

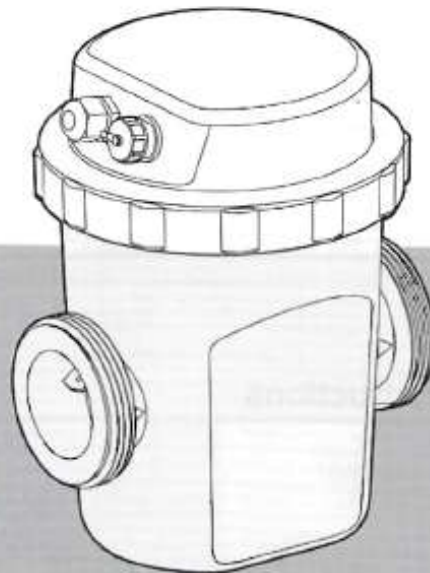


WL-CS Pro

SALT CHLORINATOR

USER MANUAL

WL-CS Pro 8
WL-CS Pro 15
WL-CS Pro 20
WL-CS Pro 24
WL-CS Pro 30



Please Read The Manual Carefully Before Use.

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IMPORTANT WARNINGS

Thank you for choosing the CS Pro series Salt Chlorinator. To ensure optimal performance and prevent potential hazards, please read this manual thoroughly and strictly follow all instructions before installation and operation.

IGNORING SAFETY WARNINGS MAY CAUSE SEVERE INJURY, PROPERTY DAMAGE, OR LIFE-THREATENING RISK!

IMPORTANT NOTICE

1. The installation and the maintenance must be performed by a certified electrician. Or else there would be risk of electrocution, grievous injury, property loss and may even cause life safety threatening consequences.
2. Before any maintenance or operation, ensure that the salt chlorinator is power-unplugged, all machinery are turned off and power source is turned off.
3. The external power adapter of the salt chlorinator must be installed on a power supply with leakage switch protection.
4. Salt chlorinator should be installed in a ventilated position as far as possible, which is conducive to the heat dissipation of the electric control parts, and should not be installed in a damp or rainy place, so as to avoid water from entering the interior and incurring incalculable losses.
5. Installation personnel must read carefully this manual before installation. If any improper or mistaken operation occurs, please contact the nearest authorized dealer or contact technical support department.
6. When parts are damaged, please prioritize the purchase of the replacement part at the manufacturer or authorized dealer.

1 PRODUCT SUMMARY

CS Pro Salt Chlorinator is an intelligent, efficient and eco-friendly disinfection equipment for private swimming pool, with the function of inverter electrolytic chlorine production, salinity online monitoring, automatic calculation of salt dosage, support APP remote control and low-salt alarm and salt dosage prompt, providing a safe, energy-saving and convenient solution for water quality management of swimming pool.

FEATURES:

- Salinity monitoring: real-time display of pool water salinity.
 - Salt dosage prompt function: when the low salt alarm is activated, the salt chlorinator can prompt the required salt addition amount, eliminating the complicated manual calculation and facilitating the user's daily maintenance.
 - App remote control: tuya wi-fi & bluetooth modules for remote operation.
 - OTA upgrade: supports firmware upgrades via the app.
 - Flow protection: chlorine production is stopped if water flow is insufficient.
 - Temperature monitoring: alerts when water temperature exceeds 10*c-45*c.
 - Titanium plates self-cleaning : reverse polarity auto-cleaning to extend lifespan.
 - Adjustable chlorine production levels: the chlorine production levels can be adjusted on the control panel or app, the chlorine production levels is 25%, 50%, 75%, 100% adjustable, which is adaptable to different disinfection needs.
 - Chlorine production time setting function: users can set the production time according to the actual situation of the pool water, to save energy.
 - One key to restore the default setting function.
 - Electrode abnormal monitoring function: when the electric board failure occurs, it will alarm.
 - When powered-on automatically initiates the last work setting from system memory.
- Automatic power on means when power shortage occurs during operation, and when power recovers the system automatically turns on.
- Memorizing the setting from last operation means the condition before a power shortage, or the system setting before the system failure.
- Low salt mode: automatically adjusting the chlorine production level when the salinity is low.

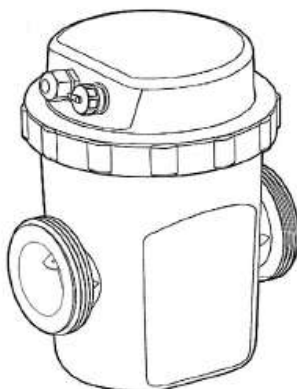
STRUCTURE DIAGRAM:

Users can choose the appropriate product according to the parameters in the following table:

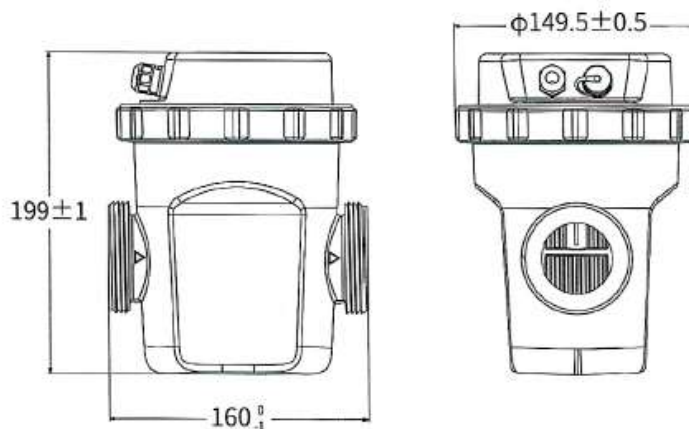
Model	CS Pro 8	CS Pro 15	CS Pro 20	CS Pro 24	CS Pro 30
Chlorine Output (g/h)	8	15	20	24	30
Pool volume(m ³)	≤36	≤67	≤90	≤102	≤135

2 PRODUCT Dimension

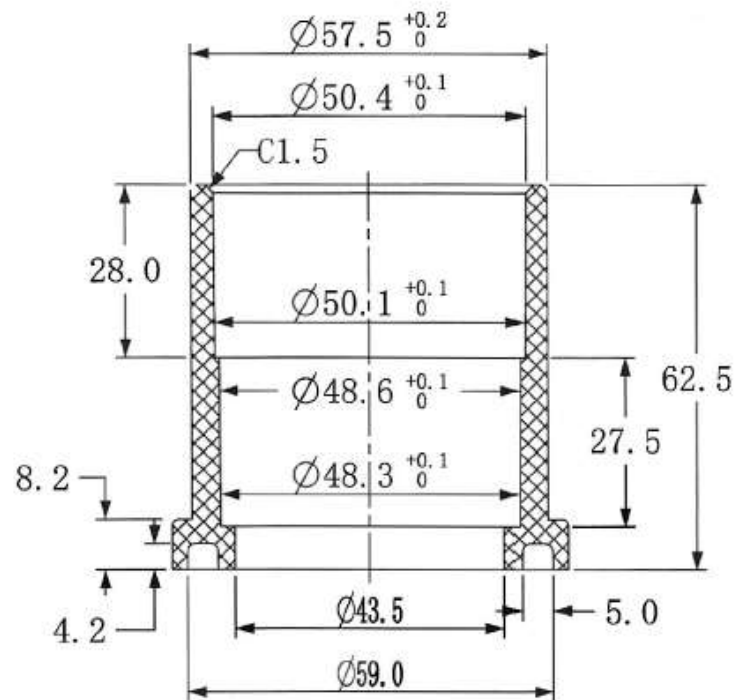
2.1 OVERALL APPEARANCE



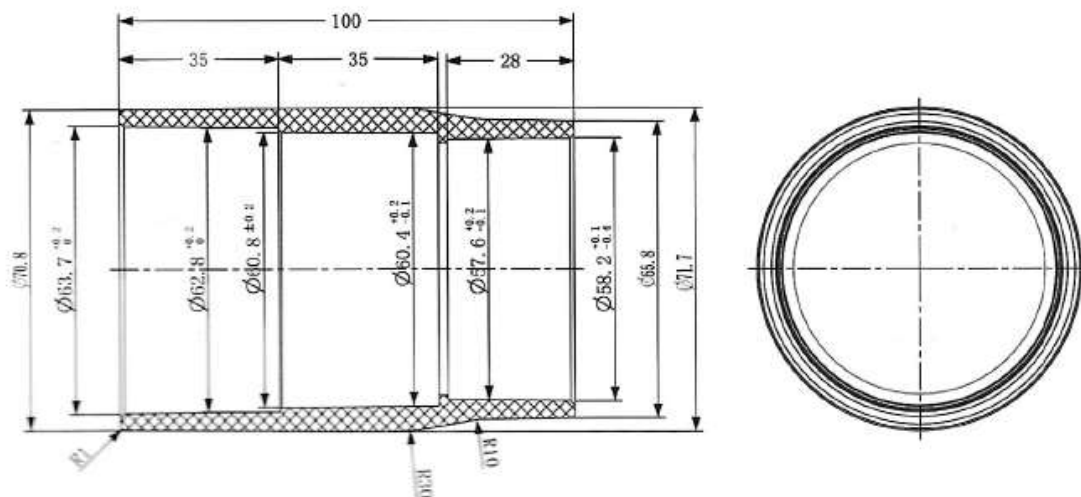
2.2 PRODUCT DIMENSION



2.3 CONNECTOR 1.5"/50MM COMMON



2.4 2.4 1.5" X 2" PIPE ADAPTER (OPTIONAL)



3 Specifications

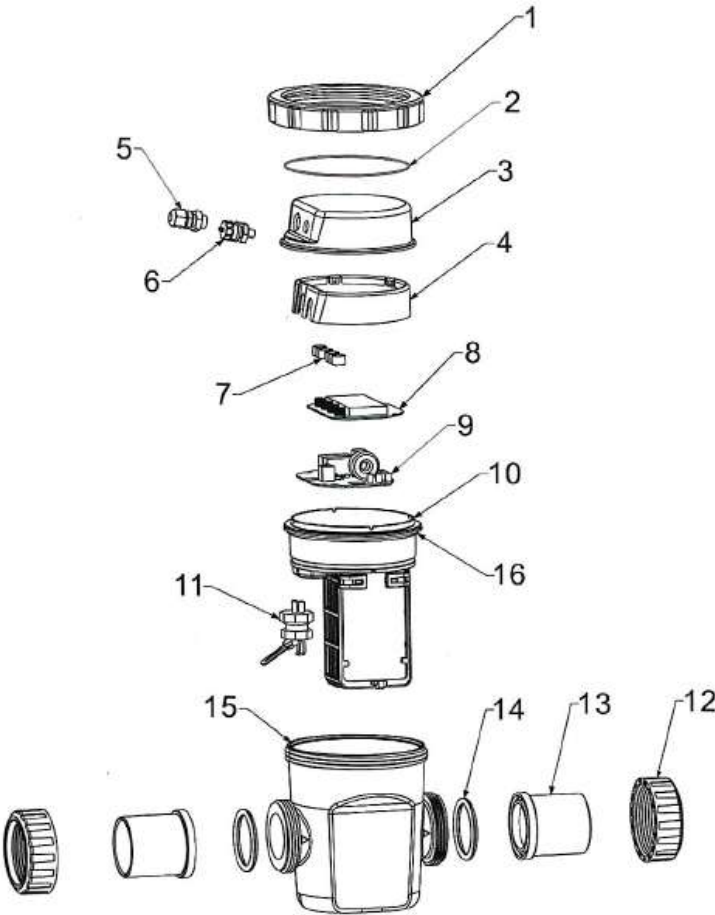
3.1 SALT CHLORINATOR SPECIFICATIONS PARAMETERS

Model	CS Pro 8	CS Pro 15	CS Pro 20	CS Pro 24	CS Pro 30
Chlorine Output (g/h)	8	15	20	24	30
Pool Volume (m ³)	≤36	≤67	≤90	≤102	≤135
Salinity (g/L)	2.7-4.5				
Recommended flow range (m ³ /h)	5-28				
Water Temp.	10-45°C				
Ambient Temp.	0°C~45°C				
Humidity	≤90%RH				
Pressure-Bearing	0.2MPa(water pressure)				
Waterproof grade	IP65				

3.2 POWER SUPPLY TECHNICAL SPECIFICATIONS PARAMETERS

Model	CS Pro 8	CS Pro 15	CS Pro 20	CS Pro 24	CS Pro 30
Input Voltage	100-240V/50-60Hz				
Output Power Supply/Current	24V/2.7A	24V/5A	24V/5A	24V/7A	24V/29A
Max.Output Power	66W	120W	120W	203W	203W

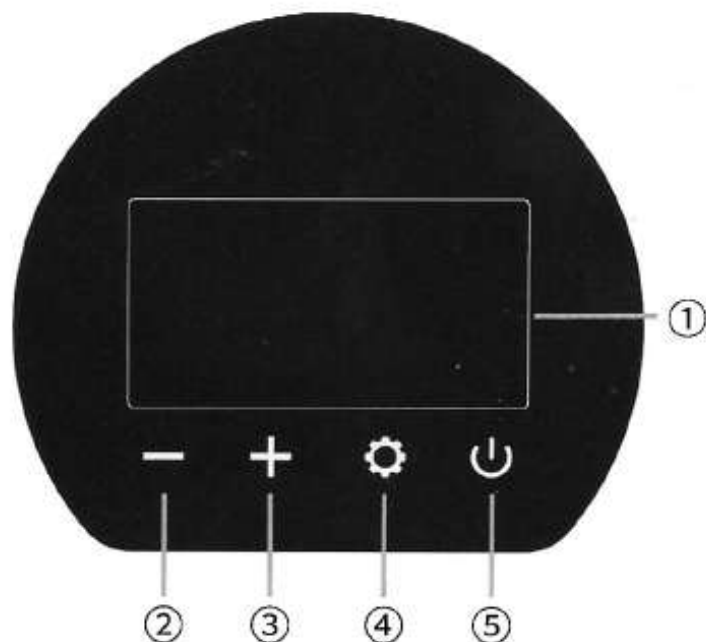
3.3 EXPLODED VIEW DIAGRAM




1	Ring nut
2	O-ring
3	Touch panel
4	Inner part
5	Lock nut
6	Dry contact
7	Shading part
8	Pc board


9	Power board
10	Titanium plate
11	Flow switch+sensor
12	Union nut
13	Union bulkhead
14	O-ring
15	Transparent housing
16	O-ring


4 Control Panel




① Segment Code Display:

- a. When it is not powered on, the digital display does not show anything; When in standby, it displays 0%.
- b. Upon power on, when there are no system failures, it will display the current chlorine production level (e.g., Output 25%).
- c. Short press the button  several times to switch the display, in sequence is Output (%), chlorine time: CLtime (h), reverse time: Reverse (h), the pool's current volume: Volume (m³).
- d. When the salt chlorinator detects a fault, it displays the corresponding fault code (Ex) and scrolls relevant instructions if applicable (e.g., when salt is low, it shows current pool water salt level: XX g/L and required salt addition: XX kg)
- e. If there is more than one fault, the fault code with the higher priority level is displayed first;
- f. During reverse polarity, '--' is displayed.


②  button: (white light) reduce button. It does not light up when the device is off, and light up when on standby. When it is not in the mode of setting, press '-' to see the water temperature.

③  button: (white light) increase button. It does not light up when the device is off, and light up when on standby. When it is not in the mode of setting, press '+' to see the salinity.

④  button: (white light) (multi-function button). It does not light up when the device is off, and light up when on standby.

Under normal condition, short press this button and use it together with '+' and '-' buttons to set the chlorine production level, chlorine production time, self-cleaning time and pool volume.

Under fault condition, long press this button to eliminate the error code.

⑤  button: (can change to white, red or yellow colour according to different situation).

Equipment start and pause button.

- a. In the unlocked state, long press for 3 seconds to turn off the device, and it turns to red .
- b. In the unlocked state, short press to turn on the device and it turns to white.
- c. Under low temperature condition, the yellow light is on.
- d. In a high production level, it turns to yellow in low salt status;
- e. Flashing red light in fault condition.

② + ③ key combination: long press for 5 seconds to enter the networking mode.

③ + ④ key combination: unlock.

- a. In unlocked state, long press the combination key for 3 seconds to lock the device.
- b. In the locked state, long press the combination key for 3 seconds to unlock the device.

④ + ⑤ key combination: In the unlocked state, long press this combination key for 5 seconds to enter the restoration of factory settings.

5 Installation Instruction

(1) Before use, you must ensure that the pipe used for installation is the same size with the salt chlorinator, and the standard port size of the salt chlorinator is 1.5" (metric system: Ø50mm; imperial system: 1.5"/Ø48mm). If you need to install a 2" pipe, please use the 1.5" x 2" adapter (optional).

(2) Before using, make sure that the valves of the pipeline where the product is to be installed is closed.

(3) Before installation, clean any oil or debris from inside the pipe and the union.

(4) The salt chlorinator shall be installed on the pipeline before returning to the pool in the water treatment process, and should be installed on the bypass pipeline. An adjustable valve must be installed on the main pipeline.

(5) When installing the salt chlorinator, it must be ensured that the direction of the water flow is the same as the direction of the arrow marked on the salt chlorinator housing.

(6) Special PVC glue should be used when connecting the pipes to the salt chlorinator.

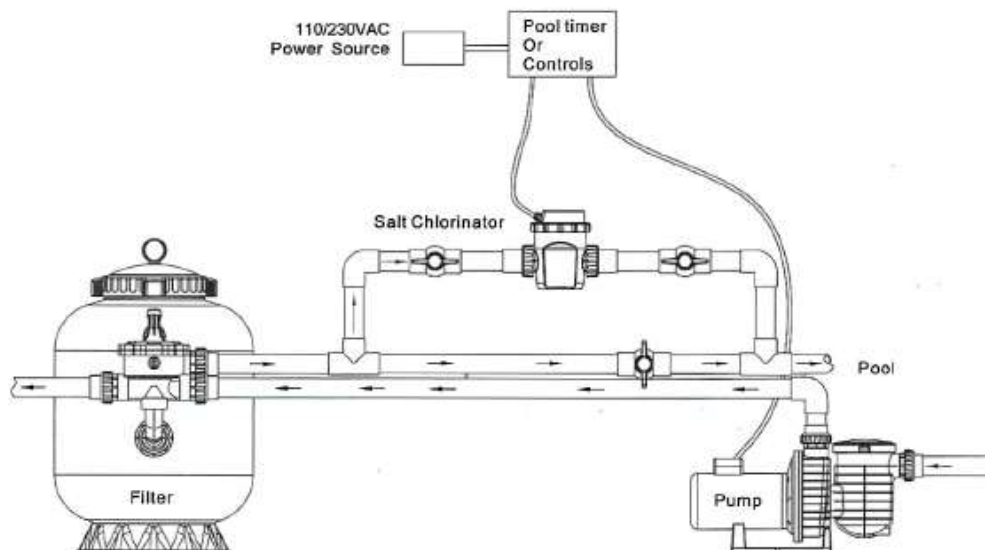
(7) The power supply of the salt chlorinator is an external power adapter. And the input power of the power adapter is AC100~240V/50~60Hz.

(8) The external power adapter for the salt chlorinator must be installed on a power supply with leakage switch protection and linked to the pump.

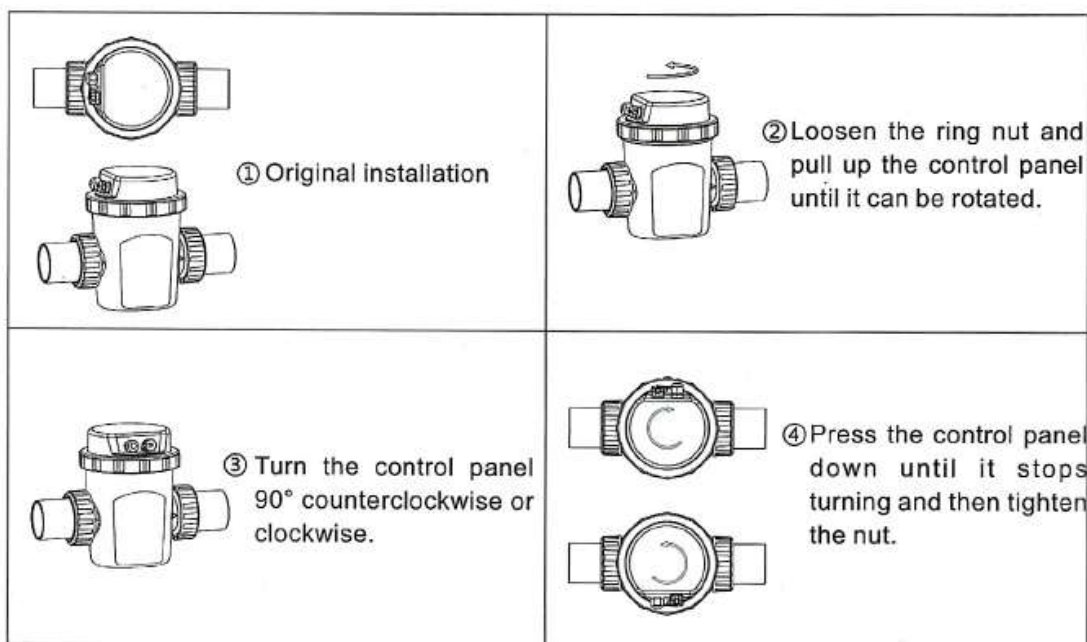
(9) Salt chlorinator should be installed in a well-ventilated place indoor, conducive to heat dissipation. Do not install in place that is easily damp or rainy to prevent water from entering the equipment and causing incalculable losses.

(10) During the using, direct sunlight should be avoided to prevent accelerated aging.

(11) Users can adjust the direction of the panel of the salt chlorinator according to the installation position and usage habits.




How to adjust the control panel orientation



6 Operation Instructions for Use

6.1 POWER ON/OFF

1. In the off state, short press  to turn on the salt chlorinator. The indicator light changes from red to white, the display lights up and displays the home page. The salt chlorinator starts to work according to the set program.

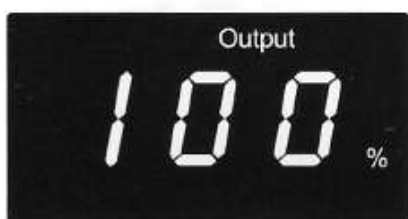
2. Under the state of power on, long press  for 3 seconds to turn off the salt chlorinator. The On/Off button indicator light will turn from white to red, the other buttons will turn off, and the salt chlorinator will stop working.

6.2 DEVICE NETWORK CONFIGURATION

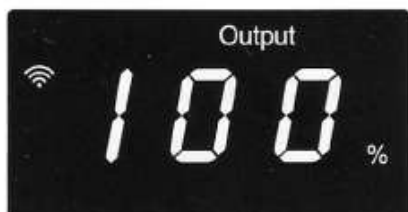
1. In an unconnected state, long press both the "+" and "-" buttons simultaneously for 5 seconds to activate the pairing and network connection function. The WiFi indicator icon on the display screen will flash. At this point, users can use the Tuya Smart app on their mobile phones to pair and connect to the network. Once the network configuration is complete, the WiFi indicator icon will always on.

2. In a paired and connected state, press and hold both the "+" and "-" buttons simultaneously for 5 seconds to disconnect the network (reset the pairing and network connection). The WiFi indicator icon on the display screen will flash.

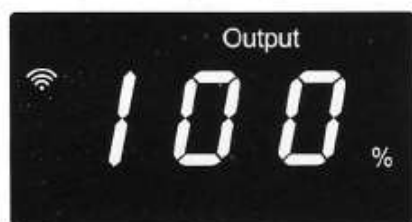
The network configuration function is not enabled. The network is not configured.




Pending Network Configuration (WIFI icon flashing)



Network configured (WIFI is always on)




6.3 CHLORINE PRODUCTION LEVEL SETTINGS

When the device is powered on, short press the button  once to enter the chlorine production level setting interface. At this point, "Output" will flash. Press the "+" or "-" button to adjust the chlorine production level, which ranges from 25% to 100% ,step size 25%. The default setting is 100%.if there is no operation within 10 seconds, it will automatically return to the home page and display the current chlorine production level.




6.4 CHLORINE PRODUCTION TIME SETTINGS

When the device is powered on, short press the button  for 2 times to enter the chlorine production time setting interface, at this time, "CL time" is flashing. Press "+" or "-" key to adjust the chlorine production time. The chlorine production time is 1~24h, the step is 1h, the default setting is 12h. After 10 seconds without operation, it will return to the home page automatically to show the current chlorine production level.




6.5 SELF-CLEANING TIME (REVERSE POLARITY TIME) SETTINGS

When the device is powered on, short press the button  3 times to enter the reverse polarity time setting interface. At this time, "Reverse" is flashing. Press "+" or "-" key to adjust the reverse polarity time. The reverse polarity time is 2~8h, the step size is 2h, and the default setting is 4h. After 10 seconds without operation, it will return to the home page automatically to show the current chlorine production level.



6.6 POOL VOLUME SETTING

When the device is powered on, short press the button  4 times to enter the pool volume setting interface, at this time, "Volume" is flashing, Press "+" or "-" key to adjust the pool volume, the pool volume is 5~200m³, and the step size is 5m³, after 10 seconds of no operation, it will return to the home page automatically to display the current chlorine production level.





6.7 WATER TEMPERATURE QUERY

Under the homepage state, press "-" key to query the current water temperature. After 10 seconds of no operation it will automatically return to display the homepage.




6.8 RESTORE FACTORY SETTING

When the device is powered on, long press  and  button at the same time for 5 seconds, the salt chlorinator will restore the factory default settings (including chlorine production level, pool volume reverse polarity time, chlorine production time, power on recovery. The control mode will become an free mode, and App also restore the factory default settings).

Model	Chlorine Production Level	Chlorine Production Time	Reverse Polarity Time	Pool Volume (m³)
CS Pro 8	100%	12h	4h	32
CS Pro 15				60
CS Pro 20				80
CS Pro 24				96
CS Pro 30				120

(The default factory settings for each model are as above)

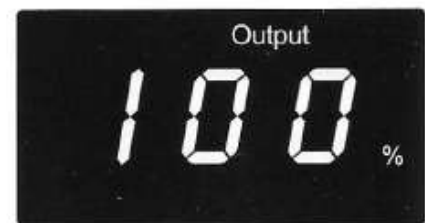
6.9 ELIMINATION OF FAULT ALARMS

When a fault alarm occurs, long press  button to clear the fault alarm.

6.10 UNLOCK OR LOCK

This function can lock the device panel key functions to avoid accidental touches on the control panel.

- The device will automatically enter the lock screen mode without any operation for 5mins.
- Long press "Settings" button and "+" button for 3 seconds to lock or unlock the device.
- When the device is in the lock screen state, operating the device through the App is not restricted by the lock screen.



7 APP INSTRUCTION

7.1 DOWNLOAD "TUYA" APPLICATION



7.2 REGISTER AND LOG IN

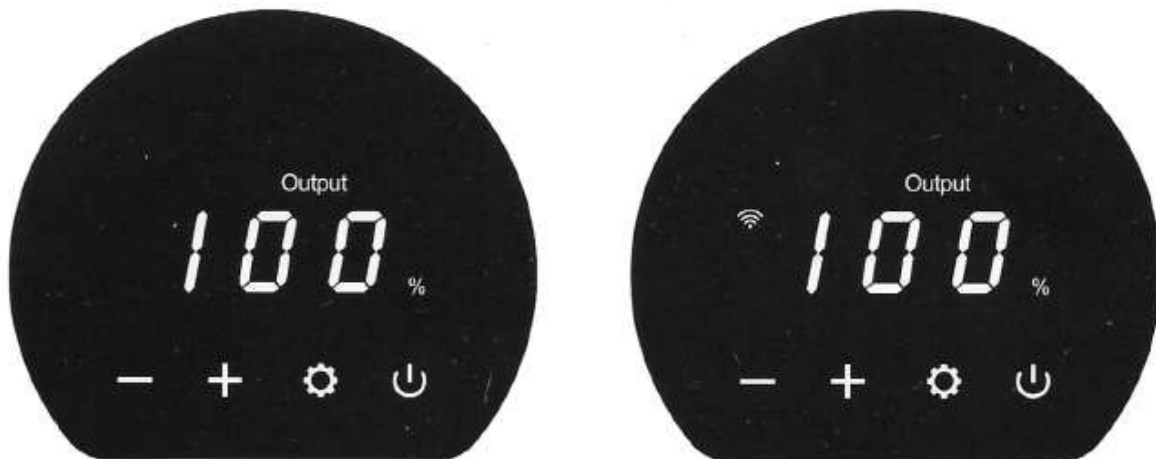


7.3 GO TO THE HOME PAGE AND CLICK “ADD DEVICE” (Or Click The + In The Upper Right Corner And Then Click Add Device)



7.4 NETWORK CONFIGURATION

Press and hold the device + and - buttons at the same time for 5 seconds and wait for the Wi-Fi icon to flash



7.5 ENTER THE PENDING NETWORK MODE

At this time Tuya App automatically search for devices. If the device is detected, click "Add" to proceed to the next step.

Note: If you can't search for the device, please check whether the Bluetooth is on or not, and whether the App permission is disabled or not.



7.6 FILL IN THE WIFI INFORMATION CURRENTLY CONNECTED.

Note: please make sure the wifi is 2.4GHz bandwidth,if 5GHz bandwidth is used , it will lead to network failure.



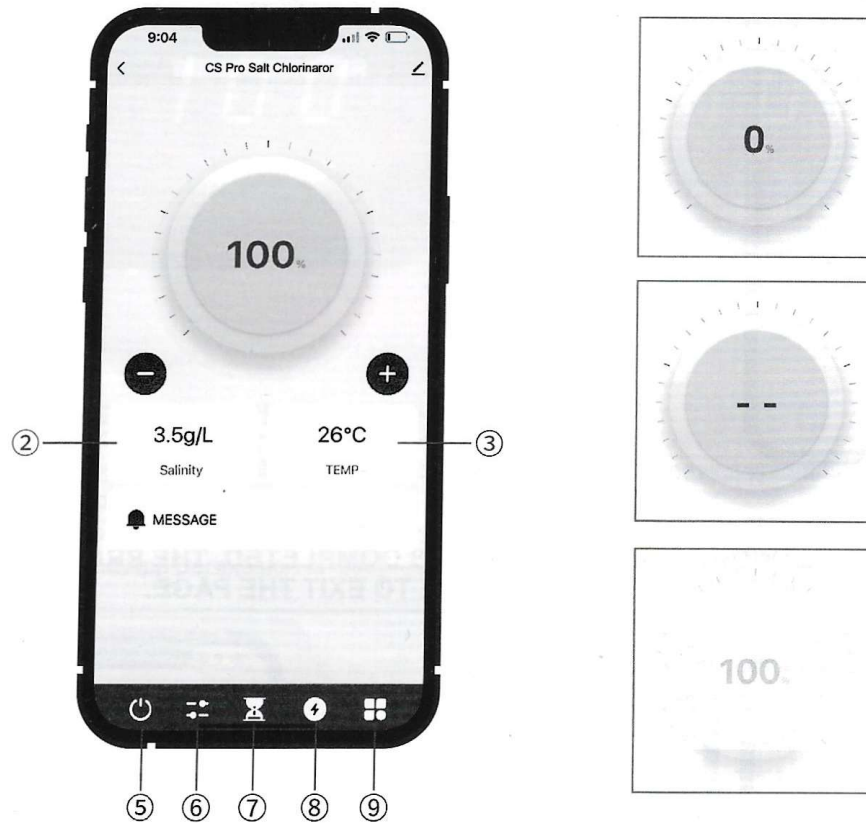
7.7 WHEN THE NETWORK CONFIGURATION IS COMPLETED, THE PRODUCT NAME CAN BE MODIFIED. THEN CLICK DONE TO EXIT THE PAGE.



7.8 AFTER COMPLETING THE NETWORK CONFIGURATION, THE USER CAN ACCESS THE HOME PAGE TO CONTROL OR SET UP THE SALT CHLORINATOR



①. Display in-time production level (e.g. 100%) when running

The actual production level is displayed during operation (e.g., 100%), 0% is displayed in standby mode, "--" is displayed during reverse polarity, and it is hidden when powered off.



②. Salinity: salinity

③. Temp: water temperature

④. Message: click to enter the fault warning page when the fault occurs, the icon  will be displayed in yellow . It will back to the original color after the fault is resolved.

⑤. Power on/off button: to turn on or turn off the power.

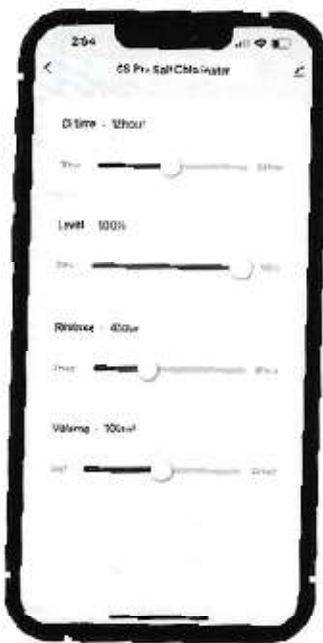
⑥. Parameter setting page

⑦. Titanium plate lifetime page

⑧. Power on mode page

⑨. Control mode page

7.9 PARAMETER SETTING PAGE



- ① CL time: Slide the slider left and right to adjust the chlorine production time.
- ② Level: Slide the slider left and right to adjust the chlorine production level
- ③ Reverse Time: Slide the slider left or right to adjust the reverse polarity time
- ④ Volume: Slide the slider left and right to adjust the pool volume

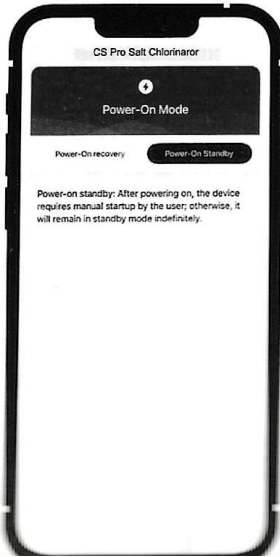
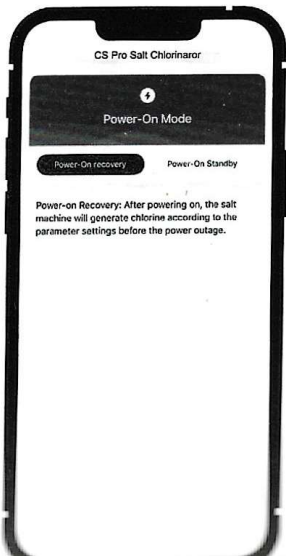
7.10 TITANIUM PLATE LIFETIME PAGE



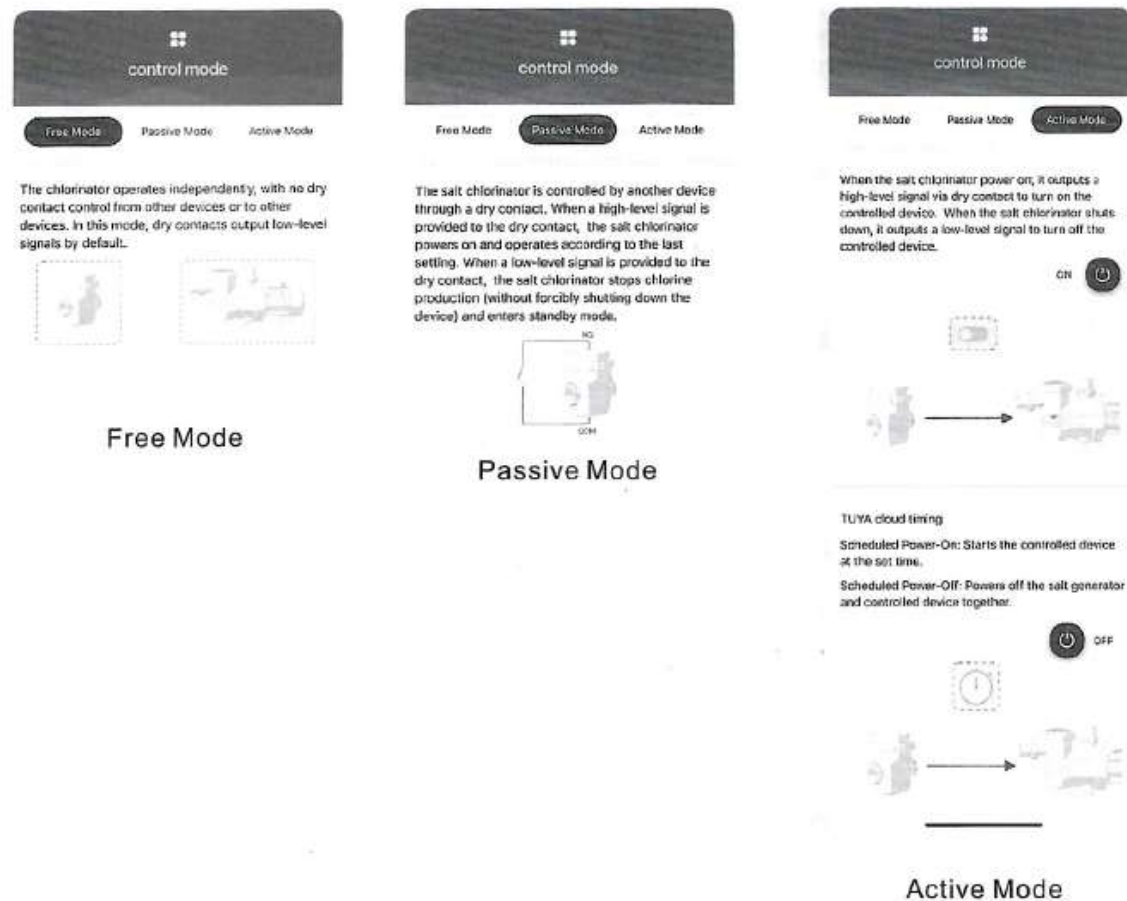
Remaining Lifetime of Titanium Plate: When the lifetime of titanium plate is less than 20%, a reminder to replace the titanium plate will appear at the bottom of the screen. Click the 'Dismantle' button to display a pop-up window, and replace the titanium plate according to the instructions



7.11 POWER ON MODE PAGE



7.12 CONTROL MODE PAGE

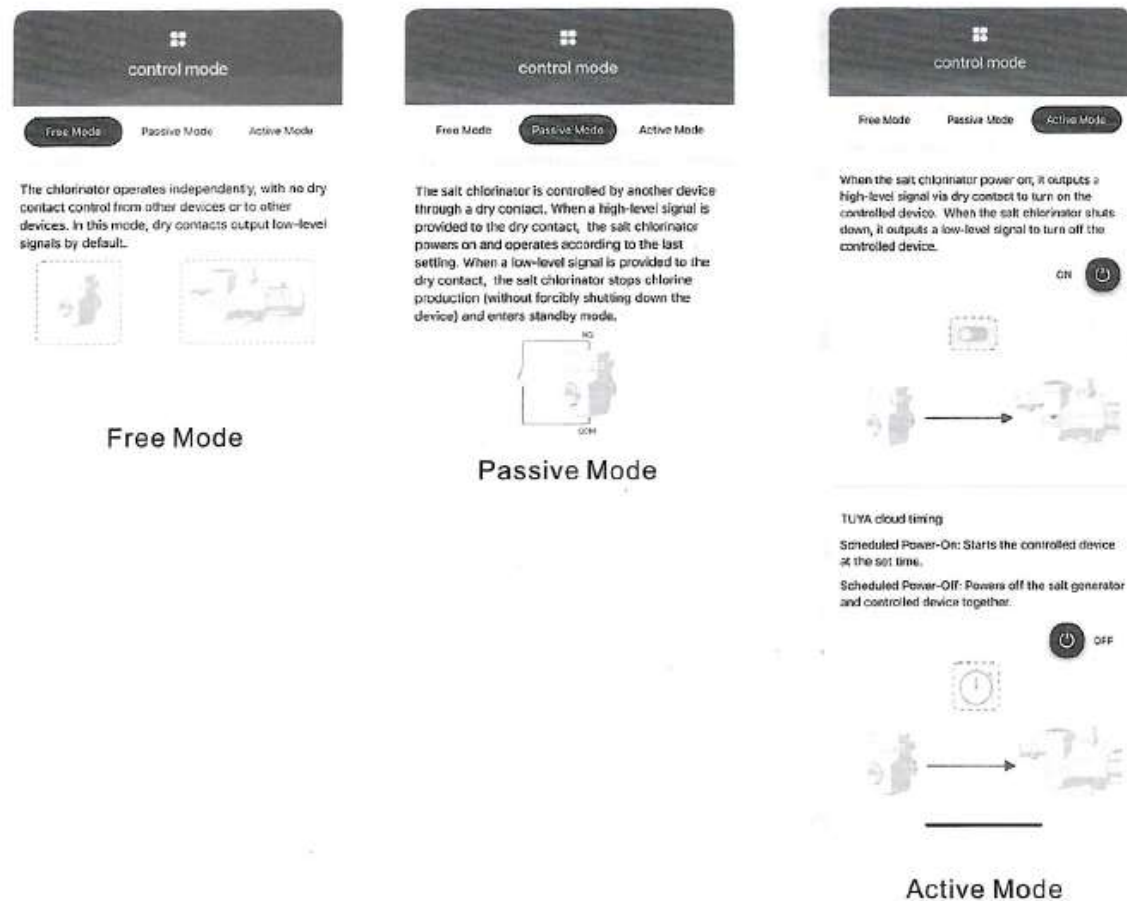


7.13 FAULT INFORMATION PAGE



- ① Records the historical fault information of the salt chlorinator, the top one is the most latest one.
- ② The amount of salt that currently needs to be added to the pool. it is only displayed when the device is short of salt).

7.12 CONTROL MODE PAGE



7.13 FAULT INFORMATION PAGE



- ① Records the historical fault information of the salt chlorinator, the top one is the most latest one.
- ② The amount of salt that currently needs to be added to the pool. it is only displayed when the device is short of salt).

8 TROUBLESHOOTING

Error Code	Fault Content Reason of error	Salt Chlorinator Response	Solution
EL	Low water temperature	Not stop chlorine production, no beep warning, the chlorinator can be resumed automatically	1. Make sure the current actual water temperature is normal. 2. If the actual water temperature is normal, replace the temperature sensor.
EH	High water temperature	Chlorine production stops, there is buzzer. It can automatically restored.	1. Make sure the current actual water temperature is normal. 2. If the actual water temperature is normal, replace the temperature sensor.
E3	No water flow	Chlorine production stops, there is buzzer. It can automatically restored.	1. Make sure that the water flow switch is closed. 2. If the water flow switch is not closed, make sure that the pump and valves are turned on. 3. If pumps and valves are on, increase pump speed or flow rate. 4. If the water flow switch is closed, please dismantle the device and check if the water flow switch connector is properly connected . 5. If the water flow switch is properly connected, replace the water flow switch.
E5	Low salinity	If alarm under high production level ,automatic downshift, no beeps, do not stop chlorine production.If alarm under low production level ,stop chlorine production, beeps warning,cannot be resumed automatically	1. Confirm that the pool water salinity is normal 2. If the salinity is normal. please check titanium plate lifetime is enough or not. 3. Check if the control board output is normal.
E7	Abnormal water temperature sensor	Chlorine production stops, beeps warning , cannot be resumed automatically	1. First check that the temperature sensor is properly connected; 2. If it is connected properly, replace the sensor
EA	Electrode Abnormal	Chlorine production stops, beeps warning , cannot be resumed automatically	1. Confirm whether the salinity is less than 300 ppm 2. Check for proper electrode wiring 3. Check that the control board output is normal 4. Replace the titanium plate module

NOTE

Displaying a fault code while the device emits a sound indicates that the device has stopped chlorine production. If only the fault code is displayed, it means the device is still producing chlorine.

9 Maintenance and Care

To ensure that our products continue to provide you and your family with the most best user experience and service, this salt chlorine generator and its key components require regular maintenance and care.

9.1 ELECTROLYTIC ASSEMBLY (TITANIUM PLATE) MAINTENANCE

Electric titanium plate components need to be cleaned and descaled manually on a regular basis, and it is recommended to use an acetic acid solution to soak and descale for 10-20min every time maintenance. Titanium plate components are replaced according to the product prompts.

It is recommended to clean the titanium plate after it has been used for six months or one year. Remove the titanium plate assembly from the pipeline, and block one end with tape or plug. Put it vertically, and pour edible white vinegar from the other end to submerge the titanium plate. It is recommended to shake about every 2 min to accelerate the cleaning rate of titanium plate, and observe whether the titanium plate surface scaling is clean or not in about 10 min. If not, immersion time should be extended. Pour out the solution in the salt chlorinator after the titanium plate is clean (pay attention to meet the requirements of local regulations). Then rinse the titanium plate assembly with tap water and put it back into the pipeline.

9.2 THE OPERATING CONDITION AND MAINTENANCE OF THE SALT CHLORINATOR

1. The calculation of the amount of water:

Knowing the capacity of the pool is the first step in adding salt to the pool.

Rectangular pool: length (meter) x width(meter) x average depth (meter) = pool water capacity (cubic meter).

Circular pool: diameter(meter) x diameter(meter) x average depth(meter) x 0.785 = pool water capacity (cubic meter).

Ellipse pool: length (meter) x width(meter) x average depth(meter) x 0.893 = pool water capacity (cubic meter).

Beveled pool: pool volume (cubic meter) x 0.85 = pool water capacity (cubic meter).

2. The type of salt

The purer the salt, the more the advantageous of the salt chlorinator would operate. This will also extend the service life of the chlorinator. The Sodium Chloride (NaCl) in the salt should be at least 99.6%. Best if the salt is dehydrated granular food grade sea salt.

- A. Please do not use rock salt, its impurity may shorten the service life of the chlorinator.
- B. Do not use Calcium Chloride as salt, only sodium chloride can be used.
- C. Avoid using anti-blocking agent (sodium cyanide, aka YPS, is poisonous and corrosive) salt, this kind of salt may change the color of the pool surface and the equipments inside.
- D. Can use water treatment salt pills, but it make take very long time to melt in the water.

3. Adding the right amount of salt

Most pools contains certain amount of salt, the concentration of the salt in water will vary depending on the water source and the sterilizing agent used. Users can use hand-held NaCl tester or salinity pen to test the current salt concentration of the pool.

- ◆ The best operating salt concentration level of the salt chlorinator is 3500ppm (3.5kg of salt per cubic meter).
- ◆ When operate the salt chlorinator for the first time, add salt to the pool following the steps below:
 - A. Use a salinity meter to check the original salt concentration in the pool.
 - B. Add appropriate amount of salt , ensure that for each cubic meter water add 3.5kg of salt.
- ◆ The concentration of salt (ppm value) can be seen as the gram of salt within 1 ton of water. If the current salt concentration of a 100m³ pool is 850ppm (can be taken as 850g in 1 ton of water), how much salt is needed for the chlorinator to normally operate ?
- ◆ Salt need to be added (unit: gram) = water in the pool x (normal operation salt concentration – the current pool salt concentration) = 100 x (3500-850) = 265000 gram.

4. The correct way of adding salt

- a. Turn on the circulation pump of the pool, and let the water circulation begin.
- b. Turn off the salt chlorinator.
- c. Test the current salt concentration of the pool.
- d. Calculate the amount of salt needed to add to the pool according to the corresponding chart.
- e. Add salt to the pool around the side of the pool, so that it can quickly and evenly dilute into the water. Do not let salt accumulate on the bottom of the pool. Stir the water on the bottom of the pool if needed so the salt can completely dissolve.
- f. Run the circulation pump for 24 hours, so the salt can evenly distribute in the pool.
- g. 24 hours later, test the salt concentration of the pool again to see if it has reached optimum level.
- h. When the salt concentration of the pool has reached the desired level, turn on the salt chlorinator and other equipments. Once the chlorinator initiates, please set your desired level of chlorine production.

5. Decrease the concentration of salt.

The only way to decrease the concentration of salt is to drain a part of the pool's water and replacing it with fresh water.

6. In order to reduce the loss of chlorine by the UV radiating on outdoor pool water, dose Cyanuric acid of 20—100mg/L as chlorine stabilizer.

10 Warranty

The warranty period for this product and its key components are calculated from the date of manufacture.

Warranty period is 18 months, the controller should be installed indoors (to prevent sun and rain), any controller damage caused by prolonged exposure to sunligh, rain or water.



GUANGDONG LASWIM WATER ENVIRONMENT EQUIPMENT CO., LTD.



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