Poolstar
Pure innovation

POOLEX

Heat pump for spa

Installation and user manual

ACKNOWLEDGEMENTS

Dear customer,

Thank you for your purchase and your trust in our products.

Our products are the result of years of research in the design and manufacture of heat pumps for pools. Our goal is to deliver high-quality products with exceptional performance.

We took great care to put together this manual so you can get the most out of your Poolex heat pump.

WARNING

This heat pump contains a flammable refrigerant R32.

Any action on the refrigerant circuit is prohibited without a valid authorisation.

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 minimise 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 CO2 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 the 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.

9. 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.

PLEASE READ CAREFULLY

These installation instructions form an integral part of the product.

They must be provided to the installer and kept in a safe place by the user.

If you lose this manual, please visit our website:

www.poolex.fr

The indications and warnings contained in this manual should be carefully read and understood as they provide important information regarding the safe handling and operation of the heat pump. Keep this manual handy for 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 people 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 of any signs of 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 authorised 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 authorised technical service organisation 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.

In the event the heat pump is sold or transferred to a third party, please ensure that all technical documentation is given to the new owner alongside the equipment.

This heat pump is exclusively designed to heat a SPA. All other uses must be inappropriate, incorrect, or even dangerous.

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All contractual and extra-contractual liability on the part of the manufacturer / distributor shall be considered null and void in the event of damage caused by errors in installation or operation, or due to non-compliance with the instructions provided in this manual, or the standards in force for the installation of equipment discussed in this document.

CONTENTS

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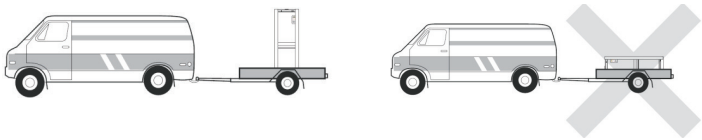
1. GENERAL INFORMATION

1.1 General terms and conditions of delivery

All products and packaging, even those delivered carriage paid, travel at the risk of the recipient.

Persons responsible for accepting delivery of the device must perform a visual inspection to make a note of any damage that may have occurred during transportation (refrigeration circuit, casing, electric box, frame). Any damage occurring during transportation must be noted by the recipient on the delivery receipt of the carrier, and confirmed by registered post sent to the carrier within 48 hours.



The device must be stored and transported upright at all times, on a pallet, and in its original packaging. If the device has been transported in a horizontal position, please wait at least 24 hours prior to connecting it.

1.2 Safety instructions

WARNING: Please read carefully all safety instructions before using the device. As the instructions noted in this document are essential to your safety, please respect them carefully.

Installation and maintenance

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 device (installation, start-up, use, 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.

1. GENERAL INFORMATION

When in use

Do not touch the vent during operation due to the risk of serious injury.

Do not leave the heat pump within reach of children due to the risk of injury caused by the heat exchanger fins.

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.

When cleaning

1. Switch off the power supply to the device.
2. Close the water inlet and outlet valves.
3. Do not place anything in the openings of the water or air inlets/outlets.
4. Do not spray the appliance with excessive amounts of 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.

When replacing pipework, only copper pipes conforming to Standard NF EN12735-1 may be used for repairs.

When pressure-testing to detect leaks:

- Use dehydrated nitrogen or a mixture of nitrogen and refrigerant.
- To avoid the risks of fire or explosion, never use oxygen or dry air.

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.

1.4 Operating limits

Your heat pump's performance is at its optimal when outside temperature is between -10 °C and 43 °C.

When outside temperature is below -10 °C, the heat pump is useful to maintain the temperature within the hot tub. However, it is not suitable to heat up your hot tub alone when outside temperature is below -10 °C. As such, it is recommended to use it with the SPA heater control relay (see § 3.6) during the cold season.

Your hot tub must be correctly insulated to enable the heat pump to function in an optimal way.

- The tub must be insulated.
- The piping must be insulated.
- The hot tub must be equipped with an insulating cover.

2. DESCRIPTION

2.1 Package contents

At reception, please check that your package contains the following:

- A Poolex heat pump
- 2x 1"1/2 (inch) to DN48.3 hydraulic connections
- 1x spa heater control relay
- 4x anti-vibration pads (directly mounted on the heat pump)
- Drainage kit
- This installation and operation manual

2.2 Characteristics

Air [1] 15°C Water [2] 26°C	Heating power (kW)	2.02 - 5.04
	Consumption (kW)	0.27 - 1.18
	COP (Coeff. of performance)	**7.48 - 4.26**
Air [1] 26°C Water [2] 26°C	Heating power (kW)	2.75 – 6.84
	Consumption (kW)	0.22 – 1.18
	COP (Coeff. of performance)	**12.5 – 5.78**
Air [1] 35°C Water [2] 27°C	Cooling capacity (kW)	1.5 – 3.14
	Consumption (kW)	0.30 – 1.08
	EER	**5.0 – 2.9**
Power supply		Single phase 220-240Vac ~ 50Hz
Maximum power		2.0 kW
Maximum current		9 A
Heating temperature range (water temperature)		15°C ~ 40°C
Operating range (ambiant air temperature)		- 20°C ~ 40°C
Unit dimensions L×P×H (mm)		750 x 460 x 460 mm
Unit weight (kg)		38 kg
Sound pressure level 10 m (dBA) [3]		< 33
Hydraulic connections (mm)		D50
Heat exchanger		PVC tank and tianium heating coil
Advised water flow (m³/h)		2.0 m³/h
Compressor type		Rotary
Refrigerant / Loaded volume (kg)		R32 / 0.4 kg
Protection rating		IPX4
Load loss (mCE)		1.2
Control panel		Digital and Wifi
Modes		Heating and cooling

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

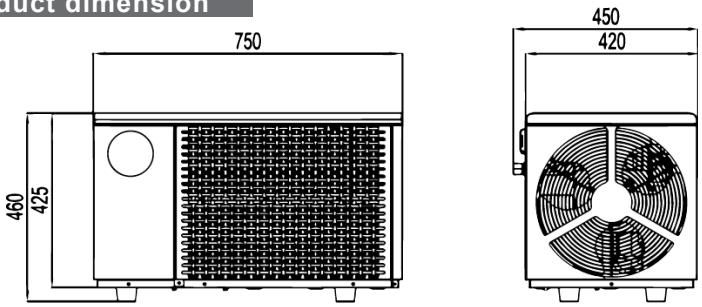
[1] Ambient air temperature

[2] Initial water temperature

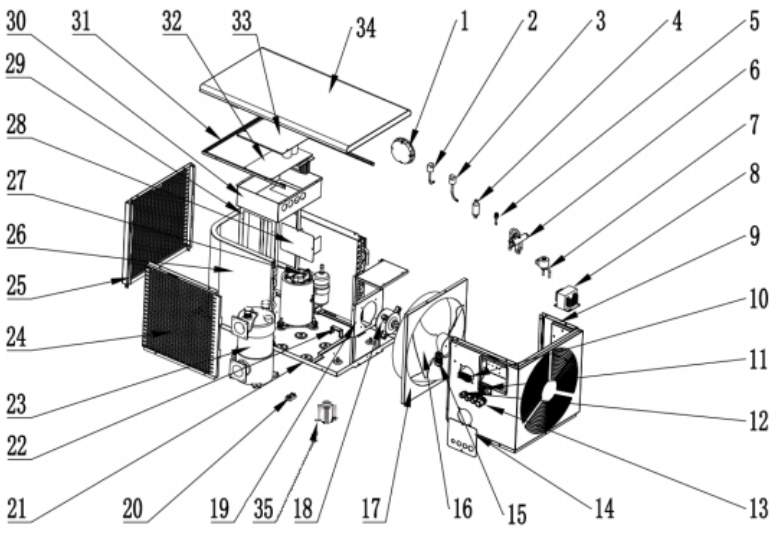
[3] Noise level at a distance of 10 m in accordance with international standards EN ISO 3741 and EN ISO 354

2. DESCRIPTION

2.3 Product dimension



2.4 Exploded view



1	Display	13	Connector PG13.5	25	Back Panel
2	High Pressure Switch	14	Electrical Box Cover	26	Evaporator
3	Low Pressure Switch	15	Temperature Sensor Retaining Clip	27	Compressor
4	Filter	16	Fan Blade	28	Reactor Protection Cover
5	Needle Valve	17	Air Deflector	29	Electrical Box Support Plate
6	Four-Way Valve	18	Fan Motor	30	Electrical Box
7	EEV	19	Motor Support Assembly	31	Top Frame Assembly
8	Reactance	20	Two-position Terminal Board	32	Main Board
9	Front Panel	21	Chassis	33	Electrical Box Cover
10	Twelve-position Terminal Board	22	Copper pipe Fixing Bracket	34	Top Cover
11	Three-position Terminal Board	23	Titanium Heat Exchanger	35	Relay
12	Connector PG7	24	Left Panel		

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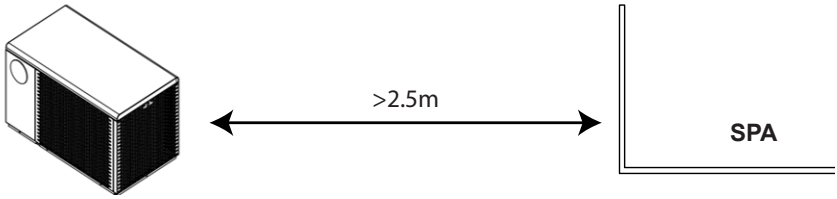
3. INSTALLATION

To install the heat pump only the hydraulic circuit and the power need to be connected.

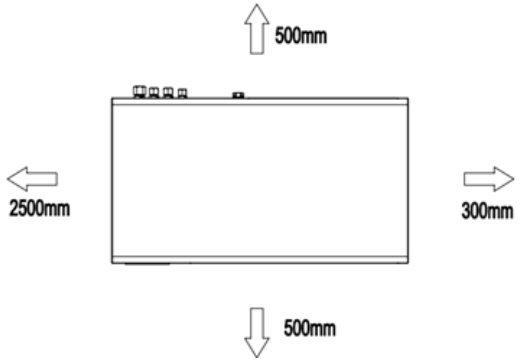
3.1 Location

The heat pump must be installed at least 2.5 m away from the pool.



Please respect the following rules when choosing the heat pump's installation location

1. The location must be easily accessible for optimal operation and maintenance.
2. The device must be installed on the ground, ideally on a level concrete slab. Ensure that the ground is sufficiently stable and it can support the weight of the device.
3. Check that there is enough air flow, that the air exhaust is not directed towards the windows of neighbouring buildings, and that exhaust air cannot return to the intake. In addition, ensure that there is enough space around the device to perform servicing and maintenance.
4. The device must not be installed in locations susceptible of being exposed to oil, flammable gas, corrosive agents, sulphur compounds, or near high frequency devices.
5. Do not install the device near to roads or footpaths to avoid mud splattering.
6. To avoid disturbing neighbours, make sure to install the device facing away from areas sensitive to noise.
7. Keep out of the reach of children insofar as possible.



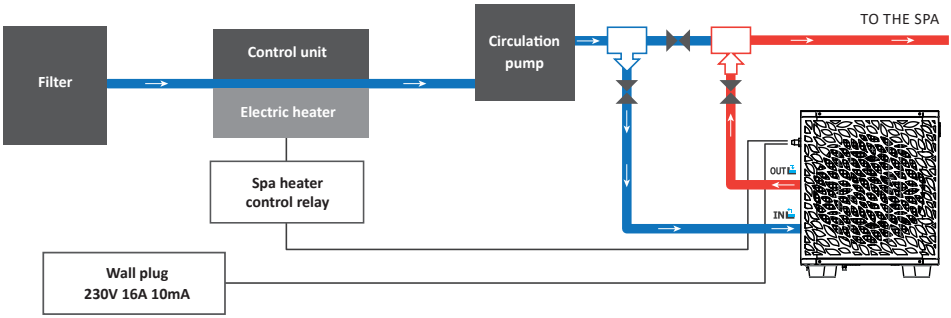
Do not place anything within 2.50 m of the front of the heat pump.

Leave at least 30cm of empty space to the sides and rear of the heat pump.

Do not place any obstacles on top or in front of the device!

3. INSTALLATION

3.2 Installation diagram

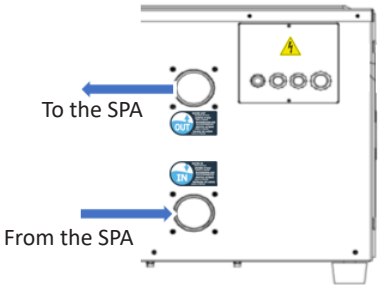


The filter located upstream of the heat pump must be regularly cleared so that the water in the system is clean, thus avoiding the operational problems associated with dirt or clogging in the filter.

3.3 Hydraulic connection

Step 1: Screw the connectors for heat pump.

Step 2: Connect the water inlet and outlet.



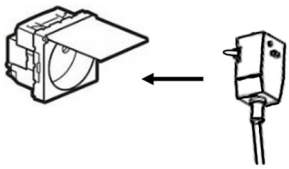
3.4 Electrical connection

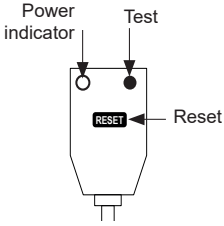
Pump's power plug integrates a 10mA differential circuit breaker.

Regularly test the correct operation. In the event of successive triggering or doubts contact the after-sales service.

Before plugging in your heat pump, please ensure the electrical socket is properly grounded and protected from rain as well as water projections.

Press the RESET button to start the heat pump. The power indicator lights up in red: the heat pump is on.





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3. INSTALLATION

3.5 Connecting other functions

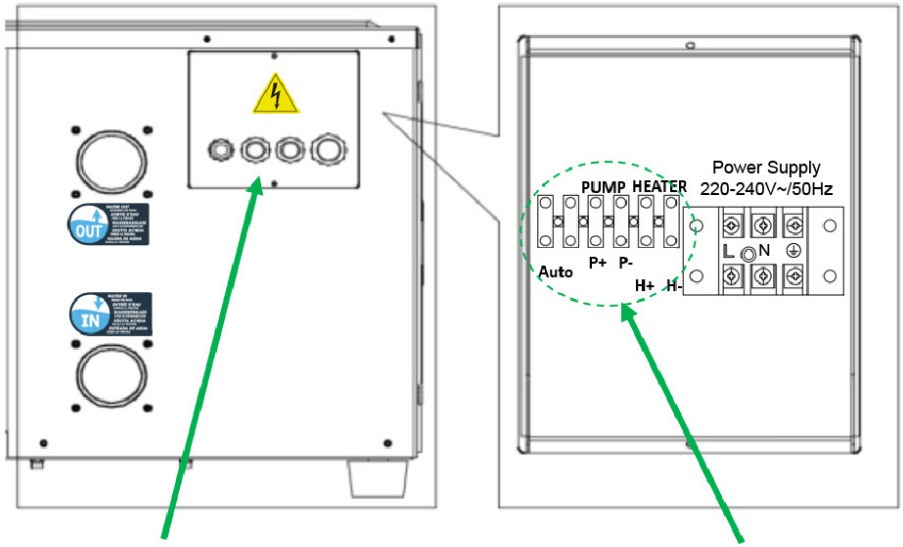
In order to ensure optimal heating of the SPA, regardless of the outside temperature, it is possible to connect a relay to control the SPA heater, which in extreme conditions will ensure good water heating.

This relay is controlled by the heat pump control box either automatically or manually (boost).

As an option, it is also possible to add an additional relay to control a circulation pump if the existing flow rate in the installed SPA system is not sufficient (recommended flow rate in the heat pump around 1.5 to 2 m^3/h).

In addition, it is possible to add an automatic control (dry contact) that allows the heat pump to start or not.

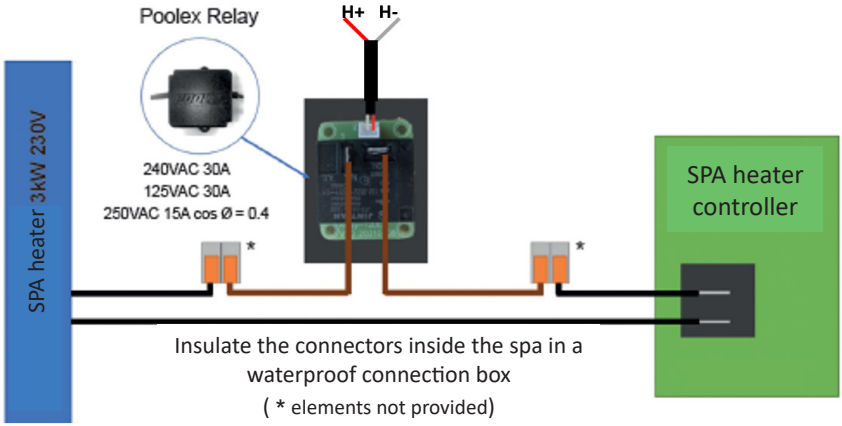
To do this, just remove the protective cover to gain access to the corresponding terminal block and connect the necessary wires.



Remove the protective cover (2 screws)

Connect the wires

3.6 Heater control relay



Start conditions in automatic mode

When the above conditions are met at the same time, the auxiliary electric heating will be turned on.

- The heating pump is in heating mode.
- The ambient temperature is <0 °C. (This value can be modified by parameter P24).
- The water temperature is below or equal to the set temperature of the heater.

The hysteresis temperature is 1 °C (parameter P1): the target temperature is considered to be reached at +/- 1 °C.

- The water flow is detected.

Closing conditions in automatic mode

When any of the above conditions are met, the auxiliary electric heating stops.

- The heating pump is in cooling mode.
- The set temperature is reached.
- Inlet water temperature sensor failure alarm.
- The ambient temperature is >0 °C (parameter P24).
- The water flow is not detected.

When the optional circulation pump is used and the heater is activated, the circulation pump is activated 30 seconds before the heater. When the heater is switched off, the circulation pump stops 30 seconds after the heater.

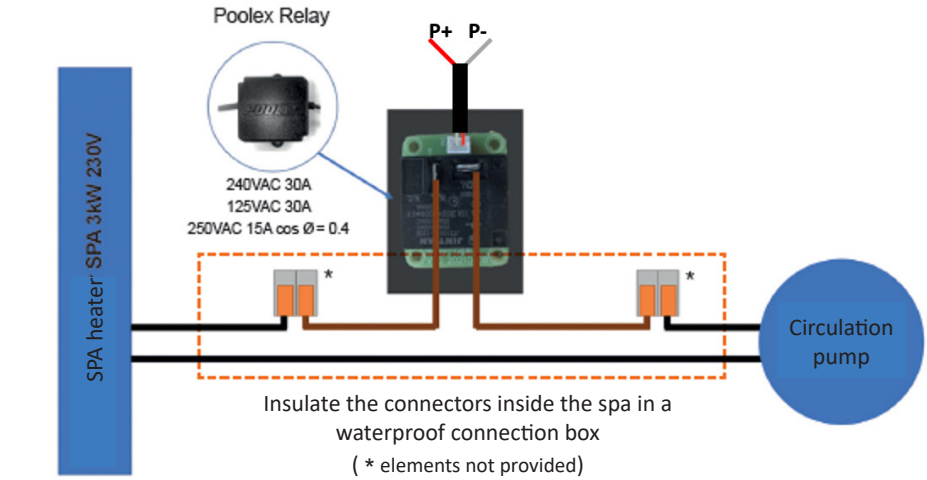
Start and closing conditions in manual mode

When the heater is set to manual mode, the start and stop conditions remain the same except that the ambient temperature is no longer considered.

Press UP for 3s to activate/deactivate the heater.

3. INSTALLATION

3.7 Circulation pump control relay (optional)



When starting up, the water pump runs 60 seconds ahead of the compressor.
When shutting down, the water pump turns off 30 seconds after the compressor.

The circulation pump operation can be set to P21:

- When P21 = 1, the circulation pump continues to run when the target temperature is reached.
- When P21 = 2, the circulation pump stops working when the target temperature is reached.
- When P21 = 3, the circulation pump intermittently runs when the target temperature is reached. It runs for 3 minutes every 20 minutes.

3. INSTALLATION

3.8 Operation

Use conditions

For the heat pump to operate normally, the ambient air temperature must be between - 10 °C and 43 °C when it is used alone, or between - 20 °C and 10 °C when used with the SPA heater.

In order to be heated, the water must circulate in the heat pump. The heat pump will not start if the water is not circulating.

Advance notice

Prior to starting the heat pump, please:

- Check that the equipment is in a stable position.
- Check that your electrical installation is in good working condition.
- Check that the hydraulic connections are properly tightened and there is no water leakage.
- Remove any object that is not required around the equipment and all tools.

Operation

1. Connect the power supply to the device.
2. Start the filtration pump.
3. Activate the device's electrical supply protection (differential switch situated on the power cable).
4. Start the heat pump.
5. Select the desired temperature using one of the modes appearing on the control panel.
6. The heat pump's compressor will start shortly after.
7. Let the heat pump and the water pump run 24 hours a day until the desired water temperature is reached. The heat pump will then stop working. The heat pump will then restart automatically (as long as the water pump is running) as soon as the water temperature in the pool is one degree lower than the set temperature.

WARNING: Under normal conditions, a suitable heat pump can heat up the tub water by 1 °C to 2°C per hour. It is therefore normal that you do not feel any difference in temperature at the outlet level when the heat pump is on.

⚠ **A heated tub must be covered and insulated to avoid any heat loss.** ⚠

Good to know: restart after power failure

After a power failure or a usual interruption, turn the power back on. The system is in sleep mode. Restart the differential plus and switch on the heat pump.

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4. USE

4.1 Control panel

Button	Function
	ON/OFF
	Choosing modes
	+1 / UP
	- 1 / DOWN
	Parameters

Symbol	Description	Symbol	Description
	Heating mode		SPA HEATER control
	Cooling mode		Defrosting
	Silent mode		Wi-Fi
	Smart mode		Fault
	Powerful mode		Key lock

4. USE

4.2 Control buttons operating instructions

No.	Function	Description
1	Unlocking/locking the keyboard	To unlock/lock the buttons. Press UP + DOWN for 3s
2	Turn On/Off the Heat Pump	Press ON/OFF for 3s
3	Check running parameters	1. Press DOWN for 3s 2. Use UP and DOWN for parameters browsing 3. Click ON/OFF to exit
4	Choose mode	Press MODE for 3s to switch from one operating mode to the other (heating/cooling)
5	Adjust temperature	Adjust the current mode setting temperature Press UP or DOWN
6	Adjust time	1. Press PARAMETER and UP for 3s to set clock. ► The hour flashes. 2. Press UP or DOWN to increase / decrease by one hour. Hold UP or DOWN to go faster. 3. Press again PARAMETER. ► The minutes flashe. 4. Press UP or DOWN to increase / decrease by one minute. Hold UP or DOWN to go faster. 5. Press PARAMETER to finish.
7	Adjust timing	1. Press PARAMETER for 3s to set periods. ► The hour of "Timing On 1" flashes. 2. Press UP or DOWN to increase / decrease by one hour. Hold UP or DOWN to go faster. 3. Press again PARAMETER. ► The minutes of "Timing On 1" flashe. 4. Press UP or DOWN to increase / decrease by one minute. Hold UP or DOWN to go faster. 5. Press again PARAMETER. ► The hour of "Timing Off 1" flashes. 6. Repeat steps 2 to 4 to set "Timing Off 1". 5. Press again PARAMETER then repeat steps 2 to 4 to set other periods of time (Timing On/Off 2, Timing On/Off 3, etc.). 5. Press ON/OFF to finish. Note: when "Timing On" and "Timing Off" are the same, the timer setting of the current time period is canceled.

4. USE

No.	Function	Description
8	Forced defrosting	Press MODE + DOWN to force defrosting. ► The defrost symbol flashes in the display.
9	Frequency mode switch	Switches between frequency modes: silent mode, smart mode, powerful mode. Press PARAMETER to switch from one frequency mode to another.
10	Change the temperature unit (°C or °F)	The unit must be turned off to change the temperature unit. Device switched off, press ON/OFF + MODE for 3s. ► The unit changes from Celsius to Fahrenheit or vice versa.
11	Turn on electric heater manually	Press UP pendant 3s to activate/deactivate the heater.
12	Check the advanced settings	1. Press ON/OFF + PARAMETER for 5s to enter the advanced settings interface. ► The time area shows 0000: it is the password interface. 2. Press UP and DOWN to enter the password and then press PARAMETER to confirm. **Check frequency** Password: 8866 The target frequency is displayed instead of the hour. The running frequency is displayed instead of the minutes. **Check system parameters** Password: 0814 See §4.6
13	Restore factory settings	The unit must be turned off to restore the factory settings. Press PARAMETER + MODE + UP + DOWN for 3s. ► The buzzer beeps twice. All parameter values are reset to the default values.

4.3 Using operating modes

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

Description of operating modes

Heating mode

Select the heating mode if you want to heat up the tub water with the heat pump.

Cooling mode

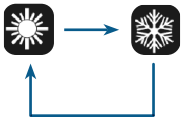
Select the cooling mode if you want to cool down the tub water with the heat pump.

Selection of the desired operating mode

By default, the heat pump is in heating mode.

To shift from one operating mode to another, press MODE for 3s.

The different modes form a cycle:
(heating > cooling)



Good to know:

The heat pump can take several minutes to change operating mode in order to preserve the refrigerant fluid.

The maximum set temperature is 40 °C.

4.4 Using mobile application

Downloading & installing the application « Smart Life »

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 that you have set up.
- Receive real-time operational alerts.
- Create scenarios with several devices, depending on the app's weather data (geolocation required).

For more information, refer to the "Help" section of the "Smart Life" app.

The "Smart Life" app and services are provided by Hangzhou Tuya Technology. The company Poolstar, owner and distributor of the Poolex brand, cannot be held responsible for the operation of the "Smart Life" application. The company Poolstar has no access to your "Smart Life" account.

iOS:

Scan or search for «Smart Life» in the App Store to download the app:

Smart Life

Download from App Store

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

Android:

Scan or search for «Smart Life» in the play to download the app:

Smart Life

Download from Google Play

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

4. USE

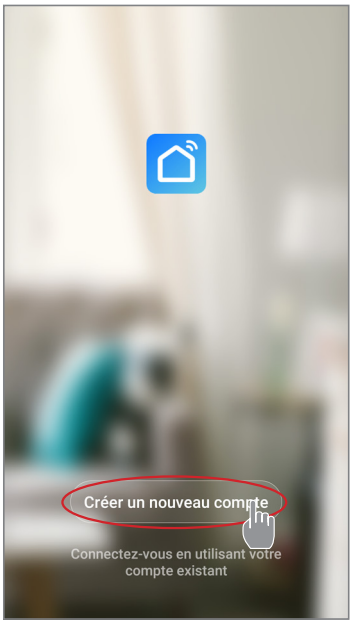
Setting up the application « Smart Life »

⚠ ***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»**.



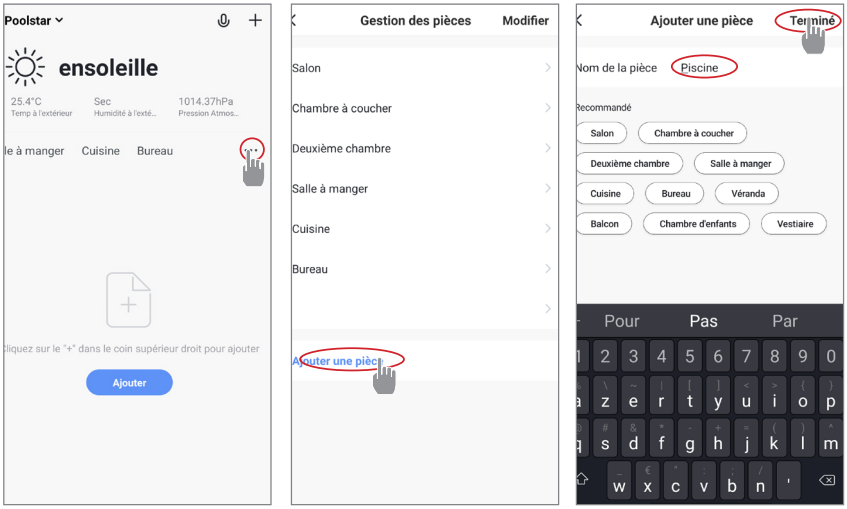
Step 2: Enter the verification code received by email or phone to validate your account.

Congratulations, you now belong to the "Smart Life" community.

EN

4. USE

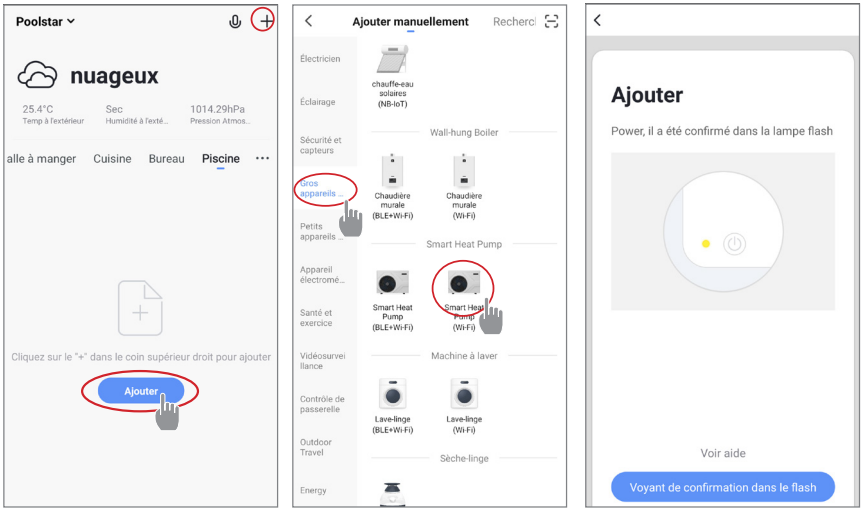
Step 3 (recommended): Add an object by clicking "…" and then "Add Object". Enter a name («Pool» for example), then click "Done".



Step 4: Now add a device to your "Pool"

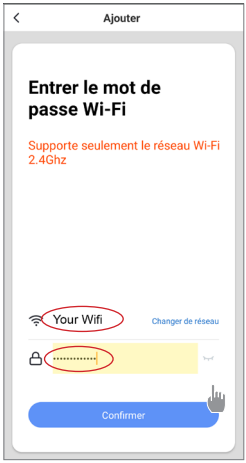
Click "Add" or "+" and then "Large appliances…" followed by "Water heater".

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



4. USE

Pairing the heat pump



Step 1: Now start the pairing.

Choose your home WiFi network, enter the WiFi password and press “Confirm”.

⚠ WARNING: 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).

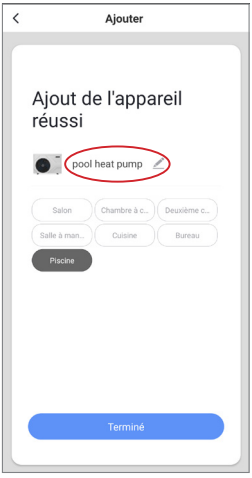
Step 2: Activate the pairing mode on your heat pump according to the following procedure.

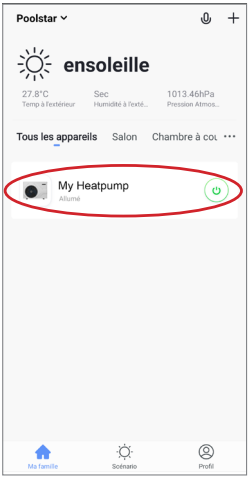
When the heat pump is turned on, press UP + MODE for 3s to start the WiFi pairing. The WiFi logo flashes.

Check that WiFi is enabled on your smartphone.

The pairing is successful, the "WiFi" logo remains fixed, you can rename your Poolex heat pump then press “Done”.

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





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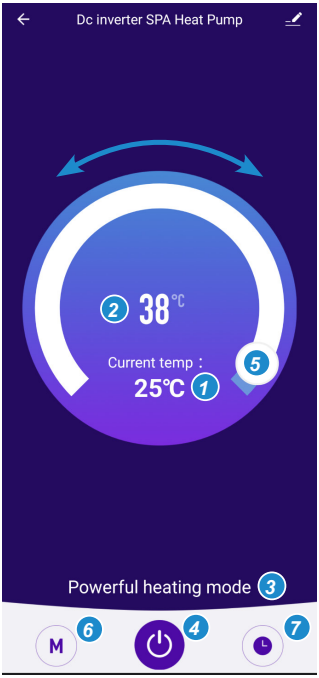
4. USE

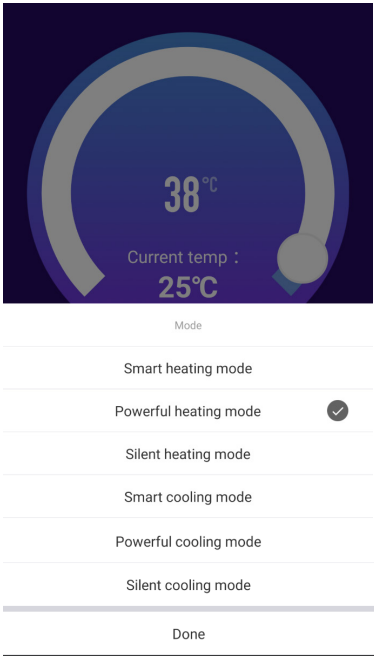
Control from the application « Smart Life »



User interface

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

Heat pump operating mode selector



You can choose between Heating or Cooling modes.

Available modes

Heating / Smart

Heating / Powerful

Heating / Silent

Cooling / Smart

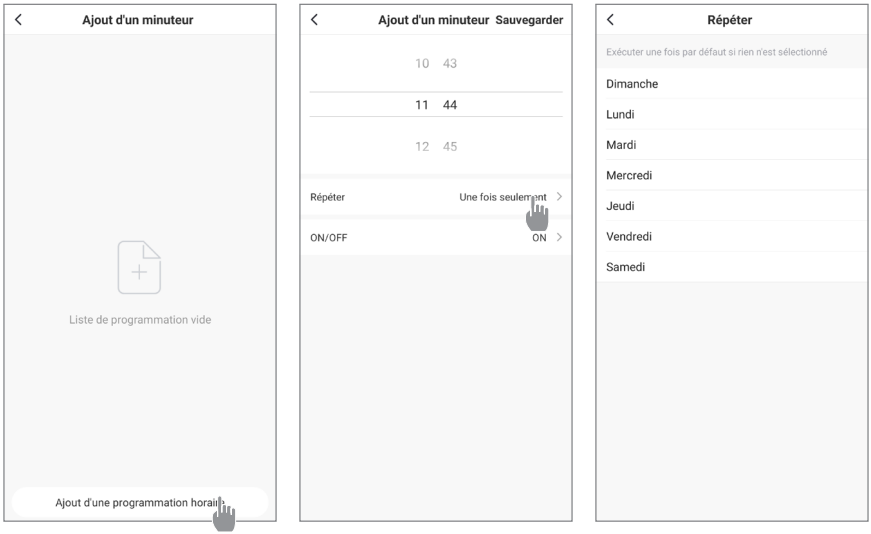
Cooling / Powerful

Cooling / Silent

4. USE

Setting up the heat pump operating range

Step 1: Create a time schedule, choose the time, the day(s) of the week concerned, and the action (switch on or switch off), then save.



Step 2: To delete a time slot, press and hold the time slot.

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4.5 Viewing running parameters

The system's settings can be checked via the remote control by following these steps

Step 1: Press DOWN for 3s to enter the settings verification mode.

Step 2: Press UP and DOWN to browse the parameters.

Step 3: Press ON/OFF to exit the parameter check mode.

Parameters table

Parameters	*Indication*
A01	Water inlet temperature
A02	Water outlet temperature
A03	Ambient temperature
A04	Exhaust temperature
A05	Suction temperature
A06	Heating coil temperature
A07	Cooling coil temperature
A08	Main EEV Steps
A09	Reserved
A10	Compressor current
A11	IPM temperature
A12	DC bus voltage value
A13	Actual speed of compressor
A14	DC fan speed

4. USE

4.6 Viewing and setting advanced parameters

WARNING: *This operation is used to assist servicing and future repairs. The default settings should only be modified by an experienced professional person.*

To check and adjust the system settings, follow these steps.

1. Press ON/OFF + PARAMETRE for 5s to access advanced parameters interface.

► The time area shows 0000: it is the password interface.

2. Press UP and DOWN to enter the password and then press PARAMETER to confirm.

Password 0814 to check system parameters.

Password 8866 to check frequency. (The target frequency is displayed instead of the hour. The running frequency is displayed instead of the minutes.)

Code	Indication	Range	Default
P1	Return difference temp.	0°C~18°C (0~36°F)	0°C (0°F)
P2	Cooling setting temp.	8°C~35°C (46~95°F)	27°C (81°F)
P3	Heating setting temp.	5°C~40°C (41~104°F)	27°C (81°F)
P4	Inlet water temperature compensation	-5°C~15°C (-10~30°F)	0°C (0°F)
P5	Compressor operating cycle when enter defrosting	20 MIN~90 MIN	45 MIN
P6	Coil temp. when allow defrosting	-9°C~-1°C (16~30°F)	-7°C (19°F)
P7	Running time of defrosting	5 MIN~20 MIN	8 MIN
P8	Coil temp. when exit defrosting	1°C~40°C (33~104°F)	20°C (68°F)
P9	Temp.difference between ambient and in heat exchanger for defrosting	0°C~15°C (0~30°F)	3°C (6°F)
P10	Ambient temp. when allow defrosting	0°C~20°C (32~68°F)	17°C (63°F)
P11	Main valve adjustment cycle	20s~90s	25s
P12	Target superheat for smart and powerful mode	-5°C~10°C (-10~20°F)	2°C (4°F)
P13	Exhaust temperature for adjusting main EEV	70°C~125°C (158~257°F)	110°C (230°F)
P14	EEV opening for defrosting	20~450	40
P15	Minimum opening of EEV	5~15 (actual set value*10)	6
P16	Main EEV mode selection	0 manual / 1 automatic	1
P17	Manual steps of the main EEV	20~45	22
P18	Target superheat degree (cooling)	-5°C~10°C (-10~20°F)	0
P19	Reserved		
P20	Operating mode of EEV for cooling	0 = water temperature 1 = SupercoolingTemperature	1

Code	Indication	Range	Default
P21	Water pump operation mode	1 = Keep running when constant temperature shutdown 2 = Turn off after constant temperature shutdown 2min 3 = Intermittent operation	3
P22	Fan motor mode selection	0 (automatic) / 1 (manual)	0
P23	Manual speed of the DC fan	0-99 (actual speed*10)	80 (actual speed*10)
P24	Ambient temp. for starting electric heater	-20 °C~20 °C (-4~68°F)	0°C (32°F)
P25	Turn on the electric heater when defrosting	0 No / 1 Yes	1
P26	Low ambient temperature protection value	0°C~-30°C (-22~32°F)	-20°C (-4°F)

To reset the system settings, follow these steps.

1. Switch off the heat pump.
2. Press PARAMETRE + MODE + UP + DOWN for 3s.

► The buzzer beeps twice. All parameter values are reset to the default values.

5. MAINTENANCE

5.1 Maintenance and servicing

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

Cleaning

The heat pump housing must be cleaned with a damp cloth. Using detergents or other household cleaning products may degrade the surface of the housing and affect its integrity.

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.

5.2 Winterising

Your heat pump is designed to operate in all weather. However, if you winterise your hot tub, it is not recommended to leave the heat pump outside for long periods of time (e.g. over winter). After draining down the hot tub for the winter, uninstall the heat pump and store it in a dry place.

5. MAINTENANCE

5.3 Repairs

WARNING: Under normal conditions, a suitable heat pump can heat up the tub water by 1 °C to 2°C per hour. It is therefore normal that you do not feel any difference in temperature at the outlet level when the heat pump is on.

In the event of a problem, the heat pump's screen displays an error code instead of temperature indications. Please consult the table below to find the possible causes of a fault and the actions to be taken.

In case of malfunction or a fault code is displayed, restart the heat pump. If the problem persists, please contact a professional.

Code	Description	Solution
E03	Water flow protection	Check water flow switch, change the switch if necessary
E04	Winter anti-freezing	Water pump will run automatically for first grade antifreeze
E05	High pressure protection	Measure the pressure value when heat pump is heating (cooling), if it's higher than 44.0 bar, it means heat pump has got really higher pressure protection: 1. Detect EEV step, low pressure and suction temp; 2. Detect the inlet/outlet water temp.; 3. Maybe there is some air in the refrigeration system; 4. Clean the water exchanger or water filter
E06	Low pressure protection	(According to actual model) Measure the pressure value when heat pump is heating(cooling), if it's lower than 6 bar, it means heat pump has got really lower pressure protection: 1. Maybe there is some leakage in the refrigeration system. 2. Ambient temp. is too low. 3. There is some blockages on the refrigerant system. 4. Clean the fin heat exchanger.
E09	Communication fault between display and PCB	1.Check if the communication connection wire between display and PCB is well. Change or mend the wire if necessary. Check the PCB or display. If damaged, Change the corresponding part.
E10	Communication fault of frequency conversion module (alarm when communication between display and PCB is disconnected)	Change PCB.

Code	Description	Solution
E12	High exhaust temp. protection	1. Replace the compressor exhaust temperature sensor. 2. Reconnect or clean compressor exhaust temperature sensor and wrap it with insulation tape. 3. Replace the controller or PC Board.
E15	Water inlet temperature fault	Check the connection, change the sensor if necessary.
E16	External coil temperature fault	Check the connection, change the sensor if necessary.
E18	Exhaust temperature fault	Check the connection, change the sensor if necessary.
E19	DC fan motor fault	Check DC fan motor. Change it if damaged. Check output port of DC fan motor on PCB. Change the PCB if there is no output.
E20	Abnormal protection of frequency conversion module	**Solve it according to the subsidiary error codes in the following table.**
E21	Ambient temperature fault	Check the connection, change the sensor if necessary.
E23	Low outlet water temp protection when cooling	Check the water flow and water system, mend it if necessary.
E27	Water outlet temperature fault	Check the connection, change the sensor if necessary.
E28	CT over current protection	
E29	Suction temperature fault	Check the connection, change the sensor if necessary.
E32	High outlet water temperature protection when heating	Check the water flow and water system,mend it if necessary
E33	Outdoor coil high temperature protection	Wait for the ambient temperature drops and restart the unit.
E42	Internal coil temperature fault	

The E20 fault displays specific error codes, detailed in the following table.

Error codes 1 to 128 are displayed in priority. Error codes 257 to 384 are only displayed if the previous ones do not appear.

If two or more error codes appear at the same time, then the error codes accumulate.
For example, if codes 8 and 16 occur at the same time, the display shows 24.

5. MAINTENANCE

Error codes 1 to 128 are displayed in priority. Error codes 257 to 384 are only displayed if the previous ones do not appear.

If two or more error codes appear at the same time, then the error codes accumulate.
For example, if codes 8 and 16 occur at the same time, the display shows 24.

Code	Description	Solution
1	Compressor over-current	1. The compressor is temporarily overloaded (for example, liquid compression). 2. The program does not match the compressor. 3. The U, V, and W lines of the compressor are inversely connected, and the compressor reverses. 4. Compressor wear (lack of oil, liquid compression lead to wear cylinder block).
2	Compressor out of step	1. The compressor is temporarily overloaded (for example, liquid compression). 2. The program does not match the compressor. 3. The compressor start pressure difference is too high and low.
8	Compressor phase loss	1. Cables U, V, and W of the compressor are missed or improperly connected. 2. The program does not match the compressor. 3. The compressor starts too high and low pressure difference.
16	DC voltage is too low	1. Check whether the AC voltage is abnormal. 2. AC power is suddenly cut off, and the DC voltage will be too low when the converter capacitor is left for the chip to work.
32	DC voltage is too high	Check whether the AC voltage is abnormal.
257	Communication is abnormal	1. Check whether the communication cable is improperly connected. 2. Check whether the baud rate and communication address code are set according to the communication protocol. 3. Replace the driving board for testing.
258	AC phase loss or CT is disconnected	1. The current transformer on the driving board is damaged during transportation. 2. Check whether the current transformer is improperly inserted during production. 3. The AC current at the frequency above 40Hz is very small, resulting in abnormal detection of the current transformer.
260	AC over-current or compressor overpower	1. AC overcurrent (currently available for external models with a separate filter board), the load is suddenly too large to reduce the frequency. 2. Compressor overpower (combined plate, three-phase 380V, no single filter plate model) the load is suddenly too large to reduce the frequency too late. 3. Compressor overpower (combined plate, three-phase 380V, models without separate filter plate) The compressor starts too high and low pressure difference.

5. MAINTENANCE

Code	Description	Solution
288	IPM over heat protection	1. The heat dissipation is poor. The condensing fan rotates at a low speed or stops unexpectedly. 2. The ambient temperature rises too fast, leading to too late reaction of over-temperature frequency reduction.
320	Compressor current protection	1. The compressor is temporarily overloaded (for example, liquid compression). 2. The program does not match the compressor. 3. The U, V, and W lines of the compressor are inversely connected, and the compressor reverses. 4. Compressor wear (lack of oil, liquid compression lead to wear cylinder block).
384	PFC module over heat protection	1. The heat dissipation is poor. The condensing fan rotates at a low speed or stops unexpectedly 2. The loop temperature rises too fast, leading to too late reaction of over-temperature frequency reduction

For malfunctions without error codes, see the table below:

Phenomenon	Cause	Solution
Unit is not running	1. Power outage 2. Power switch is not connected 3. Power switch fuse is burned-out 4. Timing is not up	1. Please wait for power supply recovery. 2. Connect power. 3. Replace fuse. 4. Please wait or cancel timing setting.
Unit is not running after starting up	1. Compressor protection time interval is not up. 2. Water temperature of the unit does not reach starting up water temperature value.	1. Please wait patiently for the end of protection time. 2. Normal phenomenon and wait for water temperature to reach.
Unit is running normally, but hot water temperature is low	1. Improper temperature setting 2. Large hot water consumption 3. Air inlet port or outlet port of outdoor machine or indoor machine is blocked	1. Set up proper temperature. 2. Wait for temperature of hot water to rise. 3. Clear tuyere obstruction.
Unit is running automatically	Reach timing to start up.	Please shutdown manually or cancel timing if needn't start up.

In the case of a fault and/or malfunction of the heat pump, the power supply must be disconnected and no attempt must be made to repair the fault.

Repair work may only be carried out by an authorised technical support service using original spare parts. Failure to respect the above provisions can have a negative influence on the safe operation of the heat pump.

6. WARRANTY

6.1 General terms and conditions of warranty

Poolstar guarantees the original owner against material defects and manufacturing defects of Poolex heat pump for a period of **two (2) years**.

The warranty enters into force on the first billing date.

This warranty does not apply to the following situations:

- Malfunction or damage resulting from installation, use or repair that does not comply with the safety instructions.
- Malfunction or damage deriving from an unsuitable chemical environment of the swimming pool.
- Malfunction or damage resulting from conditions unsuitable for the intended use of the device.
- Damage resulting from negligence, accident, or force majeure.
- Malfunction or damage deriving from the use of unauthorised accessories.

Repairs undertaken during the warranty period must be approved before being carried out by a qualified technician. This warranty is void in the event of repairs to the device made by individuals which have not been authorised by Poolstar.

The parts under warranty shall be replaced or repaired at the discretion of Poolstar. Faulty parts must be returned to us during the warranty period in order to be covered. The warranty does not cover unauthorised labour or replacement costs. Delivery costs for returning the faulty part are not covered by the warranty.

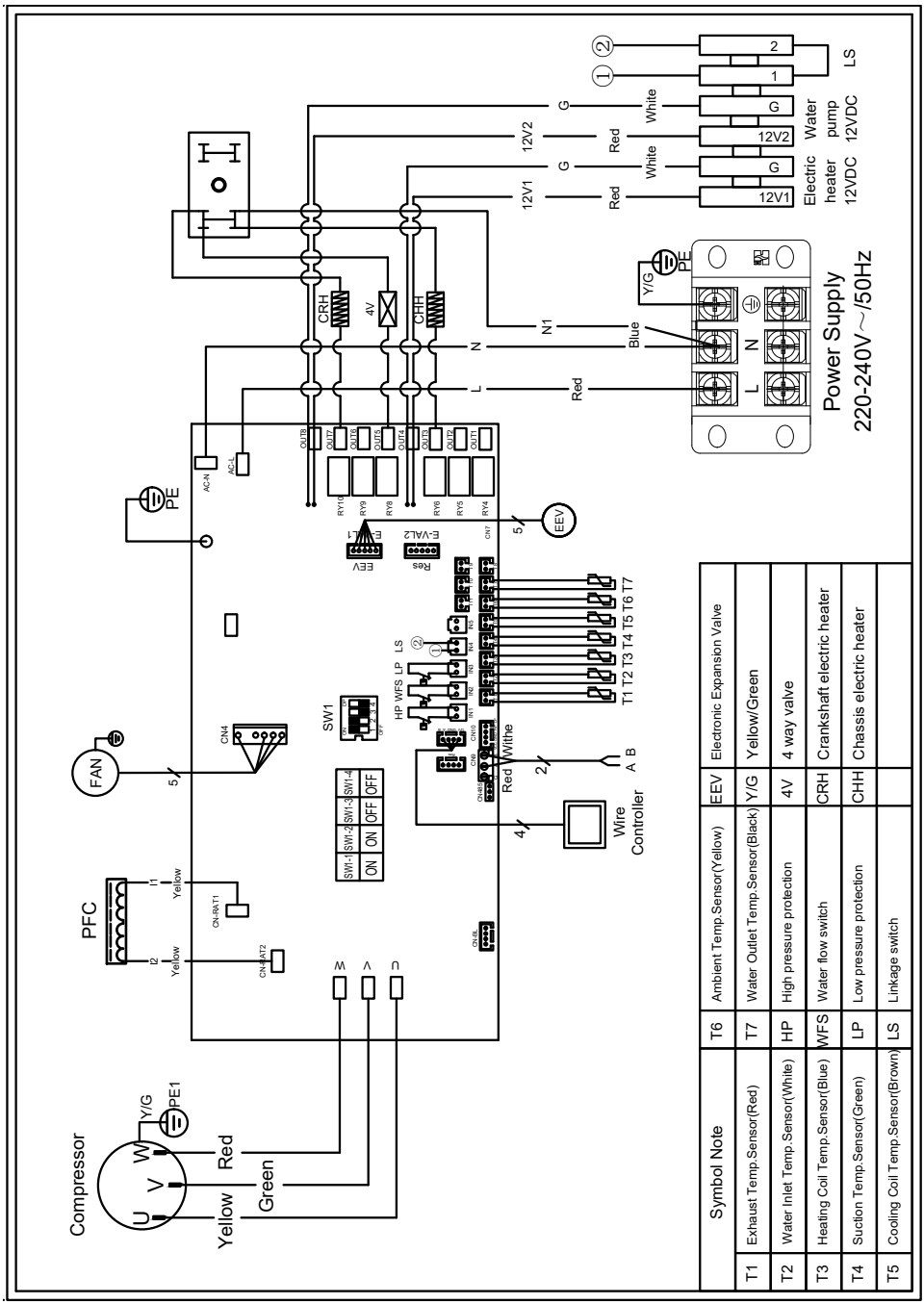
Dear customer,

A question? A problem? Or simply register your warranty, find us on our website:

https://assistance.poolstar.fr/

Thank you for your trust and support. Happy bathing!

Your personal information is processed in accordance with the French Data Protection Act of 6 January 1978 and will not be shared with 3rd parties.



Symbol Note					
T1	Exhaust Temp.Sensor(Red)	T7	Water Outlet Temp.Sensor(Black)	Y/G	Yellow/Green
T2	Water Inlet Temp.Sensor(White)	HP	High pressure protection	4V	4 way valve
T3	Heating Coil Temp.Sensor(Blue)	WFS	Water flow switch	CRH	Crankshaft electric heater
T4	Suction Temp.Sensor(Green)	LP	Low pressure protection	CHH	Chassis electric heater
T5	Cooling Coil Temp.Sensor(Brown)	LS	Linkage switch		
T6	Ambient Temp.Sensor(Yellow)	EEV	Electronic Expansion Valve		

EN

Poolstar
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POOLEX

05-2023

TECHNICAL ASSISTANCE

www.poolex.fr

RoHS CE