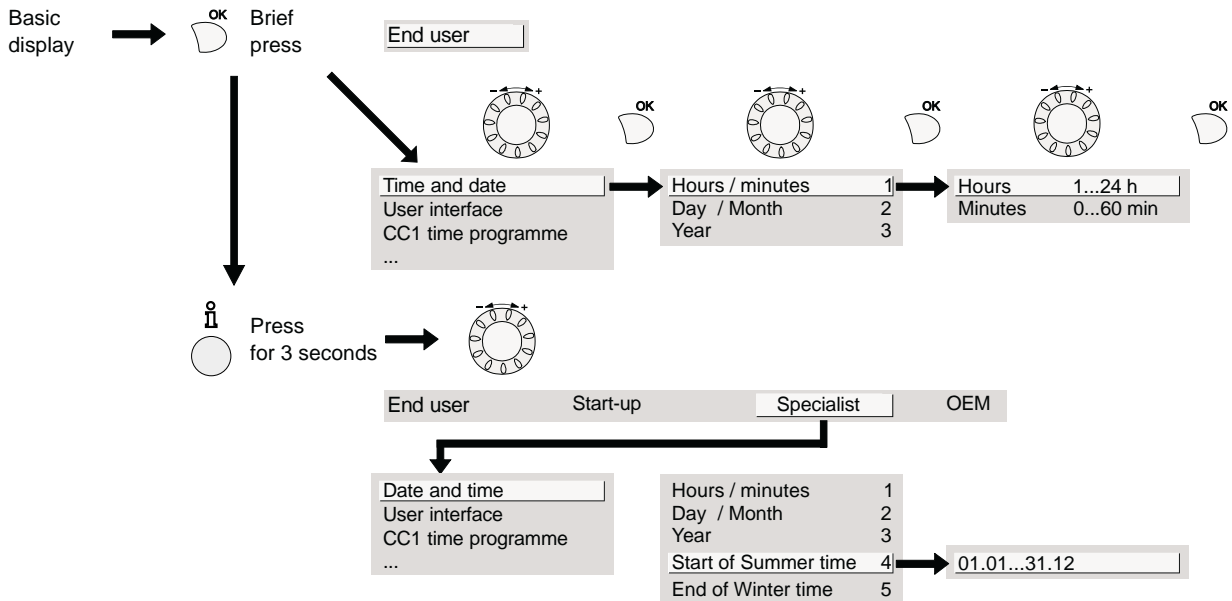
The access levels are specified in the second column of the table by means of the letters **U**, **I** and **S**.

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

#### 3.6.2 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.



#### 3.6.3 List of function lines (settings, diagnosis, status)

Line	Function	Setting range or display	Setting increment	Basic setting
<b>Date and time</b>				
1	<b>U</b> Hours / minutes	00:00... 23:59	1	
2	<b>U</b> Day / Month	01.01... 31.12	1	
3	<b>U</b> Year	1900... 2099	1	
5	<b>S</b> Start of Summer time (Day / Month)	01.01...31.12	1	<b>25.03</b>
6	<b>S</b> End of Winter time (Day / Month)	01.01...31.12	1	<b>25.10</b>
The change of hour will appear at 3:00 first Sunday after the regulated date				
<b>User interface</b>				
20	<b>U</b> Language	English, ...		
22	<b>I</b> Info	Temporary   Permanent		Temporary
26	<b>S</b> Operation locking	On   Off		<b>Off</b>
27	<b>S</b> Programming locking	On   Off		<b>Off</b>
28	<b>S</b> Direct setting	Saving... ...automatic   ...with confirmation		...with confirmation

Line	Function	Setting range or display	Setting increment	Basic setting
44	I Operation HC2  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.	Jointly with HC1   Independent		Jointly with HC1
46	I Operation HCP	Jointly with HC1   Independent		Jointly with HC1
70	S 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  Yes + OK: The standard values memorised in the regulator replace and cancel the customised heating programmes. Your customised settings are therefore lost.	no, yes		no

**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 mn	- :- -
536	U Standard values, Circuit 2  Yes + OK: The standard values memorised in the regulator replace and cancel the customised heating programmes. Your customised settings are therefore lost.	no, yes		no

**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	- :- -

Line	Function	Setting range or display	Setting increment	Basic setting
576	<b>U</b> Standard values	no, yes		<b>no</b>
<b>Time programme 5 / Cooling</b>				
If the installation is fitted with the cooling kit (Only with the cooling kit option)				
600	<b>U</b> Pre-selection (day / week) Mon-Sun Mon-Fri Sat-Sun Monday Tuesday...			<b>Mon-Sun</b>
601	<b>U</b> 1st phase On (start)	00 : 00... - :- -	10 min	<b>6 : 00</b>
602	<b>U</b> 1st phase Off (end)	00 : 00... - :- -	10 min	<b>22 : 00</b>
603	<b>U</b> 2nd phase On (start)	00 : 00... - :- -	10 min	- :- -
604	<b>U</b> 2nd phase Off (end)	00 : 00... - :- -	10 min	- :- -
605	<b>U</b> 3rd phase On (start)	00 : 00... - :- -	10 min	- :- -
606	<b>U</b> 3rd phase Off (end)	00 : 00... - :- -	10 min	- :- -
616	<b>U</b> Standard values	no, yes		<b>no</b>
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	<b>U</b> Preselection	Period 1 to 8		<b>Period 1</b>
642	<b>U</b> Date holidays start (Day / Month)	01.01... 31.12	1	
643	<b>U</b> Date holidays end (Day / Month)	01.01... 31.12	1	
648	<b>U</b> Heating schedule during the holidays	Frost protection, Reduced		<b>Frost protection</b>

**Holidays, heating circuit 2**

If the installation consists of 2 heating circuits (Only with the 2nd circuit kit option)				
651	<b>U</b> Preselection	Period 1 to 8		<b>Period 1</b>
652	<b>U</b> Date holidays start (Day / Month)	01.01... 31.12	1	
653	<b>U</b> Date holidays end (Day / Month)	01.01... 31.12	1	
658	<b>U</b> Heating schedule during the holidays	Frost protection, Reduced		<b>Frost protection</b>

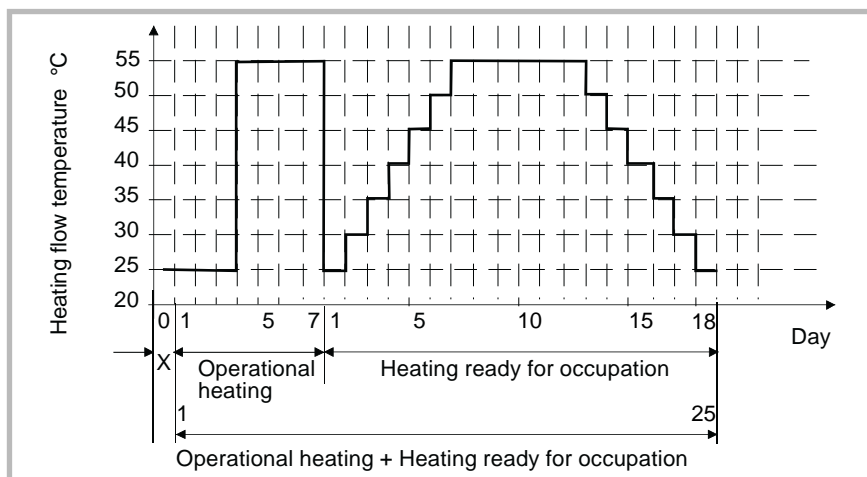
**Heating adjustment, circuit 1**

710	<b>U</b> Comfort ambient temperature setpoint	From reduced temperature to 35°C	0,5 °C	<b>20 °C</b>
712	<b>U</b> Reduced ambient temperature setpoint	from frost-free temp... to comfort temperature	0,5 °C	<b>18 °C</b>
714	<b>U</b> Frost-free ambient temperature setpoint	from 4°C... to reduced temperature	0,5 °C	<b>8 °C</b>
716	<b>S</b> Maximum comfort setpoint	20 °C... 35 °C	1 °C	<b>28 °C</b>
720	<b>I</b> Heating curve slope (See Figure 41)	0.1... 4	0,02	<b>0.5</b>
721	<b>I</b> Off-set of the heating curve (See Figure 42)	-4.50 °C... 4.5 °C	0,5 °C	<b>0 °C</b>
726	<b>S</b> Auto-adaptation of the heating curve (see § 3.3.2)	off, on		<b>on</b>
730	<b>I</b> Summer/Winter heating limits	8 °C ... 30 °C	0,5 °C	<b>18 °C</b>

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.

Line	Function	Setting range or display	Setting increment	Basic setting
732	<b>S</b> Limit of daily heating  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.	-10 °C ... 10 °C	1 °C	-3 °C
750	<b>I</b> Influence of the ambient temperature  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.	1%... 100%	1%	20%
790	<b>S</b> Maximum optimisation on switch-on	0 ... 360 min	10 min	120 min
791	Maximum optimisation on switch-off	0 ... 360 min	10	120 min
800	<b>S</b> Start of increase in reduced functioning mode	- 30 ... 10 °C	1 °C	---
801	<b>S</b> End of increase in reduced functioning mode	- 30 ... 10 °C	1 °C	-5 °C
830	<b>S</b> Mixer valve boost	0...50 °C	1 °C	0
832	<b>S</b> Type of servomotor	2-pos, 3-pos		2-pos
833	<b>S</b> Switching differential 2-pos	0 ... 20 °C	0,5 °C	2 °C
834	<b>S</b> Servomotor travel time	30 ... 873 s	1 s	240 s
850	<b>I</b> Floor controlled drying (fig. 44)  <ul style="list-style-type: none"> <li>- off: Early interruption of the current programme, programme inactive</li> <li>- Operational heating</li> <li>- Heating ready for occupation</li> <li>- Operational heating + ready heating</li> <li>- Ready heating + operational heating</li> <li>- Manual</li> </ul> Manual mode enables you to programme your own concrete slab drying time. The function ends automatically after 25 days.			off
851	<b>I</b> Manual floor drying setpoint (if line 850 = manual)	0 °C... 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	<b>I</b> Current drying day	0 ... 32		
857	<b>I</b> Terminated drying days	0 ... 32		



☞ **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”.**

*Figure 44 - Diagram of the concrete slab drying programmes*

Line	Function	Setting range or display	Setting increment	Basic setting
900	<b>S</b> Change of regime	None, Protection mode, Reduced, Comfort, Automatic	1	<b>Protection mode</b>
Operating mode at end of concrete slab drying period				
<b>Cooling circuit 1</b>				
901	<b>U</b> Regime	off, Automatic		<b>off</b>
902	<b>U</b> Comfort ambient temperature setpoint	17...40 °C	0,5 °C	<b>24 °C</b>
907	<b>U</b> Release	24h/day, Time programme HC, Time programme 5 / Refresh		<b>24h/day</b>
908	<b>I</b> Flow temp setp at OT 25°C	6...35 °C	0,5 °C	<b>20 °C</b>
909	<b>I</b> Flow temp setp at OT 35°C	6...35 °C	0,5 °C	<b>16 °C</b>
912	<b>I</b> Cooling limit at OT	---, 8...35 °C	0,5 °C	<b>24 °C</b>
913	<b>S</b> Lock time at end of heating	---, 8...100	1 h	<b>24</b>
918	<b>S</b> Summer comp start at OT	20...50 °C	1 °C	<b>26 °C</b>
919	<b>S</b> Summer comp end at OT	20...50 °C	1 °C	<b>40 °C</b>
920	<b>S</b> Summer comp setp increase	---, 1...10 °C	1 °C	<b>4 °C</b>
923	<b>S</b> Flow temp setp min OT 25°C	6...35 °C	0,5 °C	<b>18 °C</b>
924	<b>S</b> Flow temp setp min OT 35°C	6...35 °C	0,5 °C	<b>18 °C</b>
928	<b>I</b> Influence of the ambient temperature	---, 1...100 %	1 %	<b>80 %</b>
If the installation is fitted with a 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	<b>S</b> Room temp limitation	---, 0,5...4	0,5 °C	<b>0,5 °C</b>
938	<b>S</b> Mixing valve decrease	0...20 °C	1 °C	<b>0 °C</b>
939	<b>S</b> Type of servomotor	2-pos, 3-pos		<b>3-pos</b>
940	<b>S</b> Switching differential 2-pos	0...20 °C	0,5 °C	<b>2,5 °C</b>
941	<b>S</b> Servomotor travel time	30...873 s	1 s	<b>240 s</b>
945	<b>S</b> Mixing valve in heating mode	Control, Open		<b>Control</b>
946	<b>S</b> Lock time dewpoint limiter	---, 10...600 min	10 min	<b>60 min</b>
947	<b>S</b> Flow temp setp incr hygro	---, 1...20 °C	1 °C	<b>10 °C</b>
948	<b>S</b> Flow setp incr start at r.h.	0...100 %	1 %	<b>60 %</b>
950	<b>S</b> Flow temp diff dewpoint	---, 0...5 °C	1 °C	<b>2 °C</b>
963	<b>S</b> With prim contr/system pump	No, Yes		<b>No*</b>
*Basic setting : 1 circuit = No ; 2 circuits = Yes				
969	<b>S</b> Change of regime	None, off, Automatic		<b>off</b>
<b>Heating adjustment, Circuit 2</b>				
If the installation consists of 2 heating circuits (Only with the 2nd circuit kit option)				
1010	<b>U</b> Comfort ambient temperature setpoint	From reduced temperature to 35°C	0,5 °C	<b>20 °C</b>
1012	<b>U</b> Reduced ambient temperature setpoint	from frost-free temp... to comfort temperature	0,5 °C	<b>18 °C</b>

Line	Function	Setting range or display	Setting increment	Basic setting
1014	<b>U</b> Frost-free ambient temperature setpoint	from 4°C... to reduced temperature	0,5 °C	<b>8 °C</b>
1016	<b>S</b> Maximum comfort setpoint	20...35 °C	1 °C	<b>28 °C</b>
1020	<b>I</b> Heating curve slope	0.1... 4	0,02	<b>0.5</b>
1021	<b>I</b> Off-set of the heating curve	-4.50 °C... 4.5 °C	0,5 °C	<b>0 °C</b>
1026	<b>S</b> Adaptation of the heating curve (see § 3.3.2)	off, ON		<b>off</b>
1030	<b>I</b> Summer/Winter heating limits 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.	8 °C ... 30 °C	0,5 °C	<b>18 °C</b>
1032	<b>S</b> Limit of daily heating 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.	-10 °C ... 10 °C	1 °C	<b>-3 °C</b>
1050	<b>I</b> Influence of the ambient temperature 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.	1%... 100%	1%	<b>20%</b>
1090	<b>S</b> Maximum optimisation on switch-on	0 ... 360 min	10 min	<b>120 min</b>
1091	<b>S</b> Maximum optimisation on switch-off	0 ... 360 min	10 min	<b>120 min</b>
1100	<b>S</b> Start of increase in reduced functioning mode	- 30 ... 10 °C, --- °C	1 °C	<b>---</b>
1101	<b>S</b> End of increase in reduced functioning mode	- 30 ... 10 °C, --- °C	1 °C	<b>- 5 °C</b>
1130	<b>S</b> Mixer valve increase	0 ... 50 °C	1 °C	<b>0 °C</b>
1132	<b>S</b> Type of servomotor	2-pos, 3-pos		<b>3-pos</b>
1133	<b>S</b> Switching differential 2-pos	0 ... 20 °C	0,5 °C	<b>2 °C</b>
1134	<b>S</b> Servomotor travel time	30 ... 873 s	1 s	<b>240 s</b>
1150	<b>I</b> Floor controlled drying (fig. 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.			<b>off</b>
1151	<b>I</b> Manual floor drying setpoint (if line 1150 = manual) This function enables you to set the custom concrete slab drying temperature. This temperature remains fixed. The concrete slab-drying programme stops automatically after running for 25 days.	0 °C... 95°C	1 °C	<b>25 °C</b>
1156	<b>I</b> Current drying day	0 ... 32		
1157	<b>I</b> Terminated drying days	0 ... 32		
1161	<b>S</b> Excess heat evacuation	off, Heating regime, Permanent		Permanent

Line	Function	Setting range or display	Setting increment	Basic setting
1200 S	Change of regime	None, Protection mode, Reduced, Comfort, Automatic	1	Protection mode
Operating mode at end of concrete slab drying period				
<b>DHW setting (domestic hot water) (Only with the DHW kit option)</b>				
1610 U	Comfort setting	Reduced setting (line 1612)... to 65 °C	1	60 °C
The backup electrical system is required to reach this level.				
1612 U	Reduced setting	8 °C,,,to Comfort setting (line 1610)	1	40 °C
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
<b>24h/day:</b> The temperature of the DHW is constantly maintained at the DHW comfort setting.				
<b>Heating circuit time programme:</b> The DHW is produced according to the programming for the ambient temperature (with 1 hour in advance when switched on).				
<b>Programme 4/DHW:</b> The DHW programme is separate form the heating circuit programme.				
<b>Off-peak tariff*:</b> The electrical backup heating is only authorised to operate during the off-peak period.				
<b>Programme 4/DHW and Off-peak*:</b> 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 on the line setting 1641) Set day of the week (depending on the 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
<b>Swimming pool (Only with swimming pool kit option)</b>				
2056 U	Generator heating setting	8...35		22
<b>Heat pump</b>				
2884 I	Release el flow below OT Electrical release - start-up with outside temperature	-30...30 °C		2 °C
2920 S	With electrical utility lock (EX4)	Locked (Blocked on standby), Released		Released



Line	Function	Setting range or display	Setting increment	Basic setting
<b>Released</b> : HP = ON _ Back-up DHW = off _ 1st back-up HP = off _ 2nd back-up HP = off _ Boiler = ON <b>Locked (Blocked on standby)</b> : HP = off _ Back-up DHW = off _ 1st back-up HP = off _ 2nd back-up HP = off _ Boiler = ON				
<b>Additional generator (Boiler connection)</b>				
3700 S	Release under outside temperature	--- , -50 ... 50 °C	0,5 °C	<b>2 °C</b>
3705 I	Time delay on stopping	0 ... 120 min	1 min	<b>20</b>
<b>Domestic hot water (DHW) (Only with the DHW kit option)</b>				
5020 S	Overheight initial setting	0 ... 30°C	1 °C	<b>5 °C</b>
5024 S	Differential	0 ... 20°C	1 °C	<b>7 °C</b>
5030 S	Limitation on load duration	10 ... 600 min	10 min	<b>90 min</b>
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
<b>Installation configuration</b>				
5700 I	Pre-setting	1,2,3...12	1	<b>1</b>
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". <ul style="list-style-type: none"> <li>- Pre-setting 1 : 1 heating circuit</li> <li>- Pre-setting 2 : 1 heating circuit and DHW tank.</li> <li>- Pre-setting 3 : 2 heating circuits.</li> <li>- Pre-setting 4 : 2 heating circuits and DHW tank.</li> <li>- Pre-setting 5 : Boiler connection and 1 heating circuit.</li> <li>- Pre-setting 6 : Boiler connection and 2 heating circuits</li> <li>- Pre-setting 7 : Boiler connection, 1 heating circuit and DHW tank.</li> <li>- Pre-setting 8 : Boiler connection, 2 heating circuits and DHW tank.</li> <li>- Pre-setting 9 to 12 : Do not use for heat pump single service. Reserved only for heat pump 2 services.</li> </ul>				
5711 S	Cooling circuit 1	Off, System with 4 tubes, System with 2 tubes		<b>Off</b>
5870 S	Combined DHW tank	no, yes		<b>No</b>
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	<b>9</b>
6047 I	Contact type H2 NC - Normally-closed, NO - Normally-opened	NC, NO		<b>NO</b>
6100 S	Outside temperature sensor correction	-3 ... 3 °C	0,1 °C	<b>0 °C</b>
6120 S	Installation frost-free mode	ON, Off		<b>ON</b>
6205 S	Re-initialise parameters	No, yes		<b>No</b>
6220 S	oftware version (RVS)	0...99		<b>0</b>
<b>Error</b>				
6711 U	Heat pump Reset	No, yes		<b>No</b>
6740 S	Temperature alarm initiation CC1	---, 10... 240 min	10 min	<b>---</b>

Line	Function	Setting range or display	Setting increment	Basic setting
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		
<b>Maintenance / special regime</b>				
7070 I	Interval time for maintenance HP	--- , 1... 240	1 Month	---
7071 I	Operating time HP since last maintenance. Reset ? (no, yes)	0... 240	1 Month	<b>0</b>
7072 I	Maximum number of starting of the compressor 1, authorized per hour of operation.	--- , 0,1 ... 12	0,1	---
7073 I	Average number of starts of the compressor per hour of operation, since the 6 last weeks. Reset ? (no, yes)	0 ... 12		<b>0</b>
7076 I	Maximum discrepancy condens / week	--- , 1... 250	1	---
7077 I	Current maximum discrepancy condens / week Reset ? (no, yes)	0... 250		
7078 I	Minimum discrepancy condens / week	--- , 1... 250	1	---
7079 I	Current minimum discrepancy condens / week Reset ? (no, yes)	0... 250		<b>0</b>
7090 I	DHW tank period	--- , 1... 240	1 Month	---
7091 I	DHW tank since maintenance Reset ? (no, yes)	0... 240		<b>0</b>
7092 I	Heat pump DHW min load temperature	5... 80 °C	1	<b>5 °C</b>
7141 U	Emergency regime	Off, ON		<b>Off</b>
	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		<b>Manual</b>
	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	Basic setting
<b>Inputs / outputs test</b>				
7700 I	Relay test			No test
	<p>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.</p> <p>– 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</p> <p>The display shows the "Key" symbol. Pressing the Info button displays "Error 368"</p> <p><b>Warning: The component being tested is receiving electrical power throughout the test.</b></p>			
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 DO		No test
7721 I	Digital output DO1	Cooling regime, Heating regime		Heating regime
7722 I	Digital output DO2	Off, ON		ON
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
<b>Etat</b>				
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		

Line	Function	Setting range or display	Setting increment	Basic setting
8058 I	History 5	Time, Date, State code		
8060 I	History 6	Time, Date, State code		
8062 I	History 7	Time, Date, State code		
8064 I	History 8	Time, Date, State code		
8066 I	History 9	Time, Date, State code		
8068 I	History 10	Time, Date, State code		
<b>Generator diagnosis</b>				
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 difference	-50 ... 140 °C		
8440 I	Min forced stop, compressor 1	0 ... 255 min		
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		
<b>Diagnostics consumers</b>				
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.			
8720 I	Ambient relative humidity	0 ... 100 %		
8721 U	Room temperature	0 .. 50 °C		
8722 I	Dew point 1	0 ... 50 °C		
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

**Heat pump, Split, single service**

<b>Line</b>	<b>Function</b>	<b>Setting range or display</b>	<b>Setting increment</b>	<b>Basic setting</b>
8740	<b>U</b> Room temperature 1	0 ... 50 °C		<b>20 °C</b>
	Ambient temperature setting 1	4 ... 35 °C		<b>20</b>
8743	<b>U</b> Flow temperature 1	0 ... 140 °C		<b>50</b>
	Flow temperature setpoint 1	0 ... 140 °C		<b>50</b>
8756	<b>U</b> Cooling flow temperature 1	0 ... 140 °C		<b>0</b>
	Cooling flow temperature setpoint 1	0 ... 140 °C		<b>0</b>
8760	<b>I</b> Circulation pump, circuit 2	Off, ON		<b>Off</b>
8761	<b>I</b> Mixer valve HC2 open	Off, ON		<b>Off</b>
8762	<b>I</b> Mixer valve HC2 closed	Off, ON		<b>Off</b>
8770	<b>U</b> Room temperature 2	0 ... 50 °C		<b>20</b>
	Ambient temperature setpoint 2	4 ... 35 °C		<b>20</b>
8773	<b>U</b> Flow temperature 2	0 ... 140 °C		<b>50</b>
	Flow temperature setpoint 2	0 ... 140 °C		<b>50</b>
8820	<b>I</b> DHW pump	Off, ON		<b>Off</b>
8821	<b>I</b> DHW electrical resistance	Off, ON		<b>Off</b>
8830	<b>U</b> DHW (domestic hot water) temperature	0 ... 140 °C		
	DHW temperature setpoint	5 ... 80 °C		<b>50</b>
8840	<b>S</b> DHW pump operating times Reset ? (no, yes)	0 ... 2730 h		
8841	<b>S</b> DHW pump start-ups counter	0 ... 2730 h		
8842	<b>S</b> DHW electric operating times	0 ... 2730 h		
8843	DHW electric start-ups counter	0 ... 65535		
8900	<b>U</b> Swimming pool temperature	0 ... 140 °C		
	Swimming pool temperature setpoint	0 ... 80 °C		<b>24</b>
8950	<b>I</b> Common flow temperature	0 ... 140 °C		
	<b>I</b> Common flow temperature setpoint	0 ... 140 °C		<b>0</b>
8957	<b>I</b> Common flow setpoint, refrigeration	0 ... 140 °C		
9031	<b>I</b> Relay output QX1	Off, ON		<b>Off</b>
9032	<b>I</b> Relay output QX2	Off, ON		<b>Off</b>
9033	<b>I</b> Relay output QX3	Off, ON		<b>Off</b>
9034	<b>I</b> Relay output QX4	Off, ON		<b>Off</b>
9035	<b>I</b> Relay output QX5	Off, ON		<b>Off</b>
9036	<b>I</b> Relay output QX6	Off, ON		<b>Off</b>
9037	<b>I</b> Relay output QX7	Off, ON		<b>Off</b>
9050	<b>I</b> Relay output QX21 module 1	Off, ON		<b>Off</b>
9051	<b>I</b> Relay output QX22 module 1	Off, ON		<b>Off</b>
9052	<b>I</b> Relay output QX23 module 1	Off, ON		<b>Off</b>
9053	<b>S</b> Relay output QX21 module 2	Off, ON		<b>Off</b>
9054	<b>I</b> Relay output QX22 module 2	Off, ON		<b>Off</b>
9055	<b>I</b> Relay output QX23 module 2	Off, ON		<b>Off</b>

## 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	<b>Do not use for heat pump single service. Reserved only for heat pump 2 services</b>	
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 fig. 37, p. 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 fig. 37, p. 28).
- **4** - Outdoor sensor (see fig. 37, p. 28).
- **5** - Air thermostat and/or remote control (Option, See fig. 38, p. 29).
- **6** - Contract with the power provider:  
- Connect the "Power Provider" contact to input EX5 or EX4. (see fig. 38, p. 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 fig. 38, p. 29).
- **8** - Connect the domestic water sensor to terminal BX1 on the heat pump's control panel (see fig. 38, p. 29).

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

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

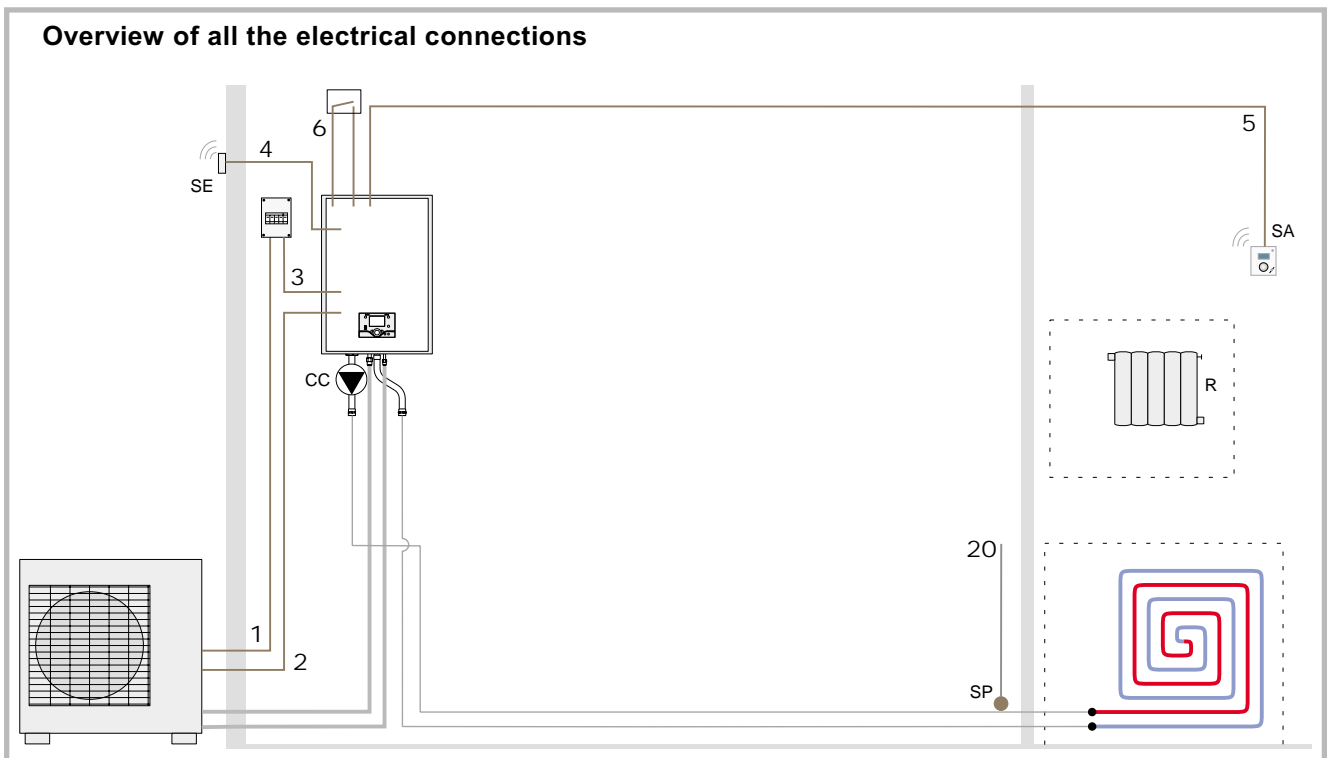
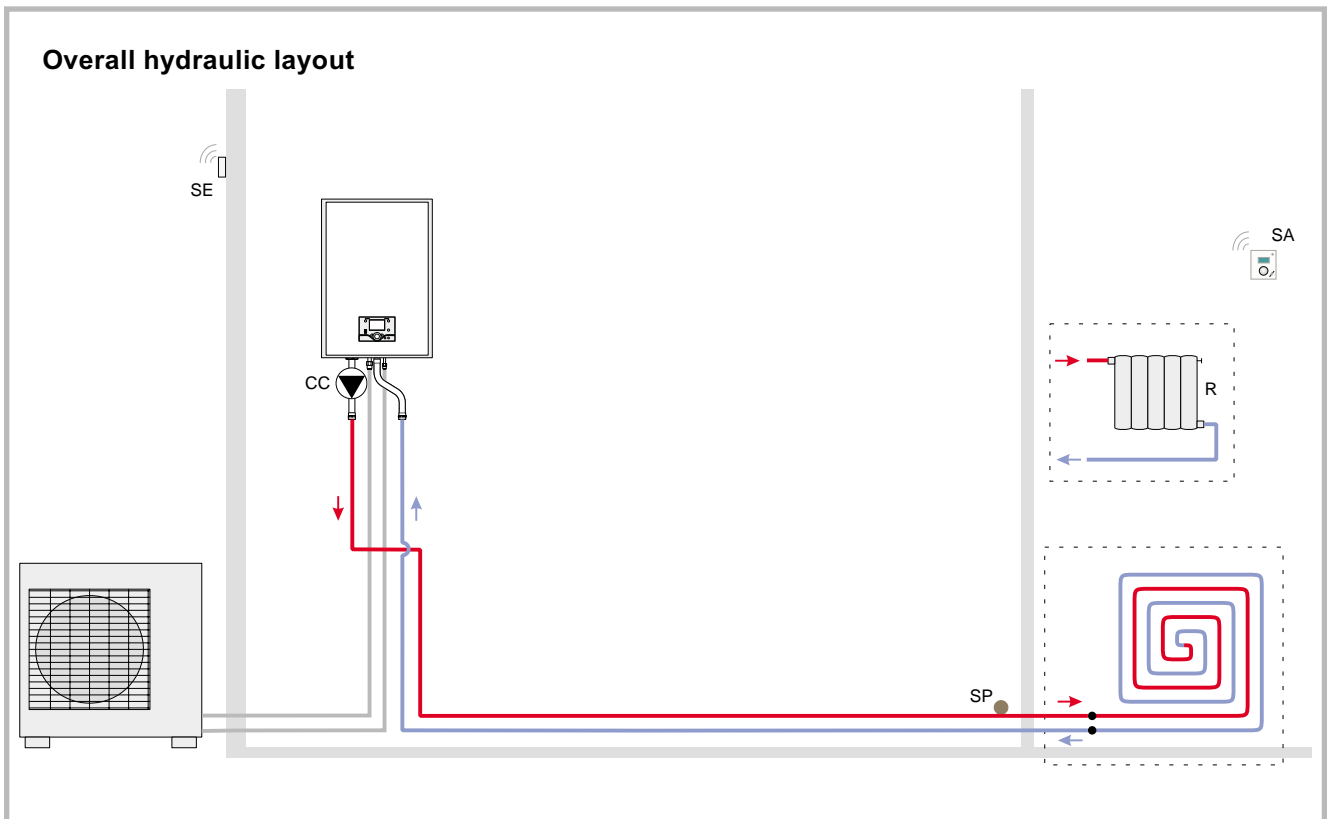
- 2 heating circuits  
Adjust the heating curve slope.  
Line 720 (Circuit 1)  
Line 1020 (Circuit 2)

### 4.1.4 Special cases

Please consult us regarding any other installation configuration

**Configuration 1 :  
1 heating circuit.**

👉 See detailed instructions  
on Page 47



**Legend**

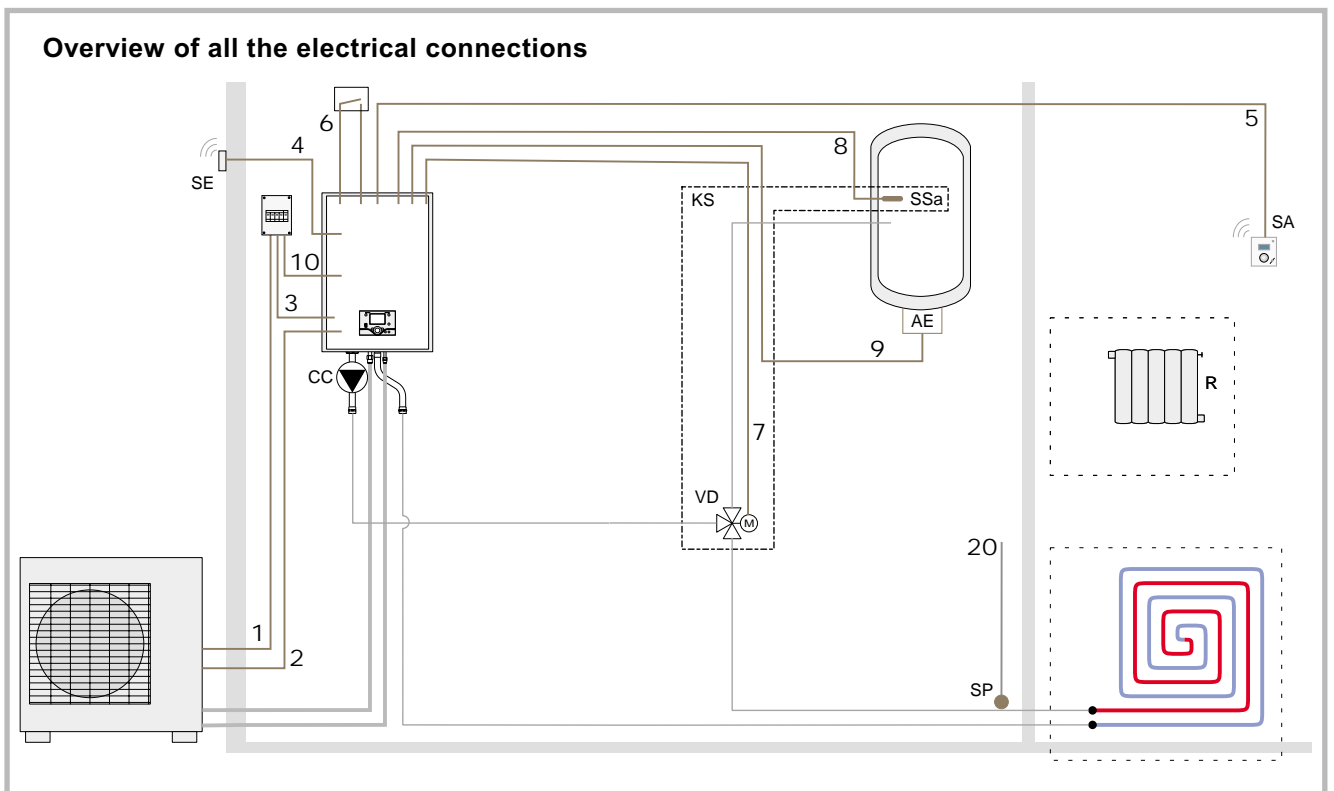
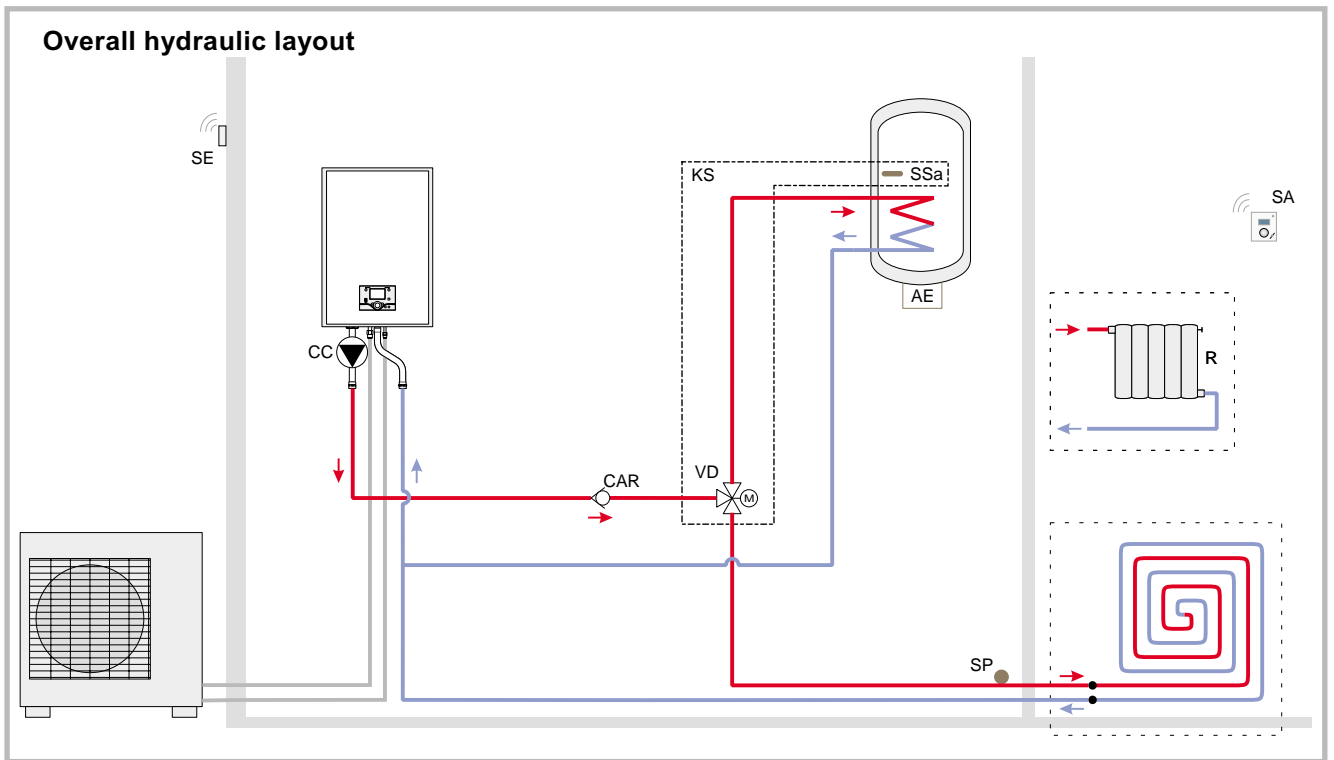
- CC** - Heating circulation pump
- R** - Radiators (or fan convectors)

- SA** - Room thermostat (option)
- SE** - Outdoor sensor
- SP** - Heated floor thermal safety fuse



**Configuration 2 :**  
**1 heating circuit and DHW tank.**

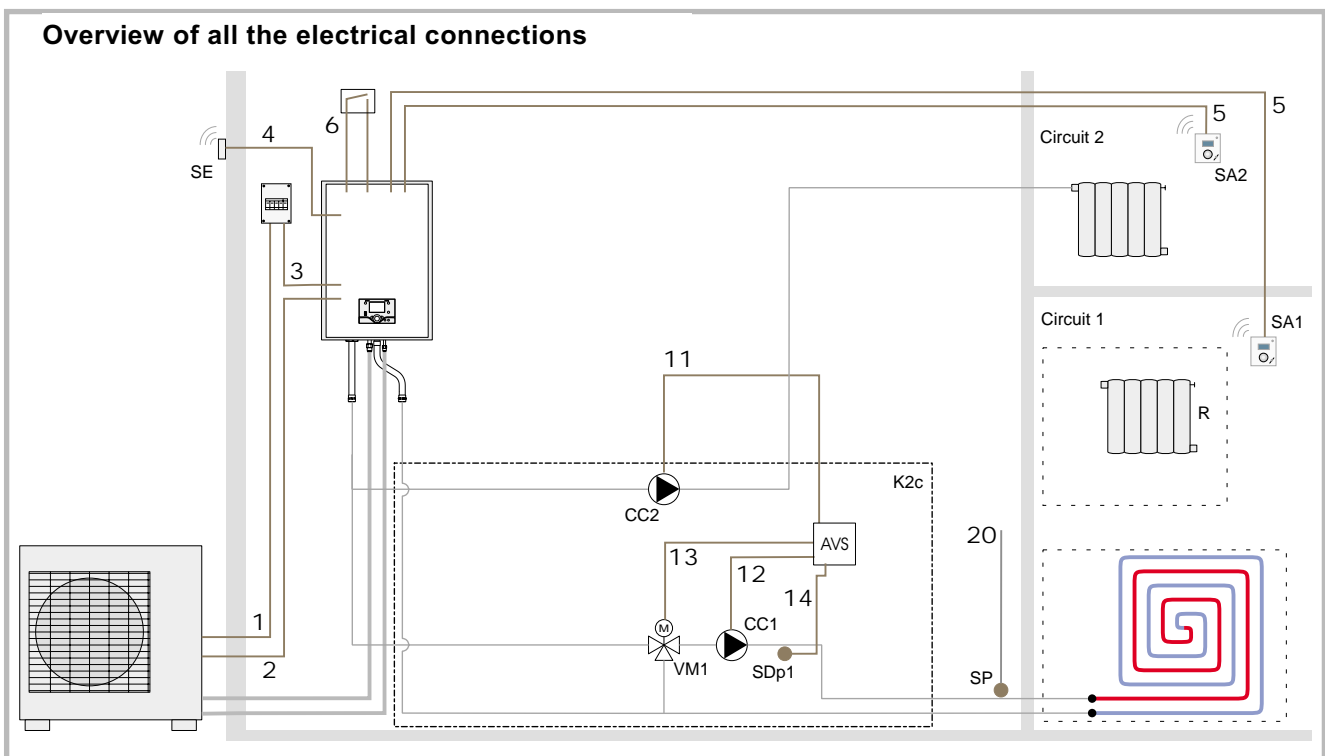
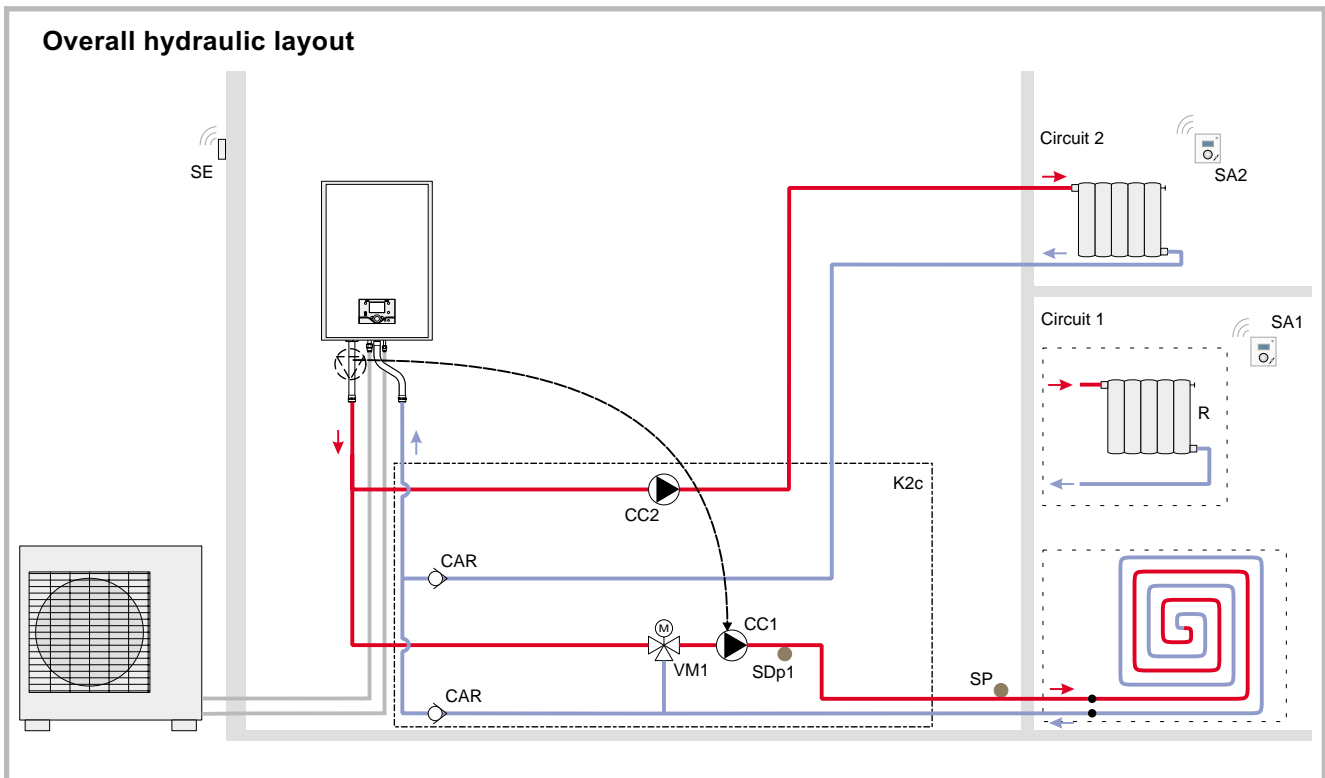
☞ **See detailed instructions**  
**on Page 47**



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

### Configuration 3 : 2 heating circuits

➔ See detailed instructions  
on Page 47



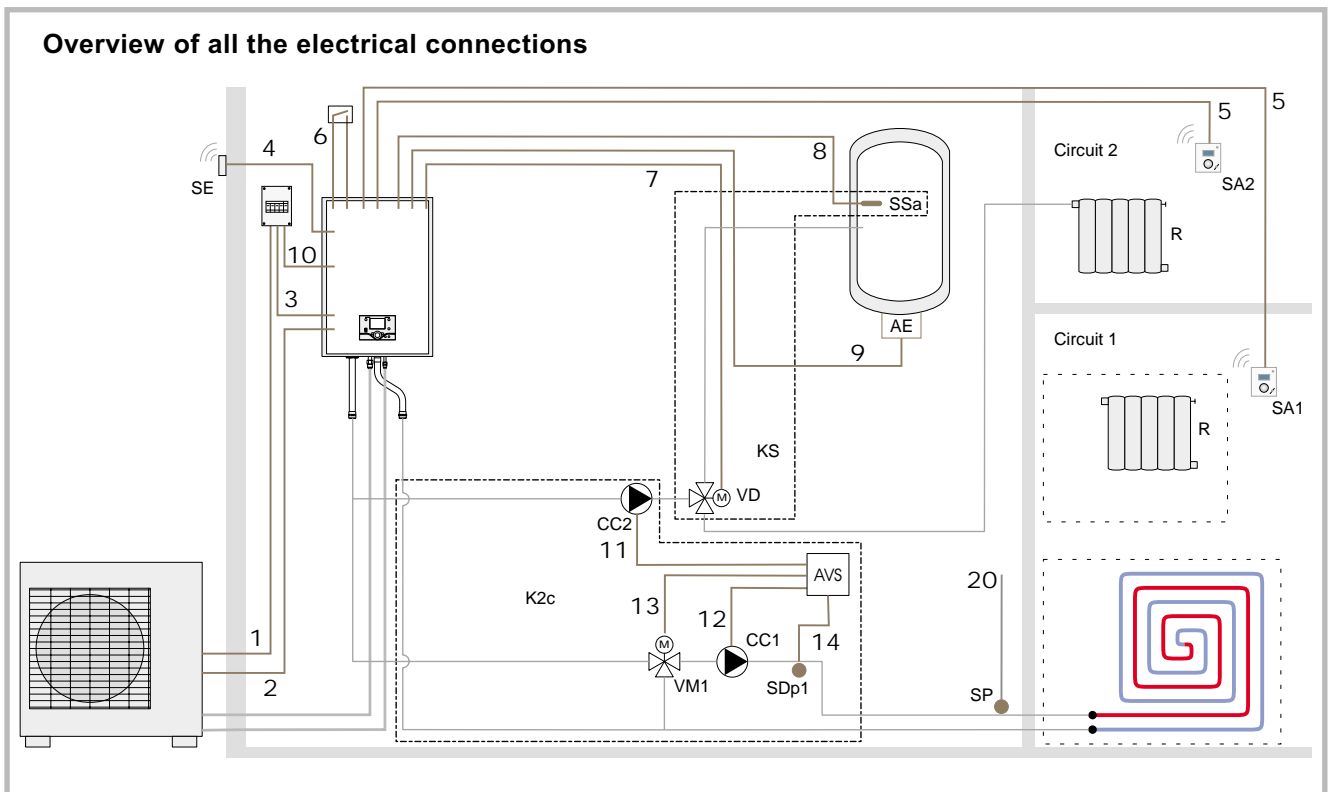
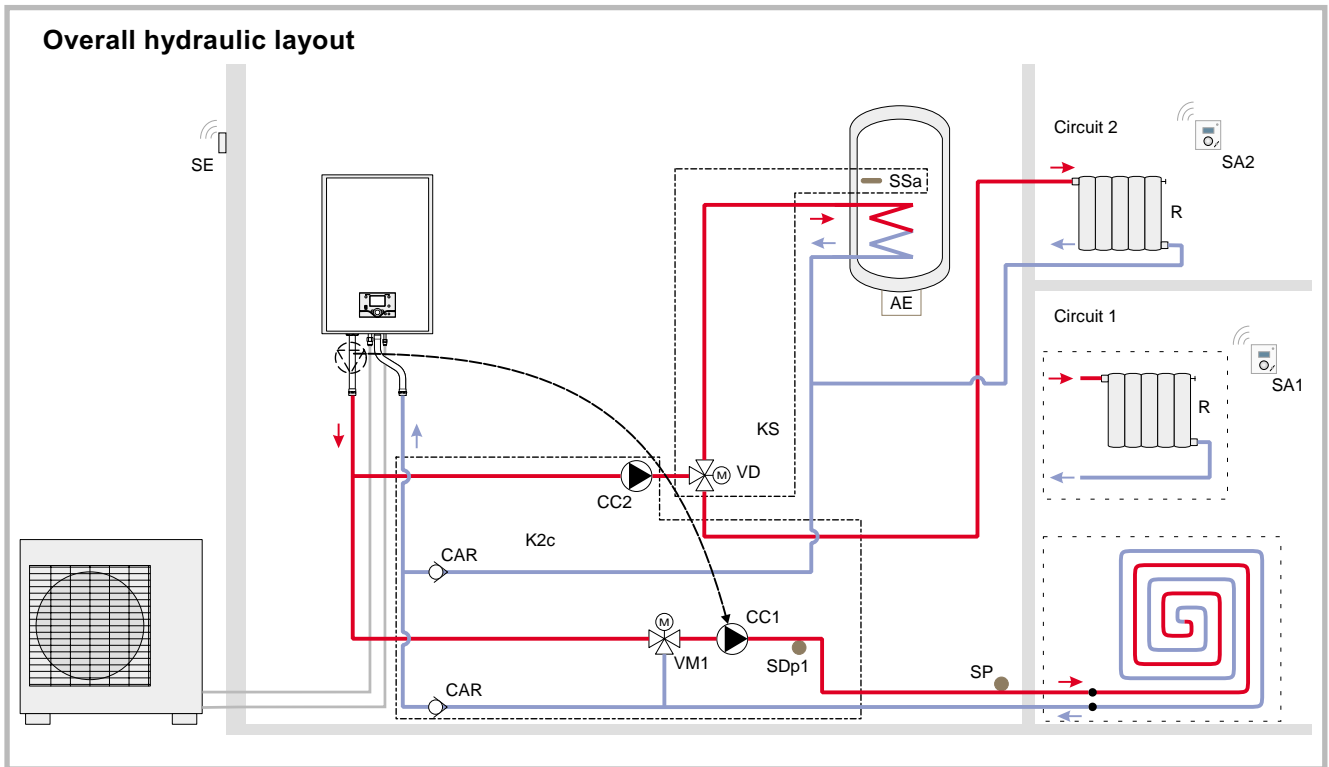
#### Legend

- 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



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

# 5 Electrical wiring diagrams

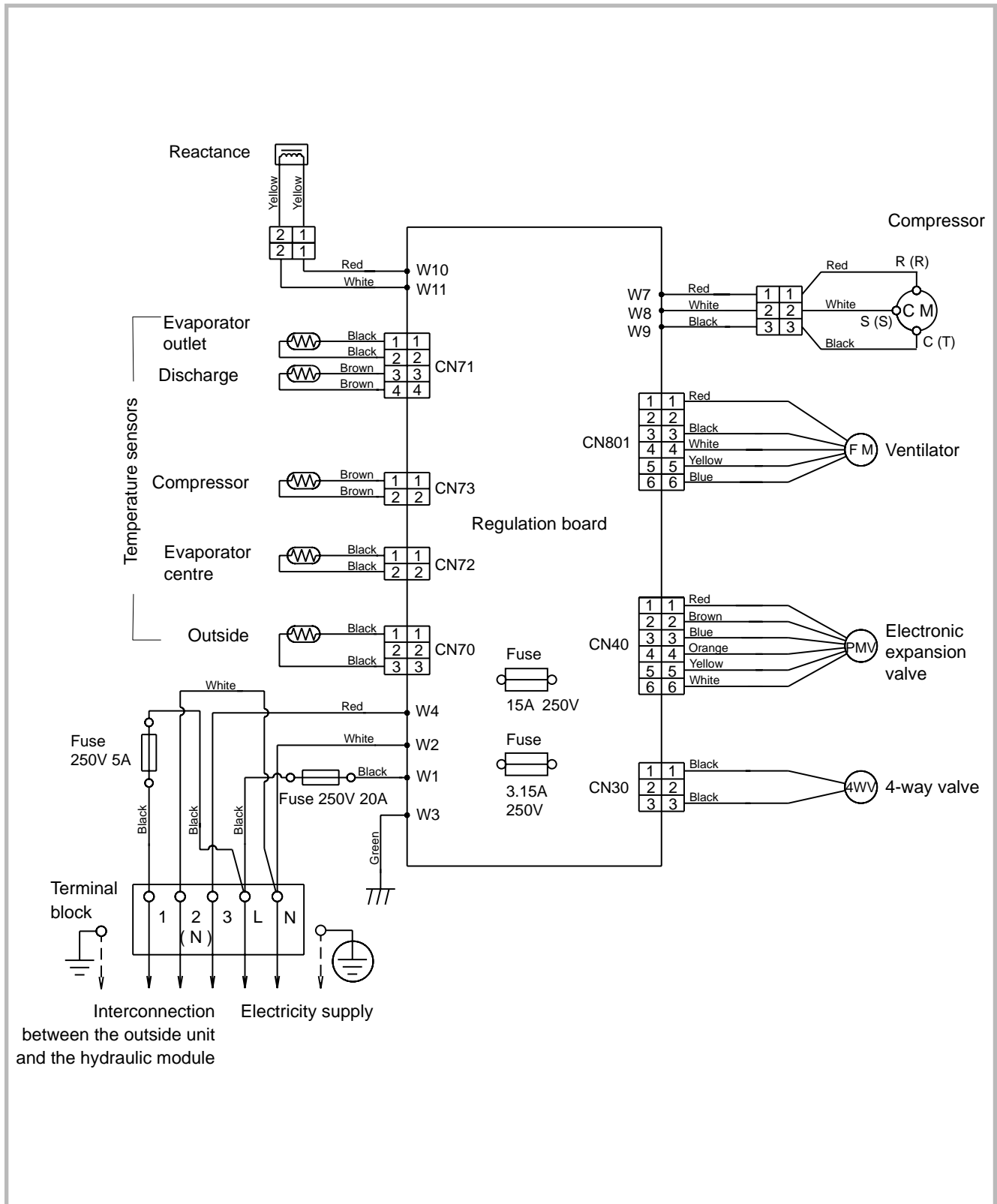


Figure 45 - Electrical wiring of outside unit Model 050, 065, 080



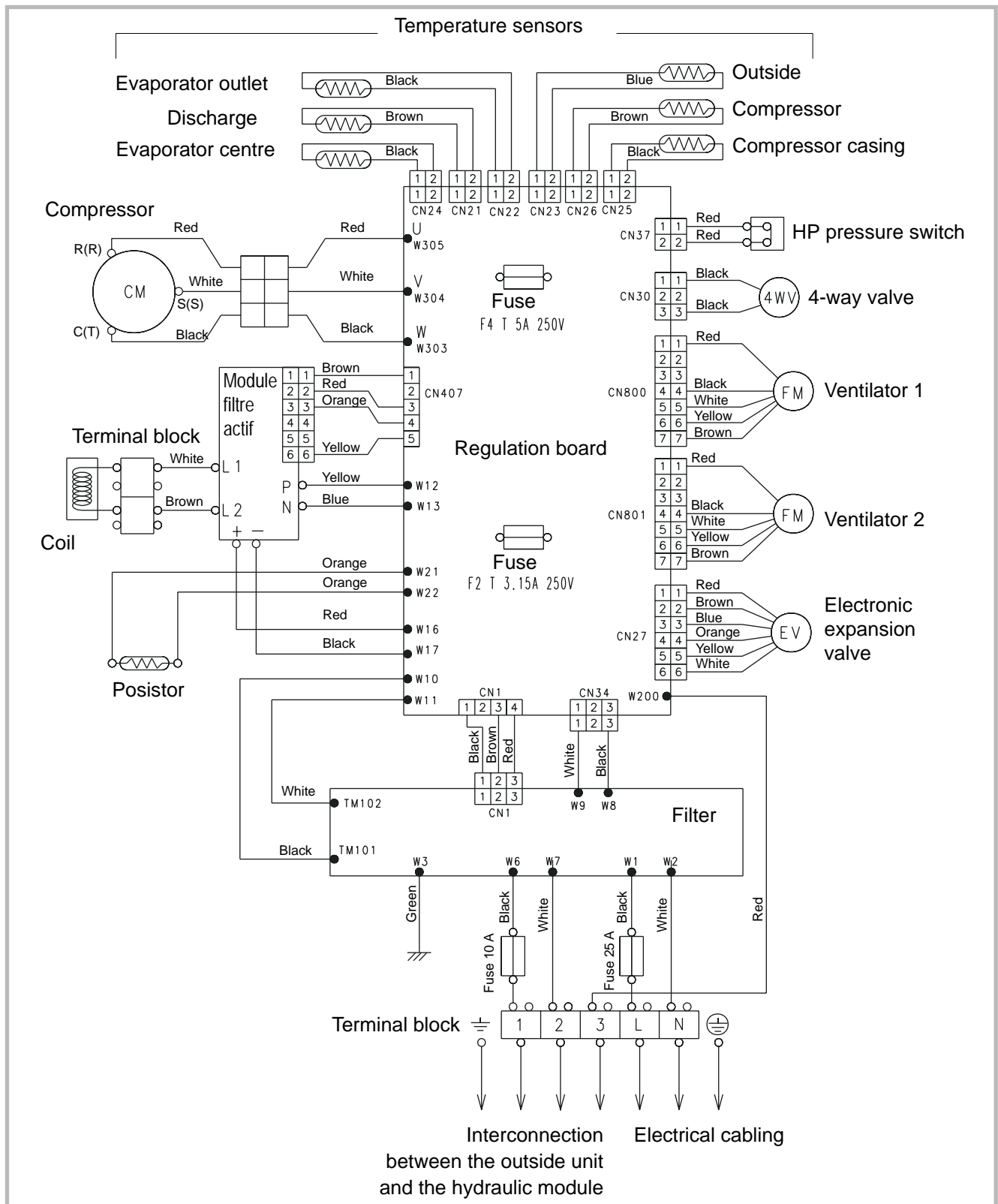


Figure 47 - Electrical wiring of outside unit Model 128

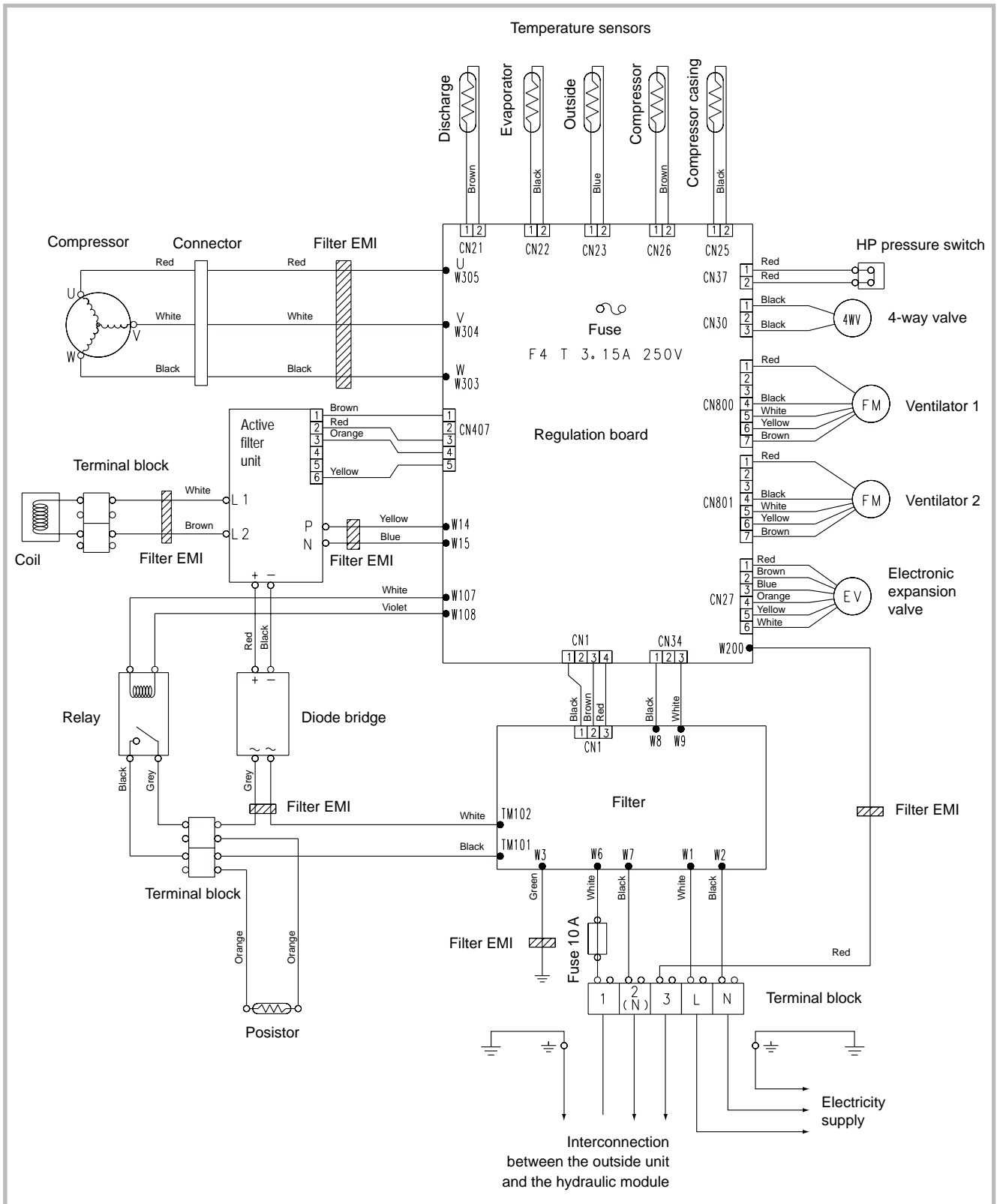


Figure 48 - Electrical wiring of outside unit Model 155

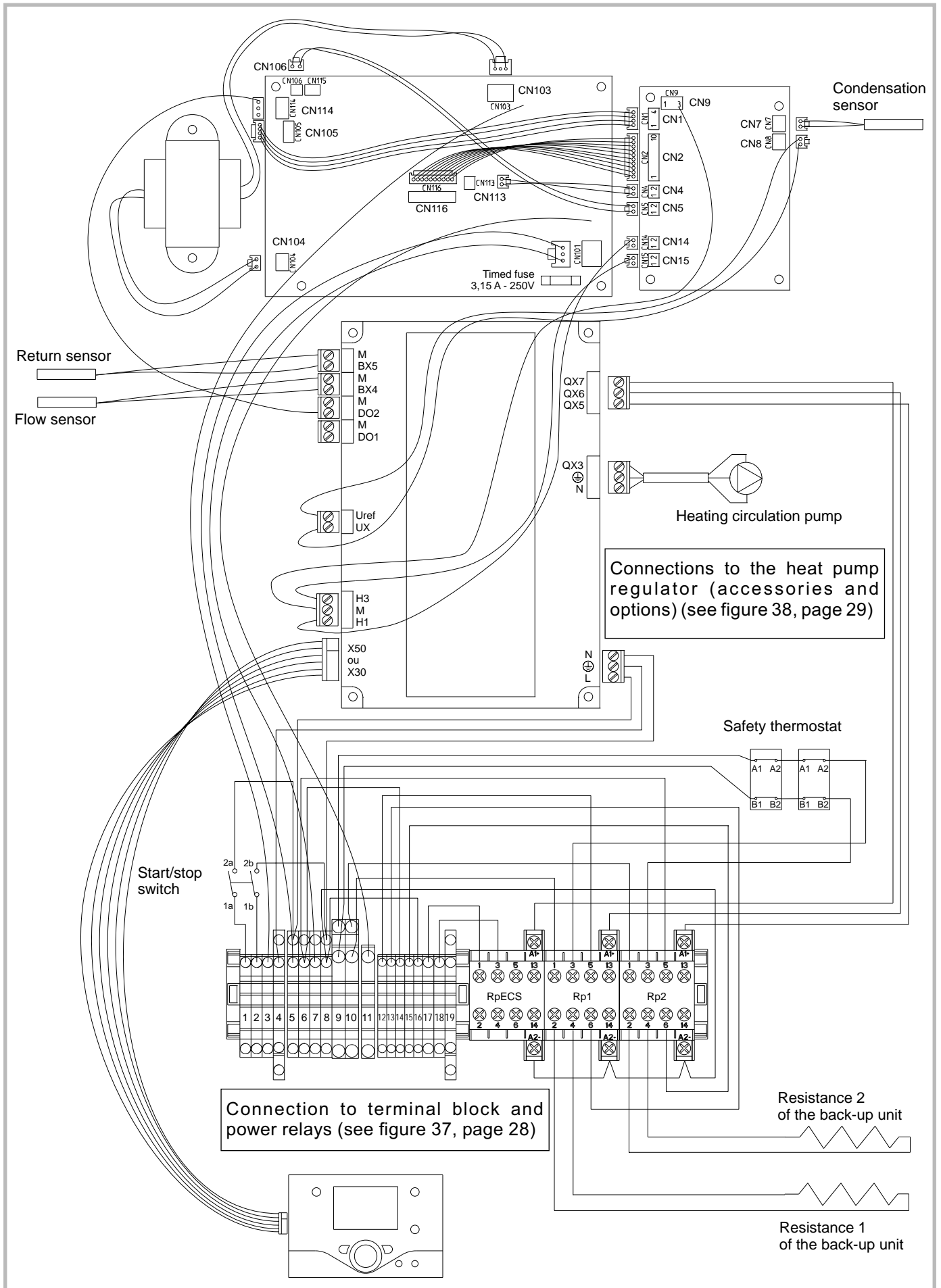


Figure 49 - Electrical wiring, Hydraulic module (Except installer's connections)



## 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.

**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	See below and fig. 58 and 59	No

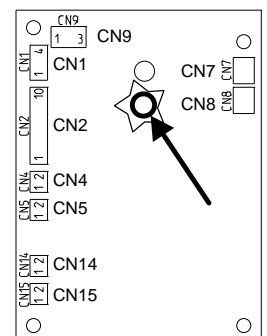
The display shows the “Bell” symbol  .

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** : Flashing of the diode visible on the interface card

Diode display	Erroneous element
1 Flash	Transmission error, "hydraulic module - outside unit"
2 Flashes	Abnormal discharge temperature or defective discharge sensor
3 Flashes	Defective exchanger sensor
4 Flashes	Defective outside temperature sensor
5 Flashes	Abnormal compressor temperature or defective compressor temperature sensor
6 Flashes	HP pressure switch cut off
7 Flashes	Abnormal current quality
8 Flashes	Current quality detection circuit defective
9 Flashes	Active filter error
10 Flashes	Compressor is not operating
11 Flashes	External fan error
12 Flashes	Compressor casing resistance fault
13 Flashes	Active filter cut off for over-intensity



## 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 050 and 065)

#### Outside unit, Ref. AOYA24LALL (Model 080)

<i>Diode display</i>	<i>Erroneous element</i>
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 095)

<i>Diode display</i>	<i>Erroneous element</i>
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

**Outside unit,  
Ref. AOYA45LATL, AOYA45LBTL (Model 128) and Ref. AOY54LJBYL (Model 155)**

<i>Diode display</i>	<i>Erroneous element</i>
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 128)	Defective "evaporator centre" temperature sensor
6 Flashes (Model 128)	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 128)	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 128)	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	-
Room temperature	8721
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 setpoint 1	8740
Flow temperature 1	8743
Flow temperature setpoint1	
Room setpoint 2	8771
Flow temperature 2	8773
Flow temperature setpoint 2	
DHW (domestic hot water) temperature	8830
Heat pump return temperature	8410
Setpoint (flow) 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 tension Directive 73/23/CEE, under standard NF-EN60335-1.
- Electromagnetic compatibility Directive 89/336/CEE
- Directive 98/37/EC,
- Directive for pressurised equipment 97/23/EC,
- Directive for labelling energy consumption 2002/31/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.