

# LIBERTY300

## Domestic hot water heat pump

 **Technibel**  
UNE AVANCE DANS L'AIR DU TEMPS

### Installation and Operating Instructions



Référence 10.12.199 GB 01

**Made in  
FRANCE**



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# ▶ 1 - RECOMMENDATIONS



- The cover of this device must never be used for carrying or handling and is not designed for this purpose.

- Rinse piping before connecting the device to the domestic hydraulic system.

- This device only functions when filled with water. Never activate the device unless the tank is completely full and properly primed.

- The magnesium anti-corrosion anode guarantees the protection of the tank. An annual inspection of the anode must be carried out. The anode must be replaced, if necessary, to maintain the anti-corrosion protection of the tank. (see § «Anti-corrosion anode»)

- It is recommended to carry out an occasional inspection for scaling followed by a cleaning if necessary using the access flange designed for this purpose.

- Always turn the device off before opening it. Take into account the fact that the fan could continue rotating due to inertia.

- Avoid getting water on the control panel. Before cleaning, turn the device off.

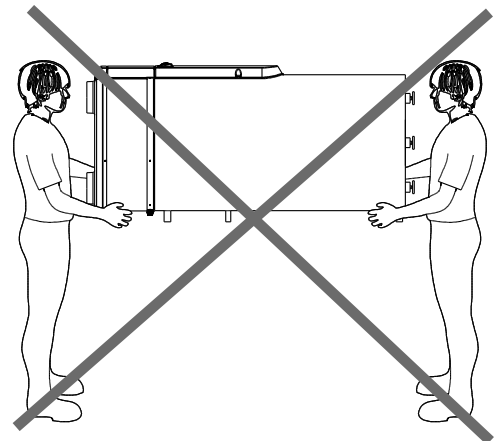
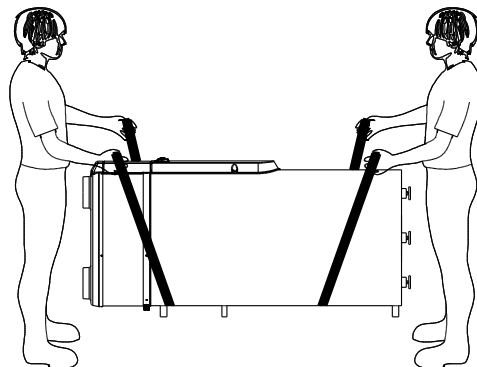
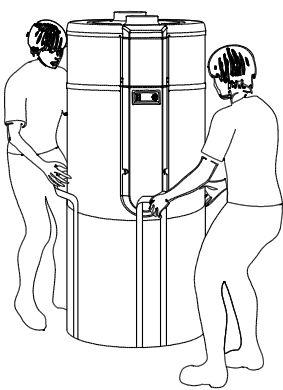
• This appliance is not appropriated for people (including children) with lack of physical and mental capacity, or people without knowhow.

• The D.W.H.P (Domestic Water Heat Pump), Solar and Heat Pump is only used to heat tap water for domestic use within the mentioned temperature limits. The heating of liquids other than drinking water is not permitted. The technical rules related to drinking water are to be respected.

• The temperature of the air taken in by the device must be between  $-7^{\circ}\text{C}$  and  $+35^{\circ}\text{C}$ . When the temperature is less than  $-7^{\circ}\text{C}$  or higher than  $+35^{\circ}\text{C}$ , the water is no longer heated by the heat pump but by the electrical backup. The functional benefits of diminish with proportion to the lowering of the temperature of the air taken in by the device.

## ▶ Storage and transport

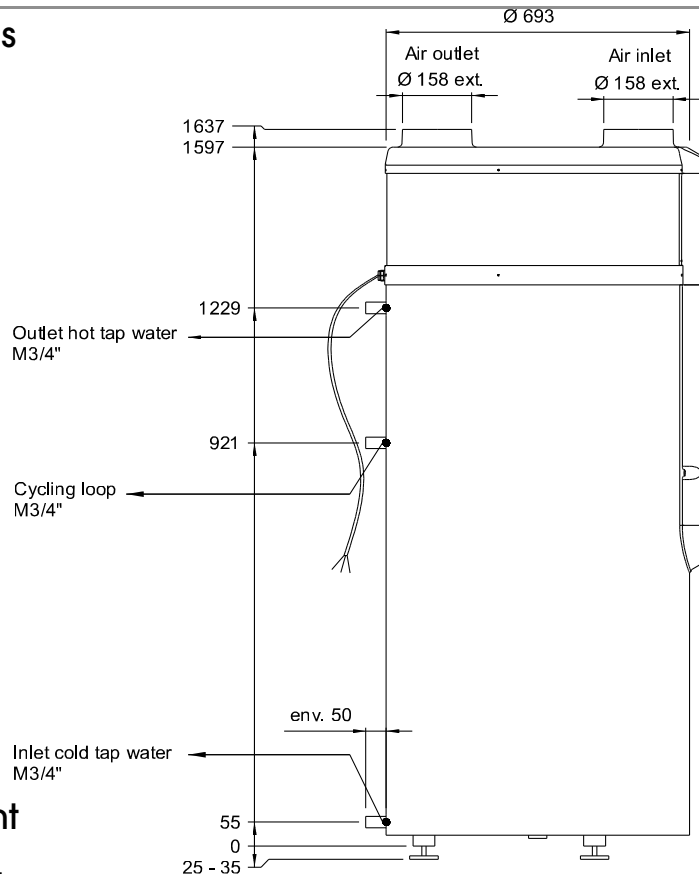
### Summary of PERMITTED transport positions



Keep the transport bag out of the reach of children (suffocation risk)

# 2 - INSTALLATION

## 2.1 Dimensions



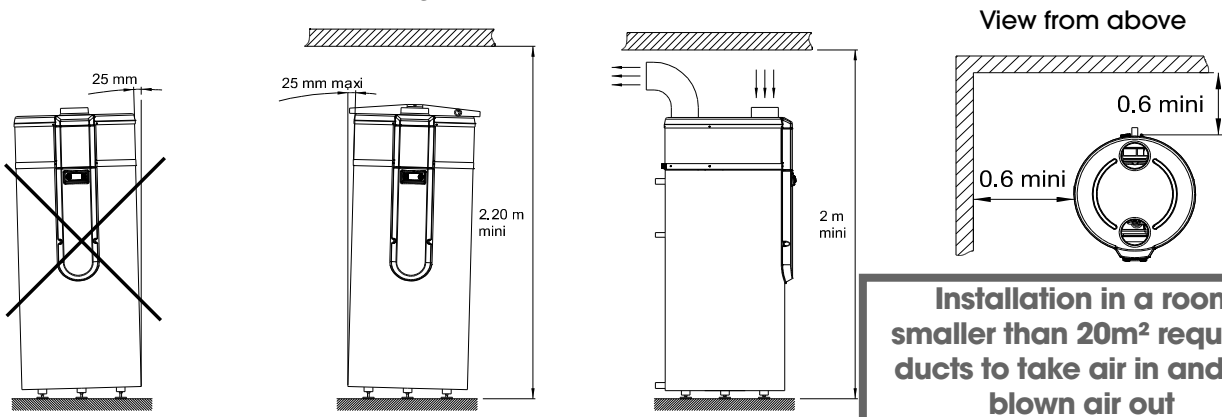
## 2.2 - Placement

### 2.2.1 - Air Intake

To be considered when choosing the final placement:

- D.W.H.P must not be installed outdoor
- D.W.H.P must be installed in a room outdoor from frost. Also, the temperature of the air taken in must range between -5°C and 35°C. When the temperature is below -5°C or above 35°C, the water is no longer heated by the heat pump, but by the electrical backup.
- inlate air must be clear of any pollution, and dust.
- The air taken in must not originate from a heated room.
- The device must not be placed in a room which risks explosion due to gases, vapours or dust and must not intake air from rooms with the same risks.

### 2.2.2 - Positioning

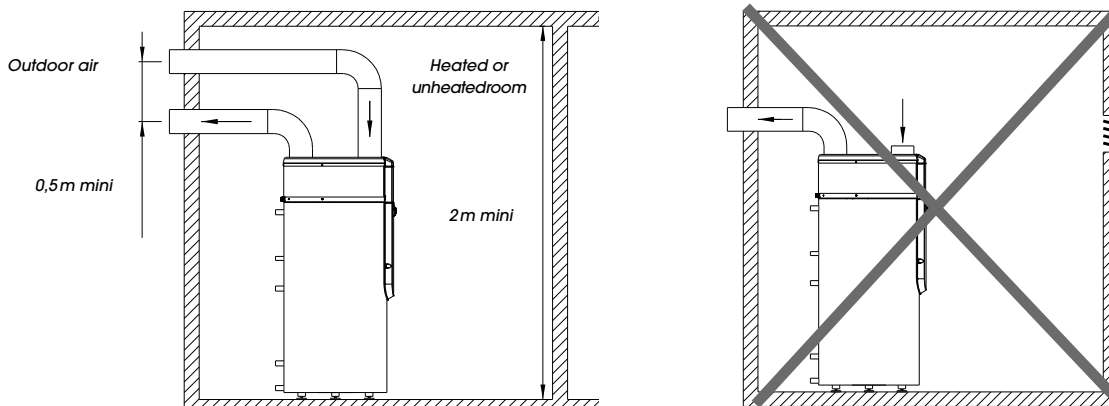


- The floor must be able to support the weight of the device (weight of D.W.H.P when full = approx. 440kg)
- Position D.W.H.P and adjust the stands in such a way that it is level. A slight inclination to the right of the device (1° max.) is acceptable.

## ▶ 2.3 - Installation with air duct

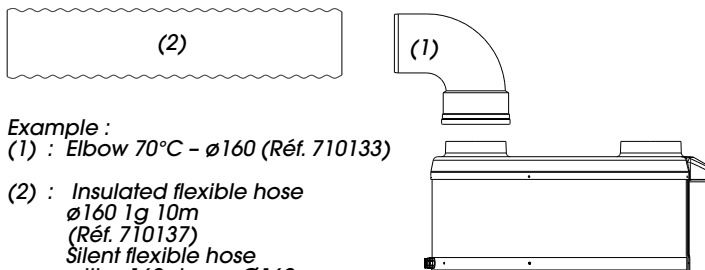


**In cases of connection with ducts, it is necessary to set the ventilation speed 2 (see section "PAR.06 - Ventilation speed")**



## ▶ 2.4 - Air duct sizing

The connection of D.W.H.P must be done using insulated air ducts of a nominal diameter of 160mm. The piping can be connected either on the intake side, the blowing side or both.



Example :

(1) : Elbow 70°C - ø160 (Réf. 710133)

(2) : Insulated flexible hose  
ø160 1g 10m  
(Réf. 710137)  
Silent flexible hose  
with ø160 sleeve Ø160  
(Réf. 710136)



**Maximum length  
of ducts + elbow (1m) =  
Flexible duct : 10m  
Rigid duct : 20m**

## ▶ 2.5 - Plumbing connections

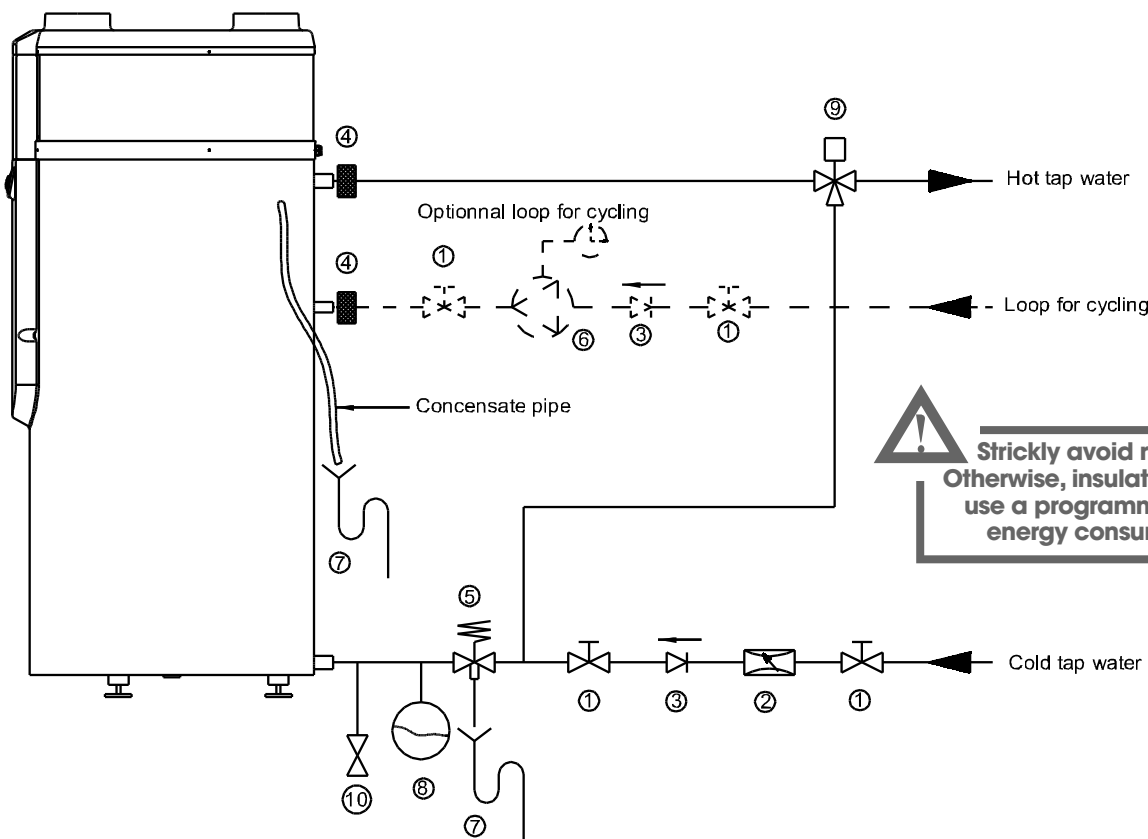
- It is mandatory to install a **new** pressure-relief valve (not included) set to 7 bars on the domestic cold water supply of the device. Membrane type valve are recommended. This pressure-relief valve must conform to the domestic standard.
- The pressure-relief valve must be installed as close as possible to the cold water inlet of the device and **the passage of water must never be hindered** by any accessory (valve, pressure controller, etc...)
- The drain outlet of the pressure-relief valve must be sized following the requirements of construction standard and must never be blocked. It must be connected by use of a funnel, allowing a minimum 20mm open space, to a vertical draining pipe of a diameter equal to the piping connection of the device.
- The drain outlet of the pressure-relief valve must be installed in a frost-free place and pointing downward.
- If the pressure of the domestic cold water supply is higher than 5 bars, install a pressure reducer above the pressure-relief valve at the beginning of the installation (a pressure of 4 to 5 bars is recommended).
- It is advised to install a shut-off valve above the pressure-relief valve.
- In cases of installations equipped with
  - piping of a small diameter
  - ceramic plate valves
 it is necessary to install, as close as possible to the shut-off valves, a domestic expansion vessel adapted to the installation.
- **For the domestic hot water circuit, use the following materials:**
  - copper
  - galvanised steel
  - brass**Depending on materials used in the hot water circuit, incompatibilities could result in damage due to corrosion.**

**In consequence, the connection of the device to the copper piping of the domestic hot water should ALWAYS be carried out via a cast iron fitting, or steel, or with the help of dielectric connections (not included) which will help to avoid any iron/copper galvanic bridge.**

- Rinse the supply line piping before attaching it to the domestic installation of the device in order to avoid the introduction of any particles, metallic or other.
- Respect the current standard in the country of use, notably those that concern domestic and pressure safety conditions.
- The maximum temperature of the domestic hot water at delivering points should never surpass 50°C for the toilet and 60°C for other uses. Install thermostatic mixing valves adequate enough to avoid any burn risks.
- In regions where the water contains high levels of limestone (TH > 20°F), it is recommended to treat water with a softener. Softened water should conform to the criteria defined by the country's norms.
- In all cases, softened or not, the latter should conform to the country's hot water additional clause norms concerning:
  - chloride levels
  - resistivity (between 2200 and 4500 ohm/cm)
  - 12°F < TH < 30°F
  - ...



**The warranty does not apply if these points are neglected or if the water quality did not allow the correct treatment in the legal framework.**



**Strictly avoid recycling. Otherwise, insulate ducts and use a programmer to limit energy consumptions.**

- |                                   |                                      |
|-----------------------------------|--------------------------------------|
| 1. Shut of valve                  | 6. Domestic hot water recycling pump |
| 2. Pressure reducer               | 7. Run-off siphon                    |
| 3. One way valve                  | 8. Domestic expansion vessel         |
| 4. Insulating dielectric sleeve   | 9. Thermostatic mixing valve         |
| 5. Membrane pressure-relief valve | 10. Drain valve                      |



**N.B. :**

- Domestic hot water cycling loop: in order to save energy, it is recommended not to use domestic hot water recycling. When a recycling line is attached to the hot water distribution system, foresee the possibility of a shut-off mechanism (valve or faucet) in order to limit useless energy loss. The connection of the recycling line is carried out in funtion of need (with a timing command).

## ▶ 2.6 - Condensate line connections

- the condensate tube must run-off into open air before entering the siphon,
- do not attach it to a boot,
- do not bend the tube,
- keep the tube vertical and open toward the bottom.

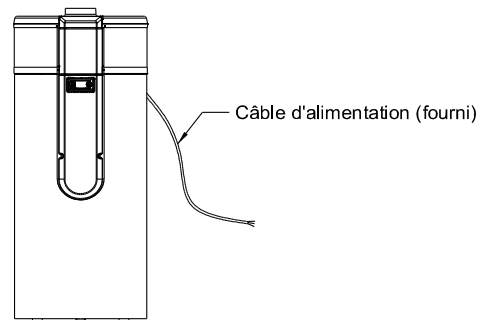
## ▶ 2.7 - Electrical connections

The electrical supply must conform the current rules of the country of installation.

Protect the device with:

- A 16A all-pole circuit-breaker with a minimum 3mm contact opening
- A 16A circuit-breaker with a 30mA differential

When supply cable is damaged, it must be replaced by the manufacturer, his aftersale service, or some qualified people to prevent any danger.



**The device is polarised, respect the polarity:**

- **Brown wire = 230V phase**
- **Blue wire = Neutral**
- **Green/Yellow wire = Ground**

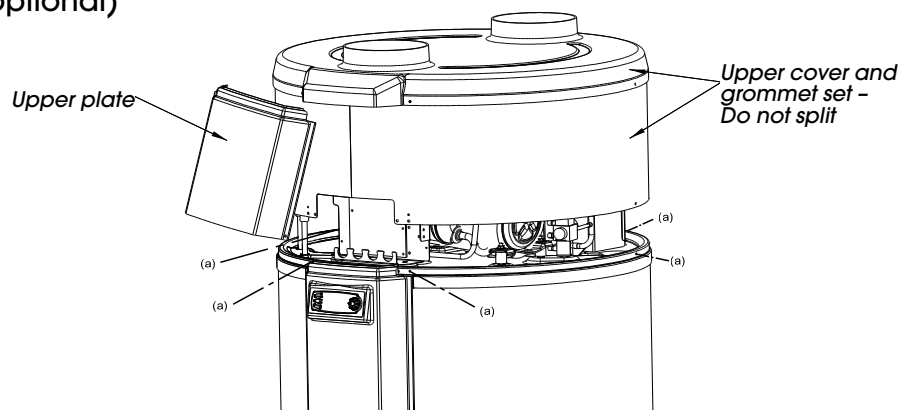
**Grounding is mandatory**

### ▶ 2.7.1 - External control (optional)

To access the electrical connections, remove the cover and the shell.

**IMPORTANT:** The upper cover and the shell form a set that must never be split.

- Remove the cover of the device by removing the screws (a) of the shell. by the lower belt.
- Remove the black cover of the electric box



### Peak time / off peak time operation

To forbid operation of electric back up during peak time, an external control can be connected.

- switch open = electric backup off
- switch closed = electric backup authorized

Do not connect voltage supply to the switch entry (entry 3) : risk of destroying the PCB

The switch (entry 3) does not control the heat pump operation, but only the electric backup

- Pass a 0.75 mm<sup>2</sup> 2 wire cable with metal tips through an available cable gland at the back of the device and bring the extremity of the cable to the electronic card. The other end of the cable is to be connected to the electrical service provider's contact.
- Remove the black protection cover of the electronic card.
- Insert the 2 wire cable via a grommet of the electronic card.
- Attach the 2 wire cable on the entry of the electronic card marked "Entrée 3" after having removed the existing red bridge.

**N.B.:**

D.W.H.P can also operate using an internal timing program (see section "Time programming").

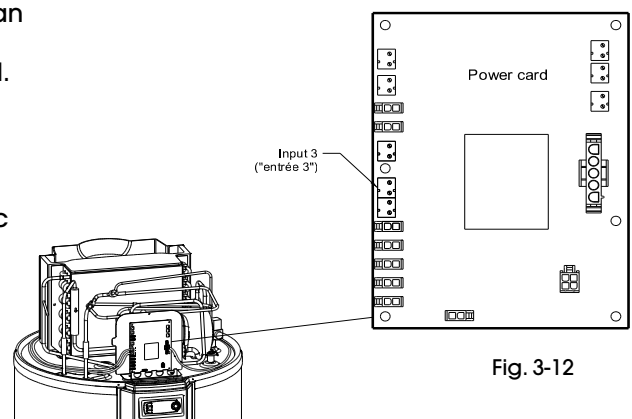


Fig. 3-12



## ► 2.7.2 Ventilation controled

D.W.H.P can be used to permanently ventilate a room . This ventilation can be used to renew the air. In this case, the connection of a humidity sensor (entry 2) allows to activate the operation of the ventilator in function to the ambient humidity. In all cases, the ventilator always operates with the heat pump.

- switch open = the ventilator does not operate
- switch closed = the ventilator operates

Set the regulator to mode "Ventilation with external control" ("PAR.05" set to mode 3 – see section "PAR.05 – Ventilation mode")

# ► 3 - SETUP AND USE

Ensure the sealing and tightness of the entire circuit.

D.W.H.P functions with the heat pump as long as the temperature of the air taken in remains with the range of -7°C to +35°C. Outside of this range, the electrical backup ensures the heating of domestic hot water.

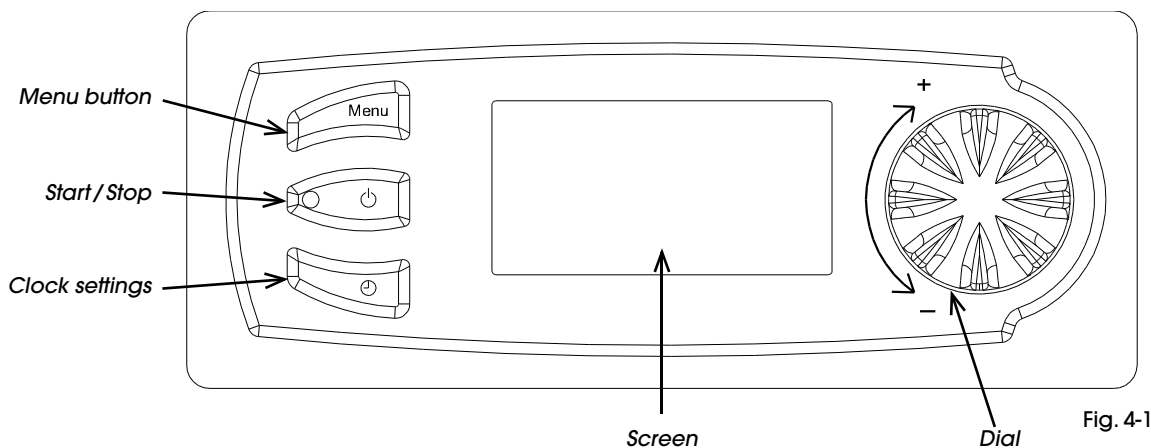
The temperature of domestic hot water supplied by the heat pump is adjustable to 60°C. In function of the volume of consumed water and to ensure savings, it is recommended to limit the temperature of domestic hot water to a lower temperature.

In case of high domestic hot water consumption, D.W.H.P possesses a comfort function that increases the heating capacity when there remains only 1/3 of the volume of the tank above 38°C (see section "PAR.10 – Minimum temperature").

In instances where there is a need for high amounts of domestic hot water, D.W.H.P possesses a "boost" function (activated by the user) which ensures the quick heating of water to the desired temperature (50°C for example) with the help of the heat pump and the electrical backup. This function is deactivated as soon as the desired temperature is achieved (e.g. 50°C).



Periodically verify for alarms (in case of alarm, see section "Error message").

## ► 3.1 - Control display




### Signification of symbols :


 .....Compressor activated

 1  
 2.....Ventilation activated  
 (speed 1 or 2)

 .....Defrosting

 .....Electrical backup activated

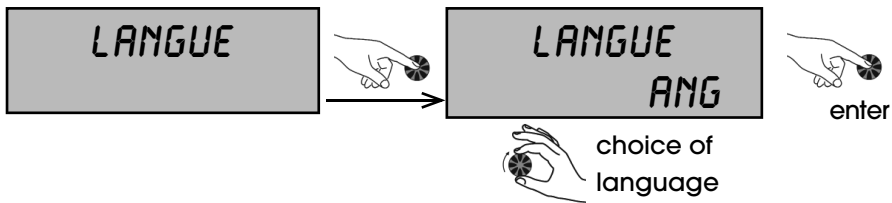
 .....Need for domestic hot water

 .....Econo-mode activated  
 (by time programming or external activation)

 .....Vacation mode activated


## ▶ 3.2 - Language setting

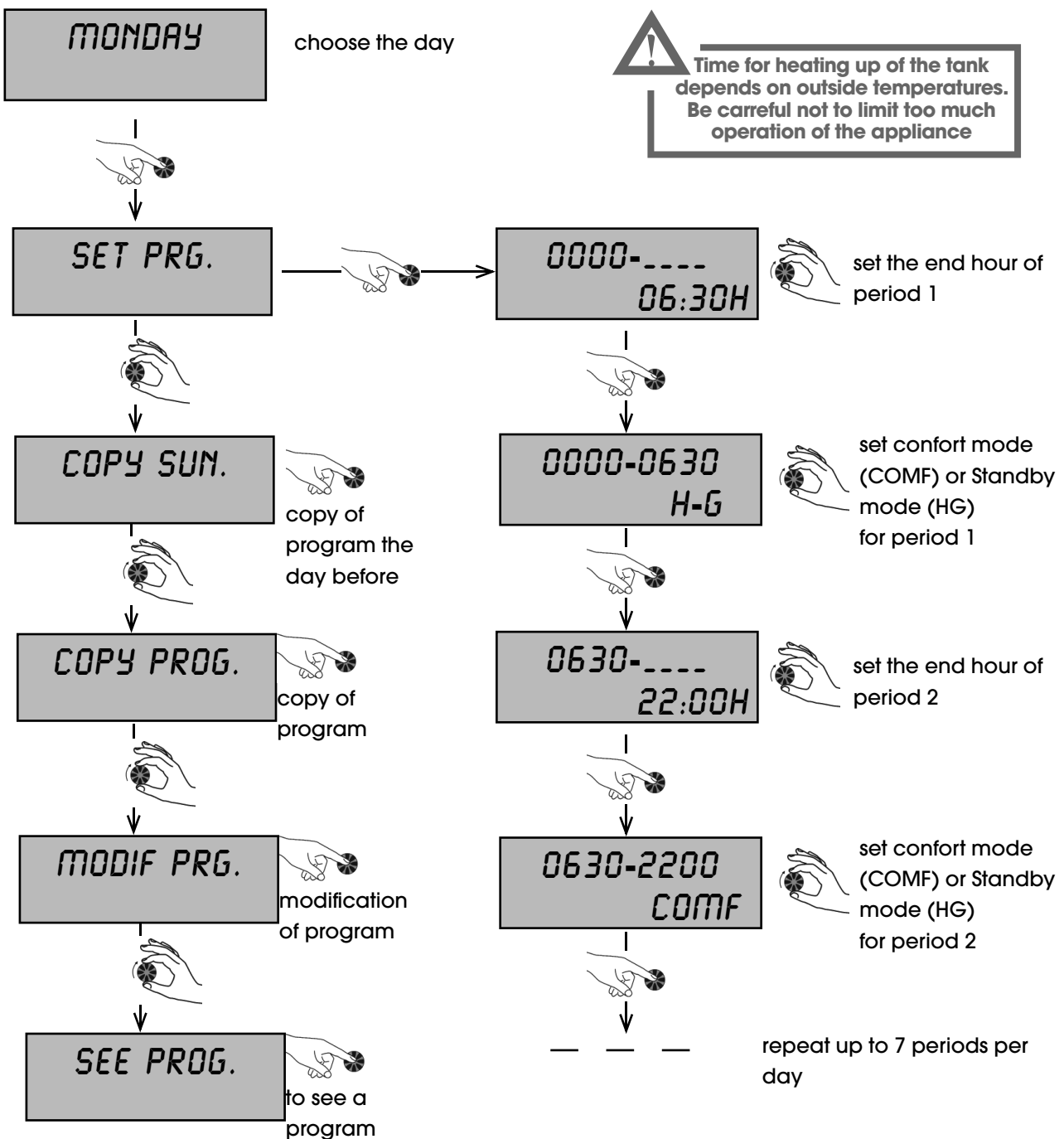
- Direct access by pressing the Menu button.
- Turn the dial to scroll through the menu choices:



- Press «Menu» to escape

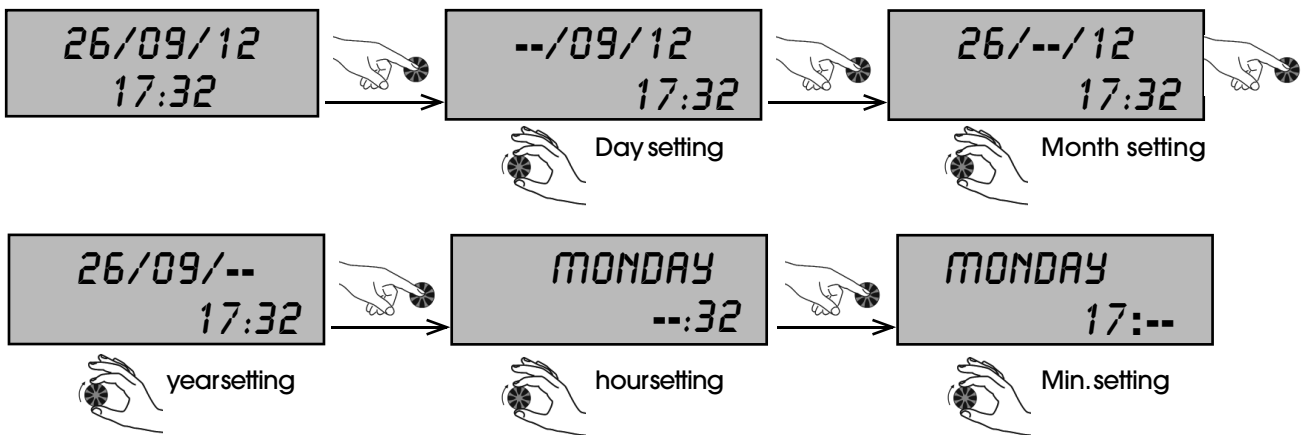
## ▶ 3.3 - Program

To program authorization hours for heat pump, press the Clock button  and keep press during 3 seconds.



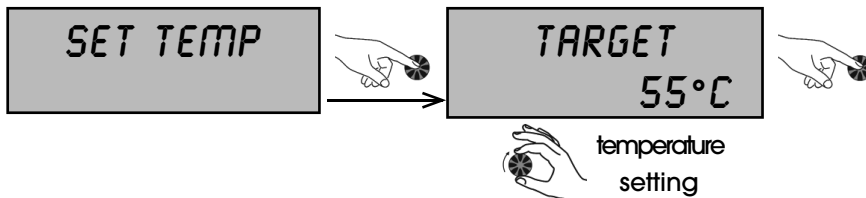
### ▶ 3.4 - Time setting

- Direct access by pressing “Clock settings”. 



### ▶ 3.5 - Water temperature setting

- Direct access by pressing “menu”.
- Turn the dial to scroll through the menu choices:



- Press the Menu button to return to the main screen



**NB**

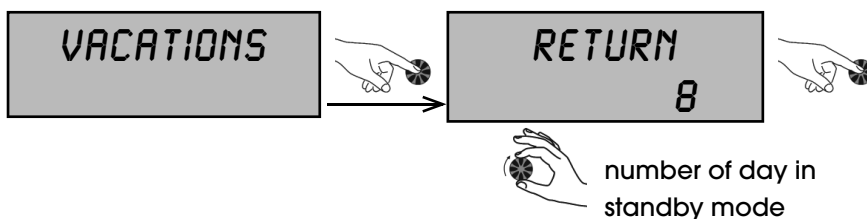
In order to get the most out of the heat pump, it is recommended to not set the temperature too high if there is no need to do so.

### ▶ 3.6 - Standby mode during vacation period

The “VACATIONS” function allows to set the device in stand by mode while conserving the frost-free function.

This function is programmable for a duration of 1 to 99 days. It is activated once the number of days are set and accepted.

- Direct access by pressing “menu”.
- Turn the dial to scroll through the menu choices:



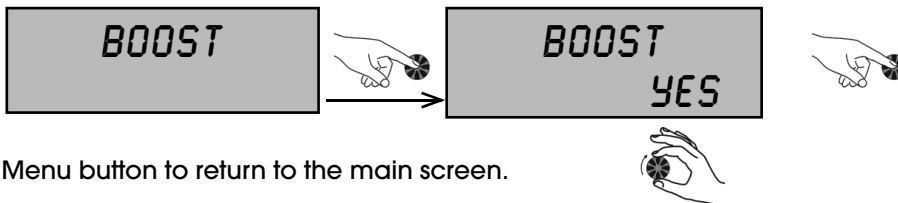
- Press the Menu button to return to the main screen

The “VACATIONS” function ends automatically at the same time as soon as the number of days have passed. During the entire duration of the vacation D.W.H.P will display “RETURN” (Return from vacation) along with a countdown for the number of days.

### ▶ 3.7 - BOOST function (for better comfort)

The "BOOST" function is a temporary forcing of the electrical backup and the heat pump, simultaneously, to accelerate the raising of temperature on a heat cycle. The spark "electrical backup" symbol blinks.

- Direct access by pressing the Menu button.
- Turn the dial to scroll through the menu choices:



- Press the Menu button to return to the main screen.



**NB**

The "BOOST" function is automatically deactivated as soon as the set temperature is achieved

### ▶ 3.8 - INSTALLER menu

According to the installation configurations, it is necessary to adjust some parameter to optimise the functioning of D.W.H.P.

#### **Access Procedure to installer menu:**

- Press the Menu button
- Turn the dial until the screen displays "INSTALLER"
- Press **simultaneously** the "Clock settings" button and the Menu button
- **Keep them simultaneously pressed down for 3 seconds** until the screen displays "SETTING" (Parameter settings).



To set the installation parameters



Reset to nominal settings

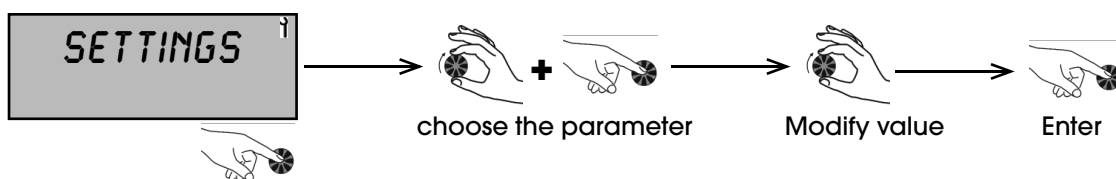


To see temperatures of different sensors



To see state of the different counters

#### ▶ 3.8.1 - Parameter settings



Parameter	Designation	Unit	Range	Initial setting
PAR. 01	Heating mode	-	3 or 6	3
PAR. 04	period for antilegionnella cycle	days	0 to 99	0
PAR. 05	ventilation mode	-	1,2, or 3	1
PAR. 06	ventilation speed	-	1 or 2	1
PAR. 09	temperature setting of elec. backup	°C	-10 or + 10	0
PAR. 10	minimum temp. for elec. backup	-	0 or 1	0

### ▶ 3.8.1.1 - **PAR.01**-Heating mode

Parameter 1 is the setting of the heating mode : Heat pump or electric heater

PAR. 01 = 3      operation in heat pump mode (Initial setting)

PAR. 01 = 6      operation in electrical heater mode

### ▶ 3.8.1.2 - **PAR.04**- Anti-legionellosis cycle

Parameter 04 allows the set the interval between two anti-legionellosis cycles.

PAR. 04 = 0      No anti-legionellosis cycle, except when returning from vacations period and after standby more than 3 days.

PAR. 04 = 8      Anti-legionellosis cycle is launched every 8 days (for example) and starts at 22:00

During the anti-legionellosis cycle the temperature of the water is raised to 60°C by the heat pump. If the default for domestic hot water is already set to 60°C (see section “Desired water temperature settings”) there will be no anti-legionellosis cycle since it is already permanent.

### ▶ 3.8.1.3 - **PAR.05**- Ventilation mode

Parameter 5 is the setting of the ventilation mode

PAR. 05 = 1      ventilation is activated only when heat pump runs (Initial setting)

PAR. 05 = 2      ventilation is permanently activated

PAR. 05 = 3      ventilation is activated when heat pump runs and when the external control switch is on

### ▶ 3.8.1.4 - **PAR.06**- Ventilator speed

Parameter 5 is the setting of the ventilator speed

PAR. 06 = 1      Automatic mode, ventilator speed change automatically when air temperature decreases setting)

PAR. 06 = 2      ventilator forced at max speed



**Speed setting 2 is mandatory when D.W.H.P is connected to air ducts**

### ▶ 3.8.1.5 - **PAR.09**-Electric back up settings

The start-up setting of the electrical backup can be shifted (either in + or in -) according to the comfort setting chose by the user (e.g. 55°C)

If the temperature of the air is out of functioning range (<-5°C or >+35°C), the heat pump cannot function, it is the electrical backup that automatically takes control. Since this backup is more energy consuming than the heat pump, and to achieve energy savings, a lower domestic hot water temperature can be defined for the latter.

PAR. 09 = -5°C    the setting therefore becomes 55°C - 5°C = 50°C

However, since the electrical backup only heats the upper part of the tank, if the consumption of hot water is high it could be necessary to define a higher temperature for the electrical backup.

PAR. 09 = +10°C the setting therefore becomes 55°C + 10°C = 60°C)

The temperature of the automated electrical backup cannot, in any case, surpass 65°C.

### ► 3.8.1.6 - *PAR. 10*-Comfort function / Minimum temperature

It is possible to authorise the operation of the electrical backup at the same time at the heat pump to make sure the water temperature does not drop below a minimal comfort level of 38°C. The electrical backup will activate in order to raise the water temperature to 43°C and will stop and the heat pump will finish completely heating the tank.

PAR.10 = 0      Comfort function is not activated (initial setting)

PAR.10 = 1      Comfort function is activated: electrical backup is going to heat in parallel with the heat pump up to 43°C

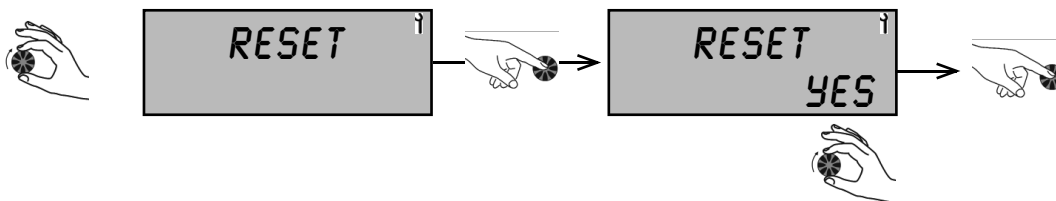


**NB**

The "Comfort" function is only active during the range of authorised hours

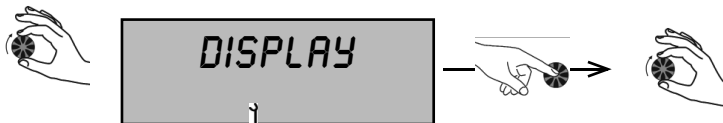
### ► 3.8.2 - Resetting Parameter

Resetting parameter allows to get back to initial parameters



### ► 3.8.3 - Sensor reading

The "Sensor reading" display menu allows to know, in real time, the different information given by the sensors and inputs.



Press the dial to read the sensor values

Display	Designation	Reference point on the electronic card
<i>BOTT.WATER</i>	Temperature of hot water in the lower part of the tank	Sensor #4
<i>AIR INLET</i>	Temperature of ambient air (air taken in)	Sensor #1
<i>DEFROST</i>	Evaporator temperature (defrosting)	Sensor #2
<i>HP SWITCH</i>	high pressure switch input (0=open contact ; 1=closed contact)	Entry #1
<i>HUMI DISTA</i>	External input, dry contact (0=open contact ; 1=closed contact)	Entry #2



**NB**

The temperature that is permanently displayed on the screen is the temperature of the water in the upper part of the tank (sensor #3).

## ▶ 4 - MAINTENANCE AND REPAIR

To maintain performance, it is recommended to have the device inspected by a qualified person every two years.



- All intervention on the refrigerating circuit must be done by a qualified person with a category 1 certificate of aptitude.
- The release of the refrigerant into the atmosphere is not permitted, the refrigerant recovery must be done before any intervention on the refrigeration circuit.
- Turn D.W.H.P off before opening it.
- Wait for the complete stop of the ventilator before any intervention.
- Make the anode inspection every year
- Do not spring water on electrical parts



**NB**

During maintenance or the shutting down of D.W.H.P, follow the environmental protection rules with respect to recovery, recycling and disposal of consumable parts and components.

### ▶ 4.1 - Water circuit / condensate draining

The inspection of the water circuit is limited to the inspection of the filters and of eventual leaks. Clean or replace the dirty filters.

Check that the condensate draining is operating correctly:

- Remove the upper cover (see section “Peak time / off-peak time functioning”).
- Verify that the evacuation orifice is not blocked.
- Clean the condensate recovery container where deposits brought in by the air can accumulate.
- Clean the condensate tube.

The pressure limiter has to be checked and cleaned, regularly to prevent any disfunctionning.

Check the leak tightness on every fitting, flange and hydraulic connections.

### ▶ 4.2 - Air intake circuit

Maintenance work is limited to the cleaning of the evaporator (at least once a year according to the cleanliness of the air taken in). If the filters are used, check regularly that they are not dirty. Clean them if necessary.



**NB**

Sharp edged fins : wound risk. Be careful not to deform or damage the fins.

### ▶ 4.3 - Anti-corrosion anode

The anti-corrosion anode is installed in the hot water tank and must be regularly electrically tested as well as a minimum of every years after the activation of D.W.H.P. Replace it if necessary.

- Drain water out of the tank
- Unscrew the anode from the tank
- Check the anode diameter at the thinnest point : diameter must be higher than 15mm
- Change the anode if its diameter is less than 15mm (the initial diameter being 33mm)



**An anti-corrosion anode in bad working condition shortens the length of operation of the device and nullifies the warranty.**

## ► 4.4 - Troubleshooting

### • The heat pump does not work

Verify that :

- Temperature setting is higher than the water temperature in the tank.
- The device has the proper power supply and that the polarity is respected:  
Phase on brown wire  
Neutral on blue wire  
Ground on green / yellow wire
- The light is on.
- The device is not in vacation mode (☰ symbol)
- The temperature of the air taken in is lower than -5°C or higher than +35°C.
- An external manipulation or a programmed hourly range is not preventing the operation (☾ symbol, "econo-mode" lit).
- An error is displayed on the screen (see section on error codes).

### • Lack of Hot water

Verify that:

- Water consumption is higher than the tank capacity.
- The authorized operating range is not too short (12 hours minimum if connected with duct).
- The programmed water temperature is not too low.

### • Condensates do no run-off (presence of water under the device)

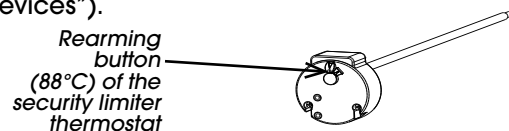
Verify that:

- The condensate evacuation system is not dirty or blocked. Clean if necessary:  
Remove the cover (see section "Peak time / off-peak time functioning").  
Check for blockage.
- The tube is not bent or not making a loop straight down.
- The tube gives off into open space.

### • The electrical backup does not work

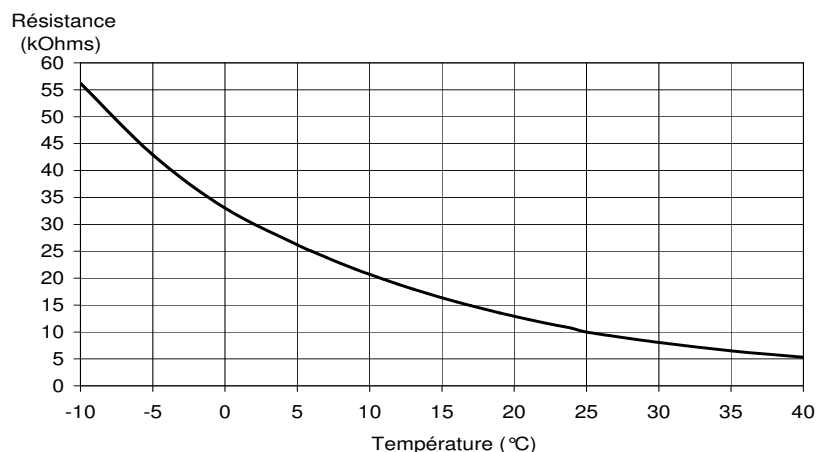
Verify that:

- An external manipulation or an hourly programming is not preventing the operation (☾ symbol, "econo-mode" lit).
- The security limiter thermostat of the electrical backup has not been set off following an overheating (>85°C). In this case, rearm it (see section "Security devices").
- Before rearming : verify that :  
- heating element is free of limestone



## ► 4.5 - N.T.C. Sensors characteristics

the 4 temperature sensors have the same curve of ohmic values.



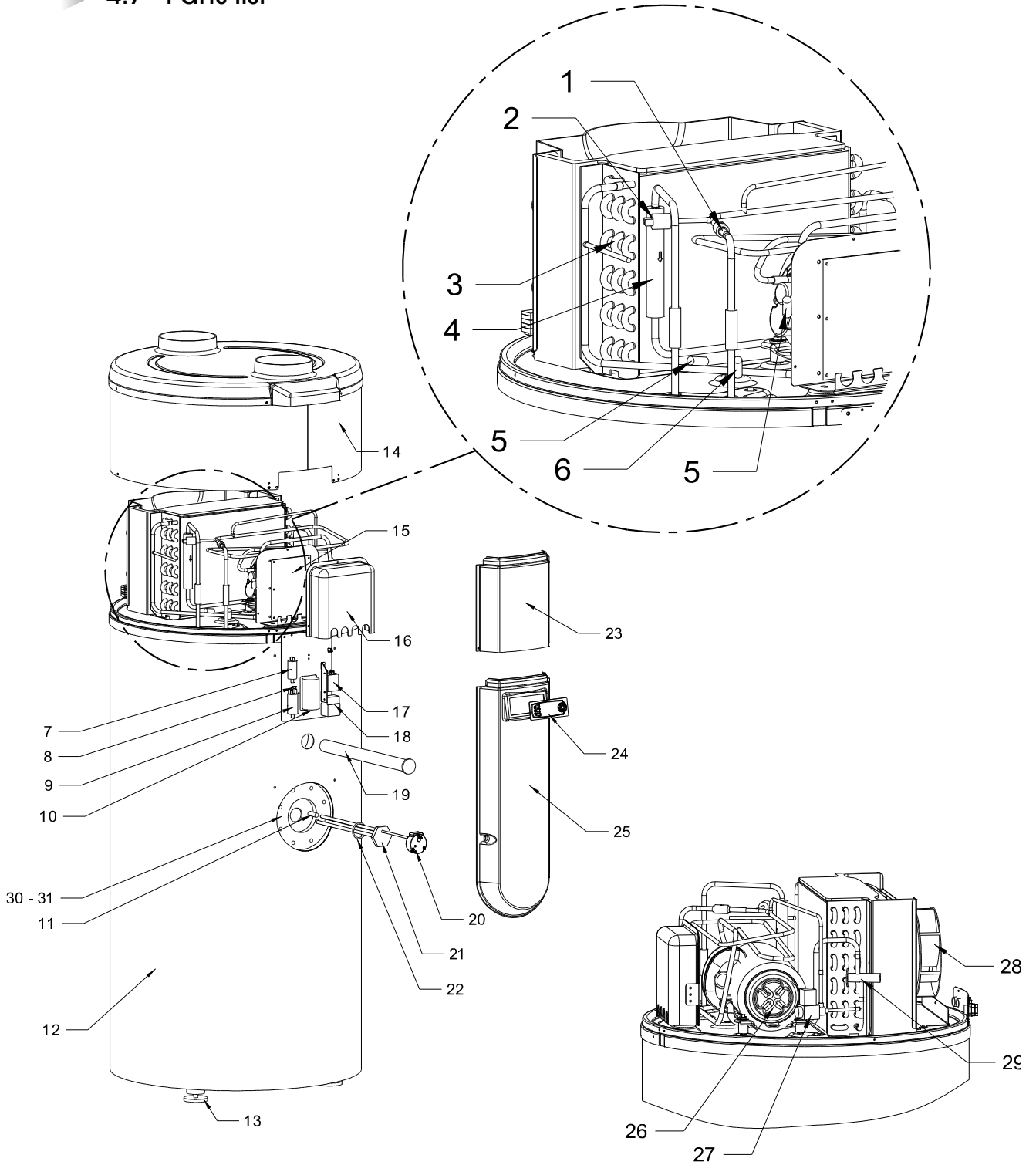


## ▶ 4.6 - Error codes

To reset error, press the dial one time 

Display	Nature of error	Probable causes	Solution	Operation mode in case of error
<b>ALARM1 00 EPRO</b>	Defective electronic card	<ul style="list-style-type: none"> <li>Over voltage on electrical network</li> <li>Cabling error during electrical connection</li> </ul>	<ul style="list-style-type: none"> <li>Replace electronic card</li> </ul>	Tank stops
<b>ALARM1 00 BUS</b>	Defective user screen	<ul style="list-style-type: none"> <li>Shock during transport</li> </ul>	<ul style="list-style-type: none"> <li>Replace the screen card</li> </ul>	Tank stops
<b>T_AIR ERR</b>	Sensor #1 defective (temperature of air taken in)	<ul style="list-style-type: none"> <li>Sensor out-of-order</li> <li>Sensor unplugged from the card</li> <li>Sensor cable damaged</li> </ul>	<ul style="list-style-type: none"> <li>Replace the sensor</li> </ul>	Heat pump stopped ; Electrical heater heats water to 43°C (min.38°C)
<b>T_DEGV ERR</b>	Sensor #2 defective (defrosting temperature)	<ul style="list-style-type: none"> <li>Sensor out-of-order</li> <li>Sensor unplugged from the card</li> <li>Sensor cable damaged</li> </ul>	<ul style="list-style-type: none"> <li>Replace the sensor</li> </ul>	Heat pump stopped ; Electrical heater heats water to 43°C (min.38°C)
<b>T_ERU ERR</b>	Sensor #3 defective (Sanitary hot water output)	<ul style="list-style-type: none"> <li>Sensor out-of-order</li> <li>Sensor unplugged from the card</li> <li>Sensor cable damaged</li> </ul>	<ul style="list-style-type: none"> <li>Replace the sensor</li> </ul>	The heat pump heats the entire tank to the set temperature as long as the air temperature remains within the operation range (-5°C to +35°C), outside of this range there is no production of hot water by the electric heater. Boost and minimum temperature backup are blocked or suspended
<b>SENSOR 4</b>	Sensor #4 defective (heat pump regulation temperature)	<ul style="list-style-type: none"> <li>Sensor out-of-order</li> <li>Sensor unplugged from the card</li> <li>Sensor cable damaged</li> </ul>	<ul style="list-style-type: none"> <li>Replace the sensor</li> </ul>	The heat pump heats only the upper half of the tank
<b>ALARM1 09</b>	Defective clock	<ul style="list-style-type: none"> <li>Over voltage on electrical network</li> <li>Shock during transport</li> </ul>	<ul style="list-style-type: none"> <li>Replace the screen card</li> </ul>	The authorized hourly range is no longer taken into account ; the water is permanently kept at the set temperature (if no signal or controller is connected to the "external switch"
<b>HIGH PRES ERR</b>	Heat pump pressure too high	<ul style="list-style-type: none"> <li>No water in the tank</li> <li>Water too hot (&gt; 75°C)</li> <li>Water sensor damaged</li> </ul>	<ul style="list-style-type: none"> <li>Verify that the hot water tank is full and primed</li> <li>Verify the water temp. Sensor</li> </ul>	Heat pump stopped ; Electrical heater heats water to 43°C (min.38°C) Back up operation authorized
<b>FREQ. DEFRO</b>	Defrosting too frequently	<ul style="list-style-type: none"> <li>Lack of air speed</li> <li>Air input / output opening blocked</li> <li>Ventilation duct blocked</li> <li>Duct is too long or has too many elbows</li> <li>Evaporator dirty</li> </ul>	<ul style="list-style-type: none"> <li>Set the ventilator to speed 2 (MENU/STAT. PPR.06 = 2)</li> <li>Verify the proper passage of air throughout the air ducts</li> <li>Verify the condition of eventual filters in the air ducts</li> <li>Verify duct length : - 10m go/backup in flexible line - 20m go/backup in rigid line</li> <li>Remove the upper cover from the hot water heat pump</li> <li>Verify the cleanliness of the evaporator</li> </ul>	Heat pump stopped ; Electrical heater heats water to 43°C (min.38°C)
<b>LOW PRES.</b>	Heat pump pressure too low	<ul style="list-style-type: none"> <li>Absence of air speed</li> <li>Air input / output opening blocked</li> <li>Ventilation duct blocked</li> <li>Ventilator blocked or out of order</li> <li>Dirty of blocked evaporator</li> <li>Frosted evaporator</li> </ul>	<ul style="list-style-type: none"> <li>Verify that the ventilator is functioning</li> <li>Verify the electrical supply of the ventilator</li> <li>Verify the proper passage of air throughout the conduits</li> <li>Verify duct length : - 10m go/backup in flexible line - 20m go/backup in rigid line</li> <li>Remove the upper cover from the hot water heat pump</li> <li>Verify the cleanliness of the evaporator</li> </ul>	Heat pump stopped ; Electrical heater heats water to 43°C (min.38°C)
<b>WATER TEMP.</b>	Water temperature to high (65°C)	<ul style="list-style-type: none"> <li>Defective water sensor</li> <li>Water sensor removed from tank</li> </ul>	<ul style="list-style-type: none"> <li>Verify the proper placement of the sensors in the tank</li> </ul>	Heat pump stopped ; Rearming is automatic

## ► 4.7 - Parts list



Number	Reference	Designation
1	B1239163	SHUT OFF VALVE
2	B1244002	HP SWITCH
3	B1472681	EVAPORATOR
4	B1472683	FILTER DRYER
5	B1243949	DEFROSTING SENSOR AND AIR TEMPERATURE SENSOR
6	B1243923	WATER TANK SENSOR 1200 mm
7	B1243929	CAPACITOR 2 $\mu$ F
8	B1243931	RESISTANCE
9	B1243930	CAPACITOR 3 $\mu$ F
10	B1944023	STARTING CAPACITOR
11	B1243950	ELECTRIC HEATER SENSOR 900 mm
12	B1958888	JACKET
13	B1954285	SET OF STANDS
14	B4591371	UPPER COVER AND GROMMET
15	B1243925	PCB CONTROLER
16	B1758871	ELECTRIC BOX COVER
17	B1243934	CONTACTOR 30 A
18	B1944024	STARTING SELF
19	B1944022	MAGNESIUM ANODE
20	B1239160	AQUASTAT 70-85°
21	B1243926	ELECTRIC HEATER
22	B1657452	ELECTRIC HEATER SEAL
23	B1758860	UPPER PLATE
24	B4991769	DISPLAY
25	B1758861	LOWER PLATE
26	B1243927	COMPRESSOR
27	B1239161	SOLENOID VALVE
28	B1243928	FAN
29	B1239162	THERMOSTATIC EXPANSION VALVE
30	B1972729	FLANGE WITH SEAL
31	B1957476	FLANGE SEAL

# ▶ 5 - WARRANTY

The warranty covers:

- The tank is warranted against break through for a period of five (5) years starting from the date of activation of the warranty voucher is returned to the manufacturer, or, in the absence of this document, from the fabrication date of the device. In case of break through of the tank, the complete device is replaced.
- The spare parts, listed in part list (see before) are warranted for a period of two (2) years starting from the date of activation of the warranty voucher is returned to the manufacturer, or, in the absence of this document, from the fabrication date of the device.

The device guaranteed to free of all manufacturing defects, in condition that the device was installed by a qualified professional following the technical instructions, the C15-100 norm concerning the electrical connections, and the DTU 60-1 additional clause 4 for plumbing concerning domestic water.

The failure of a component does not justify the replacement of the device.

The warranty is limited to the provision of the components that we have found defective.

If necessary, the part or the product must be returned to the manufacturer but only after the prior agreement of our technical services. Labour, shipping, packaging and transportation fees remain the responsibility of the user. The repairing of a device cannot in any case allow for compensation.

The warranty of the replacement part(s) ends at the same time as that of the device.

The warranty only applies to the device and its components, excluding all or part of the external installation: electrical or hydraulic.

The warranty does not apply in cases of absence of, insufficiency of or improper maintenance of the device.

Regular maintenance is required to ensure sustainable use and lasting operation. This maintenance must be done by a qualified professional. Without this the warranty is void.

All intervention on the refrigerating circuit must be done by a qualified person with a category 1 certificate of aptitude. The degassing of the refrigerating fluid into the atmosphere is not permitted, the recovery of the fluid is obligatory before any intervention on the circuit.

In the case of accidents or disasters, the device must remain in place and no ulterior intervention should take place.

## ▶ 5.1 - Warranty limits

### ▶ 5.1.1 - General information

The warranty does not cover defects or damages that could arise in the following situations:

- Improper use (other than domestic), abuse, negligence, improper handling or improper storage.
- Improper installation or installation which does not follow the instructions in the installation manual or good engineering practices.
- Insufficiency of maintenance.
- Modifications or transformations to the material.
- Impact by foreign objects, fire, earthquake, flood, lightning, freezing, hail, hurricane or any other natural disaster...
- Movement, imbalance, collapsing or settling of the terrain or the structure where the device is installed.
- All other causes where product defects are not concerned.

**D.W.H.P** is not guaranteed against:

- Colour variation of the device or damages caused by air pollution or exposure to chemical products or alteration due to bad weather.
- Soiling, dirt, spots, rust, grease or spots which appear naturally on the device.

### ▶ 5.1.2 - Exclusion of warranty (non-limited)

#### ▶ 5.1.2.1 - Use

Cases (non-limited) for voiding of warranty:

- Supply with water other than domestic cold water such as rain water, well water, etc., or domestic cold water with abnormally aggressive characteristics that does not conform to the current national norms.
- Activation of the device prior to filling it (dry heating).

#### ► 5.1.2.2 - Handling

Cases (non-limited) for voiding of warranty:

- Diverse damages caused by shock or falling during handling after delivery from the factory.
- Deterioration of the device caused by handling which does not conform to the instructions in the manual.
- Degradation of the device following activation in a time frame of less than 1 hours after the device has been laying down or inclined.

#### ► 5.1.2.3 - Placement

Cases (non-limited) for voiding of warranty:

- Placement of the device in a place prone to freezing or bad weather.
- Placement of the device which does not conform the instructions in the manual.
- Installation of the device on a floor or surface which does not support the weight of the device.
- Installation of the device in a room with an area of less than 20m<sup>2</sup> without ducts for air intake and air evacuation.
- Improper leaning or inclination of the device which does not allow for proper condensate run-off.

Fees caused by access difficulties are not the responsibility of the manufacturer.

#### ► 5.1.2.4 - Electrical connections

Cases (non-limited) for voiding of warranty:

- Defective electrical connections that do not conform to the current national norms.
- Failure to comply with connection schematics outlined in the installation manual.
- Electrical supply that is significantly over or under the required voltage.
- Failure to comply with sections on supply cables.
- Absence of insufficiency of electrical protection on the device (fuse/breaker/grounding/etc.).
- Damages caused by deactivating the aquastat of the electrical backup and/or the heat pump.

#### ► 5.1.2.5 - Hydraulic connections

Cases (non-limited) for voiding of warranty:

- Inversion of hot / cold water connections.
- Water pressure higher than 7 bars.
- Absence, incorrect assembly or blocking of the pressure-relief valve.
- Lack of pressure-relief valve on the cold water entry line of the device.
- Installation of a pressure-relief valve that does not conform to the current national norms.
- Use of a previously used pressure-relief valve.
- Opening the plumbing of the pressure-relief valve.
- Abnormal corrosion due to incorrect hydraulic connection (direct iron/copper contact) without a sleeve (cast iron, steel or insulating material).
- External corrosion due to improper sealing of the piping or a defect in the condensate evacuation system.
- Improper connection of condensate recovery system.

#### ► 5.1.2.6 -Accessories

- The warranty does not cover defects resulting from:
  - The installation of an accessory that does not conform to our recommendations.
  - The installation of an accessory other than those from our suppliers.

#### ► 5.1.2.7 - Maintenance

Cases (non-limited) for voiding of warranty:

- Non-maintenance of the device and in particular, failure to replace the anode in time.
- Non-maintenance of the pressure-relief valve resulting in excessive pressure.
- Non-maintenance of:
  - The evaporator.
  - The condensate evacuation system.
- Abnormal scaling of:
  - The heating elements.
  - The safety components.
- Use of spare parts not originating from the manufacturer.
- Body and housing subjected to exterior force.

# 6 - APPENDIX

## 6.1 - characteristics

	<b>D.W.H.P</b>
Body cover	PVC + 5 mm PE film
Insulation	45 mm PU foam
Nominal volume	300L
Materials	Enamelled steel
Protection	Magnesium anode
Maximum pressure of service (water tank)	1MPa
Dimensions	Ø 700mm x H 1622 (stand 25mm / nozzle 40mm)
Weight without water (packaged)	135kg
Protection level	IPX1
Electrical supply	230V - 50Hz - 16A
Max rating power	2200W
Fuse (B curve)	16A
Refrigerant	R134a - 0,95kg
Heat pump maximum discharge pressure	2,5MPa (25 bar)
Sanitary hot water temperature with heat pump	+15 +60°C
Air temperature range	- 5 +35 °C
Sound level for speed 1 / speed 2 (ducted)	36dB(A) à 2m
Air flow rate	Speed 1 : 300m <sup>3</sup> /h Speed 2 : 450m <sup>3</sup> /h
Maximum lenght of air conduit (Ø160 mm)	flexible duct : 10m total, suction and blowing rigid duct : 20m total suction and blowing
Air conduit connection diameter (inlet / outlet)	160mm
Condensate flow rate	0,3L/h
Sanitary cold water and sanitary hot water connection diameter	M 3/4"
Sanitary cold water recycling connection diameter	M 3/4"
Integrated electrical backup power (security = 85°C)	1500W
Electric heater max temperature	65°C
Maximum power absorbed by the heat pump for water heated to 60°C	700W
Heating capacity in standard condition	1650W
COP according to EN 255-3 at air/water 15°C / 45°C	4
COP according to EN16147 (XL cycle) at 7°C / 55°C	2,65
Max Quantity of water mixed at 40°C	440L
Electrical consumption at 50°C	0,9kWh / 24h

## 6.2 - Electrical schematic

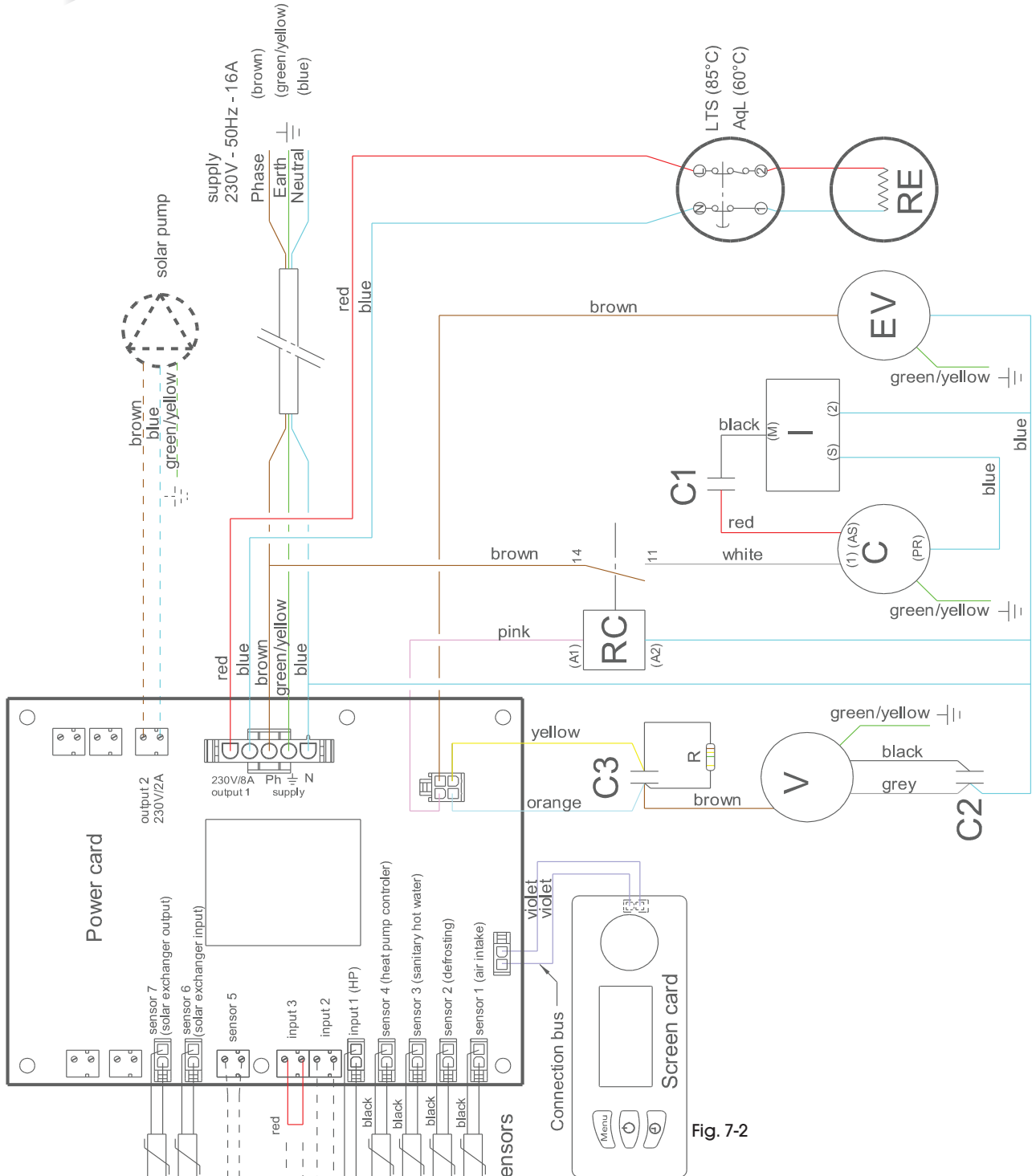
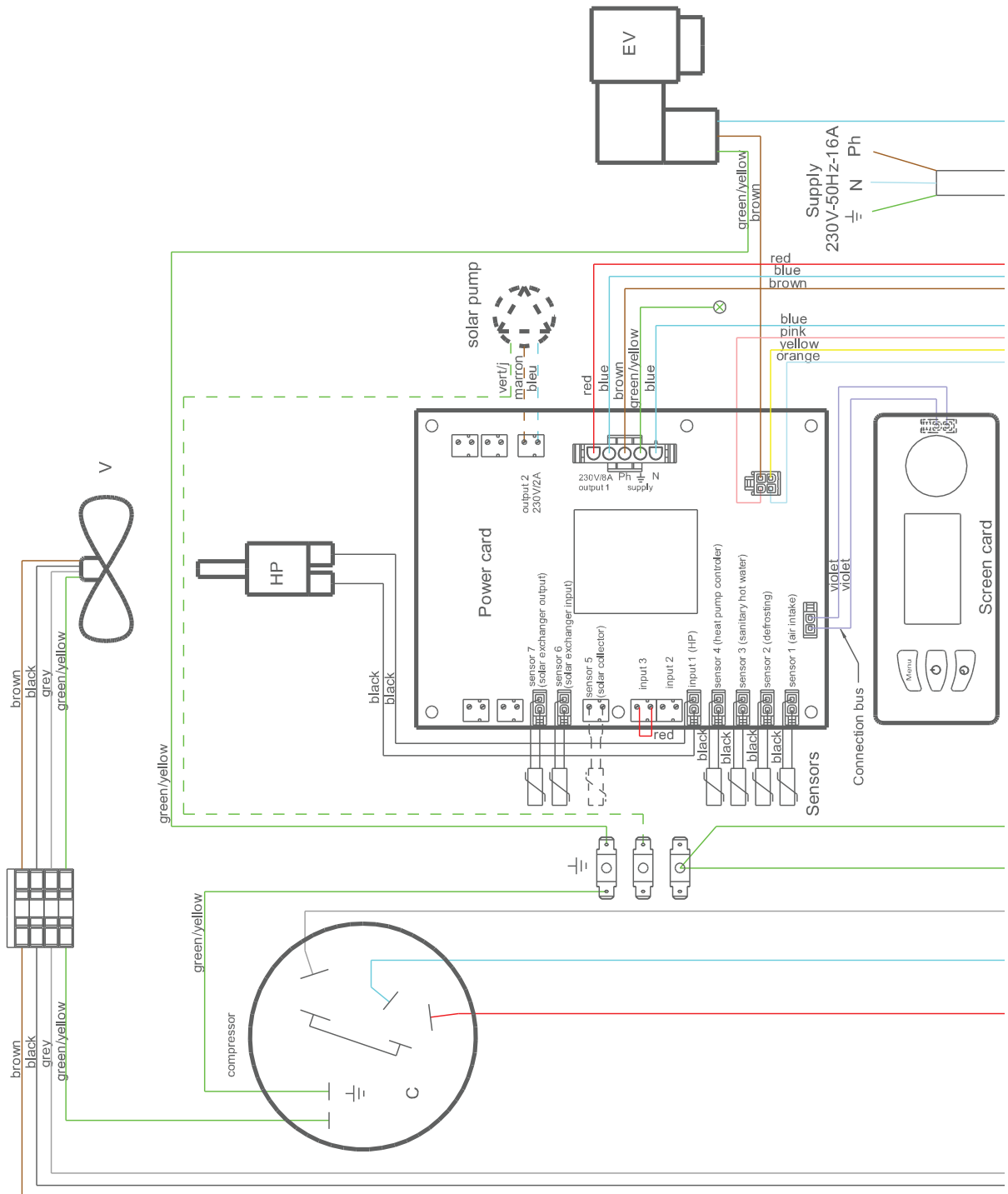


Fig. 7-2

- HP : High-pressure switch
- C1 : Start-up capacitor for compressor
- C2 : Ventilator 2 $\mu$ F capacitor
- C3 : Ventilator 3 $\mu$ F capacitor
- R : 1M $\Omega$  resistance for ventilator
- RC : Compressor contactor
- V : Ventilator
- C : Compressor
- EV : Solenoid valve
- RE : 1500W electrical resistance
- LTS : Security limiter thermostat of the electrical backup
- AqL : Limiter aquastat for the electrical backup
- I : Induction coil

### ► 6.3 - Cabling schematic





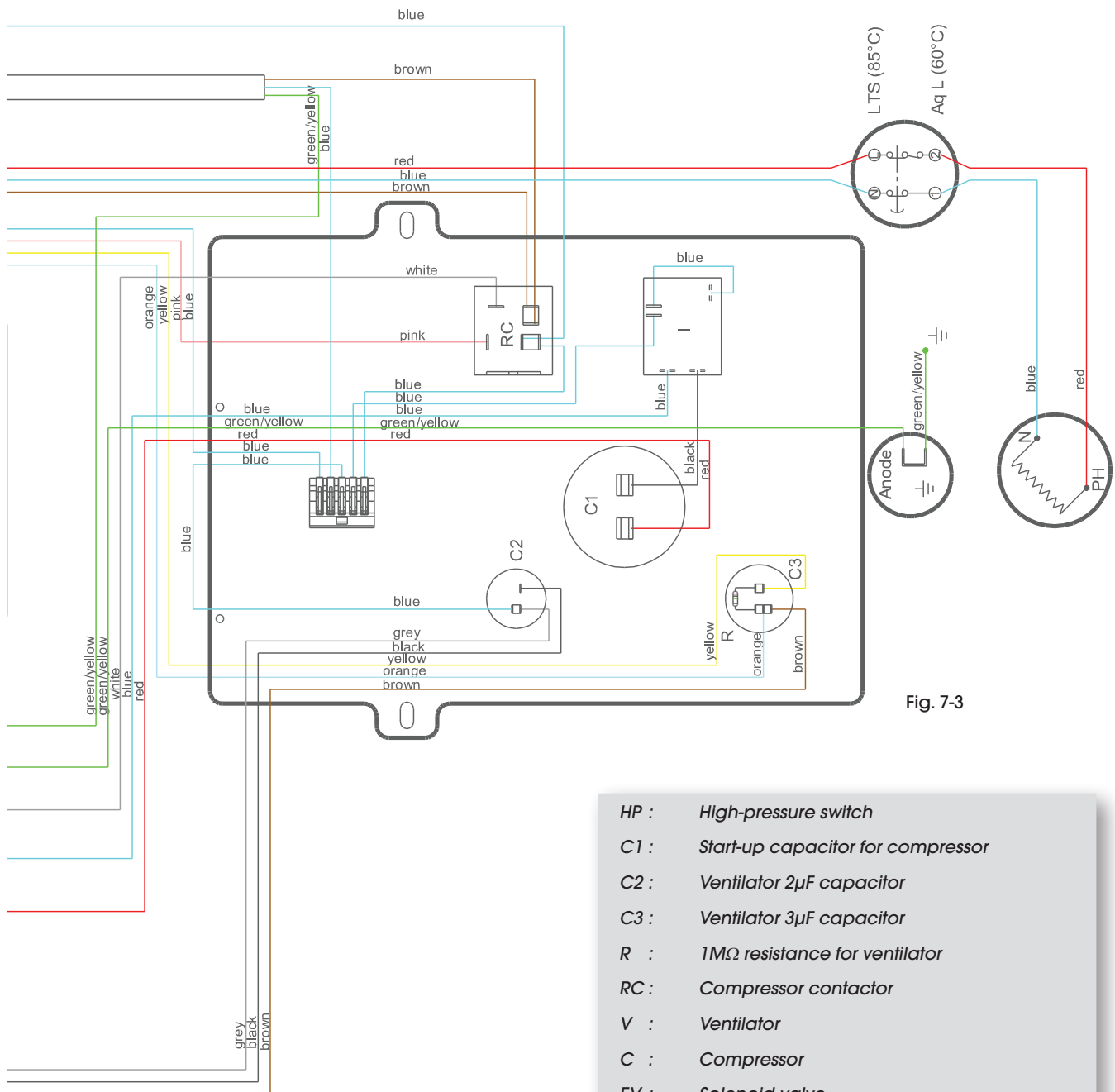


Fig. 7-3

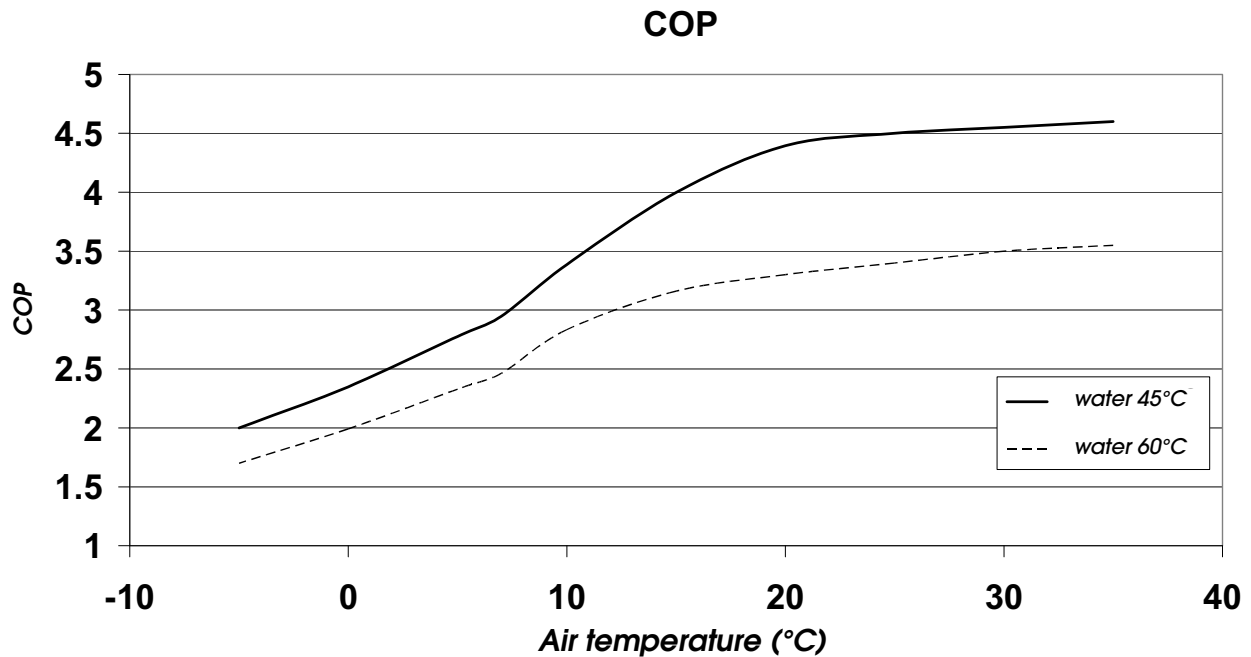
- HP :** High-pressure switch
- C1 :** Start-up capacitor for compressor
- C2 :** Ventilator 2 $\mu$ F capacitor
- C3 :** Ventilator 3 $\mu$ F capacitor
- R :** 1M $\Omega$  resistance for ventilator
- RC :** Compressor contactor
- V :** Ventilator
- C :** Compressor
- EV :** Solenoid valve
- RE :** 1500W electrical resistance
- LTS :** Security limiter thermostat of the electrical backup
- AqL :** Limiter aquastat for the electrical backup
- I :** Induction coil

## ▶ 6.4 - Performance curves

The performance is measured with a standard heating cycle with 15°C cold water.

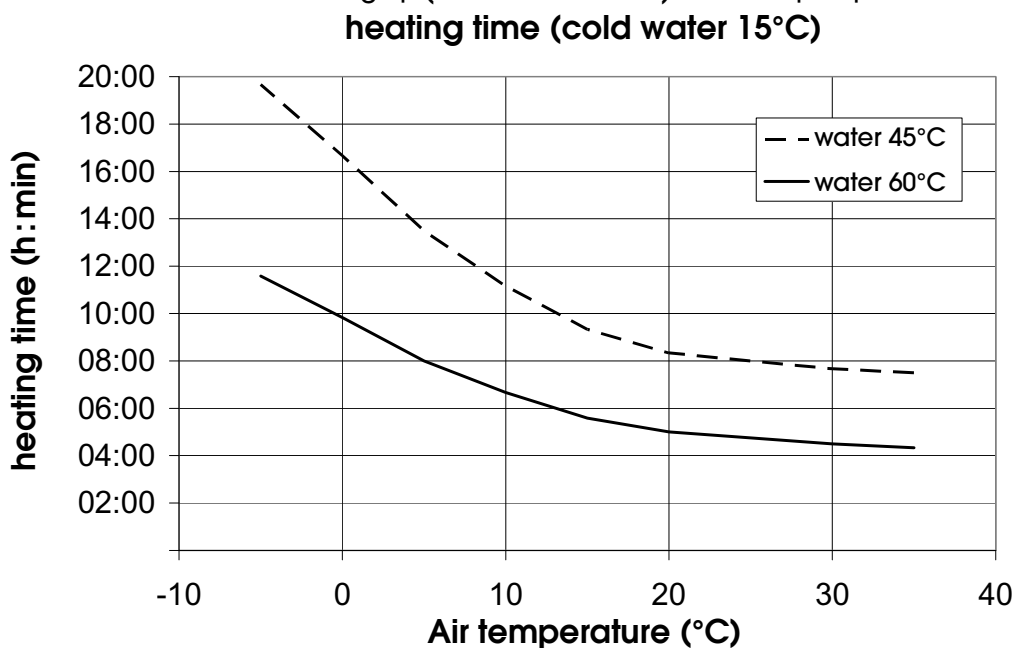
### ▶ 6.4.1 - C.O.P. Evolution

This curve represents the C.O.P. (coefficient of performance) of different air and water temperature.



### ▶ 6.4.2 - Heating time

This curve shows the heating time of a full tank in function of the air temperature and the temperature of the domestic hot water. Time for heating up (cold water at 15°C) with heat pump without backup.



## ▶ 6.5 - Maintenance log



**R134a is a greenhouse gas relevant to the Kyoto Protocol. All intervention on the refrigerating circuit must be done by a qualified person with a category 1 certificate of aptitude. The degassing of the refrigerating fluid into the atmosphere is not permitted, the recovery of the refrigerant is obligatory before any intervention on the circuit.**



- Turn D.W.H.P off before opening it.
- Wait for the complete stop of the ventilator before any intervention.

Reminder : R134a - 0,950kg

Date	Technician	Nature of the operation	<u>Recovered refrigerant</u> Charged refrigerant



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