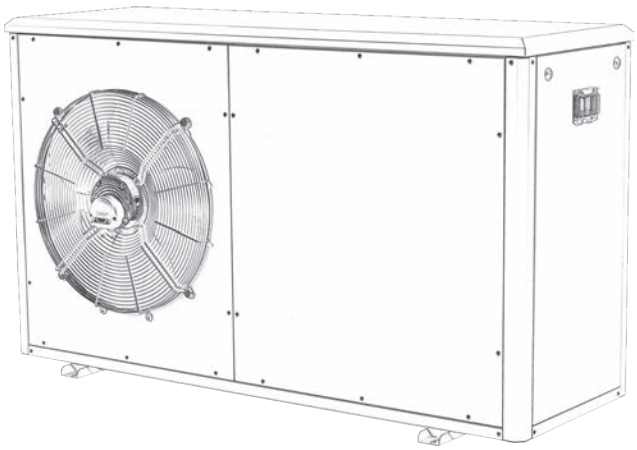
Z700 DUO

Instructions for installation and use - English
Heat pump
Translation of the original instructions in french

EN



More documents on:
www.zodiac.com

H0590900_REVA - 2018/04

WARNINGS

GENERAL WARNINGS

- Failure to respect the warnings may cause serious damage to the pool equipment or cause serious injury, even death.
- Only a person qualified in the technical fields concerned (electricity, hydraulics or refrigeration) is authorised to perform this procedure. The qualified technician working on the appliance must use/wear personal protective equipment (such as safety goggles and protective gloves, etc.) in order to reduce the risk of injury occurring when working on the appliance.
- Before handling the machine, ensure that it is switched off and isolated.
- The appliance is intended to be used for pools and spas for a specific purpose; it must not be used for any purpose other than that for which it was designed.
- This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.
- Keep the appliance out of the reach of children.
- The appliance must be installed according to the manufacturer's instructions and in compliance with local standards. The installer is responsible for installing the appliance and for compliance with national installation regulations. Under no circumstances may the manufacturer be held liable in the event of failure to comply with applicable local installation standards.
- For any work other than the simple user maintenance described in this manual, the product should be referred to a qualified professional.
- Incorrect installation and/or use may cause serious damage to property or serious injuries (possibly causing death).
- All equipment, even postage and packing paid, travels at the risks and perils of the recipient. The latter shall issue reserves in writing on the carrier's delivery slip if damage is detected, caused during transport (confirmation to be sent to the carrier within 48 hours by registered letter). In the event that an appliance containing coolant has been turned on its side, mention your reservations in writing to the carrier.
- If the appliance suffers a malfunction, do not try to repair it yourself; instead contact a qualified technician.
- Refer to the warranty conditions for details of the permitted water balance values for operating the appliance.
- Deactivating, eliminating or by-passing any of the safety mechanisms integrated into the appliance shall automatically void the warranty, in addition to the use of spare parts manufactured by unauthorised third-party manufacturers.
- Do not spray insecticide or any other chemical (inflammable or non-inflammable) in the direction of the appliance, as this may damage the body and cause a fire.
- Zodiac® heat pump, filtration pump and filter appliances are compatible with the most commonly used types of pool water treatment systems.
- Do not touch the fan or moving parts and do not place any objects or your fingers in the vicinity of the moving parts during operation of the appliance. Moving parts can cause serious injury or even death.

WARNINGS ASSOCIATED WITH ELECTRICAL APPLIANCES

- The electrical supply to the appliance must be protected by a dedicated 30 mA differential residual current protection device, complying with the standards and regulations in force in the country in which it is installed.
- Do not use any extension lead when connecting the appliance; connect the appliance directly to a suitable power supply circuit.
- Before carrying out any operations, check that:
  - The voltage indicated on the appliance information plate corresponds to the mains voltage.
  - The power grid is adapted to the power requirements of the appliance, and is grounded.
  - The plug (where applicable) is suitable for the socket.
- In the event of abnormal operation or the release of unusual odours from the appliance, turn it off immediately, unplug it from its power supply and contact a professional.
- Before any access to the appliance for service or maintenance, ensure that it is switched off and completely disconnected from the power supply. Furthermore, in addition to confirming that the heating priority (where applicable) is deactivated, ensure that any other equipment or accessories connected to the appliance are also disconnected from the power supply circuit.
- Do not disconnect and reconnect the appliance to the power supply when in operation.
- Do not pull on the power cord to disconnect it from the power supply.
- If the power cord is damaged, it must be replaced by the manufacturer, its technician or a qualified person to guarantee safety.
- Do not perform maintenance or servicing operations on the appliance with wet hands or if the appliance is wet.
- Before connecting the appliance to the source of supply, ensure that the terminal block or supply socket to which the appliance will be connected is in good condition and is not damaged or corroded in any way.
- For any component or sub-assembly containing a battery: do not recharge or dismantle the battery, or throw it into a fire. Do not expose it to high temperatures or direct sunlight.
- In stormy weather, disconnect the appliance from the power supply to prevent it from suffering lightning damage.
- Do not immerse the appliance in water (with the exception of cleaners) or mud.

WARNINGS CONCERNING APPLIANCES CONTAINING REFRIGERANT

- Do not discharge R410A or R407C fluid into the atmosphere. These are fluorinated greenhouse effect gases, covered by the Kyoto Protocol, with a Global Warming Potential (GWP) = 2088 for R410A (Directive EC 842/2006).
- According to French decree No. 2015-1790, if the appliance has more than 5teq CO2 of refrigerant gas (refer to manufacturer specifications), the cooling circuit must be checked for leakage at least once a year. This operation must be carried out by a certified cooling appliance specialist.

The heat pump pool heaters covered in this document have been evaluated, tested, and shown to comply with the applicable requirements of the following Directives:

- Pressure Equipment Directive (PED), 2014/68/EU, Module D1;
- Low Voltage Directive (LVD), 2014/35/EU;
- Electro-Magnetic Compatibility (EMC) Directive, 2014/30/EU.

The appliances have an Ingress Protection (IP) rating of IPX4 or better. Please refer to the marking indicating the IP-rating on your particular product.

Installation and maintenance

The unit may not be installed close to combustible materials, or the air duct inlet of an adjacent building .
With some devices, it is essential to fit protection grids if the unit is installed in an area with uncontrolled access.
During installation, troubleshooting and maintenance, pipes may not be used as steps: the pipe could break under the weight, spilling refrigerant and possibly causing serious burns.
When servicing the appliance, the composition and state of heat carrying fluid must be checked, as well as the absence of any refrigerant.
During the annual unit sealing test in accordance with applicable legislation, the high and low pressure switches must be checked to ensure that they are securely fastened to the coolant circuit and that they cut-off the electrical circuit when tripped.
During maintenance work, ensure there are no traces of corrosion or oil around cooling components.
Before beginning work on the cooling circuit, stop the device and wait for a few minutes before fitting the temperature and pressure sensors. Some elements such as the compressor and piping may reach temperatures in excess of 100°C and high pressures with the consequent risk of severe scalding.

Troubleshooting

All brazing must be carried out by qualified brazers.
Replacement pipes must always be made of copper in compliance with standard NF EN 12735-1.
Leak detection, pressure test:

- never use oxygen or dry air as there is a risk of fire or explosion,
- use dry nitrogen or a mixture of nitrogen and refrigerant indicated on the information plate,
- the test pressure for both the high and low-pressure circuits must not exceed 42 bar (for R410A) if the appliance is equipped with the pressure gauge option.

For the high-pressure circuit pipes made of copper with a diameter equal to or greater than 1''5/8, a certificate as indicated in §2.1 in compliance with standard NF EN 10204 must be requested from the supplier and must be kept in the installation technical file.
The technical data relating to the safety requirements of the various applicable directives are given on the appliance identification plate. All this information must be recorded in the appliance installation manual, which must be kept in the installation technical file: model, code, serial number, maximum and minimum OT, OP, year of manufacture, CE marking, manufacturer's address, coolant and weight, electrical parameters, thermo-dynamic and acoustic performance.

Recycling

This symbol means that your appliance must not be disposed of in a normal waste bin. It will be selectively collected for the purpose of re-use, recycling or transformation. If it contains any substances that may be harmful to the environment, these substances will be disposed of or neutralised. Contact your retailer for recycling information.

- **Before any action is taken on the appliance, it is essential to read through this installation and operating manual and also the “safety and warranty” booklet supplied with the appliance. Failure to do so, risks damage to equipment and property, personal injury or even death and also invalidates the warranty.**
- **Keep and pass on these documents for later consultation throughout the service life of the appliance.**
- **The distribution or modification of this document in any way is prohibited, without prior authorisation from Zodiac®.**
- **Zodiac® continuously develops its products to improve quality. The information contained in this document may therefore be modified without notice.**

CONTENTS

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Tip: to make it easier to contact your retailer

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

1 Installation

1.1 I Selecting the location

- **When installed with and protected by an appropriate Residual Current Device (RCD) having a maximum trip current rating of 30mA, the appliance must be installed at 2 metres, minimum, from the surrounding edge of the pool.**
- **If an appropriate RCD is not installed with the appliance, the appliance must be installed at a minimum distance of 3.5 metres from the edge of the pool.**
- **Do not lift the appliance by the body; lift it by its base.**

- Install the appliance outdoors. Provide a clear space all around it (see § "1.2 I Hydraulic connections").
- Install the heat pump as close as possible to the dehumidifier and pool filter (12 metres maximum).
- It is recommended to insulate the hydraulic lines to prevent any heat loss.
- If the appliance cannot be installed next to the dehumidifier:
  - Make provision for the dimensions of the pipes and primary and secondary circuits in relation to the water flow rate, losses of load and distance.
  - Install a more powerful circulating pump (contact us for its dimensions and supply),
- If the heat pump is away from the filter: the pool circuit pipes must have a minimum dimension of Ø50 and be fitted in a protective sheath if they are run below ground.
- The water treatment system must be installed after the heat pump and at a low point to avoid chlorine being returned to the heat pump.
- The heat pump must not be depended upon as support for the pipes. Adequate proper support must be provided for the pipes.
- Install the 4 anti-vibration studs under the base and position the appliance on a stable, solid and level surface,
- This surface must be able to bear the weight of the appliance (especially if installing on a roof, a balcony or any other support). It is recommended to install the appliance on a concrete slab floor or condensation tray for the condensate piping (to be provided; and is available as an accessory).

The appliance must not be installed:
- With the blower directed towards a permanent or temporary obstacle (window, wall, hedge, awning, etc.) less than 5 metres away,
- Within range of water or mud jets, sprays or run-off (the effect of the wind must be taken into account),
- Near a heat source or flammable gas,
- Near high frequency equipment,
- In a location where it is subject to a build-up of snow or sand,
- In a location where there is a risk of it being flooded by the condensates produced by the appliance during operation.

Information: condensate drainage
Important: your appliance may drain several litres of water a day, related to the condensation of water in the air.

Tip: reduce any noise annoyance from your heat pump
- Do not install it under or in the vicinity of a window.
- Do not tilt it towards your neighbours.
- Install it in an open space (sound waves are reflected on surfaces).
- Install an acoustic screen around the heat pump, respecting the recommended distances.
- Install 50 cm of flexible PVC pipe at the heat pump water inlet and outlet (stops vibrations).

1.2 I Hydraulic connections

1.2.1 Pool water circuit

- The connection is made with a Ø50 PVC pipe to the pool filtration circuit, after the filter and before the water treatment, using the unions supplied.
- Ensure that the hydraulic connection fitting direction is correct.
- A by-pass must be installed to make it easier to work on the appliance.
- Use the valve B to adjust the water flow and leave the valves A, C, D and E open (refer to diagram below)

1.2.2 Dehumidifier water circuit

- Provide a connection between the heat pump and the dehumidifier.
- The connection is made with Ø28 insulated pipes, using the union connectors supplied (12 metres maximum. Contact our design office for any additional information). The piping must be compatible with the maximum temperature of the appliance (please see § "5.2 I Technical specifications").
- Do not use quick closure valves to avoid water hammer.
- Check that the pipe system is cleaned before making any connection.

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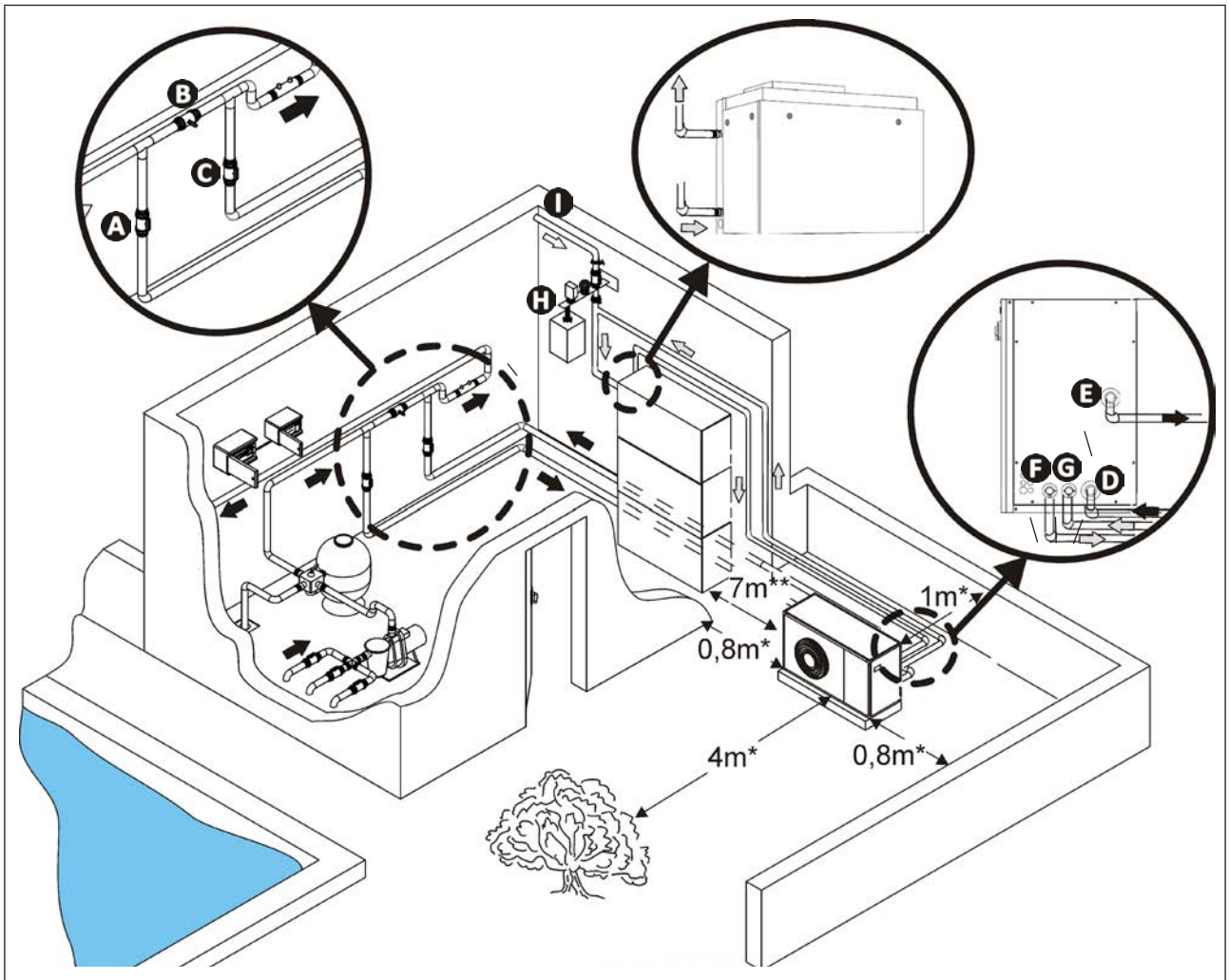
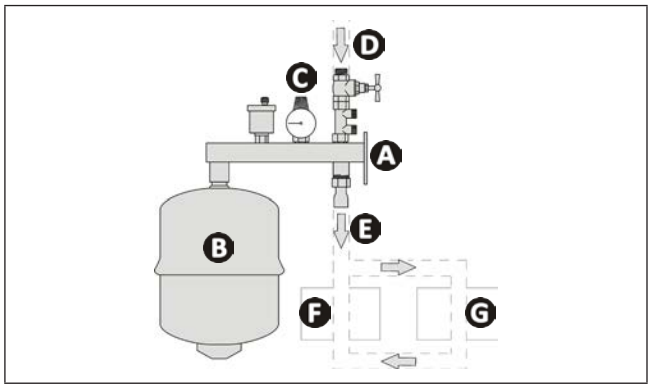


A : Pool water inlet valve B : Pool water by-pass valve C : Pool water outlet valve D : Pool water inlet adjusting valve(optional) E : Pool water outlet adjusting valve(facultative)	F : Dehumidifier water inlet valve (optional) G : Dehumidifier water outlet valve (optional) H : Dehumidifier water hydraulic connection kit I : Mains cold water inlet * Minimum distance ** Maximum distance

1.2.3 Connecting the dehumidifier water hydraulic kit

- Attach the hydraulic kit to the wall. The water inlet and outlet pipes can be swapped around if necessary.
- Connect the hydraulic kit to the outlet of the heat pump on the dehumidifier water circuit outlet to the dehumidifier.
- After installation, and while filling the dehumidifier water circuit, check to make sure that the automatic bleed plugs are loosened to bleed any air from the circuit.



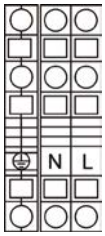
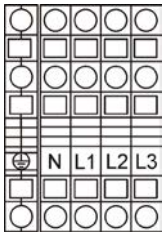
A : Wall mounting
B : Expansion chamber
C : Pressure gauge valve
D : Mains water inlet (filling valve)
E : Water outlet
F : Heat pump Z700 DUO
G : Zodiac® dehumidifier

1.3 I Power connections

- **Before carrying out any work inside the appliance, it is essential to disconnect the electrical supply as there is a risk of electric shock which can cause damage to equipment and property, serious injury and even death.**
- **Only a qualified and experienced technician is authorised to carry out wiring operations inside the appliance or to replace the power cable.**
- **The appliance and the dehumidifier battery heating circuit (if copper connection or other type of metal) must be connected to an earth point.**
- **A poor contact can cause the terminal to overheat, and will void the warranty.**
- **The equipment must be used as part of an electrical installation providing 100 A per phase.**
- **If necessary, the installer must consult the electricity supplier and ensure that the equipment is connected to a mains power supply with impedance below 0.44 Ohms.**

1.3.1 Disconnecting the heat pump

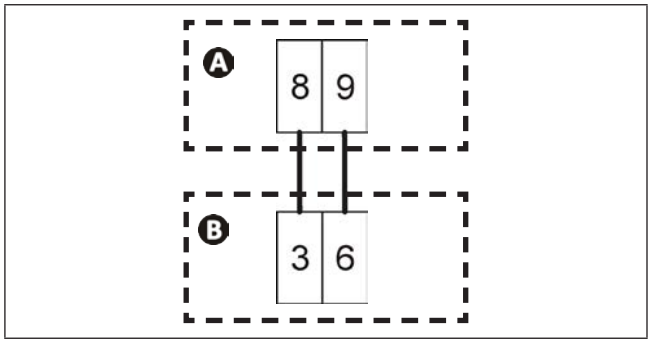
- The heat pump electrical supply must be provided with a protection and circuit breaking device (not supplied) complying with the standards and regulations in force in the country in which it is installed.
- The appliance is designed for connection to a mains power supply with TT and TN.S neutral systems.
- Electrical protection: by circuit breaker (D curve) (for rating, see § “5.2 I Technical specifications”), with a 30 mA dedicated residual-current protection system (circuit breaker or switch).
- Additional protection may be required during installation to guarantee Overvoltage Category II.
- The power supply must be compatible with the voltage indicated on the appliance information plate.
- The power cable must be insulated against any sharp or hot items that might damage or crush it.
- The electrical connection lines must be fixed.
- Use the cable gland to route the power cable in the appliance.
- Use a power cable (type R2V) suitable for outdoor or below ground use and with an external diameter of between 9 and 18 mm (or run the cable inside a protective duct) .
- We recommend burying the cable at a depth of 50 cm (85 cm under a road or path) in an electrical duct (red grooved).
- If this below ground cable meets another cable or pipe (gas, water, etc.), there must be more than 20 cm between them.
- Connect the power cable to the connection terminal inside the appliance, carefully stripping the wires bare over a length of at least 10 mm (see § “5.2 I Technical specifications”).

	⏚: earth N: neutral L: phase		⏚: earth N: neutral L1-L2-L3: phases
Single phase terminal		**Three-phase terminal**	

1.3.2 Connecting the dehumidifier

- **Compulsory connection.**
- **Use cables with a section of at least 2 x 0.75 mm².**

- Connect heat pump terminals 8 and 9 to the Zodiac® dehumidifier terminals 3 and 6.



Ⓐ : Z700 DUO heat pump terminal
Ⓑ: Zodiac® dehumidifier terminal

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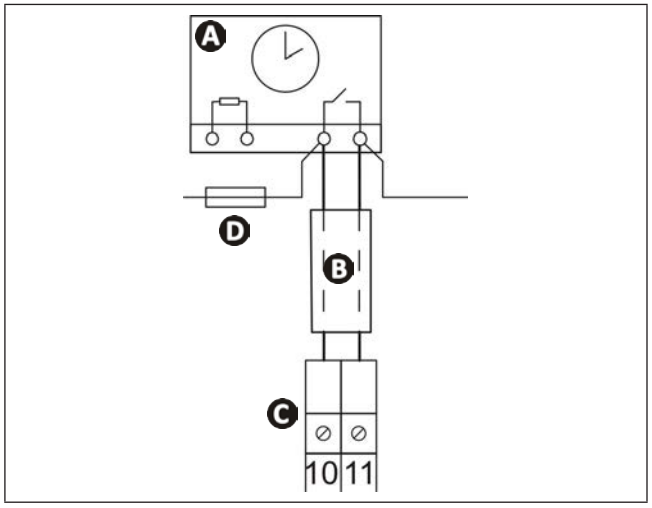
1.3.3 Connecting the filtration pump (heating priority)

- **Compulsory connection.**
- **Use cables with a section of at least 2 x 0.75 mm².**

- Connect heat pump terminals 10 and 11 to the filtration timer.
- This function keeps the water temperature constant by checking the water temperature at regular time intervals (a 15-second cycle every 60 minutes) and also at the end of each air heating cycle via filtration pump control. The filtration continues to operate if the demand for pool water heating is active.



Ⓐ: filtration timer
Ⓑ: separate connection cable for the "heating priority" function
Ⓒ: heat pump terminal
Ⓓ : fuse

1.4 I Connecting the options

- **Any incorrect connection to the terminal can damage the appliance and void its warranty.**
- **When working on the terminal, there is a risk of electrical return current, injury, damage to equipment and property and death.**
- **Use cables with a section of at least 2 x 1 mm².**
- **Run the cables through cable glands. The cables used for the options and the mains power supply cable must be kept separate (risk of interference) using a collar inside the appliance fitted just after the cable glands.**

1.4.1 "Remote control" option

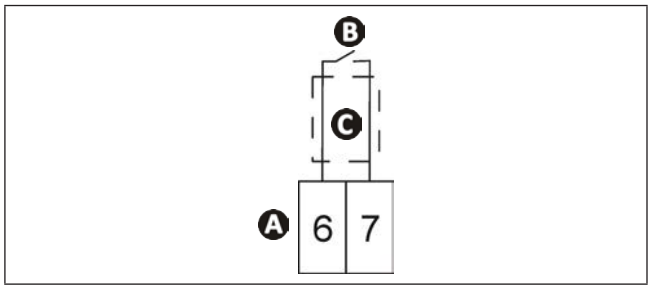
- This option duplicates the appliance user interface sot that the appliance can be controlled remotely. To do this, use the remote control kit available as an accessory.
- For connection, consult the instruction manual supplied with the kit.

1.4.2 Remote "ON/OFF" option

Connecting the remote "ON/OFF" option:

- **Any incorrect connection to terminals 6 and 7 can damage the appliance and void its warranty.**
- **When working on terminals 6 and 7, there is a risk of electrical return current, injury, damage to equipment and property and death.**
- **Use cables with a section of at least 2 x 1.5 mm² , type RO2V and a diameter of between 8 and 13 mm.**
- **Use the cable gland to route the cables in the appliance. The cables used for the options and the mains power supply cable must be kept separate (risk of interference) using a collar inside the appliance fitted just after the cable glands.**

- This option transfers the "on/off" button function via a switch installed remotely.
- For connection, remove the shunt for terminals 6 and 7 and connect the cable for the switch in its place (potential free contact, no polarity, 220-240 V ~ 50 Hz).



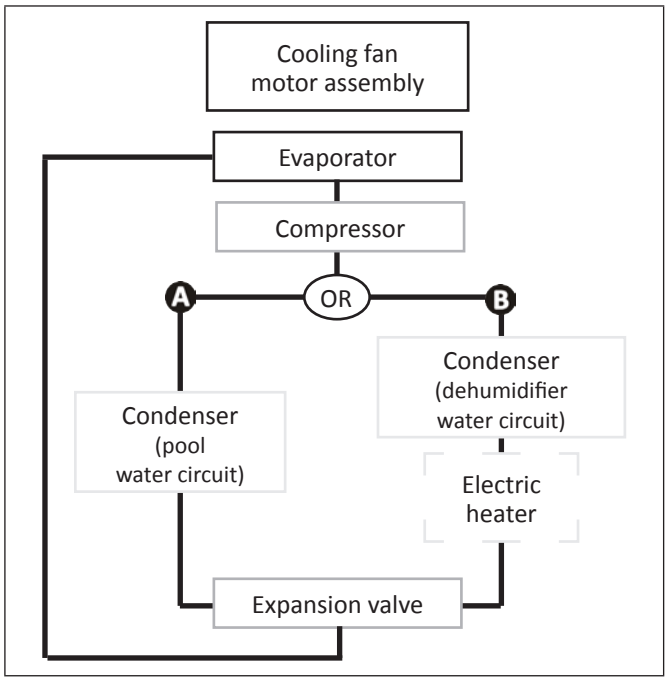
A: Heat pump terminal
B: Remote "ON/OFF" switch
C: Separate connection cable

2 Use

2.1 I Operating principle

2.1.1 Cooling circuit

The heat pump heats the pool water and the air in the pool room/area. However, the two heating modes can not be used at the same time. According to the temperature set by the user, the heat pump either heats the pool water, or heats a water circuit designed to power the heating coil of a Zodiac® dehumidifier in order to heat the air. In the theoretical event of a request for both at the same time, priority is given to heating the air.
However, if the pool temperature drops too significantly (-5°C compared to the setpoint temperature “SP01”), the heat pump will revert to heating the pool water.



A: Water heating

B: Air heating

2.1.2 Pool water heating

The heat pump uses calories (heat) from the outside air to heat the pool water. The process to heat the pool water to the required temperature can take several days, because it depends on the weather conditions, the pump heating capacity and the difference between the water temperature and the required temperature.
The warmer and more humid the air, the better the heat pump performance.

Tip: improve and maintain your pool's temperature

- Anticipate the commissioning of your pool far enough in advance before you use it.
- Cover the pool 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). It will be even more effective if it operates during the warmest hours of the day.
- Keep the evaporator clean.
- Set the required temperature and leave the heat pump to run (adjusting the setpoint to maximum will not heat the water more quickly).

2.1.3 Air heating

The heat pump also assists with the return of heat captured from the outside air to the dehumidifier water circuit which, while flowing through the hot water coil in the dehumidifier, contributes to heating the air in the pool room/area. The dehumidifier water circuit transports the heat captured by the heat pump to the dehumidification unit.

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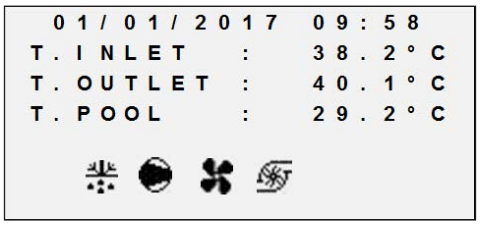
2.2 I User interface overview

esc	• Brief press: return to menu tree or exit a setting. • Brief press from the home screen (see diagram below) to display the alarms manager (see “4.2 I Alarm display”). • Press and hold (3 seconds): to switch the appliance on or off when it is connected to the power supply.
◁	• Arrow key to move to the left in the same display or to scroll through the menus.
△	• Arrow key to move up.
▽	• Arrow key to move down.
▷	• Arrow key to move to the right.
↵	• Brief press: confirm a setting or return to a menu or sub-menu. • Press and hold (3 seconds): access to the settings menu (see “2.3.5 Adjusting the heat pump timer (RTC)”.

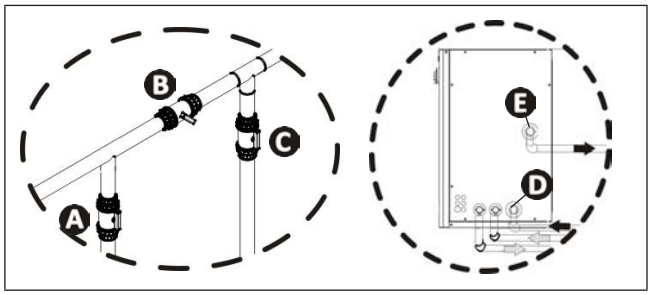


Symbol	Description	Fixed	Flashing
	Water heating mode	In operation	/
	Air heating mode	In operation	/
	Electric heater / Condenser resistance	In operation (electric heater)	In operation (condenser resistance)
	Compressor	In operation	Time-delay
	Fan	In operation	/
	Filtration pump	In operation	Time-delay
	Circulating pump	In operation	Time-delay
	Defrost mode	In operation	/
	Alarm	/	Alarm active

2.3 I Operation

2.3.1 Switching on the pool circuit

- Check that there are no tools or other foreign objects in the machine.
- Check that the access panel to the technical section is closed properly.
- Set the valves to the following positions: valve B fully open; valves A, C, D and E closed.



A: pool water inlet valve

B: pool by-pass valve

C: pool water outlet valve

D: pool water inlet adjusting valve (optional)

E: pool water outlet adjusting valve (optional)

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- **An incorrect by-pass setting can cause an operating fault on the heat pump.**

- Check that the hydraulic connections are tightened correctly and that there are no leaks.
- Check that the appliance is stable.
- Set the water circulation running.
- Close valve B gradually so that the filter pressure is increased by 150 g (0.150 bar).
- Open valves A, C and D fully, and then half-open valve E (to bleed the air that has built up inside the heat pump condenser and in the filtration circuit). If valves D and E are not fitted, open valve A fully and half-close valve C.

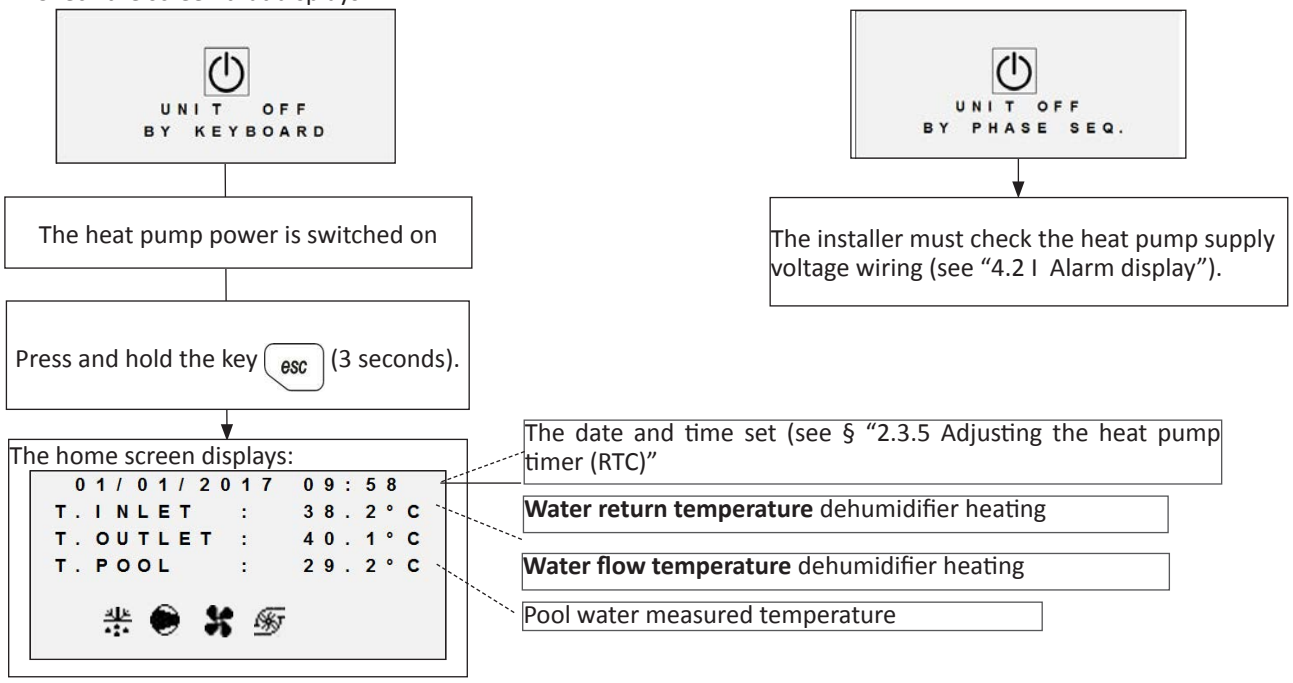
2.3.2 Switching on the air heating circuit

- Open the filling valve on the hydraulic connection kit; see “1.2.2 Dehumidifier water circuit” to fill the dehumidifier water circuit at the expansion chamber.
- If there is a risk of frost, add glycol water (maximum 20%).
- Using the pressure gauge valve, check the pressure. It should be between 1 and 1.5 bar.
- Check the air bleed on the automatic bleeds (the bleed plugs must be loose).
- Pay special attention to the dehumidifier heating water circuit during filling. Once the filling and bleed stage is complete, the circulating pump should display a power rating of 45 W during operation.

2.3.3 Switching on the heat pump

- **Check that the filtration pump timer is connected correctly; see "1.3.3 Connecting the filtration pump (heating priority)".**

- Connect the power supply to the heat pump. The message CHECKING... is displayed for several seconds and the ON LED is lit.
- The screen displays ZODIAC® for several seconds and then the RUN LED is lit to confirm that the software has loaded successfully.
- Check the screen that displays:



If the heat pump is in standby, press one of the interface buttons briefly.

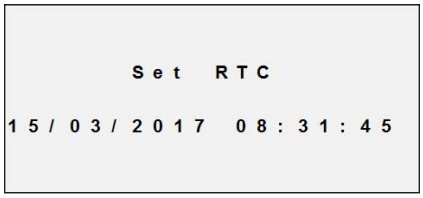
The interface language can be changed: English, French or Italian. See § "2.3.4 Set the interface language"

2.3.4 Set the interface language

- From the home screen press and hold ↵ for 3 seconds,
- Select "INSTALLATION MENU" and press ↵,
- Select "MISCELLANEOUS" menu and press ↵,
- Select the setting "PH09" and press ↵,
- Select the language (English, French or Italian) and press ↵,
- Press esc to exit. Pressing esc again takes you back to the main display.

2.3.5 Adjusting the heat pump timer (RTC)

- From the home screen press and hold ↵ for 3 seconds.
- A new menu is displayed. Go to "**RTC"** (timer) by pressing △ or ▽ and then confirm by pressing ↵: the date and time are displayed:



- Press ◁ and ▷ to change the information and confirm by pressing ↵.
- Press esc to exit. Pressing esc again takes you back to the main display.

Tip: to obtain a correct time setting
- If the appliance is disconnected from the power supply for more than 72 hours, the timer must be reset (date and time). This is important, particularly to view the alarms log, if required.

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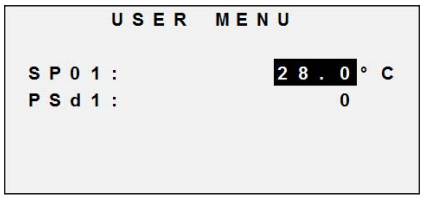
2.3.6 Adjusting the pool water temperature setpoint

The demand for pool water heating is specified by the user by entering a temperature setpoint. Reminder: the pool water heating cycle will only operate if the temperature setpoint is greater than the measured water temperature.

- The default temperature setpoint is set at 28°C.
- From the home screen press and hold ↵ for 3 seconds.
- A new menu is displayed. Select "**USER"** via △ or ▽ and then confirm by pressing ↵: The temperature setpoint SP01 displays:



- When the SP01 setting is selected (highlighted black), press ↵ to change the value. The SP01 setting will flash.
- Press △ and ▽ to adjust the value and then confirm by pressing ↵.
- Press esc to exit. Pressing esc again takes you back to the main display.

2.3.7 Locking/unlocking the keypad

- Press and hold ◁ and ▷ at the same time for 3 seconds.

3 Maintenance

3.1 I Winterizing

- **Winterizing is essential if the heat pump is shut down during the winter period. In this case, it is necessary to prepare all the circuits for winter to avoid damaging the condenser and/or plate heat exchanger, its circulating pump and electric heater, due to frost. This is not covered by the warranty.**
- **To avoid damaging the appliance with condensation, do not fully cover it.**

- Disconnect the electrical supply.
- Open the valve B; see diagram "1.2 I Hydraulic connections",
- Close the valves A, C, F and G and open the valves D and E (if fitted),
- Check to make sure that there is no water circulating in the two circuits of the heat pump,
- Drain the pool water and dehumidifier water circuits (risk of freezing) by unscrewing the water inlet and outlet connections on the back of the heat pump,
- In the event of full winterizing of the pool (complete shutdown of the filtration system, draining the filtration circuit or even draining the pool): retighten the two connections by one turn to prevent any debris entering the heat pump circuits,
- If winterizing the heat pump only (shutdown of the heating only and filtration continues to run): do not retighten the connections, but fit the plugs (provided) onto the water inlets and outlets of the condenser and heat exchanger.

3.2 I Maintenance

- **It is recommended that a general maintenance operation is carried out on the appliance at least once a year to ensure proper operation, to maintain performance levels and to potentially prevent any faults.**
- **According to the legislation applicable in the country in which the appliance is installed, an inspection of the cooling system may be required on a regular basis. Please contact your retailer.**
- **These operations are carried out at the expense of the user and some operations must be carried out by a qualified technician.**

3.2.1 Maintenance to be carried out by the user

- Check to make sure that the ventilation grille is not blocked by debris.
- Clean the evaporator (for location see § "5.3 I Dimensions and marking") using a soft brush and a fresh water spray (disconnect the power cable); do not bend the metal fins.
- Do not use a high-pressure water jet. Do not spray the appliance with salt water, or water full of minerals.
- Clean the outside of the appliance. Do not use any solvent-based products. We can provide you with a specific cleaning kit available as an option: PAC NET, see § "5.1 I Description".

3.2.2 Maintenance to be carried out by a qualified technician

- Check that the control system is operating correctly.
- Check that the condensates flow correctly when the appliance is in operation.
- Check the safety components.
- Check that the metal earths are connected to the earth.
- Check that the electrical cables are correctly tightened and connected and check the condition and cleanliness of the electrical cabinet.
- Check the hydraulic circuits for leaks (pool and dehumidification system).

4 Troubleshooting

- **If an operating fault occurs, please carry out these few simple checks using the tables below before contacting your retailer.**
- **If the fault continues, contact your retailer.**
- **: Actions are to be carried out by a qualified technician only**

4.1 I Appliance performance

The appliance does not start heating straight away	• On start-up, the appliance remains "paused" for 3 minutes before it starts operating. • When the setpoint temperature is reached, the heat pump stops heating: the water temperature is greater than or equal to the setpoint temperature. • When the water flow rate is zero or inadequate, the heat pump stops: check that the water is circulating correctly inside the heat pump and that the hydraulic connections are correct. • The heat pump stops when the outside temperature falls below -8 °C. • The heat pump may have detected an operating fault (see § “4.2 I Alarm display”). • If these points have been checked and the fault is still there, contact your retailer.
The appliance is discharging water	• Often called condensates. This water is the moisture contained in the air which condenses on contact with certain cold components inside the heat pump, especially on the evaporator. The damper the air, the more condensates the heat pump will produce (your appliance may drain several litres of water per day). This water is collected via the base of the heat pump and drained through the holes to the ground. • To check that the source of the water is not due to a leak in the pool circuit on the heat pump, shut down the heat pump and run the filtration pump so that the water circulates inside the heat pump. If the water continues to flow through the condensate drainage lines after half an hour, there is a water leak in the heat pump. Contact your retailer.
The evaporator is iced up	• The heat pump will soon switch to its defrost cycle to melt the ice. • If the heat pump is unable to defrost the evaporator, it will stop by itself. This means that the outside temperature is too low (below -8 °C).
The appliance does not operate	• If there is no display, check the supply voltage and fuse F1 (see “4.4 I Wiring diagram”). • When the setpoint temperature is reached, the heat pump stops heating: the water temperature is greater than or equal to the setpoint temperature. • When the water flow rate is zero or is inadequate, the heat pump stops: check that the water is circulating correctly inside the heat pump. • The heat pump stops when the outdoor temperature falls below -8 °C. • The heat pump may have detected an operating fault (see § “4.2 I Alarm display”).
The appliance is operating but the water temperature does not increase	• The heat pump may have detected an operating fault (see § “4.2 I Alarm display”). • Check that the automatic filling valve is not stuck in the open position; this will continue to supply cold water into the pool and will prevent the temperature from rising. • There is too much heat loss because the air is cold. Install a heat-insulated cover over your pool. • The heat pump is unable to capture enough heat because the evaporator is clogged with dirt. Clean it to restore its performance (see § “3.2 I Maintenance”). • Check that the external surroundings do not prevent the heat pump from operating correctly (see § “1 Installation”). • Check that the heat pump is the right capacity for this pool and its environment.
The fan is running but the compressor stops from time to time with no error message	• The heat pump is unable to capture enough heat because the evaporator is clogged with dirt. Clean it to restore its performance (see § “3.2 I Maintenance”).
The appliance trips the circuit breaker	• Check that the circuit breaker is of correct capacity and that the cable section used is correct (see § “5.2 I Technical specifications”). • The supply voltage is too low; contact your electricity provider.

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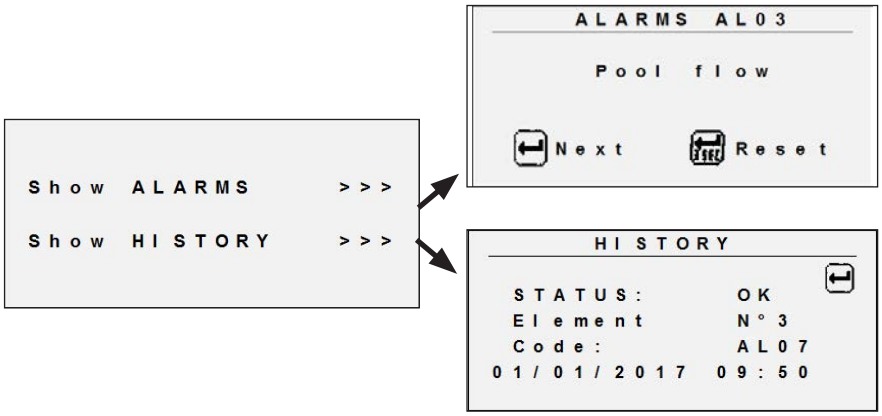
4.2 I Alarm display

- An alarm is reported by flashing of the symbol on the main home screen.
- Press esc to go to the “Alarms” menu. Two types of information are displayed:



= alarm code

= alarm meaning

Press = see next alarm.

Press and hold for 3 seconds = clears the alarm

= alarm status

= alarm code

= date and time alarm was triggered

Display	Possible causes	Solutions
AC01 Compressor operating hours	• The component has reached the number of operating hours. • Component may require handling. • The appliance will continue to operate	The appliance will continue to operate
AC23 Thermostat resistance	Temperature reached on the resistor is too high (63°C).	Manually reset the safety thermostat. 
AF01 Fan operating hours	• The component has reached the number of operating hours. • Component may require handling.	The appliance will continue to operate
AL03 Flow switch	No flow or low flow rate in the pool circuit.	• Check that the filtration pump is running, • Check the valve opening and closure status (by-pass valve, etc.), • Check the water inlet and outlet direction at the connections. • Once all the points have been checked, check the flow switch.
AL04 Cooling circuit high pressure fault	Plate exchanger or pool exchanger clogged.	Clean the water exchanger.
	Incorrect water flow (pool circuit or dehumidifier circuit).	• Increase the flow using the by-pass and check that the pool filter is not clogged. • Check the flow rate of the dehumidifier circuit. The circulating pump should display 45 W. • Check the pressure of the dehumidifier heating circuit (between 1 and 1.5 bar). See § “2.3.2 Switching on the air heating circuit”
	Air and water emulsion flowing into the appliance.	Check the pool hydraulic circuit.
	Flow switch blocked.	Check the flow switch.
	Cooling fault.	Call a qualified technician.

Display	Possible causes	Solutions
AL05 Low-pressure fault on the cooling circuit	Evaporator clogged or obstructed.	Clean the evaporator and remove any obstacles in front of the evaporator.
	Ventilated air fault.	Check that the fan is operating correctly.
	Cooling fault.	Call a qualified technician.
AL06 Heating water flow fault	No flow or low flow rate in the dehumidifier circuit.	No alarm (shunt between terminals 20-21).
AL07 Phase sequence fault (on three-phase models only)	Failure to correctly observe the cabling on the appliance supply voltage terminal.	Invert the phases on the supply voltage terminal (appliance disconnected from the power supply).
	Electricity provider has changed the sequence of the phases.	Call a qualified technician, who will contact the electricity provider to find out if any changes have been made to your installation.
	Temporary disconnection of the power supply to one or more phases.	
AL09 Antifreeze	Pool water temperature inside the condenser (ST1) too low (≤ 0 °C).	Make sure filtration is running properly (if defective, drain out the condenser, to prevent from icing).
AL10 Operating limit (pool heating)	Outside temperature is too low < -8°C. Condition has an impact on the appliance cooling cycle. Only the electric heater is heating the dehumidifier circuit.	Wait until the outside temperature rises (>-8°C) to restart the cooling cycle, especially for pool heating.
AL11 Defrosting	The sensor on the evaporator (ST3) has reached a temperature reading of -5°C for 60 seconds. Defrost mode is required.	Wait for the defrost cycle to end.
AL12 RTC discharged/broken	• The appliance has remained disconnected from the power supply for more than 72 hours = RTC discharged • RTC broken	• Reconnect the appliance power supply and update the date and time (see §"2.3.5 Adjusting the heat pump timer (RTC)"). • If this fails, contact the Zodiac® Technical Department
AP01 Circulating pump operating hours	• The component has reached the number of operating hours. • Component may require handling. • The appliance will continue to operate	The appliance will continue to operate
AP02 Pump operating hours		
AR01 Resistor 1 operating hours	• The component has reached the number of operating hours. • Component may require handling. • The appliance will continue to operate	The appliance will continue to operate
AR02 Resistor 2 operating hours		
ES01 ST1 pool heat exchanger input temperature sensor	Sensor is faulty or disconnected.	Reconnect or change the sensor.
ES02 ST2 outside temperature sensor		
ES03 Evaporator temperature sensor ST3		
ES04 Plate exchanger inlet temperature sensor ST7		
ES05 Plate exchanger outlet temperature sensor ST8		

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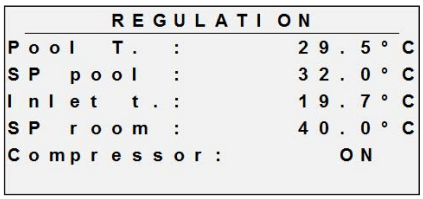
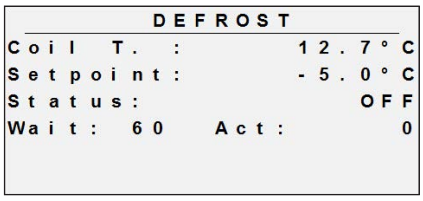
4.3 I Additional menus

- From the home screen, press ▷ to access the menus.
- Press ▷ to scroll through the menus.



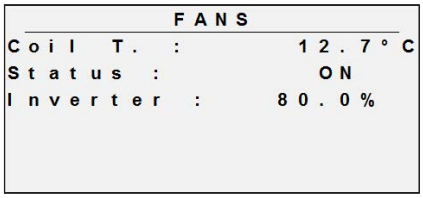
Pool water temperature
Pool water temperature setpoint (SP = Set Point)
Dehumidifier heating water inlet temperature
Dehumidifier heating water temperature setpoint
Compressor status (ON = in operation / OFF = stopped)



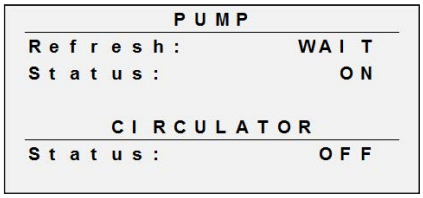
Evaporator temperature
Defrost mode activation temperature
Defrost status (ON = in operation / OFF = stopped)
Countdown settings before defrost starts (60 seconds)

- Defrost mode will be activated if the evaporator temperature is less than or equal to the activation temperature for a period of 60 seconds.

Defrosting is carried out by reversal of the cooling cycle. Defrosting ends if:
- The defrost period (the machine setting can not be changed by the user) has elapsed (600 seconds).
- The temperature of the evaporator rises above a given temperature (the machine setting can not be changed by the user). This temperature is 10°C.



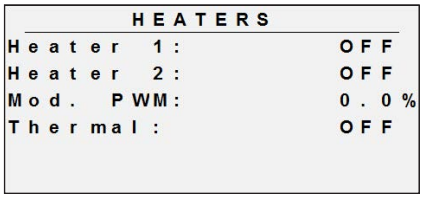
Evaporator temperature
Fan status (ON = in operation / OFF = stopped)
Ignore



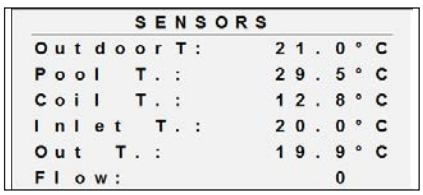
Filtration status (ON = in operation / OFF = stopped)

Circulating pump status (ON = in operation / OFF = stopped)

The circulating pump only operates in the dehumidifier water heating configuration.



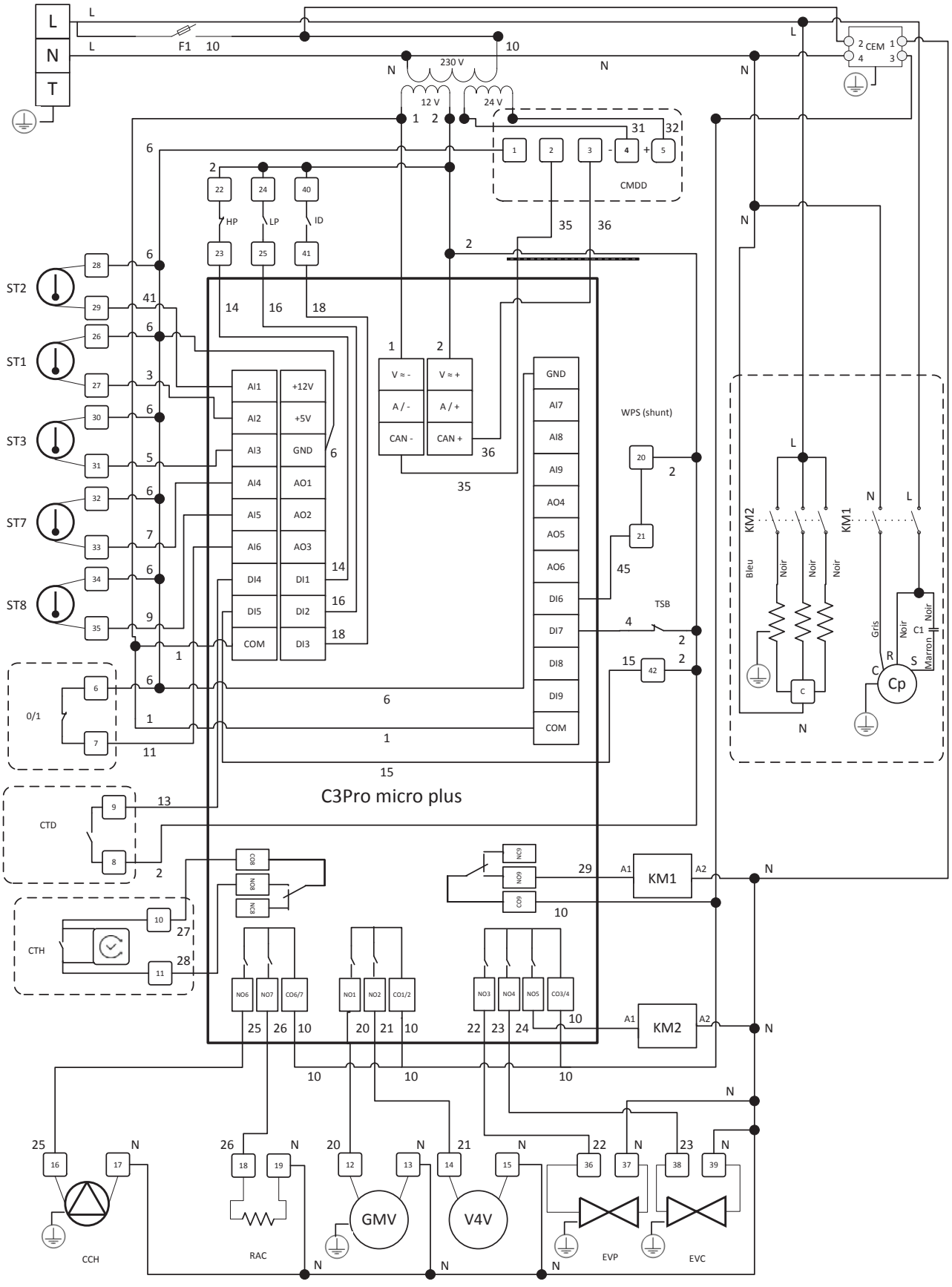
Electric heater status (ON = in operation / OFF = stopped)
Ignore
Ignore
Ignore



Outside air temperature (ambient air) (ST1)
Pool water temperature (ST2)
Evaporator temperature (ST3)
Dehumidifier heating water inlet temperature (ST7)
Dehumidifier heating water outlet temperature (ST8)
Ignore

4.4 I Wiring diagram

4.4.1 Wiring diagram for single-phase models



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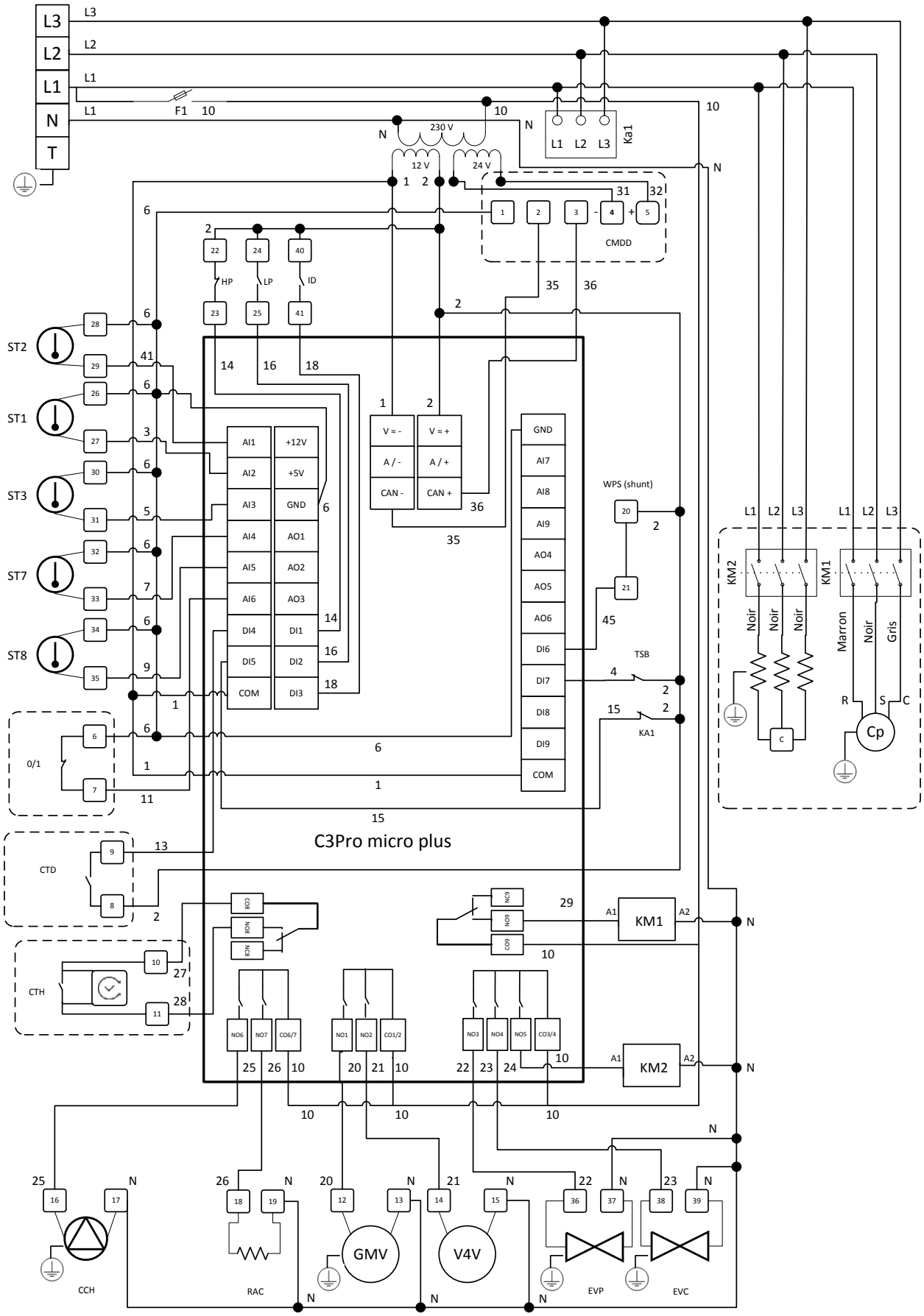
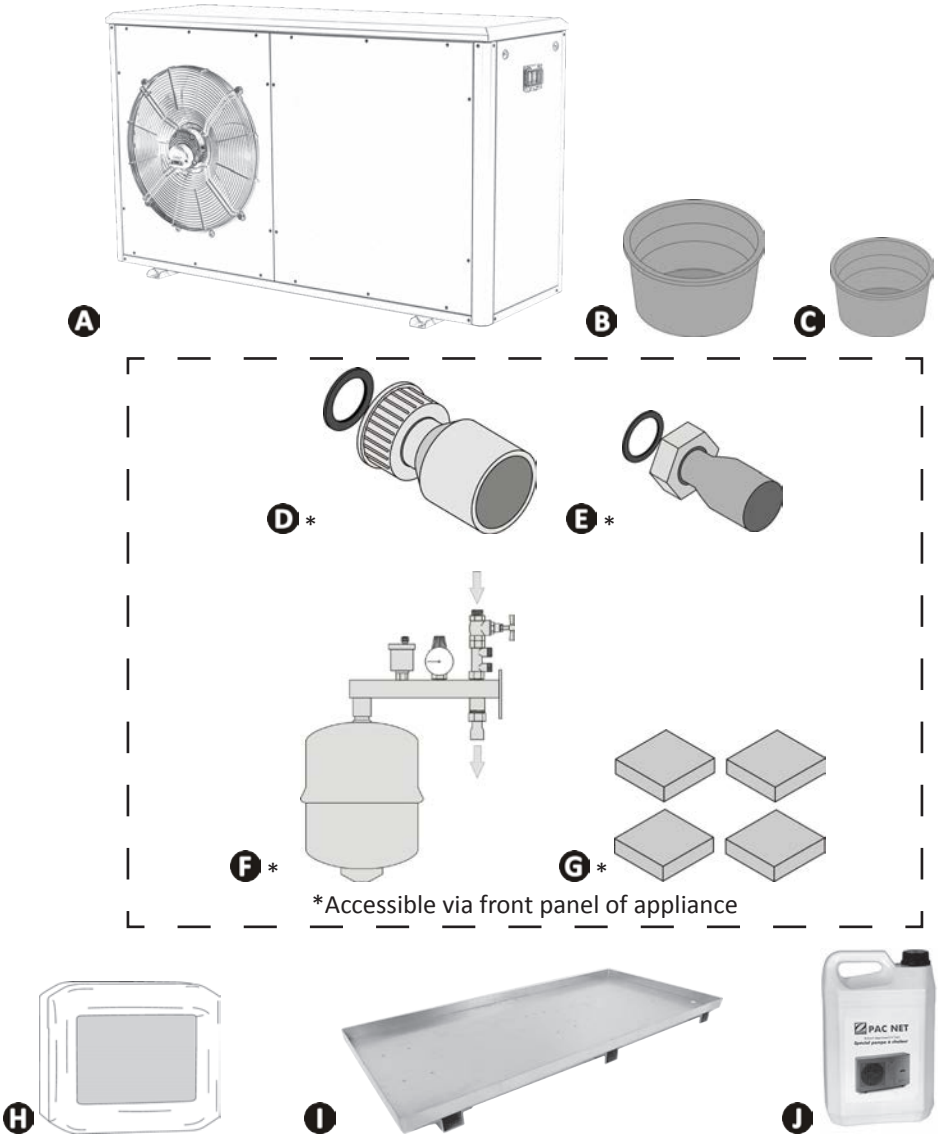
4.4.2 Wiring diagram for three-phase models



Symbol	Description
KA1	Phase sequence controller
KM1	Compressor contactor
KM2	Electric heater switch
C1	Condenser 80 µf
F1	3.15 A fuse 5 x 20
LP	Low pressure switch
HP	High pressure switch
WPS	Dehumidifier water circuit pressure switch
GMV	Cooling fan motor assembly
V4V	4-way valve
CCH	Dehumidifier water circulating pump
EVP	Pool water circuit solenoid valve
EVC	Dehumidifier water circuit solenoid valve
ID	Flow switch
ST1	Pool water temperature sensor
ST2	Outside air temperature sensor
ST3	Evaporator temperature sensor
ST7	Dehumidifier water inlet temperature sensor
ST8	Dehumidifier water outlet temperature sensor
0/1	Remote "ON/OFF" switch
CTD	Dehumidifier thermostat contact
CTH	Pool pump timer contact
TSB	Electric heater overheat thermostat
CMDD	Remote control
L-N-T	Single-phase power supply
L1-L2-L3-N-T	Three-phase supply voltage
RAC	Pool water antifreeze resistor
Bleu	Blue wire
Noir	Black wire
Marron	Brown wire
Gris	Grey wire
CP	Compressor
CEM	Filter
C3Pro micro plus	Controller (PLC)

5 Features

5.1 I Description



A	Z700 DUO	MD5	TD5	MD8	TD8
B	Pool circuit condenser plug (x 2)	✔	✔	✔	✔
C	Dehumidifier circuit exchanger plug (x 2)	✔	✔	✔	✔
D	Connection Ø50 and seal (x 2)	✔	✔	✔	✔
E	Connection Ø28 and seal (x 2)	✔	✔	✔	✔
F	Air heating hydraulic connection kit	✔	✔	✔	✔
G	Anti-vibration studs (x 4)	✔	✔	✔	✔
H	Remote control	⊕	⊕	⊕	⊕
I	Condensate tray	⊕	⊕	⊕	⊕
J	PAC NET (cleaning product)	⊕	⊕	⊕	⊕

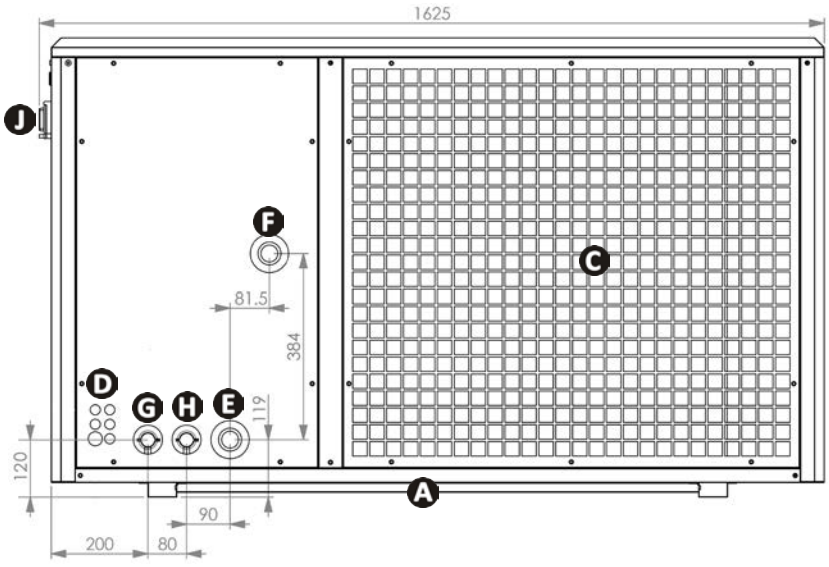
✔: provided ⊕: available as an accessory

5.2 I Technical specifications

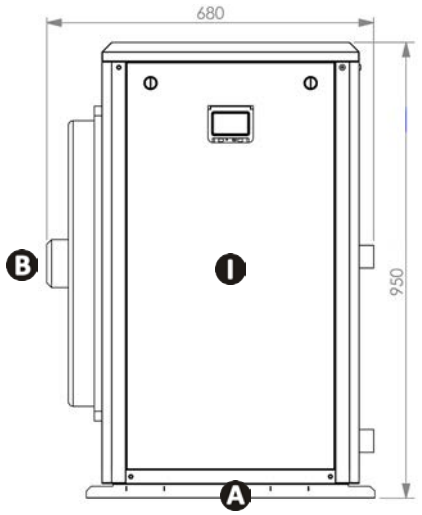
Z700 DUO		MD5	TD5	MD8	TD8
Operating temperature range	air	-8 to 38 °C			
	pool water	from 10 to 32°C			
	dehumidifier water	from 10 to 50°C			
Voltage		220-240 V - 50 Hz	380-415 V - 50 Hz	220-240 V - 50 Hz	380-415 V - 50 Hz
Admissible variation in voltage		± 6 % (during operation)			
Maximum current consumed with electric heater	A	53.2	17.3	58.2	19.3
Minimum cable section*		3 x 10	5 x 4	3 x 16	5 x 6
Pool water circuit		**MD5**	**TD5**	**MD8**	**TD8**
Test pressure	bar	3.06	3.06	3.06	3.06
	Pa	300,000	300,000	300,000	300,000
Service pressure	bar	1.53	1.53	1.53	1.53
	Pa	150,000	150,000	150,000	150,000
Head loss	bar	0.15	0.15	0.15	0.15
	mCE	1.5	1.5	1.5	1.5
Average water flow	m³/h	6	6	6	6
Nominal water flow (min-max)	m³/h	4 to 8	4 to 8	4 to 8	4 to 8
Dehumidifier water circuit		**MD5**	**TD5**	**MD8**	**TD8**
Test pressure	bar	1	1	1	1
	Pa	100,000	100,000	100,000	100,000
Service pressure	bar	3	3	3	3
	Pa	300,000	300,000	300,000	300,000

* Values provided for information purposes for a maximum length of 20 metres (calculation base: NFC 15-100), must be checked and adapted to the installation conditions and standards of the installation country.

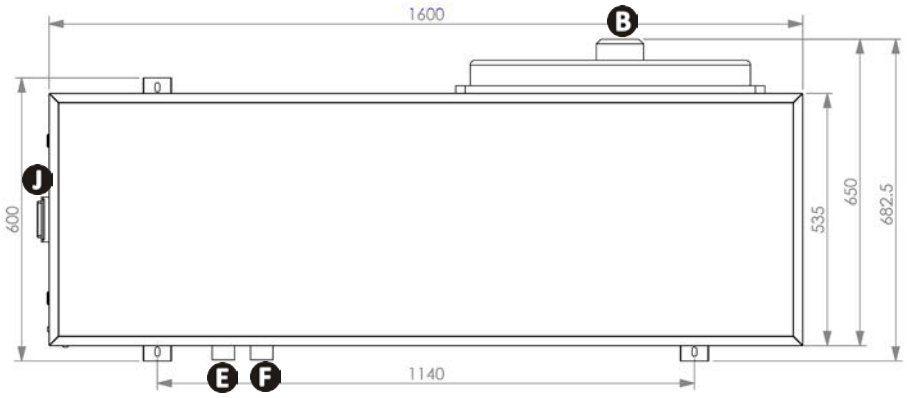
5.3 I Dimensions and marking



Front



Side



Top

A: Base
B: Fan
C: Evaporator
D: Cable gland
E: Pool water inlet
F: Pool water outlet
G: Air heating water inlet
H: Air heating water outlet
I: Technical access door
J: User interface

Overall dimensions

ZODIAC®

Votre revendeur *Your retailer*	
Modèle appareil *Appliance model*	
Numéro de série *Serial number*	

Pour plus d'informations, enregistrement produit et support client :
For more information, product registration and customer support:

www.zodiac.com

Zodiac Pool Care Europe - Bd de la Romanerie - BP 90023 - 49180 St Barthélémy d'Anjou cedex - S.A.S.U. au capital de 1 267 140 € / SIREN 395 068 679 / RCS PARIS