

CyberSync Chemical Controller INSTALLATION AND OPERATION MANUAL







FOR ABOVE GROUND AND INGROUND POOL

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IN THE BOX

Welcome, and thank you for purchasing a high quality product from Emaux. Please check the contents of the box and read through this manual before starting any installations.



Item	Description	Check
1	THIS USER MANUAL	
2	CONTROL UNIT with power cord 2m	
3	CHLORINATOR CELL with cable 3m. Electrode inside for 20, 30, or 40 gram per hour	
4	PROBE HOLDER For 11/2" (38mm) PVC pipes (reducer required for 2" pipes)	
5	FLOW SWITCH HOLDER. Fits 1½" (38mm) and 2" (50mm) pipes	
6	FLOW SWITCH with grommet and protective cap and 1.40m cable	
7	ORP PROBE (red) and user manual. Measuring range 300 to 900 mV.	
8	PH PROBE (blue) and user manual. Measuring range pH 0 to 14.3m cable.	
9	SALINITY PROBE (black) and user manual. Measuring range 1000 to 35000 ppm. 3m cable.	
10	TEMPERATURE PROBE. 1.40m cable	
11	CELL UNIONS FOR 1½" (38mm) (2), and 2" (55mm) (2) PIPES, O-rings (2) and retaining rings (2)	
12	PROBE HOLDER ADAPTERS (3), and RUBBER GROMMETS (4)	
13	CALIBRATION BUFFERS (3): ph 4.1, pH 7.0, ORP356 mV	
14	TEFLON TAPE (1) for probe adapters	
15	FIXING SCREWS (3) and WALL PLUGS (3) for control unit	

SAFETY INFORMATION



Shock

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 cause death.

- 1. In order to reduce the risk of electric shock DO NOT use an extension cord to connect the unit to electric supply.
- 2. A damaged supply cord 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. The electricity supply must be connected through a residual current device (RCD, RCCB) or Ground Fault Circuit Interrupter (GFCI) not exceeding 30 mA.
- 5. Electrical grounding (earth) must be connected before connection 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.



Burn danger

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 components.



Compressed air hazard

The plastic enclosure housing of the titanium cell can become pressurized. To avoid explosion and serious injury the cell must be only be operated with the pump running and with the valves fully open for unrestricted water flow.



For swimming pools and spa use only.

Not be used for purifying drinking water.

*Only one pump and one underwater light system may be connected directly to this unit. The current loading of the connected pump must not exceed 8 Amp. For higher loads, a relay must be used.



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.



Waste disposal / recycling

This symbol indicates that this product or its packaging 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. Correct disposal helps prevent damage to health and the environment. For more information about the recycling of this product, please contact your local council waste disposal service, or the shop that sold the product.

INTRODUCTION and FEATURES

The Emaux CyberSync Chemical Controller is an innovative system that combines a salt water chlorine generator that can use pool salt or sea water to provide a safer and more environmentally friendly alternative to traditional methods of adding chlorine to the pool water. This advanced controller also continuously monitors and displays the pool water status. It has built-in features that add smart pool functions to connected accessories such as your pump, chemical dosing pumps, lights, other disinfection systems, heater, and pool cover.

Additionally, the Smart Life app includes scheduling and automated functions, enabling you to effortlessly monitor and manage your pool from your smartphone or tablet anytime, anywhere.

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

Water chemistry

The salt electrolysis cell of the CyberSync Chemical Controller needs a recommended pool water salt concentration of 3000 to 5000 ppm to function. See table on page 14.

2NaCl+2H₂O=2NaHO+H₂ +O₂ Cl₂+2NaHO=NaCl+NaClO+H₂O

The EMAUX Chlorinator does not maintain the water chemistry of your swimming pool water; it simply produces chlorine by hydrolysis from the salt dissolved in the pool water.

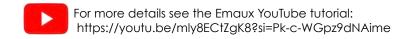
FEATURES

The advanced IoT enabled pool monitoring system connects seamlessly to the SmartLife 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.

- 1.Real-Time Alerts: Get instant notifications for pH, temperature, ORP, and salinity to maintain optimal water quality.
- 2. Pump Operation Status: Receive instant notifications when the pool pump starts or stops for real-time updates.
- 3. Connection Status Alerts: Get notified if the app loses connectivity to IoT devices or the internet.
- 4. Remote Control: Manage your pool's settings and check system status from anywhere, even remotely.
- 5. Automated Scheduling: Schedule maintenance tasks and automate chemical dosing for effortless pool upkeep.
- 6. Seamless Integration: The app easily connects with various SmartLife IoT devices for effortless pool management:
 - Automatic pool chemistry control
 - Automatic pool device control: UV-C, heater,
 - Easily upgrade the pool to automatic processes
 - Monitor pool status
 - IOT connection
 - Al chemical control (simple setup and minimize chemical usage)

INSTALLATION

ACCESSORY CABLES



Open the cover

Lay the controller on a flat surface. Loosen two screws. Gently prise the cover up and move it forward







Internal connections:

Hot

рН

The Pool Station Controller can connect up to 3 dosing pumps through the Hot contacts, and one Pool Pump plus three further accessories through the Cold contacts, and a motorised pool cover.

Cold contact

Switch1 Switch2



DOSINGS

Others

Feed the flow switch and the temperature probe cables through the rubber grommet, tie knots in them, and connect them.

Note: Turn the 'ON/OFF' switch to 'OFF', after flow Switch wires have been connected.



Hot contact vs Cold contact

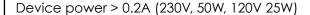
ORP

contact

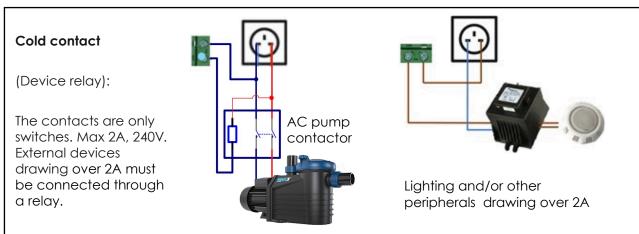
Hot contact (Dosing pump): This connector provides the same voltage as the power supply for this series of chemical controllers. CyberSync dosing pumps can be directly connected to the L/N terminals.

GROUND

Pool





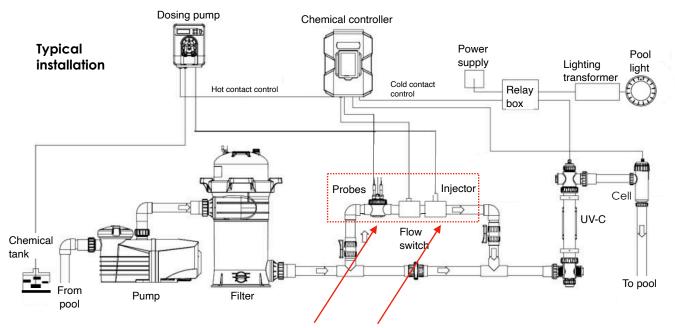


- Replace the cover ensuring the rubber grommet is correctly seated.
- Install the control unit on a wall ensuring the cables will reach the probe holder and the flow switch housing.

INSTALLATION

HARDWARE





pH and ORP probes should be installed **BEFORE** the injectors so that they measure the **untreated** water (true water conditions). Chemical injectors must be positioned **after** the probe, so that dosing does not distort the pH reading.

Probe holder



The probe holder fits $1\frac{1}{2}$ " (38mm) pipes. For 2" pipes, use reducers.

Glue the probe holder into the PVC pipe in any direction. NOTE: In the direction of flow it must be installed **BEFORE** any injectors, see schematic above.

Probes: Slide the threaded adapter and O-ring onto the probe. Wrap teflon tape round the adapter thread. Install the probes in the holder.



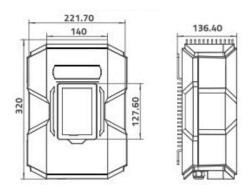


The flow switch holder fits 2" (50mm) pipes. The switch ensures that power to the electrode is switched off if the water is not moving through the cell housing. This prevents any danger of explosion from gas or steam pressure building up in the housing.

- 1. Glue the flow switch holder into a PVC pipe in the correct direction of the water flow (an arrow is moulded on the switch holder).
- 2. Remove the 2-part protective cap from the flow switch and screw it into the body.

HARDWARE

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



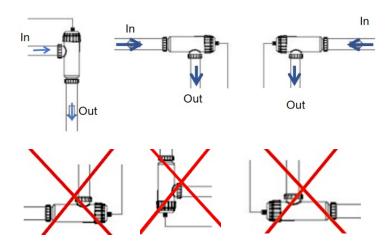
The chlorinator cell comes with unions for $1\frac{1}{2}$ " (38mm) and 2" (50mm) pipes.

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.

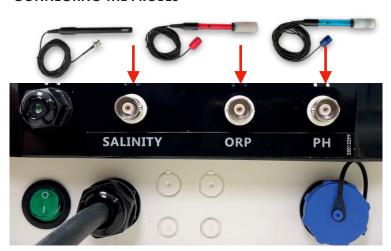
Cell housing

The cell housing can be installed vertically or horizontally





CONNECTING THE PROBES



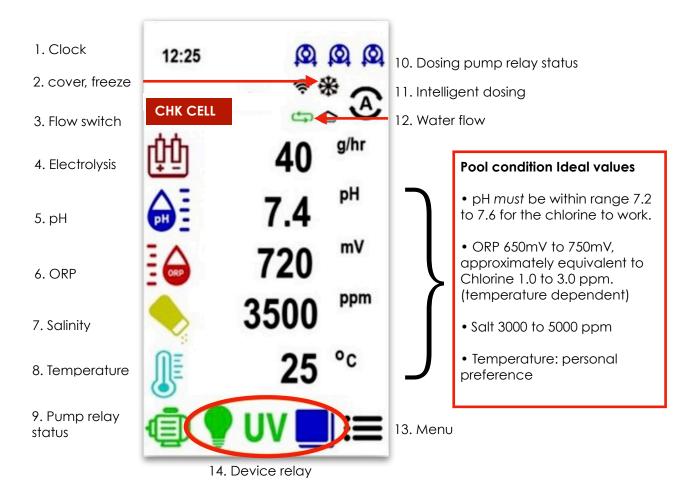
CONNECTING THE CELL

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



CONTROLS AND SETUP

Home screen



- 1. Clock: synchronises with smart phone when Internet is connected
- 2. Flow switch (alternates between FLOW and CHK CELL),
- 3. Pool cover and low temperature status
- 4. Electrolysis (chlorine production)
- 5. pH
- 6. ORP
- 7. Salinity
- 8. Temperature
- 9. Pump relay status
- 10. Dosing pump status
- 11. Intelligent dosing
- 12. Water flow (red: no flow; green: ok.)
- 13. Menu

Dosing pump relay status



On / Auto



Schedule



Stop



Error

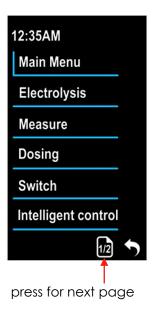


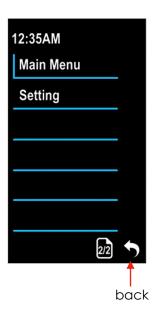
Inactive

Climate adjustment: In high temperature climates algae and bacteria grow faster but water conductivity is higher and the hydrolysis produces more chlorine. In low temperature climates, salt water conductivity is low but algae and bacteria don't grow so well so less chlorine is needed and the chlorine percentage can be adjusted to an ideal rate.

SET UP

Press Menu button to go to setup menu





Electrolysis

- 1. Select cell type: 20g, 30g, 40g
- 2. Level: this option can be used to change the duty cycle to reduce the chlorine production
- 3. Winter mode: when winter mode is activated, chlorine production is reduced to 85%
- 4. Mode: you can switch off the cell function
- 5. Schedule: 4 schedule times for user to select the chlorine production.

Note: Electrolysis: During in "Auto", chlorine production will follow the range of Dosing 2, Chlorine. When the range of chlorine in Dosing 2 is 700mA to 720mA, the unit will produce chlorine in the control range.



Measurement

User from probe: pH, ORP, Salinity and Temperature setup and calibration.

- 1. Function: you can turn on/off the function
- 2. Offset: fine tuning the reading without calibration if necessary
- 3. Calibration: THe pH and ORP probes are factory calibrated but recalibration is recommended from time to time. See page 15 MAINTENANCE for details.



DOSING

Three dosing pumps can be connected.

1) Type:

a. Dosing 1: Acid / others b. Dosing 2: Chlorine

c. Dosing 3: Alkaline (pH increaser) / others

2) Dosing mode

a. Auto / on / off

3) Settings

a. Upper / Lower

b. Pump rate

c. Duty

4) Priming: press the switch, the relay switch will close to let the connected dosing pump run continuously. Check the dosing pump squeeze tube and press again to stop when the tube is full.



	Dosing 1	Dosing 2	Dosing 3
Dosing type	Acid / others	Chlorine	Alkaline/ others
Auto dosing*	Yes (pH value) User input: - Pump rate	Yes, (ORP value) User input: - Pump rate	Yes (ph value) refer to dosing 1
Manual dosing (on)	Yes User input: - Duty	Yes, User input: - Duty	Yes User input: - Duty
Dosing control range setting	Yes, pH - Alert when out of range	Yes, ORP - Alert when out of the range	No
Off the device	Yes	Yes	Yes

^{*} if user input is incorrect the chemical control will adjust the dosing rate automatically.

Default and general setup (for use with salt chlorinator)

1. Dosing 1 (pH):

a. Dosing type: Acid b. Dosing mode: Auto

c. Setting: i. Upper PH: pH 7.6

ii. Lower PH: pH 7.2

d. Pump rate: enter the maximum dosing pump rate

e. Duty: not applicable

2. Dosing 2 (ORP): off 3. Dosing 3 (Others): off 4. Electrolysis: a. Mode on

SWITCHES

Pump Switch

PUMP SWITCH defaults to user connection to pool pump. When the switch is activated, the pump can be connected and the user can connect the pump and schedule the circulation to run automatically.

12:35AM

Pump

Schedule

Freeze

Activated

User can connect the circulation pump to the connector and turn the pump on/off automatically by schedule.

NOTE: Variable speed pumps have their own built-in schedule controllers.

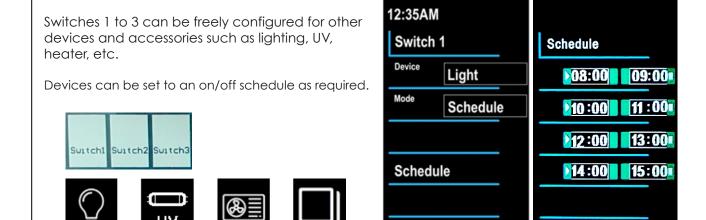
- 1) Mode: Activated, disactivated, off
- 2) Schedule: the pump can be configured for 4 schedule times
- 3) Freeze: freeze protection function.

If the water temperature is displayed near to freezing point, turn on the circulation to prevent ice formation.





Switches 1 - 3



Intelligent control

This function is for users:

- Who require full automation
- Who need to reduce the use of chemicals
- Who have less knowledge of pool chemistry

After entering the reference pool size and setting up the dosing pump(s), the internal DSP will test the dosing, calculate required dosing and optimize chemical by Al logic. Even though user has entered incorrect values, it will detect and make the correction.

IOT SMART LIFE PLATFORM

The CyberSync chemical controller can be connected to the SmartLife app to enable control and monitoring of the pool condition anytime and anywhere. Follow the general installation and setup guide to install "SmartLife" and add devices.

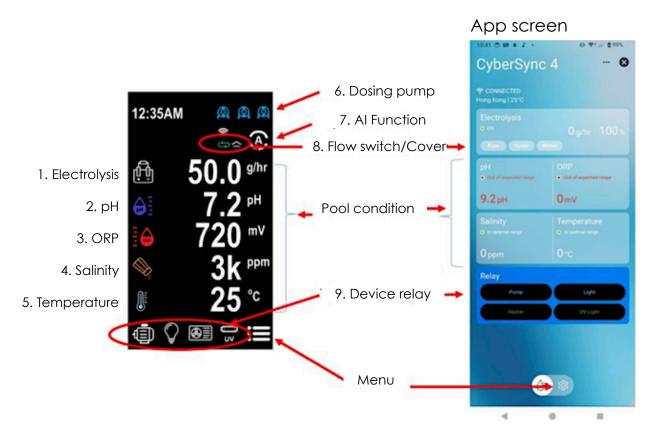
Note: the Intelligent control function is under testing. Please connect cell, ph, ORP and temperature probe + acid dosing on dosing 1.

Function to be upgraded.

Network

Ensure a 2.4G WiFi router network is ready. Check that the device has connected to internet - the WiFi icon will be displayed on the main screen.





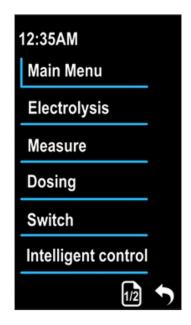
Device status



Device relay



Setting Menu – Go to Menu





Menu screens, device and App are synchronised:

- App is able to modify display name on portable device for higher flexibility of control
- Device screen: Some functions such as Priming, Probe calibration, Dosing on/off are functions that must be controlled on-site in device only.

Setup procedure:

1. Install the SmartLife app from GooglePlay or Android Appstore. Depending on your telephone brand, the PlayStore or AppStore screens may look slightly different.



- 2. Register and login to SmartLife (3rd party account)
- 3. Add a device:
 - a. Prepare a Wi-Fi 2.4G Internet network
 - b. On the mobile device, open the SmartLife app
 - c. Power up Cybersync, on the WiFi Setup manual
 - d. The icon will change to blue.
 - e. In the main page of the app, select "add device" and follow the on screen instructions
 - f. Your CyperSync will show on the screen when detected.

NOTE: For details for SmartLife function, please refer to the SmartLife app user manual.

ADDING SALT TO THE POOL WATER

The amount of salt required is between 4000 and 6000 ppm. To reach the desired salt level required by your model in a new or refilled pool (including the balance tank), add:

- 1 kg of pool salt per m³ (1,000 litres) of water.
- 2.2 pounds of pool salt per 264 USA gallons of water

Before adding the salt into the pool, place the filter's multiport valve on "Filtration" or "Recirculation" and then turn the filtration pump on.

- Add the salt directly into the pool evenly around the pool. Do not allow the salt to sit in a pile on the floor of the pool.
- Do not add large amount of salt near the skimmer or near the main drain or spa suction drains, it will block the pipes or damage the pump.
- Wait several hours until most of the salt has dissolved
- Keep the filtration system running for 24 hours using the Main Drain or vacuum port as a main suction line.
- The only way to remove the salt in the pool water is to partially drain the pool and refill with fresh water.

Typical salt quantity for 4000 ppm

Volume m³	Salt kg	Volume Gall US	Salt pounds
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

Overflow pools: be sure to include the volume of the balance tank.

NOTE: At low salinity mode, e.g. 1000 ppm, the production of disinfectant drops to \sim 50%. The low salinity mode will not shorten the life of the cell.

Salt is not lost through evaporation. Much of the hypochlorous acid returns to salt after disinfection, but not all of it, and some is lost through:

- Backwashing, splashout, and heavy rain
- UV sunlight breaks down chlorine into gases that escape the pool
- Bather load → sweat, urine, cosmetics consume chlorine into non-recoverable byproducts

Occasional topping up is therefore required.

TYPE OF SALT

Only use salt that is specially refined for use in pools. Obtain pool salt from your pool dealer.



Do NOT use these types of salt:

Salt with additives or impurities and food grade salt will cause early cell failure.

- Rock salt
- 2. Salt with more than 1% yellow prussiate of soda
- 3. Salt with more than 1% of anti-caking additives
- 4. lodized salt
- 5. Supermarket or catering food grade salt

MAINTENANCE

CLEANING THE TITANIUM SALT CELL



Wear protective clothing!

You need:

- Proprietary cell cleaning fluid
- diluted hydrochloric (muriatic) acid (always add acid to water)
- 1. Turn off the filtration system.
- 2. Unplug the salt cell cable from the control unit.
- 3. Remove the salt cell from the housing.
- 4. Fill salt cell cleaning fluid or diluted hydrochloric (muriatic) acid into a plastic bucket
- 5. Add the salt cell to the cleaning mixture avoiding contact with the terminals.
- 6. Wait five to ten minutes for the lime scale (calcium) to be fully dissolved by the cleaning fluid or acid.
- 7. If any parts of calcium are stuck or will not dissolve, carefully remove them with a smooth plastic instrument. Do not touch the titanium blades with anything made of metal.
- 8. Once the salt cell is clean, rinse with fresh water and place back in the housing and tighten the cell or collar.
- 9. Reconnect the cell cable to the control unit.
- 10. 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.

CLEANING AND CALIBRATING THE PROBES



For more detailed instructions for calibrating the probes see the Emaux YouTube video:

https://youtu.be/mly8ECtZgK8?si=Pk-c-WGpz9dNAime

You need:

- Distilled or deionized (demineralized) water
- Soft wipes
- pH buffer 4.01 and 7.0
- ORP buffer

Please refer to the manual that came with the probe.

Hard water: Check the probes occasionally for calcium deposit (limescale). Remove hard deposits very carefully with a smooth piece of plastic.

Cleaning the probes can be combined with the recalibration process. Always use distilled water and very soft wipes (optical quality for glasses and camera lenses)



SPECIFICATIONS

Product Specifications

CYBER SYNC POOL STATION							
Code	Model	Input Voltage/ Frequency	SALT LEVEL PPM	OUTPUT gram/hr	POOL VOL m³	IP Rating	FUNCTION
9130601	CS-A20	110-240V 50Hz/60Hz	3000/1000	20/10	60	IPX4	electrolysis,
9130602	CS-A30	110-240V 50Hz/60Hz	3000/1000	30/15	80	IPX4	measurement, dosing,
9130603	CS-A24	110-240V 50Hz/60Hz	3000/1000	40/20	100	IPX4	switch , control,

FUNCTION	SPECIFICATION
Display	4.3" LCD with Touch control
Cell type (chlorine production)	20 g/h , 30 g/h or 40 g/h
Measurement	pH, ORP, Salinity and Temperature
Device connection	Dosing pump: x 3 (hot contact) @50W Switch: x 3 (cold contact)
Pool cover detect	Detect connetion x 1
Wi-Fi	- 802.11 b/g/n - 2.4 GHz
Modbus	RS485
Input	220V to 240V AC, 2A max (EU version) 110V to 120V AC, 4A max (US version)

Probe and Accessories Specifications

Code	Product	Parameter
106090073	ORP probe (with 3 m signal line)	Pressure: 7 bar Material: epoxy Measuring range: -300 to 900 mV
106090073	pH probe (with 3 m signal line)	Pressure: 7 bar Material: epoxy Measuring range: pH 0-14
178818	Salinity probe (with 3 m signal line)	Pressure: 7 bar Material: epoxy Measuring range: 1000 to 35000 ppm
178817	Temperature sensor with 3 m cable	ероху
1090010392	ORP buffer solution, 30 mL	256 mV,
109007168	pH buffer solution, 30 mL	pH 4 .01 and pH 7.0
E130078	Probe holder	PVC transparent
114145332	Flow switch	Normal open
620065469	Flow switch Holder	PVC

You will need this information if you require service for your product		
PRODUCT		
MODEL		
SERIAL NUMBER		
DATE OF PURCHASE		
DEALER		

WARRANTY

As the original purchaser of the equipment you have purchased through an authorized international distributor or dealer, Emaux Water Technology Co Ltd, 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 resellers. 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 result of an act of God;
- (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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NOTES

Make notes of your settings or keep a log of your maintenance schedules.

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OUR PREMIER SUPPLIER