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plug & play products

## HS Salt electrolysis

**ZLAX0016, ZLAX0020 en ZALX0030**  
**(EC8, 12, 16, 20 and 30)**





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## Introduction

This manual contains all the necessary information for installation, troubleshooting and maintenance. Read the manual thoroughly before opening or using the unit. The manufacturer of this product will not be held responsible for any injury to and/or damage of the product resulting from improper installation or unnecessary/incorrect maintenance. It is essential that the instructions in this manual be followed at all times. Installation by qualified personnel is required.

- Only a qualified installer, center, individual or an authorized dealer can repair this product.
- Maintenance and operation should be performed according to the recommended time and frequency, as stated in the manual.
- Use only original standard parts. Failure to do so will void your warranty.

## Features

- Durable: the materials used are chlorine, acid (sulfuric acid), salt and alkali resistant. They can withstand long-term exposure to pool water (even with salt for salt electrolysis).
- Simple operation: the unit is very convenient to operate.
- Low cost: the operating cost is very low because when used correctly, the pool water never turns green.
- The pH and Redox probes need to be calibrated regularly, and the correct operation verified by a proper color measurement method (e.g. Poolab ZWMX1060)

## Key elements :

- **Incomplete grounding of the pool pipes can have negative effects on the measurement results and thus lead to abnormal pH and chlorine values in the pool.**
- **Proper grounding is made as follows :**
  - **The pool line after the filter pump is grounded through an in-line grounding to an independent grounding post**
  - **The pool line near the measuring probes is grounded through an in-line grounding to a second independent grounding post**
  - **Use only city water, not rainwater or well water**



## Specifications

Electrolysis Unit	ZLAX0016 ZLAX0020 50 m3 75m3
Chlorine control	EC 16 - 16g/h EC 20 20g/h
Pool connection	50mm to stick
Flow switch	Flow control on EC unit
Power supply	230V ~, 50 Hz

## Installation

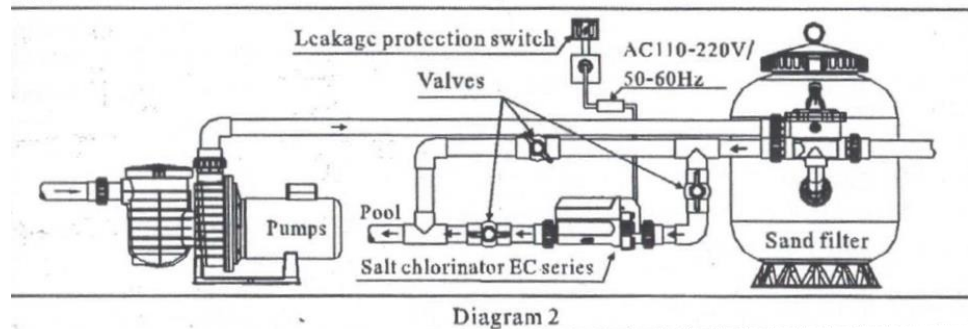
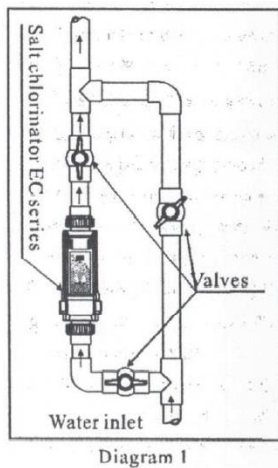
### Attention!

- o The electrical installation should be done in such a way that:
  - The electrolysis and acid pump cannot operate if the filter pump is not working. This can be done by adding a flow switch/flow controller ZWMX3552-P to the installation or by using the same power line as the filter pump.
- o Addition of pool chemicals should be done downstream of pool accessories such as heater, UV lamp, filter etc.
- o It is recommended that the installation of the water treatment unit be in bypass configuration.
- o Install the water treatment unit on a solid base or against the wall (always vertical)
- o The product must be installed inside. If you want to do this outside, please contact your supplier.
- o The electronics (dosing devices) of the unit must be installed inside. Make sure that - in case of leakage - the water cannot run over the installation.
- o The electronics or the device itself must NEVER be connected to an output of a frequency converter or frequency inverter.
- o The dosing device must not be on the same power circuit as that of the frequency converter or frequency inverter being used and it must be at least 3 m away from the dosing unit.





## Salt electrolysis installation



The salt chlorinator should be installed with the return line to the pool and through the water treatment line as shown in the diagram. A control valve must be installed on the main line.

Before installing the salt chlorinator, make sure that the water flow matches the direction indicated by the chlorinator.

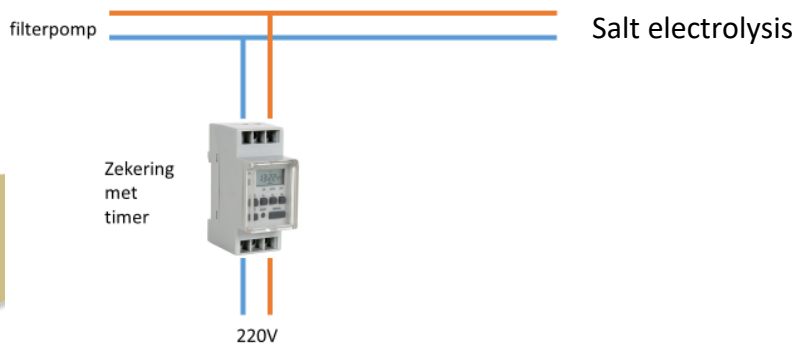
To connect the pipes, use only line suitable for PVC bonding.

The chlorinator should be installed in a well-ventilated area to allow it to cool properly. Do not install in an area where the electronic components of the chlorinator may be damaged by moisture or rain.

During operation, the chlorinator should avoid direct sunlight to prevent the aging process of the housing.

Make the electrical connections in such a way that:

- **The salt electrolysis and acid pump cannot operate when the filter pump is not working.**
- The salt electrolysis and acid pump can be turned off when the filter pump is operating.



The chlorinator's external power adapter must be connected to a power source that has a 30mA ground fault circuit breaker

### Preparing the pool water

Make sure the pH of the pool water is at least between 7.2 and 8.5 and as close to 7.4 as possible. Make sure the content of chlorine stabilizer (cyanic acid) in the pool water is between 20-40 ppm (20-40 g / 10 m<sup>3</sup>)

### Chlorinator



The Salt Chlorinator uses the most advanced microcomputer technology. It is both multifunctional and easy to operate.

It includes features such as automatic reset (self-cleaning, lime removal) and malfunction alarm.

#### Product Distinctive Facts:

Design for easy access to the titanium polar plate during installation and maintenance

Users can choose from different levels of chlorine production. One can adjust the level according to the need of the pool, which is energy efficient and environmentally friendly.

The chlorinator includes a salt meter and alarms.

The chlorinator includes water temperature protection (10 ° to 40 °). This can significantly improve the life of the unit. Outside this temperature range, the electrolysis does not work.

There is a water level detection. The chlorinator will only operate if water is effectively detected.

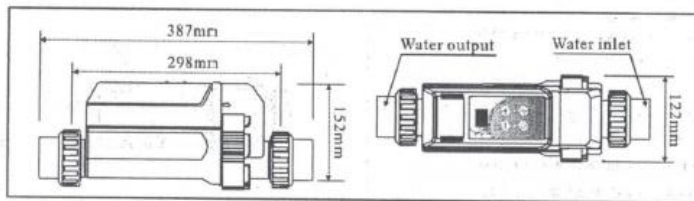




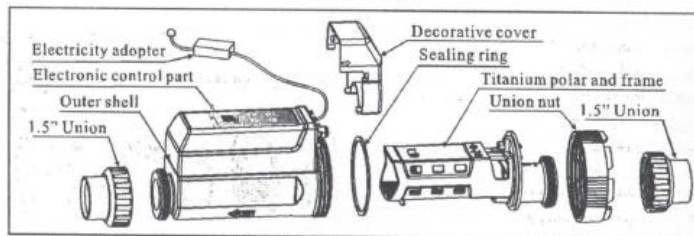
When turned on, the unit will assume the last observed settings..

Model	Chlorine production	Ideal business location
EC8	8g/h	unit suitable for swimming pools = 40 m <sup>3</sup>
EC12	12g/h	unit suitable for swimming pools = 60 m <sup>3</sup>
EC16	16g/h	unit suitable for swimming pools = 80 m <sup>3</sup>
EC20	20g/h=	unit suitable for swimming pools = 100 m <sup>3</sup>

### Structure diagram



Product size diagram



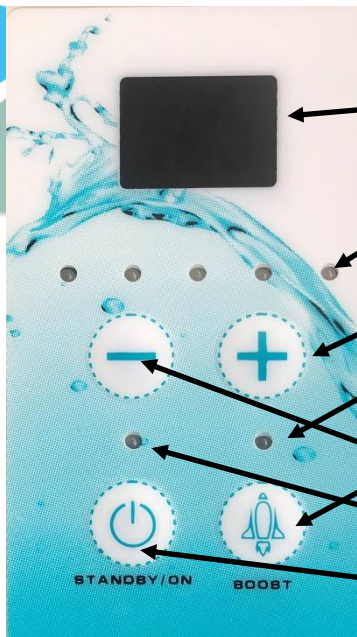


## Using the chlorinator

1. When the chlorinator is connected to the faucet, adjust the water flow with the valve to ensure that enough water flows through the salt chlorinator.
  2. Before use, ensure that the salt concentration of the pool water is within the normal operating range (3.5- 4.5 kg of salt per m<sup>3</sup>), otherwise it may shorten the life of the Titanium cell.
  3. The display shows the current water temperature. Press the Power / Operate button, the operation light will change from red to green and the chlorinator will start working: Note: The chlorinator can only operate if the water level detector detects the presence of sufficient water flow .
  4. By pressing the "+" or "-" button, users can adjust the rate of chlorine creation as needed; users can use level 1-5, 1 level is the smallest and 5 level is the highest. The higher the level, the faster the chlorine is produced.
  5. Parameter check: press the acceleration key several times while the chlorinator is off to look up various parameters below:
    - ① Internal temperature chlorinator
    - ② Water temperature
    - ③ Input voltage
    - ④ Version number
    - ⑤ Time period of continuous operation; the system automatically exits the application after 3 seconds
  6. Time setting for continuous operation: press the acceleration key 5 times while the machine is turned off to display the time period of continuous operation. Change the time periods of continuous operation by pressing '+' or '-'. The time period ranges from 1-24 hours (and then shut off) after it is turned on. After this cycle, the chlorinator stops for 12 hours and turns on again for 12 hours.
- In case you use the control option "RX TIME", the setting of the chlorinator should be at least as long, than the selected time.

**IMPORTANT:** THE CHLORINATOR IS PRESET FOR 12 HOURS CONTINUOUS OPERATION, IF 24 HOURS NON-STOP OPERATION IS REQUIRED, THE TIME FOR CONTINUOUS OPERATION MUST BE SET TO 24; THE SYSTEM WILL AUTOMATICALLY EXIT THE SETTING AFTER 3 SECONDS.





1. Led monitor (displays the water temperature under normal operation, displays the corresponding error code if a problem occurs)
2. Level indicator light (1 light stands for level 1, 2 light stands for level 2 ..... 5 lights stand for 5 levels)
3. Button for level control of chlorine production
4. boost indicator light
5. Boost button
6. level reduction button
7. Operating indicator light
8. Start/stop Button

## Error codes and corresponding solutions chlorinator

Error code	Reason for failure	Remark	Solution
E1	Cooling fin temperature is too high	The temperature of the cooling fin is too high	First check if error code E6 is present , if present , check if the temperature sensor is connected,if connected replace the sensor; If error code E6 is not present, check the installation.
E2	Water temperature is below the normal	The error must be corrected manually	First check if the error code E7 is present, if it is, check if the temperature sensor is attached. if it is, replace the sensor; If the E7 error code is not present. check whether the water is within the operating temperature range
E3	No water	The normal temperature range is between 10-45 degrees Celsius.	First check that the water level detector is attached. Check if water is leaking or if air is present. If water is present, wash the water level detector
E4	Salt concentration is too high	Normal operation requires sufficient water in the chlorine supply	First, use the salt meter to check the salt concentration in the pool. If the salt concentration level in the pool exceeds 3500 ppm, drain a portion of the pool and replace it with fresh water. When the salt level of the pool reaches the normal salt level, the error code should disappear. And the unit should work again.
E5	Salt concentration is too low	Normal salt concentration is 3500 ppm	First, use the salt meter to check the salt concentration in the pool. If the salt concentration level in the pool exceeds 3500 ppm, drain part of the pool and add salt to the fresh water. When the salt level of the pool reaches the salt level of normal operation, the error code should disappear and the machine should function again.

Error code	Reason for failure	Remark	Solution
E6	The sensor in the controller is not working properly	The fault must be solved manually	check whether the corresponding temperature sensor is attached, replace the sensor if this is the case
E7	water temperature sensor defective	The fault must be resolved manually	check whether the corresponding temperature sensor is attached, replace the sensor if this is the case
E8	input voltage is too high or too low	The fault must be resolved manually	change the power supply
E9	Electrode does not work properly	The fault must be remedied manually	contact supplier for repair
EA	Electrode defective	The fault will have to be cleared manually	first check if the electrode is attached, if this is the case, replace the electrode
EB	storage chip fault	the fault will have to be remedied manually	Contact the supplier for repair
EC	system detection circuit failure	The fault must be remedied manually	turn off and restart, if the error does not occur again, the chlorinator should be turned on normally; if this error occurs multiple times, contact the supplier for controller repair



## Additional : operation and maintenance of the chlorinator

### 1. The mixture and maintenance of water and salt The operational state and maintenance of salt chlorinator

#### 1.1 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 meters)

Round pool: diameter (meter) x diameter (meter) x average depth (meter) x 0.785 = pool water capacity (cubic meters)

Oval pool: length (meter) x width (meter) x average depth (meter) x 0.893= pool water capacity (cubic meters)

#### 1.2 The type of salt

The salt used must be "pool salt" with approval number as a precursor of biocides of the country in which the unit is used. The sodium chloride (NaCl) in the salt must be at least 99.6% .

#### 1.3 Adding the right amount of salt:

Most swimming pools contain a certain amount of salt, the concentration of salt in the water depends greatly on the water source. Users can use a portable NaCl tester or a salinity pen to test the current salt concentration of the pool.

#### TIPS

The normal salt concentration level of the EC Series of salt chlorinator is 3500-4500 ppm (3.5-4.5 kg of salt per cubic meter of water)

When you first start using the EC Series, add salt to the pool according to the steps below:

A) Use a salinity meter to check the initial salt concentration in the pool.

B) Add the appropriate amount of salt, making sure to add 3.5-4.5 kg of salt for each cubic meter of the pool.





#### **1.4 The correct way to add salt:**

- A) Turn on the pool circulation pump and allow the water circulation to begin.
- B) Turn off the chlorinator.
- C) Test the current salt level of the pool.
- D) Calculate the amount of salt needed to add to the pool.
- E) Add salt to the pool around the side of the pool, allowing the salt to dilute quickly and evenly in the water. Do not allow salt to accumulate at the bottom of the pool. If necessary, stir the water at the bottom of the pool to allow the salt to completely dissolve.
- F) Run the circulation pump for 24 hours to allow the salt to distribute evenly in the pool.
- G) 24 hours later, test the salt concentration of the pool again to see if it has reached the optimum level.
- H) When the pool salt concentration has reached the desired level, turn on the salt chlorinator and other equipment. Once the chlorinator has started, set the desired level of chlorine production.

#### **1.5 Reduce the salt concentration:**

The only way to lower the salt concentration is to drain some of the pool water and replace it with fresh water.

**1.6 To reduce the loss of chlorine due to UV radiation on the water of the outdoor pool, you should add Cyanuric acid of 20-70 mg / l as a chlorine stabilizer.**

## **2. Maintenance of saltchlorinator**

### **2.1 Maintenance of the electrolysis cell**

To ensure proper operation of the salt chlorination plant, the electrolysis cell should be checked every three months after cleaning the filter. Follow the steps below to complete the check:

- A) Before removing the electrolysis cell, close the inlet and outlet valves and turn off the salt chlorinator for 5-10 minutes.
- B) After removing the electrolysis cell, check if there are flaky sediments, debris, light-colored layers in the inner surface. Clean carefully with clean water .
- C) If there is a white calcified substance on the titanium plate, immerse the titanium plate in 4: 1 water hydrochloric acid to remove the calcified substance. For your safety, wear rubber gloves and eye protection.
- D) If there is significant sediment that cannot be removed on its own, contact the seller for professional advice.





## Warnings

- Improper installation can create an electrical or chemical hazard, which can result in serious injury.
  
- Keep the installation and chemicals out of the reach of children. Always wear safety gloves and safety glasses when working on the installation.
  
- Disconnect power when working on the installation
  
- NEVER make any adjustments inside the dispensing equipment.
  
- If you are not familiar with the pool filter system and dosing equipment:
  - read the entire installation and operating instructions before using the dosing equipment;
  - never modify anything without consulting your supplier, professional pool contractor.