### Models

<table>
<thead>
<tr>
<th>Model</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLSN010</td>
<td>C-10</td>
</tr>
<tr>
<td>CLSN018</td>
<td>C-18</td>
</tr>
<tr>
<td>CLSN025</td>
<td>C-25</td>
</tr>
<tr>
<td>CLSP010</td>
<td>C-10PH</td>
</tr>
<tr>
<td>CLSP018</td>
<td>C-18PH</td>
</tr>
<tr>
<td>CLSP025</td>
<td>C-25PH</td>
</tr>
</tbody>
</table>

**Certifikin**

INSTALLATION AND MAINTENANCE MANUAL
MANUEL D’INSTALLATION ET D’ENTRETIEN
MANUAL DE INSTALACION Y MANTENIMIENTO
MANUALE DI INSTALLAZIONE E MANUTENZIONE
EINBAU-UND BETRIEBSANLEITUNG
MANUAL DE INSTRUÇÕES E MANUTENÇÃO
ENGLISH

IMPORTANT: The instruction manual you are holding includes essential information on the safety measures to be implemented for installation and start-up. Therefore, the installer as well as the user must read the instructions before beginning installation and start-up. Keep this manual for future reference.

Disposal of waste electrical and electronic domestic systems in the European Union

All the products marked with this symbol indicate that the product shall not be mixed or disposed with your household waste at their end of use. It is responsibility of the user to eliminate this kind of wastes depositing them in a recycling point adapted for the selective disposal of electrical and electronic wastes. The suitable recycling and treatment of these wastes contributes in essential way to the preservation of the Environment and the health of the users. For further information regarding the points of collection of this type of wastes, please contact to the dealer where you acquired the product or to your municipal authority.

The instructions given in this manual describe the operation and maintenance of Chlorsalt C-XX and C-XXPH Salt Electrolysis Systems. For optimum performance of the Chlorsalt Electrolysis Systems, we recommend you to follow the instructions given below:

1. CHECK THE CONTENTS OF THE PACK: ________________________________________________________________________

You should find the following elements inside the box:

- Power supply.
- Electrolysis cell.
- pH sensor (only in C-XXPH).
- Calibration solutions pH 7.0 (green) / pH 4.0 (red) (only in C-XXPH).
- CEE22 (M) connector for dosage pump (only in C-XXPH).
- Operation Manual.

2. GENERAL FEATURES: _______________________________________________________________________________________

When Chlorsalt Salt Electrolysis System is installed, a quantity of salt must be dissolved into the swimming pool water. This salty water then passes through the electrolysis cell that is located in the plant room. The Chlorsalt Salt Electrolysis System consists of two elements: an electrolysis cell and a power supply. The electrolysis cell contains a quantity of titanium plates (electrodes) and when a weak electrical current is passed through the plates inside the electrolysis cell, there is chlorine production.

Maintaining a level of chlorine in swimming pool water keeps the water sanitised and healthy to swim in. The Chlorsalt Salt Electrolysis System will manufacture chlorine whenever the pool circulation system (pump and filter) is operational.

The power supply is provided with various safety devices, which are activated in case of irregular operation of the system, as well as a microprocessor driven control system.

The Chlorsalt Salt Electrolysis Systems have an automatic cleaning system that avoids scale formation on the electrodes. Moreover, C-XXPH Systems include a built-in pH controller.

3. SAFETY WARNINGS AND RECOMMENDATIONS: ___________________________________________________________________________

- The equipment should be assembled and handled by truly qualified people.
- Current electrical and accident prevention regulations should be followed.
- Under no circumstances will the manufacturer be held responsible for the assembly, installation or start-up, nor any handling or fitting of components unless they are carried out on its premises.
- The Chlorsalt Salt Electrolysis Systems operate at 230VAC, 50Hz. Do not attempt to alter the system to operate at a different voltage.
- Check that all the electrical connectors are well tightened to avoid false contacts and their consequent overheating.
- Before installing or replacing any component, disconnect the equipment from the mains, and use exclusively spare parts supplied by Certikin.
- Taking into account the fact that the equipment produces heat, it must be installed in places with sufficient ventilation. Fan openings should be kept free of any element that could obstruct them. The equipment should not be installed near flammable materials.
- The Chlorsalt Salt Electrolysis Systems have an IP24 protection degree. They should never be installed in places susceptible to flooding.

- 1 -
### POWER SUPPLY

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>MODEL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>C-10 / C-10PH</td>
</tr>
<tr>
<td>Standard working voltage</td>
<td>230 V AC, 50 Hz.</td>
</tr>
<tr>
<td>Output (dc)</td>
<td>12 A (2x 6A)</td>
</tr>
<tr>
<td>Production (g/h)</td>
<td>10 - 12</td>
</tr>
<tr>
<td>Flow detector</td>
<td></td>
</tr>
<tr>
<td>Salinity range / Temperature</td>
<td>4 - 6 g/l / +15 - 40°C (59°F - 104°F)</td>
</tr>
<tr>
<td>Electrodes</td>
<td>SELF-CLEANING coated Titanium</td>
</tr>
<tr>
<td>Estimated lifetime</td>
<td>4,000 - 7,000 hours of operation (depending on water quality)</td>
</tr>
<tr>
<td>Production control</td>
<td>0 - 100 % (6 production levels)</td>
</tr>
<tr>
<td>Cover control</td>
<td>Input for potential free contact</td>
</tr>
<tr>
<td>Polarity switch</td>
<td>Programmable 2'/3 hours (jumper in control board) + test mode</td>
</tr>
<tr>
<td>Voltage</td>
<td>Input for potential free contact enabled by jumper in control board</td>
</tr>
<tr>
<td></td>
<td>Logics: ON (closed contact) / OFF (open contact)</td>
</tr>
<tr>
<td>Salt level protection</td>
<td>Automatic protection of output current</td>
</tr>
</tbody>
</table>

(1) Factory defaults

### ELECTROLYSIS CELL

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>MODEL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>C-10 / C-10PH</td>
</tr>
<tr>
<td>Minimum recirculation flow</td>
<td>2 m³/h</td>
</tr>
<tr>
<td>Electrode number</td>
<td>5</td>
</tr>
<tr>
<td>Material</td>
<td>Methacrylate derivate</td>
</tr>
<tr>
<td>Pipe connections</td>
<td>Gluing with PVC adhesive Ø 63 mm</td>
</tr>
<tr>
<td>Max. Recommended pressure</td>
<td>1 Kg./cm²</td>
</tr>
<tr>
<td>Working temperature</td>
<td>Less than 40°C (104 °F)</td>
</tr>
</tbody>
</table>

### PH CONTROL

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>MODEL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>C-10 / C-10PH</td>
</tr>
<tr>
<td>Measure range</td>
<td>0.0 - 9.9 (pH)</td>
</tr>
<tr>
<td>Control range</td>
<td>7.0 - 7.8 (pH)</td>
</tr>
<tr>
<td>Precision</td>
<td>± 0.1 pH</td>
</tr>
<tr>
<td>Calibration</td>
<td>Automatic, with calibration solutions</td>
</tr>
<tr>
<td>Control output [pH]</td>
<td>One output 230 V / 500 mA for dosage pump connection</td>
</tr>
<tr>
<td>pH sensor</td>
<td>PPO body, 12x15 mm., blue, range 0 - 14 (pH), 0-80°C (32 - 176°F)</td>
</tr>
</tbody>
</table>
Fig. 1 Recommended installation diagram (Chlorsalt C-XX).
Fig. 2 Recommended installation diagram (Chlorsalt C-XXPH).
4. INSTALLATION: 

4.1. Installation of the power supply

Always install the POWER SUPPLY of the Chlorsalt system VERTICALLY on a solid and rigid surface (wall) as shown in the recommended installation diagram (Figs. 1,2). In order to guarantee a good state of conservation, the POWER SUPPLY should be installed in a well-ventilated dry place. Due to IP degree of the POWER SUPPLY the Chlorsalt system should not be installed outdoors. The POWER SUPPLY should be installed a bit distant from the electrolysis cell so that it cannot accidentally suffer water splashes.

Beware of corrosive atmosphere formation due to pH decreasing solutions (specially, those ones based on hydrochloric acid "HCl"). Do not install the Chlorsalt system near to any stores of these chemicals. We strongly recommend the use of chemicals based on sodium bisulphate or diluted sulphuric acid. Power supply must be connected to the electrical control box of the pool, so that the pump and the Chlorsalt System are turned on (and off) simultaneously.

4.2. Installation of the electrolysis cell

The electrolysis cell is made of a transparent polymer in whose interior the electrodes are placed. The electrolysis cell must be always installed indoors and after the pool filter, and after any other equipment that may be present (heat pumps, control systems, etc.).

The installation of the cell should allow easy access to the installed electrodes by the user. It is highly recommended to install the electrolysis cell VERTICALLY, in a place of the pipe that can be easily isolated from the rest of the installation by two valves, so that the tasks of maintenance can be carried out with no need of partial or total draining of the swimming pool.

Where the cell is installed on a by-pass (recommended option), a valve to regulate the flow must be introduced. Prior to installation, please consider the following commentaries:

---

Fig. 3

1. Flow direction marked in the cell must be respected. Recirculation system must guarantee the minimum flow stated in the Table of Technical Specifications for each model (see Section 9).

Fig. 4

2. The system flow detector activates if there is not recirculation (flow) of water through the cell or if flow is very low. If electrolysis gases are not properly removed through the electrolysis cell, the generated gas bubble electrically isolates the auxiliary electrode (electronic detection). Therefore, when locating the electrodes in the cell, the level sensor (auxiliary electrode) will have to be located in the higher area of the cell. The safest orientation is shown in the recommended installation diagram.

Fig. 5

3. WARNING: if the in-out valves of the electrolysis cell are closed simultaneously, the flow detector (gas detector) will not work correctly, with the consequent risk of cell breakdown. Although this situation is extremely unusual, it can be easily avoided once the equipment has been installed, by locking at opened position the return valve to the swimming pool, so it cannot accidentally be manipulated.
Other configurations would only be acceptable in the case that they allow for detection of gas bubbles when water flow through the cell is too low.

4.3. **Installation of the pH sensor** (only in C-XXPH)

Install the pH electrode holders in the circuit through ½” saddles (not included with the equipment). Insert the electrodes into their corresponding holders. Next, tighten the holder until the electrode is properly fixed.

The electrodes must be installed in the holder so that it is guaranteed that the sensor located in their ends will always be submerged in the water circulating through the pipe.

Install always the electrodes vertically or with a maximum inclination of 40°.

4.4. **Electrical connection of the electrolysis cell**

Make the interconnection between the electrolysis cell and the power supply according to the following scheme. Due to relatively high current intensity circulating do not modify or cut either the length or section of the supplied cables without making a previous consultation to an authorized Certikin distributor. The cable connecting the electrolysis cell and the power supply must necessarily be of the maximum length recommended in this Manual: C-10 / C-10PH, 7.5 m.; C-18 / C-18PH, 4 m.; C-25 / C-25PH, 3 m.

---

![Recommended installation](image6)

![Allowed installation](image7)

![Not allowed installations](image8)

---

![Fig. 10](image10)

---

**Fig. 10**

---

![Production electrodes](image11)

---

**Fig. 11**
4.5. Controls and indicators

Chlorsalt electrolysis systems are equipped with a control panel in the front (Figs. 12, 13).

Fig. 12. C-XX models control panel

Fig. 13. C-XXPH models control panel

1. Key "\(\downarrow\)" (decrease production)
2. SELF-CLEANING indicators (DIRECT/REVERSE) polarity
3. Indicator of SALINITY ALARM (low/high)
4. Production scale (%)
5. Key "\(\uparrow\)" (increase production)
6. Indicator of FLOW ALARM
7. INFORMATION display (water pH indication / pH setpoint)
8. Key of pH setpoint programming and visualization
9. Key for pH CALIBRATION MODE
10. Indicator of HIGH PH ALARM (> 8.5)
11. Indicator of LOW PH ALARM (<6.5)
4.6  Programming and control

Besides the basic operations, the Chlorsalt Salt Electrolysis System has an input for an external control by means of an ORP controller, residual chlorine, etc.; as well as one for the adjustment of the production of the equipment on activation of the automatic swimming pool cover. Moreover, it permits the configuration of three electrode SELF-CLEANING modes: TEST, 2/2, 3/3 hours.

- **ELECTRODE SELF-CLEANING System**: the LEDs [2] indicate electrode polarisation status (direct/reverse). The reversal frequency can be selected by means of jumper "JP3" on the system control panel (Fig. 14). This configuration will become effective by disconnecting and connecting again the equipment.

- **AUTOMATIC COVER control**: the system has an input for a potential-free contact. When the contact connected to this input is closed (automatic cover closed), the electrolysis system reduces its production to 10% of its rated value (the "20%" led of the production scale will stay on).

- **EXTERNAL Control**: the system has an additional auxiliary input for a potential-free contact. This input can be used to make the electrolysis system interact with an external controller (ORP, RESIDUAL CHLORINE, PHOTOMETER, etc.). When the contact connected to this input is OPEN, the electrolysis system is stopped. To activate this input, place jumper "JP2" located on the unit's control panel. This configuration will become effective by disconnecting and connecting again the equipment.

![Fig. 14](image-url)
4.7. **Cover detaching**
1. Remove the embellisher (A) situated in the cover.
2. Unscrew the cover fixation screw (B).
3. Remove the cover by sliding it upwards and outwards.

4.8. **Start-up**

Check that the filter is 100% clean, and ensure that the swimming pool and the installation do not contain copper, iron or algae. Ensure that any heating equipment on the pool is suitable for use in salt water.

2. Ensure that the swimming pool water is balanced. Balanced water enables the chlorine that is produced to be used more efficiently and effectively, and ensures that the life of the electrodes is prolonged. Water should be maintained within the parameters shown below:
   
   a) pH must be in the range 7.2-7.6
   b) Total alkalinity must be in the range 80-120 ppm

3. Although the ChlorSalt system can work at a salinity range of 4-6 g/l, try to maintain the recommended minimum salt level of 5 g/l, by adding 5 kg per m$^3$ of water if the water does not already contain salt. Always use common salt (sodium chloride), without additives like iodides, that is “apt for human consumption”. Never add the salt through the cell. Add it directly to the swimming pool or into the balance tank.

4. When adding the salt, and in case the swimming pool is going to be used immediately, carry out a treatment with chlorine. An initial dose of 2 g/m$^3$ of trichloroisocyanuric acid may be added.

5. Prior to starting up the salt chlorinator, disconnect the power supply to the salt chlorinator and run the pump for 24 hours to ensure that the salt is completely dissolved.

6. Next, reconnect the power supply and turn on the salt chlorinator, locating the production level so that free chlorine concentration stays within the recommended range (0.5 - 1.5 ppm).

**NOTE:** in order to establish the free chlorine level you will need to use a test kit.

7. In outdoor swimming pools it is advisable to maintain a level of 25-30 g/m$^3$ of chlorine stabiliser (cyanuric acid) in the pool. A level of 75 ppm should be never exceeded. This will help to stop the chlorine that is in the water from being destroyed by the sun.
5. OPERATION:

5.1. System on stand-by
The system goes into "STAND-BY" when the "▼" [1] key is pressed until the "0%" light blinks. When this occurs, there is no production in the electrolysis cell.

5.2. Production level selection
To select the desired production level, press the "▼" [1] / "▲" [5] keys until the production level light blinks. The system will set its production to the desired level after a few seconds.

5.3. TEST Mode
To enter TEST MODE, reduce the production level to "0%" by pressing the key "▼" [1] in a row (Fig. 15)
Once the system has stopped, hold down this key for 10 seconds. The system will indicate that it has entered TEST MODE and all the leds will light up for one second. When the system is in TEST MODE, the polarity leds "self cleaning" [2] blink.

When the system enters TEST MODE, the system resets the polarity change timer and the level of production selected. In this mode, the system is totally operational, and the electrode polarity reversal will be performed every 2 minutes. To quit TEST MODE, the system must be switched off from the 230 V mains.
5.4. **Integrated pH controller (C-XXPH)**

The integrated pH controller is supplied with a default factory calibration and programmed with the following parameters:

\[ \text{pH SETPOINT} = 7.2 \]

**IMPORTANT:** In order to have a correct regulation of the pH value, the Total Alkalinity of the pool water must be maintained in the range 60-120 ppm CaCO₃. Use a pool water test kit to check the Total Alkalinity and adjust manually if necessary.

5.4.1. **CONNECTION OF THE pH SENSOR**

Connect the pH sensor provided with the unit to the corresponding BNC connector located in the unit’s base (Fig. 18).

5.4.2. **CONNECTION OF THE DOSAGE PUMP**

The Chlorsalt systems (C-XXPH) have a connector on their base for connecting a dosage pump to control the pH of the water in the pool. The dosage pump can be connected through the CEE22 connector supplied for that purpose with the equipment (Fig. 18).

![Diagram](image)

**Fig. 18**

5.4.3. **PH SETPOINT PROGRAMMING**

Keep the *SET* [8] key pressed until the screen [7] the desired pH value within the 7.0 - 7.8 range. Release after selection.

![Diagram](image)

**Fig. 19**

The pH setpoint could be visualized at any time by pressing once the *SET* [8] key.
5.5. Alarms

- **HIGH SALT LEVEL**
  
  If too much salt has been added, the power supply will reduce the level of power with regard to that which was selected automatically. The "salt" [3] led will stay on. In this case, empty part of the swimming pool (for example 10%), and add fresh water to reduce the salt concentration. To know the exact level of salt, we recommend the use of a portable salinity-temperature meter.

- **LOW SALT LEVEL**
  
  If the level of salt in the swimming pools water were below the recommended level, the power supply may not reach the level of output selected. The "salt" [3] will blink. In this case determine the salt level of the water and add the necessary amount of salt. The type of common salt (NaCl) indicated for salt electrolysis should have no additives (anti-clogging agents, iodides) and should be suitable for human consumption. To know the exact level of salt we recommend the use of a portable salinity-temperature meter.

- **WATER LEVEL IN CELL/FLOW DETECTOR (GAS)**
  
  If an air or gas bubble forms at any time at the top of the electrolysis cell and the FLOW DETECTOR is not submerged, the system will automatically switch off production and the "flow" [6] led will blink. System automatically resets when water flows through the cell again or the bubble disappears.

- **PH OUT OF RANGE**
  
  The integrated pH control system has two ALARM lights which come on whenever a pH value of less than 6.5 "low" [11] or more than 8.5 "high" [10] is detected. When the regulator detects an active pH alarm, it opens the control output of the dosage pump (pH).

- **EXTERNAL CONTROL**
  
  When the external controller detects a value over the fixed setpoint, it switches off production automatically and the "0%" led of the production scale [4] flashes.
6. MAINTENANCE:

6.1. Maintenance of the electrolysis cell

The electrolysis cell must be kept in suitable conditions to ensure a long lifetime. This salt chlorination unit has an automatic electrode cleaning system that helps to prevent scale build-up on the electrode surface. If the salt chlorination system is operated in accordance with these instructions, and in particular if the pool water balance is kept within the recommended parameters, it should not be necessary to manually clean the electrodes. However, if the pool water and the salt chlorination system are not maintained in line with these instructions then it may be necessary to manually clean the electrodes following the procedure outlined below:

1. Cut off the 230 Vac unit’s supply.
2. Unscrew the closing nut located at the end where the electrodes are located, and remove the electrode package.
3. Use diluted hydrochloric acid (a part of commercial acid in 10 parts of water), submerging the electrode package in the prepared solution for no more than 10 minutes.
4. NEVER SCRAPE OR SWEEP THE CELL OR THE ELECTRODES.

The electrodes of a salt chlorination system comprise of a titanium sheet coated with a layer of noble metal oxides. The electrolysis processes that take place on their surface produce a progressive wearing down – the electrodes do have a finite life. In order to optimise electrode lifetime, please consider the following aspects:

1. Although all Chlorsalt salt electrolysis units are SELF-CLEANING, a prolonged operation of the system at pH values over 7.6 in waters of high hardness can produce scale formation on the surface of the electrodes. Scaling on the electrodes surface will progressively deteriorate the coating, causing a decrease of lifetime.
2. Manually cleaning/washing the electrodes (as described above) will shorten their life.
3. Prolonged operation of the system at salinities lower than 3 g/l (3000 ppm) will cause a premature deterioration of the electrodes.
4. Frequent use of copper based algicides will promote the formation of copper deposits on the electrodes, progressively damaging the coating. Remember that chlorine is the best algicide.

6.2. Calibration of the pH sensor

The integrated pH-controller has two calibration modes of the pH-electrode: “FAST” and “STANDARD”. We recommend carrying out it at least once a month during the period of use of the swimming pool.

6.2.1. “FAST” MODE

“FAST” MODE allows the calibration of the pH-electrode when there are small reading deviations with no need to extract the sensor from the installation or to use calibration solutions.

PROCEDURE:

1. Be sure the point of insertion of the pH-sensor is flooded, and the pump is in recirculation.
2. Using a pH-test kit, measure the water pH of the swimming pool.
3. Press the “CAL” [9] approx. 5 seconds until the equipment beeps and release the key. The pH [7], screen will blink “7.0”.
4. Keep the “SET” [8] key pressed until the pH-value previously measured in the water with the pH-test kit appears. Once reached, loosen and press “CAL” [9] key. If no error has been detected, the system will have been calibrated.

Fig. 22
6.2.2. **STANDARD** MODE

“STANDARD” MODE allows the precise calibration of the pH-sensor using two calibration solutions of pH 7.0 and 4.0, however this method requires that the pH-sensor is removed from the installation.

**PROCEDURE:**

**IMPORTANT:** before closing the by-pass valves, stop the system from control panel (see Section 5.1).

1. Extract the pH-sensor from the holder and wash it with tap water.


3. Gently shake the sensor to remove any possible drops of water and insert in the standard pH=7.0 solution (green). Gently shake for a few seconds and press “CAL” [9]. Once stabilised, the screen [7] will display a blinking “4.0”.

4. Remove the sensor from the calibration solution and rinse it with tap water.

Shake the sensor smoothly so that any drops of water that may be adhered to the plastic body are removed and introduce it in the calibration solution pH=4.0 (red colour). Shake smoothly for a few seconds and press “CAL” [9] key. Once the measurement has stabilised, the pH-controller will automatically leave the calibration mode and will be operative.
If the calibration process is interrupted for whatever reason, the pH-controller will automatically leave the calibration mode if the intervention of the user is not detected in a few seconds. In this case, "E1" indication in the display [7] will appear.

If the pH value during the calibration process is very different from the expected one, (e.g., defective sensor, etc.), display [7] will indicate "E2", not allowing calibration.

If the pH measure is unstable during the calibration process, code "E3" will appear in display [7]. In addition, the pH-sensor calibration will not be allowed.

### pH electrode maintenance

- Ensure that the electrode membrane remains moist all the time.
- If the electrode is not going to be used for a long period, keep it submerged in a pH=4.0 conservation solution.
- To clean the electrode, avoid the use of abrasive materials that can scratch the sensor surface.
- The pH electrode is a consumable part and will need to be replaced over a period of time.
7. PROBLEMS / SOLUTIONS:

Any action required to solve possible problems in the equipment should always be performed with the equipment disconnected from the mains. Any problem not indicated in the following list should be solved by an Certikin technician.

<table>
<thead>
<tr>
<th>PROBLEM</th>
<th>SOLUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production indicator always indicates &quot;0&quot; at all production levels</td>
<td>Check the electrodes. &lt;br&gt;Verify connections between power supply and the electrolysis cell. &lt;br&gt;Check salt concentration.</td>
</tr>
<tr>
<td>It is not possible to turn on the power supply.</td>
<td>Check that the system is properly connected to 230 V/50-60 Hz in the control box of the pump. &lt;br&gt;Check the estate of the fuse located at the bottom of the power supply.</td>
</tr>
<tr>
<td>Free chlorine levels in the water are very low.</td>
<td>Check that the system produces chlorine in pool jets. &lt;br&gt;Verify that the water Chemicals parameters (pH, combined chlorine, isocyanuric acid, etc.) are correct. &lt;br&gt;Increase filtering time. &lt;br&gt;Add chlorine stabilizer (cyanuric acid) until a concentration of 25 - 30 g/m³ is achieved.</td>
</tr>
<tr>
<td>pH controller always shows high values or readings are unstable.</td>
<td>The cable of the pH sensor is damaged. Clean the contacts or replace the cable. &lt;br&gt;The pH sensor has an air bubble in the membrane area. Hold the sensor in vertical position. Shake it lightly until the bubble moves up. &lt;br&gt;pH sensor fault. The connection cable is too long or it is too near to sources of electrical interference (motors, etc.). Replace the sensor. Locate the unit nearer to the sensor.</td>
</tr>
<tr>
<td>Impossible calibration of the pH sensor</td>
<td>Polluted or expired calibration solution. &lt;br&gt;Blocked sensor membrane. Check that the membrane is not damaged. Clean the sensor with diluted acid in water, shaking it lightly. &lt;br&gt;Sensor fault. Replace the sensor.</td>
</tr>
<tr>
<td>Slow response of the pH sensor</td>
<td>Sensor electrostatically charged. During the calibration phase, the sensors should not be dried with paper or cloth. Clean it exclusively with water and shake it lightly. &lt;br&gt;Insufficient renovation of the analyzed water (no flow through the sample point). Ensure that the tip of the sensor is submerged in the water at the sample point, and that no air bubbles are present.</td>
</tr>
</tbody>
</table>
8. COMPONENTS

### POWER SUPPLY

<table>
<thead>
<tr>
<th>ID</th>
<th>CODE</th>
<th>DESCRIPTION</th>
<th>C-10</th>
<th>C-18</th>
<th>C-25</th>
<th>C-10PH</th>
<th>C-18PH</th>
<th>C-25PH</th>
<th>NUMB</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>CK00-013</td>
<td>Power supply cover</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>CK10-003</td>
<td>Power card AC-12</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>CK18-003</td>
<td>Power card AC-22</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>CK25-003</td>
<td>Power card AC-30</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>CK00-014</td>
<td>Wall fixation</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>CK00-003</td>
<td>Cable gland M20</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>CK00-004</td>
<td>CEE22 F connector external pH pump</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>CK00-005</td>
<td>Electrolysis display card</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>CK00-015</td>
<td>Electrolysis+pH display card</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>1</td>
</tr>
<tr>
<td>7</td>
<td>CK10-002</td>
<td>Power transformer 190 VA</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>7</td>
<td>CK18-002</td>
<td>Power transformer 370 VA</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>7</td>
<td>CK25-003</td>
<td>Power transformer 480 VA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>CK00-007</td>
<td>External heat sink</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>1</td>
</tr>
<tr>
<td>9</td>
<td>CK00-016</td>
<td>Internal controllers structure</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>1</td>
</tr>
<tr>
<td>10</td>
<td>CK00-009</td>
<td>Fuse holder</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>1</td>
</tr>
<tr>
<td>11</td>
<td>CK00-010</td>
<td>Internal BNC cable</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>12</td>
<td>CK00-011</td>
<td>CEE22 M connector external pH pump</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>1</td>
</tr>
<tr>
<td>13</td>
<td>CK00-018</td>
<td>Power supply cover fixation screw</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>1</td>
</tr>
<tr>
<td>14</td>
<td>CK00-019</td>
<td>Fixation screw embellisher</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>1</td>
</tr>
<tr>
<td>15</td>
<td>CK00-020</td>
<td>Power card-display card connection cable</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>1</td>
</tr>
</tbody>
</table>
9. TECHNICAL CHARACTERISTICS:

TECHNICAL SPECIFICATIONS:

<table>
<thead>
<tr>
<th>ID</th>
<th>CODE</th>
<th>DESCRIPTION</th>
<th>C-10</th>
<th>C-18</th>
<th>C-25</th>
<th>C-10PH</th>
<th>C-18PH</th>
<th>C-25PH</th>
<th>NUMB</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>R-015-04</td>
<td>Electrodes M8 Nylon nut</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>R-015-02</td>
<td>1 mm thickness PP M8 washer</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>R-015-03</td>
<td>Electrodes PP divider</td>
<td>8</td>
<td>12</td>
<td>12</td>
<td>8</td>
<td>12</td>
<td>12</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>R-015-01</td>
<td>Electrode-holder PP M8 screw</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>2</td>
</tr>
<tr>
<td>5</td>
<td>R-015-07</td>
<td>Contact protection cover</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>R-010</td>
<td>Cell</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>1</td>
</tr>
<tr>
<td>7</td>
<td>R-015-51</td>
<td>Chlorsalt electrode-holder</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>R-015-06</td>
<td>Cell threaded ring</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>1</td>
</tr>
<tr>
<td>9</td>
<td>R-015-08</td>
<td>Cell joint</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>1</td>
</tr>
<tr>
<td>10</td>
<td>R-131</td>
<td>Chlorsalt C-10/C-10PH electrodes</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>1</td>
</tr>
<tr>
<td>10</td>
<td>R-132</td>
<td>Chlorsalt C-18/C-18PH electrodes</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>1</td>
</tr>
<tr>
<td>10</td>
<td>R-133</td>
<td>Chlorsalt C-25/C-25PH electrodes</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>1</td>
</tr>
</tbody>
</table>

General Features:

- System control:
  - Microprocessor.
  - Membrane keypad with control keys and operation indication leds.
  - Control I/O: 2 inputs (potential-free contact type) for monitoring the automatic cover and external controller (ORP, RESIDUAL CHLORINE, etc.).
  - Cell output: production control (6 discrete levels).
  - Salinity range / Temperature: 4 - 6 g/l. / +15 – 40°C (59°F - 104°F).
  - Integrated pH controller (only DOM-XXPH)

- Self-cleaning:
  - Automatic polarity switch

- Working temperature:
  - From 0°C (32°F) to +40°C (104°F).
  - Cooling: natural convection

- Material:
  - Power supply: ABS
  - Electrolysis cell: Transparent methacrylate

- pH sensor (C-XXPH):
  - Body: plastic (blue protector)
  - Range 9 - 12 pH
  - Solid electrolyte
10. WARRANT CONDITIONS:

10.1. GENERAL ASPECTS

10.1.1. According to these provisions, the seller guarantees that the guaranteed product is in perfect condition upon delivery.

10.1.2. The Total Warranty period is 2 YEARS.

10.1.3. The Warranty period will be calculated as of delivery to the purchaser. The electrode is covered by a 2-YEAR WARRANTY (or 5,000 hours), which is not extendable. The pH sensor is covered by a 6-MONTH non-renewable warranty.

10.1.4. Should the Product be faulty and the seller is notified during the Guarantee Period, he shall repair or replace the Product at his own cost wherever he sees fit, unless this is either impossible or out of proportion.

10.1.5. When the Product cannot be repaired or replaced, the buyer may request a proportional price reduction or, if the fault is important enough, rescission of the sales contract.

10.1.6. Parts replaced or repaired pursuant to this warranty shall not extend the warranty period of the original Product, although they shall have their own warranty.

10.1.7. For this warranty to be effective, the buyer shall accredit the date of acquisition and delivery of the Product.

10.1.8. When the buyer alleges a fault in the product over six months after its delivery, he shall accredit the original and existence of the alleged fault.

10.1.9. This Warranty Certificate does not limit or prejudice consumer rights pursuant to national legislation.

10.2. SPECIFIC CONDITIONS

10.2.1. For this warranty to be effective, the buyer must closely follow the manufacturer’s instructions included in the documentation supplied with the product, as applicable to each product range and model.

10.2.2. Whenever a schedule is defined for the replacement, maintenance or cleaning of certain product parts or components, the warranty shall only be valid when said schedule has been correctly followed.

10.3. LIMITATIONS

10.3.1. This warranty shall only be applicable to sales to consumers, with consumer being defined as a person who purchases the product for other than professional purposes.

10.3.2. No warranty is applicable to normal wear or the product, parts, components and/or fungible or consumable materials (except the electrode).

10.3.3. The warranty does not cover cases in which the product: (i) has been incorrectly treated; (ii) has been inspected, repaired, maintained or handled by an unauthorised person; (iii) has been repaired or maintained with non-original parts, or (iv) has been incorrectly installed or started up.

10.3.4. When a faulty product results from incorrect installation or start-up, this warranty shall only be applicable when the installation or start-up forms part of the product contract of sale and had been performed by the seller or under the seller’s responsibility.

10.3.5. Damage or faults due to any of the following causes:

- Operation at salinity values of less than 3 g of sodium chloride per liter and/or temperatures lower than 15°C (59°F) or higher than 40°C (104°F).
- Operation at a pH of more than 7.6.
- Use of explicitly unauthorised chemicals.
- Exposure to corrosive environments and/or temperatures of less than 0°C (32°F) or more than 50°C (125°F).
DECLARATION EC OF CONFORMITY

The products listed above are in compliance with:
Low Voltage Directive 73/23/EEC.
Electromagnetic Compatibility Directive 89/336/EEC.
European Standard EN 61558-1:1999 and all its modifications.

DECLARATION CE DE CONFORMITÉ

Les produits énumérés ci-dessus sont conformes à:
La Directive des Appareils à Basse Tension 73/23/CEE.
La Directive de Compatibilité Électromagnétique 89/336/EEC.
La Réglementation Européenne EN 61558-1:1999 dans toutes ses modifications.

DECLARACION CE DE CONFORMIDAD

Los productos arriba enumerados se hallan conformes con:
Directiva de Equipos de Baja Tensión 73/23/CEE.
Directiva de Compatibilidad Electromagnética 89/336/EEC.
Norma Europea EN 61558-1:1999 en todas sus modificaciones.

DICHIARAZIONE CE DI CONFORMITÀ

I prodotti di cui sopra adempiono alle seguenti direttive:
Direttiva per gli Apparecchi a Bassa Tensione 73/23/CEE.
Direttiva di Compatibilità elettromagnetica 89/336/EEC.
Normativa Europea EN 61558-1:1999 en tutte le sue modifiche.

KONFORMITÄTSERKLÄRUNG CE

Die oben aufgeführten Produkte sind konform mit:
Richtlinie für Niederspannungsanlagen 73/23/CEE.
Richtlinie zur elektromagnetischen Kompatibilität 89/336/EEC.
Europäische Norm EN 61558-1:1999 mit allen Änderungen.

DECLARAÇÃO CE DE CONFORMIDADE

Os produtos relacionados acima estão conformes as:
Directiva de Equipamentos de Baixa Tenção 73/23/CEE.
Directiva de Compatibilidade Electromagnética 89/336/EEC.
Norma Europeia EN 61558-1:1999 e respectivas modificações.

Signature / Qualification:
Firma / Cargo:
Unterschrift / Qualifizierung:
Assinatura / Título:

I.D. ELECTROQUIMICA, S.L.
Pol. Ind. Atalayas, Dracma R-19
E-03114 ALICANTE, Spain.

Gaspar Sánchez Cano
Gerente

01-04-2009