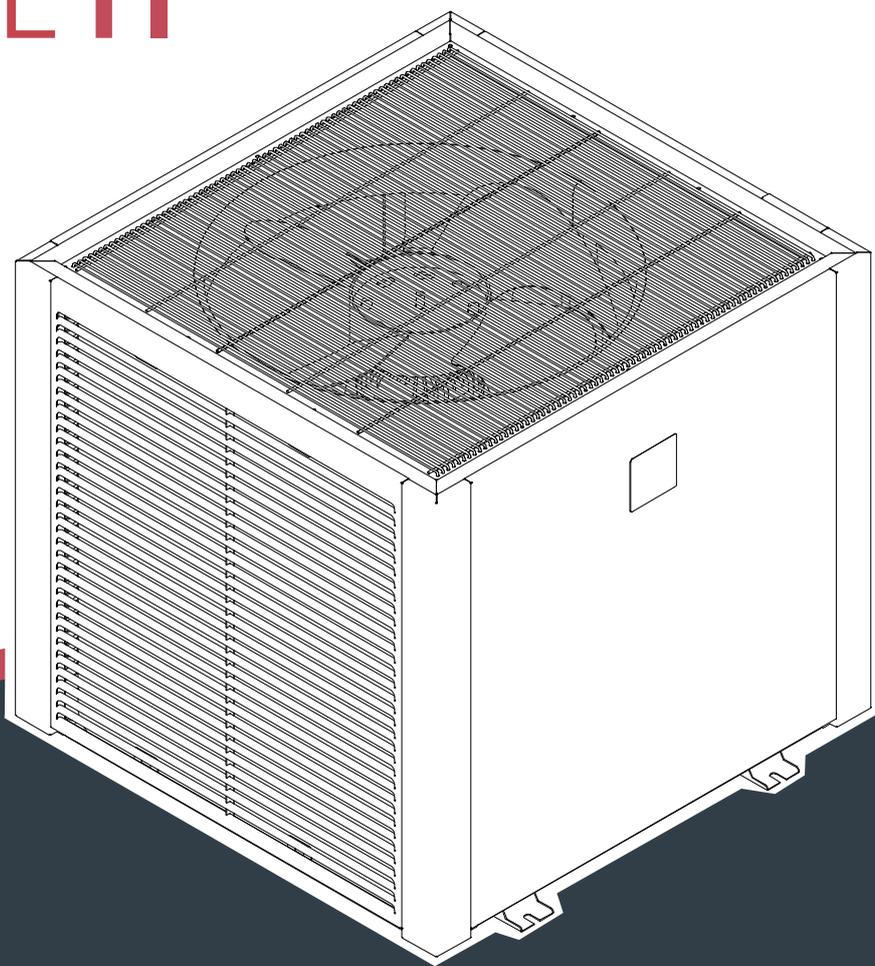


# **POOLEX**

## **MEGALINE FI**



**INSTALLATION AND USER MANUAL**  
for your heat pump

# Warning



***This heat pump contains a flammable refrigerant R32.***

***Any intervention on the refrigerant circuit is prohibited without a valid authorization.***

***Before working on the refrigerant circuit, the following precautions are necessary for safe work.***

## **1. Work procedure**

*The work must be carried out according to a controlled procedure, in order to minimize the risk of presence of flammable gases or vapours during the execution of the works.*

## **2. General work area**

*All persons in the area must be informed of the nature of the work in progress. Avoid working in a confined area. The area around the work area should be divided, secured and special attention should be paid to nearby sources of flame or heat.*

## **3. Verification of the presence of refrigerant**

*The area should be checked with a suitable refrigerant detector before and during work to ensure that there is no potentially flammable gas. Make sure that the leak detection equipment used is suitable for flammable refrigerants, i.e. it does not produce sparks, is properly sealed or has internal safety.*

## **4. Presence of fire extinguisher**

*If hot work is to be performed on the refrigeration equipment or any associated part, appropriate fire extinguishing equipment must be available. Install a dry powder or CO<sub>2</sub> fire extinguisher near the work area.*

## **5. No source of flame, heat or spark**

*It is totally forbidden to use a source of heat, flame or spark in the direct vicinity of one or more parts or pipes containing or having contained a flammable refrigerant. All sources of ignition, including smoking, must be sufficiently far from the place of installation, repair, removal and disposal, during which time a flammable refrigerant may be released into the surrounding area. Before starting work, the environment of the equipment should be checked to ensure that there is no risk of flammability. «No smoking» signs must be posted.*

## **6. Ventilated area**

*Make sure the area is in the open air or is properly ventilated before working on the system or performing hot work. Some ventilation must be maintained during the duration of the work.*

## **7. Controls of refrigeration equipment**

*When electrical components are replaced, they must be suitable for the intended purpose and the appropriate specifications. Only parts of the manufacturer can be used. If in doubt, consult the technical service of the manufacturer. The following controls should be applied to installations using flammable refrigerants:*

- *The size of the load is in accordance with the size of the room in which the rooms containing the refrigerant are installed;*
- *Ventilation and air vents work properly and are not obstructed;*
- *If an indirect refrigeration circuit is used, the secondary circuit must also be checked.*
- *The marking on the equipment remains visible and legible. Illegible marks and signs must be corrected;*
- *Refrigeration pipes or components are installed in a position where they are unlikely to be exposed to a substance that could corrode components containing refrigerant.*

## **8. Verification of electrical appliances**

*Repair and maintenance of electrical components must include initial safety checks and component inspection procedures. If there is a defect that could compromise safety, no power supply should be connected to the circuit until the problem is resolved.*

*Initial security checks must include:*

- *That the capacitors are discharged: this must be done in a safe way to avoid the possibility of sparks;*
- *No electrical components or wiring are exposed during loading, recovery or purging of the refrigerant gas system;*
- *There is continuity of grounding.*

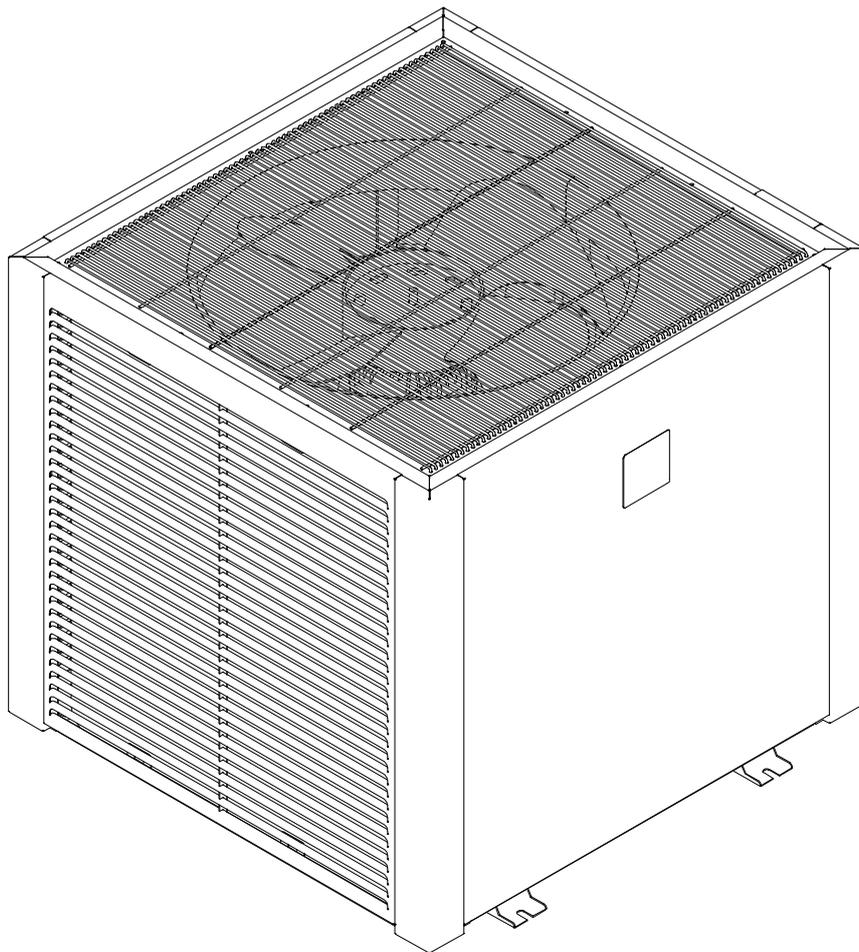
# Thank you

*Dear Customer,*

*Thank you for your purchase and for your confidence in our products.*

*These are the result of many years of research in the field of design and production of heat pumps for swimming pools. Our aim is to provide you with an exceptional high performance quality product.*

*We have produced this manual with the utmost care so that you get maximum benefit from your Poolex heat pump.*





# PLEASE READ CAREFULLY.



**These installation instructions are an integral part of the product.**

**They must be given to the installer and retained by the user.**

**If the manual is lost, please consult the website:**

**[www.poolex.fr](http://www.poolex.fr)**

The instructions and recommendations contained in this manual should be read carefully and understood since they provide valuable information concerning the heat pump's safe handling and operation. **Keep this manual in an accessible place for easy future reference.**

**Installation must be carried out by a qualified professional person** in accordance with current regulations and the manufacturer's instructions. An installation error may cause physical injury to persons or animals as well as mechanical damage for which the manufacturer can under no circumstances be held responsible.

**After unpacking the heat pump, please check the contents in order to report any damage.**

Prior to connecting the heat pump, ensure that the information provided in this manual is compatible with the actual installation conditions and does not exceed the maximum limits authorized for this particular product.

**In the event of a defect and/or malfunction of the heat pump, the electricity supply must be disconnected** and no attempt made to repair the fault.

Repairs must be undertaken only by an authorized technical service organization using original replacement parts. Failure to comply with the above-mentioned clauses may have an adverse effect on the heat pump's safe operation.

To guarantee the heat pump's efficiency and satisfactory operation, it is important to ensure its regular maintenance in accordance with the instructions provided.

If the heat pump is sold or transferred, always make sure that all technical documentation is transmitted with the equipment to the new owner.

This heat pump is designed solely for heating a swimming pool. Any other use must be considered as being inappropriate, incorrect or even hazardous.

Any contractual or non-contractual liability of the manufacturer/distributor shall be deemed null and void for damage caused by installation or operational errors, or due to non-compliance with the instructions provided in this manual or with current installation norms applicable to the equipment covered by this document.

# Contents

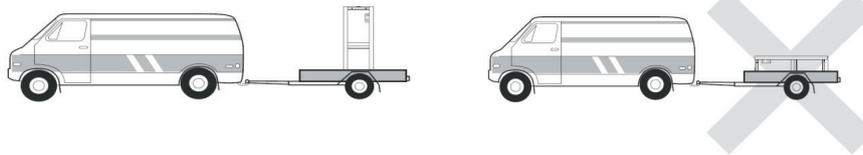
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# 1. General

## 1.1 General Terms of Delivery

All equipment, even if shipped 'free of carriage and packing', is dispatched at the consignee's own risk

The person responsible for receiving the equipment must carry out a visual inspection to identify any damage to the heat pump during transport (refrigerant system, body panels, electrical control box, frame). He/she must note down on the carrier's delivery note any remarks concerning damage caused during transport and confirm them to the carrier by registered letter within 48 hours.



The equipment must always be stored and transported vertically on a pallet and in its original packaging. If it is stored or transported horizontally, wait at least 24 hours before switching it on.

## 1.2 Safety instructions



**WARNING:** Please read carefully the safety instructions before using the equipment. The following instructions are essential for safety so please strictly comply with them.

### During installation and servicing

Only a qualified person may undertake installation, start-up, servicing and repairs, in compliance with current standards.

Before operating or undertaking any work on the equipment (installation, commissioning, usage, servicing), the person responsible must be aware of all the instructions in the heat pump's installation manual as well as the technical specifications.

Under no circumstances install the equipment close to a source of heat, combustible materials or a building's air intake.

If installation is not in a location with restricted access, a heat pump protective grille must be fitted.

To avoid severe burns, do not walk on pipework during installation, repairs or maintenance.

To avoid severe burns, prior to any work on the refrigerant system, turn off the heat pump and wait several minutes before placing temperature and pressure sensors.

Check the refrigerant level when servicing the heat pump.

Check that the high and low pressure switches are correctly connected to the refrigerant system and that they turn off the electrical circuit if tripped during the equipment's annual leakage inspection.

Check that there is no trace of corrosion or oil stains around the refrigerant components. During use

To avoid serious injuries, never touch the fan when it is operating.

Keep the heat pump out of the reach of children to avoid serious injuries caused by the heat exchanger's blades.

Never start the equipment if there is no water in the pool or if the circulating pump is stopped.

Check the water flow rate every month and clean the filter if necessary.

# 1. General

## During cleaning

- Switch off the equipment's electricity supply.
- Close the water inlet and outlet valves.
- Do not insert anything into the air or water intakes or outlets.
- Do not rinse the equipment with HP water.

## During repairs

Carry out work on the refrigerant system in accordance with current safety regulations.

Brazing should be performed by a qualified welder.

When replacing a defective refrigerant component, use only parts certified by our technical department.

In case of piping replacement, only copper tubing conforming to country standards may be used for troubleshooting.

When pressure-testing to detect leaks:

- To avoid the risks of fire or explosion, never use oxygen or dry air.
- Use dehydrated nitrogen or a mixture of nitrogen and refrigerant.
- The low and high side test pressure must not exceed 42 bar.

## 1.3 Water treatment

Poolex heat pumps for swimming pools can be used with all types of water treatment systems.

Nevertheless, it is essential that the treatment system (chlorine, pH, bromine and/or salt chlorinator metering pumps) is installed after the heat pump in the hydraulic circuit.

**To avoid any deterioration to the heat pump, the water's pH must be maintained between 6.9 and 8.0.**

# 2. Description

## 2.1 Package contents

- ✓ Heat pump Poolex Vertigo Fi
- ✓ 2 hydraulic inlet/outlet connectors (50mm diameter)
- ✓ Condensation draining kit
- ✓ 4 anti-vibration pads (fastenings not supplied)
- ✓ This installation and user manual

## 2.2 General features

A Poolex heat pump has the following features:

- ◆ High performance with up to 80% energy savings compared to a conventional heating system.
- ◆ Clean, efficient and environmentally friendly R32 refrigerant.
- ◆ Reliable high output leading brand compressor.
- ◆ Wide hydrophilic aluminium evaporator for use at low temperatures.
- ◆ User-friendly intuitive remote control.
- ◆ Heavy duty ABS shell, anti-UV treated and easy to maintain.
- ◆ CE certification and complies with the RoHS European directive.
- ◆ Designed to be silent.
- ◆ Dual antifreeze system to avoid frost damage:
  - Revolutionary exchanger with patented antifreeze system.
  - A smart monitoring system to preserve the pipework and liner without emptying the pool in winter.

## 2. Description

### 2.3 Technical specifications

Test conditions		Poolex Megaline 35
Air <sup>(1)</sup> 26°C	Heating power (kW)	13.69~44.20
Water <sup>(2)</sup> 26°C	Consumption (kW)	1.19~7.21
<b>80% HUMIDITY</b>	<b>COP (Coeff. of performance)</b>	<b>6.13~11.46</b>
Air <sup>(1)</sup> 15°C	Heating power (kW)	10.72~34.29
Water <sup>(2)</sup> 26°C	Consumption (kW)	1.45~6.94
<b>70% HUMIDITY</b>	<b>COP (Coeff. of performance)</b>	<b>4.94~7.42</b>
Air <sup>(1)</sup> 35°C	Cooling capacity (kW)	15.56~22.10
Water <sup>(2)</sup> 27°C	Consumption (kW)	2.58~5.17
<b>40% HUMIDITY</b>	<b>EER (Energy Efficiency Ratio)</b>	<b>4.27~6.03</b>
	<b>SCOP</b>	<b>8,08 class A EN17645</b>
Maximum power (kW)		9,5
Maximum current (A)		14
Electricity supply		Triphase 380-415V 3N~50/60Hz
Type of circuit breaker		Magneto-thermal protection (curve D)
Circuit-breaker response current (A)		25
Protection		IPX4
Heating temperature range		5°C~40°C
Cooling temperature range		10°C~28°C
Operating temperature range		-15°C~45°C
Unit dimensions L x W x H (mm)		1005*936*885
Net device weight (kg)		180
Gross device weight (kg)		250
Sound pressure level at 1 m (dBA) <sup>(3)</sup>		58,65
Sound pressure level at 10 m (dBA) <sup>(3)</sup>		48
Hydraulic connection (mm)		PVC 63mm
Water flow rate (m <sup>3</sup> /h)		15
Heat exchanger		PVC Tube and Titanium Coil – 2 Ø19.05*18m
Compressor		Mitsubishi
Compressor type		DC inverter Twin-Rotary
Evaporator		Hydrophilic aluminium blades and copper tubes Ø 9.52 on 3 lines
Refrigerant		R32
Volume of refrigerant (g)		4000
Load loss (mCE)		0.5
Maximum suction pressure (MPa)		1,68
Maximum discharge pressure (MPa)		4,3
Minimum operating pressure (MPa)		0,1
Maximum operating pressure (MPa)		4,3
Maximum permissible pressure (MPa)		0,7
Remote control		Fixed touch screen control
Wifi		2,4 GHz
Display		LED
Mode		Heating / Cooling / Auto

The technical specifications of our heat pumps are provided for information purposes only. We reserve the right to make changes without prior notice.

<sup>1</sup> Ambient air temperature

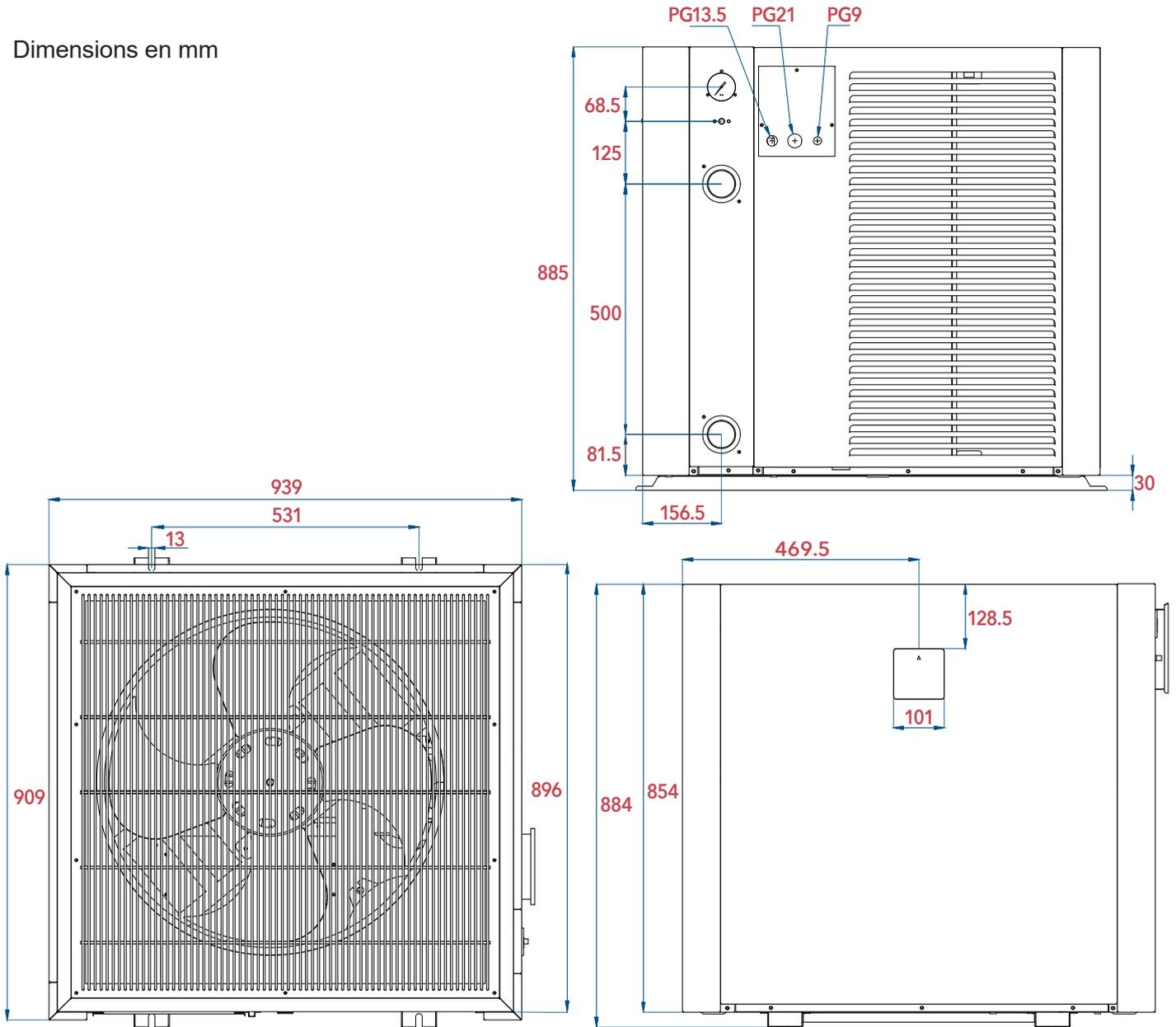
<sup>2</sup> Initial water temperature

<sup>3</sup> Noise at 1 m, at 4 m and at 10 m in accordance with Directives EN ISO 3741 and EN ISO 354

# 2. Description

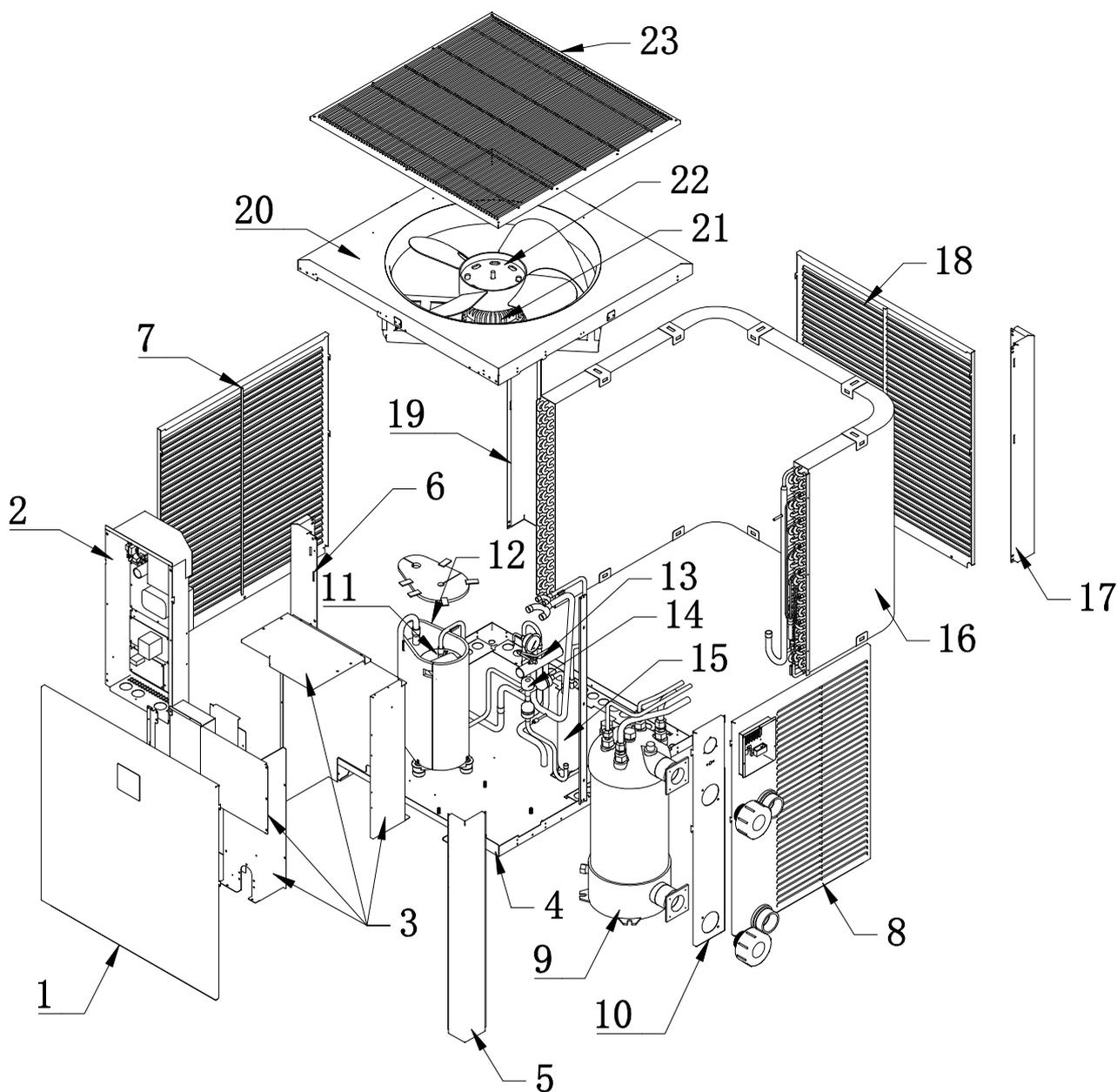
## 2.4 Dimensions de l'appareil

Dimensions en mm



## 2. Description

### 2.5 Exploded view



- |                                  |                                |
|----------------------------------|--------------------------------|
| 1. Front panel                   | 13. Four-way valve             |
| 2. Electrical terminal block     | 14. Electronic expansion valve |
| 3. Electrical box cover          | 15. Accumulator                |
| 4. Frame                         | 16. Evaporator                 |
| 5. Front right corner            | 17. Right rear corner          |
| 6. Left front corner             | 18. Rear panel                 |
| 7. Left panel                    | 19. Left rear corner           |
| 8. Right panel                   | 20. Fan frame                  |
| 9. Heat exchanger                | 21. Fan motor                  |
| 10. Water inlet and outlet panel | 22. Fan blades                 |
| 11. Compressor                   | 23. Air outlet grille          |
| 12. Compressor soundproofing     |                                |

# 3. Installation



**WARNING:** Installation must be carried out by a qualified engineer. This section is provided for information purposes only and must be checked and adapted if necessary according to the actual installation conditions.

## 3.1 Pre-requirements

### Equipment necessary for the installation of your heat pump:

- ✓ Power supply cable suitable for the unit's power requirements,
- ✓ A By-Pass kit and an assembly of PVC tubing suitable for your installation,
- ✓ Stripper, PVC adhesive and sandpaper,
- ✓ A set of wall plugs and expansion screws suitable to attach the unit to your support.

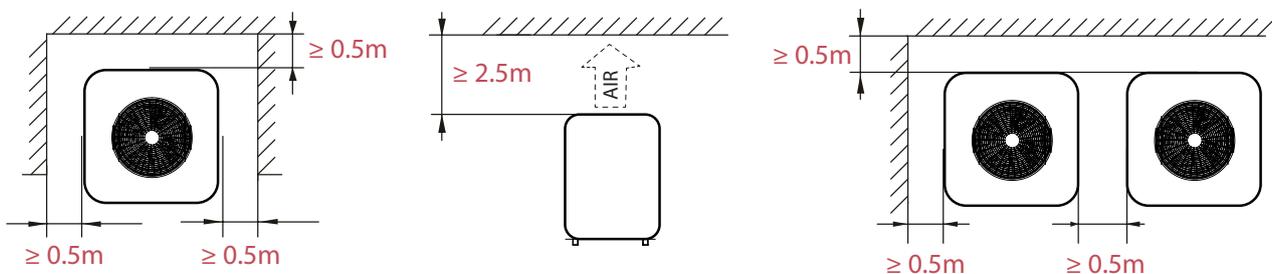
### Other equipment useful for the installation of your heat pump:

- We recommend that you connect the unit to your installation by means of flexible PVC pipes in order to reduce the transmission of vibrations.
- Suitable fastening studs may be used to raise the unit.

## 3.2 Location

### Please comply with the following rules concerning the choice of heat pump location.

1. The unit's future location must be easily accessible for convenient operation and maintenance.
2. It must be installed on the ground, fixed ideally on a level concrete floor. Ensure that the floor is sufficiently stable and can support the weight of the unit.
3. A water drainage device must be provided close to the unit in order to protect the area where it is installed.
4. If necessary, the unit may be raised by using suitable mounting pads designed to support its weight.
5. Check that the unit is properly ventilated, that the air outlet is not facing the windows of neighbouring buildings and that the exhaust air cannot return. In addition, provide sufficient space around the unit for servicing and maintenance operations.
6. The unit must not be installed in an area exposed to oil, flammable gases, corrosive products, sulphurous compounds or close to high frequency equipment.
7. To prevent mud splashes, do not install the unit near a road or track.
8. To avoid causing a nuisance to neighbours, make sure the unit is installed so that it is positioned towards the area that is least sensitive to noise.
9. Keep the unit as much as possible out of the reach of children.

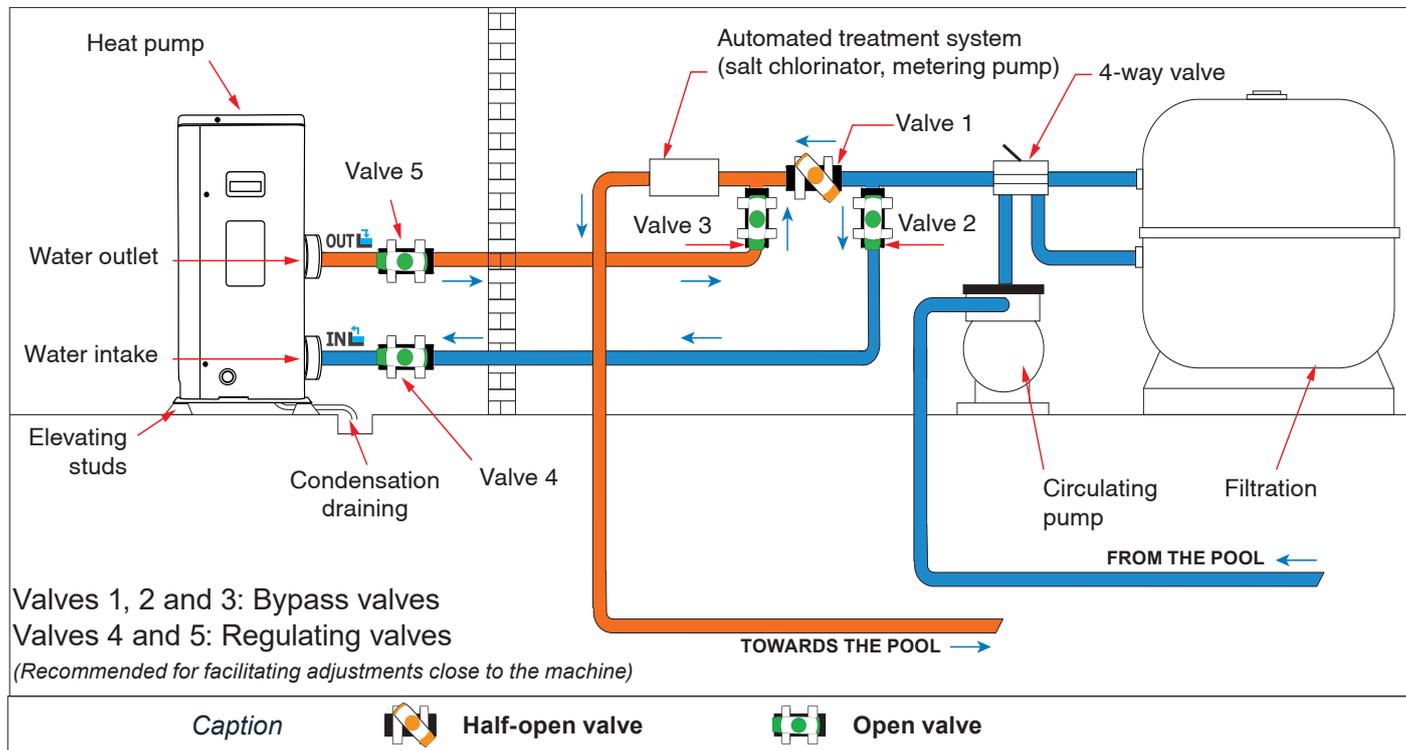


Place nothing less than one metre in front of the heat pump.  
Leave 50 cm of empty space around the sides and rear of the heat pump.

**Do not leave any obstacle above or in front of the unit!**

# 3. Installation

## 3.3 Installation layout



## 3.4 Connecting the condensation draining kit

While operating, the heat pump is subject to condensation. This will result in a more or less large run-off of water, depending on the degree of humidity. To channel this flow, we recommend that you install the condensation drainage kit.

**How do you install the condensation drainage kit?**

Install the heat pump, raising it at least 10 cm with solid water-resistant pads, then connect the drainage pipe to the opening located under the pump.

## 3.5 Installing the unit on noise-damping supports

In order to minimize noise pollution associated with heat pump vibrations, it can be positioned on vibration absorbing pads.

To do this, you simply have to position a pad between each of the unit's feet and its support, and then fix the heat pump to the support with suitable screws.

# 3. Installation

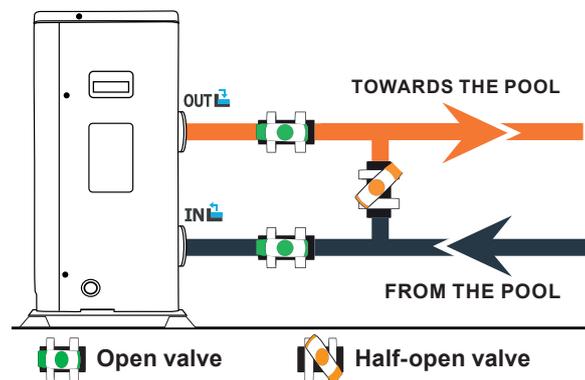
## 3.6 Hydraulic connection

### By-Pass assembly

The heat pump must be connected to the pool by means of a By-Pass assembly.

A By-Pass is an assembly consisting of 3 valves that regulate the flow circulating in the heat pump.

During maintenance operations, the By-Pass permits the heat pump to be isolated from the system without interrupting your installation.



### Making a hydraulic connection with the By-Pass kit

**⚠ WARNING: Do not run water through the hydraulic circuit for 2 hours after applying the adhesive.**

**Step 1:** Take the necessary steps to cut your pipes.

**Step 2:** Make a straight perpendicular cut through the PVC pipes with a saw.

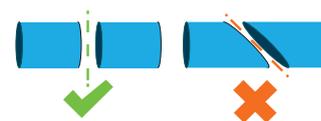
**Step 3:** Assemble your hydraulic circuit without connecting it in order to check that it perfectly fits your installation, then dismantle the pipes to be connected.

**Step 4:** Chamfer the ends of the cut pipes with sandpaper.

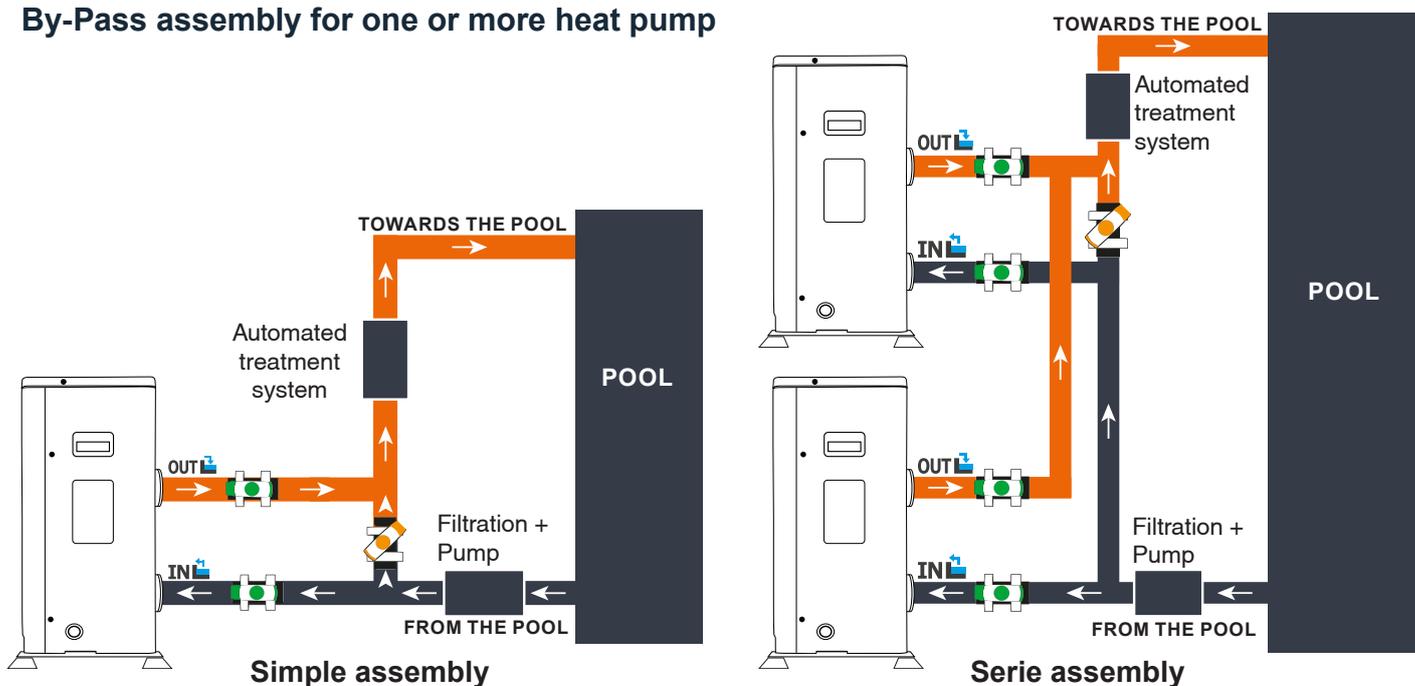
**Step 5:** Apply stripper to the ends of the pipes to be connected. Then, apply the adhesive in the same place. Assemble the pipes.

**Step 6:** Clean off any adhesive remaining on the PVC.

**Step 7:** Leave to dry for at least 2 hours before putting the hydraulic circuit into water.



### By-Pass assembly for one or more heat pump



*Caption*



Half-open valve



Open valve

The filter located upstream of the heat pump must be regularly cleared so that the water in the system is clean, thus avoiding the operational problems associated with dirt or clogging in the filter.

# 3. Installation

## 3.7 Electrical installation

To function safely and maintain the integrity of your electrical system, the unit must be connected to a general electricity supply in accordance with the following regulations:

- Upstream, the general electricity supply must be protected by a 30 mA differential switch.
- The heat pump must be connected to a suitable D-curve circuit breaker (see table below) in accordance with current standards and regulations in the country where the system is installed.
- The electricity supply cable must be adapted to match the unit's rated power and the length of wiring required by the installation (see table below). The cable must be suitable for outdoor use.
- For a three-phase system, it is essential to connect the phases in the correct sequence. If the phases are inverted, the heat pump's compressor will not work.
- In places open to the public, it is mandatory to install an emergency stop button close to the heat pump.

For the Megaline 35, the following electrical properties must be respected:

- Power supply: Triphase 380-415V 3N~50/60Hz
- Maximum current: 14 A
- Diameter of the power cable: RO2V 5x6 mm<sup>2</sup> (for a distance of 10 m)
- Magneto-thermal protection (curve D): 20 A

## 3.8 Electrical connection



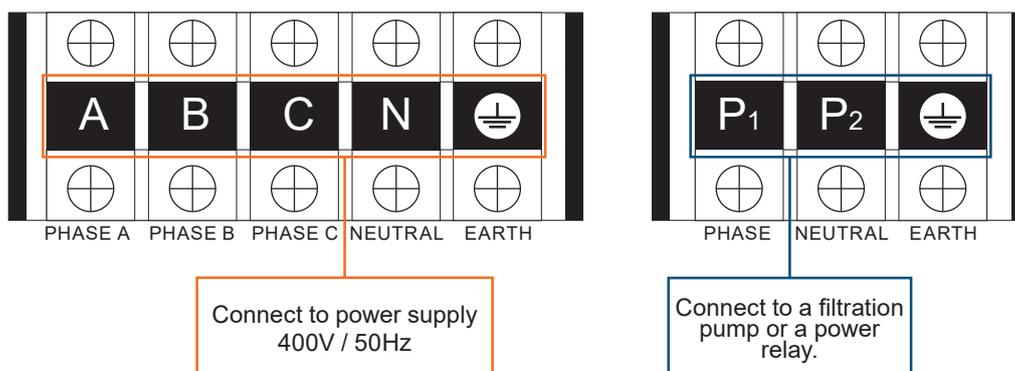
**WARNING:** The heat pump's power supply MUST be disconnected before any operation.

**Please comply with the following instructions to electrically connect the heat pump.**

**Step 1:** Detach the electrical side panel with a screwdriver to access the electrical terminal block.

**Step 2:** Insert the cable into the heat pump unit by passing it through the opening provided for that purpose.

**Step 3:** Connect the power supply cable to the terminal block in accordance with the diagram below.



**Step 4:** Carefully close the heat pump panel.

### Servocontrol of circulating pump

Depending on the type of installation, you can also connect a circulating pump to terminals P1 and P2 so that this operates in tandem with the heat pump.



**WARNING:** Servo-control of a pump whose power exceeds 5A (1000W) requires the use of a power relay.

# 4. Operation

## 4.1 Operation

### Conditions of use

For the heat pump to operate normally, the ambient air temperature must be between -15°C and 45°C.

### Recommendations prior to start-up

Before activating the heat pump, please:

- ✓ Check that the unit is firmly secured and stable.
- ✓ Check that the gauge indicates a pressure greater than 80 psi.
- ✓ Check that the electrical wiring is properly connected to the terminals.
- ✓ Check the earthing.
- ✓ Check that the hydraulic connections are tight and that there is no leakage of water.
- ✓ Check that the water is circulating correctly in the heat pump and that the flow rate is adequate.
- ✓ Remove any unnecessary object or tool from around the unit.

### Operation

1. Activate the unit's power supply protection (differential switch and circuit breaker).
2. Activate the circulating pump if it is not servocontrolled.
3. Check the By-Pass opening and the control valves.
4. Activate the heat pump.
5. Adjust the remote control clock.
6. Select the required temperature by using one of the remote control's mode.
7. The heat pump's compressor will start up after a few moments.

All you have to do now is wait until the required temperature is reached.



**WARNING:** Under normal conditions, a suitable heat pump can heat the water in a swimming pool by 1°C to 2°C per day. It is therefore quite normal to not feel any temperature difference in the system when the heat pump is working.

A heated pool must be covered to avoid any loss of heat.

## 4.2 Servocontrol of circulating pump

If you have connected a circulating pump to terminals P1 and P2, it is automatically electrically powered when the heat pump operates.

# 4. Operation

## 4.3 Using the pressure gauge

The gauge is for monitoring the pressure of the refrigerant contained in the heat pump. The values it indicates can vary considerably, depending on the climate, temperature and atmospheric pressure.

### When the heat pump is in operation:

The gauge's needle indicates the refrigerant pressure.

*Mean operating range between 250 and 450 PSI, depending on the ambient temperature and atmospheric pressure.*

### When the heat pump is shut down:

The needle indicates the same value as the ambient temperature (within a few degrees) and the corresponding atmospheric pressure (between 150 and 350 PSI maximum).

### If left unused for a long period of time:

Check the pressure gauge before starting up the heat pump. It must indicate at least 80 PSI.

If the pressure goes down too much, the heat pump will display an error message and automatically go into 'safe' mode.

This means that there has been a leakage of refrigerant and that you must call a qualified technician to replace it.

## 4.4 Antifreeze protection



**WARNING:** For the antifreeze system to work, the heat pump must be powered and the circulating pump activated. If the circulating pump is servocontrolled by the heat pump, it will be automatically activated.

When the heat pump is on standby, the system monitors the ambient temperature and the water temperature in order to activate the antifreeze programme if required.

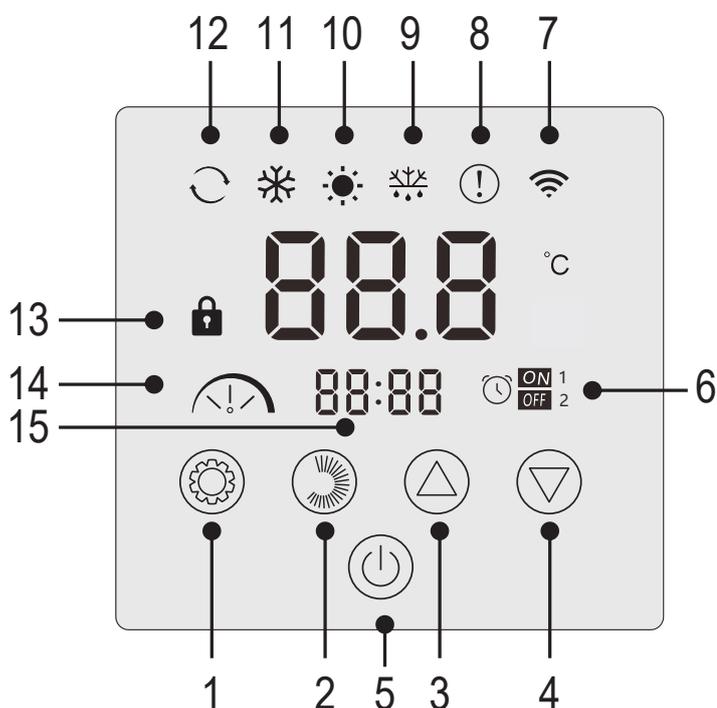
The antifreeze programme is automatically activated when the ambient temperature or the temperature of the water is less than 2°C and when the heat pump has been shut down for more than 120 minutes.

When the antifreeze programme is running, the heat pump activates its compressor and the circulating pump so as to reheat the water until the water temperature exceeds 2°C.

The heat pump automatically leaves the antifreeze mode when the ambient temperature is greater than or equal to 2°C or when the heat pump is activated by the user.

# 5. Use

## 5.1 Wired remote control



Nr	Function
1	Operating mode selection / Parameters
2	Mode intensity selection / Settings
3	Up / Increase
4	Down / Decrease
5	On / Off
6	On/off timer
7	WiFi indicator
8	Error indicator
9	Defrost indicator
10	Heating mode
11	Cooling mode
12	Automatic mode
13	Lock indicator
14	Silent, eco or boost mode
15	Time display

### Locking the control panel

Without any action on your part, the control box locks automatically after 1 minute.

When the control box is locked, the lock indicator  is displayed.

To unlock the control panel, press 2s on/off button .

### Start the heat pump

When the control box is unlocked, press 2s on/off button  to start the heat pump. When your heat pump is turned off, the operating mode is no longer displayed.

### Adjusting the water temperature

Once the unit is unlocked, press the  or  to display the set temperature.

Then adjust the desired temperature using the buttons  and .

After 3 seconds, the system automatically exits the temperature setting and the screen displays the current water temperature again.

### Forced de-icing function

Hold  and  for 3 seconds to force defrost the pump, the symbol  appears.

### Enable / Disable LEDs

To disable LEDs, set L6 to 0 (see «5.10 User setting», page 28).

# 5. Use

## 5.2 Operating mode selector

 **Before starting, ensure that the filtration pump is working and that water is circulating through the heat pump.**

To choose the operating mode, press the  button for 3s.

Pour changer l'intensité du mode, Press le bouton .

Each form a cycle:



Hot and cold modes can each be set to silent, eco or boost intensities. On the other hand, the automatic mode is systematically eco intensity. It cannot be changed.

Active LED	Operating mode
	<i>Heating</i>
	<i>Cooling</i>
	<i>Auto</i>
	<i>Silent</i>
	<i>Eco</i>
	<i>Boost</i>

**SILENT Heating mode:** The heat pump heats the water silently.

**ECO Heating mode:** The heat pump heats the water in a conventional manner.

**BOOST heating mode:** The heat pump quickly heats the water in your pool.

**Auto mode:** The heat pump intelligently chooses the most appropriate operating mode according to the set temperature.

**SILENT Cooling mode:** The heat pump cools the water silently.

**ECO Cooling mode:** The heat pump cools the water in a conventional manner.

**BOOST Cooling mode:** The heat pump quickly cools the water in your pool.

 **WARNING:** When the cooling mode switches to heating mode or vice versa, the heat pump will restart after **10 minutes**.

When the incoming water temperature is less than or equal to the required temperature (setpoint temperature - 1°C), the heat pump will switch to heating mode. The compressor will stop when the temperature of the incoming water is greater than or equal to the required temperature (setpoint temperature + 1°C).

 In any case, if no key is pressed for 30 seconds, the current setting value is confirmed and the display returns to the main interface.

# 5. Use

## 5.3 Setting the clock

Set the system clock to local time, as follows:

**Step 1:** In the main interface, press  for 5 seconds to access the local time setting interface. The hours and minutes flash at the same time.

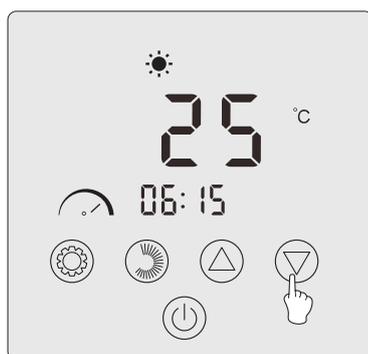
**Step 2:** In the Real-Time Clock Setting interface, press . The hour numbers flash, and the minutes stop flashing. Press  or  to set the times.

**Step 3:** After setting the time, press . The minute digits flash and the hour digits stop flashing. Then press  or  to set the minutes.

**Step 4:** Once the minutes are set, press again  to confirm the local time setting and return to the main interface.

### Notes:

1. In the clock setting interface, press  to confirm the current value of the clock setting and return to the main interface.
2. If no key is pressed for 30 seconds, the clock setting value is confirmed and the display returns to the main interface.



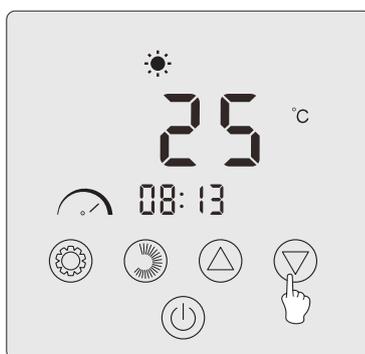
Step 1



Step 2



Step 3



Step 4

# 5. Use

## 5.4 Programming Start/Stop



This function allows you to programme the start and stop time. You can record 2 programs in total, that is, you can schedule up to 2 different departures and 2 stops.

### Notes:

1. If the schedule is activated, the program number is displayed on the main interface.
2. A schedule is not valid if the start and stop times are the same.
3. If no key is pressed for 30 seconds, the clock setting value is confirmed and the display returns to the main interface.

### Activate the time programming function

**Step 1:** Press  for 3 seconds to access the L parameter setting.

**Step 2:** Press twice  to L2. Press again  to access the setting. Press  to set the L2 parameter to «1».

**Step 3:** Press  to confirm. Then press  to return to the main interface.

### Programme your heat pump

**Step 1:** On the main interface, press  for 3 seconds to access the schedule setting. You can record 2 programs in total. When you access the time programming interface, program 1 flashes.

**Step 2:** When program 1 flashes, press  to enter the program start “ON” setting. The hour numbers flash. Press  or  to set the time of the program.

**Step 3:** After setting the program time, press again  to switch to the program minute setting. The minute numbers flash. Press  or  to set the program minutes.

**Step 4:** After setting the time and minutes of starting the program, press again  to switch to the program “OFF” stop setting. The setting method is the same as above.

**Step 5:** After setting the program stop, press again  to confirm program 1.

**Step 6:** Press  or  to switch to program 2. The setting method is the same as for program 1.

### Activate a programme

**Step 1:** Press  for 3 seconds to activate program 1. Icon  and digit “1” appear on screen.

**Step 2:** Press  or  to select program 2, then press  for 3 seconds to activate program 2. Icon  and digit “2” appear on screen.

**Step 3:** Press  to confirm activated programs and return to the main interface.

### Disable a program

**Step 1:** On the main interface, press  for 3 seconds to access the time schedule setting.

**Step 2:** Press  or  to select the program to disable.

**Step 3:** Press  for 3 seconds to disable the program. Icon  and digit disappear.

# 5. Use

## 5.5 Download & Installation of the «Smart Life» application

### About the Smart Life app:

You'll need to create a «Smart Life» account to control your heat pump remotely.

The «Smart Life» app lets you control your home appliances from anywhere. You can add and control multiple devices at once.

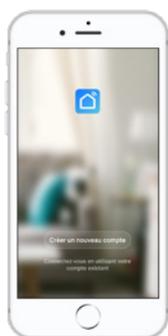
- Also compatible with Amazon Echo and Google Home (depending on the country).
- You can share your devices with other Smart Life accounts.
- Receive real-time operational alerts.
- Create scenarios with several devices, depending on the app's weather data (geolocation required).

For more information, go to the «Help» section of the «Smart Life» app

The «Smart Life» app and services are provided by Hangzhou Tuya Technology. Poolstar, owner and distributor of the Poolex brand, cannot be held responsible for the operation of the «Smart Life» app. Poolstar has no visibility on your «Smart Life» account.

### iOS :

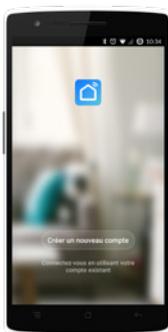
Search for «Smart Life» in the App Store to download the app:



Check the compatibility of your phone and the version of your OS before installing the application

### Android :

Search for «Smart Life» on Google Play to download the app:



Check the compatibility of your phone and the version of your OS before installing the application

# 5. Use

## 5.6 Setting up the app

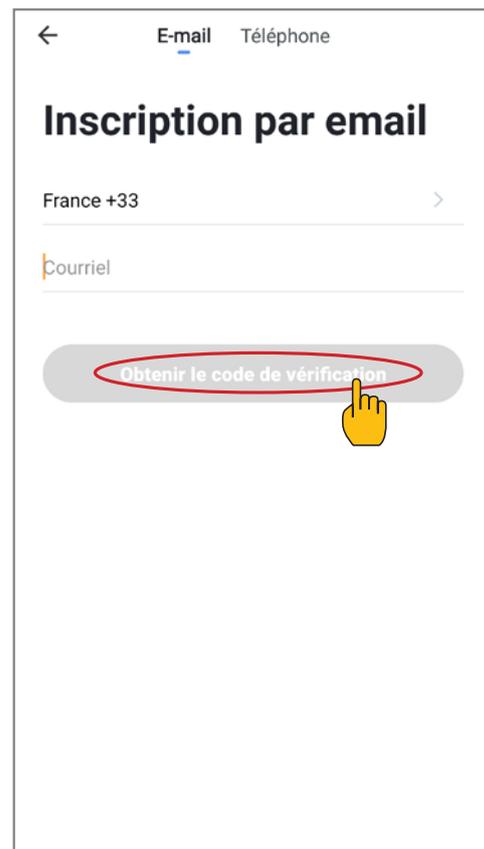
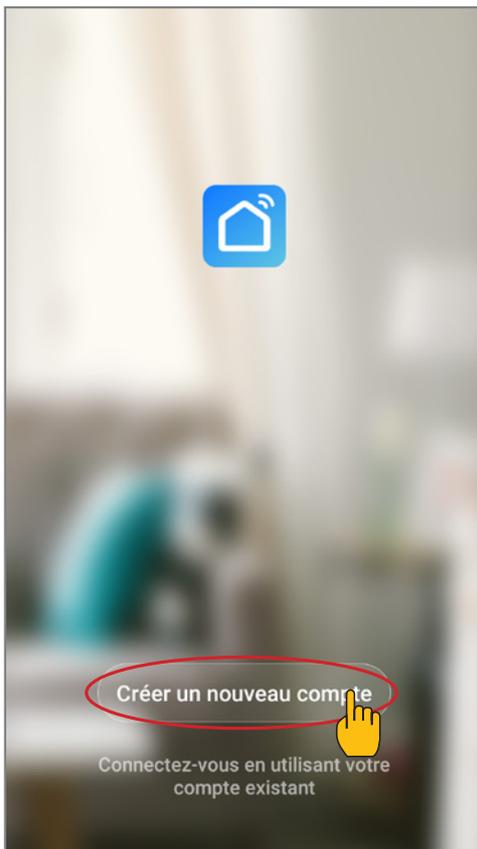


**WARNING:** Before you begin, make sure you have downloaded the «Smart Life» app, connected to your local WiFi network, and that your heat pump is electrically powered and running.

You'll need to create a «Smart Life» account to control your heat pump remotely. If you already have a Smart Life account, please log in and go directly to step 3.

**Step 1:** Click on «Create new account» and choose to register by «Email» or «Phone,» where a verification code will be sent to you.

Enter your email address or phone number and click «Send verification code».

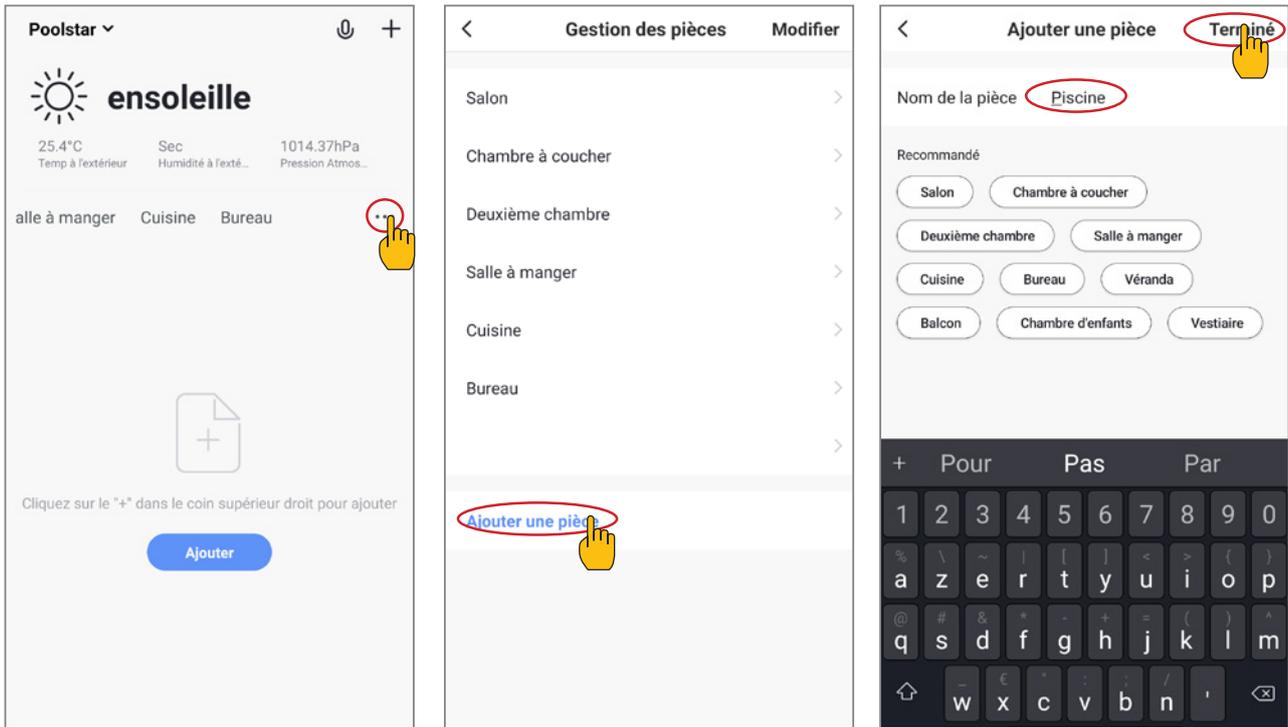


**Step 2:** Enter the verification code received by email or phone to validate your account.

**Congratulations! You are now part of the «Smart Life» community.**

# 5. Use

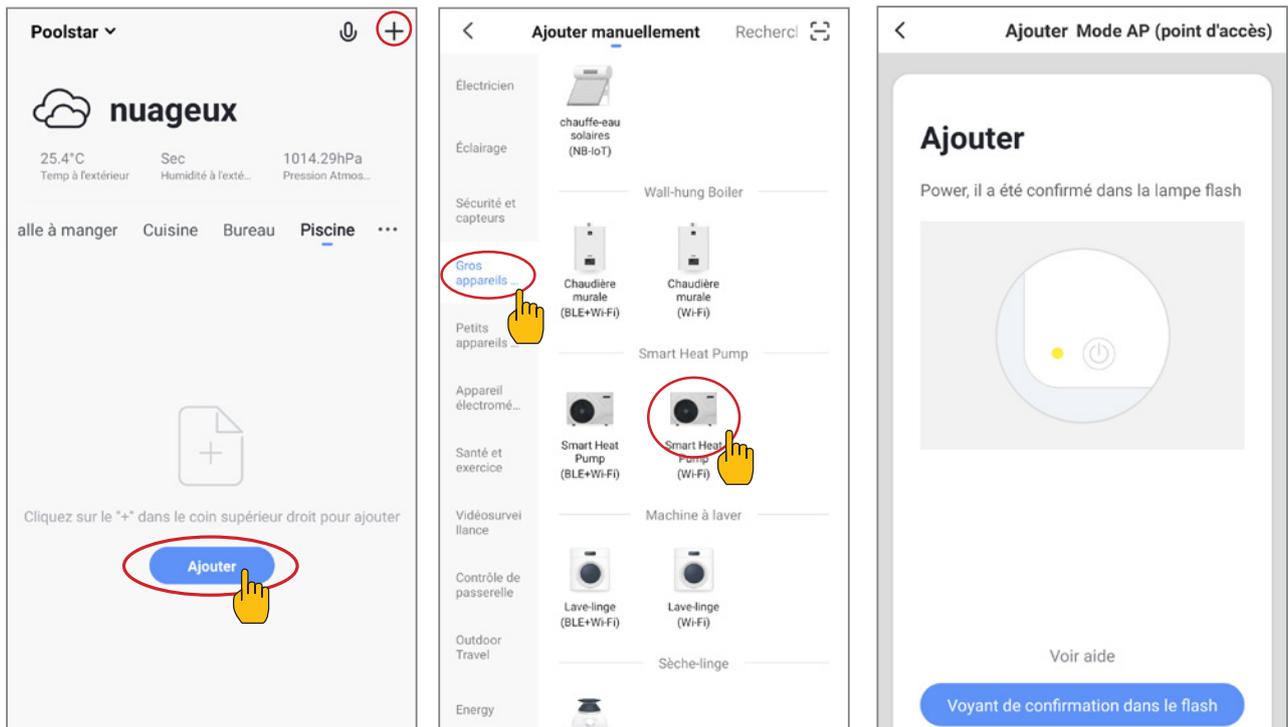
**Step 3 (Recommended):** Add an object by clicking «...» and then «Add Object.» Enter its name («Pool» for example), then click «Done.»



**Step 4:** Now add a device to your «Pool»

Click «Add» or «+» and then «Large appliances...» followed by «Water heater.»

At this point, leave your smartphone on the «Add» screen and go to the pairing step for your control box.



# 5. Use

## 5.7 Pairing the heat pump

**Step 1:** Now start the pairing.

Choose your home WiFi network, enter the WiFi password and press «Confirm».

**CAUTION:** The «Smart Life» application only supports 2.4GHz WiFi networks.

If your WiFi network uses the 5GHz frequency, go to the interface of your home WiFi network to create a second 2.4GHz WiFi network (available for most Internet boxes, routers and WiFi access points).

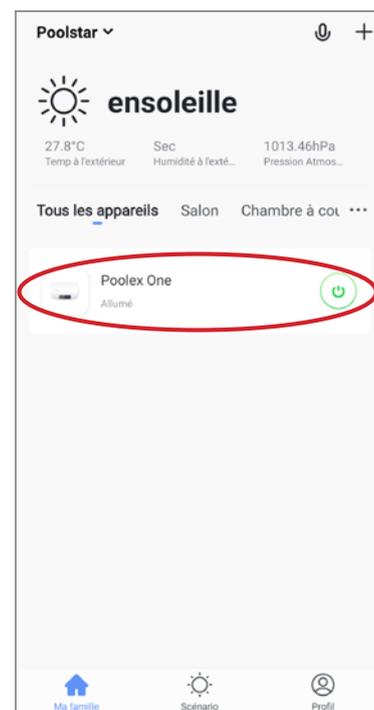
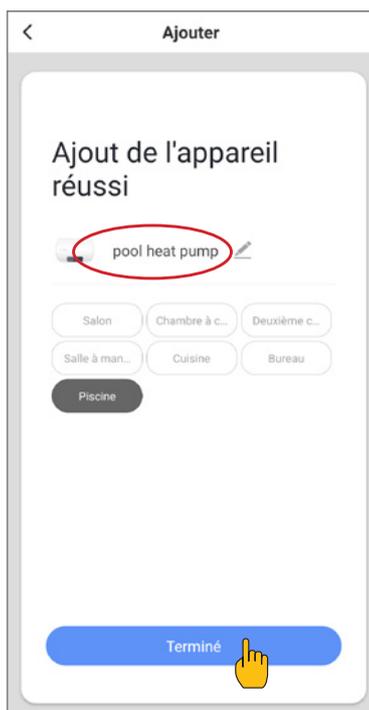
**Step 2:** Activate the pairing mode on your heat pump according to the following procedure:



Press  and  simultaneously for 3 seconds.

The light  appears and flashes.

The control box is ready to be paired.



Once pairing has been successfully completed, you can rename your Poolex heat pump and then press «Done».

**Congratulations, your heat pump can now be controlled from your smartphone.**

**Note:** The flashing stops when the box is connected to WiFi.

# 5. Use

## 5.8 Controlling

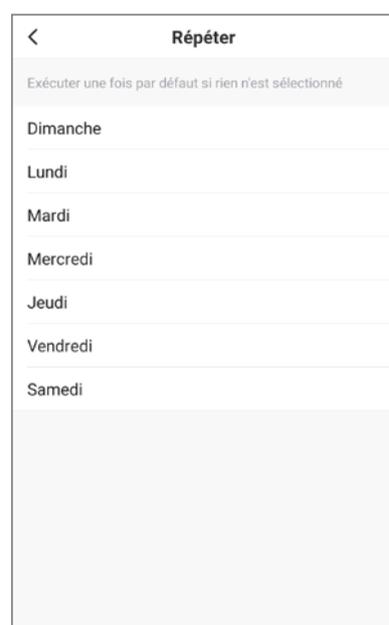
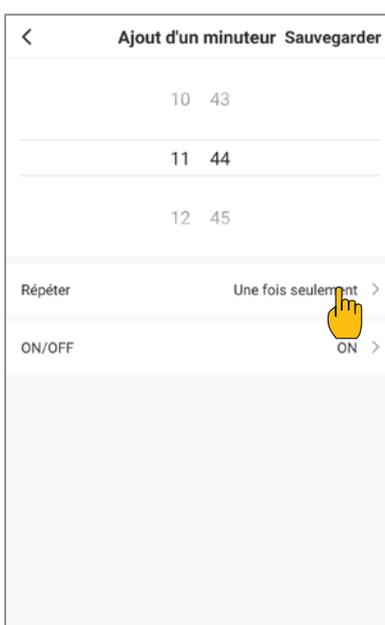
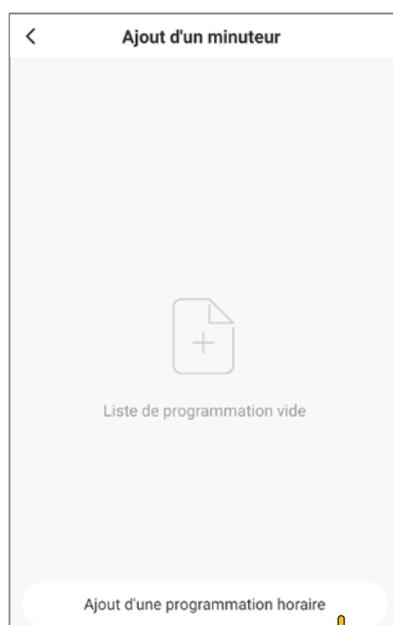
### User interface

- 1 Current pool temperature
- 2 Temperature setpoint
- 3 Current operating mode
- 4 Switch the heat pump on/off
- 5 Change the temperature
- 6 Change the operating mode
- 7 Set the operating range

### Configure the operating ranges for the heat pump

**Create a schedule:** Choose the time, day(s) of the week(s), and the action (turn on or off) and save.

**Delete a time slot:** Press on it and hold.

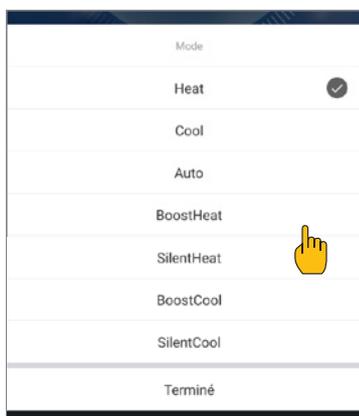


### Choice of operating modes

For Inverter heat pumps:

You can choose between Heating (eco), Cooling (eco), Automatic, BOOST heating, Silent heating, BOOST cooling, Silent cooling.

\*Some modes may change depending on the machines



### Available modes

- Heating (eco)\*
- Cooling (eco)\*
- Automatic\*
- Heating BOOST\*
- Heating Silent\*
- Cooling BOOST\*
- Cooling Silent\*

# 5. Use

## 5.9 Status values

The status values can be checked via remote control by following these steps.

**Step 1:** Keep pressing  for 3 seconds to enter parameters check mode.

**Step 2:** Press  or  to check the parameter values.

**Step 3:** Press  to return to the main screen.

### Status values table

Code	Parameter name	Remarks
$\Gamma 1$	Discharge temperature	
$\Gamma 2$	Coil-outside temperature	
$\Gamma 3$	Ambient temperature	
$\Gamma 4$	Water inlet temperature	
$\Gamma 5$	Water outlet temperature	
$\Gamma b$	Suction temperature	
$\Gamma 7$	Coil-inside temperature	
$\Gamma 8$	Reserved	
$\Gamma 9$	Reserved	
$\Gamma 10$	IPM temperature	
$\Gamma 11$	Reserved	
$Ft$	Target frequency	
$Fr$	Real time frequency	
$IF$	Opening degree of main EEV	
$2F$	Opening degree of auxiliary EEV	
$od$	Operation mode	1: Cooling ; 4: Heating
$Pr$	Fan speed	DC: Actual speed (display*10)
$dF$	Defrosting status	
$OIL$	Oil return status	
$r 1$	Reserved	
$r 2$	Chassis electric heater switch	
$r 3$	Reserved	
$SEF$	Four-way valve switch	
$HF$	Reserved	
$PF$	Reserved	
$PDF$	Reserved	
$Pu$	Water pump switch	
$RH$	Ac fan high speed	
$Rd$	Ac fan medium speed	
$RL$	Ac fan low speed	
$dcU$	DC voltage	
$dcC$	Inverter compressor current(A)	
$RcU$	AC input voltage	
$RcC$	AC input current	
$HE1$	Error code history last	
$HE2$	Error code history last -1	
$HE3$	Error code history last -2	
$HE4$	Error code history last -3	
$Pr$	Protocol version	
$5r$	Software version	

# 5. Use

## 5.10 User setting

### Modify user settings

**Step 1:** Press  for 3 seconds to access the user settings modification.

**Step 2:** Press  and  to choose the advanced setting you want to change.

**Step 3:** Press  to change the setting. The value flashes.

**Step 4:** Press  and  to change the value.

**Step 5:** Press  to validate the change.

*Without any intervention for 10s, the return to the main screen is done automatically.*

### User Settings Table

Code	Parameter	Description	Default value
L0	Operation mode of water pump	0: The water pump does not turn off when the heat pump reaches the set value and stops. 1: When the heat pump reaches the set value and stops, the water pump shuts down 60 seconds later than the compressor, and opens for 5 minutes every L1 minute.	0
L1	Interval operation time of water pump time of water pump when the heat pump reaches the set value and stops	When the heat pump reaches the set value and stops, water pump opens for 5 minutes every (L1) min, L1=3~180min	30
L2	Timer setting	0: No timing function, the timing key is invalid, and the relevant timing icon disappears. 1: The daily timing is valid and can be set. After the timing is finished, the timing icon does not disappear.	0
L3	Power-off memory	0=OFF ; 1=ON	1
L4	--	--	--
L5	Operation mode	Range: 0~3 0 = Heating; 1 = Cooling; 2 = Cooling + Heating; 3 = Cooling + Heating + Automatic + Boost heating + Silent heating + Boost cooling + Silent cooling.	3
L6	LED strip	0=OFF ; 1=ON	1

# 5. Use

## 5.11 System parameter query



**WARNING:** *This operation is used to assist servicing and future repairs.*

*The default settings should only be modified by an experienced professional person.*

**ANY CHANGE TO THE SYSTEM PARAMETER (OUTSIDE THE PREVIOUS TABLE) WILL AUTOMATICALLY VOID THE WARRANTY.**

### Enter the input code in the system parameter

**Step 1:** Press  and  for 3 seconds. The settings check mode opens.

**Step 2:** Press  to select the first digit to edit and then the next.

**Step 3:** Press  and  to change the value.

**Step 4:** Press again  to validate the change. Repeat step 3 to complete the code.

**Step 5:** Press  to validate the code and access to the advanced settings modification.

*Without any intervention for 10s, the return to the main screen is done automatically.*

### Modify system parameter

*This step will only be possible after validating the right code to access the advanced settings.*

**Step 1:** Press  to validate the code and access to the advanced settings modification.

**Step 2:** Press  and  to choose the advanced setting you want to change. Refer to the “System Parameter Table”, page 30, for available functions and settings for each parameter.

**Step 3:** Press  to change the setting. The value flashes.

**Step 4:** Press  and  to change the value.

**Step 5:** Press  to validate the change.

*Without any intervention for 10s, the return to the main screen is done automatically.*

# 5. Use

## System Parameter Table

N°	Description	Adjustment range	Factory setting
H0	Accumulated heating operation time setting value	30~120	35 min
H1	Max time of defrosting	1~25	12 min
H2	Exit defrosting temperature	1~25	12°C
H3	Enter defrosting temperature	-20~20	-3°C
F0	Heating startup deviation set value	0~5	1°C
F1	Stop deviation value after reach set temp. (heating mode)	0~5	0°C
F2	EEV adjustment cycle	10~60	30 s
F3	Cooling startup deviation set value	0~18	2°C
F4	Stop deviation value after reach set temp. (cooling mode)	0~18	0°C
P0	Compensation temperature	-9~9	0°C
P1 - P2	Reserved	non-activated	-
P3	Minimum working ambient temperature	-50~15 (When ambient temperature $\leq$ the set value, the unit stops)	-15°C
P4	Minimum working ambient temperature deviation	2~18	2°C
P5	Reserved	non-activated	-
P6	Auxiliary electric heater	OF: OFF ; ON: ON	ON
P7	Auxiliary electric heater starting temperature point	2~15 (When ambient temperature $\leq$ the set value, the unit stops)	5°C
P8	Inlet and outlet water temperature difference protection	2~60	5°C
P9	Chassis heater starting temperature point	-9~10	0°C
P10-P16	Reserved	non-activated	-
P17	Max opening degree of EEV	50~480	480P
P18	Min opening degree of EEV	50~300	68P
P19	Reserved	non-activated	-
P20	Force refrigerant recycle	OF: OFF ; ON: ON	OF
P21	Reserved	non-activated	-
P22	Max setting temp of heating	35-60	40°C
P23	Min setting temp of heating	15-25	15°C
P24	Max setting temp of cooling	25-35	30°C
P25	Min setting temp of cooling	2-10	7°C
C0	Testing mode	OF: OFF ; ON: ON	OF
C1	Testing mode compressor manual frequency	10~120	50Hz
C2	Testing mode manual opening degree of EEV	60~480	350P
C3	Testing mode fan motor speed	1~150/ DC values: 300~1500 AC: 1: high 2: medium 3: low DC: Current Speed (Display*10)	82

# 6. Maintenance and servicing

## 6.1 Maintenance and servicing



**WARNING:** Before undertaking maintenance work on the unit, ensure that you have disconnected the electrical power supply.

### Cleaning

The heat pump's casing must be cleaned with a damp cloth. The use of detergents or other household products could damage the surface of the casing and affect its properties.

The evaporator at the rear of the heat pump must be carefully cleaned with a vacuum cleaner and soft brush attachment.

### Annual maintenance

The following operations must be undertaken by a qualified person at least once a year.

- ✓ Carry out safety checks.
- ✓ Check the integrity of the electrical wiring.
- ✓ Check the earthing connections.
- ✓ Monitor the state of the pressure gauge and the presence of refrigerant.

## 6.2 Winter storage

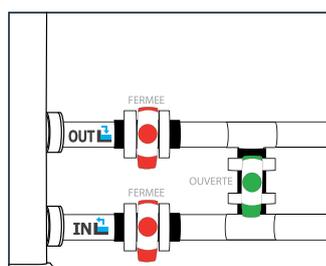
In the winter months when the ambient temperature is lower than 3°C, a shut-down heat pump must be winterized to avoid any frost damage.

### Winterizing in 4 steps



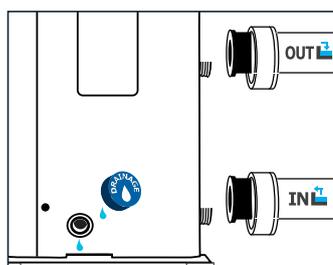
#### Step 1

Disconnect the heat pump from the power supply.



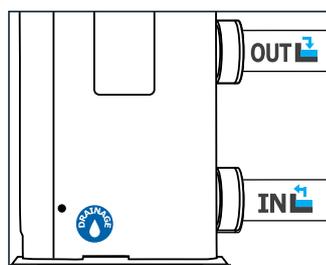
#### Step 2

Open the By-Pass valve. Close the inlet and outlet valves.



#### Step 3

Unscrew the water pipes in order to drain any water from the heat pump.



#### Step 4

Screw back the pipes or block them with rags so as to prevent any foreign bodies from getting into the circuit.



If a circulating pump is servocontrolled by the heat pump, drain this also.

# 7. Repairs



**WARNING:** Under normal conditions, a suitable heat pump can heat the water in a swimming pool by 1°C to 2°C per day. It is therefore quite normal to not feel any temperature difference in the system when the heat pump is working.

A heated pool must be covered to avoid any loss of heat.

## 7.1 Breakdowns and faults

In the event of a problem, the heat pump's screen displays a fault symbol (⚠) instead of temperature indications. Please consult the table opposite to find the possible causes of a fault and the actions to be taken.

## 7.2 Reset the settings

The control box must be turned off to be able to reset the settings to factory settings.

**User and Factory Settings:** Press (⏻) and (⏮) for 10 seconds to restore the values from user settings and factory settings to default.

**Parameters E:** Press (⏻) and (⏮) and (⏭) for 3 seconds to reset E settings.

**Error History:** Press (⏻) and (⚙) for 3 seconds to clear error history.

## 7.3 List of faults

Code	Anomalies	Inspection and troubleshooting
E01	Exhaust temperature failure	<ol style="list-style-type: none"> <li>1. Check/replace the sensor.</li> <li>2. Check the status of the sensor head.</li> </ol>
E05	Coil temperature failure	
E09	Return air temperature failure	
E17	Return water temperature failure	
E18	Water outlet temperature failure	
E21	Communication failure	Please contact the supplier.
E22	Ambient temperature failure	<ol style="list-style-type: none"> <li>1. Check/replace the sensor.</li> <li>2. Check the sensor head condition.</li> </ol>
E25	Water flow switch failure	<ol style="list-style-type: none"> <li>1. Check whether the water pump is installed correctly and can be started.</li> <li>2. Check whether the water pipeline is not drained or blocked.</li> <li>3. Check the water flow switch wiring or replace the water flow switch.</li> <li>4. Check if the piping is installed correctly.</li> </ol>
E27	Communication failure between main board and driver board	Please contact the supplier.
E28	EEPROM error in main board	Please contact the supplier.
E29	EEPROM error in driver board	
P02	High pressure protection( three consecutive times will lock the machine)	<ol style="list-style-type: none"> <li>1. Replace the high pressure switch.</li> <li>2. Drain the pipe air.</li> <li>3. Install the water inlet temperature sensor correctly.</li> <li>4. Check or replace the circulating water pump.</li> <li>5. Discharge excess refrigerant.</li> <li>6. Regularly clean the water heat exchanger.</li> </ol>

# 7. Repairs

Code	Anomalies	Inspection and troubleshooting
P0b	Low pressure protection ( three consecutive times will lock the machine)	<ol style="list-style-type: none"> <li>1. Check or replace throttling components.</li> <li>2. Clean the evaporator fins.</li> <li>3. Replace the low pressure switch.</li> <li>4. Check the leakage position, repair it, re-vacuum and charge the refrigerant according to the refrigerant type and weight shown on the nameplate.</li> </ol>
P11	High temperature protection of exhaust temperature	<ol style="list-style-type: none"> <li>1. Check whether the water temperature sensor is installed in place.</li> <li>2. Check the leakage position, repair it, re-vacuum and charge the refrigerant according to the refrigerant type and weight shown on the nameplate.</li> <li>3. Regularly clean the water heat exchanger.</li> <li>4. Check or replace the circulating water pump.</li> </ol>
P15	Inlet and outlet water temperature difference protection	Check whether the pump is running normally and whether the water circuit is blocked.
P1b	Cooling undercooling protection	Please contact the supplier.
P17	Standby frost protection	
P18	Electric heater overheating protection	
P19	Compressor current protection	
P24	DC fan protection and failure	
P25	Outdoor ambient temperature too high or too low protection	
P2b	Water outlet temperature over in Heat Mode	Please contact the supplier.
P27	Over temperature protection of outer coil during cooling	
r02	Compressor drive failure	<ol style="list-style-type: none"> <li>1. Check whether the wiring is normal.</li> <li>2. Wire the wires in the correct order.</li> </ol>
r05	IPM module overheat protection	Shut down, power on again after 5 minutes of power off.
r0b	Heat pump overcurrent protection	Please contact the supplier.
r10	DC voltage overvoltage protection	<ol style="list-style-type: none"> <li>1. Normal voltage range: 182V~242V.</li> <li>2. It is recommended to power on at an interval of more than 2 mins, or wait for the code to disappear automatically.</li> </ol>
r11	DC voltage undervoltage protection	
r12	AC voltage overvoltage and undervoltage	Normal voltage range: 182V~242V.
r24	Unstable input power voltage	Shut down, power on again after 5 minutes of power off.
r21	IPM overcurrent protection	<ol style="list-style-type: none"> <li>1. Shut down, power on again after 5 minutes of power off.</li> <li>2. Water temperature setting too high.</li> <li>3. Switch to ECO mode or silent mode operation.</li> </ol>

# 8. End of product life

## 8.1 Recycling the heat pump

Your heat pump has reached the end of its life and you wish to dispose of it or to replace it. Do not throw it in the rubbish bin.



A heat pump must be disposed of separately with a view to its reuse, recycling or upgrading. It contains substances that are potentially hazardous to the environment but which will be eliminated or neutralized by recycling.

You have three solutions:

1. Disposing of it at your local recycling centre.
2. Giving it to a social service organization for it to be repaired and put back into circulation.
3. Returning it to the heat pump distributor against a new purchase.

## 8.2 General warranty conditions

The Poolstar Company guarantees the original owner against defective materials and faults in the manufacture of the Poolex Vertigo Fi heat pump for a period of **three (3) years**.

- The compressor is guaranteed for a period of **five (5) years**.
- The titanium tube heat exchanger is guaranteed for a period of **fifteen (15) years** against chemical corrosion, except for frost damage.
- The condenser's other components are guaranteed for **three (3) years**.

The warranty becomes effective on the date of the first invoice.

The warranty does not apply in the following cases:

- Malfunction or damage arising from an installation, usage or repair that is not in compliance with the safety instructions.
- Malfunction or damage arising from a chemical agent that is unsuitable for the pool.
- Malfunction or damage arising from conditions that are unsuitable for the equipment's purposes of use.
- Damage arising from negligence, accident or force majeure.
- Malfunction or damage arising from the use of unauthorized accessories.

Repairs undertaken during the warranty period must be approved prior to being carried out by an authorized technician. The warranty shall be null and void if the repair to the equipment is carried out by a person who is not authorized by the Poolstar company.

The guaranteed parts shall be replaced or repaired at Poolstar's discretion. Defective parts must be returned to our workshops to be covered during the warranty period. The warranty does not cover labour costs or unauthorized replacements. The return of the defective part is not covered by the warranty.

Dear Sir/Madam,

**Please spend a few minutes filling in the warranty registration card that you will find on our website:**

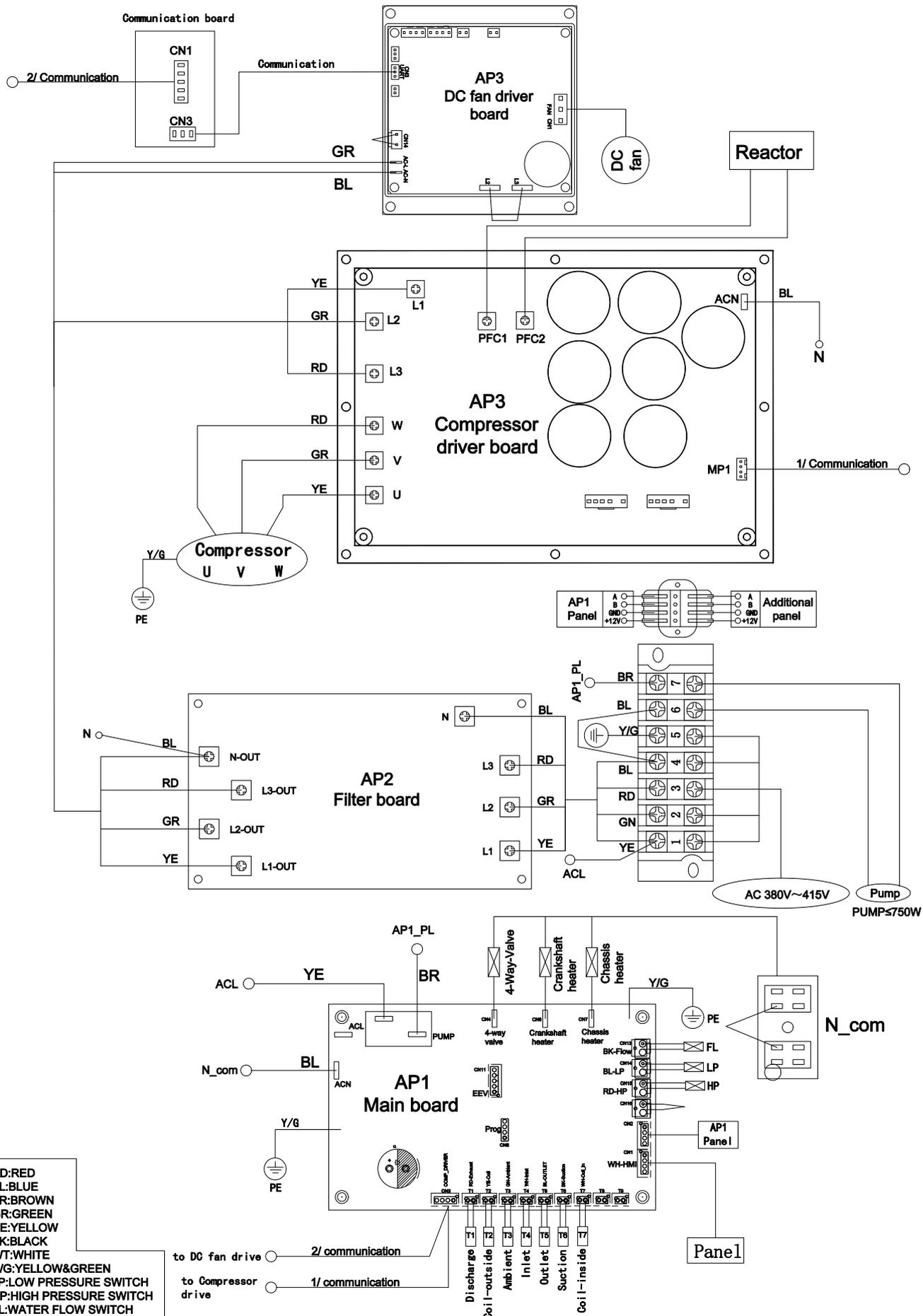
**<http://support.poolex.fr/>**

We thank you for your trust in our products.  
Enjoy your swimming!

Your details may be treated in accordance with the Data Protection Act of 6 January 1978 and will not be divulged to any third party.

# 9. Appendices

## 9.1 Wiring diagrams of the electronic board



# **POOLEX**



TECHNICAL ASSISTANCE

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