

Inverter Salt Chlorinator

Operating Instructions



AquaLimpid

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1 Warnings



WARNING: General Information

1. Carefully read the instructions that appear in this manual and on the device. Failure to comply with the instructions can cause injuries. This document must be given to every pool user, who should keep it in a safe place.
2. Chemicals can cause internal and external burns. To avoid death, serious injury and/or damage to equipment, wear personal protective equipment (gloves, goggles, mask, etc.) when servicing or maintaining this device. This device must be installed in an adequately ventilated place.
3. The appliance is not to be used 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.
4. Children must not play with the device. User maintenance and cleaning must not be carried out by unsupervised children.
5. The chlorinator must be located or fixed so that they cannot fall into the water.
6. Avoid damage due to water freezing.
7. Use only original Aquark parts.



WARNING: Electrical Hazard.

1. The appliance is intended to be used only in swimming pools.
2. The control unit is recommended to be installed in the pool machine room.
3. Disconnect the equipment from the mains supply before any intervention or maintenance.
4. All electrical connections must be carried out by a qualified approved electrician in accordance with the standards currently in force in the country of installation.
5. Check that the device is plugged into a power outlet that is protected against short-circuits. The device must also be powered via an isolating transformer or a residual current device (RCD) with a nominal operating residual current not exceeding 30 mA.
6. Check that the supply voltage required by the product corresponds to the voltage of the distribution network and that the power supply cables are suitable for the product power supply.
7. To reduce the risk of electric shock, do not use an extension cable to connect the device to the mains. Use a wall socket.
8. The device must not be used if the power cord is damaged. An electric shock could occur. A damaged power cord must be replaced by the after-sales service or similarly qualified persons to avoid danger.

2 Product Introduction

2.1 Product Specification

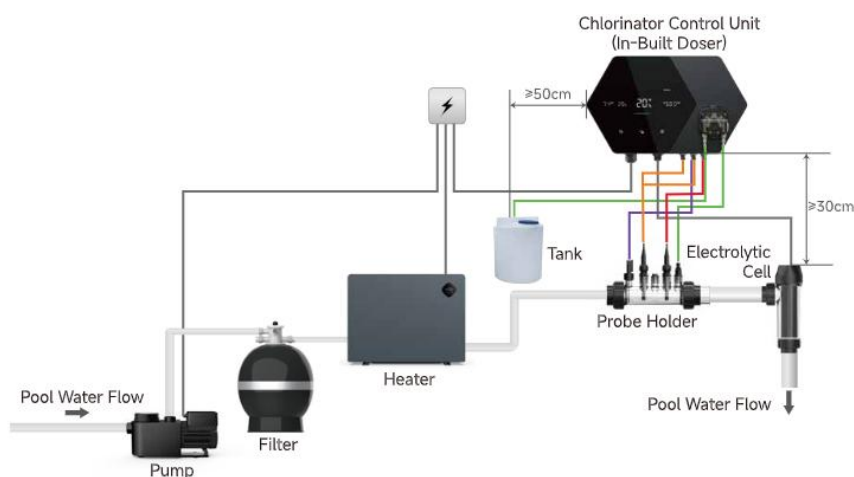
Model	ALS14	ALS21	ALS28	ALS33
Chlorine production (g/h) (Salinity: 3000 PPM)	14.0	21.0	28.0	33.0
Pool Volume (m ³)	50-70	70-85	80-110	100-125
Recommended Salinity	3 — 5 (recommended 3g/L)			
Power Supply	220—240V~ 50/60Hz			
Max. Output Voltage	DC12V	DC12V	DC12V	DC12V
Max Input Power	88W	123W	158W	181W
Advised water flux (m ³ /h)	5 —18 m ³ /h			
Operating Water Temperature	10 — 40℃			
Ambient Temperature	-5 — 42℃			
Pressure for Electrolytic Cell	3.0 Bar for Sensor Holder, 4.5 Bar for Electrolysis Cell			
Cell Lifetime	Up to 10000H			

3 Installations and Connections

3.1 Materials and Tools

Tools Needed for Installation
Tape Measure
Phillips and Flathead Screwdrivers
Pliers Drill
Drill
Hacksaw
Waterproof for Pool Pipes
PVC primer and glue

3.2 Installations Diagram

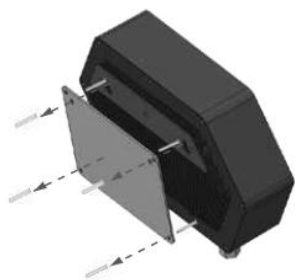


3.3 Control Unit

Note:

- The control unit is recommended to be installed in the pool machine room.
- For safety and user convenience, the control unit should be installed from the ground at least 80cm.
- Don't place the control unit directly above an open chemical container or tank.
- It is suggested to place the salt chlorinator control unit keeping a distance from the chemical container or tank, **more than 2m is better**. (The minimum distance between the control unit and the sealed acid barrel must be 50cm)
- The unit should also be kept away from heat sources. Proper ventilation is essential for correct operation.
- Electrolysis cell is connected to control unit with a **1.8m cell cable**.

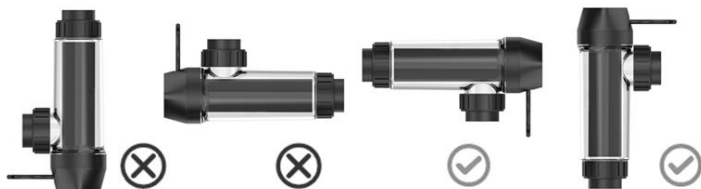
- Control unit should be installed at least 30cm higher than electrolysis cell.
 - Connect the control unit power supply to an appropriate weatherproof power outlet/controller.
 - For easy maintenance, the control unit can be taken out from the mounting surface freely, without any excess operations.
1. Using the wall-mounted backplate as a guide, mark holes on the mounting surface where the control unit will ultimately reside. Drill the holes in the mounting surface.
 2. Insert the expansion plugs into the borehole.
 3. Reinstall the wall-mounted backplate to the top and bottom of the back of the control unit using the screws that were removed.
 4. Tighten all the screws, ensuring that the control unit is securely hung on the mounting surface.
 5. Check source voltage.



3.4 Electrolytic Cell

Note:

- Before installation, make sure pool pump is turned off.
 - It is recommended that the electrolytic cell be installed in the pool return line after the filter and heater.
 - The solvent cement or primer can cause damage if allowed to contact the threads or the o rings.
 - Electrolysis Cell is connected to Control Unit with a 1.8m cell cable.
 - Failing to install in the correct way may cause products faults and void warranty.
1. Shown below are 4 different cell orientations:



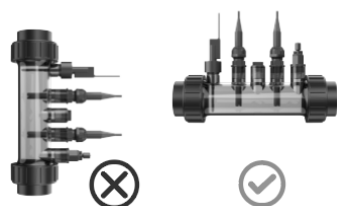
2. The power supply connection cap and the air sensor must be the highest point of the installation.

3. Ensure adequate water flow over the cell plates and the air switch.
4. Make sure the higher water level in the electrolytic cell, and the power supply connection cap is the highest point.
5. The cell is supplied with 48.3mm, 50mm, 60.3mm and 63mm unions to connect to the PVC plumbing.
6. Ensure a suitable solvent cement is used to glue the unions to the pipework.
7. Ensure the nuts are over the union tails before gluing them onto the pipework.
8. Once the solvent cement has set, place the cell housing onto the pipework and hand tighten the union nuts with the o rings in place.

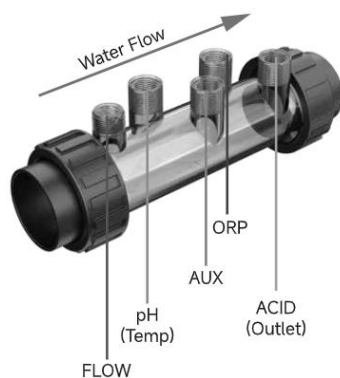
3.5 Probe Cell

Note:

- Before installation, make sure pool pump is turned off.
 - Failing to install in the correct way may cause products faults and void warranty.
1. Probe Cell only be installed horizontally.



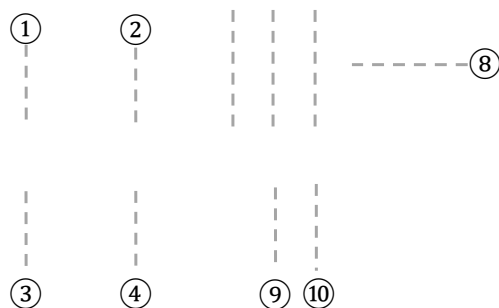
2. Flow Switch, pH Probe, ORP Probe, Check Valve (for acid) can be installed according to the recommended sequence.



3.6 Control Unit with In-Built pH Doser

5 / 45 ⑤ ⑥ ⑦





No.	Port Name	Photo	Description	
①	Dry Contact		Connector for dry contact The safe current value < 5A, AC220-240V	
②	AUX (9 Pin)		Reserved external control (VS Pump, Pool Cover)	
③	Power Input		AC power connector (220-240V, 50/60Hz)	
④	Power Output		Terminal for cell power	
⑤	pH		BNC connector for pH sensor	
⑥	T (Water Temp)		BNC Connector for temperature sensor (Integrated with the pH sensor)	
⑦	ORP		BNC Connector for ORP sensor	
⑧	In-built pH Regulator		Left	Acid inlet
			Right	Acid outlet
⑨	FL (Flow Switch)		Connector for flow switch	
⑩	485 COM (Reserved)		1	485 – B
			2	485 – A
			3	485 – GND

3.6.1 Dry Contact Cable Connection (Water Pump)

Dry Contact Specifications:

Type: Isolated relay contact (NO/NC)

Rating: MAX 5A, 220-240V AC

Characteristics:

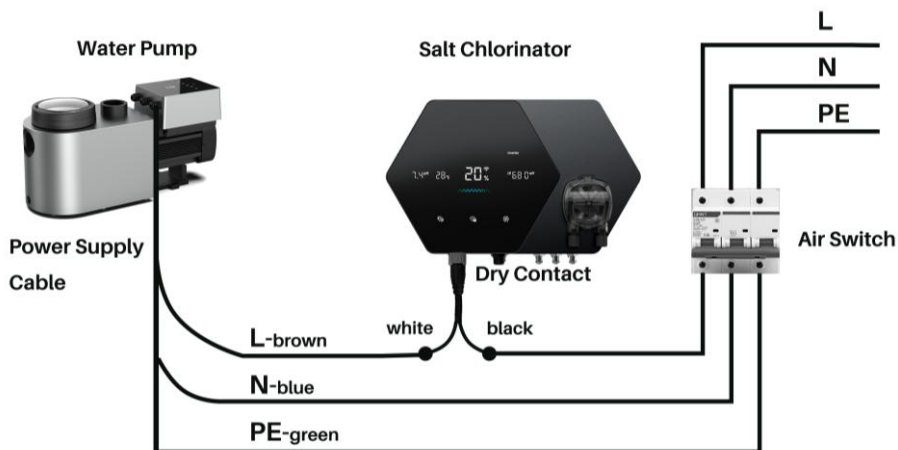
- No voltage/current supplied by the contact itself.
- Can switch external AC loads up to 5A at 220-240V.

Water Pump Control Logic via Dry Contact:

The operating states and their outcomes are clearly defined in the following logic table:

Chlorinator State / Screen Displayed	Dry Contact Status	Water Pump Action
Chlorinator is OFF	Disconnected	Turned OFF
Setting Screen (after shutdown)	Disconnected	Turned OFF
HOME Screen	Connected	Turned ON
Calibration Screen	Connected	Turned ON

Our product will be equipped with a Dry Contact Cable (3 m), wire the cable as shown in the diagram below:



- ① Remove the outer black insulation from the power supply cable of Water Pump that will be connected to the Salt Chlorinator. Three wires inside are exposed (green, blue, brown).
- ② Disconnect three wires of water pump power supply cable.
- ③ Install Cable Glands or Connectors: If your junction box uses cable glands, screw them into the entry points of the box. These are used to secure the cable and provide a waterproof seal.

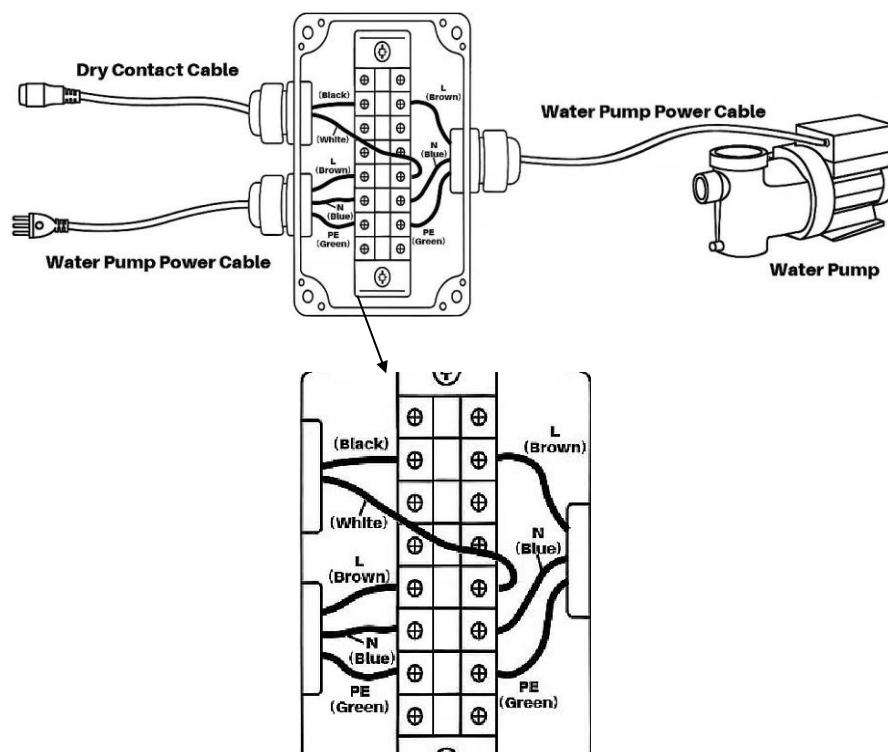
Or insert the Wires into the Junction Box: Feed the wires through the cable glands or waterproof connectors into the junction box. Ensure that the wires pass through without any kinks or sharp bends.

- ④ Connect the Wires: Inside the junction box, connect the wires using either screw terminals or other appropriate connectors (such as wire nuts or crimp connectors).

Make sure each wire is securely attached and that there is no exposed metal that could cause a short circuit. If necessary, use electrical tape to cover any exposed wire for added protection.

- ⑤ Seal the Junction Box: Close the waterproof junction box, ensuring that the sealing gasket or O-ring is in place to prevent water from entering. Tighten the screws or latches that secure the box.
- ⑥ Test the Connection:

Once the junction box is sealed, test the connection by turning on the power or checking for continuity to ensure everything is connected properly and functioning as expected.

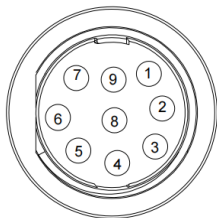


NOTE:

- Ensure the power supply is disconnected throughout the entire operation. Only turn on the socket power after all connections have been completed.

3.6.2 AUX Device Connection

Our product is equipped with a 9-pin connector for aux devices like VS pump and pool cover, as shown in the diagram below:



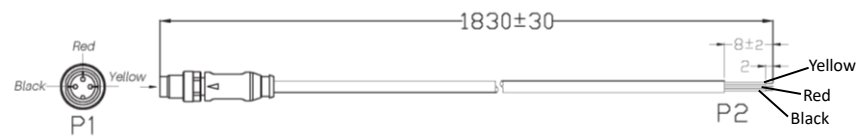
Number	Wire Color	Description
①	Black	VS Pump stop (off)
②	Orange	VS Pump Low (S1)
③	Red	VS Pump Medium (S2)
④	Blue	VS Pump High (S3)
⑤	White	VS Pump Com
⑥	Grey	AUX (DC5V output)
⑦	Brown	AUX
⑧	Green	Pool cover
⑨	Yellow	Pool cover GND

3.6.3 RS485 Cable Connection

According to different configurations, RS485 cables can be selected. The intelligent control system of the Salt Chlorinator operates via RS485 communication.



It uses a 3-pin RS485 cable for data transmission. One end of the cable (P1) is factory-connected to the 485-C OM port of the Salt Chlorinator, while the other end (P2) must be connected to the RS-485 terminal of the external control device.



Each wire core is color-coded to ensure correct and secure terminal connections, as shown in the table below:

Communication Wiring Table

Wire Color	Conn.
Yellow	GND
Red	B
Black	A

4 Pool Water Preparation

To prepare the pool water to enable the chlorinator, its chemical composition must be balanced and salt added. Certain adjustments to the chemical balance of the pool can take several hours.

The procedure **MUST** therefore be started well **BEFORE** the chlorinator is turned on.

4.1 Adding Salt

Add the salt several hours or, if possible, a day before turning on the chlorinator. Ensure that the recommended amount of salt is used.

Measure the salt content 6 to 8 hours after adding the salt to the swimming pool.

NOTE:

- If the water in the pool is not fresh and/or if it is liable to contain dissolved metals, use a metal remover, according to the manufacturer's instructions.
- If your water has previously been treated with a product other than chlorine (bromine, hydrogen peroxide, PHMB, etc.), neutralize this product or replace all the water in the pool.
- If using mineral salt (Magnesium chloride and / or Potassium chloride) add approx. 1.4times the amount of normal salt. (Optimum mineral salt level 4200ppm).
- If your water is supplied from a well, shock chlorination with trichloroisocyanuric acid (2 kg/50 m³ of water).

4.2 Chemical Water Balance

The water must be balanced manually **BEFORE** the device is started up.

The following table summarizes the concentrations recommended. Your water should be checked regularly to maintain these concentrations and minimize surface corrosion or deterioration.

CHEMISTRY	Recommended CONCENTRATIONS
Salt	Salt 3.0-5.0 g/l (recommended 3g/L)
Free chlorine	Free chlorine 1.0 to 3.0 ppm
pH	pH 7.2 to 7.6
Cyanuric acid (stabilizer)	20 to 30 ppm max, 0 ppm in indoor pool (Add stabilizer only if necessary)
Total alkalinity	80 to 120 ppm
Water hardness	200 to 300 ppm
Metals	0 ppm
Algaecide	Use of algaecide is an option, but must be copper free

5 Control Unit Operation

5.1 General Screen View



Description	Icon
Real-time pH	0.0 pH
Real-time water temperature (°C/°F)	00 °F 00 °C
Real-time chlorine production	100 %
Real-time ORP *display “---” when the value exceeds 999mV	rX 00 0 mV
Main display area: ● pool volume (m³) ● Boost mode countdown ● Local time, timer 1 and 2 ● acid adding amount (ml/day) ● real-time chlorine production (%)	TIMER ON OFF 1 2 00:00 m³ WAIT 00:00 ml/day

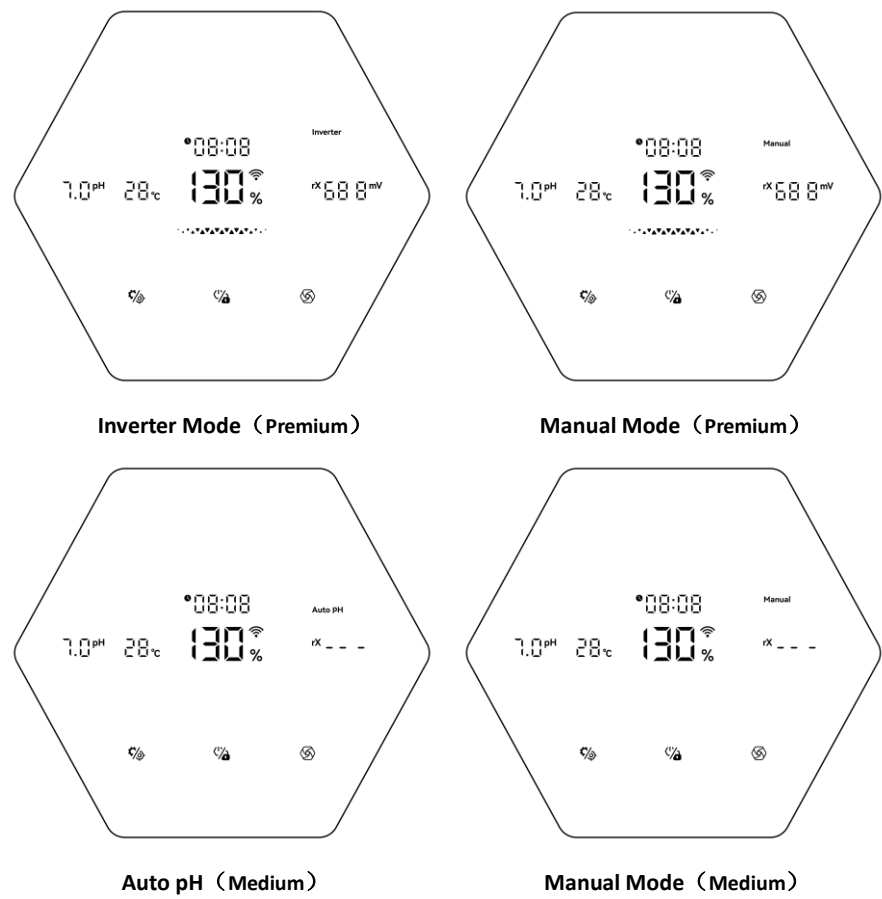
Chlorine Production Mode: Inverter Mode	Inverter
Chlorine Production Mode: Manual Mode	Manual
Chlorine Production Mode: Auto pH Mode	Auto pH
Error codes	
Warnings	 ADD SALT ACID TANK NO FLOW AIR IN CELL CALIBRATE
LED Indicator ● Blue: Suitable for swimming ● Red: Unstable Water condition /abnormal ORP or pH value (LED keep blinking) * Only available with ORP probe, pH+Temp probe	
Chlorine Production Mode Select / Boost	
Tuning up	
Settings/Calibration	
Tuning down	
Power/Lock	

5.2 Chlorine Production Mode Introduction

The chlorinator can be configured to 3 different modes according to different chlorine production modes. And the home screens in these 3 different modes are shown as below.

Configuration		Premium Model	Medium Model
Hardware Options		ORP+pH+Doser	pH+Doser
Selectable Chlorine Production Mode	Inverter Mode	√	-
	Auto pH Mode	-	√
	Manual Mode	√	√

5.2.1 Home Screen



5.3 LED Indicator Introduction

The LED Indicator of each status is shown as follows:

Status		LED Indicator
Real-time Water quality Display	Water Quality	Blue: Suitable for swimming
	1.Unstable water condition 2.Abnormal ORP or pH value * Only available with ORP probe or pH/Temp probe	1. Red: Unstable water condition /abnormal 2. ORP value, pH value keeps blinking
Calibration	1、ORP Calibration 2、pH Calibration	1. In operation: LED turn blue and gradually dimming 2.Success: Long beeper sounds 3. Unsuccess: LED blinking, beeper sounds 2 times and turns back to home screen.

5.4 Basic Commands and Functions

Command Keys	Function
	1. Power ON: Hold for 3 seconds initially. 2. Power OFF: Tap on home screen. 3. Screen Lock/Unlock: Hold for 3 seconds. Note: The auto lock function will be activated after 2 minutes without any operation.
	1. Enter BOOST mode: Tap 2. Exit BOOST mode: Hold for 3 seconds
	2. Enter Setting Menu Tap 3. Enter Calibration Process: Hold for 3 seconds 4. Go to Next Step: Tap 5. Back to Home Screen: Hold for 3 seconds
	Increase number/Tuning Up: Tap.
	Decrease number/Tuning Down: Tap.

5.4.1 Start Up

① It is recommended to set the pool volume 【P2】 and local time 【P3】 , Polarity reversal interval 【P4】 first. (Refer to Pt 5.4.7)

- When switching on the control unit, it will show the home screen.

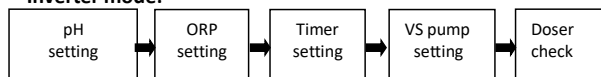
② Chlorine Production Mode Selection

- On the home screen, hold to  and  to enter Chlorine Production Mode menu.
- tapping  or  select Chlorine Production Mode.(Inverter, Auto pH, Manual)
- Tap  back to home screen.

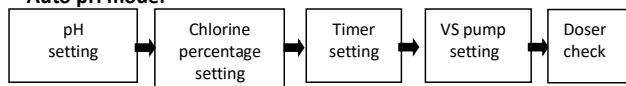
Note: When the Chlorinator is switched to Manual Mode , the doser will rotate for 30 seconds automatically.

Tap  to enter Setting Process The following Start Up steps :

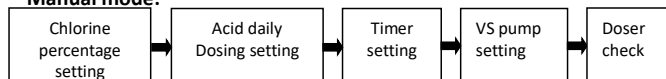
Inverter mode:



Auto pH mode:



Manual mode:



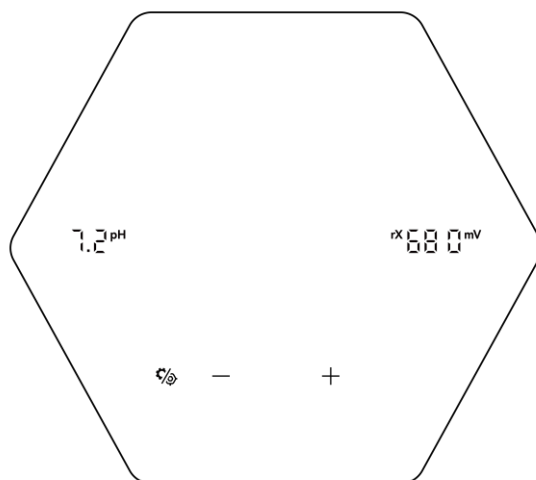
③ ORP Setpoint Setting (Only Premium)

- The default digit display on the pad screen is “700mV”.
- When the number is blinking, it can be tuned from 200 to 850 mV, in increments of 10, by tapping $+$ or $-$. Hold the button can accelerate the tuning speed in increments of 20.
- Confirm the ORP setpoint setting by tapping , and enter the next step: pH Setpoint setting.

④ pH Setpoint Setting (Premium/Medium)

- The default digit display on the pad screen is “7.2”.
- When the number is blinking, it can be tuned from 6.5 to 8.5, in increments of 0.1, by tapping $+$ or $-$. Hold the button can accelerate the tuning speed.
- Tap  to confirm and enter next step.

Note: If P5 is set to 0, Alarm A1 (Acid Tank) and E2 (pH Setpoint not Reached) will be turned off.

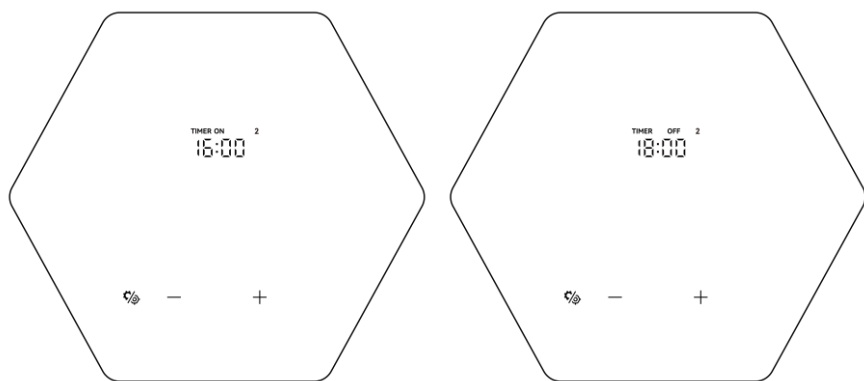


⑤ Timer Setting

- There are 2 timers in total, named **1** and **2**.
- For Each timer, When the **TIMER ON** is Blinking, tap $+$ or $-$ to select **TIMER ON** or **TIMER OFF**, which means switching on or off the single timer.

Step 1	Step 2
Select TIMER ON	①When TIMER ON and 1 lights up, set hours of the first timer by tapping + and -, save the parameter by tapping , then set and save minutes in the same way. ②When TIMER ON setting finished, TIMER OFF light up, set the end time of the 1 timer in the same way. ③Tap  save timer 1 and skip to next timer settings 2.
Select TIMER OFF	① No need to set the timer 1, tap  and skip to timer 2.

- Tapping  to confirm Timer settings and return to home screen.

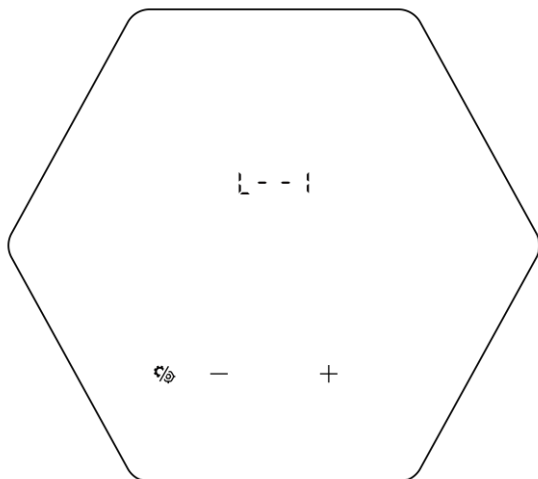


⑥ Variable Speed Pump Setting (VS Pump)

- Before setting VS Pump speed, make sure **AUX** is connected to VS Pump. (pt 3.6.3)
- “L- -” light on, tap **+** or **-** to select Speed

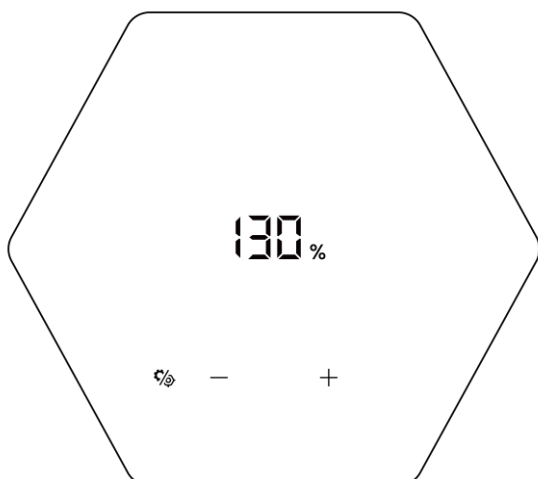
VS Pump Mode	Function
L- - 0	VS Pump stop
L- - 1	VS Pump operate in low speed
L- - 2	VS Pump operate in medium speed
L- - 3	VS Pump operate in high speed

- Tap  to confirm and enter next step.



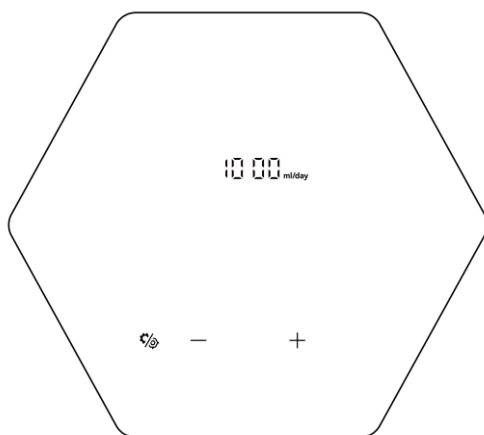
⑦ Chlorine Production Setting (Auto pH Mode / Manual Mode)

- The default digit display on the pad screen is "130%".
- When the number is blinking, it can be tuned from 0 to 130, in increments of 5, by tapping $+$ or $-$. Hold the button can accelerate the tuning speed.
- Tap  to confirm and enter next step.



⑧ pH Dosing Volume Setting (Only Manual Mode)

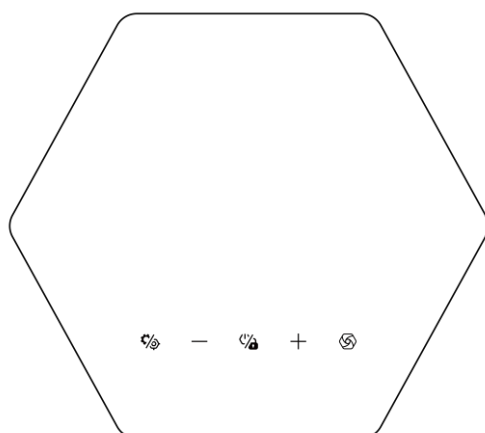
- Actual pH Dosing Volume Setting: range 0-99900ml/d. On the pad screen, the digit display is 0-9990ml/d.
- The default digit display on the pad screen is “50”, it means that the real pH Dosing Volume that is 500 ml/day.
- When the number is blinking, it can be tuned from 0 to 9990, in increments of 10, by tapping $+$ or $-$. Hold the button can accelerate the tuning speed.
- Tap  to next step.



⑨ Doser Check

To check the Doser works properly or not, the steps are as follows:

- Make sure the Doser hoses and PE acid tubes are connected and fitted tightly.
- Check the acid tank's fluid level, make sure PE acid tube is connected to suction valve in the tank.
- On the home screen, tap  , turn off the Chlorinator (**Power OFF**).



- Hold $+$ and $-$ for 3 seconds, then the long beeper sounds.
- The Doser will rotate automatically for 30s.
- Observe whether the acid solution is fulfilled in PE acid tubes and peristaltic tube.
- Acid solution is pushed out to pool water through the Doser tube, the Doser is ready.
- Tap  , turn on the Chlorinator(**Power ON**).

5.4.2 BOOST Performance

- ① **Boost Mode Switch ON:** tap  to enter Boost mode.

the device will run at 130% power for 24 hours. The real-time production and Boost countdown will be displayed.

- ② **Boost Mode Switch OFF:** Hold  for 3 seconds.



NOTE:

- BOOST mode is suggested to be activated when chlorine is urgently needed.
- While BOOST mode is on, the  is deactivated.
- If the chlorinator is powered off with BOOST mode turned on, the BOOST countdown refreshes when the chlorinator is turned on again.
- When the BOOST mode terminates or stops, production continues according to the previous settings.
- In Boost mode, when the ORP is higher than the set value, Chlorine Production still keeps running on 130%.

5.4.3 Pool Cover mode

NOTE:

- When the pool cover is detected, low chlorine production will be activated automatically, with  icon displayed on the screen.
- Pool cover protection can be set 0-30% 【PA】 , in increments of 10 (pt 5.4.7).
- For example, If the current chlorine production percentage is higher than 30%, the chlorine production will reduce to 30%; if the current chlorine production percentage is lower than 30%, it will remain unchanged.
- When the pool cover is not detected, the Cover is exited and the  is not displayed. Normal electrolysis is resumed.

批注 [海外销售二部-郑柔1]: 12.4 修改泳池盖盖时, 可以选择产氯量%

5.4.4 Recommended Settings

Tap Setting  to enter settings in accordance with following order:

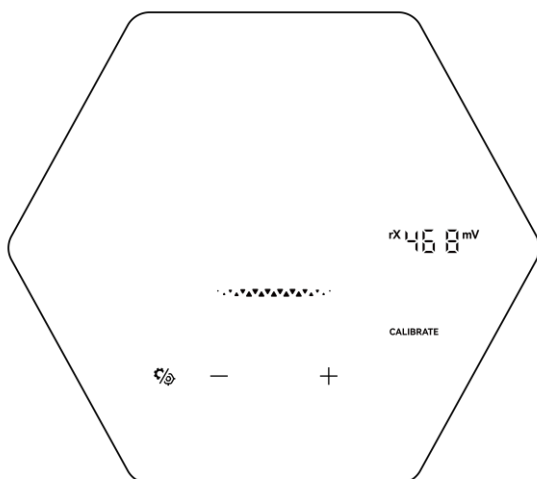
- 1) pH Target Setting: range 6.5-8.5, the recommended setpoint is in:7.2~7.6
- 2) ORP Target Value setting: range 200-850mV (Inverter Mode)
 - Sug'td ORP Winter setting: ORP 650mV.
 - Sug'td ORP summer setting: ORP 700mV.
 - If there is a free chlorine probe or other free chlorine monitoring instrument, adjust your pool water (Free chlorine 1.0 to 3.0 ppm), then look at ORP value on the chlorinator screen and memorize this level as the setpoint.
- 3) Chlorine Production: 0-130% (Auto pH Mode / Manual Mode).
- 4) pH Dosing Volume Setting: range 0-9990 (Manual Mode), corresponding 0-99900 ml/day.
Hydrochloric Acid: ≤12.5% concentration.
- 5) Timers setting: range 0:00-24:00 (24hr clock).

5.4.5 Calibration

① ORP Calibration (Inverter Mode)

Hold  for 3 seconds to enter calibration process.

- When the default digit display ORP value 468mv flashing, tap $+$ or $-$ to adjust the ORP calibration buffer type (range from 200-600mv).
- Place ORP probe into 468mV buffer solution, make sure the head of the probe is totally soaked.
- Calibration completes when the beeper sounds, and then enter pH calibration.

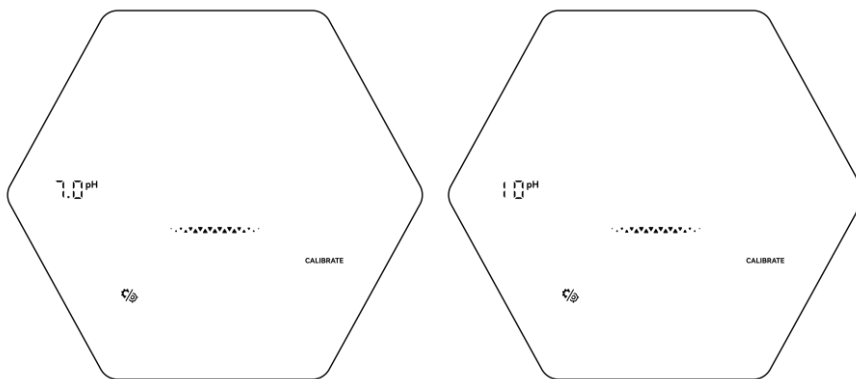


NOTE:

- ORP calibration values range from 200-600mv, step size is 1mv, Hold the button can accelerate the tuning speed.
- This step can also be skipped by tapping .
- If the ORP probe soaked in wrong solution, the blue LED indicator would keep blinking until the probe is handled properly. Otherwise, it will return to home screen 10mins later
- Before calibrating or replacing the probe, the valve of the electrolytic cell needs to be turned off to avoid leakage.

② pH 7.0 and pH 10.0 Calibration (Inverter Mode/Auto pH Mode)

- On the processing screen, the default digit display “pH 7.0”, and the blue light blinking.
- place pH probe into the PH 7.0 buffer solution, make sure the head of the probe is totally soaked.
- Calibration completes when the beeper sounds, and then enter pH10.0 calibration.
- Remember to clean the pH probe before pH 10.0 calibration.
- On the processing screen, the default digit display “pH 10.0”.
- place pH probe into the PH 10.0 buffer solution, make sure the head of the probe is totally soaked.
- Calibration completes when the beeper sounds, and then enters pool size setting.



NOTE:

- If the pH probe soaked in wrong solution, the blue LED indicator would keep blinking until the probe is handled properly. Otherwise it will return to home screen 10mins later
- This step can also be skipped by tapping  .
- Before calibrating or replacing the probe, the valve of the electrolytic cell needs to be turned off to avoid leakage.
- The Default pH Calibration Mode is “pH 7 and pH 10”, you can choose different PH Calibration Mode refer to your Calibration solution type. **【P0 setting】 (Pt 5.4.7)**

5.4.6 Combination Commands and Operation

Combinations	Function
On home screen, hold  and  for 3 seconds	Chlorine Production Mode Selection
On home screen, tap  to enter settings, hold  and  for 3 seconds	Networking configuration (Wi-Fi)
When the chlorinator is turned off, Hold  and  for 3 seconds	Doser Check
When the chlorinator is turned off, Hold  for 3 seconds	System settings
On home screen, tap  to enter settings, Hold  and  for 3 seconds	Restore factory settings

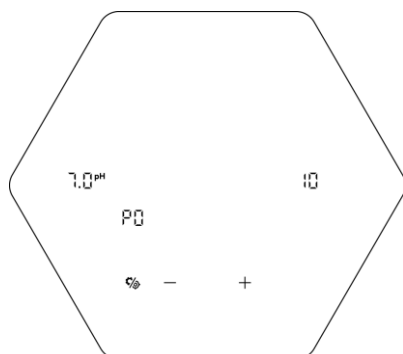
5.4.7 System Settings

No	Settings Page Name	Option
P0	pH Calibration Mode	1: PH4、PH7 2: PH4、PH9.21 3: PH4、PH10 4: PH7、PH9.21 5: PH7、PH10 (Default)
P1	ORP calibration values	Range from 200-600mv, 468mv (Default)
P2	Pool Volume	Range from 0-100m3, 40 m3 (Default)
P3	Local time	00:00-23:59 Local time will be refreshed when Wi-Fi is connected
P4	Polarity Reversal Interval	2h, 4h (Default), 6h
P5	A1: ACID TANK E2: pH setpoint not reached	0: Off 1: On (Default)
P6	A2: ADD SALT EC: Low salt protection	0: Off 1: On (Default)
P7	EA : ORP setpoint not reached	0: Off (Default) 1: On
P8	A5 : Reminder for Probe Calibration (Each 180days)	0: Off (Default) 1: On ● It is very important to carry out a calibration of the pH probe at the beginning of each season of use when returning to service, and after each probe replacement.
P9	Electrode plates life	● Show electrode plates life (hours) ● Hold  and  for 3 seconds to reset.
PA	Pool cover protection	Range from 0-30%, 30% (Default)

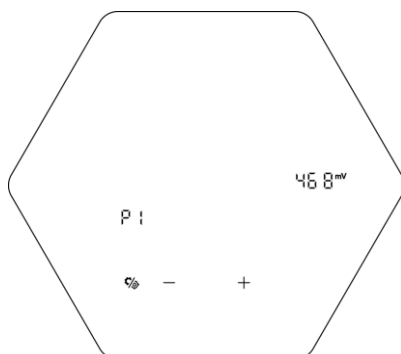
批注 [销售二部-关晓茹2]: P6 可以同时关闭 AC 和 EC 的使能

批注 [销售二部-关晓茹3]: 12.4 泳池盖功能可配置百分比

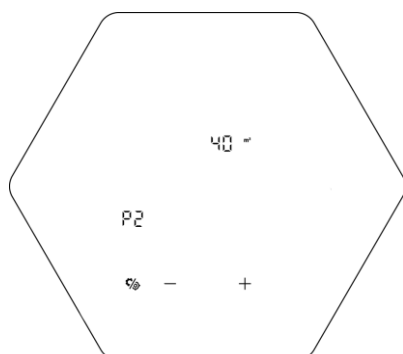
- ① In home screen, Tap  , turn off the Chlorinator(Power OFF).
- ② Then hold  to enter System Settings.
- ③ Tap  or  to select options, Tap  skip to the next Settings Page.



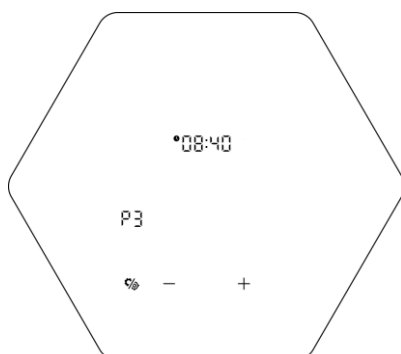
pH Calibration Mode (P0)



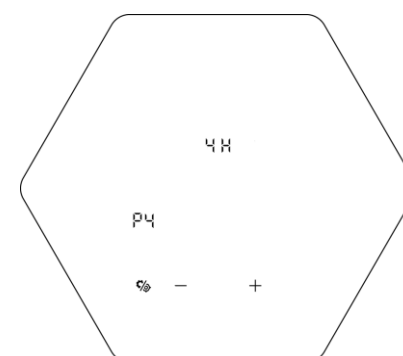
ORP calibration values (P1)



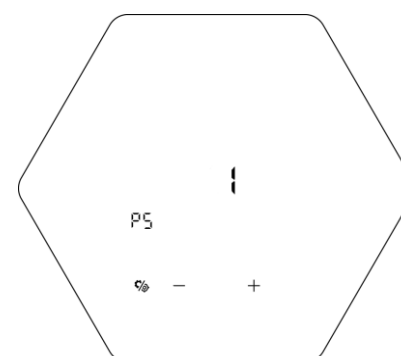
Pool Volume (P2)



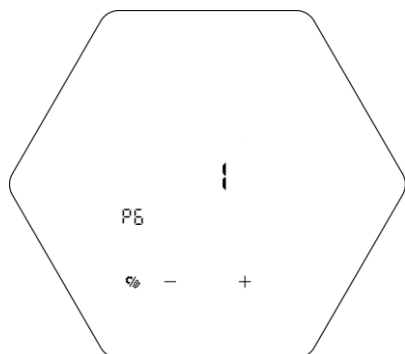
Local time (P3)



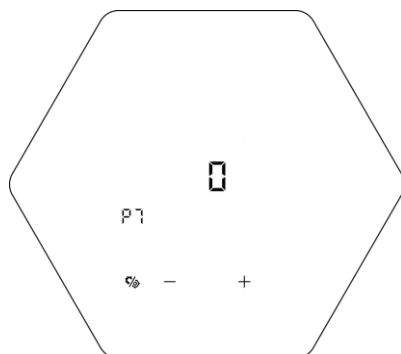
Polarity Reversal Interval (P4)



A1 + E2 alarm (P5)

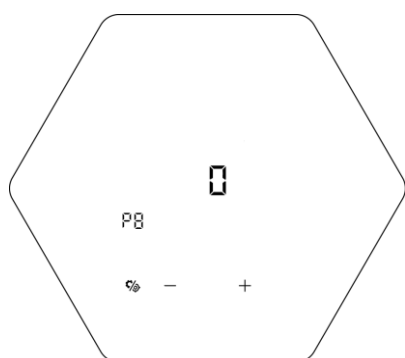


A2+EC alarm (P6)

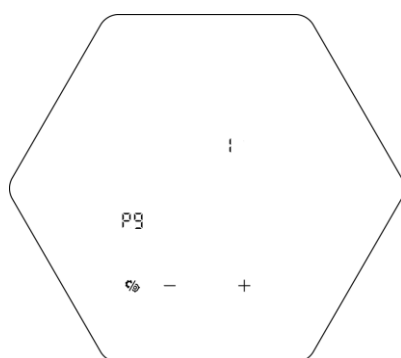


EA alarm (P7)

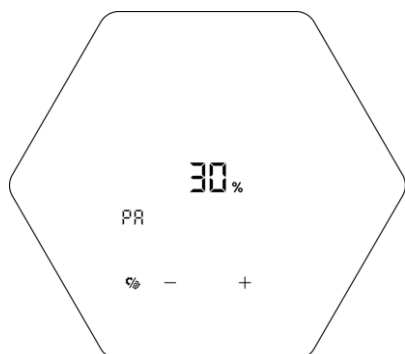
批注 [销售二部-关晓茹4]: P6 可以同时关闭 AC 和 EC 的使能



A5 alarm (P8)



Electrode plates life (P9)



Pool cover protection (PA)

5.4.8 Restore Factory Settings

- ④ When switching on the control unit, on home screen, tap  to enter **Setting Process**.
- ⑤ hold **+** and **-** for 3 seconds, hearing the long beeper and the chlorinator is restored factory settings, the full screen is lighted up for 2 seconds.
- ⑥ Then turn back to main screen automatically.



Parameter	Default	Related Mode
pH Setpoint	7.2	Inverter, Auto pH
ORP Setpoint	700mv	Inverter
Chlorine Production	100%	Manual
pH Dosing Volume	50	Manual
Timer 1 ON time	00: 00	
Timer 1 OFF time	00: 00	
Timer 2 ON time	00: 00	
Timer 2 OFF time	00: 00	
VS Pump speed	L - - 1	
System Setting	Default	Related Mode
【P0】 pH Calibration Mode	5: PH7.0、PH10	Inverter, Auto pH
【P1】 ORP calibration values	468	Inverter
【P2】 Pool Volume	40	
【P3】 Local time	00: 00	
【P4】 Polarity Reversal Interval	4	
【P5】 A1: ACID TANK E2: pH setpoint not reached	1	Inverter, Auto pH
【P6】 A2: ADD SALT EC: Low salt Protection	1	
【P7】 EA: ORP setpoint not reached	0	Inverter
【P8】 A5: Reminder for Probe Calibration (Each 180days)	0	
【P9】 Electrode plates life	0	
【PA】 Pool cover protection	30%	

批注 [销售二部-关晓茹5]: P5 和 Auto pH 还有 inverter 模式有关
12.04 写到了 P6 的位置

批注 [海外销售二部-郑柔6]: 12.4 添加

批注 [海外销售二部-郑柔7]: 12.4 添加

6 Salt Replenishment



The chlorinator must remain OFF during this operation and until the additive is completely dissolved. Operating the chlorinator with non-dissolved salt could irreversibly damage the cell and the power supply, and lead to a void of the warranty.

Calculate the volume of the swimming pool and add 3 to 5 Kg of salt per cubic meter. The suggested salinity is 3-5 g/L. Make sure the chlorinator is disconnected during the whole process and turn on the filtration system to work for at least 24 hours after the operation.



For any new pool builds please wait for four weeks before adding salt into any recently cement coated pool or discuss this with your pool builder.

The salt dissolving process can be accelerated using the pool cleaner. Check the salt concentration is between 3 and 5 kg/m³ using a kit from a specialized pool shop.

The salt concentration may be reduced over time due to the rain or other periodic freshwater contributions (topping up, backwashing, etc.). Whenever the salt concentration needs to be corrected, pour salt as close as possible to the return lines. Never pour salt in the skimmers or in the drain inlet.

7 Maintenance

7.1 Cleaning the Electrodes

The smart polarity inversion system is designed to prevent the electrode plates from corrosion and scaling (Default setting = 4 hours). However, periodic cleaning may be required when the water hardness is too high. The cleaning process is listed as follows:

- ① Turn off the chlorinator and the filtering, close the isolation valves, and ensure power is disconnected at the isolating switch.
- ② Place the cell backwards and fill it with a cleaning solution so that the electrode plates are immersed. Do not allow the cell cap assembly to be immersed.
- ③ Leave the cleaning solution to dissolve the scale deposit for about 15 minutes. Dispose of the cleaning solution at an approved waste recycling site, never pour into the rainwater drainage system or into the sewers.
- ④ Rinse the electrode using clean water and put it back on the cell fixture collar (there is an alignment mark).
- ⑤ Open the isolation valves and restart the filtering and chlorinator.
- ⑥ If you do not use a commercially available cleaning solution, you can manufacture it yourself by carefully mixing 1 volume of hydrochloric acid with 9 volumes of water (Warning: always pour the acid into the water and not the opposite and wear suitable protective equipment!).
- ⑦ Make sure that the setting of the polarity inversion cycles is adapted to the pool water hardness.

7.2 Maintenance of the ORP Probe

7.2.1 Cleaning the Probe

Under any circumstance, every 6 months cleaning is always advisable. Generally, impurities and grease caught on electrodes may also result in measurement errors.

The cleaning steps are as follows:

- ① Before calibrating or replacing the probe, the valve of the electrolytic cell needs to be turned off to avoid leakage.
- ② Turn off the chlorinator, unscrew the probe from the holder.
- ③ Thoroughly clean the probe in pure, preferably distilled water. Shake the probe to remove the water. Use a cotton or a paper napkin if necessary.
- ④ Turn on the control unit, Insert the probe into standard calibration solution (default 468mV) and complete the calibration process.
- ⑤ **It is necessary to carry out a calibration of the ORP probe at the beginning of each season of use when returning to service, and after each probe replacement.**

7.2.2 Storage

In case of pools being shut down during the winter season, take the probe out of the cell and store it at temperature from +5 to +30 °C in the probe storage bin filled with a storage solution. Other storage methods are not recommended.

NOTE: Never leave the probe outside. If the probe has been dried for a time, it can be regenerated with the standard calibration solution.

7.3 Maintenance of the pH Probe

7.3.1 Maintenance

It is recommended to clean and check the probe every 6 months. Generally, impurities and grease caught on electrodes may also result in measurement errors.

The cleaning steps are as follows:

- ① Before calibrating or replacing the probe, the valve of the electrolytic cell needs to be turned off to avoid leakage.
- ② Turn off the chlorinator, unscrew the probe from the holder.
- ③ Stir the probe in a glass of water in which a spoonful of detergent has been dissolved.
- ④ Wash it under the tap and leave it for a few hours in a glass of water in which 1 cm³ of hydrochloric acid has been added.
- ⑤ Thoroughly clean the probe in pure water, shake the probe to remove the water. Use a cotton or a paper napkin if necessary.
- ⑥ Turn on the control unit, recalibrate the probe again.
- ⑦ **It is necessary to carry out a calibration of the pH probe at the beginning of each season of use when returning to service, and after each probe replacement.**

7.3.2 Storage

In case of pools being shut down during the winter season, take the probe out of the cell and store it at temperature from +5 to +30 °C in the probe storage bin filled with a storage solution. Other storage methods are not recommended.

NOTE:

- If well maintained, a probe can last for two or three years. When the probe is exposed in air, the original cap should be placed, or it should be submerged in a glass of water.
- If a probe has been left to dry, it can be regenerated by leaving it for 12 hours in a glass of water, preferably adding a few drops of hydrochloric acid.

7.4 Maintenance of the Doser

To check the Doser works properly or not, the steps are as follows:

- ① Make sure the Doser hoses and PE acid tubes are connected and fitted tightly.
- ② Check the acid tank's fluid level, make sure PE acid tube is connected to suction valve in the tank.
- ③ Tap  turn off the Chlorinator (**Power OFF**).
- ④ Hold  and  for 3 seconds, then the long beeper sounds.
- ⑤ The Doser will rotate automatically for 30s.
- ⑥ Observe whether the acid solution is fulfilled in PE acid tubes and peristaltic tube.
- ⑦ Acid solution is pushed out to pool water through the Doser tube, the Doser is ready.
- ⑧ Tap , turn on the Chlorinator(**Power ON**).

NOTE:

- **Inverter Mode and Auto PH Mode:** the Doser will regularly rotate every 3 minutes, with 80ml acid injection each rotation (30s duration).
- **Manual Mode:** the Doser will rotate according to **pH Dosing Volume Setting**.
The doser roller will rotate for 30 seconds and injecting around 80ml acid each time. Injection frequency is based on pH dosing volume setting (24hours) and the chlorinator operate time in ever 24hours
- When the actual pH value is equal to or lower than pH setpoint, the Doser will stop spinning.
- When pH probe detection fails or E3 (no flow) alarm displays, the Doser will stop spinning.

批注 [海外销售二部-郑柔9]: 100ml 改为 80ml

批注 [海外销售二部-郑柔10]: 100ml 改为 80ml

8 Winterizing and Low Temp Protection

The chlorinator has low temperature protection to limit chlorine production (%) under poor operating conditions such as cold water (winter).

Active winterizing = filtering and chlorinator operational in winter:

Passive winterizing = lower water level and drained piping: leave the electrode plates dry in its cell with its isolation valves- open.

Low Temperature Protection:

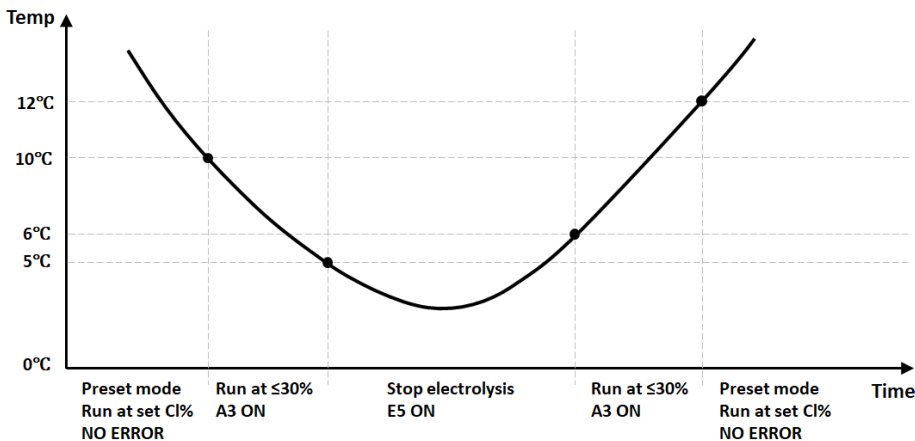
When the water temperature drops:

- Water temp $\geq 10^{\circ}\text{C}$: Chlorinator running in the preset mode (Inverter, Auto pH).
- $5^{\circ}\text{C} \leq \text{Water temp} < 10^{\circ}\text{C}$: Chlorinator running, production capped at 30%, A3 is on.
- Water temp $< 5^{\circ}\text{C}$: Electrolysis off. E5 is on.

When the water temperature rises:

- After E5 is on, Water temp $< 6^{\circ}\text{C}$, electrolysis keeps off.
- $6^{\circ}\text{C} \leq \text{Water temp} \leq 12^{\circ}\text{C}$: Chlorinator running, capped at 30%, E5 off, A3 turns on.
- Water temp $> 12^{\circ}\text{C}$: A3 off, Chlorinator recovers and keeps running in the preset mode.

Example chart below: temp. falls then rises.



Note:

- Temperature sensor must be installed, if you need Low temperature protection.

9 Overheat Protection

Overheat protection will be activated when the power pack temperature inside the main control unit is higher or equal to 70°C .

High Temperature (Power pack)	$70^{\circ}\text{C} \leq \text{Temperature} \leq 80^{\circ}\text{C}$	A. A4 occurred. Electrolytic output limited to 30%
Over Temperature (Power pack)	$\text{Temperature} > 80^{\circ}\text{C}$	A. E4 occurred and stop electrolysis B. Temperature $< 68^{\circ}\text{C}$, E4 and A4 off, electrolysis starts again.

10 Wi-Fi Instruction and iGarden App

10.1 Start-Up

10.1.1 Download App on Smartphone

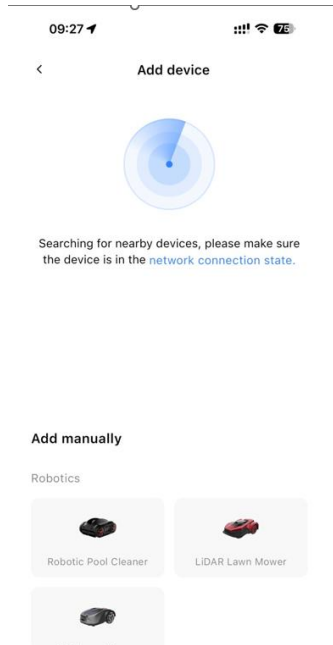
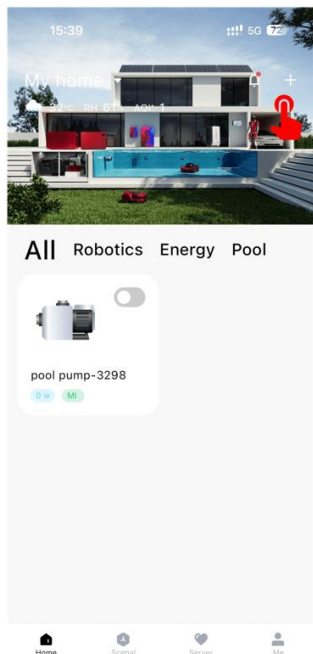
“iGarden” app is available on App Store and Google Play.
Please scan the following QR code to download:



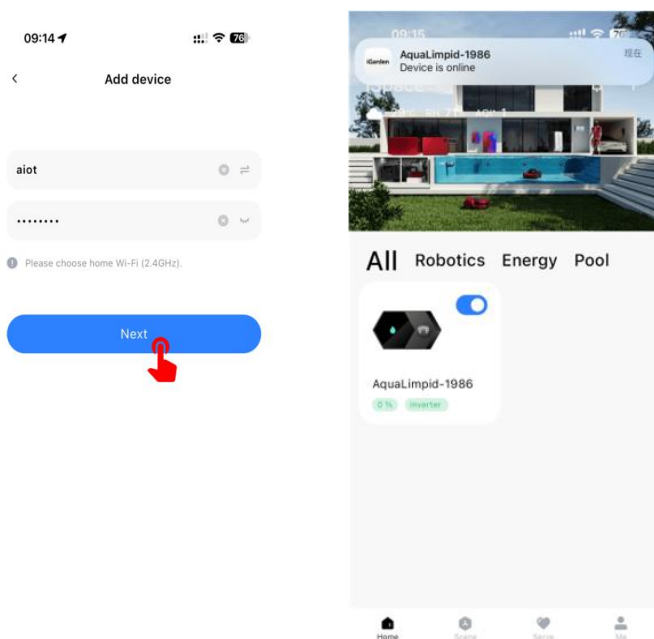
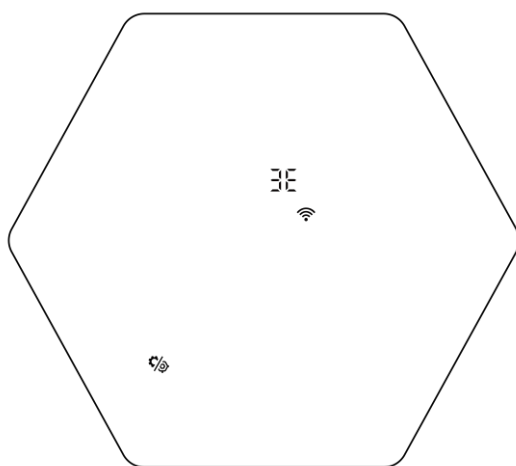
10.2 Networking Configuration

10.2.1 Auto Scan

- ① Turn on your local Chlorinator, Wi-Fi device, cell phone Bluetooth.
- ② Enter the “iGarden” App, tap the "+" icon in the top right corner of the home page, and then Tap on "Add Device".

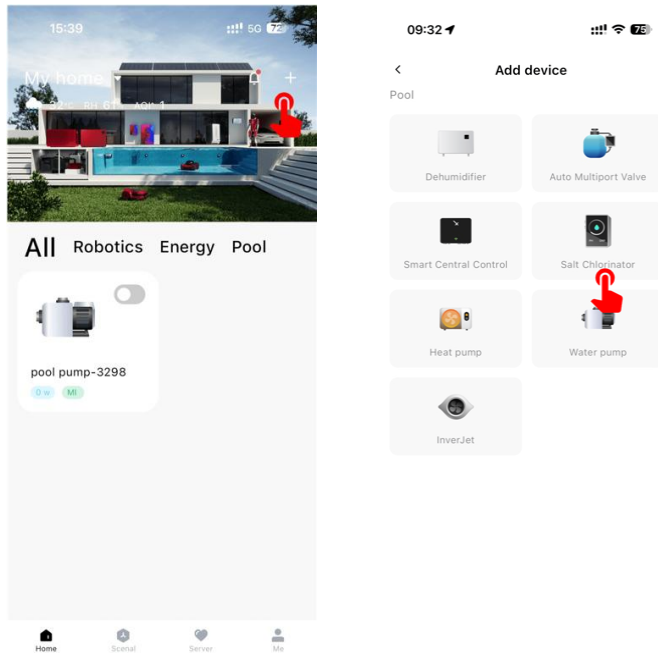


- ③ When chlorinator is on home screen, tap  to enter settings, hold  and  for 3 seconds, when an intermittent beep occurs, and enters network connection mode **【3E】**.
- ④ When your phone finds the chlorinator, it will be displayed on your phone. Tap "Next", enter the wifi password and tap "Next". Then the device will be automatically connected to the App.

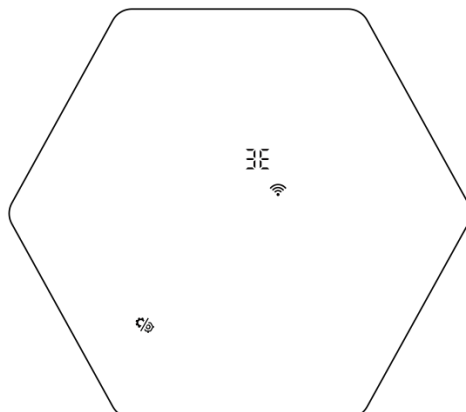


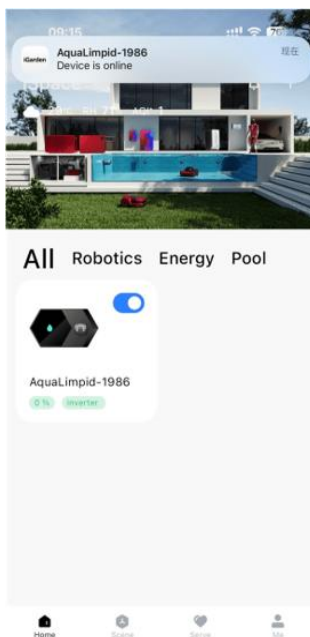
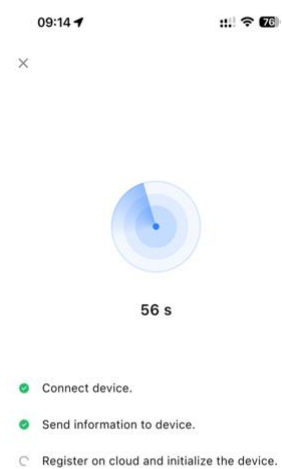
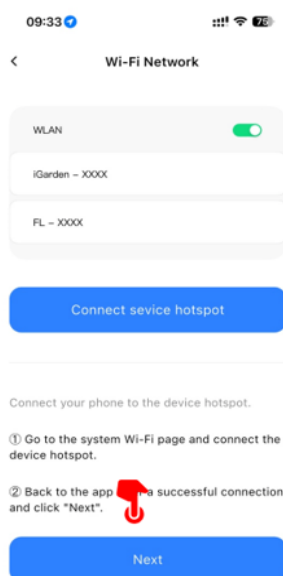
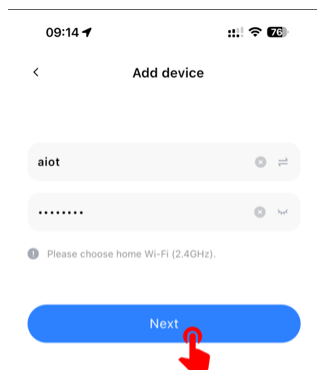
10.2.2 Wi Fi hotspot

- ① Turn on your local chlorinator, Wi-Fi device, cell phone Bluetooth.
- ② Enter the "iGarden" App, tap the "+" icon in the top right corner of the home page, and then tap on "Salt chlorinator icon " and add it manually.



- ③ Enter the home wifi password and tap "Next",
- ④ When chlorinator is on home screen, tap  to enter settings, hold  and  for 1.5 seconds, when an intermittent beep occurs, and enters network connection mode **【3E】** .
- ⑤ After the chlorinator enter network connection mode **【3E】** , connect your cell phone to the hot spot, as follow:

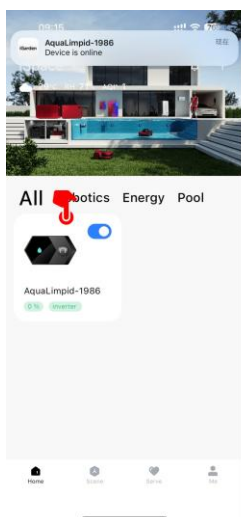




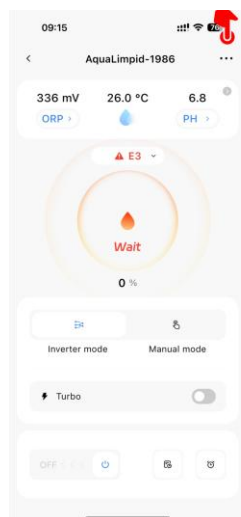
10.3 Remove Control

After Networking Configuration :

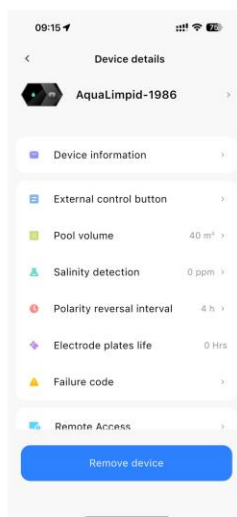
- ① On iGarden Home screen, user can tap the chlorinator icon enter its main screen. Or switch on/off the chlorinator by the blue slider.
- ② Chlorinator main screen displays real time status parameters and mode. user can adjust seting points, timers and switch to different modes.
- ③ Tap “...” on the upper right corner to enter Device details: Device information, external control, pool volume, Salinity calculation, polarity reversal interval, electrode plates life, failure code, remove access.



iGarden Home screen



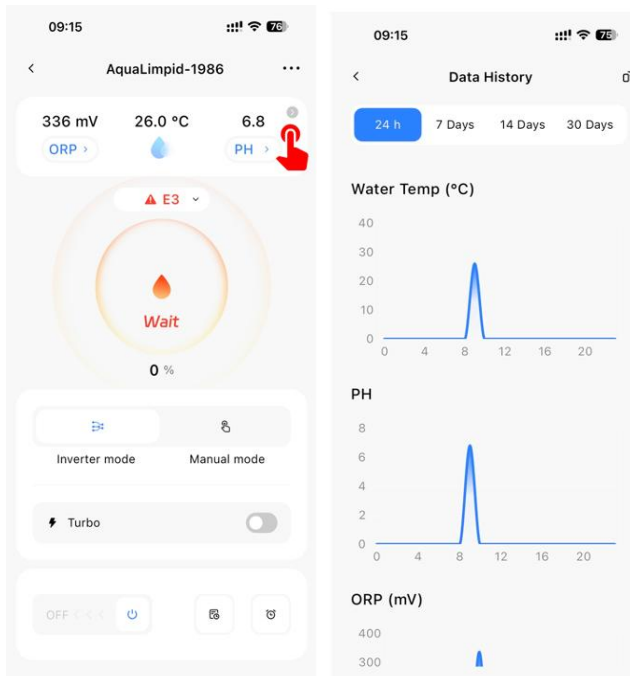
Chlorinator main screen



Device details

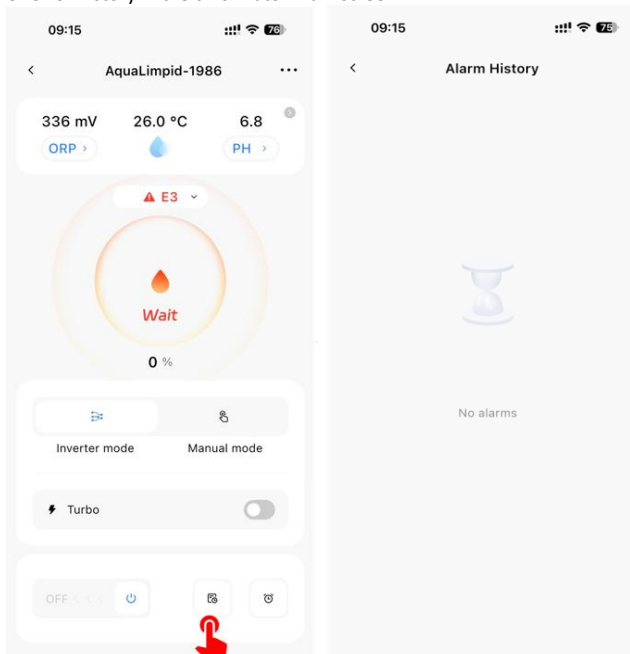
10.3.1 Data History

- ① Enter data history in the chlorinator main screen.
- ② Last 24 hours, 7 days, 14 days, or 30 days data is displayed.
- ③ Tap to the icon  in the upper right corner to enlarge the data table.



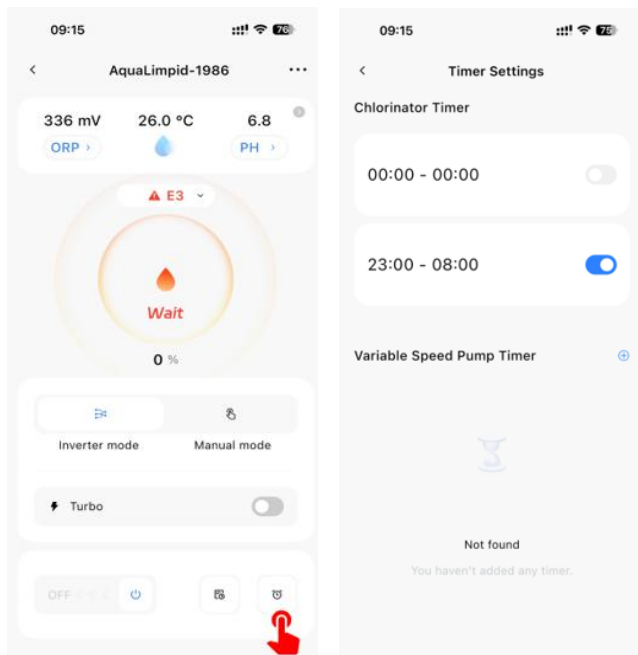
10.3.2 Alarm or Error History

- ① Enter alarm or error history in the chlorinator main screen.



10.3.3 Timer Settings

- ① Enter Timer Settings in the chlorinator main screen.

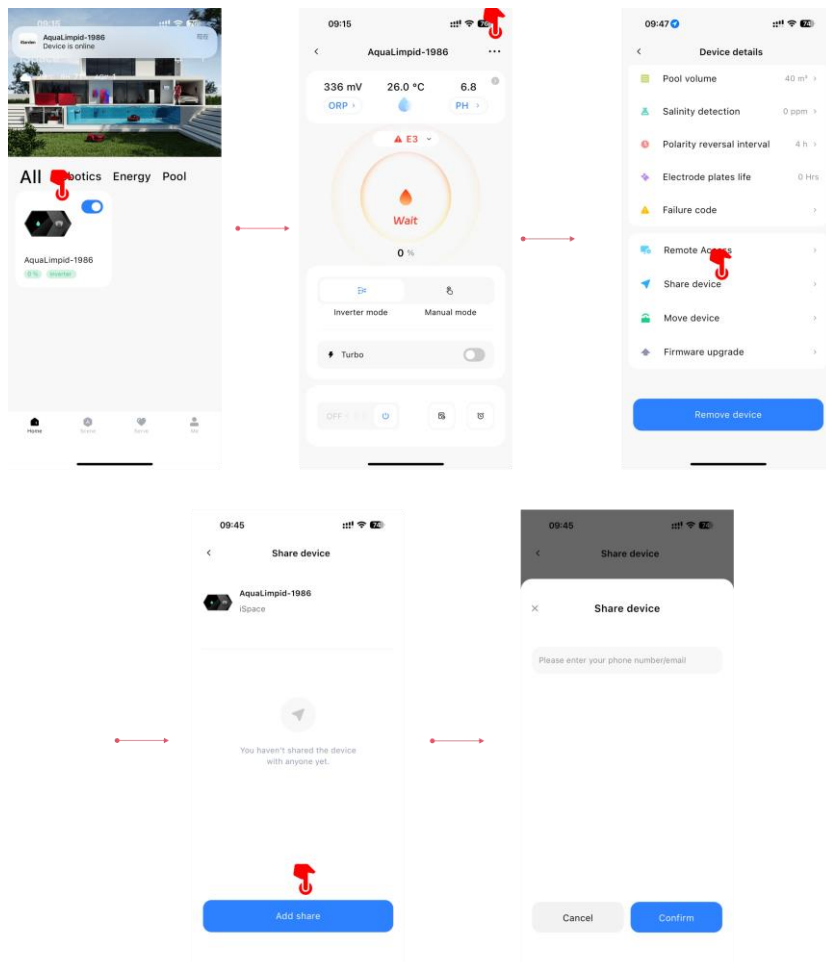


10.4 OTA Upgrade

- ① When upgrade is available, upgrade information will pop up and Tap "Update Now".
- ② Or Tap on the brush icon in the top left corner of the screen to enter the settings screen.
- ③ Tap "Device Upgrade" at the bottom to upgrade.

10.5 Device Sharing

- ① Download the "iGarden" app.
- ② Enter the app Settings, tap "Share Device".
- ③ Add the mobile number of the corresponding person being shared.
- ④ The user being shared can view the device's information simultaneously.



10.6 Change Language Settings

- ① Click "Me" in the lower right corner.
- ② Click the "Settings" button.
- ③ Swipe down and select "Language" to switch to the target language.

11 Error Code and Solution

Error Code	Effect	Trigger	Elimination	Remark
E1 Power Supply Abnormal	Pause electrolysis process	When chlorine production is set>10%, but real time DC output detected is too low	Automatically resume normal operation, when the DC output recovers normal range.	1. Check electrodes connection. 2. Check the electrolytic cell for excessive scaling or coating loss. 3. Restart the chlorinator control unit. 4. Please contact the After-Sales Center.
E2 pH setpoint not reached Inverter Auto pH	Pause the acid adding process	pH readings failed to reach setpoints. ALS14: 24 h; ALS21: 48 h; ALS28: 72 h; ALS33: 72 h.	1. Restart the chlorinator. 2. Automatically resume normal operation, when setting the pH setpoints equals to previous reading.	1. Test pH with other equipment. 2. Balance the pH level by adding extra chemicals. 3. Try the following in order: ● Check probe connections. ● Clean the probe. ● Calibrate the probe and test PH again. ● Replace probe. 4. E2 Alarm function can be turned off in 【P5】.
E3 No flow	Pause electrolysis process and acid adding process	Flow status detected is "OFF"	Automatically resume normal operation, when Flow switch "ON" status is detected.	Insufficient water flow might be caused by: 1. Filtration pump output. 2. Water valve closed. 3. Other possible reasons.
E4 Control Unit Overheat Protection	Pause electrolysis process	Internal temperature of control unit is over 80℃	Control Unit back to 68℃, E4 off.	The installation should avoid direct sunlight or high moisture, a sheltered area is more suggested.
E5 Low TEMP in Cell	Pause electrolysis process	Water temperature detected by temperature sensor is below 5℃.	Water temp higher than 6℃, E5 off.	Only shows up when the temperature sensor is installed.

E6 Air in Cell	Pause electrolysis process and acid adding process	The water level is low in electrolysis cell, the air sensor is in contact with air .	Make sure high water level is in the cell, the air sensor is under water level.	Might be caused by: 1.Filtration pump output. 2.Water valve closed. 3.Other possible reasons.
E7 pH Sensor Failure Inverter Auto pH	Pause the acid adding process	Hardware communication error occurs inside the control unit.	Hardware communication error occurs inside the control unit.	1. Restart the chlorinator control unit. 2. Disconnect the power for 10 seconds and re-plug the chlorinator control unit. 3. Factory reset 4. Please contact the After-Sales Center
E8 ORP Sensor Failure Inverter	Pause electrolysis process	Hardware communication error occurs inside the control unit.	Hardware communication error occurs inside the control unit.	1. Restart the chlorinator control unit. 2. Disconnect the power for 10 seconds and re-plug the chlorinator control unit. 3. Factory reset 4. Please contact the After-Sales Center
E9 Power Module Failure	Pause electrolysis process	Hardware communication error occurs inside the control unit.	Hardware communication error occurs inside the control unit.	1. Restart the control unit. 2. Disconnect the power for 10 seconds and re-plug the control unit. 3. Factory reset. 4. Please contact the After-Sales Center.
EA ORP Setpoint Not Reached Inverter	Pause electrolysis process	ORP readings failed to reach setpoints. Alarm on after 72 hours	Automatically resume normal operation, when setting the ORP setpoints equals to previous reading.	1. Test the free chlorine level with other equipment, make sure there's enough chlorine in the pool. 2. Replenish the pool with proper amount of stabilizer. 3. Add Acid to balance pH. 4. Activate TURBO mode or add extra chlorine to reduce chloramine. 5. Check the cell for scaling or coating loss. 6. Try the following in

				order: ● Check ORP probe connection. ● Clean the probe. ● Calibrate the probe and test ORP value. ● Replace the probe 7. EA Alarm function can be turned off in 【P7】
EC Low salt Protection	Pause electrolysis process	Pool salinity detected is below 500ppm	Automatically resume normal operation, when salinity the higher than minimum threshold.	1. Replenish the salt up to the recommended level(3000-3500ppm). 2. Check the water temperature. 3. Check the cell for excessive scaling or coating loss. 4. EC Alarm function can be turned off in 【P6】
A1 ACID TANK	Indicator lights up, normal operation continues.	pH setpoints hasn't been reached yet. ALS14: 6 h; ALS21: 12 h; ALS28: 18 h; ALS33: 18 h.	1. Restart the chlorinator. 2. Automatically resume normal operation, when setting the pH setpoints equals to previous reading.	1. Replenish the acid tank. 2. Check for leakage of the whole dosing system. 3. Try the following steps: - Check pH probe connections - Clean the probe - Calibrate the probe and test pH value again - Replace probe 4. A1 Alarm function can be turned off in 【P5】
A2 ADD SALT	Indicator lights up, normal operation continues.	Pool salinity detected is below 2000ppm	Automatically resume normal operation, when salinity the higher than minimum threshold.	1. Replenish the salt up to the recommended level(3000-3500ppm). 2. Check the water temperature. 3. Check the cell for excessive scaling or coating loss. 4. A2 Alarm function can be turned off in 【P6】
A3 Low TEMP in Cell Warning	Chlorine Production is limited to ≤30%	Water temperature detected by temperature	1. Water temp> 10℃ , operates in the preset	Only shows up when the temperature sensor is installed.

批注 [海外销售二部-郑柔11]: 12.4 添加低盐保护

批注 [销售二部-关晓茹12]: 12 月 4 日增加低盐保护
低盐保护可以在 P6 里边关闭

		sensor is below 10℃.	mode. 2. If E5 was on , Water temp back to > 12℃ , chlorinator operates in the preset mode.	
A4 Control Unit High Temp Warning	Chlorine Production is limited to ≤30%	Internal temperature of control unit is over 70℃	1. Control Unit is <70℃ , chlorinator operates in the preset mode. 2. If E4 was on , Control Unit back to < 69℃ , chlorinator operates in the preset mode.	The installation should avoid direct sunlight or high moisture, a sheltered area is more suggested.
A5 CALIBRATE	Indicator lights up, normal operation continues.	1. No calibration finished for more than 90 days	1. Restore factory default settings 2. Finish calibration.	A5 Alarm function can be turned off in 【P8】

12 After-Sales Support

Important Information for After-Sales Support

To ensure that we can assist you effectively when you contact our after-sales service, please have the following information ready:

Product Information

- **Serial Number** (located on the nameplate)
- Device Model

Problem Description

- Error Code Display
- Device Readings and Production Status
- Frequency and Timing of Issues

Usage Environment

- Pool Size, Indoor/Outdoor
- Actual Salinity and ORP, pH, Free Cl Levels
- Water Flow and Filtration Time

Providing this information will help us resolve your issue more efficiently. Thank you!

AQC000-VO-V1.5