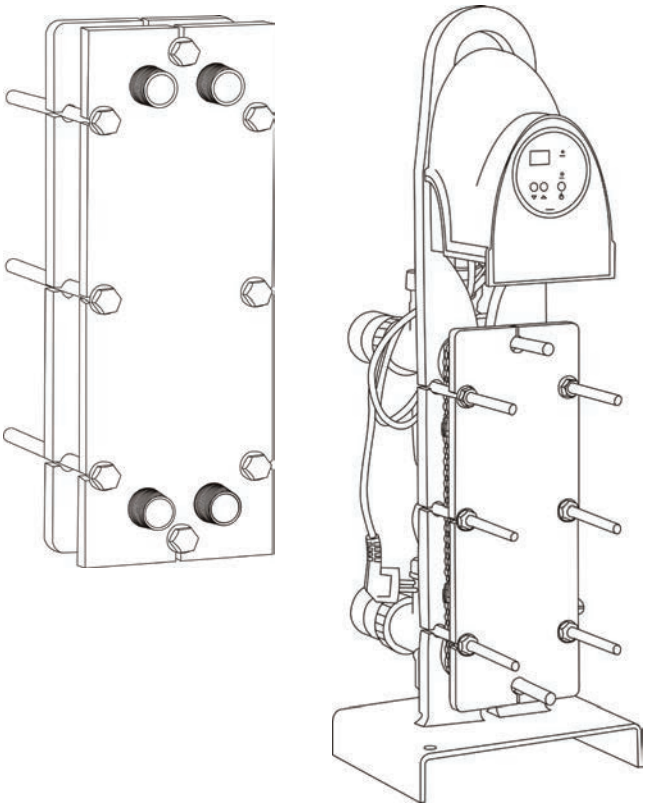
# Uranus+



Instructions for installation and use
English

EN

More documents on:
www.zodiac-poolcare.com

H0360700.D - 2016/02

## WARNINGS

- **Failure to respect the warnings may cause serious damage to the pool equipment or cause serious injury, even death.**
- **The appliance is intended for a specific pool use and must not be used for any use other than that for which it was designed.**
- **It is important that the equipment is operated by competent and qualified (both physically and mentally) people who have previously received the instructions for use. All persons not meeting these criteria must not approach the appliance in order to avoid exposure to dangerous elements.**
- **Keep the appliance out of the reach of children.**
- **The device must be installed by a qualified technician according to the manufacturer's instructions and in compliance with local regulations. The installer is responsible for installation of the equipment and for compliance with national installation regulations. Under no circumstances can the manufacturer be held liable in the event of failure to comply with applicable local standards.**
- **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 consignee shall make reservations in writing on the carrier's bill of lading if damage is detected, caused during transport (confirmation to be sent to the carrier within 48 hours by registered mail with acknowledgement of receipt). In the event of a device containing coolant that 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 the appliance yourself, contact a qualified technician.**
- **Refer to the warranty conditions for details of the permitted water balance values for operating the appliance.**
- **Eliminating or shunting one of the safety devices automatically voids the warranty, as does the replacement of parts using parts not manufactured by ourselves.**
- **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.**
- **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 where it is installed.**
- **Before carrying out any operations, check that:**
  - **The voltage indicated on the maker's plate of the appliance 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 function or the release of odours from the appliance, turn it of immediately, unplug it from its power supply and contact a professional.**
- **Before any intervention on the appliance, ensure that the latter is switched off and disconnected from the power supply, in addition to any other equipment connected to the appliance, and that the heating priority (where applicable) is deactivated.**
- **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.**
- **Do not handle the electrical elements with wet hands.**
- **Clean the terminal board or the power supply socket before connection.**
- **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, unplug the appliance to prevent it from suffering lightning damage.**
- **Do not immerse the appliance in water (with the exception of cleaners) or mud.**

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**Recycling**

This symbol means that your appliance must not be thrown into a normal bin. It will be selectively collected for the purpose of reuse, recycling or transformation. If it contains any substances that may be harmful to the environment, these will be eliminated or neutralised.
Contact your dealer for recycling information.

- **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.**

# CONTENTS

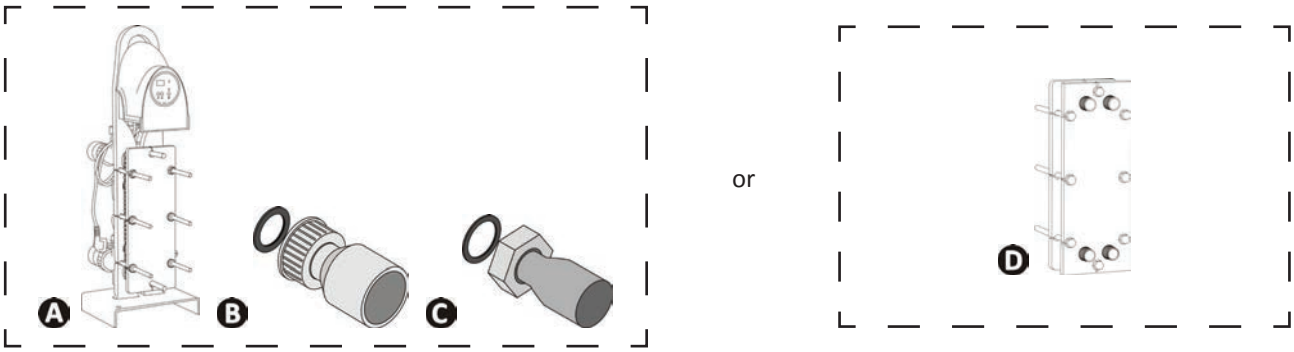


**Tip: to make it easier to contact your reseller**

- 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




| | |
|---|---|
| A | UAP |
| B | Ø50 connector to be glued + seal x2 |
| C | Pin to be soldered Ø20/22 (UAP 35-75-120) - Ø26/28 (UAP 240) x2 |
| D | UAN |

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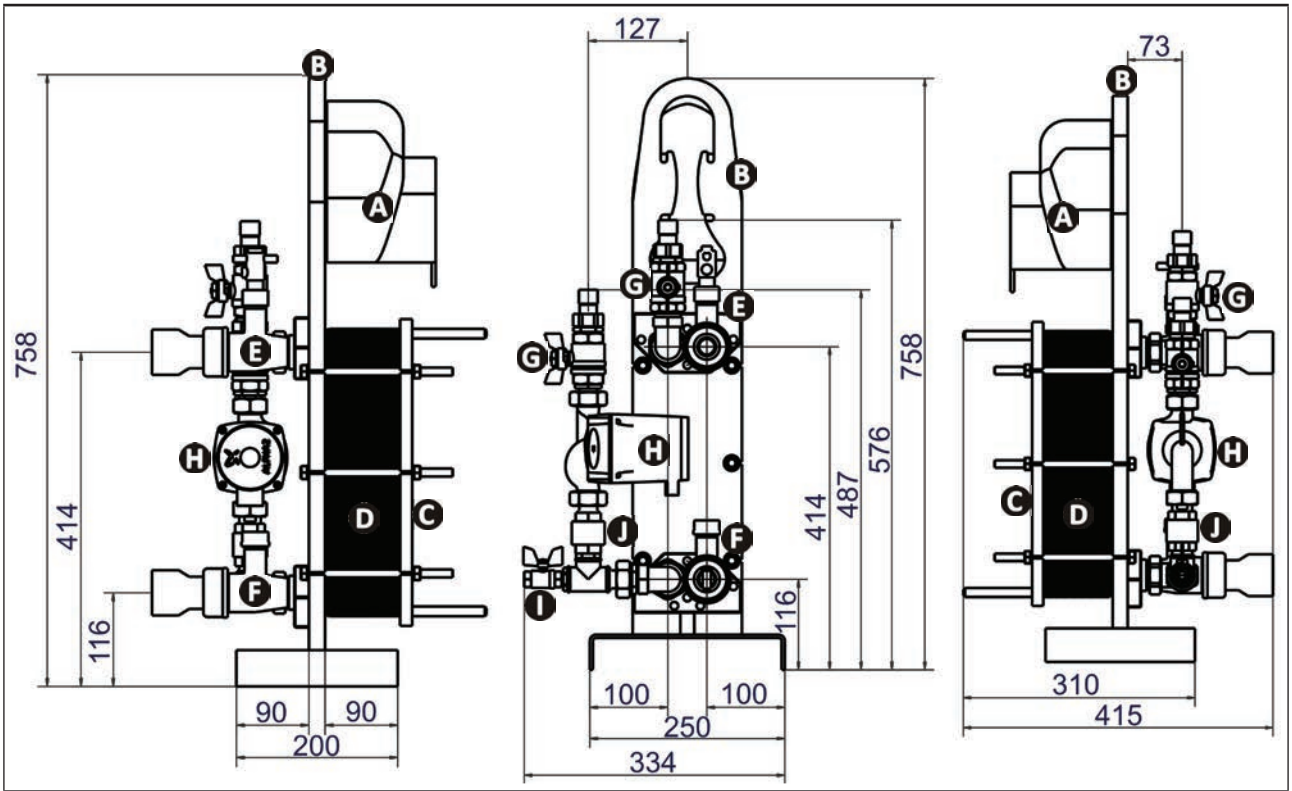
## 1.2 I Technical specifications

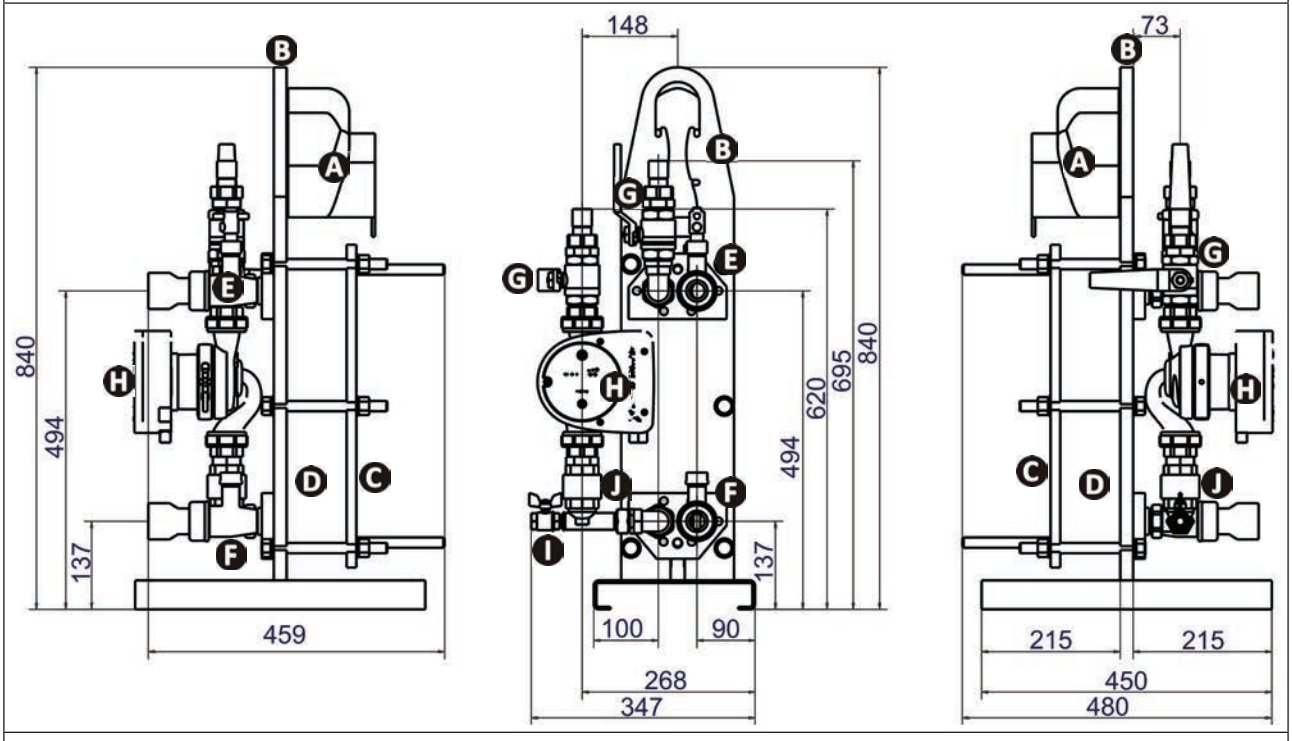
| UAP / UAN | Unit | 35 | | | 70 | | | 120 | | | 240 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Primary | °C | 90 | 60 | 45 | 90 | 60 | 45 | 90 | 60 | 45 | 90 | 60 | 45 |
| Secondary | °C | 26 | | | 26 | | | 26 | | | 26 | | |
| Power | kW | 55 | 27 | 15 | 80 | 38 | 21 | 120 | 63 | 34 | 240 | 123 | 68 |
| Primary rate | m³/h | 1.6 | | | 2.1 | | | 2.8 | | | 6.3 | | |
| Secondary rate | m³/h | 2 | | | 2.9 | | | 4.3 | | | 8.7 | | |
| Primary loss of load | bar | 0.15 | | | 0.12 | | | 0.1 | | | 0.2 | | |
| Secondary loss of load | bar | 0.24 | | | 0.23 | | | 0.25 | | | 0.38 | | |
| Primary pressure head available* | bar | 0.23 | | | 0.2 | | | 0.07 | | | 0.16 | | |
| Primary connection | UAP | Ø26/34 male screw-in | | | | | | | | | Ø33/42 male screw-in | | |
| | UAN | Ø20/27 male screw-in | | | | | | | | | Ø26/34 male screw-in | | |
| Secondary connection | UAP | PVC Ø50 to be glued | | | | | | | | | | | |
| | UAN | Ø20/27 male screw-in | | | | | | | | | Ø26/34 male screw-in | | |
| Primary circuit pressure | Service | 2 bars | | | | | | | | | | | |
| | Maximum | 3 bars | | | | | | | | | | | |
| Number of plates | | 11 | | | 17 | | | 31 | | | 31 | | |
| Type of titanium plate | | T2B | | | | | | | | | M3 MH/ML | | |
| Plate thickness | mm | 0.5 | | | | | | | | | 0.4 | | |
| Medium tightening dimension | mm | 34 | | | 53 | | | 96 | | | 87 | | |
| Operating temperature range | Pool water | between 2 and 40 °C | | | | | | | | | | | |
| | Primary circuit water | between 45 and 90 °C | | | | | | | | | | | |

| UAP | | 35 | 70 | 120 | 240 |
|---|---|---|---|---|---|
| Electrical box protection index | | IP34 | | | |
| Power supply | | 230Vac | | | |
| Circulating pump | | Alpha 2L 15-60 | | | Magna 1 32-80 |
| Circulating pump spacer | | 130 mm | | | 180 mm |
| Absorbed power | Speed 3 | 45 W | | | 151 W |
| In | | 0.20 A | | | 0.65 A |
| Maximum absorbed intensity | | 0.38 A | | | 1.22 A |

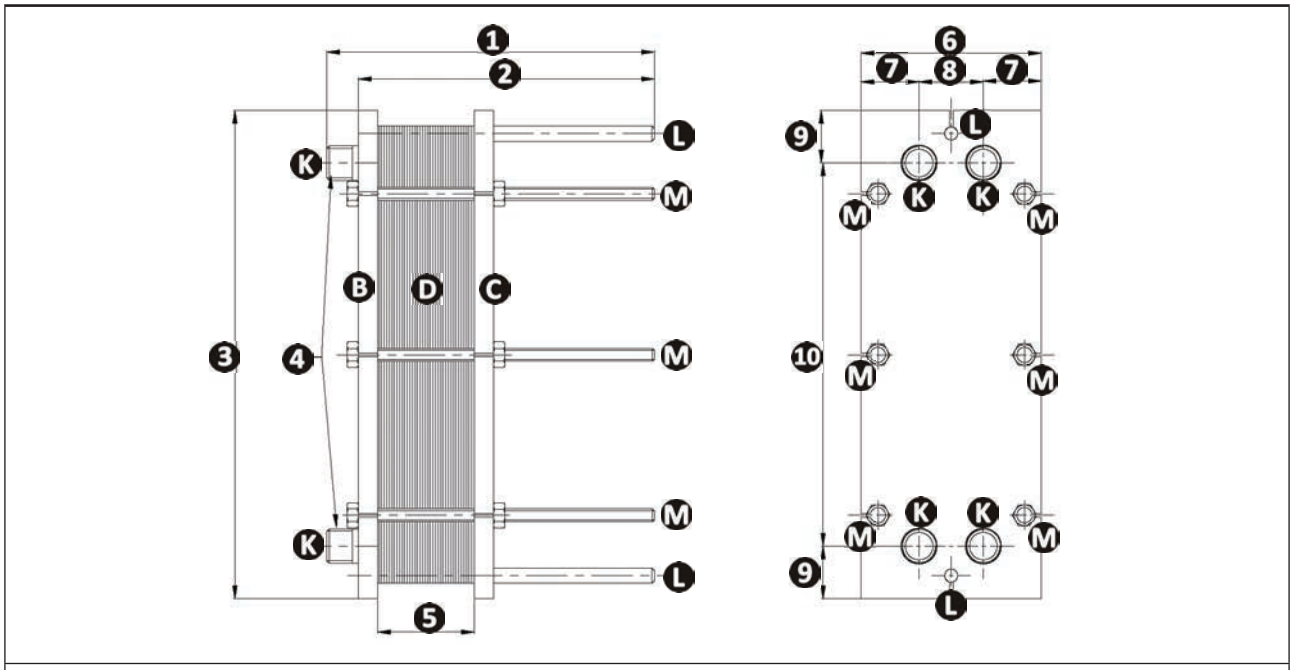
## 1.3 I Dimensions and marking




**UAP 35-70-120**




**UAP 240**




**UAN 35-70-120-240**

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| UAN | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| **35** | 255 mm | 230 mm | 380 mm | 3/4'' | 34 mm | 140 mm | 45 mm | 50 mm | 41 mm | 298 mm |
| **70** | 255 mm | 230 mm | 380 mm | 3/4'' | 53 mm | 140 mm | 45 mm | 50 mm | 41 mm | 298 mm |
| **120** | 255 mm | 230 mm | 380 mm | 3/4'' | 96 mm | 140 mm | 45 mm | 50 mm | 41 mm | 298 mm |
| **240** | 407 mm | 350 mm | 500 mm | 1" | 87 mm | 200 mm | 70 mm | 60 mm | 71.5 mm | 357 mm |

| | |
|---|---|
| A | Electrical unit |
| B | Fixed chassis |
| C | Tightening plate |
| D | Exchange plates |
| E | Adaptation and sealing flange + Injected T with spur 20/27 male screw-in + Rate controller |
| F | Adaptation and sealing flange + Injected T with spur 20/27 male screw-in + Regulation sensor + Glove finger |

| | |
|---|---|
| G | Spherical valve |
| H | Circulating pump |
| I | Drainage valve |
| J | Anti-return valve |
| K | Connection tubes (with caps) |
| L | Guide bar |
| M | Tightening levers |

# 2 Installation

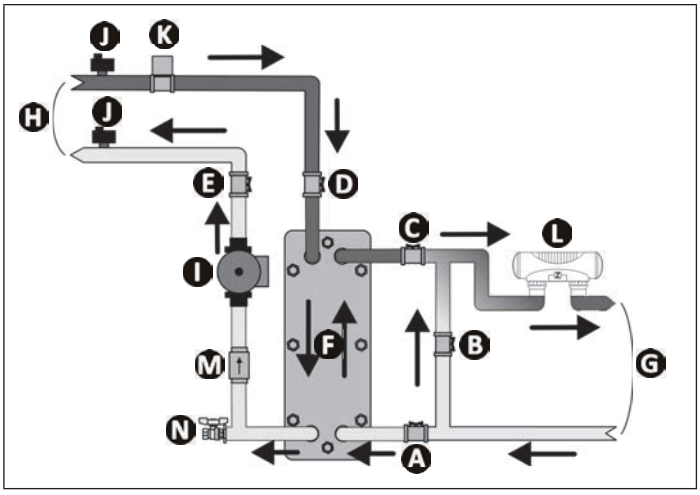
## 2.1 I Selecting the location

- **The appliance must be installed in a technical room ventilated, dry and without stored pool treatment products.**

- Install the appliance as close as possible to the heating source (boiler, heat pump, geothermal, solar-powered heating, etc.),
- If the appliance cannot be installed beside the heating source:
  - Provide for the dimensioning of the pipes and primary and secondary circuits in relation to the water flow rate, the losses of load and the distance, and insulate them thermally,
  - Install a more powerful circulating pump (contact us for its dimensions and supply),
- If the exchanger is away from the filter: the swimming pool circuit pipes must have a minimum dimension of Ø50 and be placed in a protective sheath if they are run underground.
- The water treatment system must be installed after the exchanger and at a low point to avoid chlorine being returned to the exchanger,
- Leave at least 80 cm free space around the appliance to facilitate its installation and maintenance,
- The pipes must not be supported by the exchanger.
- The appliance must be placed on a solid and level base which is raised off the ground in case of flooding or if the floor is cleaned with a water spray.

## 2.2 I Hydraulic connections

- Respect the hydraulic connection direction (see the label on the appliance).
- Do not use quick closure valves to avoid water hammer.
- Correctly tighten the hydraulic connections and check for leaks.
- Check that the pipe system is cleaned before connecting anything.




A : pool water inlet valve (secondary circuit)
B : pool water by-pass valve (secondary circuit)
C : pool water outlet valve (secondary circuit)
D : heating water inlet valve (primary circuit)
E : heating water outlet valve (primary circuit)
F : exchanger
G : pool circuit
H : heating circuit
I : circulating pump
J : automatic bleeder
K : solenoid valve (optional)
L : water treatment
M : anti-return valve
N : drainage valve

**Tip: calorie exchange optimisation**
- The water from the heating source must be at constant temperature.
- Respect the water flow direction in the exchanger.

### 2.2.1 Heating system connection (a.k.a. primary)

- **The primary circuit's spur must be upstream of any valves or pumps.**

- With insulated pipes,
- Fitted with a safety valve (pressure limited to 3 bars) and a correctly-dimensioned expansion chamber,
- The pipes must have automatic drains at their high points.

### 2.2.2 Pool system connection (a.k.a. secondary)

- **90° elbow fittings must not be installed directly at the exchanger outlet; leave at least 25 cm of straight pipe to prevent chatter of the flow controller armature.**

- In PVC pipes Ø50 minimum,
- compulsory via a by-pass.

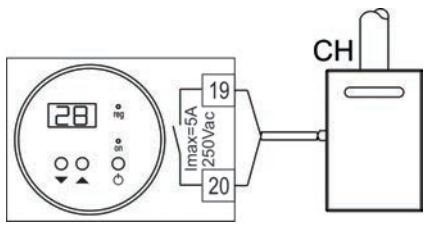
## 2.3 I Electricity supply connections (depending on the models)

- **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.**

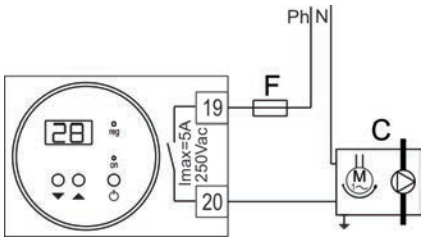
- The exchanger's electrical supply must be provided through a protection and circuit breaking device (not supplied) complying with the standards and regulations in force in the country where it is installed.
- Electrical protection: via 30 mA residual-current circuit breaker.
- The electricity supply must correspond to the voltage indicated on the device's information plate.
- Use the power supply cable delivered with the appliance.
- All extension cables or multisocket connects are prohibited. Request the installation of a protected power socket near the appliance from an approved technician.
- If the supply cable is not long enough, it must be replaced by a qualified technician.
- 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.

### 2.3.1 Connecting an external command to supply the primary circuit

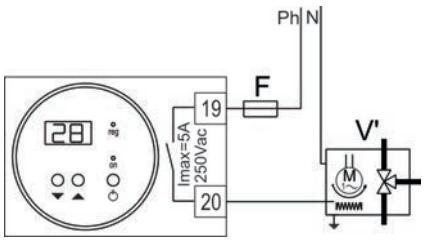
- Use a 3G1 cable (section 1 mm²),
- This function is provided via the dry contact without polarity "normally open at rest" (maximum intensity 5A under 250Vac 50-60Hz) available on the terminal 19-20 regulator,
- The wire connected to terminals 19-20 must go through the additional discharge “grommet” (supplied) to be installed on the base of the box.



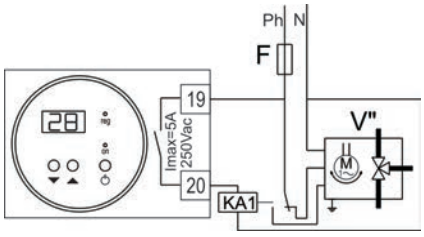

Connection to a heating source




Connection to a circulating pump




Connection to a 3-channel valve with mechanical return




Connection to a motorised 3-channel valve with two rotation directions

Ph: live

N: neutral

F*: protection fuse (maximum 5A)

C*: additional circulating pump

V’*: 3-channel valve with mechanical return

CH*: existing heating source

V’’* : motorised 3-channel valve with two rotation directions

KA1*: command relay

* not supplied

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# 3 Use

- **Never run the circulating pump (depending on the model) without water. The circulating pump is very quiet when it starts up; you may not hear it running.**

## 3.1 I Operating principle

Your heat pump uses the calories (heat) from your home's heating to heat up your pool's water.
The heat is exchanged through a series of pipes; the home's heating water circulates through the exchanger's body and the pool water circulates through the pipes.

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

- Cover the basin with a sheet (bubble canopy, canvas, etc.) to prevent heat loss. The closer the heat source is to the exchanger, and the exchanger is to the pool, the less heat will be lost.
- 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 appliance will have enough operating range to heat up)

## 3.2 User interface presentation (depending on the models)

| | |
|---|---|
| 28 | Display screen (default: water temperature measured) |
| ⏻ | "On/off" button |
| ▲ ▼ | Value setting buttons |

| | | Fixed | Flashing | Off |
|---|---|---|---|---|
| on | "On/off" light | Appliance powered up | / | No electrical supply |
| reg | Heating light | Heating in progress | • Timed before operation<br>• No water circulation in the secondary circuit (less than 1.1m³/h) | No need for heating |

**Tips: using the user interface**

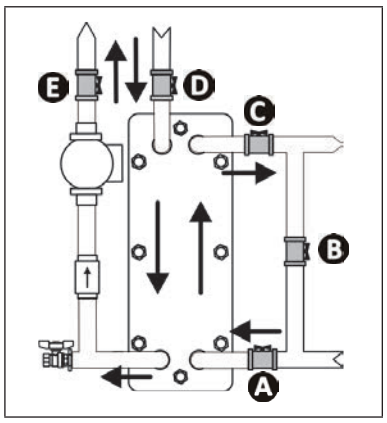
- The temperature is regulated by degrees.
- Hold down the buttons to scroll through the values quickly.
- The setpoint adjustment range is between 2° and 40°C.
- This maximum temperature may be lowered to protect the pool liner (see § “3.2.1 Modifying the maximum setpoint”).

### 3.2.1 Modifying the maximum setpoint

- Switch off the regulator (the "on" light goes off and the pool water temperature is displayed),
- Press ▲ and ▼ simultaneously for 5 seconds: "PA" is displayed,
- Press ⏻, then enter the value "80" with ▲ or ▼ (code to access the "parameters" menu),
- Press ⏻ to confirm: "PA" is displayed,
- Press ▲ and ▼ simultaneously for 5 seconds: "/1" is displayed,
- Press ▲ to scroll through each parameter until "r2" is displayed,
- Press ⏻; the current "r2" parameter value is displayed,
- Press ▲ or ▼ to modify the maximum setpoint value, then press ⏻ to validate this new value,
- Press the ▲ and ▼ keys at the same time for 5 seconds to return to the pool water temperature display.

## 3.3 I Operating

- **Never run the circulating pump (depending on the model) without water. The circulating pump is very quiet when it starts up; you may not hear it running.**
- **Never run any water through the primary circuit without any water running through the secondary circuit.**
- **The water must flow slowly to avoid water hammer.**




A : pool water inlet valve (secondary circuit)
B : pool water by-pass valve (secondary circuit)
C : pool water outlet valve (secondary circuit)
D : heating water inlet valve (primary circuit)
E : heating water outlet valve (primary circuit)

- Check that the hydraulic corrections are correctly tightened and that there are no leaks.
- Check that the device is fully stable.
- Position the valves as follows: valves A, B and C fully open.
- Start the filtration pump.
- Carry out a first by-pass setting by slightly closing valve 1 (+ 150 to 200g for Uranus 35-70, + 300 to 400g for Uranus 120-240 on the filter pressure) so that the nominal secondary water flow is more or less respected.
- Open valves D and E fully,
- Check that the heating circuit is filled and vented,
- Connect the regulation to the power supply and turn it on,
- Adjust the temperature setpoint.
- Adjust the by-pass using valve C for correct operation.
- After the start-up steps for your exchanger:
  - Check that there are no leaks.
  - Check that the fluid temperatures and pressures do not exceed the limits indicated on the appliance's maker's plate.
  - Check that the circulating pump stops operating when the setpoint temperature is reduced or when the regulation is switched off and when the filtration is stopped or valve A or C is closed.
  - Check that the exchanger is no longer irrigated with water by the heating circuit when the filtration is stopped and that there are no pool water heating requests.

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## 3.4 I Additional functions

### 3.4.1 Setting the setpoint on UAP

To display and modify the set point value, press ▲ or ▼.

### 3.4.2 Operation of the circulating pump on UAP 35-70-120

- When the circulating pump is powered up, the POWER ON light comes on.
- When the circulating pump is operating, it displays the electrical consumption in Watts: 
- The display may switch on even if the power supply is disconnected, if the circulating pump's wheel is activated by the water filling up, for example.

**Tips: restarting the circulating pump after a long shutdown period**
- The circulating pump is equipped with an self-cleaning system designed to minimise the effects of fouling.
- If a blockage occurs, lights appear on the circulating pump, see § “5.2 I Error code display”.

**Tips: choosing the right operating mode**
- By default, the circulating pump is programmed to "proportional speed 2 pressure". We recommend that you keep this mode, which is suitable for most installations.
- If, however, your appliance is close to the boiler, you may lower the speed to speed 1 (see § “3.4.3 Circulating pump operating modes on UAP 35-70-120”.

### 3.4.3 Circulating pump operating modes on UAP 35-70-120

- Press to scroll through the operating modes:

| Mode | Speed | Lights |
|---|---|---|
| Proportional pressure | Speed 1 | |
| | Speed 2 | |
| Constant pressure | Speed 1 | |
| | Speed 2 | |
| Constant speed | Speed 3 | |
| | Speed 2 | |
| | Speed 1 | |

### 3.4.4 Operation of the circulating pump on UAP 240

- When the circulating pump is powered up, the light comes on green.
- When the circulating pump is running the light turns.
- The display may switch on even if the power supply is disconnected, if the circulating pump's wheel is activated by the water filling up, for example.

**Tips: restarting the circulating pump after a long shutdown period**
- The circulating pump is equipped with an self-cleaning system designed to minimise the effects of fouling.
- If a blockage occurs, lights appear on the circulating pump, see § “5.2 I Error code display”.

**Tips: choosing the right operating mode**
- By default, the circulating pump is programmed to "proportional speed 2 pressure". We recommend that you keep this mode, which is suitable for most installations.
- If, however, your appliance is close to the boiler, you may lower the speed to speed 1; if it is far away from the boiler, you may switch it to speed 3 (see § “3.4.5 Circulating pump operating modes on UAP 240”.

### 3.4.5 Circulating pump operating modes on UAP 240

- Press to scroll through the operating modes:

| Mode | Speed | Lights |
|---|---|---|
| Proportional pressure | Speed 1 |  |
| | Speed 2 |  |
| | Speed 3 |  |
| Constant pressure | Speed 1 |  |
| | Speed 2 |  |
| | Speed 3 |  |
| Constant speed | Speed 3 |  |
| | Speed 2 |  |
| | Speed 1 |  |

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# 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 electrical box with condensation, do not fully cover it.**

- Power down the regulation,
- Cut the water circulation in the primary and secondary circuits,
- Drain the primary circuit (pay attention to the water temperature; wait until it cools down to avoid any risk of burns):
  - Close the insulation valves D and E (see § “2.2 I Hydraulic connections”),
  - Open the drainage valve,
- Drain the secondary circuit:
  - Close valves A and C (see § “2.2 I Hydraulic connections”),
  - Unscrew the connectors to drain the exchanger,
  - Tighten the connectors slightly again when the exchanger is empty.

## 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 Maintenance to be carried out by a qualified technician

- Make sure that the appliance's pipe fittings are property tightened.
- Only for UAP:
  - Check the electrical mechanism.
  - Check the ground connection.
  - 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 | • When the setpoint temperature is reached, the appliance stops heating: the water temperature is higher than or equal to the setpoint temperature.<br>• When the water flow rate is zero or is not enough, the appliance stops: check that the water is circulating correctly in the exchanger and that the hydraulic connections are correct.<br>• It may be that the appliance has detected an operating fault (see § "5.2 I Error code display").<br>• If you have checked these points and the problem persists: contact your reseller. |
| The device is not working | • If there is no display, check the supply voltage and the F1 fuse and replace it if necessary (see § "5.3 I Replacing the electrical box fuse (depending on the models)").<br>• When the setpoint temperature is reached, the appliance stops heating: the water temperature is higher than or equal to the setpoint temperature.<br>• When the water flow rate is zero or is not enough, the appliance stops: check that the water is circulating correctly in the appliance.<br>• It may be that the appliance has detected an operating fault (see § "5.2 I Error code display"). |
| The device is working but the water temperature does not increase | • It may be that the appliance has detected an operating fault (see § "5.2 I Error code display").<br>• 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.<br>• There is too much heat loss as the air is cool. Install a heat insulated cover on your pool.<br>• Check that the appliance is the right size for this pool and its environment. |
| The pool water is hotter than requested | • The circulating pump is not operating correctly. Check that it stops when the setpoint temperature is reached.<br>• Another circulating pump is pushing on the primary circuit. In this case, provide a solenoid valve on the output from the primary circuit managed by terminals 19-20 (see § "2.3.1 Connecting an external command to supply the primary circuit"). |
| The device trips the circuit breaker | • Check that the circuit breaker is correctly dimensioned and that the cable section used is the right one (see § "1.2 I Technical specifications").<br>• The supply voltage is too low; contact your electricity supplier. |

## 5.2 I Error code display

| Regulator display | Possible causes | Solutions |
|---|---|---|
| E0<br>Flashing | The regulation sensor is out of service or disconnected | Reconnect or change the sensor |

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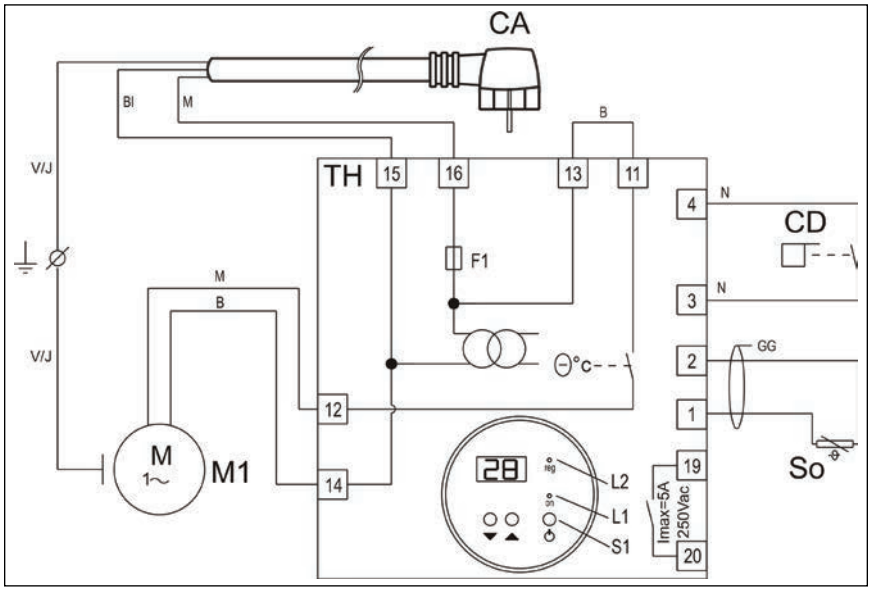
## 5.3 I Replacing the electrical box fuse (depending on the models)

- CAUTION! Disconnect power to the appliance!
- Remove the cover,
- Disconnect the regulator,
- Remove the regulator cover,
- Remove the protective fuse (T3,15AH250V).

| 1 | 2 |
|---|---|
|  |  |

## 5.4 I Wiring diagrams




| | |
|---|---|
| CA | power cable: 2L+E 10/16A 3G1 |
| TH | Regulation thermostat with digital display |
| M1 | Circulating pump motor |
| F1 | 3.15 A-T protection fuse |
| CD | Flow controller |
| So | Pool water regulation sensor (PTC) |
| GN | Black duct |
| L1 | "On/off" LED |
| L2 | "Reg" LED flashing when timed or fixed heating in progress |
| S1 | "On/off" switch |
| 19-20 | Dry command contact "normally open" |
| V-J | Green-yellow |
| Bl | blue |
| M | brown |
| B | White |
| N | black |
| ⏚ | Earth |

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| | |
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| Votre revendeur<br>*Your retailer* | |
| Modèle appareil<br>*Appliance model* | |
| Numéro de série<br>*Serial number* | |

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