Emaux

CyberSync Salt Chlorinator
INSTALLATION AND OPERATION MANUAL
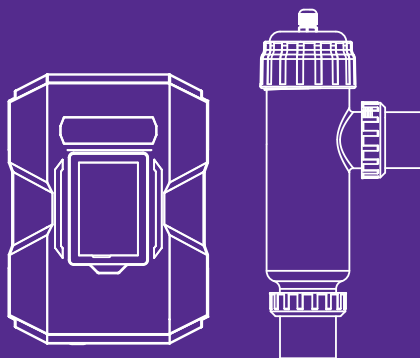
USER MANUAL

CyberSync

CE · RoHS DIRECTIVE 2011/65/Eu · SAA

25120910

CyberSync Salt Chlorinator

FOR ABOVE AND INGROUND POOL

TABLE OF
CONTENT

1. SAFETY WARNINGS

 This appliance must be installed in accordance with national wiring codes and with a means of disconnection incorporated in any fixed wiring. High voltage can shock, burn, or case death or serious property damage.

1. In order to reduce the risk of electric shock DO NOT use an extension cord to connect the unit to electric supply.
2. If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or a qualified electrician.
3. The system must be permanently connected to an individual circuit breaker, especially when pump power is connected from pump socket of the device.
4. This electricity supply must be connected through a residual current device (RCD) or Ground Fault Circuit Interrupter (GFCI) with a rated residual operating current not exceeding 30 mA.
5. Electrical grounding must be connected before connecting to electrical power. Failure to ground all electrical equipment can cause electric shock or serious or fatal injury.
6. Before servicing, unplug the power plug from the electrical socket and allow the device to cool for at least 15 minutes.
7. Never unplug the cell cable during operation.

 This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.

 HYPERTHERMIA

Always unplug the device from its socket or power source and allow it to cool before opening the enclosure. There is high risk of shock and burn injuries from touching the internal component.

 COMPRESS AIR HAZARDOUS

This system enclosed titanium cell in a plastic enclosure that can become pressurized. Pressurized air can cause the plastic enclosure to explore causing serious injury or death. The cell must be operated with the pump running and the valves fully open allowing water to flow unrestricted through the cell enclosure.

WARNING: This device is intended for use with swimming pools and spas only; it must not be used for disinfecting drinking water.
Only one pump and one underwater light may be connected to this unit
The current loading of the pumped connected must not exceed 8 Amp.

SAFETY WARNINGS

	Correct disposal of this product
	This symbol on the product, or in its packaging, indicates that this product may not be treated as household waste. Instead, it should be taken to the appropriate waste collection point for the recycling of electrical and electronic equipment. By ensuring this product is disposed of correctly, you will help prevent potential negative consequences for the environment and human health, which could otherwise be caused by the inappropriate waste handling of this product. For more detailed information about the recycling of this product, please contact your local council, your household waste disposal service, or the shop where you purchased the product.

2. SAFE POOL SANITIZING WORKING PRINCIPLE

Chlorine is a highly effective sanitizing agent which is commonly used in swimming pools. It can prevent the growth of bacteria and fungi. This chlorinator uses the process of electrolysis to break down the salt (NaCl) in the swimming pool water to produce chlorine gas (Cl_2)Chlorine production can be regulated from the control unit by altering the electric current flowing through the titanium electrode in the cell housing.

$$2NaCl+2H_2O=2NaHO+H_2\uparrow+O_2\uparrow$$
$$Cl_2+2NaHO=NaCl+NaClO+H_2O$$
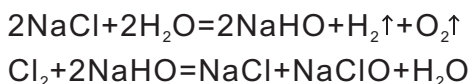
2.1 WATER CHEMISTRY:

WARNING: It is important to note that the EMAUX Salt Chlorinator does not maintain the water chemistry of your swimming pool water; it simply produces chlorine from a mild salt solution.

To ensure that your chemical balances is within the guidelines listed below and to encourage a sparkling clean, you should also have your water tested regularly at your local pool shop.

Salt level	3000/ 1000 ppm
Free Chlorine	1.0 – 3.0 ppm
pH	7.2 – 7.6
Cyanuric acid (stabilizer)	30 – 50 ppm
Total Alkalinity	80 – 120 ppm
Calcium Hardness	200 – 400 ppm
Metals	0 ppm

2.2 CHLORINE LEVEL CALCULATION

It is important to note that the EMAUX Chlorinator does not maintain the water chemistry of your swimming pool water; it simply produces chlorine from a mild salt solution.

$$\text{Required chlorine production rate(g/hr)} = \frac{\text{Pool Volume (litre) x Standard Chlorine (g/litre)}}{\text{Turnover Rate(Hr)}}$$

Standard chlorine level not less than 2mg/litre =0.002g/litre
Example:
Pool volume: 65m^3 =65,000 litre
Turnover rate: 4 Hour

$$\text{Required chlorine production rate(g/hr)} = \frac{\text{65.000litre x 0.002g/litre}}{\text{4 Hr}} = 32.5\text{g/hr}$$

2.3 SALT LEVEL

The amount of salt required is between 1000 and 3000 ppm. This can be done by adding 1-3Kg of salt per 1,000 litres of water directly into the pool water.
A low concentration of salt (below 1000 ppm) will cause premature cell failure.
A High concentration of salt (above 3000 ppm) may cause electro-oxidation and corrosion damage to the Stainless Steel pool fixtures and fittings.

Salt required according to the volume of the pool:

Pool volume (m3)	Salt (kg)	Pool volume (Gallon)	Salt (Pound)
10	40	2,642	88
15	60	3,963	132
20	80	5,283	176
25	100	6,604	220
30	120	7,925	264
35	140	9,246	308
40	160	10,567	352
50	200	13,209	440
60	240	15,850	528
70	280	18,492	616
80	320	21,134	704
90	360	23,775	792
100	400	26,417	880
110	440	29,059	968
120	480	31,700	1,056
150	600	39,626	1,320

Note: Table based on 4000 ppm of salt per m3 of water.

2.4 TYPE OF SALT

WARNING:

The most common salt used in swimming pools with Salt Electrolysis is 99% pure Sodium Chlorine (NaCl).

DO NOT use the following types of salts:
1. Rock salt.
2. Salt with more than 1% yellow prussiate of soda.
3. Salt with more than 1% of anti-caking additives.
4. Iodized salt.
Salt with additives or impurities will cause premature cell failure.

2.5 ADDITION AND REMOVING SALT IN THE SWIMMING POOL WATER

2.5.1 Adding salt
Before adding the salt into the pool, place the multiport valve on " Filtration " or " Recirculation" and then turn the filtration pump on.
Add the salt directly into the pool evenly around the pool or ballast tank. Do not allow the salt to sit in a pile on the bottom of the pool. Do not add large amount of salt nearby the skimmer at the same time. It will damage the unit. Keep the filtration system running for 24 hours using the Main Drain or vacuum suction nozzle as a main suction line.

2.5.2 Removing salt
The only way to remove the salt in the pool water is to partially drain the pool and refill with fresh water.

3. INTRODUCTION

The Emaux CyberSync Salt Chlorinator is an innovative saline electrolysis system designed to enhance swimming pool water quality and transform your pool into a smart pool. This advanced
product generates chlorine from both regular and seawater through electrolysis, providing a more environmentally friendly alternative to traditional chlorine chemicals.
The CyberSync continuously monitors the pool water status, optimizing chemical dosing and minimizing chemical usage, which helps reduce skin irritation and discomfort for swimmers. As the
best choice for upgrading your pool to smart technology, the CyberSync ensures your pool remains clean and well-maintained. As a smart control station, the CyberSync allows you to connect your
pump, lights, disinfection system, and heater. With its smartphone or tablet app, you can monitor and control your pool status anytime, anywhere.

4. PRODUCT FEATURE:

Introducing our advanced IoT-enabled pool monitoring system, designed to enhance your pool maintenance experience. This innovative system connects seamlessly to the Smart Life app, allowing
you to monitor critical parameters such as pH, temperature, ORP (Oxidation-Reduction Potential), and salinity in real time. With the ability to respond intelligently to these sensor readings, the system can
automatically control your pool pump, ensuring optimal water quality and safety.
Additionally, the Smart Life app features robust scheduling and automation functions, enabling you to manage your pool effortlessly from anywhere. Experience a smarter, more efficient way to keep your
pool in perfect condition, all through the convenience of the Smart Life app.
1. Pump Operation Status: Receive instant notifications when the pool pump starts or stops for real-time updates.
2. Connection Status Alerts: Get notified if the app loses connectivity to IoT devices or the internet.
3. Remote Control: Manage your pool's settings and check system status from anywhere, even remotely.
4. Automated Scheduling: Schedule maintenance tasks and automate chemical dosing for effortless pool upkeep.

Product dimension

Control Box
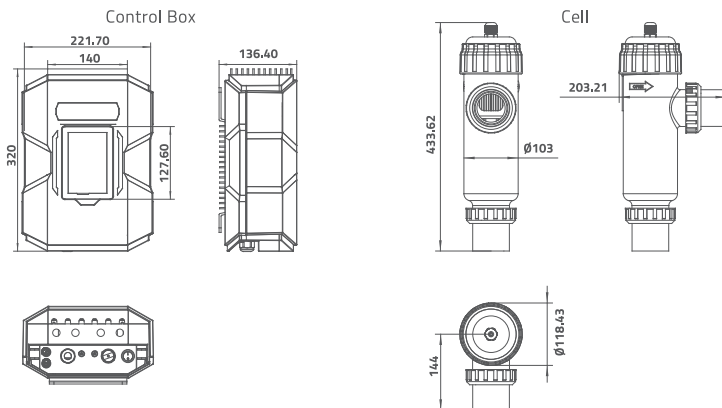
Cell

Product specification

CyberSync Salt Chlorinator		Input Voltage/ Frequency	Salt Level	Cell Output (gram/h)	Max pool size (m³)	IP Rating	Function
Code	Model						
9130052	CS-20	110-240V 50Hz/60Hz	3000/ 1000 ppm	20/10	60	IPX4	Salt chlorinator
9130053	CS-30	110-240V 50Hz/60Hz	3000/ 1000 ppm	30/15	80	IPX4	
9130054	CS-40	110-240V 50Hz/60Hz	3000/ 1000 ppm	40/20	100	IPX4	

*Our product ideally working on 3000ppm salt level environments getting best performance.

FUNCTION	SPECIFICATION
Display	4.3" LCD with Touch control
Cell type (chlorine production)	20 g/h , 30 g/h or 40 g/h
Device connection	Dosing pump: x 3 (hot contact) Pump switch & Switch: x 3 (cold contact)
Pool cover detect	Detect connection x 1
Wi-Fi	- 802.11 b/g/n - 2.4 GHz
Modbus	RS485
Input	110V to 240V AC, 2A max (EU version) 110V to 240V AC, 4A max (US version)

5. INSTALLATION

Open the cover

Loosen 2 screws with a screwdriver and then open the cover upwards.

Connections:
Emaux Salt controller can connect with 3 dosing pump, 1 circulation pump and 3 devices.

Control unit
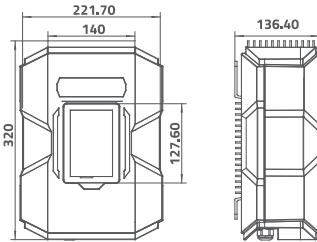
Three self-tapping screws and wall plugs are provided for fast and simple installation. Simply hang the chlorinator on the wall via the bracket on back of the control box.

Chlorinator cell
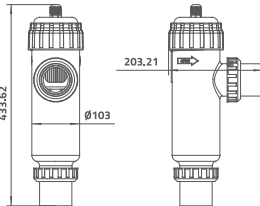
The chlorinator cell comes with unions for 1½" (38mm) and 2" (55mm) pipes.

The cell housing should preferably be installed on a bypass so that filtration does not need to be interrupted when servicing or adjusting your Emaux CyberSync Pool Station.

Cell housing
The cell housing can be installed vertically or horizontally
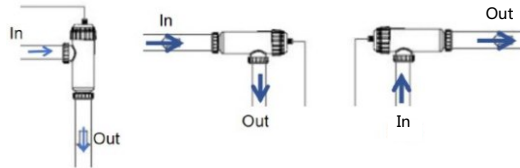
but not in these positions:
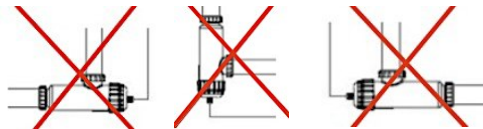
CONNECTING THE CELL

After the chlorinator cell has been installed, connct the cable. Note the alignment markings.

Connected pool cover switch to 'pool cover' and flow switch (optional) to under. Unite can obtain and display 'on/off' state to controller's panel. 'Temp probe' is for temperature sensor (optional) connection.
Note: Turn the 'ON/OFF' switch to 'OFF', after flow switch has been connected.
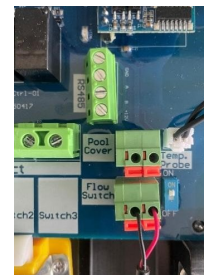
Hot contact vs Cold contact

-Hot contact (Dosing pump): The contact has electricity which same as input power of this Salt controller. You can direct connect dosing pump L/N to the connector for use
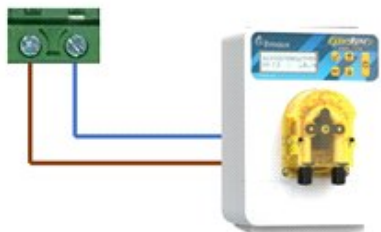
Connection: Device power > 0.2A (230V, 50W, 120V 25W)

-Cold contact (Device relay): the contact is a switch only. Max 2A, 240V. Relay switch is highly recommended for user to connect to external device:
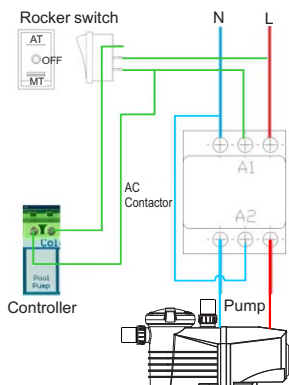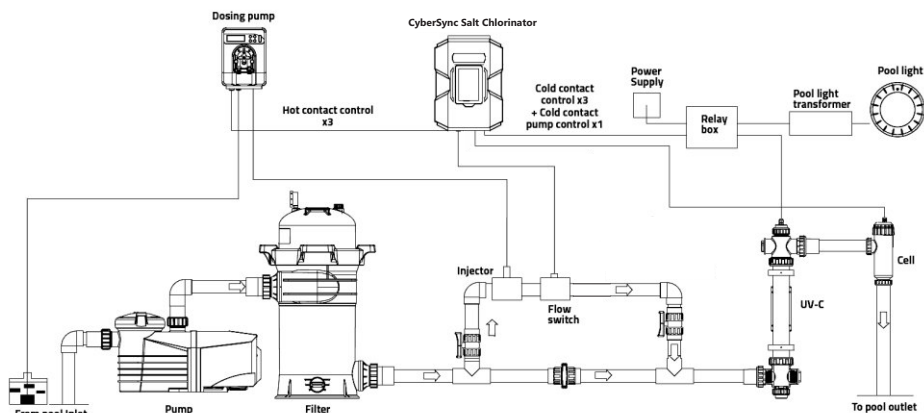
Connection: Device power < 2A
(230V, 500W, 120V 250W)
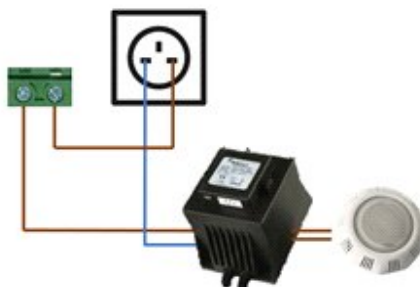
Connection: Device power < 2A
(230V, 500W, 120V 250W)

Installation Diagram

5. 2 Mobile App : Smart Life

Smart Life app allows users to control CyberSync Salt Chlorinator outside the home network through their mobile phones. Please follow the instructions below to complete the Smart Life App installation, and set up and operate the CyberSync Salt Chlorinator.

5.2.1 App installation

Search "Smart Life – Smart Living" in Google Play Store(Android) or AppStore (Apple iOS) to download the App for your mobile phone

Android (PlayStore)	iOS (AppStore)
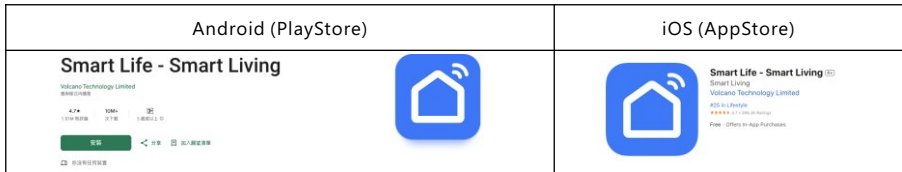
5.2.2 App setup

Search "Smart Life – Smart Living" in Google Play Store(Android) or AppStore (Apple iOS) to download the App for your mobile phone

Check this link for more information about the Smart Life app that including installation the app, account management, scene function, manage homes and more.

https://developer.tuya.com/en/docs/iot/user-manual-for-tuya-smart-v3177?id=K9obrofrfk4sk or you can scan this QR code to visit the web site.

Scan this QR code to visit Tuya Technical Support site

Complete the following steps based on Tuya Technical support site.
1) Download and install the Smart Life app on the mobile phone
2) Register the account for Smart Life app, you can enter a mobile phone number or email address, agree on the User Agreement, Privacy Policy, and Third
Party Information Sharing List, and then tap Get Verification Code.
3) Enter the returned verification code to navigate to the password setting page. Set a password as required and tap Done.
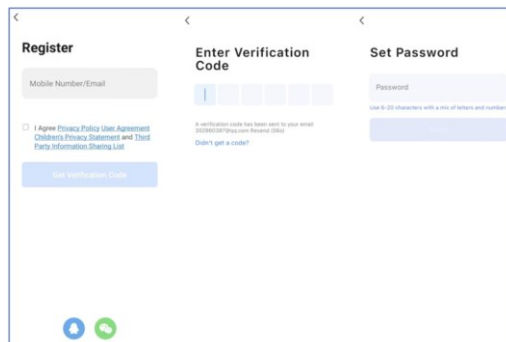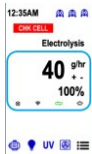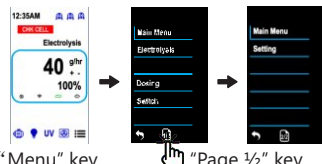
4) Open the app. If you have registered an account of the app, tap Log In to go to the login page.
5) Enter the registered mobile phone number or email address and the password and tap Log In.
After the Smart Life app is installed and registered the account in your mobile phone, we can start connect the CyberSync to Wi-Fi network.

5.2.3 Connect your CyberSync to your Wi-Fi network
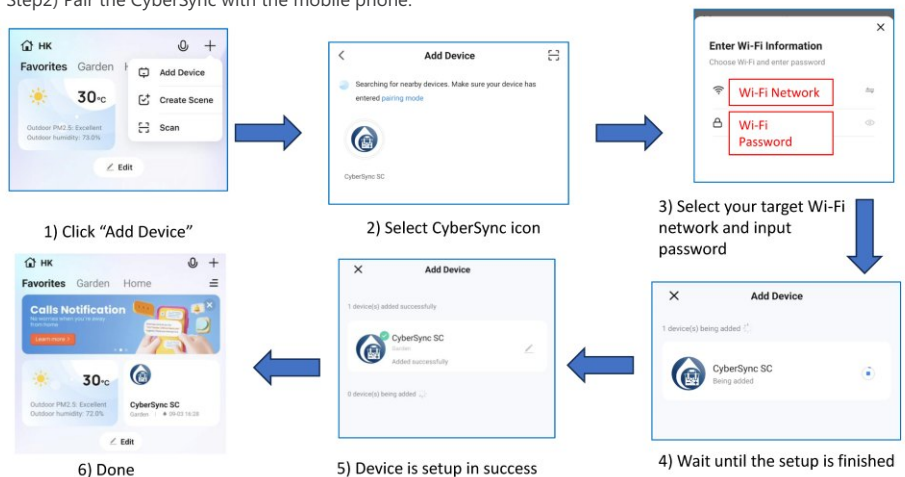Remark: The connected router must have internet access.
Step1) Enable the network configuration mode in CyberSync

Step	Operation Description	Screenshots (For completed steps)
1	Power ON the CyberSync	
2	Press the "Menu key" (lower right corner of the LCD), and then surf to Setting page MENU -> Page ½ -> Setting	"Menu" key "Page ½" key
3	Press and hold the "Wi-Fi pairing" key for 1 sec and then release	"Wi-Fi pairing" key

5.2.4 Open the Smart Life app and click "Add device" in the app
Remark: Make sure the previous steps are completed

Step2) Pair the CyberSync with the mobile phone.

1) Click "Add Device"

2) Select CyberSync icon

3) Select your target Wi-Fi network and input password

4) Wait until the setup is finished

5) Device is setup in success

6) Done

6. CONTROL AND SETUP

The lower the water's temperature, the lower the salt water's conductivity will be. This in turn will cause the CyberSync Salt Chlorinator cell to work much harder than normal to produce chlorine. Algae and bacteria don't grow well in cold environments. Thus, very little chlorine is needed, simply adjust the chlorine percentage to an ideal rate.

6.1 Main Page
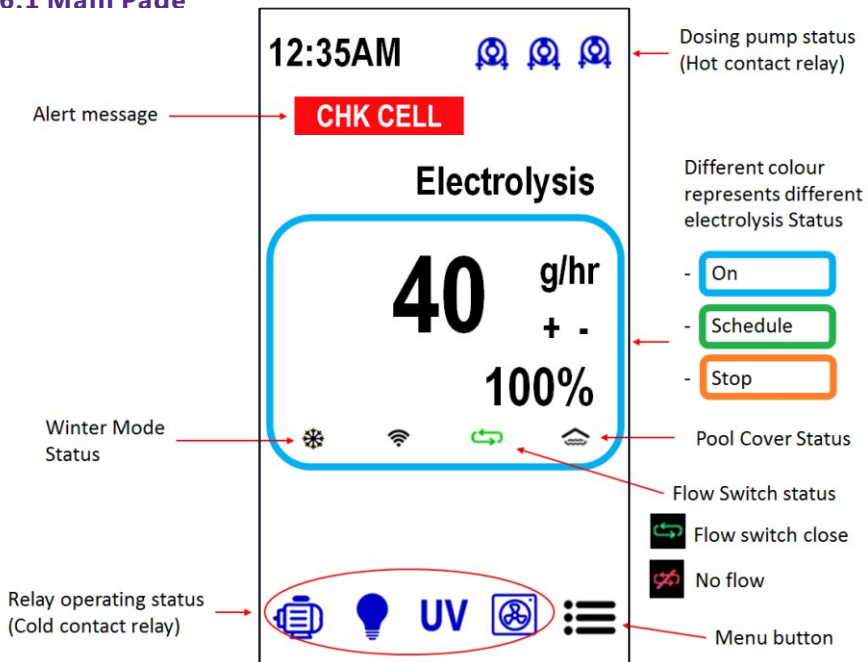
1) Clock: Clock sync with connected mobile when internet is connected
2) Show Flow switch, pool cover and low temperature status
3) Electrolysis: show the production of Chlorine
4) Setting menu
5) Relay operating status
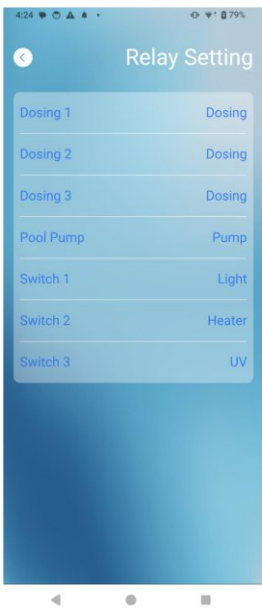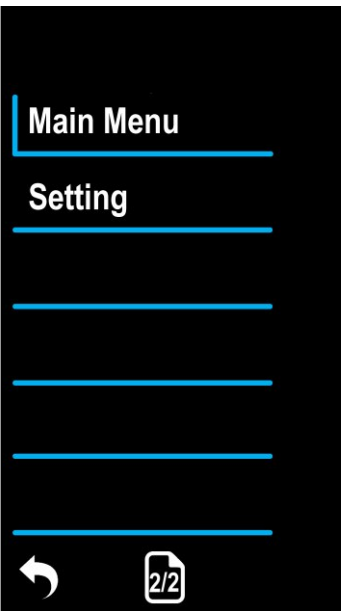
6.2 General device condition

Dosing pump relay status:

- On/Auto
- Schedule
- Stop
- Deactivate

6.3 Setup :

Press Menu switch to setup menu
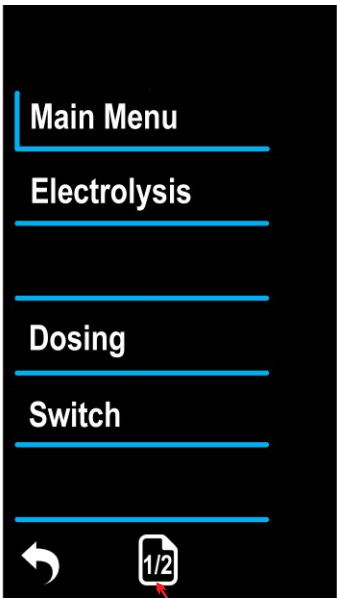
press to next page

6.3.1 Electrolysis

1) Selected cell : 20g / 30g / 40g (It refers to the dip switch setting of the main board)
2) Level: you can adjust this option to change duty cycle so to reduce the chlorine production
3) Winter mode: when winter mode is activated, chlorine production reduce to 85%
4) Water mode:
    a) Normal: Designed for everyday used
    b) Hard: Ideal for tougher water condition
    c) Intensive: For maximum protection and performance
5) Schedule: 4 schedule time setting for user to provide the chlorine production
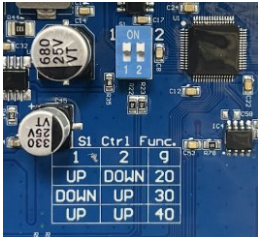

Select suitable
20g / 30g / 40g setting
on the main board
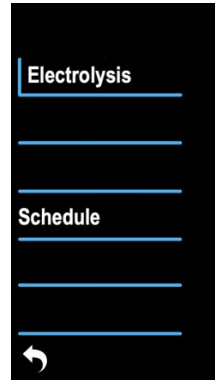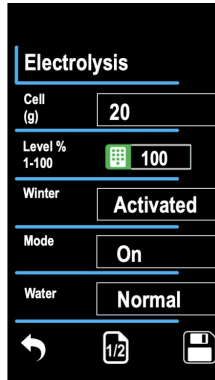
6.3.2 Dosing

There are three dosing pump can be connected.
1)Dosing mode:
Schedule / ON / OFF / Deactivated
2)Priming: Press and hold the "Priming" button, the button will change to blue color and the relay switch will close which to let the connected dosing pump continuously. User need to check the dosing pump tube. The dosing pump stop after the "Priming" button is released.
3)Schedule: 4 schedule time setting for user to provide the dosing setting.
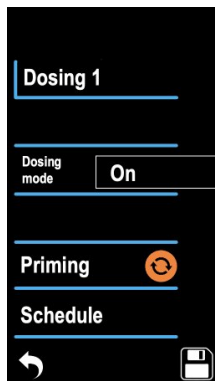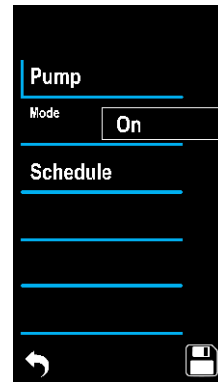
6.3.3 Switch Pump

Switch Pump is reserved for user to connect a pool pump. When the "Mode" is activated (ON/OFF/Schedule), the system will work with the connected pump and can be scheduled circulation automatically as per user setting.

User can connect the under used circulation pump to the connector and turn the pump ON/OFF by schedule automatically.

1) Mode: On/Off/Schedule/Deactivate
2) Schedule: Up to 4 schedule setting can be configured

6.3.4 Switch 1-3

Switch 1-3 can let user to connect either Light, UV light, Heater or "Other" type of device. When the "Mode" is activated (ON/OFF/Schedule), the system will work with the connected device and can be scheduled ON/OFF status as per user setting.
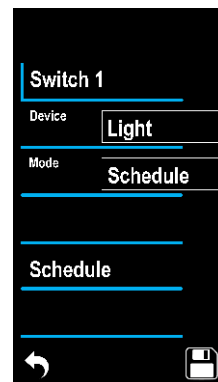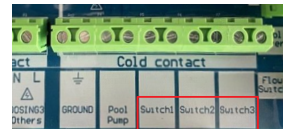
1) Mode: On/Off/Schedule/Deactivate
2) Schedule: Up to 4 schedule setting can be configured

7. IoT, SMART LIFE APP

7.1 Preset:

The device must connect to internet though Wi-Fi, 2.4G. Make sure a router network is ready.
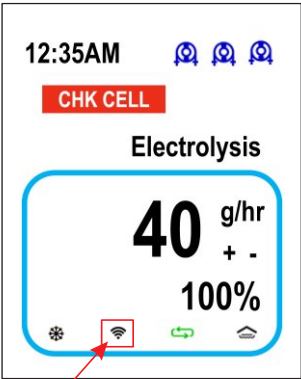Make sure the device has connected to internet which wifi ICON will show on main screen.

Connected to internet
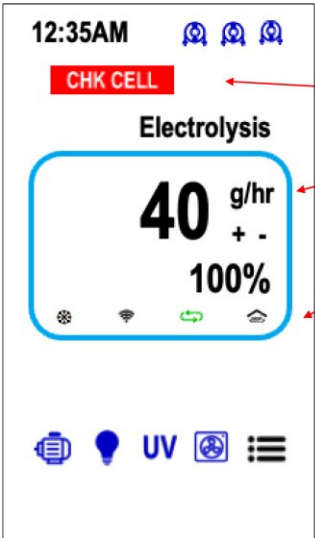
Fail to connected to internet
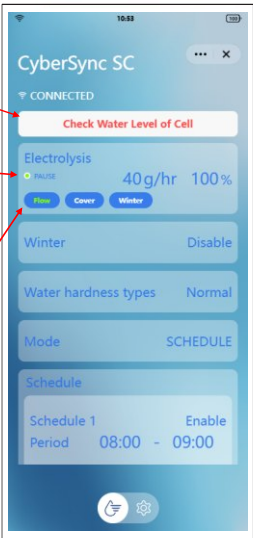
Fail to connected to home router
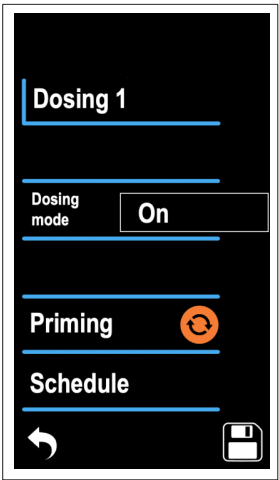
WIFI

7.2 App screen

Alert Message

Electrolysis data

Flow Switch/ Cover status

LCD screen

Smart Life App Screen

Setting Menu – Go to Menu

LCD screen
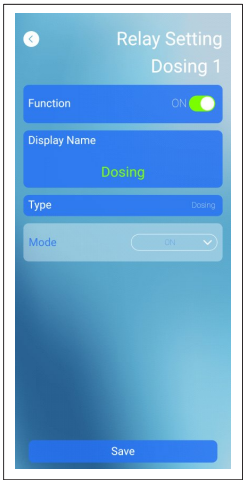
Smart Life App Screen

Menu screens, device, and app are synchronized, except that some functions, such as priming of the dosing pump, must be configured on-site and are available only on the device.

Alert Message:

FREEZE	Water temperature is too low.
FLOW	No water flow is detected
CHK CELL	Check water level of the cell (Electrolysis is stopped)
CHK LEVEL	Cell is not function, check the salinity of the pool
CHK DRV	Check power driver connection
LOW SALT	The salinity of the pool is insufficient; add salt to pool is recommended

8. CLEANING THE TITANIUM CELL

1. Turn the filtration system off.
2. Remove the salt cell from the housing.
3. Add the salt cell to the cleaning mixture making avoiding contact with the terminals.
4. Wait five to ten minutes for the Salt Cell to be cleaned.
5. If any parts of calcium are stuck or will not dissolve, carefully remove them with a smooth plastic instrument.
6. Once the salt cell is clean, rinse with fresh water and place back in the housing and tighten the cell or collar.
7. Turn system back to automatic setting or timer. Dispose of cleaning mixture.

If the salt cell has a heavy deposit of calcium that has not been removed after ten minutes in the cleaning solution, we recommend using a "Cell Cleaner" product which is not as corrosive as hydrochloric acid. The cell can then be left in the cleaner for up to a hour and will completely remove the calcium.
We recommended using Salt Cell Cleaner at all times over the traditional Hydrochloric mixture, it is a safer alternative and not harmful to your Salt Cell at all and reusable.

9. TERMS OF THE WARRANTY

As original purchaser of this equipment have purchased from Emaux Water Technology Co Ltd, through Authorized International Distributor or Dealer, warrants its products free from defects in materials and workmanship under normal use during warranty period. The warranty period begins on the day of purchase and extends only to the original purchaser. It is not transferable to anyone who subsequently purchases the product from you. It excludes all expendable parts.

During the warranty period, Emaux authorized reseller will repair or replace defective parts with new parts or, at the option of Emaux, serviceable used parts that are equivalent or superior to new parts in performance.

This Limited Warranty extends only to products purchased from Emaux authorized reseller. This Limited Warranty does not extend to any product that has been damaged or rendered defective

(a) as a result of accident, misuse or abuse;
(b) as a consequence of a force majeure event;
(c) by operation outside the usage parameters stated herein;
(d) by the use of parts not manufactured or sold by Emaux;
(e) by modification of the product;
(f) as a result of war or terrorist attack; or
(g) as a result of service by anyone other than Emaux authorized reseller or authorized agent.

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