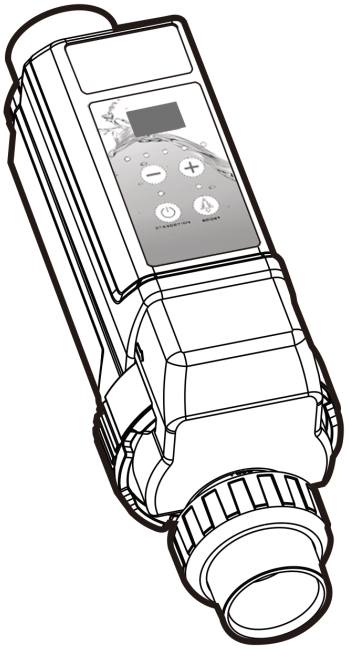
OXYGON

SWIMMING POOL · WATER TREATMENT · HEATING · COOLING



EC Series

Salt Chlorinator for Swimming Pools

Installation & User Manual

Codes: 108.14.21 · 108.14.22 · 108.14.23 · 108.14.24

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1. Safety Warnings

Thank you for choosing the OXYGON **EC Series** salt chlorinator. To prevent accidents, read this entire manual carefully before assembling and using the chlorinator, and follow it strictly for your own safety and for correct operation. Neglecting the safety warnings may cause serious consequences such as grievous injury, property loss or even danger to life. Keep this manual for future reference.

ELECTRICAL SAFETY — LICENSED ELECTRICIAN ONLY

Installation and maintenance must be carried out by a **licensed electrician**; otherwise there is a risk of electrocution, grievous injury, property loss or danger to life. Before any maintenance or operation, make sure the chlorinator is **unplugged**, all equipment is **switched off** and the power source is turned off.

LEAKAGE-CURRENT (RCD) PROTECTION

The external power adapter of the chlorinator must be connected to a power source protected by a **leakage (residual-current) switch**.

VENTILATION · MOISTURE · RAIN · SUNLIGHT

Install the chlorinator in a **well-ventilated** area so that it can cool down. Do not install it where **moisture or rain** can damage its electronic components. Avoid **direct sunlight**, which accelerates the ageing of the housing.

SALT · ACID · CHLORINE

Use only **sodium chloride (NaCl)** salt of the purity given in Section 9. When the electrodes are cleaned with a **hydrochloric acid** solution, wear **rubber gloves and eye protection** (Section 10).

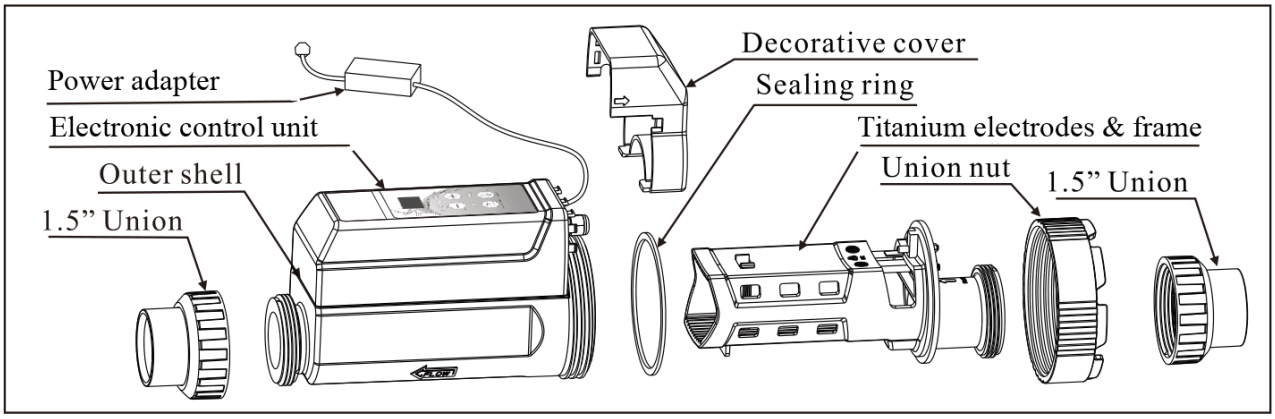
INSTALLERS · SPARE PARTS

Installation personnel must read this manual carefully before installation. In case of improper or mistaken operation, contact your nearest authorised dealer or OXYGON technical support. When parts are damaged, use only original replacement parts supplied by OXYGON or an authorised dealer (Section 11).

CE marking: the EC Series (EC08, EC12, EC16, EC20) has been tested to EN 60335-1 (Low Voltage Directive 2014/35/EU) and to EN 55014-1, EN 55014-2, EN 61000-3-2 and EN 61000-3-3 (EMC Directive 2014/30/EU). Enclosure protection: **IPX4** (EN 60529). For the warranty terms, see Section 13 — Warranty & Contact.

2. Components

The EC Series chlorinator consists of the following main parts:



Main parts of the EC Series salt chlorinator

- **Power adapter** — external; input AC 110–220 V / 50–60 Hz, output DC 24 V / 5 A.
- **Electronic control unit** — LED display and keypad (Section 7).
- **Outer shell** — water inlet and outlet on the same axis.
- **Titanium electrodes & frame** (electrolysis cell) — specific to each model.
- **Sealing ring** and **union nut** — seal and secure the electrolysis cell in the shell.
- **Decorative cover** — protects the power connection (power connector).
- **Two 1.5" unions** (Ø50 mm) — pipe connections.

3. Product Overview

The EC Series salt chlorinator uses advanced microcomputer technology and is multi-functional and easy to operate. Salt dissolved in the pool water passes through the titanium electrode cell, where **electrolysis** converts it into active chlorine that disinfects the water. The chlorinator has self-cleaning and malfunction alarm functions, and you can set the chlorine production to match your needs — for efficient and environmentally friendly disinfection.

Distinguishing features

1. Control unit and chlorinator integrated in one body — easier installation, less space.
2. Water inlet and outlet on the same axis — less pipework.
3. Easy access to the titanium electrode plates for simple installation and maintenance.
4. Five selectable chlorine production levels (level 1 lowest, level 5 highest) — energy-efficient and environmentally friendly.
5. Salinity prompt and malfunction alarm.
6. Water temperature protection (10–40 °C) and water shortage protection, which extend the service life of the unit.
7. Water level detection — the chlorinator operates only when the sensor detects water.
8. BOOST mode — maximum chlorine production for 8 hours.
9. Continuous-operation timer, adjustable from 1 to 24 hours (default 12 hours).
10. When powered on, the chlorinator automatically resumes the last working setting from memory.

Automatic power-on: if the power fails during operation, the system turns on automatically when power returns. **Setting memory:** the chlorinator restores the condition it had before the power failure or system failure, including the BOOST state; the BOOST timer is reset.

4. Technical Specifications

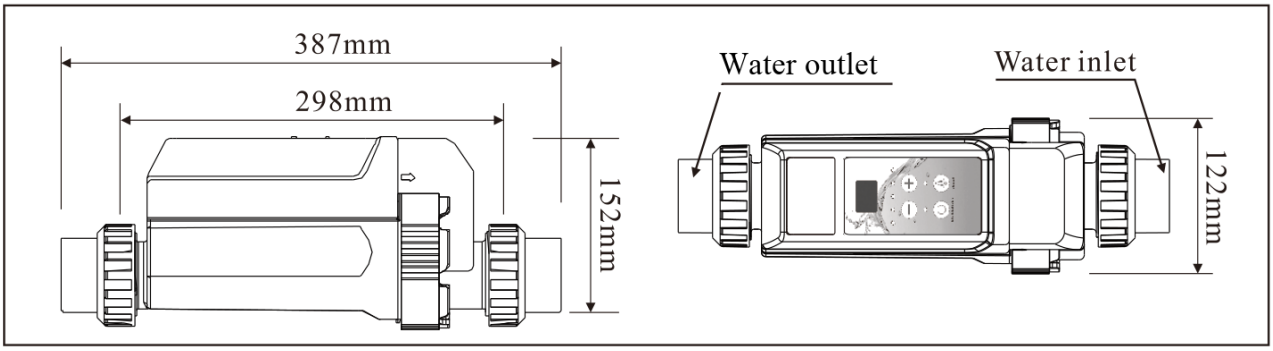
Models

OXYGON code	Model	Chlorine production	Pool volume	Salt level	Connection
108.14.21	EC08	8 g/h	up to 40 m³	3,500 ppm	1.5" (Ø50 mm)
108.14.22	EC12	12 g/h	up to 60 m³	3,500 ppm	1.5" (Ø50 mm)
108.14.23	EC16	16 g/h	up to 80 m³	3,500 ppm	1.5" (Ø50 mm)
108.14.24	EC20	20 g/h	up to 100 m³	3,500 ppm	1.5" (Ø50 mm)

Common data (all models)

Power adapter — input	AC 110–220 V, 50–60 Hz
Power adapter — output (to chlorinator)	DC 24 V / 5 A
Salt concentration	2,700–4,500 ppm (optimum 3,500 ppm)
Chlorine production levels	5 levels + BOOST (maximum output for 8 h)
Continuous-operation timer	1–24 h (default 12 h)
Water temperature protection	10–40 °C (error E2 outside 10–45 °C — see Section 12)
Pipe connection	1.5" union — metric Ø50 mm (inch: 1.5" / Ø48 mm)
Dimensions (L × H × W)	387 × 152 × 122 mm (see Section 5)
Enclosure protection	IPX4

5. Dimensions



Dimensions in mm — side view (left) and top view (right). Overall length 387 mm, height 152 mm, width 122 mm.

6. Installation

1. The pipe used for installation must be the same size as the chlorinator: nominal diameter **1.5"** (metric Ø50 mm; inch 1.5" / Ø48 mm).
2. Before use, make sure that the valve of the pipe connecting to the chlorinator is closed.
3. Before installation, clean any dirt or oil off the pipes and the connection joints.
4. Install the chlorinator on the **return pipe to the pool**, on a **bypass** of the water-treatment line, as shown in Diagram 1 or Diagram 2. An **adjusting valve** must be installed on the main pipe.
5. Make sure that the water flows in the direction indicated on the chlorinator.
6. When connecting the pipes to the chlorinator, use **glue specifically for PVC**.
7. The chlorinator is powered by its external power adapter: input AC 110–220 V / 50–60 Hz, output DC 24 V / 5 A. The adapter must be connected to a power source with **leakage-switch protection**.
8. Install the chlorinator in a well-ventilated area, where moisture and rain cannot damage the electronic components.
9. During use, protect the chlorinator from direct sunlight, which accelerates the ageing of the housing.

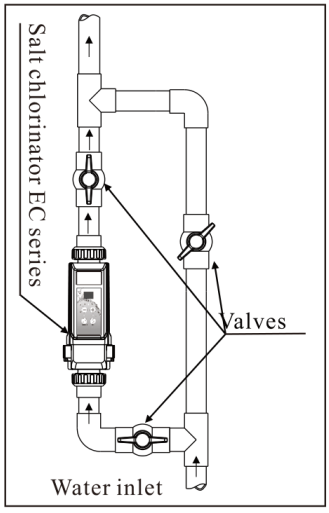


Diagram 1 — bypass installation

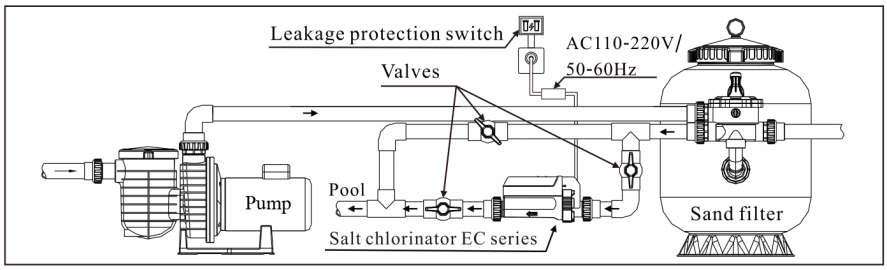
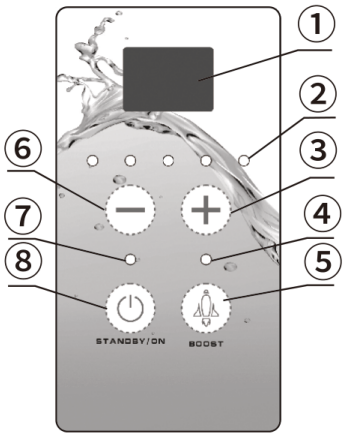


Diagram 2 — installation with pump and sand filter

7. Control Panel



Control panel

No.	Element
①	LED display — shows the water temperature during normal operation and the error code when a problem occurs
②	Level indicator lights — 1 light = level 1, 2 lights = level 2 … 5 lights = level 5
③	Level increase button (+)
④	BOOST indicator light
⑤	BOOST button
⑥	Level decrease button (–)
⑦	Operation indicator light
⑧	STANDBY/ON button (start / stop)

8. Operation

1. With the chlorinator connected, open the valve connecting the chlorinator and adjust the water flow with the valve, so that enough water flows through the chlorinator.
2. To connect the power cable, open the decorative cover in the direction of the arrow on the cover, plug the round plug into the power connector (Diagram 3), then refit the decorative cover.
3. Before operation, make sure that the salt concentration of the pool water is within the normal operating range (**2,700–4,500 ppm**); otherwise the service life of the titanium electrodes is reduced.
4. Switch on the leakage switch to activate the display. Press **STANDBY/ON**: the operation light turns from red to green and the chlorinator starts operating. The chlorinator works only when the water level detector detects enough water flow.
5. Press «+» or «–» to set the chlorine production level (1–5): level 1 is the lowest and level 5 the highest. The higher the level, the more chlorine is produced.
6. To accelerate chlorine production, press **BOOST**: the chlorinator operates at maximum capacity for 8 hours and then returns to the preset state.
7. **Parameters check:** with the chlorinator in standby (power connected, display on, not operating), press the BOOST key repeatedly to view: (1) internal temperature of the chlorinator, (2) water temperature, (3) input voltage, (4) version number, (5) continuous-operation time. The display returns to normal automatically after 3 seconds.
8. **Continuous-operation time:** with the chlorinator in standby, press the BOOST key 5 times to display the continuous-operation time, then change it with «+» or «–» (1–24 hours). Example: at 12, the chlorinator operates for 12 hours after it is switched on, stops for 12 hours and then operates again for 12 hours, repeating this cycle.
9. When the chlorinator reports a malfunction or warning, press the BOOST key to clear it and resume normal operation (causes and solutions: Section 12).

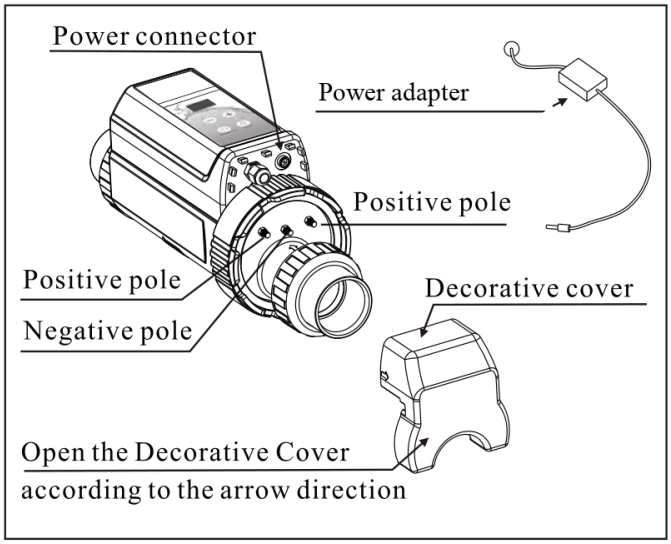


Diagram 3 — power connection

Note: the chlorinator is preset to **12 hours** of continuous operation. For 24-hour non-stop operation, set the time to 24; the setting closes automatically after 3 seconds.

9. Salt Management

9.1 Pool water volume

Knowing the volume of the pool is the first step in adding salt.

- Rectangular pool: length (m) × width (m) × average depth (m) = volume (m³)
- Round pool: diameter (m) × diameter (m) × average depth (m) × 0.785 = volume (m³)
- Oval pool: length (m) × width (m) × average depth (m) × 0.893 = volume (m³)
- Pool with sloped walls: pool volume (m³) × 0.85 = water volume (m³)

9.2 Type of salt

The purer the salt, the better the chlorinator operates and the longer its service life. The salt must contain at least **99.6% sodium chloride (NaCl)**; dehydrated granular food-grade sea salt is best.

SALT — WHAT NOT TO USE

A. Do not use **rock salt** — its impurities may shorten the service life of the chlorinator.
B. Do not use **calcium chloride** — only sodium chloride can be used.
C. Do not use salt with anti-blocking agents (sodium cyanide — poisonous and corrosive); this kind of salt may change the colour of the pool surface and of the equipment inside.
D. Water-treatment salt tablets can be used, but they take a very long time to dissolve.

9.3 Adding the right amount of salt

Most pools already contain some salt, depending on the water source and the disinfectant used. Measure the current salt concentration with a hand-held NaCl tester or a salinity pen.

- The optimum operating salt concentration of the EC Series is **3,500 ppm** (3.5 kg of salt per m³ of water).
- First operation: measure the initial salt concentration of the pool, then add the appropriate amount of salt so that each m³ of water contains 3.5 kg of salt.
- The salt concentration in ppm equals the grams of salt in 1 tonne (1 m³) of water: 850 ppm = 850 g of salt in 1 m³.

Salt to add (g) = pool volume (m³) × (3,500 − current salt concentration in ppm)
Example: 100 m³ pool at 850 ppm → 100 × (3,500 − 850) = **265,000 g = 265 kg** of salt.

9.4 How to add salt

a. Start the circulation pump of the pool and let the water circulate.

b. Switch off the salt chlorinator.

c. Measure the current salt concentration of the pool.

d. Calculate the amount of salt needed (9.3).

e. Add the salt around the side of the pool so that it dissolves quickly and evenly. Do not let salt accumulate on the bottom of the pool; brush the bottom if needed until the salt has fully dissolved.

f. Run the circulation pump for 24 hours so that the salt is evenly distributed in the pool.

g. After 24 hours, measure the salt concentration again to check that the optimum level has been reached.

h. When the desired level is reached, switch on the chlorinator and the other equipment and set the chlorine production level.

9.5 Lowering the salt concentration

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

9.6 Outdoor pools — chlorine stabiliser

To reduce the loss of chlorine caused by UV radiation in outdoor pools, dose **cyanuric acid at 20–100 mg/L** as chlorine stabiliser.

10. Maintenance of the Electrolysis Cell

To ensure smooth operation, check the electrolysis cell **every three months or after cleaning the filter, whichever comes first**, as follows:

A. Switch off the salt chlorinator, wait 5–10 minutes and close the inlet and outlet valves before removing the electrolysis cell.

B. After removing the cell, check the inner surface for flake-like sediments, debris or light-coloured layers. Wash with clean water.

C. If there is a white calcified deposit on the titanium plates, immerse the plates in a **4:1 water and hydrochloric acid** solution to remove it. Wear **rubber gloves and eye protection**. Always add the acid slowly to the water — never water to acid — in a well-ventilated area, and rinse the plates with clean water before refitting.

D. If there are major deposits that you cannot remove yourself, contact your dealer for professional advice.

11. Spare Parts

The parts of the chlorinator are shown in the diagram of Section 2. For spare parts, contact OXYGON or your authorised dealer and state the model (EC08, EC12, EC16 or EC20).

Spare part	Applies to
Titanium electrode cell (electrolysis cell)	Specific to each model — EC08 · EC12 · EC16 · EC20
Power adapter (DC 24 V / 5 A)	All models
Electronic control unit	All models
1.5" unions (set of 2)	All models

12. Error Codes & Troubleshooting

When a problem occurs, the LED display shows an error code. Correct the cause as described below; to clear a malfunction or warning and resume normal operation, press the BOOST key (Section 8, step 9).

Code	Cause	Remark	Solution
E1	Cooling fin temperature too high	Normal temperature should be below 65 °C. The malfunction must be removed manually.	First check whether error code E6 is present; if it is, check that the temperature sensor is attached — if it is, replace the sensor. If E6 is not present, have the control circuit checked by your dealer or OXYGON service.
E2	Water temperature beyond the normal range	The normal operating temperature range is 10–45 °C.	First check whether error code E7 is present; if it is, check that the temperature sensor is attached — if it is, replace the sensor. If E7 is not present, check that the water is within the operating temperature range.
E3	No water	Normal operation requires enough water in the chlorinator.	First check that the water level detector is attached. If it is, check whether water is lacking or air is present. If water is present, wash the water level detector.
E4	Salt concentration too high	Normal salt concentration range: 2,700–4,500 ppm.	Check the salt concentration of the pool with a salinity meter. If it is above 4,500 ppm, drain part of the pool and replace it with fresh water. When the salinity reaches the normal operating level, the error code disappears and the chlorinator works again.
E5	Salt concentration too low	Normal salt concentration range: 2,700–4,500 ppm.	Check the salt concentration of the pool with a salinity meter. If it is below 2,700 ppm, add salt to the pool (Section 9). When the salinity reaches the normal operating level, the error code disappears and the chlorinator works again.
E6	Temperature sensor inside the control unit malfunctioned	The malfunction must be removed manually.	First check whether the corresponding temperature sensor is attached; if it is, replace the sensor.
E7	Water temperature sensor malfunctioned	The malfunction must be removed manually.	First check whether the corresponding temperature sensor is attached; if it is, replace the sensor.
E8	Input voltage too high or too low	The malfunction must be removed manually.	Replace the power supply (power adapter); contact your dealer or OXYGON service.
E9	Output current too large	The malfunction must be removed manually.	Contact your dealer or OXYGON service for repair or replacement.
EA	Electrode malfunction	The malfunction must be removed manually.	First check whether the electrode is attached. If it is, replace the electrode.
Eb	System storage chip malfunction	The malfunction must be removed manually.	Contact your dealer or OXYGON service for repair or replacement of the system storage chip.
EC	System detection circuit malfunction	The malfunction must be removed manually.	Switch off and restart. If the error does not occur again, the chlorinator works normally; if it occurs repeatedly, contact your dealer or OXYGON service for repair or replacement of the control unit.

13. Warranty & Contact

OXYGON warrants this product against defects in materials and workmanship for a period of **24 months** from the date of purchase. This warranty covers manufacturing defects only and does not cover damage caused by improper installation, misuse, lack of maintenance, or normal wear and tear. For warranty claims, contact your authorised OXYGON dealer with proof of purchase.

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ISO Certifications

ISO 9001:2015 Quality Management *EUROCERT*	**ISO 14001:2015** Environmental Management *BQV*	**ISO 45001:2018** Occupational Health & Safety *BQV*
ISO 22301:2019 Business Continuity *EUROCERT*	**ISO 46001:2019** Water Efficiency *BQV*	

Recycling of materials must be carried out in accordance with applicable regulations.