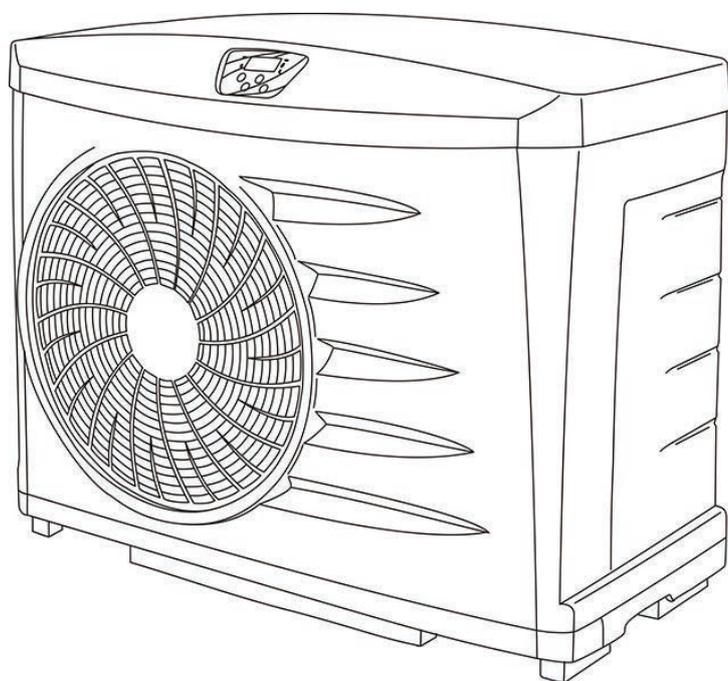


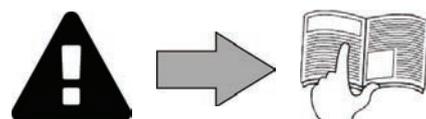
# Z200 PI20 Power Everpac



Instructions for installation and use  
English

EN

More documents on:  
[www.zodiac-poolcare.com](http://www.zodiac-poolcare.com)





- Before you do anything with the device, it is vital that you read this installation and user manual, as well as the "warnings and warranty" booklet delivered with the device. Failure to do so may result in material damage or serious or fatal injury and will invalidate the warranty.
- Keep and pass on these documents for later consultation during the device's life time.
- It is prohibited to distribute or modify this document in any way without authorisation from Zodiac®.
- Zodiac® is constantly developing its products to improve their quality; therefore, the information contained in this document may be modified without notice.

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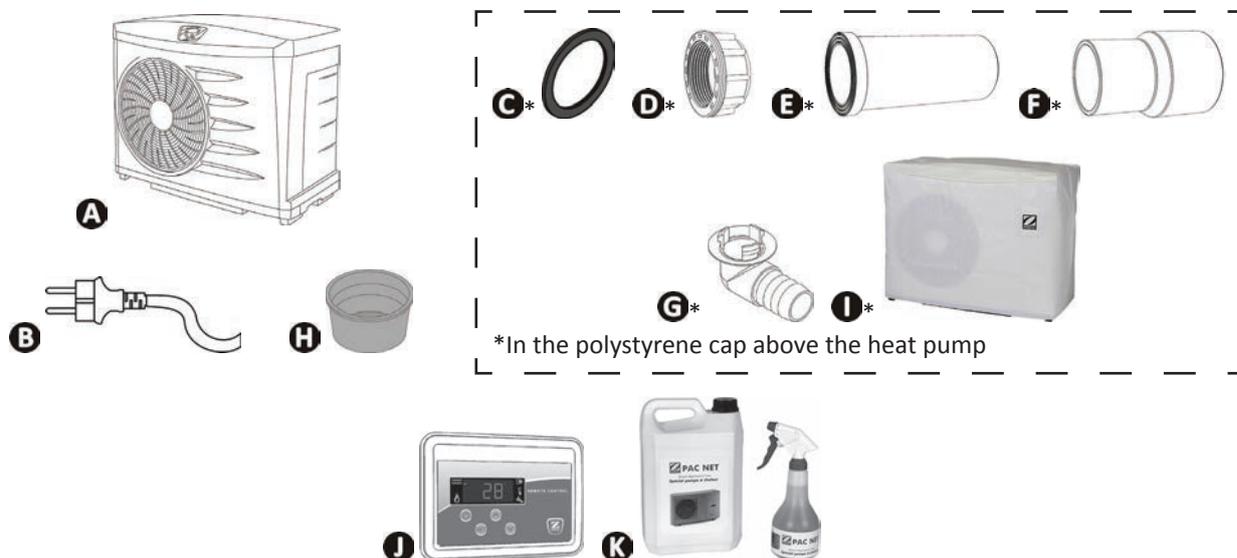
#### **Tip: to make it easier to contact your reseller**

- Write down your reseller's contact details to help you find them more easily and fill in the "product" information on the back of the manual; your reseller will ask you for this information.



# 1 Specifications

## 1.1 I Description



EN

A		Z200	PI20	Power	Everpac
B	Supply cable		✓ with plug except PI2051	✓ with plug except 11M	
C	Joint (x2)	✓	✓	✓	✓
D	Screw-in connector (x2)	✓	✓	✓	✓
E	Ø40 adaptation (x2)	✓	✓	✓	✓
F	Ø50 reduction (x2)	✓	✓	✓	✓
G	Condensation evacuation kit (Ø15)	✓	+	+	✓
H	Wintering cap (x2)	✓	✓	✓	✓
I	Wintering cover	✓	+	+	✓
	Heating priority	✓	Non compatible	Non compatible	✓
J	Remote control	+	Non compatible	Non compatible	+
K	PAC NET (cleaning product)	+	+	+	+

✓: supplied

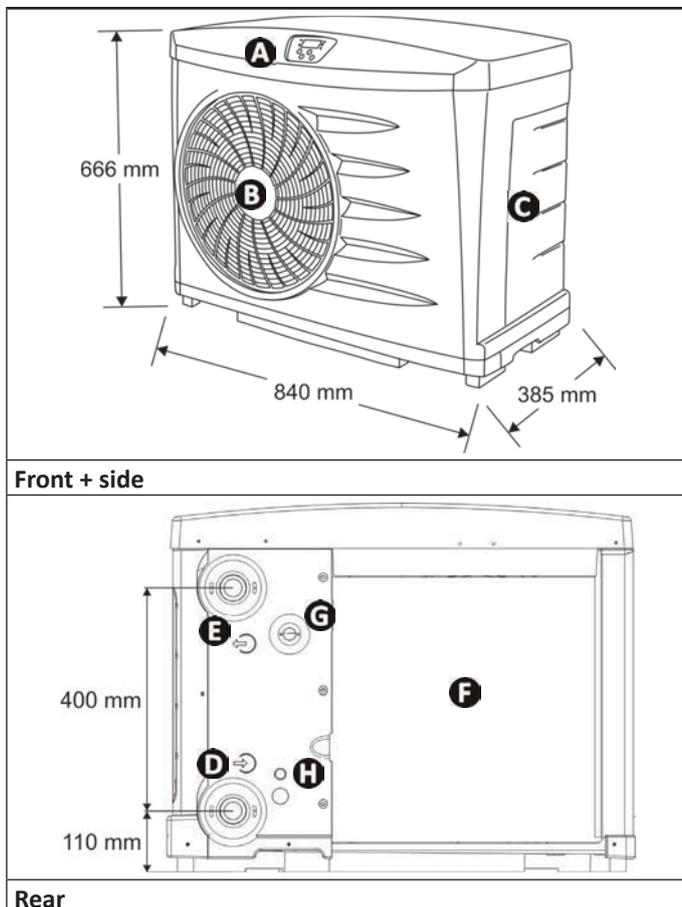
+: available as an accessory

## 1.2 I Technical specifications

Z200	M2	M3	M4	M5	
PI20	PI2021	PI2031	PI2041	PI2051	
Power	5M	7M	9M	11M	
Everpac	5M	7M	9M	/	
Operating temperature range	air	7 to 32°C			
	water	up to 32°C			
Voltage	230V-50Hz				
Acceptable variation in voltage	-10%, +7% (during operation)				
Nominal absorbed intensity	A	4.45	7.09	9.09	11.82
Maximum absorbed intensity	A	5.2	8.7	12.4	15.5
Minimum cable section*	mm <sup>2</sup>	3x1.5	3x1.5	3x2.5	3x2.5
		3G1.5	3G1.5	3G2.5	3G2.5
Proof pressure	bar	6			
Service pressure	bar	1.5			
Head loss	mCE	1	1	1.5	1.5
Minimum optimum water flow rate	m <sup>3</sup> /h	4	6	8	8
Maximum water flow	m <sup>3</sup> /h	10			

\* Values provided for information purposes for a maximum length of 20 metres (calculation base: NFC15-100), must be checked and adapted to the installation conditions and standards of the installation country.

## 1.3 I Dimensions and marking



- A**: User interface
- B**: Ventilator
- C**: Technical access door
- D**: Pool water intake
- E**: Pool water output
- F**: Evaporator
- G**: Grommet for heating priority cable run\*
- H**: Location for drilling for remote control cable run\*

\*depending on the model



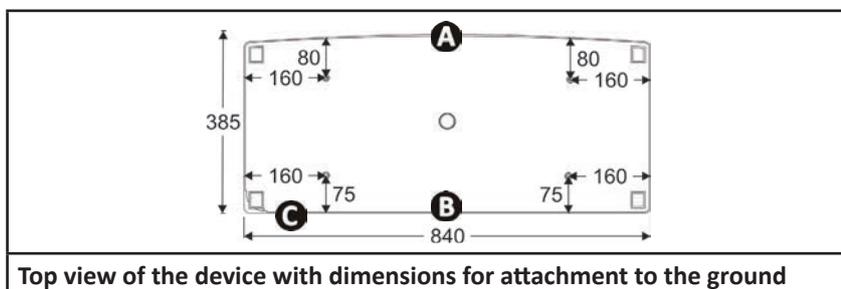
## 2 Installation

### 2.1 I Selecting the location



- Do not lift the device by the body; use its base.
- The device must be installed at a minimum distance from the pool's surrounding edge. This distance is determined by the electrical standards which apply in the installation country.

- Install the device outdoors; provide free space around it (see § “2.2 I Hydraulic connections”).
- Place the device on its anti-vibration studs (integrated under its base) on a stable, solid and level surface,
- This surface must be able to bear the weight of the device (in particular in the case of installation on a roof, a balcony or any other support).
- The device may be secured to the ground using the holes in the base of the device or with rails (not supplied). A drilling scale is available on the back of the packaging carton.



The device must not be installed:

- In a location subject to high winds,
- With the blowing towards a permanent or temporary obstacle (window, wall, hedge, awning, etc.) less than 3 metres away,
- Within range of water or mud jets, sprays or run-off (take the effect of the wind into account),
- Near a heat source or flammable gas,
- Near high frequency equipment,
- In a location where it would be subject to snow build-up,
- In a location where it might be flooded by the condensation produced by the device when operating.

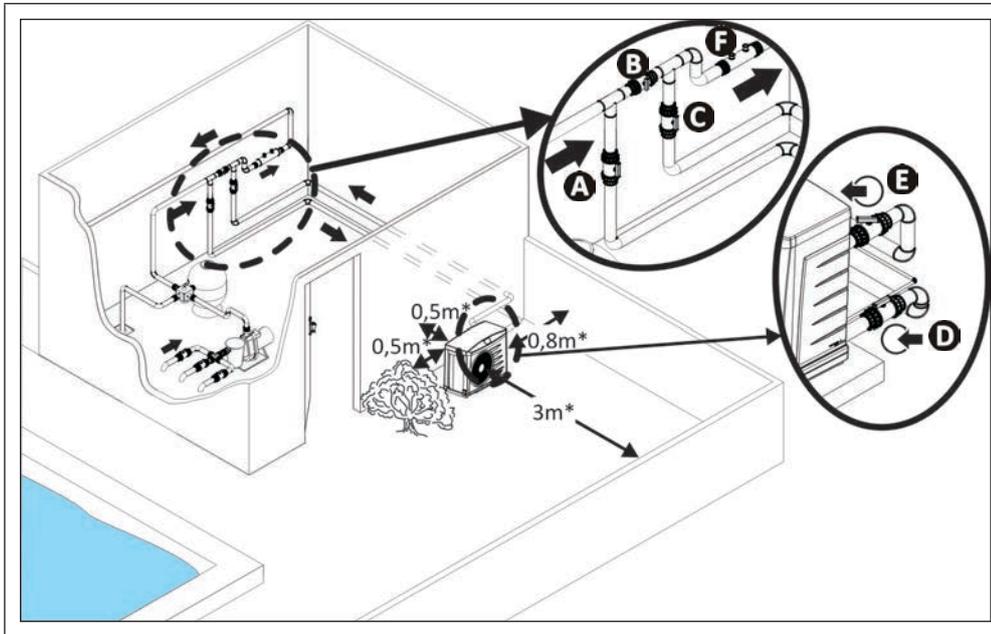


#### **Tips: reduce any noise annoyance from your heat pump**

- Do not install it under or towards a window.
- Do not tilt it towards your neighbours.
- Install it in a clear space (the sound waves are reflected on surfaces).
- Install an acoustic screen around the heat pump, respecting the distances.
- Install the anti-vibration studs under the heat pump and replace them regularly.
- Install 50cm of flexible PVC pipe at the heat pump water input and output (stops vibrations).

## 2.2 I Hydraulic connections

- The device will be connected with a  $\varnothing 40$  or  $\varnothing 50$  PVC pipe, using the connectors supplied (see § “1.1 I Description”), to the pool's filtration circuit, after the filter and before the water treatment.
- Respect the direction of hydraulic connection (  = input and  = output).
- A by-pass must be installed to make it easier to work on the device.



- A**: water entry valve
- B**: by-pass valve
- C**: water exit valve
- D**: water entry adjustment valve (optional)
- E**: water exit adjustment valve (optional)
- F**: water treatment

\* minimum distance

- To evacuate the condensation, fit a  $\varnothing 15$  pipe on the grooved elbow to be mounted under the device base (supplied according to model, see § “1.1 I Description”).



### **Tip: condensation drainage**

Caution, several litres of water must be drained from your device each day. We strongly recommend connecting the drainage to the sewers

## 2.3 I Electricity supply connections



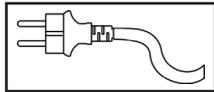
- Incorrectly tightened terminals may cause the terminal unit to heat up and invalidate the warranty.
- Before any work inside the device, you must cut the electricity supply as there is a risk of electric shock which may cause material damage, serious injury or even death.
- Only a qualified and experienced technician is authorised to carry out cabling in the equipment or to replace the supply cable.

- The heat pump's electrical supply must be provided through a protection and circuit breaking device (not supplied) complying with the standards and regulations in force in the country where it is installed,
- The device is provided for connection to a general power supply with a TT and TN.S neutral regime.
- Electrical protection: by circuit breaker (D curve) (for calibre, see § "1.2 I Technical specifications"), with a 30 mA dedicated differential circuit breaker (circuit breaker or switch) at the head of the line.
- The electricity supply must correspond to the voltage indicated on the device's information plate.
- The electricity supply cable must be insulated against any cutting or hot elements that may damage or crush it.
- The equipment must be connected to an earth socket.
- The electrical connection lines must be fixed.
- Use the gland to pass the supply cable into the device.
- Used the supply cable (RO2V type) adapted for outdoor or buried use (or run the cable into a protection duct).
- We recommend burying the cable at a depth of 50 cl (85 cm under a road or path) in an electrical duct (red ribbed).
- If this buried cable meets another cable or pipe (gas, water, etc.), there must be more than 20 cm between them.

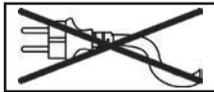
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Depending on the model, there are 2 ways to connect:

### Device equipped with a cable with plug (depending on model)

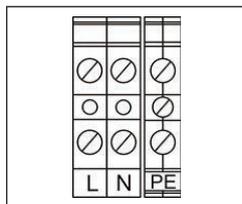


- Check that the supply cable is firmly attached to the connection terminal.
- All use of an extension cord or multisocket connection is prohibited.
- If the supply cable is not long enough, contact a qualified technician.
- Connect the supply cable delivered with the appliance to a 16A socket, according to the country's applicable standards and regulations.



### Device not equipped with a cable (depending on model)

- Connect the supply cable to the connection terminal unit inside the heat pump.



L: live

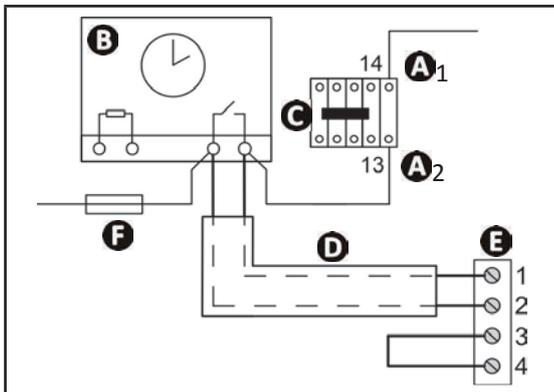
N: neutral

PE: earth

## ➤ 2.4 | Option connection

### 2.4.1 "Heating priority" option (depending on model)

- This function helps to keep the water temperature constant by checking the water temperature at regular time intervals (minimum 5 minute cycle every 220 minutes (modifiable time)) by filtration pump control. The filtration is kept operating while the pool temperature is below the temperature requested.
- For the connection, connect the filtration timer to terminals 1 and 2 and add a shunt between terminals 3 and 4.



- A1- A2** : power for the filtration pump power contactor coil
- B**: filtration timer
- C**: power contactor (tripolar or bipolar) for the filtration system pump motor
- D**: separate cable for the "heating priority" function
- E**: heat pump terminal (see wiring diagram § "5.3 | Wiring diagrams")
- F**: fuse

- Modification of the time between 2 filtration operations (value in number of minutes):
  - press and **SET** or **OK** at the same time for 3 seconds: SEL appears,
  - press until the POI parameter appears, then press **SET** or **OK** to change the parameter using the and keys.
  - Once the value has been modified, press **SET** or **OK** to confirm,
  - press to exit the menu.

### 2.4.2 "Remote control" option (depending on model)

- This option enables the device's user interface to be duplicated to enable the device to be controlled by remote. To do so, use the remote control kit available as an accessory.
- For the connection, consult the manual supplied with the kit.



## 3 Use

### 3.1 I Operating principle

Your heat pump uses the calories (heat) in the air to heat up your pool's water. The process to heat your pool's water to the temperature you want may take a few days as it depends on the weather conditions, your heat pump's power and the difference between the water temperature and the temperature you want.

The heat pump is ideal for maintaining temperature.

The warmer and damper the air, the better your heat pump will perform. The outdoor parameters for optimum operation are an air temperature of 27°C, a water temperature of 27°C and 80% hygrometry.

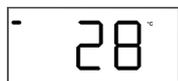
#### **Tips: improve your pool's temperature rise and maintenance**



- Anticipate the commissioning of your pool far enough in advance before you use it.
- For the temperature rise, set the filtration pump to continuous operation (24/24).
- To maintain the temperature throughout the season, run "automatic" circulation for at least 12 hours/day (the longer this time the longer the heat pump will have enough operating range to heat up).
- Cover the basin with a sheet (bubble canopy, canvas, etc.) to prevent heat loss.
- Take advantage of a period with mild outdoor temperatures (on average > 10°C at night); your heat pump will be even more effective if it runs during the warmest hours of the day.
- Keep the evaporator clean (see § "4.2 I Maintenance").
- Set the temperature you want and let the heat pump run (adjusting the setpoint to maximum will not heat the water more quickly).
- Connect the "Heating priority"; the filtration pump and heat pump operating time will be set according to requirements.

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### 3.2 User interface presentation



Display screen (default: setpoint temperature)



"On/off" button

**SET**

Pool water temperature reading or parameter setting button

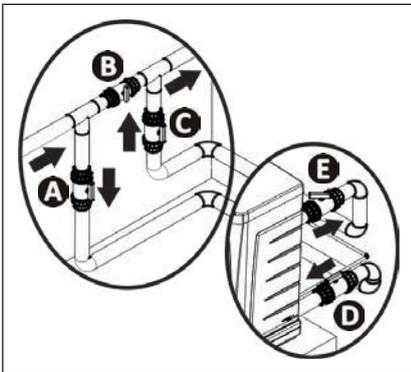


Value setting buttons

Symbol	Designation	Fixed	Flashing	Off
	Water flow	Water flow ok	Water flow too low or missing	/
	Heating	Active	starting	Inactive
	Ambient air temperature	Sufficient	Insufficient	/
	Priority heating connected	Priority heating connected and heating request	Priority heating connected but no heating request	Priority heating not connected
	Fault	Fault in progress, see § "5.2 I Error code display"	Heating priority connected, heating requested but water flow too low or missing	No fault

### ▶ 3.3 I Operating

- Check that there are no tools or other foreign objects in the machine.
- The panel that provides access to the technical section must be put in place.
- Set the valves as follows: valve B wide open, valves A, C, D and E closed



- A**: water entry valve
- B**: by-pass valve
- C**: water exit valve
- D**: water entry adjustment valve (optional)
- E**: water exit adjustment valve (optional)



- **An incorrect by-pass setting may cause the heat pump to malfunction.**

- Check that the hydraulic corrections are correctly tightened and that there are no leaks.
- Check that the device is fully stable.
- Set the water circulation running.
- Close valve B gradually so that the filter pressure is increased by 150g (0.150 bars).
- Open valves A, C and D fully then valve E by half (the air which has built up in the heat pump condenser and the filtration circuit will bleed out). If valves D and E are not present, open valve A wide and close valve C by half.
- Connect the power supply to the heat pump:

704

program version number (different according to model)

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Screen saver

Press and hold  for 2 seconds

888

Splash screen

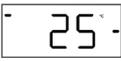
28

Temperature setpoint

- Device starts after a timer of up to 5 minutes,
- Set the temperature you want ("setpoint" temperature) by pressing  or .
- After the steps to start up your heat pump, stop the water circulation temporarily to check that your device stops after a few seconds (by activating the flow controller):  the water flow light must flash.

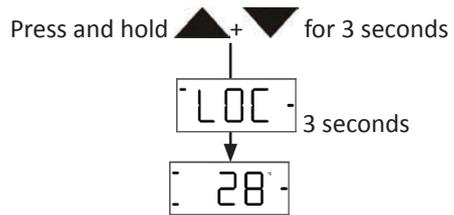
## ▶ 3.4 I User functions

### 3.4.1 Water temperature reading

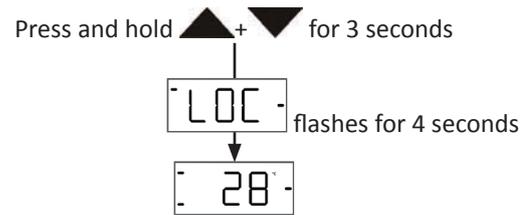
When the water is circulating through the heat pump, press **SET**:  flashes for 10 seconds then the setpoint temperature is displayed fixed.

### 3.4.2 Locking/unlocking the keyboard

#### Locking the keyboard



#### Unlocking the keyboard





## 4 Maintenance

### ➤ 4.1 I Wintering



- **Wintering is vital to prevent the condenser breaking due to freezing. This is not covered by the warranty.**
- **To avoid damaging the equipment with condensation, do not fully cover it.**

- Switch off the device by pressing and holding  for 2 seconds and disconnect it or switch off the electricity supply,
- Close the water input and output valves and make sure that there is no water circulating in the heat pump,
- Drain the water from the condenser (risk of freezing) by unscrewing the water input and output connectors on the back of the heat pump,
- In the case of full wintering for the pool (complete shutdown of the filtration system, bleed the filtration circuit or even pool drainage): tighten the two connectors by one turn to prevent any foreign bodies from getting into the condenser,
- In the case of wintering for the heat pump only (shutdown of the heating only, the filtration keeps running): do not tighten the connectors but add 2 caps (provided) on the condenser's water inputs and outputs.
- We recommend that you put the aired wintering micro cover on the heat pump.

### ➤ 4.2 I Maintenance



- **It is recommended that the device be general serviced at least on a yearly basis to ensure proper operation, maintain performance levels and prevent some potential failures. These operations are carried out at the user's expense, by a technician.**

#### 4.2.1 User maintenance

- Make sure that the filter is not blocked by any foreign bodies.
- Clean the evaporator (for location see § "1.3 I Dimensions and marking") using a soft brush and a fresh water spray (disconnect the power cable); do not fold over the metal wings, then clean the condensation drainage pipe to remove any impurities that may be blocking it.
- Do not use a high pressure jet. Do not spray with rain water, salt water or water which is full of minerals.
- Clean the outside of the device; do not use any solvent-based products. We can provide you with a specific cleaning kit as an accessory: the PAC NET, see § "1.1 I Description".

#### 4.2.2 Maintenance to be carried out by a qualified technician

- Check that the regulation is operating correctly connected.
- Check that the condensation flows correctly when the device is operating.
- Check the safety mechanisms.
- Check the connection of the metal masses to the earth.
- Check that the electrical cables are correctly tightened and connected and that the electrical unit is clean.



## 5 Troubleshooting



- Before you contact your reseller, please carry out these few simple checks using the following tables if a problem occurs.
- If the problem continues contact your reseller.
-  : Actions reserved for a qualified technician

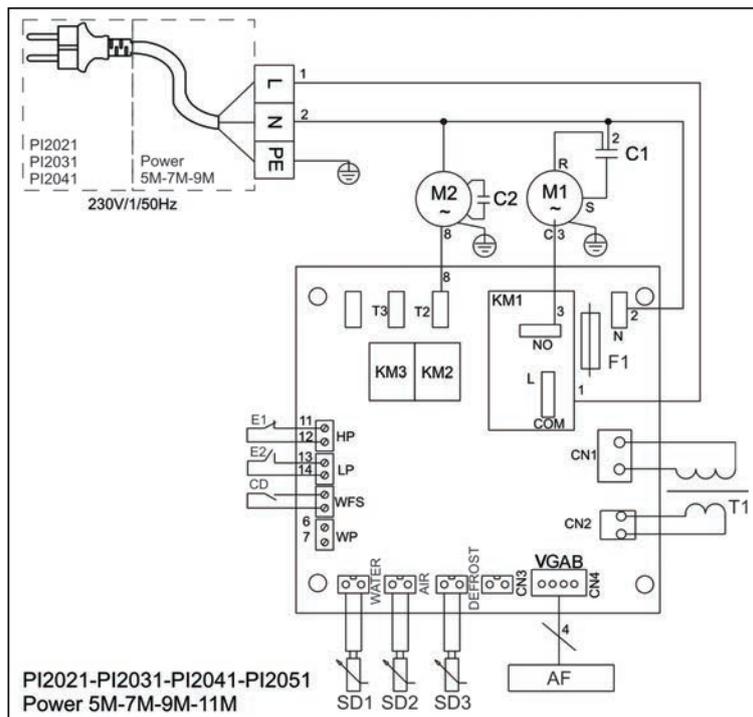
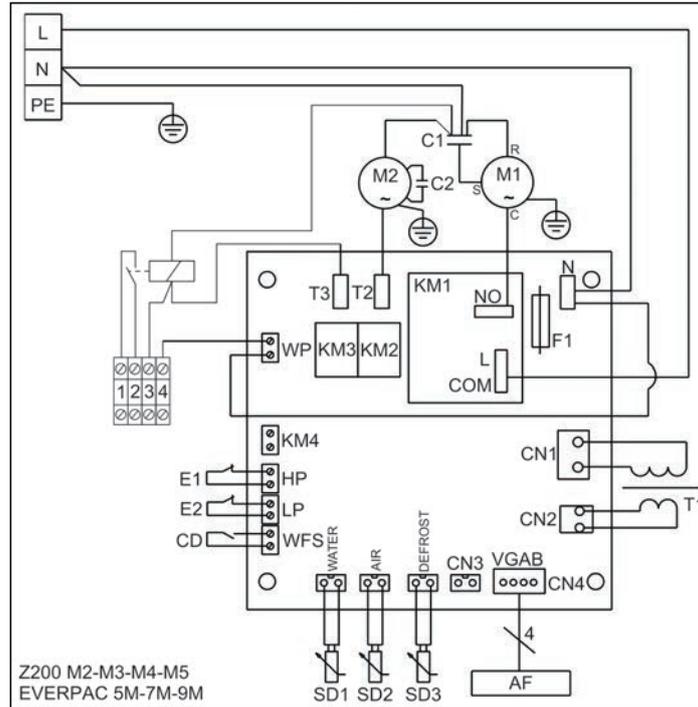
### 5.1 I Device behaviour

The device does not start heating straight away	<ul style="list-style-type: none"> <li>• On start-up, the device remains "paused" for 5 minutes before it starts operating.</li> <li>• When the setpoint temperature is reached, the heat pump stops heating: the water temperature is higher than or equal to the setpoint temperature.</li> <li>• When the water flow rate is zero or is not enough, the heat pump stops: check that the water is circulating correctly in the heat pump and that the hydraulic connections are correct.</li> <li>• The heat pump stops when the outdoor temperature falls below 7 °C.</li> <li>• It may be that the heat pump has detected an operating fault (see § "5.2 I Error code display").</li> <li>• If you have checked these points and the problem persists: contact your reseller.</li> </ul>
The device is draining water	<ul style="list-style-type: none"> <li>• Often called condensation, this water is the moisture contained in the air which condenses on contact with certain cold mechanisms in the heat pump, especially on the evaporator. The more damp the air, the more condensation your heat pump will produce (your device may drain several litres of water per day). This water is retrieved by the base of the heat pump and drained through a hole.</li> <li>• To check that the water is not coming from a leak in the pool circuit on the heat pump, shut down the heat pump, wait a few minutes and run the filtration pump for the water to circulate in the heat pump. If the water continues to flow through the condensation drain, there is a water leak in the heat pump; contact your reseller.</li> </ul>
The evaporator is iced over	<ul style="list-style-type: none"> <li>• Your heat pump will soon switch to its defrost cycle to melt the ice.</li> <li>• If your heat pump cannot manage to deice its evaporator, it will stop itself; this means that the outdoor temperature is too low (below 7°C).</li> </ul>
The device is not working	<ul style="list-style-type: none"> <li>•  If there is no display, check the supply voltage and the F1 fuse.</li> <li>• When the setpoint temperature is reached, the heat pump stops heating: the water temperature is higher than or equal to the setpoint temperature.</li> <li>• When the water flow rate is zero or is not enough, the heat pump stops: check that the water is circulating correctly in the heat pump.</li> <li>• The heat pump stops when the outdoor temperature falls below 7 °C.</li> <li>• It may be that the heat pump has detected an operating fault (see § "5.2 I Error code display").</li> </ul>
The device is working but the water temperature does not increase	<ul style="list-style-type: none"> <li>• It may be that the heat pump has detected an operating fault (see § "5.2 I Error code display").</li> <li>• Check that the automatic filling valve is not stuck in open position; this will keep supplying cold water into the pool and will prevent the temperature from rising.</li> <li>• There is too much heat loss as the air is cool. Install a heat insulated cover on your pool.</li> <li>• The heat pump is unable to capture enough calories as its evaporator is clogged with dirt. Clean it to restore its performances (see § "4.2 I Maintenance").</li> <li>• Check that the external environment is not hindering the heat pump (see § "2 Installation").</li> <li>•  Check that the heat pump is the right size for this pool and its environment.</li> </ul>
The ventilator is running but the compressor stops from time to time with no error message	<ul style="list-style-type: none"> <li>• If the outdoor temperature is low, the heat pump will perform defrost cycles.</li> <li>• The heat pump is unable to capture enough calories as its evaporator is clogged with dirt. Clean it to restore its performances (see § "4.2 I Maintenance").</li> </ul>
The device trips the circuit breaker	<ul style="list-style-type: none"> <li>•  Check that the circuit breaker is correctly dimensioned and that the cable section used is the right one (see § "1.2 I Technical specifications").</li> <li>•  The supply voltage is too low; contact your electricity supplier.</li> </ul>

## 5.2 I Error code display

Display of	Possible causes	Solutions
<div style="border: 1px solid black; padding: 2px; display: inline-block;">E02</div> Air temperature sensor fault	SD2 sensor is offline or incorrectly connected	 Sensor replacement
<div style="border: 1px solid black; padding: 2px; display: inline-block;">E03</div> Deicing sensor fault	SD3 sensor is offline or incorrectly connected	 Sensor replacement
<div style="border: 1px solid black; padding: 2px; display: inline-block;">E04</div> Low-pressure fault	Low pressure fault in the cooling circuit (if fault persists after acknowledgement)	 Call an approved technician
<div style="border: 1px solid black; padding: 2px; display: inline-block;">E05</div> High-pressure fault	Air and water emulsion passed into the device	Check the pool's hydraulic circuit
	Insufficient water flow	Increase flow using by-pass, check that the pool filter is not clogged
	Water temperature too high (32°C maximum)	Wait until the temperature falls
	Flow controller blocked	 Check the flow controller
	Water condenser scaled up or blocked	 Clean the water condenser
<div style="border: 1px solid black; padding: 2px; display: inline-block;">E06</div> Water temperature sensor fault	SD1 sensor is offline or incorrectly connected	 Sensor replacement
<div style="border: 1px solid black; padding: 2px; display: inline-block;">E07</div> Deicing cycle fault (>20 minutes)	Air temperature too low	Wait until the temperature is within the operating range
	The evaporator is scaled up	Clean the evaporator (see § "4.2 I Maintenance")
	The ventilator does not work	 Replace the ventilator or the electronic board
	Wrong value provided by the air or deicing sensor	 Replace the sensor.

### 5.3 I Wiring diagrams



L-N-PE	230V-1N-50Hz protected power supply
AF	Digital display
	Earth
C1	Compressor condenser
C2	Ventilator condenser
CD	Flow controller
E1	High pressure switch
E2	Low pressure switch
F1	Fuse
KM1	Compressor relay

KM2	Ventilator relay
KM3	Auxiliary pump relay
KM4	Complementary relay
M1	Compressor
M2	Ventilator
SD1	Water temperature sensor
SD2	Air temperature sensor
SD3	Defrost sensor
T1	Transformer
1-2-3-4	Terminal for heating priority connection

Votre revendeur  
*Your retailer*

Modèle appareil  
*Appliance model*

Numéro de série  
*Serial number*


Trouvez plus d'informations et enregistrez votre produit sur  
*More informations and register you product on*

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