Salt Chlorinator

Operating Instructions

Mr.Crystal

INDEX

Warnings....1

1 Product Introduction....2
1.1 Product Specification....2
1.2 Electronic Connections....2

2 Pool Water Preparation....4
2.1 Adding Salt....4
2.2 Chemical Water Balance....5

3 Control Unit Operation....6
3.1 General Screen View....6
3.2 Chlorine Production Mode Introduction....7
3.3 Basic Commands and Functions....9

4 Salt Replenishment....22

5 Maintenance....23
5.1 Cleaning the Cell....23
5.2 Maintenance of the Doser (Optional)....23

6 Overheat Protection....23

7 Error Code....24

8 Indicators....24

9 After-Sales Support....25

Warnings

⚠ WARNING: General Information

1. Carefully read all the instructions in this manual and on the device. Failure to read and comply with the instructions can cause injury. This document must be given to the pool owner / custodian, who should keep it in a safe place for reference.
2. Chemicals can cause internal and external burns. To avoid death, serious injury and/or damage to equipment, always 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 this device. User maintenance and cleaning must not be carried out by unsupervised children.
5. Use only original iGarden parts.

⚠ WARNING: Electrical Hazard

1. This equipment is intended to be used on swimming pools only.
2. Disconnect the equipment from the mains supply before any intervention or maintenance.
3. All electrical installations must be carried out by a qualified and approved electrician in accordance with the standards currently in force in the country of installation.
4. 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.
5. 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 products power demand.
6. To reduce the risk of electric shock, do not use an extension cable to connect the device to the mains. Connect directly to a wall socket.
7. This device must not be used if the power cord is damaged. An electric shock could result. A damaged power cord must be replaced by after-sales service or similarly qualified persons to avoid danger.

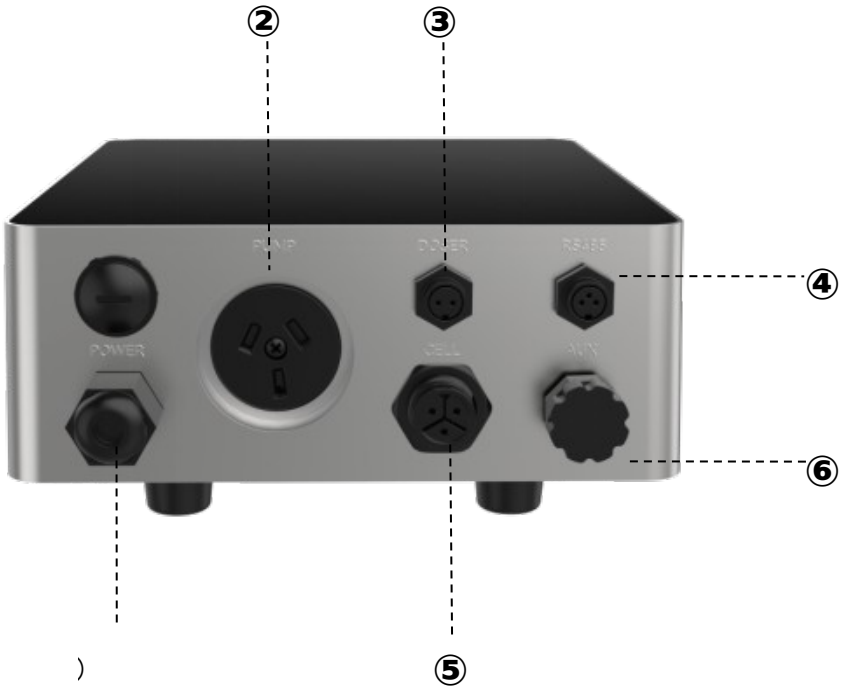
1 Product Introduction

1.1 Product Specification

Model	MCS08	MCS16	MCS26	MCS36
100% Chlorine Production (g/h) (Salinity: 3000 PPM)	08	16	26	36
Pool Volume (KL)	10-22	22-42	35-70	48-96
Recommended Salinity	3g/L			
Power Supply	AC 220~240V 50/60Hz			
Max Output Voltage	DC 12V			
Max Input Power	62W	104W	151W	197W
Max Output Voltage	DC 12V			
Advised water flux	5 m^3/h~18 m^3/h			
Operating Water Temperature	5℃~40℃			
Ambient Temperature	-7℃~42℃			
Pressure for Electrolytic Cell	≤4.5 Bar			
Material of Cell-Housing	PETG			
Water Flow Control	Air Switch			
IP Rating	IP65			
Cell Lifetime	Up to 10,000H			

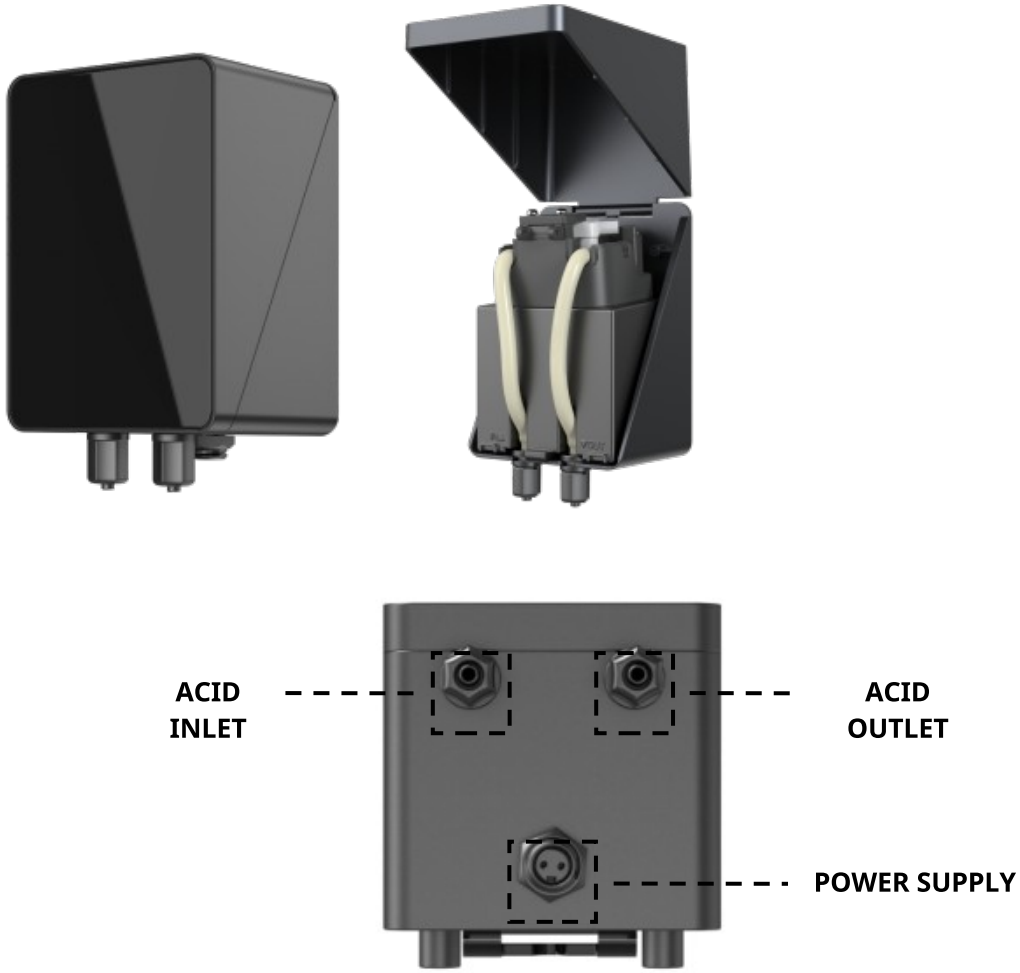
1.2 Electronic Connections

1.2.1 Control



No.	Port Name	Photo	Description	
①	Power Input		AC Power Connector (220~240V, 50/60Hz)	
②	Pump (Water Pump Socket)		Water pump control	
③	Doser (Optional)		Connector for external pH Doser	
④	RS 485		1	485 - GND
			3	485 - B
			4	485 - A
⑤	Power Output		Terminal for cell power	
⑥	AUX		Heater CMD Detection	

1.2.2 External pH Doser (Optional)



2 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.

2.1 Adding Salt

Add the salt 24 hours before turning on the chlorinator with the pump working. Ensure that the recommended amount of salt is not exceeded.

Measure the salt content 6 to 8 hours after the amount has been added 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. 1.4 times 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 m^3 of water).

2.2 Chemical Water Balance

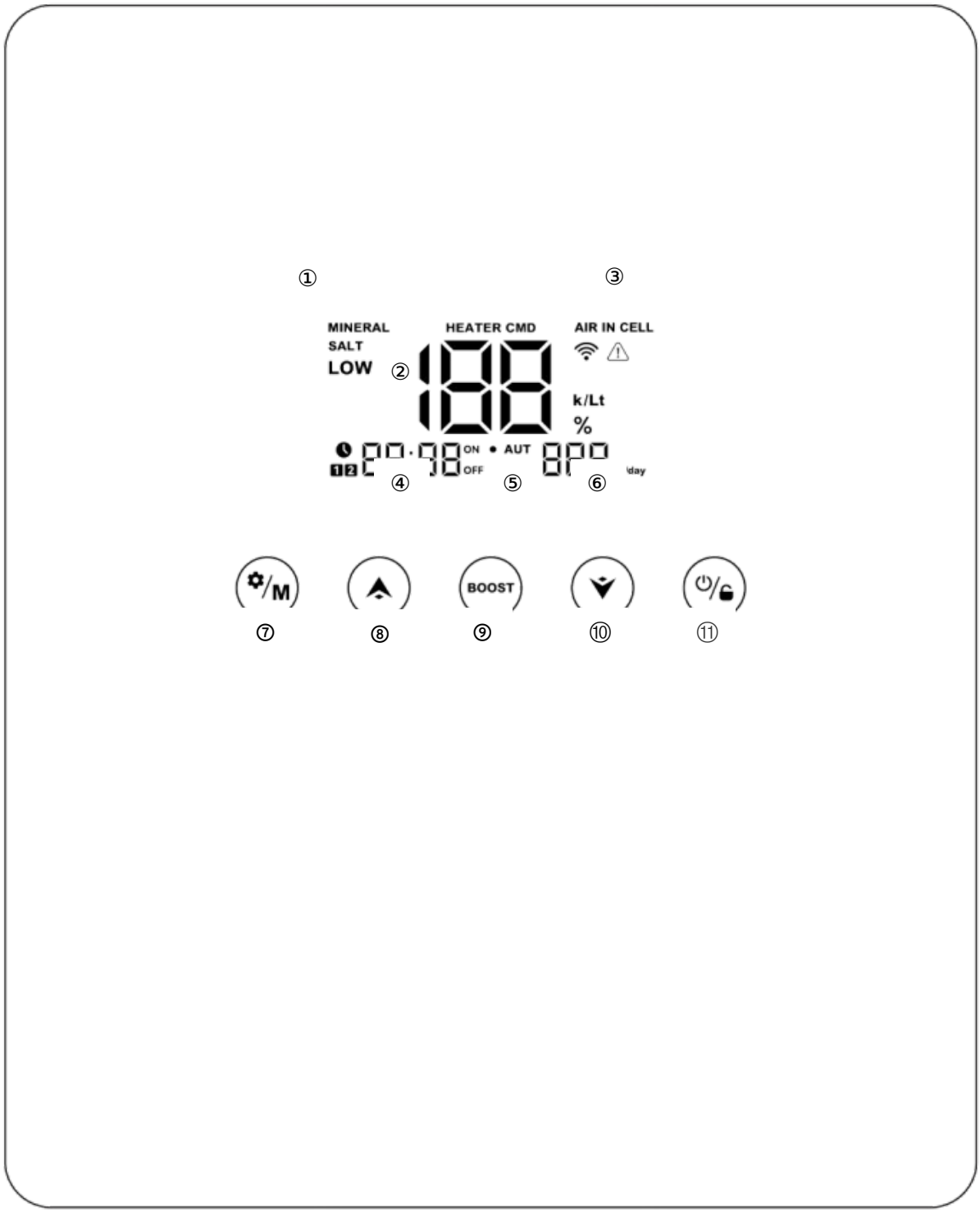
The water must be balanced manually **BEFORE** the device is started up.

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 3g/l
Free chlorine	Free chlorine 1.0 to 3.0 ppm
pH	pH 7.2 to 7.6
Cyanuric acid (Stabilizer)	20-50 ppm, 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

3 Control Unit Operation

3.1 General Screen View



Marked Area	Description	Icon
①	• Low Salt Alarm • Salt Type （Mineral Salt，NaCl Salt）	MINERAL SALT LOW
②	Chlorine Production / Pool Volume	188 k/Lt %
③	• Low/No Water Flow (Air Switch) • WIFI Connection Error Notification	AIR IN CELL
④	Time Display * Real-time * Timer (1) and (2)	1 2 88:88 ON OFF
⑤	Chlorine Mode (Auto/Manual)	• AUT • MAN
⑥	Acid Adding	888 ml/day
⑦	Settings	M
⑧	Tuning Up	
⑨	Boost Mode Switch	BOOST
⑩	Tuning Down	
⑪	Power/Lock Switch	

3.2 Chlorine Production Mode Introduction

The chlorinator can be configured to 2 different Chlorine production modes.

Configuration	Standard	Standard (Acid adding)
Hardware Options	--	External Doser
Selectable Mode	Auto Mode	
	Manual Mode	

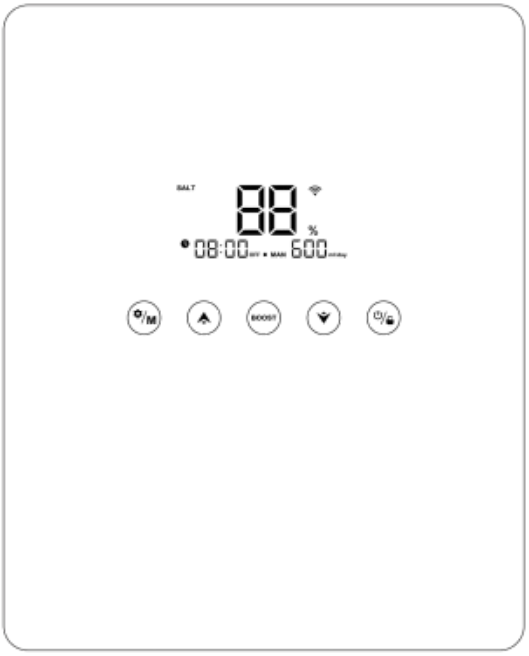
***Auto Mode: Timer control of the Chlorine output (Max: 2 Timers)**

***Manual Mode: Manual control of the Chlorine output**

The HOME screen of 2 different mode is shown as follows:



AUTO Mode



MANUAL Mode

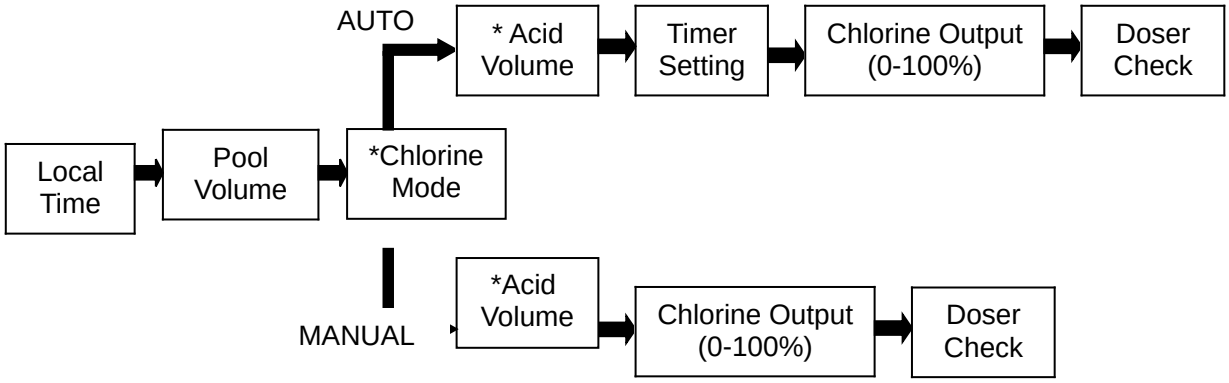


Screen Locked

3.3 Basic Commands and Functions

Command Keys	Function
	1. **Power ON:** Hold for 3 seconds initially 2. **Power OFF:** Tap on home screen 3. **Lock/Unlock:** Hold for 3 seconds. **Note:** The auto lock function will be activated after 1 minutes without any operation.
	1. **Activate BOOST:** Tap on *24 hours constant operation 2. **Exit BOOST:** Hold for 3 seconds
	1. **Chlorine Mode Selection / Main Settings** 2. **Back to home screen:** Hold for 3 seconds (manually) *After 1 minutes without operation (automatically)

3.3.1 Start up



*Default chlorine mode is AUTO Mode.

*Only available with dosing pump

① Local Time Setting

- When the local time is blinking, set hours of the local time by tapping  and 
- Tap  to next step.

* Setting Range：00：00 ~ 23：59



② Pool Volume Setting

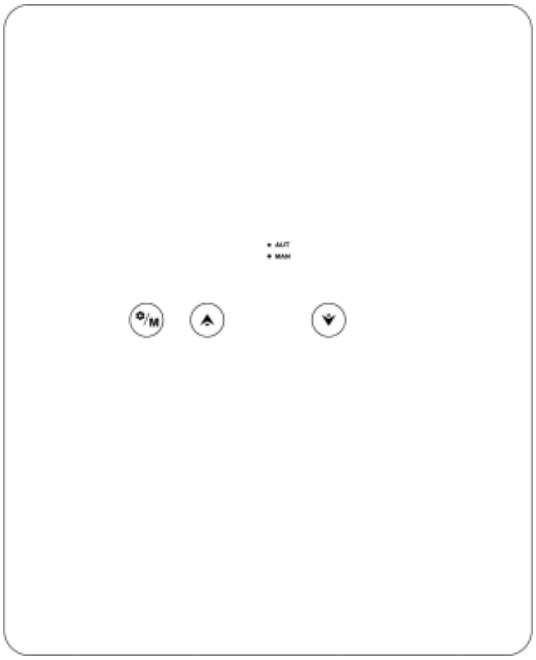
- When pool size value is blinking, it can be tuned from 5 to 150 m^3, in increments of 5, by tapping or . Hold the button can accelerate the tuning speed.
- Tap to next step.



③ Chlorine Mode

- When **AUT** is blinking, Tap ▲ or ▼ to select chlorine production modes.
- Tap M to confirm your selection and go to next step.

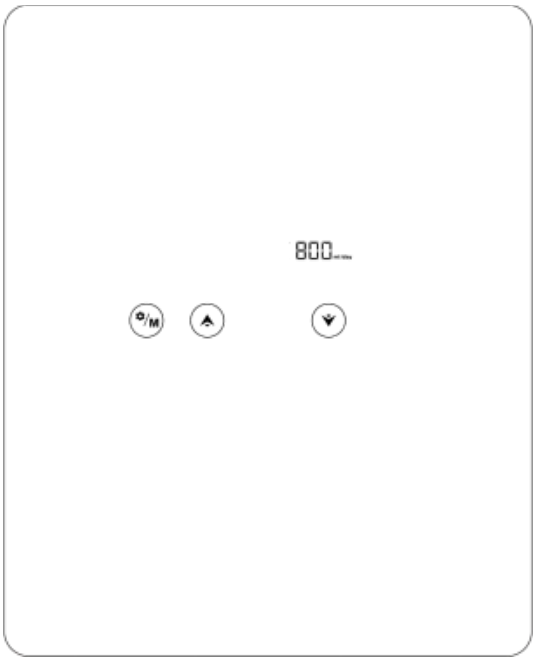
*Default mode is Auto mode.



Auto/Manual

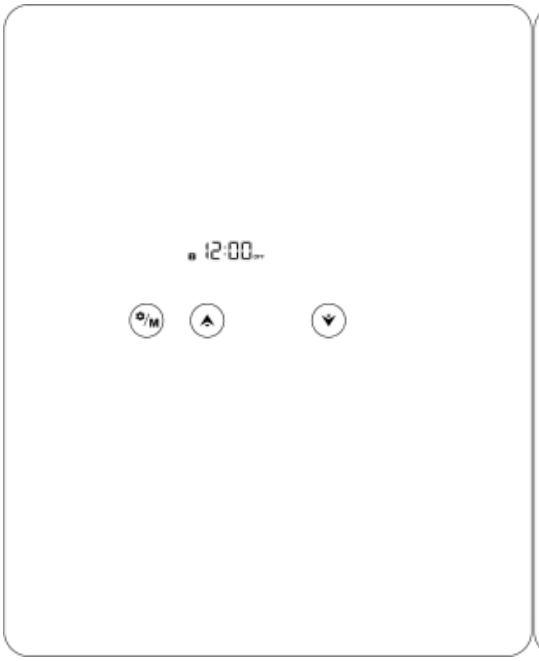
④ Acid Dosing Volume Setting (Only Available With Doser)

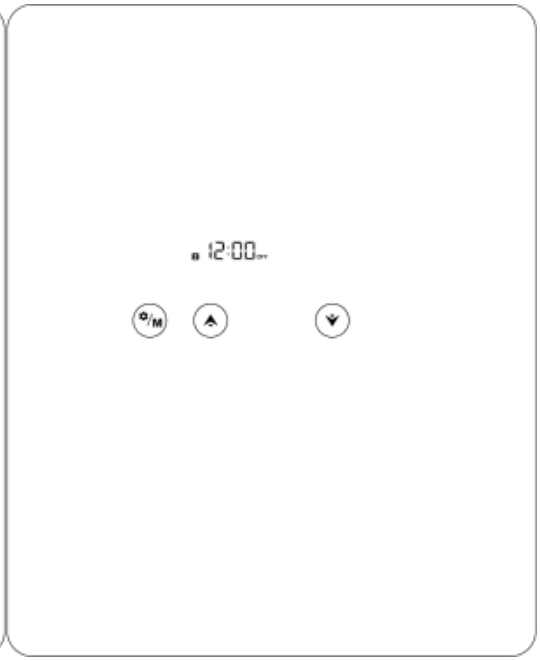
- When the number is blinking, it can be tuned from 0 to 999, in increments of 10, by tapping ▲ or ▼. Hold the button can accelerate the tuning speed.
- Tap M to next step.



⑤ Timers Setting (Only Auto Mode)

- When TIMER ON and 1 lights up, set hours of the first timer by tapping ▲ and ▼, save the parameter by tapping ⚙/M, then set and save minutes in the same way.
- When TIMER ON setting is finished, TIMER OFF lights up, set the end time of the first timer in the same way.
- When 1 vanishes and 2 lights up, set the start and end time of the second timer, if required in the same manner.
- Tap ⚙/M to Confirm Timers setting.





Timer On **Timer Off**

⑥ Chlorine Output

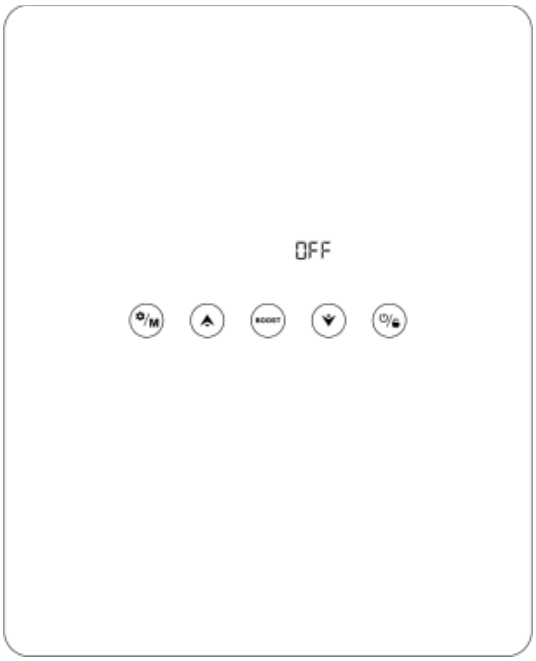
- Tap or to adjust the chlorine output, 0~100%.



⑦ Doser Check（optional）

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.
- Tap ，turn off the Chlorinator(**Power OFF**).
- Hold the place of and for 3 seconds, the Doser will rotate for 15s，to check its rotation.
- Repeat last step 3~5 times, until 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**).

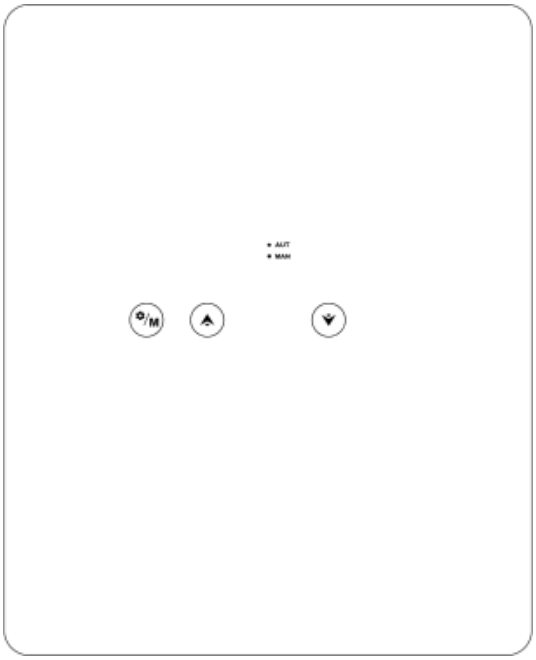


Doser Check

3.3.2 Main settings

① Chlorine Mode Selection

- Tap M to enter the Chlorine mode selection
- Tap ▲ or ▼ to select chlorine production modes.
- Tap M to confirm your selection and go to next step.

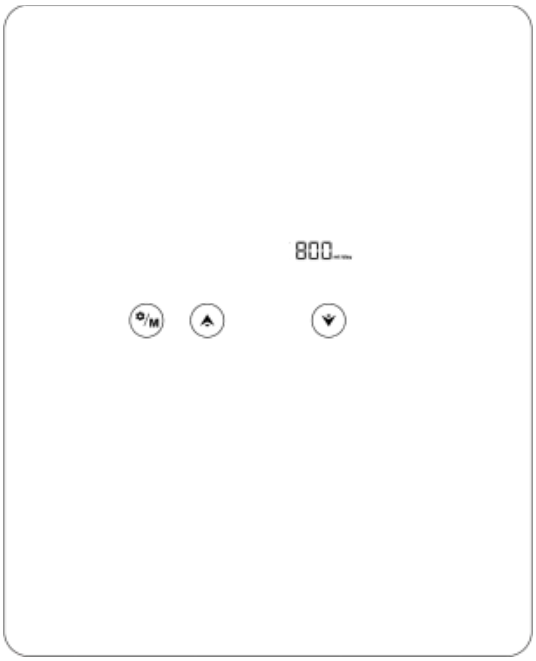


Chlorine Mode Switch

NOTE: Hold M for 3 seconds to back to home screen.

② Acid Dosing Volume Setting (Only Available with Doser)

- The default digit display on the pad screen is “xx mL/day”.
- When the number is blinking, it can be tuned from 0 to 999, in increments of 10, by tapping ▲ or ▼. Hold the button can accelerate the tuning speed.
- Tap M to next step.



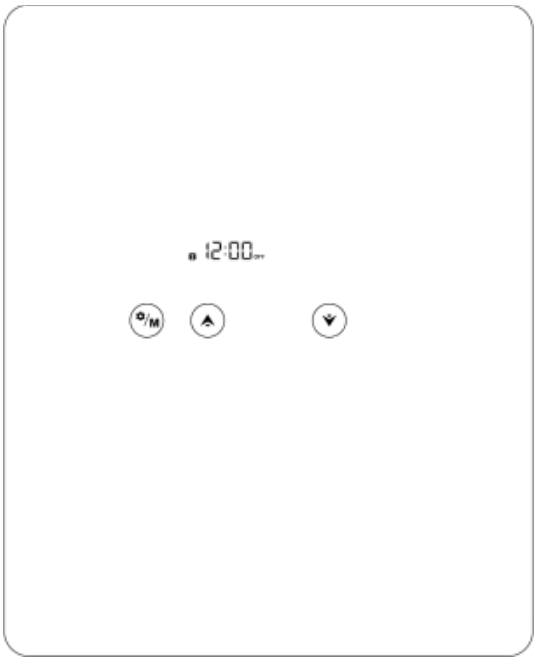
Acid Dosing Volume

③ Timers Setting

- When TIMER ON and 1 lights up, set hours of the first timer by tapping ▲ and ▼, save the parameter by tapping ⚙/M, then set and save minutes in the same way.
- When TIMER ON setting is finished, TIMER OFF lights up, set the end time of the first timer in the same way.
- When 1 vanishes and 2 lights up, set the start and end time of the second timer, if required in the same manner.
- Tap ⚙/M to Confirm Timers setting.



Timer On



Timer Off

3.3.3 Basic Configuration

① Local Time Setting

- Hold M for 3 seconds
- When the local time is blinking, set hours of the local time by tapping ▲ and ▼
- Tap M to next step.

② Pool Volume Setting

- When pool size value is blinking, it can be tuned from 5 to 150 m^3, in increments of 5, by tapping ▲ or ▼. Hold the button can accelerate the tuning speed.
- Tap M to next step.

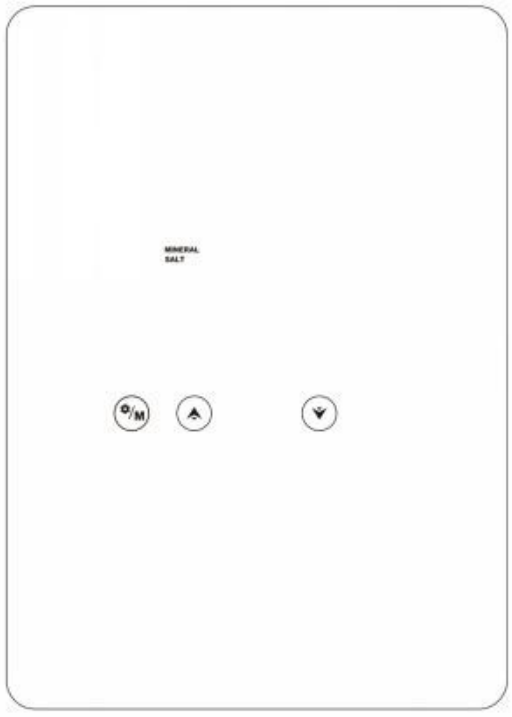
③ Salt Type Selection

- When the “Salt” is blinking, it can be tuned to MINERAL/SALT by tapping ▲ or ▼ .

- Tap  to complete the settings.

Note:

- The Self-cleaning time【Electrode exchange】is different between MINERAL/SALT，
- Salt：exchange Electrode every 4 hours,
- Mineral Salt：exchange Electrode every 2 hours.



④ Water Pump Protection Countdown Setting

- When the Countdown is blinking, it can be tuned to MINERAL/SALT by tapping  or . The range is 3 to 10 min.
- Tap  to complete the settings.

NOTE:

- Chlorinator and pump is connected.
- Read the status of the air switch for 15 seconds, If the air sensor is in contact with air for 610seconds or more, it is determined that the electrolytic cell has entered air.

  Light up **AIR IN CELL**
- After **AIR IN CELL** light up, Water Pump Protection Countdown begins.The water pump will stop after the countdown is done



3.3.4 BOOST Performance

① Switch ON: Tap BOOST to enter Boost mode, the device will run at 100% power for 24 hours.

* 24-hour countdown displays on the screen

② Switch OFF: Hold BOOST for 3 seconds.



NOTE:

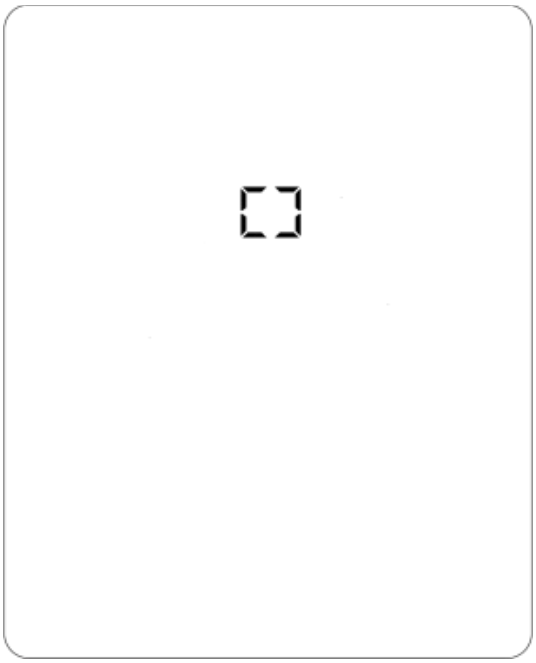
- Boost mode is suggested to be activated when chlorine is urgently needed.

- If the chlorinator is out of power, the 24-hour countdown will be refreshed.
  Unable to manually turn off the unit during the Boost mode.
- When the Boost mode terminates or stops, production continues according to the preset settings.

3.3.5 Restore Factory Settings

Tap  to the next screen menu.

Hold  and  for 3 seconds, hearing the beeper, the chlorinator is restored to factory settings.



NOTE:

- **Power-down memory**: Abnormal power failure during operation, when the power is restored, the controller automatically restarts and continues to run according to the state before power failure.

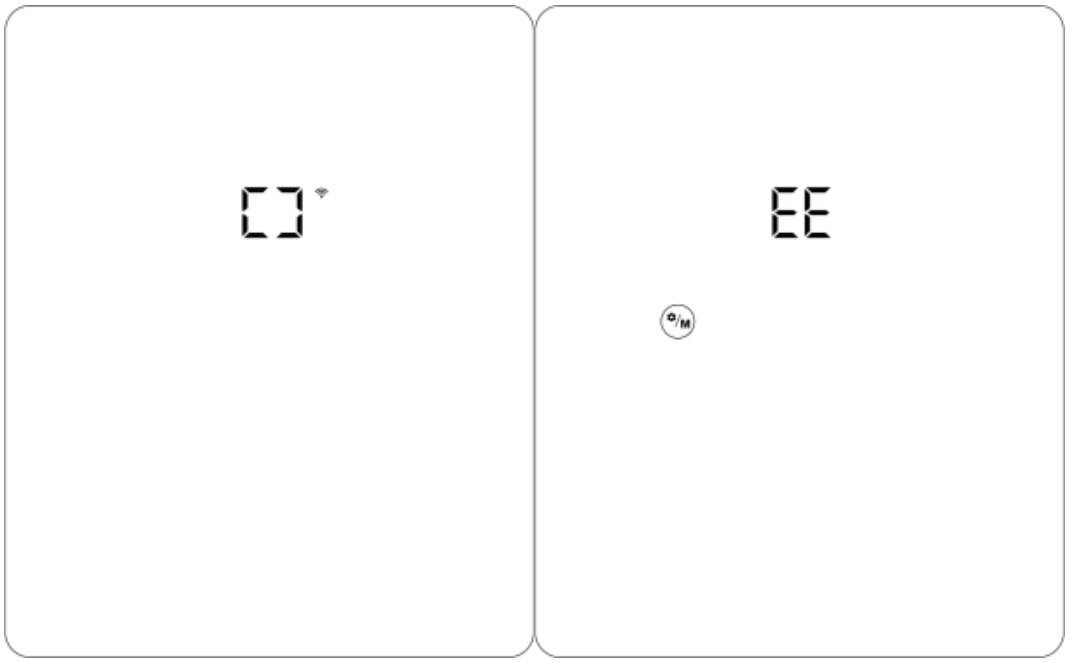
3.3.6 Network Configuration

Enter Network Configuration screen by holding and for 3 seconds.

Lighted up with counterclockwise, then:

a. If is lighted up, WIFI connection will be active with 2 sounds buzzer.

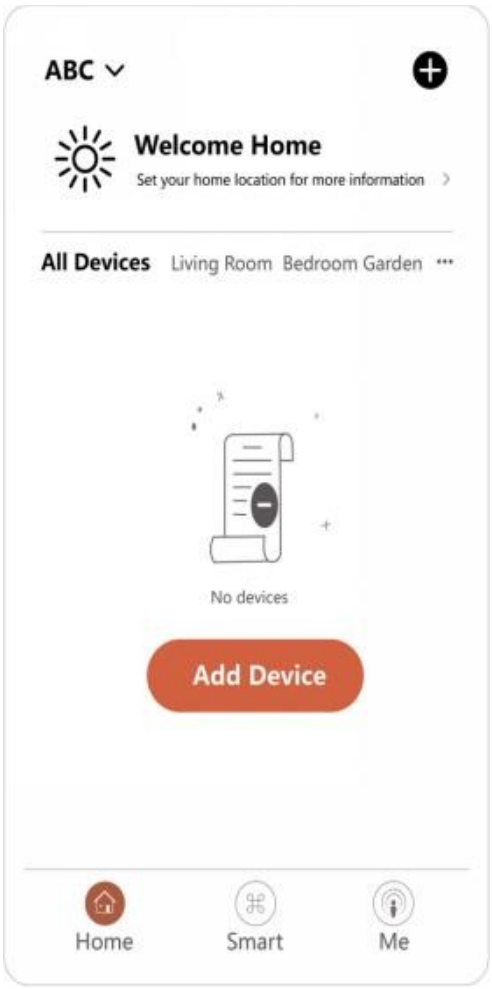
b. If is lighted up with 3 sounds buzzer, WIFI failed to connect, back to main screen.

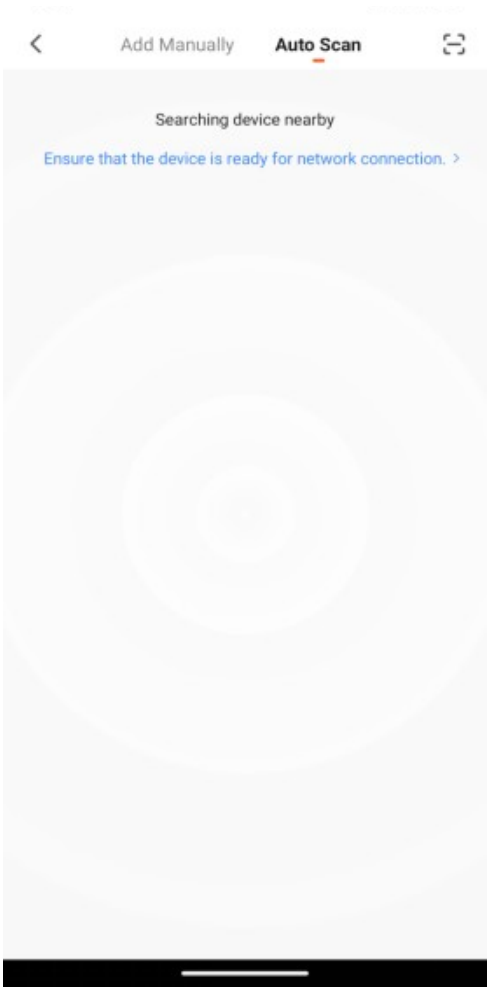


3.3.7 Connect to InverGo

“InverGo” app is available on App Store and Google Play.

Turn on your location services, Wi-Fi and Bluetooth, enter the “InverGo” App,
tap the "+" icon in the top right corner of the home page, and then Tap on "Auto Scan" to start searching for nearby devices.





When Control Unit is on home screen, holding  and  for 3 seconds,.  Lighted up

When your phone finds the Control Unit, it will be displayed on your phone. Tap "Next", input the hotspot password, and tap “Next”. Then the device will be automatically added to the App menu. The mobile phones and devices need to be connected to the same hot spot.

When installation is finished, it will be shown as added.

4 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 salt adding process, and turn on the filtration system for at least 24 hours, allowing the salt to dissolve completely.

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/m^3using a kit from a specialized pool shop.

The salt concentration may reduce over time due to 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 near the drain inlet.

5 Maintenance

5.1 Cleaning the Cell

The smart polarity inversion system is designed to prevent the electrode plates from corrosion and scaling (Default setting = 4 hours，1~10 hours optional). 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.

5.2 Maintenance of the Doser (Optional)

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

① Tap ，turn off the Chlorinator(**Power OFF**).

② Hold the place of  and  for 3 seconds, the Doser will rotate for 15s，to check its rotation.

③ Apply lubricant on the inner tube if necessary.

NOTE:

- **Manual Mode**：the Doser will rotate according to **pH Dosing Volume Setting**.

6 Overheat Protection

Overheat protection will be activated when the temperature inside the main controller is

higher or equal to 70 ℃.

High Temperature (Power pack)	70℃≤Temperature ≤75℃	A. Electrolytic output reduce
Over Temperature (Power pack)	Temperature ＞75℃	A. E4 occurred B. Stop electrolysis

Overheat protection will be lifted when the temperature drops below 68 ℃.

7 Error Code

Error Code	Descripiton	Logic	Action
E1	Abnormal Electrolysis	a. Electrolytic output power greater than 10% b. Voltage less than 0.8V or current less than 0.3A	A. E1 occurred B. Stop electrolysis: Restart electrolysis after 30 minutes. If abnormal electrolysis is detected 3 times in a row, electrolysis function cannot be restarted again.
E3	Abnormal water Level	Upon triggering the 'AIR IN CELL' indicator and continuous timing for 180 seconds	A.E3 occurred B. Stop the Filter Pump
E4	Over Temperature (Power pack)	Temperature ＞75℃（Inside） Overheat protection will be lifted when the temperature drops below 68 ℃	A. E4 occurred B. Stop electrolysis

8 Indicators

Description	Logic	Action
AIR IN CELL	Read the status of the air switch for 15 seconds: If the air sensor is in contact with air for 10 seconds or more, it is determined that the electrolytic cell has entered air.	A. Stop electrolysis B. Light up: AIR IN CELL 
LOW SALT	When the salinity is detected to be less than 2000ppm, it is determined to be Low Salt. Low Salt indicator will disappear when the salinity is detected to be more than 2500ppm.	Light up: LOW
HEATER	Read the on/off status of the heater for 15 seconds:	Light up:

CMD	If the heater starts/on for 6 seconds or more, it is determined that the heater is on status.	**HEATER CMD**

9 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 Virtual ID** (available in the InverGo app)
- Device Model

Problem Description

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

Usage Environment

- Pool Size, Indoor/Outdoor
- Water Flow and Filtration Time

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