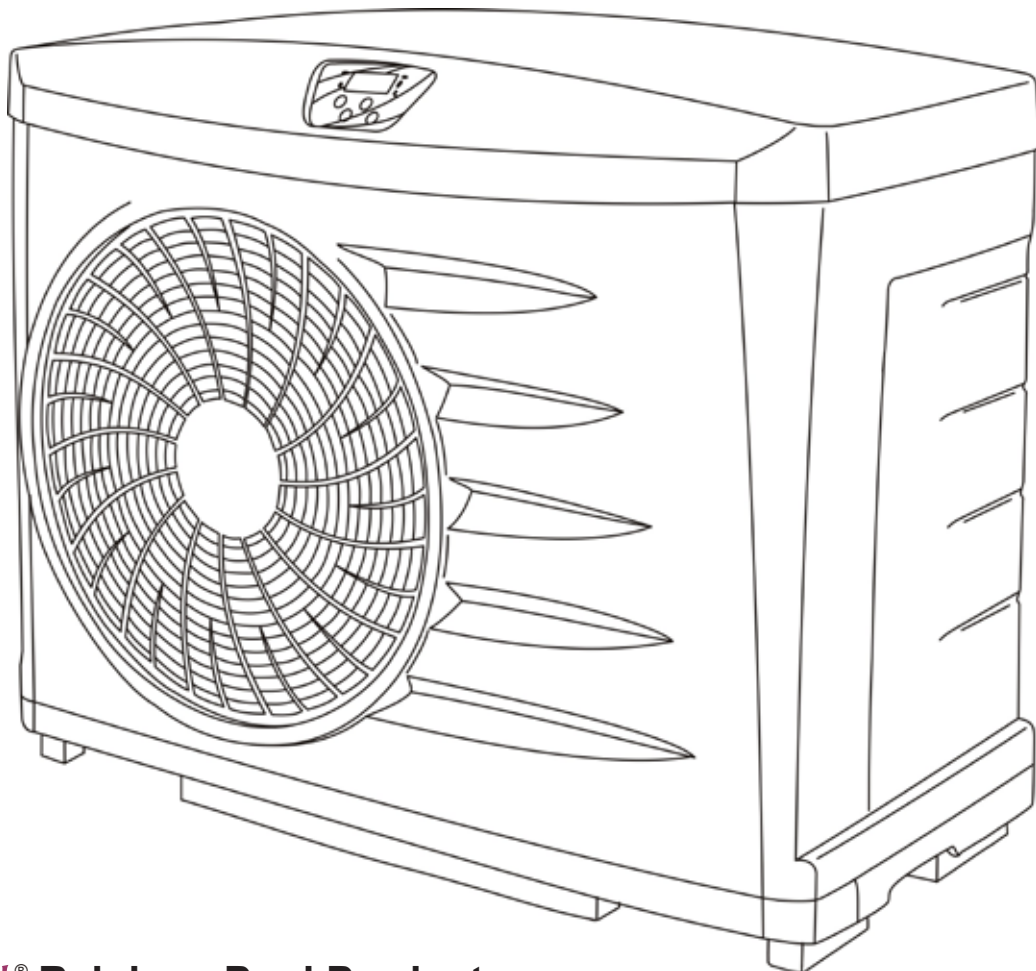


Z200

Instructions for installation



Rainbow Pool Products

PO Box 2388, Mansfield Qld 4122

Telephone STD 61-7-3849 5385

Facsimile STD 61-7-3849 5384

Email: info@rainbowpoolproducts.com.au

Web: www.rainbowpoolproducts.com.au

• Read this notice carefully before installing, maintaining or repairing this appliance!

• The symbol  indicates important information that you must take into account to avoid the risk of damage to persons or the appliance.

• The symbol  indicates useful information as an indication.



Warning

- As part of a continuous improvement process our products may be modified without prior notice.
- Exclusive use: the heating of pool water (must not be used for any other purpose),
- The appliance must be installed by a qualified technician, in compliance with the manufacturer's instructions and in compliance with current local standards. The installer is responsible for the installation of the appliance and compliance with local regulations in matters of installation. Under no circumstances can the manufacturer be held liable in the event that local installation standards are not respected.
- Incorrect installation may cause damage to property or serious injuries (possibly causing death),
- It is important that this appliance be handled by skilled and apt persons (physically and mentally) having received the instructions for use beforehand (by reading these instructions). All persons not meeting these criteria must not approach the appliance in order to avoid exposure to dangerous elements.
- Wiring and installation must be carried out in accordance with local and federal regulations regarding the installation of an electrical device in relation to the pool with an IP24 rating.
- If the appliance suffers a malfunction: do not try to repair the appliance yourself, contact your reseller,
- Before any intervention on the appliance, make sure it has been powered off and locked out, and that heating priority has been deactivated.
- Before any operations check that:
 - the voltage indicated on the appliance plate corresponds to the mains voltage,
 - the power supply is suitable for use with a heat pump, and that it has a ground connection.
- Eliminating or shunting any safety devices automatically voids the warranty, as does the replacement of parts using parts not originating from our warehouses,
- Keep the appliance out of the reach of children,
- Do not release R410A coolant liquid into the atmosphere. This is a fluoride greenhouse effect gas covered by the Kyoto agreement with a global warming potential (GWP) = 1975.
- This heat pump is compatible with all types of water treatment.



Additional recommendations relative to pressurised appliances (PED-97/23/EC)

Installation and maintenance

- It is prohibited to install the appliance close to combustible materials or close to the air intake on an adjacent building.
- For some appliances it is imperative to use the protection grate accessory if the installation is located in an unregulated access area.
- During installation, repair, or maintenance operations it is prohibited to use piping as a step ladder: under stress the piping could rupture and the coolant could cause serious burns.
- During maintenance of the appliance the composition and condition of the heat transporting fluid will be checked as will the absence of traces of coolant.
- During the annual appliance seal inspection in compliance with applicable regulations, check that the high and low pressure switches are correctly connected to the refrigeration circuit and that they cut the electric circuit when triggered.
- During the maintenance phase make sure there are no traces of corrosion or oil stains around the refrigerating components.
- Before any operations on the refrigerating circuit it is imperative to shut down the appliance and to wait a few minutes before fitting temperature or pressure sensors. Some equipment such as the compressor and piping can reach temperatures in excess of 100°C and high pressures which can cause serious burns.



Repairs

- All welding operations are to be carried out by qualified welders
- Piping can only be replaced using copper tube in compliance with NF EN 12735-1 standard.
- Leak detection, pressure test:
 - never use oxygen or dry air, there is a risk of fire and explosion,
 - use dehydrated nitrogen or a mixture of nitrogen and the coolant indicated on the identification plate,
 - the test pressure on the low and high pressure sides must not exceed 42 bar.
- For the high pressure circuit piping using copper pipes of a diameter = or > than 1''5/8, a §2.1 certificate under standard NF EN 10204 is to be requested from the supplier and kept with the installation technical documents.
- The technical information relative to the safety requirements for the different applicable directives is indicated on the identification plate. All this information must be recorded on the appliance installation manual which must be part of the installation technical file: model, code, serial number, maximum and minimum service voltage and service pressure, year of manufacture, CE marking, manufacturer's address, coolant type and weight, electric parameters, thermodynamic and acoustic performances.

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Are available in the appendices at the end of these instructions:

- Electric Diagram
- Size
- Description

1. Information before installing

1.1 General delivery terms and conditions

Ensure the unit is delivered in an upright position and avoid tipping over.

1.2 Technical specifications

Z200		M3 [^]	M4 [^]	M5
Single phased voltage	230V-50Hz			
Input power*	kW	1.56	2	2.6
Rated input intensity*	A	7.09	9.09	11.82

* with surrounding air temperature at 15°C and pool water at 24°C, humidity level 70%

[^] Factory fitted with cord and plug (Australian customers only)

- Operating temperatures: from 7 to 32°C air and up to 32°C water

2. Installation



Do not lift the appliance using the casing, handle it from the base.

2.1 Selection of the location

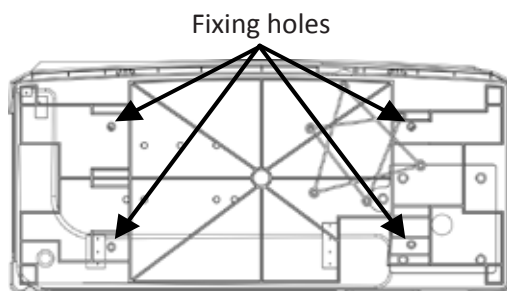


The appliance must be installed outside and be surrounded by free space (see §2.3).

- **the heat pump must be installed** at a minimum distance of 3.5m from the edge of the pool in order to avoid any projections of spray onto the appliance. This distance is determined by the electric standards applicable locally.
- **the heat pump must not be installed:**
 - close to a heat source or to a source of inflammable gas,
 - close to a road with a risk of water or mud being sprayed,
 - facing strong winds,
 - with the blower facing a permanent or temporary obstruction (window, wall, hedge, etc.) less than 3 metres away.

2.2 Installing the appliance

- **install on a stable, solid surface** which is level,
- protect from risks of flooding due to condensates from the appliance when it is running.



The anti-vibration pads are built into the heat pump base.

The appliance can be fixed to the ground using the holes in the appliance base, or using rails (not supplied).

A drilling diagram is available on the back of the packaging box.



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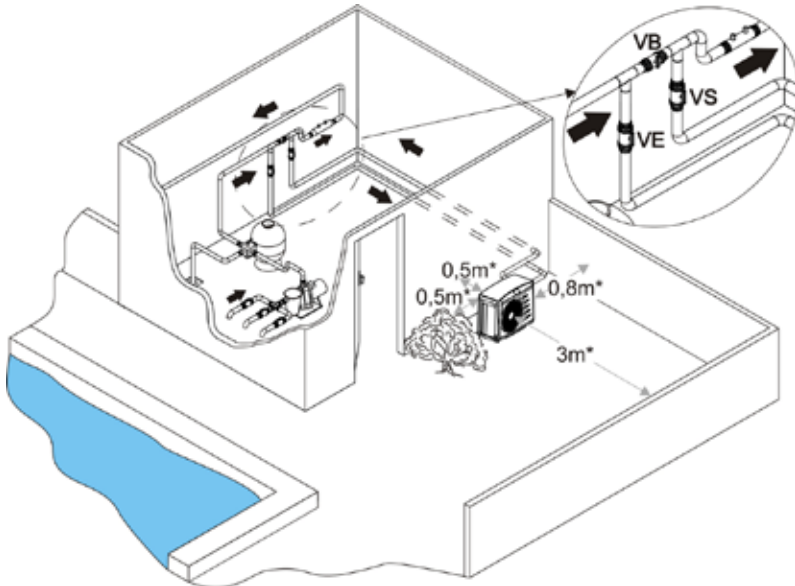
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2.3 Hydraulic connections



VE: water intake valve
 VB: by-pass valve
 VS: water output valve
 * minimum distance

Z200		M3	M4	M5
Test pressure	bar	6		
Service pressure	bar	1.5		
Load loss	mCE	1	1.5	1.5
Water flow optimum	m ³ /h	6	8	8
Water flow minimum	m ³ /h	8		
Water flow maximum*	m ³ /h	10		

* rate not to be exceeded

Follow the hydraulic connection direction (see § «Sizes» in the appendix).

- The connection will use Ø50 piping, or Ø40 using the supplied adapter (see §1.2), use the half-union fittings to connect to the pool filtering circuit, after the filter and before water treatment.
- Installing a by-pass is mandatory and facilitates operations on the appliance.
- Adjust the water flow using valve VB, and leave valves VE and VS open.
- Make sure the hydraulic fittings are correctly tightened and that there are no leaks.

i Condensate drainage: warning, your appliance can release several litres of water per day; it is highly recommended to connect the drainage to the drains.
 Connect an interior Ø15 pipe (not supplied) to the corrugated angle to be fitted under the appliance base (supplied, see §1.2).

2.4 Electric connections

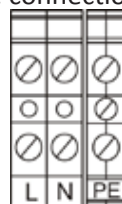
2.4.1 Voltage and protection

- The appliance is designed for connection to mains electricity using a neutral TT and TNS wiring,
- Electric protection: using a circuit breaker (D curve) (see § 2.4.3 for ratings), with a 30 mA ground fault circuit breaker at the head of the line (circuit breaker or switch).

i Acceptable voltage variation: -10%, +7% (while running).

2.4.2 Connections

- Check the strength of the power supply cable on the connection terminal block



phase (L) + neutral (N) + earth (PE)

!

- Loose terminals can cause the terminal block to heat and lead to the warranty being voided.
- It is imperative to connect the appliance to an earth rod.
- Risk of electric shocks inside the appliance.
- Only a qualified and experienced technician is authorised to wire inside the appliance.
- If the power supply cable is damaged it should be replaced by a qualified technician.

2.4.3 Cable size

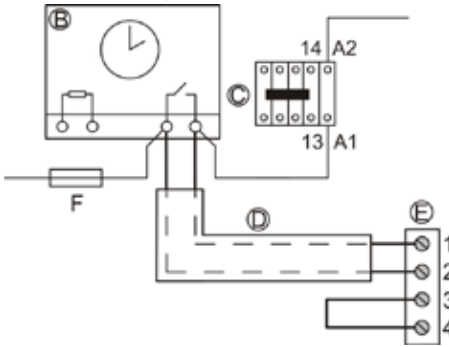
- Power supply cable and plug are factory fitted for models M3 and M4 for Australian customers. For other models and other regions the table provided below indicates the requirements for cabling: for a maximum length of 20 metres (calculation on the basis of: NFC 15-100), must be checked and suitable for the installation conditions.

Z200	Voltage	I Maximum absorbed	Minimum cable section		Electric protection
		A	mm ²		A
M3	230V-50Hz	8.7	3x1.5	3G1.5	16
M4	230V-50Hz	12.4	3x1.5	3G1.5	20
M5	230V-50Hz	15.5	3x2.5	3G2.5	20

2.4.4 Connecting options

Heating priority:

- Function: control system to run the filtration pump (per cycle of 5 minutes minimum every 220 minutes (modifiable, see §2.3), with the filtration running if the pool temperature is lower than the set point temperature).
- To connect, connect the filtration timer to terminals 1 and 2, add a shunt in between terminals 3 and 4.



- A1-A2 : power for the power switch coil of the filtration pump
- B : Filtration timer
- C : power switch (three-pole or two-pole), powering the filtration pump motor
- D : independent connexion cable for the “heating priority” function
- E : heat pump terminal box
- F : fuse

Remote control module:

- The unit has the option of remote line control function.
- Function: to control the heat pump operation from a distance.
- For connection see the remote control module manual.

3. Use

3.1 Presentation of the regulation









Symbol	Meaning	Fixed	Flashing	Off
	Water flow	Water flow correct	Water flow too low or absent	/
	Heating	Active	Starting up	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 detected, see §5	External pump or heating priority connected, running to reach set point but water flow too low or missing	No fault
	«On/Off» button			
SET	Pool water temperature reading and parameter setting button			
	Value adjustment buttons			

3.2 Checks before commissioning


- Correct tightening of hydraulic fittings,
- Good stability (appliance level and vertical),
- The electric power supply cable must be isolated from all sharp or hot elements that could damage or crush it.

3.3 Starting up the appliance

- Start up water circulation and adjust the valves (see §2.3),
- Connect the heat pump electricity supply: (programme version n° different depending on the model) then ,
- **Powering on:** press for 2 seconds: then by default the screen displays the set point temperature,
- The appliance starts after a timer that can last up to 5 minutes,
- **Set the required temperature** (so-called «set point»): when the heat pump is running, press or to set the temperature.
- **Water temperature reading:** when water is flowing through the heat pump, press **SET**: flashes 10 seconds then the fixed temperature set point is displayed,

- Possibility of locking the keyboard:
 - Keyboard lock: press ▲ and ▼ at the same time for 3 seconds:  appears for 3 seconds, then: .
 - Unlocking the keyboard: press ▲ and ▼ at the same time for 3 seconds:  flashes for 4 seconds, then: .
- Changing the time between 2 filtration cycles for the “heating priority” function (value in number of minutes):
 - press  and **SET** simultaneously for 3 seconds:  is displayed,
 - press ▲ until  is displayed, then press **SET** to change the setting using the ▲ and ▼ keys.
 - once the desired value is reached, press **SET** to validate,
 - press  to exit the menu.


3.4 Checks to carry out once the appliance is running

After the heat pump commissioning steps, temporarily shut off the water flow to check that your appliance shuts down after a few seconds (by triggering the flow meter): the water flow  indicator should flash.

3.5 Wintering



Wintering is imperative, In temperatures below 0°C failure to do so exposes the condenser to a risk of freezing, this situation is not covered by the warranty. To avoid condensation damaging the appliance, do not cover it hermetically.

- Power off the heat pump by pressing  for 2 seconds and then disconnect it from the power supply,
- Make sure there is no water flow in the heat pump,
- Drain the water condenser (risk of freezing) by unscrewing the two pool water intake and discharge fittings behind the heat pump,
- In the event of full pool wintering: screw the two fittings back on a full turn to avoid foreign bodies from entering the condenser,
- If wintering the heat pump only: do not screw the fittings back on, instead fit 2 caps (supplied) to the condenser water intake and discharge.
- Install a micro ventilated wintering cover on the heat pump.

4. Maintenance

4.1 Maintenance instructions



It is recommended to carry out general servicing of the appliance on wintering and recommissioning (at least once per year), in order to check it is in good working order and maintain its performances, as well as to prevent certain possible defects. These actions are the user’s responsibility and must be carried out by a technician. Do not use high pressure cleaners.

- Make sure that no foreign bodies block the ventilation grate.
- Clean the evaporator (for the location see § «Size» in the appendices) using a flexible brush and a clean water hose (disconnect the power supply), do not bend the metal heat sinks, clean the condensate drainage pipe to remove any dirt that may be obstructing it.
- Clean the outside of the appliance, do not use solvent based products,
- Check that the controller is in working order.
- Check that the condensates are draining correctly when the appliance is running.
- Check the safety devices.
- Check that metal casing is connected to the earth.
- Check the tightness of the electric wire connections and the cleanliness of the control box.

4.2 Recycling



This symbol means that your appliance must not be disposed of as household waste. It will be subject to selective waste sorting with a view to its reuse, recycling or sale. If it contains substances that are potentially harmful to the environment, they will be eliminated or neutralised.

Ask your reseller for information about recycling.

5. Troubleshooting

5.1 Displays

Symbol	Meaning	Cause	Solution
E02	Air temperature sensor fault	Sensor out of order or incorrectly connected	Replace the sensor, contact your reseller or a qualified technician
E03	Defrosting sensor fault	Sensor out of order or incorrectly connected	Replace the sensor, contact your reseller or a qualified technician
E04	Low pressure fault	Low pressure fault in the cooling circuit (if fault persists after acknowledgement)	Contact your reseller or a qualified technician
E05	High pressure fault	<ul style="list-style-type: none"> Water and air mixture passing in the appliance, Unsatisfactory water flow, Blocked flow controller Clogged or blocked heat exchanger Water temperature too high (32°C maximum) 	<ul style="list-style-type: none"> Check the pool hydraulic circuit Increase the flow-rate using the by-pass, check that the pool filter is not clogged) Check the flow-rate controller Clean the exchanger If the defect persists, contact an approved technician Wait for the temperature to drop
E06	Water temperature sensor fault	Sensor out of order or incorrectly connected	Replace the sensor, contact your reseller or a qualified technician
E07	Defrosting cycle fault (>20 minutes)	<ul style="list-style-type: none"> Air temperature too low The ventilator is out of order The evaporator is dirty Wrong value provided by the air or deicing sensor 	<ul style="list-style-type: none"> Wait for the temperature to come within the operating range Contact your reseller or a qualified technician Clean the evaporator (see §4.1) Contact your reseller or a qualified technician

5.2 Appliance malfunctions

Malfunction	Possible causes	Solutions
The appliance is out of order	<ul style="list-style-type: none"> No display The pool temperature is above the set point temperature There is a message on the screen Water flow absent or incorrect The air temperature is too low 	<ul style="list-style-type: none"> Check the power supply voltage and fuse F1 Increase the set point temperature Check the meaning of the message in §5.1 Check the water flow (by-pass, filtering) Wait until the air temperature returns to within the operating range
The appliance is working but the water temperature does not rise	<ul style="list-style-type: none"> Insufficient filtering time Usage period not compliant The heat pump is undersized The automatic pool filling is blocked in the open position The heat insulated cover is not used The evaporator is dirty The appliance is incorrectly located There is a message on the screen 	<ul style="list-style-type: none"> Switch the filtering to manual 24h/24 for the temperature rise Check that the outside temperature is compliant with the operating range (see §1.3) Check the heat pump specifications for the pool Check that automatic filling is in working order Position the heat insulated cover Clean the evaporator (see §4.1) The appliance must be installed outside. Check that there are no obstacles at less than 3 metres from the blower, and 0.50 metres behind the heat pump (see §2) Check the meaning of the message §5.1
The ventilator is running but the compressor stops from time to time without any error messages	<ul style="list-style-type: none"> The heat pump occasionally performs defrosting cycles The evaporator is dirty 	<ul style="list-style-type: none"> Normal if the outside temperature is less than 12°C Clean the evaporator
The heat pump is tripping the circuit breaker	<ul style="list-style-type: none"> The circuit breaker is incorrectly or wrongly sized The cable size is undersized The supply voltage is too low 	<ul style="list-style-type: none"> Check the circuit breaker (see § 2.4.3) Check the cable size (see §2.4.3) Contact your electricity supplier

5.3 FAQ

Is it possible to improve the temperature rise?	To improve the efficiency of your heat pump it is recommended to:	<ul style="list-style-type: none"> • Cover the pool using a cover (bubble cover, shutter, etc.) to avoid heat losses. • Take advantage of a period when outside temperatures are warm (on average > 10 °C at night), to guarantee easier temperature rises (this can take several days, its duration can vary depending on weather conditions and the heat pump sizing). • Keep the evaporator clean.
	Check that the filtering time is sufficient	<ul style="list-style-type: none"> • During the temperature rise phase, water circulation must be continuous (24*7). • To maintain the temperature throughout the season, switch to «automatic» circulation at least 12h/day (the longer this period, the more the heat pump will have a sufficient operating range to warm).
	Setting the set point to the maximum will not heat the water quicker.	
Why doesn't my heat pump heat?	<ul style="list-style-type: none"> • On start-up the appliance stays in «pause» for 30 seconds before starting: check that this time has elapsed. • When the set point temperature is reached, the heat pump stops heating: check that the water temperature is less than the set point (see §3.3) • When the water flow is nil or insufficient, the heat pump stops: check that the water is flowing correctly through the heat pump and that the hydraulic fittings have been installed correctly. • When the outside temperature drops below 7°C, the heat pump stops: check the outside temperature. • The heat pump may have detected an operating fault: check for a code displayed on the screen, if there is one refer to §5.1. • If these points have been checked and the problem persists: contact your reseller. 	
My appliance is draining water: Is this normal?	<ul style="list-style-type: none"> • Your appliance drains water in the form of condensates. This water is the humidity from the air that condenses when in contact with some of the cold components of the heat pump. • Warning: your appliance can drain several litres of water per day. 	
Where should my water treatment system be located relative to the heating system?	<ul style="list-style-type: none"> • The water treatment system (chlorinator, salt water chlorinator, etc.) must be installed preferably downstream from the heat pump (see location §2.3) and be compatible with it (contact the manufacturer) 	

6. Registering the product

Register your product on our website:

- be the first to be informed of new Zodiac® products and special offers,
- help us to constantly improve our product quality.

For Australia/NZ/Oceania - www.zodiac.com.au



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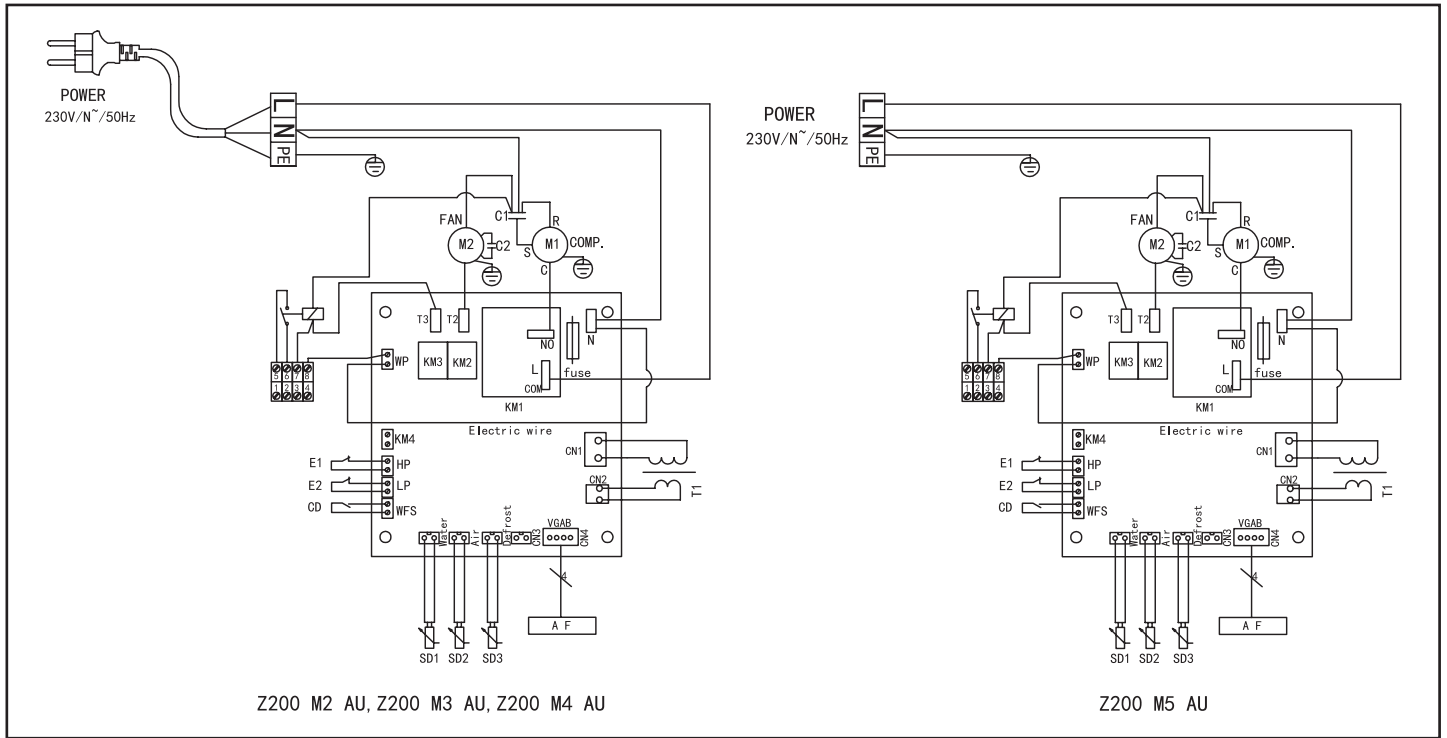
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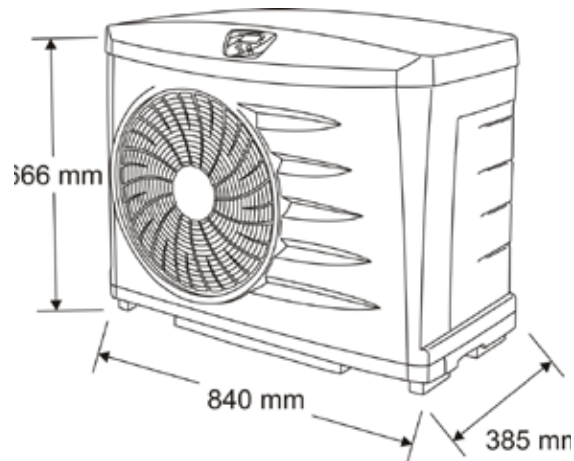
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Electric diagram



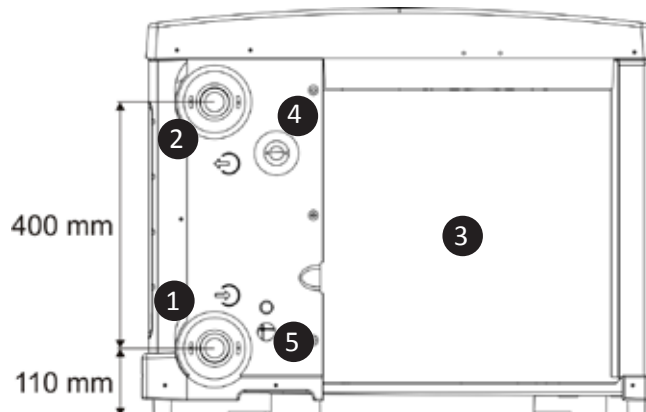
L-N-PE	Protected power supply 230V-1N-50Hz
AF	Digital display
⊥	Earth
C1	Compressor capacitor
C2	Fan capacitor
CD	Flow rate controller
E1	High pressure switch
E2	Low pressure switch
F1	Fuse
KM1	Compressor relay
KM2	Fan relay
KM3	Auxiliary pump relay
KM4	Complementary relay
M1	Compressor
M2	Fan
SD1	Water temperature sensor
SD2	Air temperature sensor
SD3	Defrost sensor
T1	Transformer
1-2-3-4	Connector terminal for connecting heating priority

Dimensions



Z200	Weight (Kg)
M3	45
M4	50
M5	53

Description



	English
1	Pool water inlet
2	Pool water outlet
3	Evaporator
4	Location for drilling for priority heating cable run
5	Location for drilling for remote control cable run



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