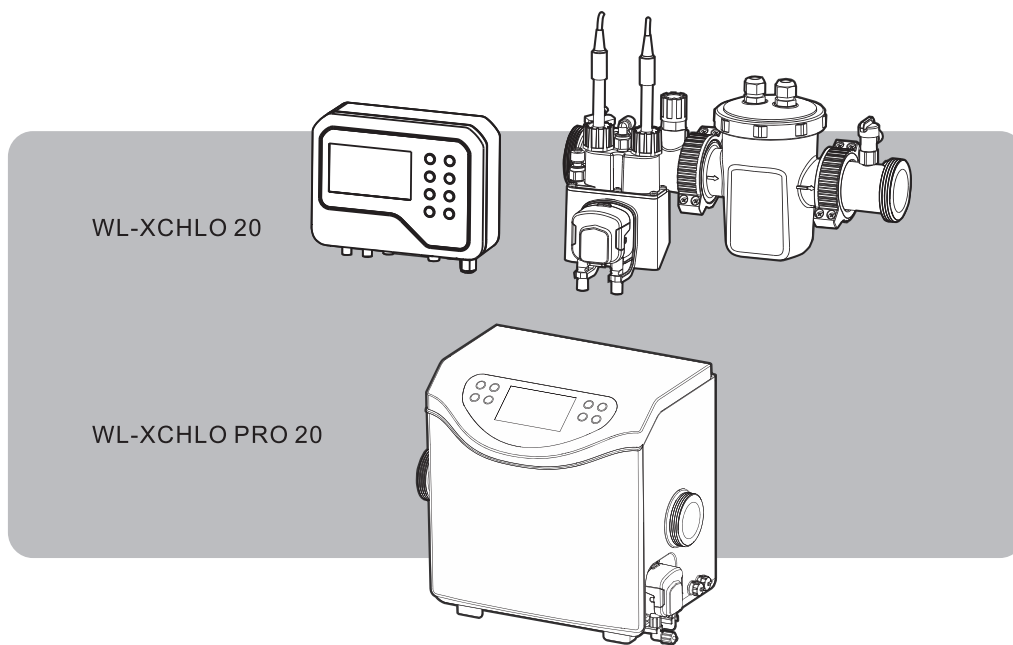




WL-XCHLO SMART SALT CHLORINATOR

USER MANUAL



Please Read The Manual Carefully Before Use.

 PLEASE READ CAREFULLY!

In order for you and your family to get the best experience and service, please read the entire content of this user manual carefully before installing and using this salt chlorine generator, and strictly abide by the relevant requirements of this user manual.

This user manual is an integral part of the product. It records important information on the installation and use of this salt chlorine generator. In order for you and your family to get the best experience and service, it is recommended that you keep it for future use.

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1 WARNING

- (1) Before installing the salt chlorinator, please carefully read this user manual and strictly follow the requirements.
- (2) The salt and chlorinator must be installed in a well ventilated indoor area to prevent overheating and exposure to sunlight and rain.
- (3) The installation of this salt chlorine generator must be carried out by qualified professionals. Incorrect installation may cause harm to people, animals and products, and the manufacturer does not assume any responsibility.
- (4) The sodium chloride required to operate the salt chlorinator is itself a corrosive substance. Although the salt content of the salt chlorine generator is relatively low compared to seawater, the addition of any amount of sodium chloride to the pool water will inevitably increase the corrosion or damage of the pool water to metal parts and certain natural or artificial surfaces. Please consult your experienced pool professional to ensure that your pool and pool equipment are made of materials that are resistant to corrosion by low concentration sodium chloride solutions (2700-4500ppm).
- (5) The acid added to the salt chlorinator to control and adjust the pH of the pool water (5%~15% dilute hydrochloric acid is recommended) is corrosive. When maintaining the equipment, please wear personal protective equipment (gloves, goggles, etc.) to avoid personal injury, animal injury and equipment damage.
- (6) pH and ORP electrodes are fragile accessories, please avoid dropping and violent collision. The probes used for pH and ORP electrodes must be immersed in pool water or electrode protection liquid for a long time. Long-term separation from the liquid will damage the electrodes or cause inaccurate test results.
- (7) When you need to replace accessories, you can only use parts provided or approved by the manufacturer. The manufacturer is not responsible for damage to the equipment or performance degradation caused by unauthorized replacement of other accessories.
- (8) To reduce the risk, do not allow children to play with or use this product.

2 PRODUCT OVERVIEW

2.1. PRODUCT INTRODUCTION

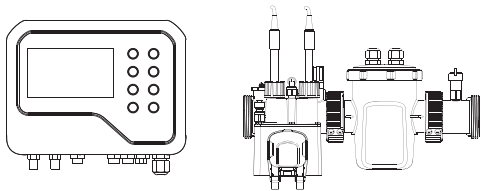
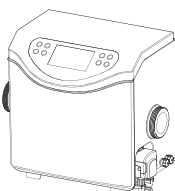
WL-xChlo smart salt chlorine chlorinator is an intelligent, efficient and environmentally friendly swimming pool disinfection equipment. It has variable frequency electrolysis chlorine production, online water quality monitoring, automatic dosing function, supports APP remote control, can automatically adjust pH and ORP values, has low salt alarm and salt addition reminder, providing safe, energy-saving and convenient swimming pool water quality management solutions.

- (1) Real-time water quality monitoring: Online continuous monitoring and adjustment of the pH and ORP values of the swimming pool water to ensure healthy water quality.

- (2)Automatic dosing function: It can control the peristaltic pump, intelligently control the dosing amount, and maintain the pH value of the swimming pool water stable.
- (3)APP remote control: Remote monitoring and operation can be achieved through the mobile phone APP, making swimming pool water quality management more convenient.
- (4)Salt monitoring display: Built-in core salt detection algorithm, swimming pool water salt content visualization, convenient for users to maintain daily maintenance.
- (5)BOOST accelerated chlorine production: One-click accelerated chlorine production function, quick response to special situations.
- (6)Multiple chlorine production control modes: ORP control, time control and water flow control, flexible to meet different needs.
- (7)Water pump control: The operation of the swimming pool circulation pump can be controlled through dry contacts or RS485.
- (8)Multi-language selection: Supports multiple language selection to meet the needs of different users.
- (9)OTA upgrade function: Support remote OTA upgrade to ensure continuous update of device performance.
- (10)Electrode calibration: pH electrode and ORP electrode calibration function can keep the monitoring quantity accurate.
- (11)Grounding electrode: Provide grounding protection, eliminate stray current, and protect metal equipment in the swimming pool.
- (12)Water flow monitoring: When the water pump is turned off or the water flow is less than 2m³/h, xChlo will stop chlorine production; when the water flow is greater than 2m³/h, xChlo automatically resumes chlorine production.
- (13)Restore factory settings: Long press the on/off button to restore factory settings.
- (14)Model and version query: Query the model and software version information of the device.
- (15)Adjustable chlorine production mode: It is able to select the chlorine production mode on the panel or mobile phone APP to meet different disinfection needs.
- (16)Polarity reversal time: The reversal time can be set on the panel or mobile phone APP to optimize the electrolysis process.

2.2. PACKAGE CONTENTS

When receiving the product, please check as soon as possible whether the below product list is consistent with the actual product.

WL-xChlo 20		WL-xChlo Pro 20	
ITEM	QTY	ITEM	QTY
Control box	1	Complete set device with control box, cell and dosing pump device	1
Electrolytic cell	1	pH electrode	1
Water quality device	1	ORP electrode	1
pH electrode	1	Dosing pump	1
ORP electrode	1	Injection valve	1
Dosing pump	1	Filter bottom valve	1
Injection valve	1	PVC dosing hose	2m
Filter bottom valve	1	PE outlet hose	1m
PVC dosing hose	2m	Manual	1
PE outlet hose	1m	1.5" unions	2
Manual	1		
1.5" unions	2		
			

2.3. WORKING PRINCIPLE

- (1) The salt chlorinator is to electrolyze a sodium chloride solution (with a salt content of 2.7-4.5 g/L) to convert chloride ions in pool water into highly oxidizing active chlorine (including chlorine gas, hypochlorous acid, and hypochlorite ions).
- (2) Activated chlorine can not only be reduced to chloride ions by contact with microorganisms (bacteria, fungi, viruses, etc.) and organic matter in pool water, but can also be converted to chloride ions under the action of ultraviolet light or other light sources.
- (3) Due to the production of hydrogen gas and hypochlorite ions during the electrolysis process, the pH of the pool water will increase, and excessively high pH will reduce the disinfection effect of residual chlorine. The xChlo salt chlorinator can monitor and adjust the pH and ORP values of swimming pool water in real time by adding acid through pH electrodes, ORP electrodes, and peristaltic pumps, keeping the swimming pool water in a healthy state.

2.4. RECOMMENDED RATE TABLES

In order to maintain a good level of disinfection in the pool water, the pool water must meet the requirements listed in the table below

Parameter	Target value	Comments
Salinity	2.7-4.5g/L	Too low will trigger an alarm or reduce disinfection effectiveness. Excessive height will increase the corrosion of metal components by pool water.
pH	7.2-7.8	Although being too low will enhance the disinfection effect of chlorine, it will increase the consumption of acid, residual chlorine, and electricity. Excessive levels not only reduce the disinfection effectiveness of residual chlorine, but also prevent ORP from reaching the target value and increase energy consumption.
ORP	650-750mV	Too low will affect the disinfection effect and breed bacteria and algae. Excessive levels can lead to excessive residual chlorine, increase acid and electricity consumption, and also irritate the skin and eyes.
Residual chlorine	0.3-3.0ppm	Being too low may affect the disinfection effect and breed bacteria and algae. Excessive height may pose a risk to human hair, skin, and eyes.
Cyanuric acid (stabilizer)	20-50ppm	Excessively low levels may lead to rapid consumption of residual chlorine, increasing the consumption of electrical energy. Excessive levels may lock chlorine and affect the disinfection effect of residual chlorine.
Total Alkalinity (TAC)	80-120ppm	Too low can lead to unstable pH and easy fluctuations. Excessive pH can cause the pH to be too stable, affecting the regulation of pH and ORP, while titanium plates and swimming pools are more prone to scale formation.
Total hardness (TH)	<300ppm	Excessive height not only produces white particles and scale, but also shortens the lifespan of titanium plates and increases energy consumption.

In order to maintain a good level of disinfection in the pool water, you must follow the following guidelines:

A sufficient amount of circulating filtration time per day is required to ensure that the xChlo salt chlorinator can effectively control and regulate the water quality of the swimming pool.

Filters must be backwashed regularly. Without backwashing for a long time not only leads to filter blockage and the growth of a large number of microorganisms, but also increases the consumption of residual chlorine, acid, and electricity, and may produce harmful substances to the human body.

It is necessary to regularly clean the mud, plant debris, and garbage at the bottom of the pool. Long term non cleaning will increase the consumption of residual chlorine, acid, and electricity, and may produce harmful substances to the human body.

For first-time use of chlorinators or long-term unused swimming pools, first run BOOST mode for chlorine shock treatment.

THREE WORKING MODES ARE AVAILABLE:

ORP control (default,automatic)

Time control (programmatic control)

Water flow control (manual/programmatic control)

ORP (oxidation-reduction potential) is an important indicator of water quality. The ORP value represents the strength of the disinfectant's oxidizing ability. The higher the ORP value in water, the stronger the oxidizing power, and the better the bactericidal power. However, the level of ORP value can be influenced by various factors, such as residual chlorine pH, Turbidity, cyanuric acid, urea, organic matter, algae, etc. For example, the higher the residual chlorine, the lower the pH, the less suspended solids in the water, the lower the turbidity, and the clearer the water, the higher the ORP value may be. Cyanuric acid, urea, organic matter, algae, and other substances in water may cause a lower ORP value.

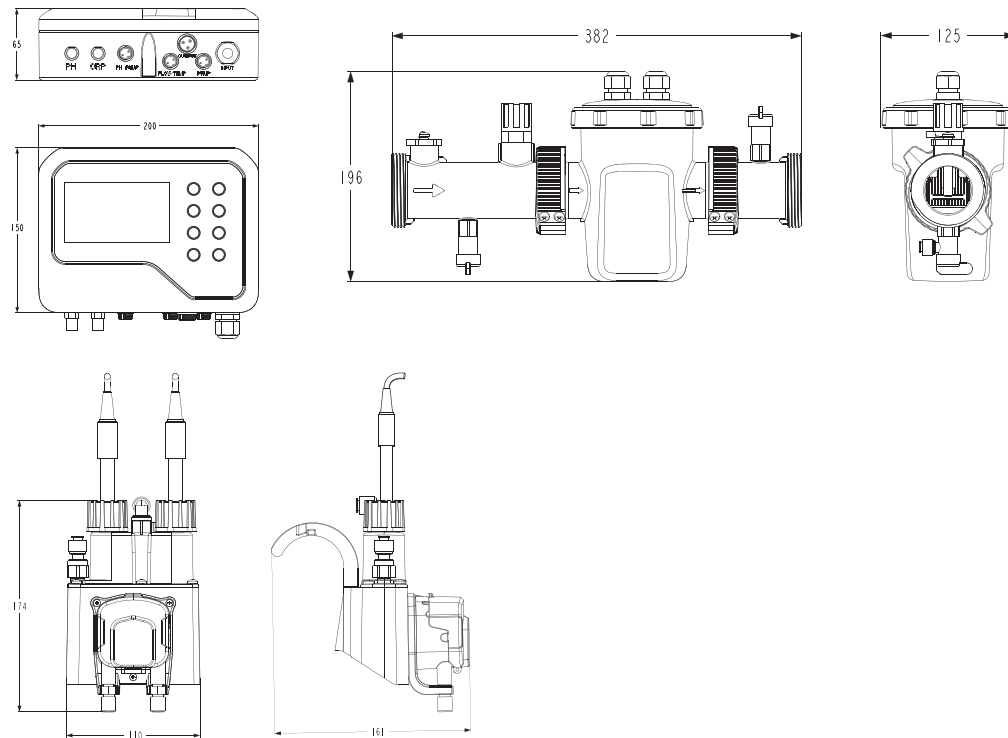
There is a significant correlation between ORP and residual chlorine concentration in pool water. Under certain conditions of other water quality indicators, the higher the residual chlorine, the higher the ORP value, the stronger its oxidation ability, and the stronger the disinfection effect; The lower the residual chlorine, the lower the ORP value, the weaker the oxidation ability, and the weaker the disinfection effect. ORP value actually represents the strength of pool water disinfection ability more accurately than residual chlorine. According to the regulations of the World Health Organization, an ORP value of $\geq 650\text{mV}$ is sufficient to ensure the disinfection effect of water.

2.5. TECHNICAL SPECIFICATIONS

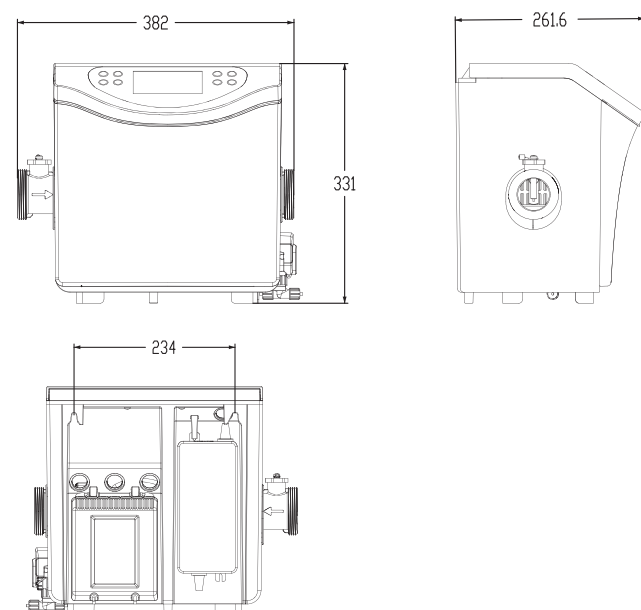
ITEM No.	WL-xChlo 20	WL-xChlo Pro 20
Power supply	100~240Vac ~ 50-60Hz, 2.5A	
Transformer output voltage	≤24VDC	
Working current	5A	
Max.power/standby	120W/5W	
Max.Production rate	20g/h	
Ambient Temperature	0-45°C	
Environment humidity	≤90%RH	
Operating temperature	10-45°C	
Flow rate	5-22m³/h	
Water pressure	≤0.2MPa	
Salinity	2.7-4.5g/L	
Dimension(LxWxH)	Controller 200x 150x 65mm Electrolytic cell 382x 130x 230mm	380x 325x 260mm
Working mode	ORP/TIME/FLOW	
Pool size setting	5-200m³ adjustable, step size 5m³, default 90m³	
Chlorine production setting	20%-100% adjustable, step size 20%	
Production time setting	1-24hours adjustable, step size 1h, default 12 hours	
Polarity reversal	2-8hours adjustable, step size 2h, default 4 hours	
pH target setting	7.0-7.8 adjustable, step size 0.1, default 7.2	
ORP target setting	400-800mV adjustable, step size 10mV, default 650mV	
pH detection/PH calibration	YES/7.01	
ORP detection	YES/470mV	
Dosing pump/Injection flow rate	YES/ >200mL/min	
Dosing pump max. pressure	>0.15MPa	
Temperature sensor	YES	
Flow detection	YES	
BOOST	YES	
Wifi & Bluetooth	YES	
Salt addition tips	YES	
Brightness	Adjustable	
Waterproof standard	IPX4	
Language	English/Spanish	
Water pump	Dry contact/RS485	

2.6. DIMENSIONS

WL-xChlo 20

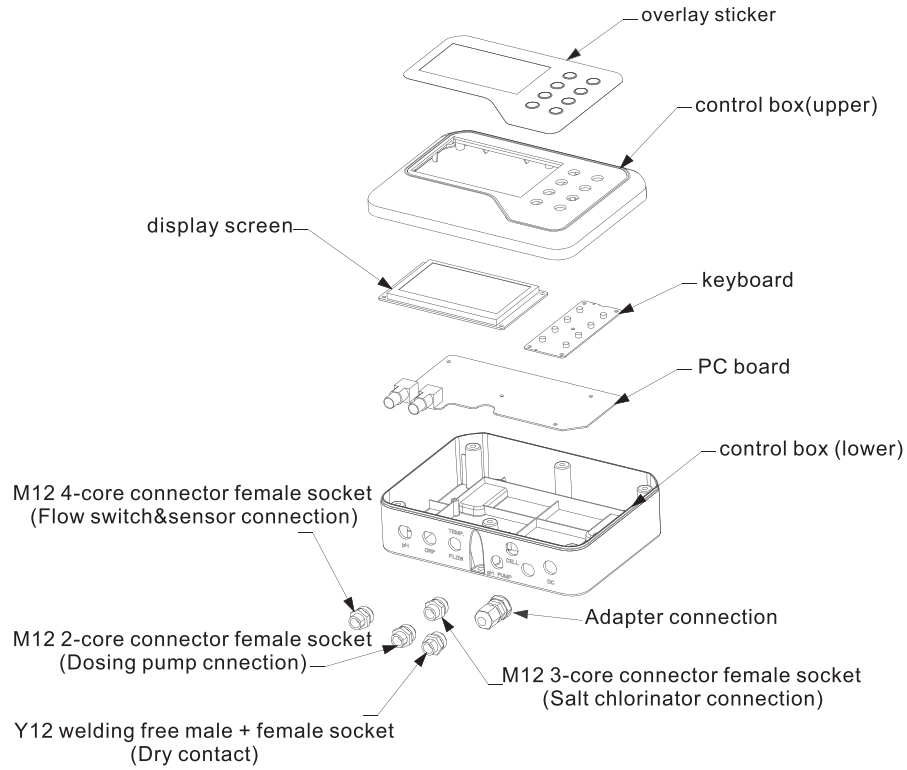


WL-xChlo Pro 20

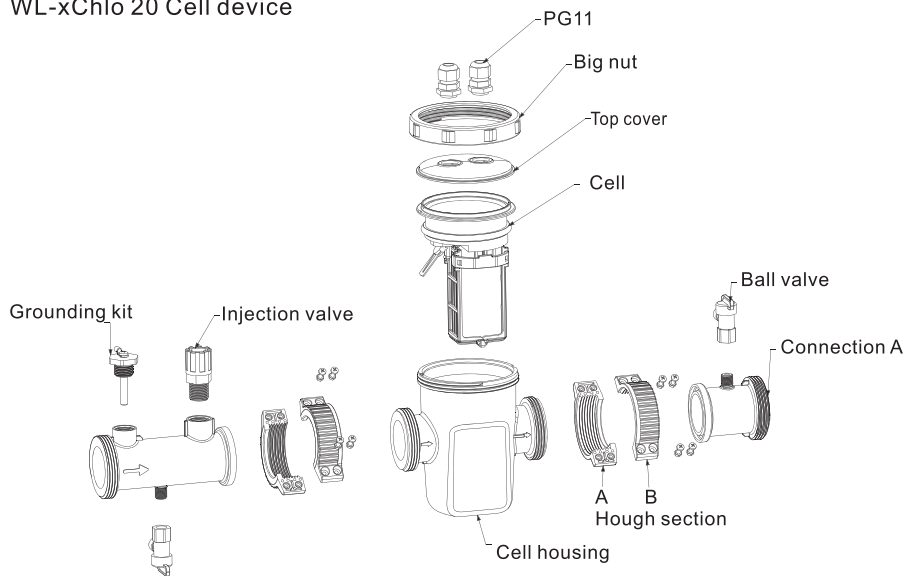


2.7. EXPLODED VIEWS

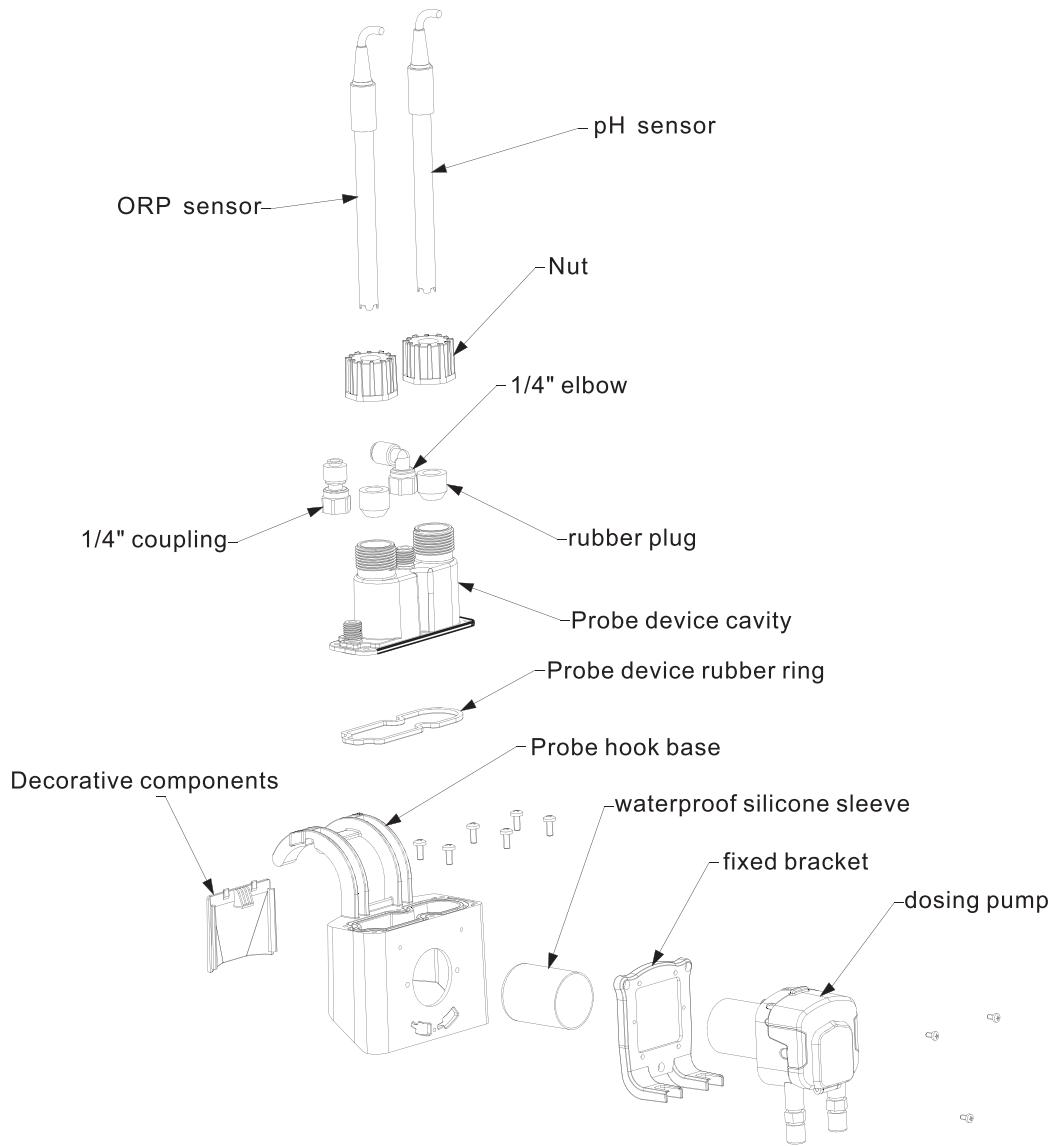
WL-xChlo 20 control

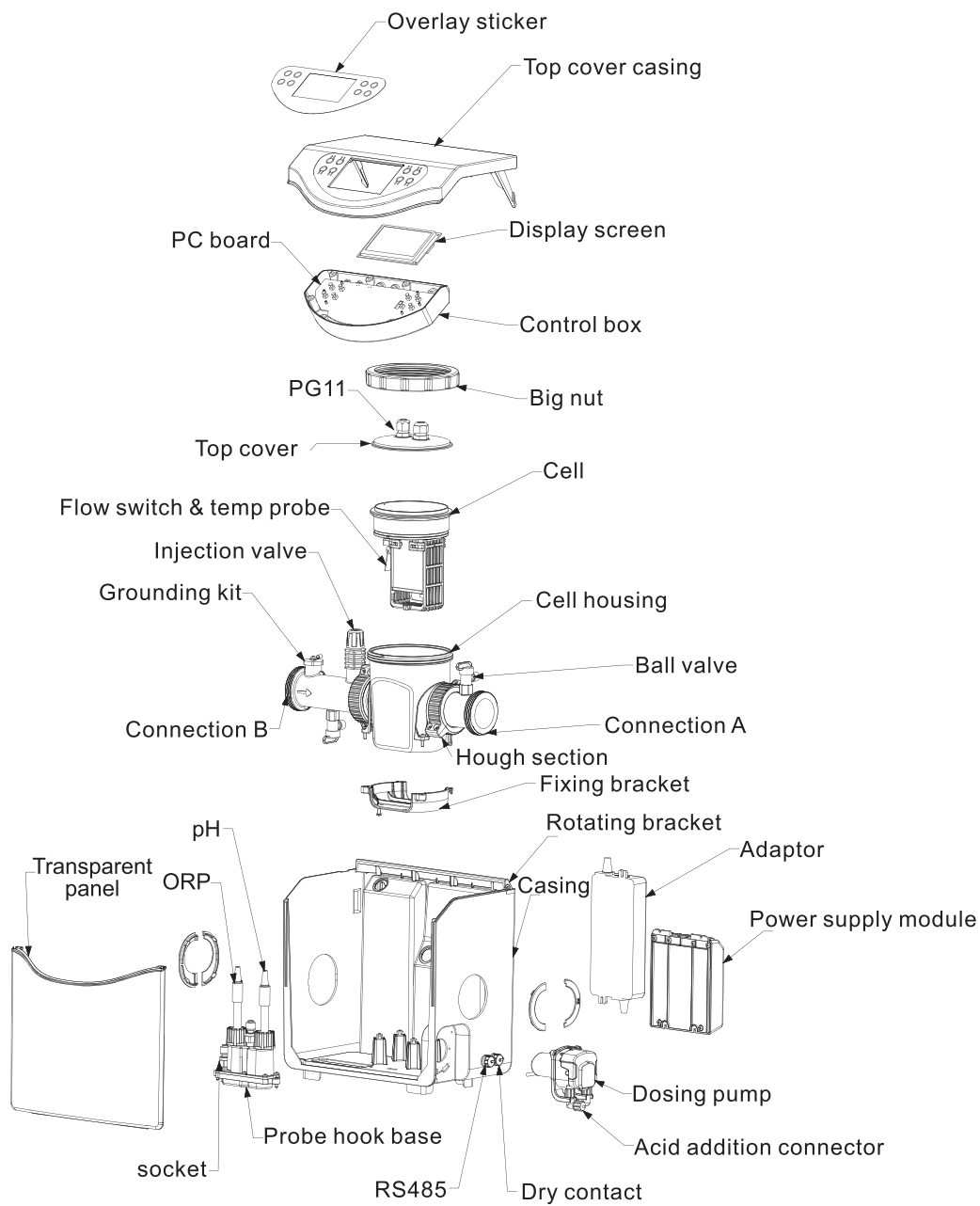


WL-xChlo 20 Cell device

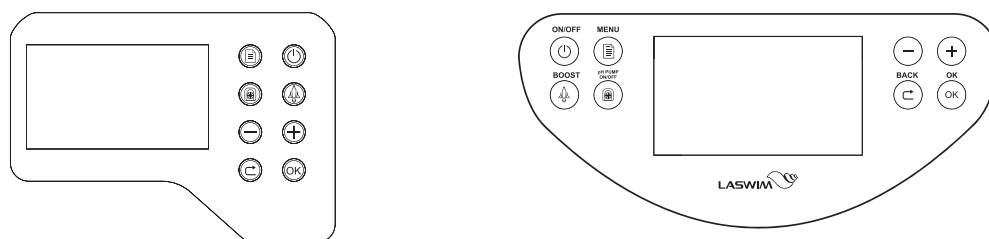


WL-xChlo 20 flow detection device





2.8. CONTROL PANEL

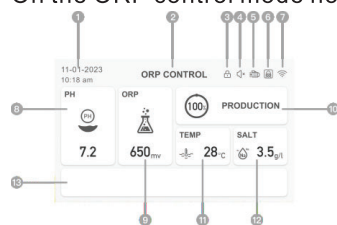


Button	Designation	Function
	ON/OFF	Start/Stop the device (short press) Reset the device (long press for 5s.)
	Menu	Enter/Return back menu (short press)
	Dosing pump	Start/Stop the dosing pump
	BOOST	Start/Stop BOOST MODE
	Plus	1.Short press the "+" button to adjust the chlorine production ratio by 20%. 2.Long press the "+" and "-" buttons simultaneously for 5 seconds to turn on the WIFI pairing and networking function of the salt chlorinator. The WIFI icon in the upper right corner of the display screen flashes, and users can add devices to the APP for pairing and networking; After successful pairing, The WIFI icon is constantly on.
	Minus	1.Short press the "-" button to adjust the chlorine production ratio by 20%. 2.Long press the "+" and "-" buttons simultaneously for 5 seconds to turn on the WIFI pairing and networking function of the salt chlorinator. The WIFI icon in the upper right corner of the display screen flashes, and users can add devices to the APP for pairing and networking; After successful pairing, The WIFI icon is constantly on.
	Back	1.Short press to exit and return to the previous interface. 2.When the screen is locked, press and hold the "BACK" and "OK" buttons for 5 seconds simultaneously to cancel the lock. 3.Under the interface with pop ups, follow the prompts to exit the current pop up.
	OK	1.Short press to confirm the selection in the menu or pop-up interface. 2.When the screen is locked, press and hold the "BACK" and "OK" buttons for 5 seconds simultaneously to cancel the lock. 3.On the homepage interface, long press for 5 seconds to clear the current alarm information.

2.8.1 Home screen displays

The home screen adapts according to the operating mode chosen.

On the ORP control mode home screen :



No.	Designation	Function
1	Time information	Time and date
2	Control mode	Current control mode (ORP Control, TIME Control, and FLOW Control).
3	Lock/Unlock screen	Lock status: the indicator icon is on. Unlock state: the indicator icon is off.
4	Silent state	Silent state: the mute indicator icon is on. Non silent mode: the mute indicator icon is off.
5	Water pump	Standby mode: the icon is on. Working mode: the icon flashes. Disabled: the icon is off.
6	Dosing pump	Disabled: the icon is off. Enabled: the icon is on. Working: the icon flashes.
7	Wifi	Disable: . Waiting for distribution work: flashes. Connected network: is on.
8	pH	It displays the pH value measured by the probe in real time.
9	ORP	It displays the ORP value measured by the probe in real time.
10	Production ratio	It displays the production level of the chlorinator.
11	Water temperature	It displays the current water temperature in real time (e.g. 28 °C).
12	Salinity	It displays the salt level in your pool water (e.g. 3.5g/L).
13	Alarm&Reminder	Display the alarm or reminder information of the current salt and chlorinator.

2.8.2 When you choose ORP Control mode (recommended), please refer to below pH and ORP settings:

Reference for pH and ORP settings		
pH setting	ORP setting	Note
7.0	730-750mV	It is recommended to set the pH between 7.2-7.5, and the ORP should be set according to the pH setting value.
7.1	720-740mV	
7.2	710-730mV	
7.3	700-720mV	
7.4	690-710mV	
7.5	680-700mV	
7.6	670-690mV	
7.7	660-680mV	
7.8	650-670mV	

2.8.3 Tips for choosing for your settings

To choose the appropriate **filtration time and/or treatment**, based on water temperature and number of swimmers, refer to the following table:

Water temperaute	10-20°C	20-25°C	25-28°C	≥28°C	≥28°C or more people	≥30°C or more people
CL time	2-3h	4-6h	6-8h	8-10h	12-14h	BOOST or 24h
Filtration time	5-10h	10-12h	12-16h	16-24h	24h	24h

To choose the appropriate **chlorine production rate** based on the size of the swimming pool, refer to the following table:

Pool size	10-20m ³	20-40m ³	40-60m ³	60-80 m ³	80-100 m ³
CL production ratio	≥20%	≥40%	≥60%	≥80%	100%
CL production mode	≥4g/h	≥8g/h	≥12g/h	≥16g/h	20g/h

To choose the appropriate **polarity reversal time** based on the total hardness of the pool water, refer to the following table:

Total hardness(TH)	<100mg/L	<200mg/L	<300mg/L	≥300mg/L
polarity reversal time	8h	6h	4h	2h

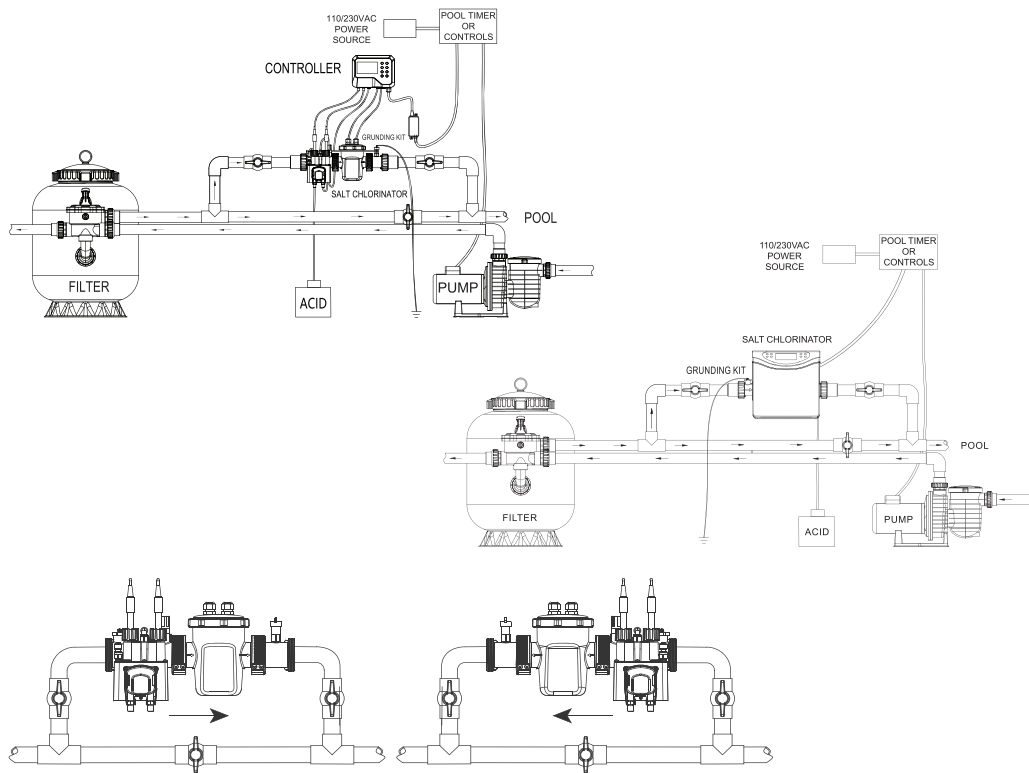
3 INSTALLATION

3.1. WATERWAY INSTALLATION

The electrolytic cell and flow detection device xChlo salt chlorinator equipment must be installed after the circulation pump and filter; If your swimming pool is also equipped with a heat pump, please install it after the chlorinator (including the electrolytic cell and flow detection device); If your pool is also equipped with equipment that may interfere with water quality testing (such as ozone disinfection equipment and UV disinfection equipment, etc.), please arrange them after the chlorinator.

ATTENTION:

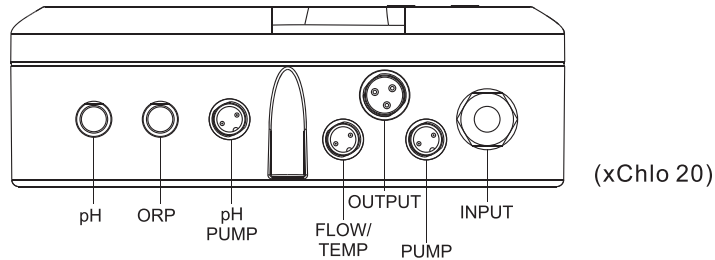
- (1)Before installation, please ensure the pipe used for installation is the same size with the chlorinator: metric: $\varnothing 50\text{mm}$ and imperial 1.5" / 48mm.
- (2)Before use, please ensure that the valves of the pipe connecting to the chlorinator are turned off.
- (3)Before installation, please clean away any clutter or oil from the pipes and the connection joint.
- (4)The chlorinator should be installed on the pipeline before returning to the swimming pool in the water treatment process, and should be on the bypass pipeline. An adjustable valve must be installed on the main pipeline, as shown in the following figure.



- (5) The salt chlorinator must be installed on a wall or desktop style, and it is not allowed to be hung in the air.
- (6) Before installation, please ensure the water flow matches the direction on the chlorinator indicating, otherwise the device will not work.
- (7) When connecting pipes to the chlorinator, please use glue specialized for PVC.
- (8) If water pump is connected to this device, and the flow detection device needs to be installed vertically.
- (9) When installing the pH electrode and ORP electrode, first unscrew the fixing nut of the flow detection cell, place the fixing nut and silicone ring $50 \pm 10\text{mm}$ above the probe, and then install them together on the flow detection cell. When installing electrodes, they must be handled gently to prevent falling or collision damage to the electrode probe.
- (10) The peristaltic pump inlet pipe uses PVC flexible hose; The peristaltic pump outlet pipe uses PE rigid hose.
- (11) After installation, please check whether there is water leakage and the water flow circulation in the pool is normal.
- (12) The electrode probe end should be kept moist. If not used in the short term, it should be ensured that there is always water immersion in the flow detection cell. If not used for a long time, it is recommended to remove the electrode and soak it in electrode protection solution for storage. Failure to do so may prematurely destroy the electrolyte contained in the probes.

3.2. ELECTRICAL INSTALLATION

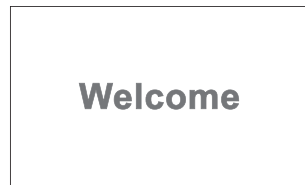
- (1) The controller must be installed in a well ventilated indoor area to prevent overheating and exposure to sunlight and rain.
- (2) The controller needs to be installed on a power supply with leakage switch protection (100-240V~50/60Hz).
- (3) The controller must be properly connected to the power supply, chlorinator, dosing pump, pH electrode, ORP electrode, water pump (when using automatic control water pump function), and water flow/temperature sensor, as shown in the following figure:



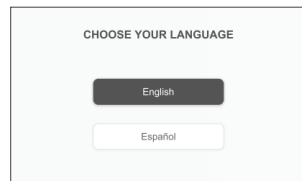
3.3. SETTING

When you start up for the first time or after a reset, you need to follow the steps for setting up the device.

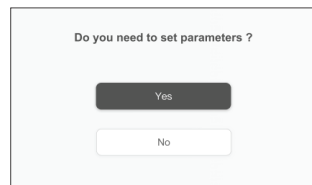
A, short press  to enter welcome interface, and after 5 seconds, it will automatically enter the language settings interface.



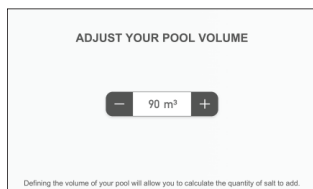
B, Use the key  and  to select the language, then short press  to confirm.



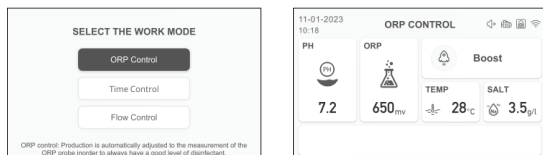
C, Use the key  and  to define the parameter setting, select 'YES' then press  to confirm.



D, Use the key **+** and **-** to set your pool size, then press **OK** to confirm.



E, Use the key **+** and **-** to select operating mode, then press **OK** to enter homepage.



4 USE

4.1. LOCK/UNLOCK

After 15 minutes without action, the device locks automatically.

When locked, the screen displays the icon in the top right corner.

To unlock the screen, long press the key **↶** and **OK** simultaneously for 5 seconds.

Locked state:

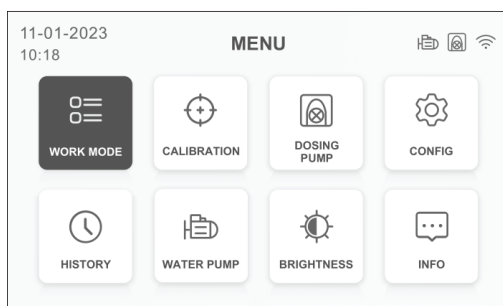


Unlock state:



4.2. MENU

To enter or exist the menu, use the button **≡** and **↶**.



	Choose or set the operation mode		Remaining lifespan of titanium plate Remaining lifespan of dosing pump Key historical operation records Historical alarm records
	Calibration		Programming the circulation pump
	Activate and configure dosing pump		Brightness adjustment
	WIFI, Time, sound, language		Version information

4.3. WORKING MODE

MENU>WORK MODE>ORP CONTROL or TIME CONTROL or FLOW CONTROL

In the menu selection interface, through  and  to enter the "WORK MODE" setting interface ; Then continue to use  and  to select the desired working mode, and press  to confirm the selected working mode.

There are three working modes available: **ORP Control**, **TIME Control**, and **FLOW Control**.

Operation mode	Working mode parameter settings	Note
ORP CONTROL (Default and recommended mode)	ORP value: 400~800mV adjustable, step 10mV, default 650mV.	ORP detection value $\geq$ set value+10mv, stop chlorine production; ORP detection value $\leq$ set value -10mv, resume chlorine production
	pH value: 7.0~7.8 adjustable, step 0.1~default 7.2.	
	Polarity reversal: 2~8h adjustable, step 2h, default 4h.	
	Pool size: 5~200m ³ adjustable, step 5m ³ , default 90m ³ .	
TIME CONTROL (Used when the ORP electrode is abnormal)	CL time: 1~24h adjustable, step 1h, default 12h.	The operation of your chlorinator is programmed according to chlorine production time set in the parameter, and ORP is not controlled. Please pay attention to the filtration time.
	pH value: 7.0~7.8 adjustable, step 0.1, default 7.2.	
	Polarity reversal: 2~8h adjustable, step 2h, default 4h.	
	Pool size: 5~200m ³ adjustable, step 5m ³ , default 90m ³ .	
FLOW CONTROL (Used when the ORP electrode is abnormal)	pH value: 7.0~7.8 adjustable, step 0.1, default 7.2.	The operation of your chlorinator depends on the operation of your circulation pump. Only the polarity reversal time needs to be set. Adjust your production rate.
	Polarity reversal: 2~8h adjustable, step 2h, default 4h.	
	Pool size: 5~200m ³ adjustable, step 5m ³ , default 90m ³ .	

4.4. CHLORINE PRODUCTION SETTING

Short press  and  adjust the chlorine production rate. The chlorine production range is adjustable from 20% to 100%, increasing 20% each time.

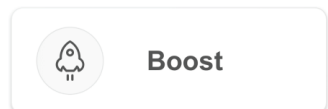
	Rated current (A)					
	20%	40%	60%	80%	100%	BOOST
WL-xChlo 20	1.0	2.0	3.0	4.0	5.0	5.0
WL-xChlo Pro 20	1.0	2.0	3.0	4.0	5.0	5.0
Current error requirements	When $I < 1.0A$, the deviation shall not exceed ± 0.1 ; When $I \geq 1.0$, it shall not exceed $\pm 10\%$.					

In non BOOST mode, short press  once to run the BOOST acceleration chlorine production function for 24 hours (after BOOST ends, it automatically returns to the previous chlorine production mode); In BOOST mode, press briefly  once to exit BOOST and return to the chlorine mode before running BOOST.

Non BOOST status: The chlorine production rate information area displays the current chlorine production rate.



BOOST status: The chlorine production rate information area displays "Small Rocket" and "Boost".



4.5. CALIBRATION

Before using for the first time, or when changing a probe, each probe must be calibrated.

In the menu selection interface, using ,  and  to select "CALIBRATION", enter the electrode calibration interface or select "CORDION" for external calibration (non-standard solution calibration). Users must strictly follow the calibration prompts of the chlorinator to ensure successful calibration.

Electrode calibration method	Calibration type	Calibration techniques and standard solutions
CALIBRATION (Standard solution)	pH Calibration	Single point calibration: Use pH7.01 standard solution for calibration
	ORP Calibration	Single point calibration: Use ORP470mV standard solution for calibration
CORRECTION (External calibration)	pH Correction	Non standard liquid calibration requires knowledge of the current pH value of the solution
	ORP Correction	Non standard liquid calibration requires knowledge of the current solution ORP value

pH standard solution calibration:

MENU>CALIBRATION>CALIBRATION>pH Calibration>START pH Calibration

A. Enter the Menu, use  and  to select the “Calibration” menu  , this takes you to “Calibration pH” menu.

B. Follow the instructions on the screen:

(1) Rinse the pH probe.

(2) Immerse the head of the probe in the pH 7.01 standard solution.

(3) Confirm with  .

C. A 5-minute countdown starts while the calibration takes place. Keep the probe in the standard solution during calibration.

ORP standard solution calibration:

MENU>CALIBRATION>CALIBRATION>ORP Calibration>START ORP Calibration

A. Enter the Menu, use  and  to select the “Calibration” menu  , Confirm with  .

B. Use the  and  to select “ORP calibration probe” menu. Press  to confirm.

C. Follow the instructions on the screen:

(1) Rinse the ORP probe

(2) Immerse the head of the probe in the 470mV standard solution.

(3) Confirm with  .

D. A 10-minute countdown starts while the calibration takes place. Keep the probe in the standard solution during calibration.

pH correction (non-standard solution calibration)

MENU>CALIBRATION>CORRECTION>pH Correction>START pH Correction

The pH of the water used for this step must be known. You can use pH test strips by following steps.

A. Rinse the pH sensor.

B. Immerse the pH probe in this water and confirm with  .

C. Wait one minute.

D. Use the  and  to indicate the pH value measured.

E. Confirm with  then use the back arrow  to exist this menu.

ORP correction (non-standard solution calibration)

MENU>CALIBRATION>CORRECTION>ORP Correction>START ORP Correction

The ORP of the water used for this step must be known. You can use ORP test strips by following steps.

A. Rinse the ORP sensor.

B. Immerse the OPR probe in the water and confirm with  .

C. Wait one minute.

- D. Use the  and  to indicate the ORP value measured.
- E. Confirm with  then use the back arrow  to exist this menu.

4.6. DOSING PUMP

The button  is used to quickly switch the dosing pump on/off.

Dosing pump check

MENU>DOSING PUMP>CHECK

- A. Enter the menu, use  and  to select the “Dosing pump”, then confirm your selection by clicking .
- B. Using the  and  to select “CHECK”, press  to confirm.

Each press of the dosing pump only runs for 15 seconds, which can be used for production, installation, debugging, and testing to check whether the peristaltic pump is normal. The direction of operation of the peristaltic pump is clockwise.

Priming the dosing pump

MENU>DOSING PUMP>PRIMING

- A. Enter the menu, use  and  to select the “Dosing pump”, then confirm your selection by clicking .
- B. Using the  and  to select “Priming”, press  to confirm.
- C. Use the  and  to change the priming time value.
- D. Press the  to confirm and start the boot process.

4.7. CONFIG

In the menu selection interface, use  and  to enter the configuration interface. WIFI, TIME, SOUNDS, and LANGUAGE will be able to be adjusted according to your needs.

WIFI CONFIG

MENU>CONFIG>WIFI

- A. Enter the menu, use  and  to select the “Configuration” menu  and confirm.
- B. Press  to enter the “WiFi” menu.
- C. Use  and  to turn the push button to the right, to activate WiFi.
- D. Press  to confirm. The icon  starts flashing during pairing.

TIME CONFIG

The time and date are automatically adjusted after connecting WiFi.

MENU>CONFIG>TIME

- A. Enter the menu, use  and  to select the “Configuration” menu  and confirm.
 - B. Use the  and  to select “Time”, press  to confirm.
- If you have wifi enabled, check the synchronisation at this stage.
- C. The pre-selected value starts flashing. Use the  and  to select the value to be changed, then press .
 - D. The next value is automatically selected and ready to be modified.
 - E. To exist the “Time” menu, use the back  several times, or menu  or confirm  the year.

SOUNDS CONFIG

MENU>CONFIG>SOUNDS

- A. Enter the menu, use  and  to select the “Configuration” menu  and confirm.
- B. Use  and  to select the “Sounds” menu, then confirm .
- C. Use  and  to change the position of the push button and confirm  to switch from one to the other.

LANGUAGE CONFIG

MENU>CONFIG>LANGUAGE

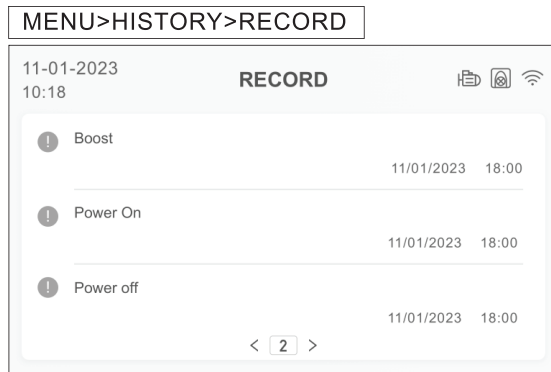
- A. Enter the menu, use  and  to select the “Configuration” menu  and confirm.
- B. Use  and  to select the “Languages” menu, then confirm .
- C. Use  and  to select your language then confirm . The device language is updated immediately.

4.8. HISTORY

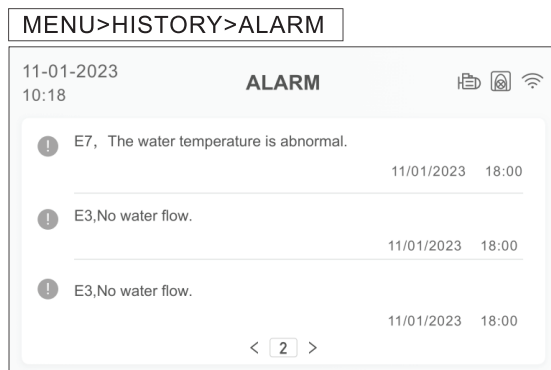
Through “History” key, the remaining life of the titanium plate and dosing pump, key operation records, and alarm records will be able to check.

- A. Enter the menu, use  and  to select the “History” menu  and confirm.
- B. Confirm  again to enter the “Chart” menu.
- C. Use  and  to select the menu of your choice: salinity, temperature, pH, ORP, energy consumption or circulation pump activation.
- D. Press  to display the exact value for the day, hour by hour, in an insert.
- E. Use the back key  to return to the data menu.

Key historical operation records



Historical alarm records:



4.9. WATER PUMP

The filtration pump can be activated directly or programmed to run in regular cycles or according to one to three timers.

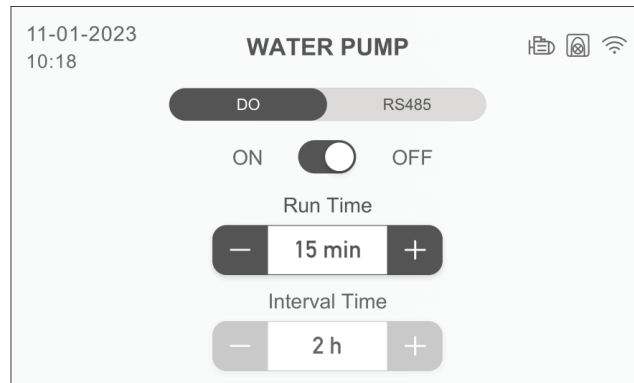
When it is active, the icon  is visible, when it encounters a connection problem, the icon  flashes.

There are two options for water pump connection: **dry contact control** and **RS485 control**.

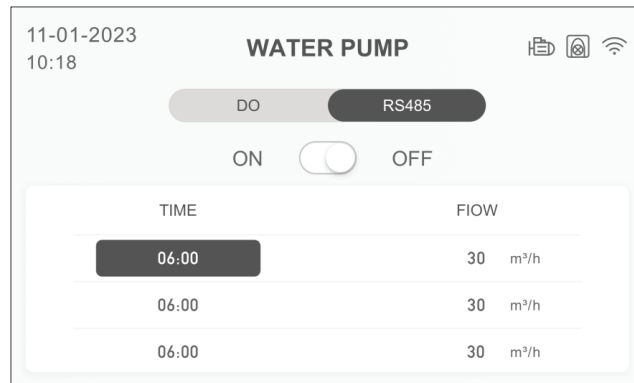
Activate the circulation pump:

A. Enter the menu, use  and  to select the “Water pump” menu , then confirm your selection by clicking .

B. On the water pump interface, select DO, click ON, and set the water pump adjustable running time between 15-120 minutes, with a step length of 15 minutes and a default of 15 minutes. The water pump running interval is adjustable from 0 to 24 hours, with a step length of 1 hour and a default of 2 hours.

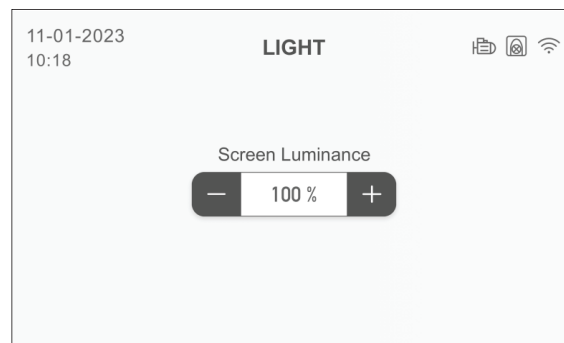


C. The RS485 communication control of the water pump supports the setting of three different time periods. The time setting range is 00:00~24:00, the step length is 60min, TIME1<TIME2<TIME3; the water pump flow rate is 0~30m³/h, the step length is 1m³.



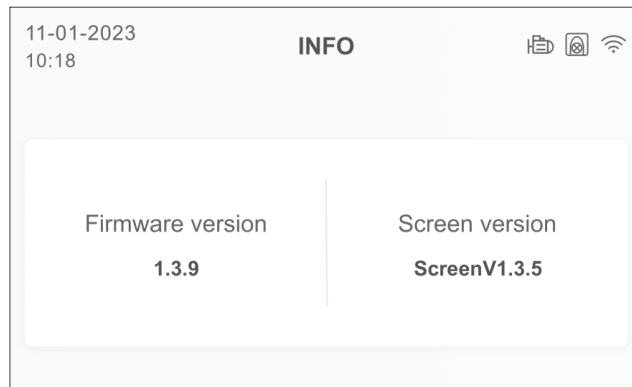
4.10. BRIGHTNESS

- Enter the menu, use **+**, **-**, and **OK** to select "Brightness" menu and confirm.
- Use **+**, **-**, and **OK** to increase or decrease the screen brightness from 20% to 100% in steps of 20%.
- Use the back to return to the main menu.



4.11. INFORMATION (INFO)

Enter the menu, use  ,  and  to select "INFO"  and confirm. You are able to check the device information.



4.12. FACTORY RESET

When the device is powered on, press and hold  for 5 seconds to enter the factory reset confirmation interface, and short press  to confirm, then the device will be restored to factory settings.

5 APP APPLICATION

5.1 DOWNLOAD AND INSTALL TUYA APPLICATION



Search for "Tuya Smart" or "TUYA" in the "App Store" on your phone and download and install it.

After the installation is complete, open the "Tuya Smart" app and follow the APP prompts to register and log in. If you are a new user of the "Tuya Smart" app, you need to register using your mobile phone number or email address before logging in.

5.2. PAIRING YOUR DEVICE

To pair your device, follow these steps:

(1) Check that your WiFi is activated and compatible with the application: the application only supports 2.4 GHz WiFi networks.

If your home WiFi is in the 5GHz band, you need to create another WiFi network in the 2.4GHz wifi network. If you use a mobile phone WiFi hotspot to connect to the network, the Android phone must change the mobile phone WiFi hotspot to the 2.4GHz band (the WiFi hotspot function of the Apple phone is turned on in the maximum compatibility mode, which is compatible with the 2.4GHz band).

(2) Turn on your phone's Bluetooth.

(3) Press  and  simultaneously for 5 seconds, to pair the network.

WiFi disabled state: The WiFi icon is marked with a slash, and the pairing and networking function is disabled.



Waiting for network connection: The WiFi icon flashes and the user can pair with the network.



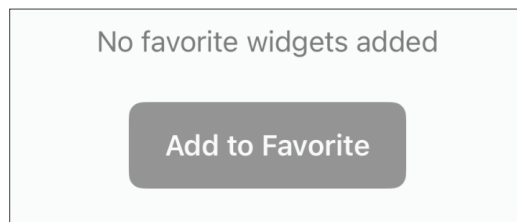
Network connected (normal network connection): The WiFi icon is always on, indicating that the user has been paired with the network and is connected to the network.



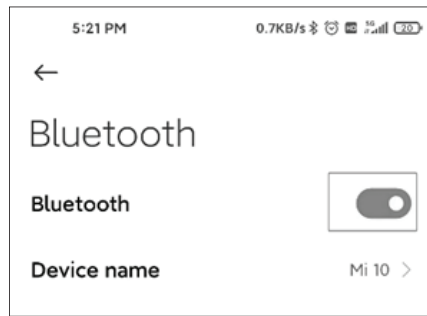
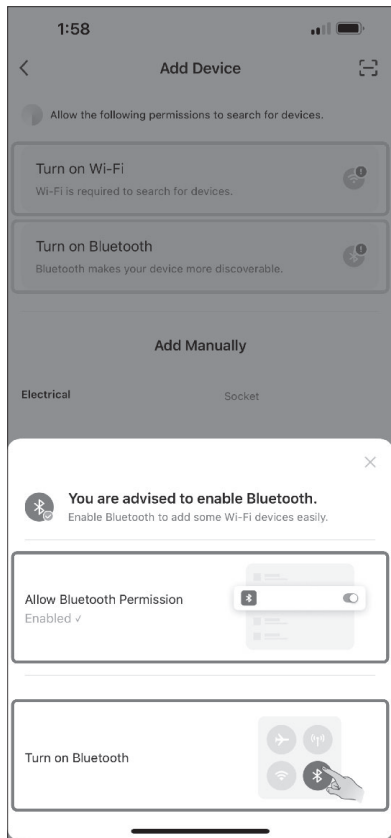
Unconfigured network state (network connection is disconnected): no WiFi icon.



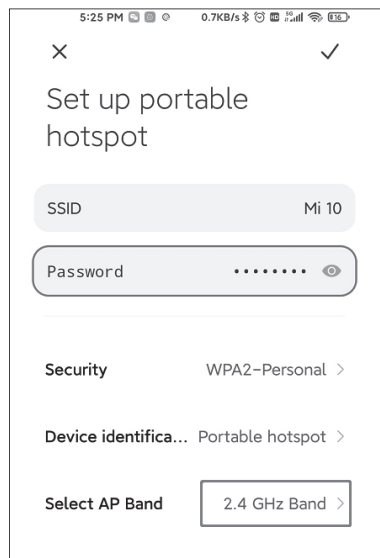
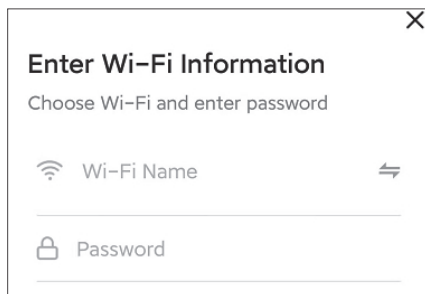
(4) On your application, go to the "Add a device" tab.



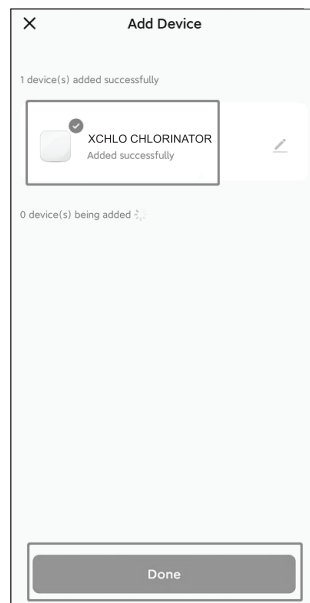
(5) Turn on WiFi, turn on Bluetooth.



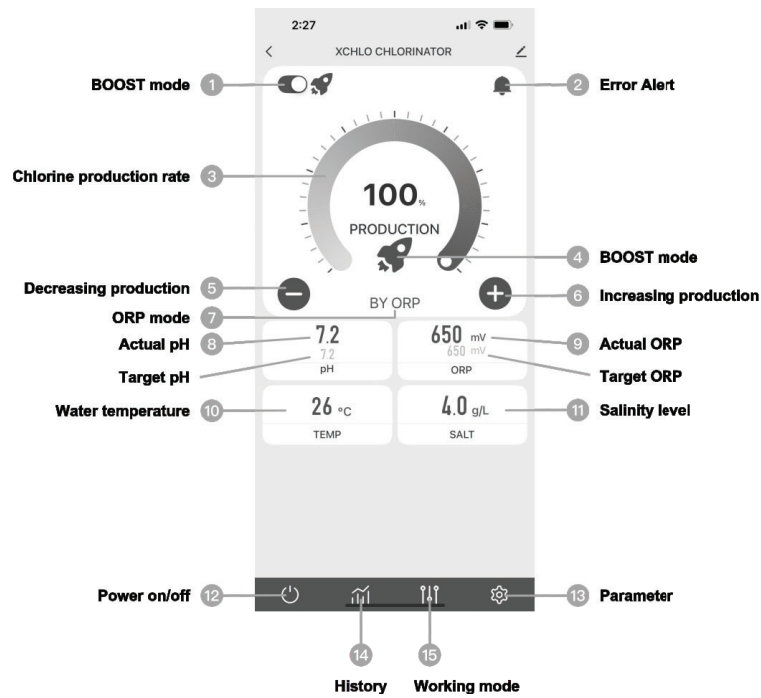
(6) Enter your WiFi information



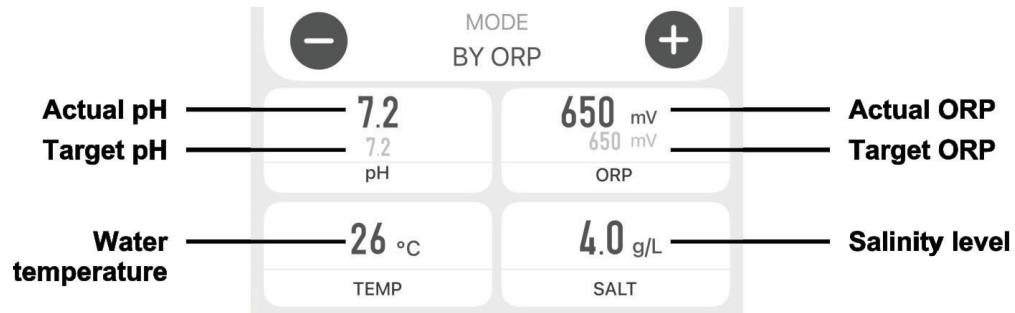
(7) After the network is successfully paired, the successfully paired product will appear on the TUYA app homepage. Click this product to enter the APP control interface of the xChlo salt chlorine generator.



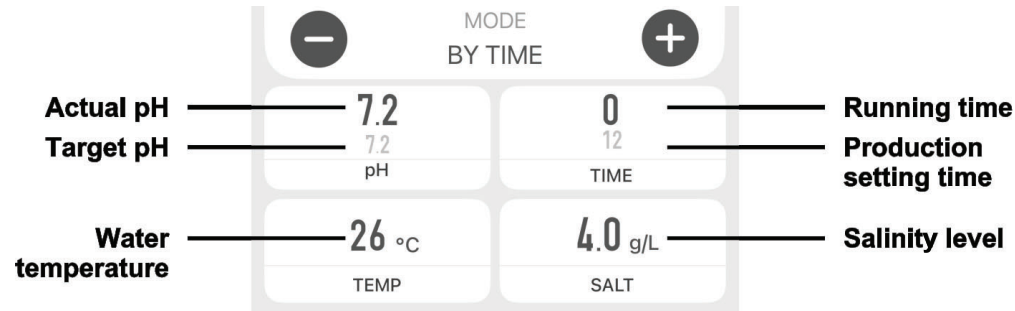
5.3. INTERFACE



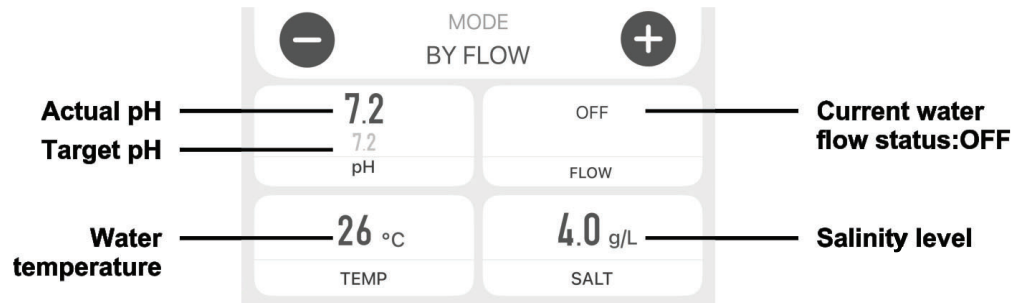
Operation mode: ORP control



Operation mode: TIME control



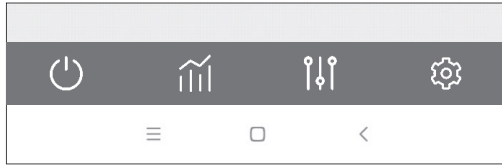
Operation mode: FLOW control



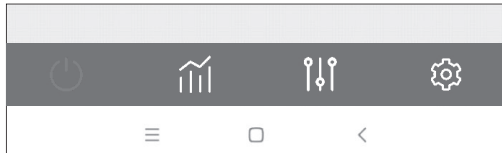


Start or stop the chlorinator.

Power on status:

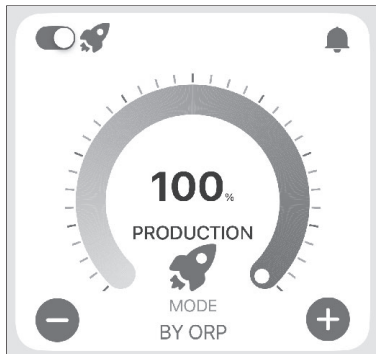


Power off status:



Accelerate chlorine production

BOOST status:



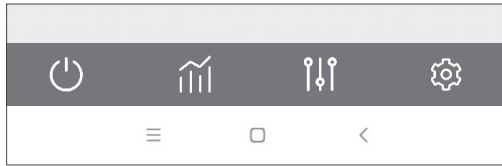
Non-BOOST state:



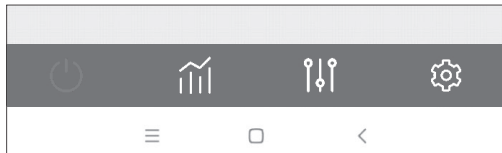


Start or stop the chlorinator.

Power on status:



Power off status:



Accelerate chlorine production

BOOST status:

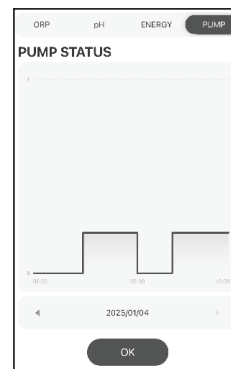
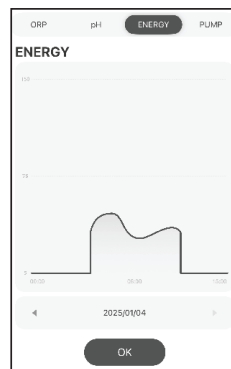
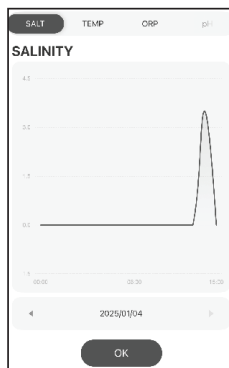


Non-BOOST state:



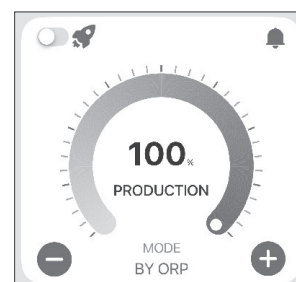
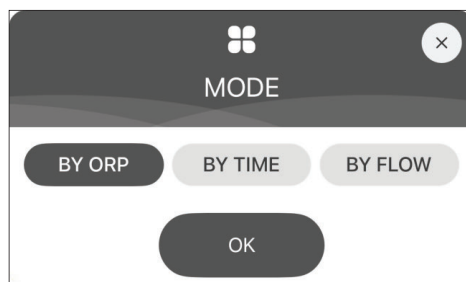


Find the graphs showing the values of salinity, water temperature, pH, ORP, consumption, water pump.

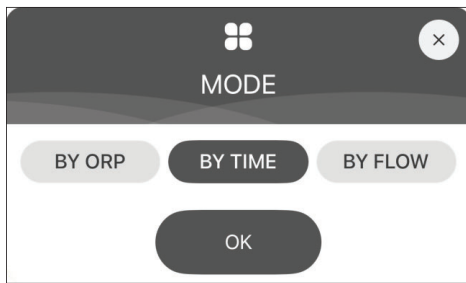


Change the operating mode of the chlorinator.

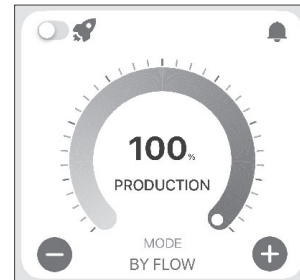
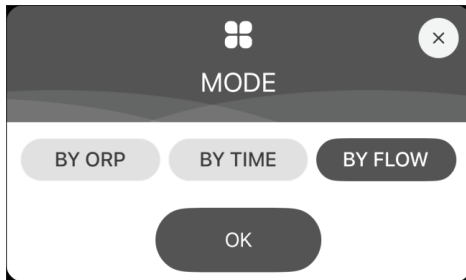
ORP control



TIME control

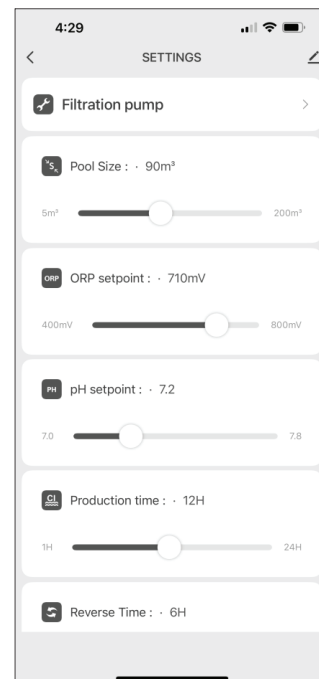


FLOW control



Adjust the chlorinator parameters.

The water pump control parameters, pool size, ORP, pH, chlorine production time and reversal time can be set. The parameter setting range is consistent with the device end.



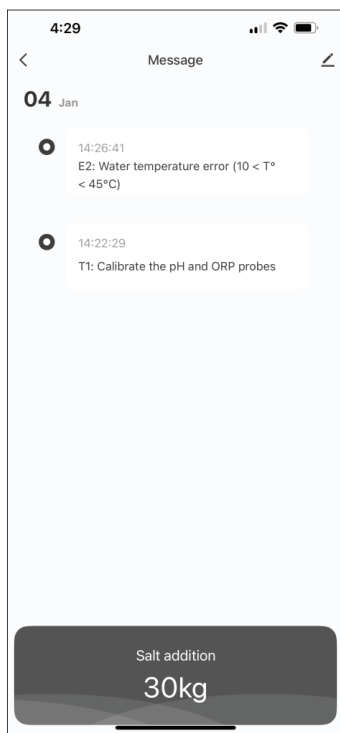
No fault alarm: The button is blue



Fault alarm: The button is yellow

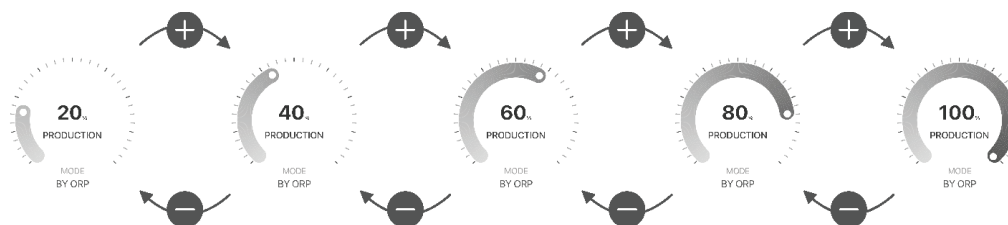


Fault alarm query interface



5.4. PRODUCTION RATE SETTING

Use  and  to adjust the chlorine production rate.



6 TROUBLE SHOOTING AND SOLUTION

CODE	ERROR	SOLUTION
E1	MOS tube overheat	1. First check if there is an E6 fault code. 2. If there is no E6, long press "OK" button for 5 seconds to clear the fault alarm, and then reduce the chlorine production rate.
E2	Abnormal water temperature	1. Check whether the actual water temperature is within the range of 10-45°C. 2. Check whether E7 (water temperature sensor fault alarm) is reported at the same time. 3. Use the resistance range of the multimeter to check whether the resistance of the water temperature sensor is $50\pm 10K$ (normal temperature)
E3	No water flow	1. Check whether the water pump is running and sufficient flow. 2. Check whether the water pipe valves before and after the chlorinator are fully opened. 3. Check or clean the pipes and pump to ensure sufficient flow. The normal operating range of the flow sensor is between 2m³/h and 10m³/h. 4. Check that the filtration time is long enough to cover the entire treatment time. 5. Check whether the water flow + water temperature sensor is plugged into the controller, and whether there is a problem of poor contact. 6. Turn off the circulating pump, loosen the large nut in a counterclockwise direction, and check whether the water flow switch connector is plugged in, whether there is a problem of poor contact. 7. Check the controller whether the internal wiring is normal. If all of the above is correct, but the error persists, contact the after-sales service to have the flow sensor replaced.
E4	Abnormal operation of dosing pump	1. Check the pump wiring. 2. Check the suction and discharge pipes do not contain dirt. Impurities can damage the pump body pipe and cause an anomaly in the discharge. 3. Check the condition of the pump filter. A clogged filter can cause a decrease in flow. 4. The dosing pump pipe may not be properly lubricated or hardened due to aging, resulting in failure to start normally. Please open the transparent cover of the dosing pump and turn the motor to restore to normal. If it cannot be restored, please contact after-sales service.
E5	Low salt	1. Check whether the pool water is indeed lacking in salt (the pool has not been salted, the pool has recently been replenished with fresh water to dilute the pool water, or there has been heavy rain recently to dilute the pool water). 2. If it is indeed lacking in salt, add sodium chloride according to the amount of salt added indicated by the salt chlorinator. The normal range of salt concentration is 2700-4500 ppm. However, the ideal salt concentration is approximately 3500 ppm.

E6	Abnormal MOS tube temperature sensor	1. Check visually whether the NTC thermistor next to the MOS is soldered. 2. Use a multimeter to check whether the NTC thermistor is $10\pm 1K$ (normal temperature).
E7	Abnormal water temperature sensor	1. Check whether the water flow + temperature sensor is plugged into the controller, and whether there is any problem of poor contact. 2. Use a multimeter to check whether the NTC thermistor is $50\pm 1K$ (normal temperature).
E8	Input voltage abnormality	1. First, press and hold the "OK" button for 5 seconds to eliminate the fault alarm. 2. If E8 continues to be reported, use a multimeter to check whether the input and output voltage of the power adapter is normal. 3. If the error persists, contact customer service for a replacement transformer or cell.
EA	Abnormal electrode	1. First, press and hold the "OK" button for 5 seconds to eliminate the fault alarm. 2. If the EA alarm continues, please check whether the electrolytic component plug is plugged into the controller, and whether there is a problem of poor contact. 3. Disassemble and inspect the controller, check whether the wiring of the electrolytic output has a problem of poor wiring, and check whether the output voltage is stable. 4. Disassemble and inspect the electrolytic component. If there is severe corrosion of the electrode rod or titanium plate, please replace the entire electrolytic module; if there is severe scaling, it is recommended to use dilute hydrochloric acid or acetic acid to soak and descale.
T1	Calibration maintenance	1. Calibrate the pH/ORP sensor (3months/time) 2. Press and hold the "OK" button for 5 seconds to restart the device.
T2	Electrolytic cell maintenance	1. Use acetic acid or dilute hydrochloric acid to clean and descale. 2. Press and hold the "OK" button for 5 seconds to reset.
T3	Replacement of electrolytic cell reminder	1. Replace the electrolytic cell. (cumulated 10,000 hours) 2. Press and hold the "OK" button for 5 seconds to reset.
T4	Peristaltic pump hose reminder	1. Replace the peristaltic pump hose. 2. Press and hold the "OK" button for 5 seconds to reset.
T5	Reminder to replace peristaltic pump	1. Replace the peristaltic pump. 2. Press and hold the "OK" button for 5 seconds to reset.
/	Unable to search for the desired paired connected device	1. Check if the WiFi network function is disabled. When disabled, the WIFI icon will be . 2. Press and hold the "+" and "-" buttons for more than 3 seconds to turn on the pairing network function. 3. Check whether the Bluetooth and WiFi have been turned on.
/	Pairing failed	1. Re-pair and confirm whether the WiFi account and password are entered normally. 2. Check whether the WiFi signal on site is poor. Adjust the installation position of the router to ensure that the environment where the chlorinator is located has a good

		WiFi network signal; turn on the mobile phone WiFi hotspot and use the mobile phone WiFi hotspot to pair and connect to the Internet. 3. Please check your mobile phone WiFi hotspot to the 2.4GHz band (the WiFi hotspot function of the Apple phone is turned on in the maximum compatibility mode, which is compatible with the 2.4GHz band)
/	pH calibration failed	1. Check whether the pH electrode connector is well connected to the controller. 2. Check whether the pH calibration solution is pH 7.0 (pH 7.01) and pH 10.0 (pH 10.01). 3. Recalibrate to confirm that the operation is correct during the calibration process and there is no cross contamination of the standard solution. 4. Replace the new pH calibration solution and recalibrate. 5. Replace the new pH electrode and recalibrate
/	ORP calibration failed	1. Check whether the ORP electrode connector is well connected to the controller. 2. Check whether the ORP calibration solution is 470 ± 10 mV. 3. Recalibrate to confirm that the operation is correct during the calibration process and there is no cross contamination of the standard solution. 4. Replace the new ORP calibration solution and recalibrate. 5. Replace the new ORP electrode and recalibrate
/	pH value too high	1. Check if the peristaltic pump is in disabled state. 2. Check if the acid tank is in low liquid level state. 3. Check if the peristaltic pump and its pipeline are leaking. 4. Enter the "DOSING PUMP" menu, run "CHECK", and visually check if the peristaltic pump is rotating in the clockwise direction. 5. Check if the inlet and outlet valves of the flow detection cell are open, and water circulation inside is normal. 6. Use a pH electrode to detect the pH standard solution and observe if the deviation is ≤ 0.1. 7. Recalibrate the pH electrode. 8. Replace the pH electrode.
/	ORP value has not been able to rise	1. Check whether the salt chlorinator is producing chlorine. 2. Check whether the chlorine production rate is 100%. 3. Check whether the operation mode is "ORP CONTROL". 4. Check whether the inlet and outlet valves of the flow detection cell are open, and the water circulation inside is normal. 5. Check whether the chlorinator is not equipped with a pH electrode and a peristaltic dosing pump. 6. Check whether the current pH display value is high ($\text{pH} > 7.6$). 7. Use the ORP electrode to detect the ORP standard solution and observe whether the deviation is ≤ 50 mV. 8. Recalibrate the ORP electrode. 9. Replace the ORP electrode.

7 MAINTENANCE

Regular maintenance is very important for long-term operation. These operations must be carried out systematically and meticulously according to the following recommendations.

- (1) Check the level of the tank with pH-lowering solution regularly to prevent the dosing pump from running dry.
- (2) Check that the suction and discharge pipes are free of impurities.
Impurities can damage the pump tubes and cause abnormal discharge.
- (3) Check the operation of the dosing pump regularly by checking the condition of the pump filter. A clogged filter will cause a reduction in flow.
- (4) Check the probe for blockage.
- (5) Clean the electrolyzer 1 to 2 times per season.
- (6) Check the stabilizer level (cyanuric acid) for a concentration of 20 to 50 ppm.
- (7) Check for the presence of phosphates and nitrates, which often cause high chlorine demand: if the test result is positive, shock with an oxidizer.
- (8) Do not use fertilizers near swimming pools. Fertilizers are one of the many sources of nitrates or phosphates, which can cause high chlorine demand in the pool water and the formation of deposits on the pool.
- (9) Install the system (controller, dosing pump and chlorinator) in the shade or away from sunlight whenever possible.

7.1. ELECTROLYSER CELL MAINTENANCE

WARNING

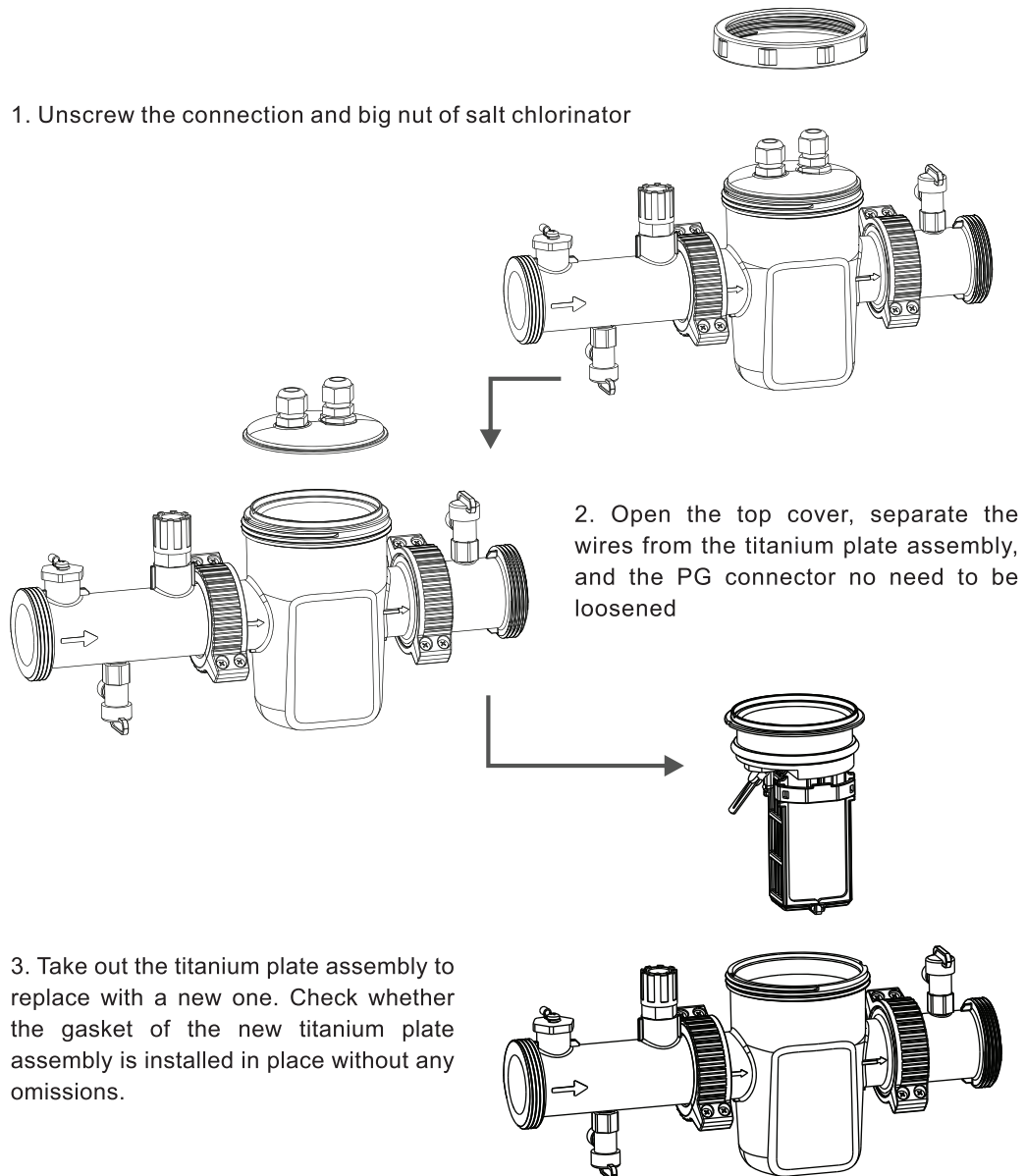
- (1) Always use a descaling product specifically formulated for chlorinator cell and strictly follow the manufacturer's instructions for use and safety.
- (2) Using an unsuitable or overly concentrated product (pure acid) can cause visible and irreversible damage to the cell, is not covered by the warranty, and can be dangerous.
- (3) When clean the cell, always wear suitable protective gear such as rubber gloves and goggles.
- (4) Always work in a well-ventilated area. Acid splashes can cause serious injury and/or property damage. Never put water in acid.

Procedure :

- (1) Cut off all power and close the return valves.
- (2) Disconnect the transformer cable.
- (3) Unscrew the threaded nuts around the PVC fittings that connect the cell to the pipes.
- (4) Empty the residual water.
- (5) Remove the cell completely from the union fittings. DO NOT pull or carry the cell by its cable.

- (6) Block one end with tape or a plug, place it vertically, and pour edible white vinegar from the other end until the titanium plate is immersed.
- (7) It is recommended to shake the titanium plate every 2 minutes to speed up the cleaning rate. After about 10 minutes, observe whether the scale on the surface of the titanium plate is clean. If it is not clean, extend the soaking time.
- (8) After the titanium plate is cleaned, pour out the solution in the salt chlorinator, then rinse the titanium plate assembly with tap water, and then install it back into the pipeline.

Replace the titanium plate assembly:



7.2. pH ELECTRODE MAINTENANCE

The first time use, it is recommended to use standard solution (pH7.01) for calibration, and continuous use, it is recommended to calibrate once every three months. If the electrode has not been used for a long time or it is uncertain whether it is normal, it is recommended to use standard solution for calibration first. If the electrode has not been used for a long time, it is recommended to soak it in protective solution (saturated potassium chloride solution).

7.3. ORP ELECTRODE MAINTENANCE

The first time use, it is recommended to use ORP standard solution (470mV) for calibration and continuous use, it is recommended to calibrate once every three months. If the electrode has not been used for a long time or it is uncertain whether it is normal, it is recommended to use standard solution for calibration first. If the electrode has not been used for a long time, it is recommended to soak it in protective solution (saturated potassium chloride solution).

7.4. PERISTALTIC PUMP ASSEMBLY MAINTENANCE

It is recommended to visually check the peristaltic pump hose for leaks once a month.

It is recommended to replace the peristaltic pump hose every 12 months.

It is recommended to replace the peristaltic pump (including the inlet and outlet pipes, filter bottom valve and injection valve) every 24 months.

8 WARRANTY

Laswim provides 36 months warranty for controller and 10,000 hours for titanium plates. Probes are consumable components not covered by the warranty.

The warranty takes effect on the delivery date from factory.

The warranty does not apply to the following:

1. Failure or damage caused by failure to install, use or service in accordance with the safety instructions.
2. Failure or damage caused by an unsuitable chemical environment in the pool.
3. Failure or damage caused by conditions unsuitable for the intended use of the equipment.
4. Damage caused by negligence, accident or force majeure.