



OPERATION MANUAL

EcoloxTech 300 System



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CAUTION The recipient/user must acknowledge all risks inherent in the use of the E300 system and have knowledge of its proper usage and maintenance.

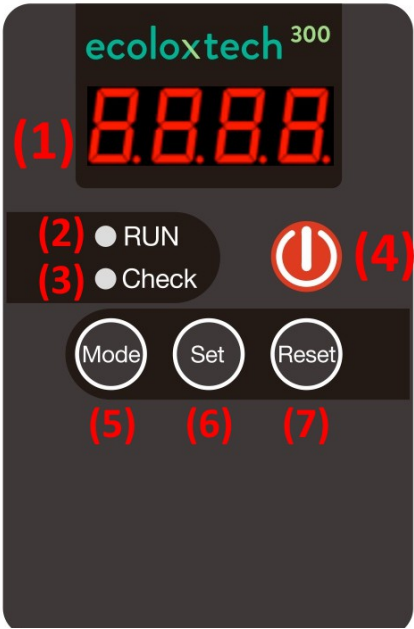
Specifications & Requirements

Specifications	
Model Name	EcoloxTech E300 System
Installation Type	Wall mount and desktop type
Dimensions	32 x 17 x 42 cm (12.5 x 6.5 x 16.5 in)
Weight	11.8 kg (26 lbs.)
Material	316 stainless steel (SUS)
Product Water	Hypochlorous acid (HOCl)
Concentration Range	20 to 225 ppm of free available chlorine (FAC)
Power	AC 100/240V 50/60Hz, 180W / 2A
Ampere Settings	13 to 22 amp
Pump Speed Settings	0 to 19 (max. speed to min. speed)
Production Cell Type	Single cell electrolyzer

Requirements	
Ambient Temperature	5 to 50 °C (41 to 122 °F)
Feed Water & Brine Temperature	10 to 30 °C (50 to 86 °F)
Feed Water & Brine Water Quality	Hardness < 80 ppm / 4.5 dH (higher will damage the electrolysis cells)
Humidity	Less than 96% relative humidity (RH)
Minimum Flow Rate	1 L/min
Maximum Water Pressure	50 PSI (3.4 bar)

CAUTION This product must be operated or managed by a designated responsible person who has received professional technical training on the proper use and handling procedures of this system.

Buttons and Display



No.	Description
1	LED display
2	System is running
3	Check error code in LED display
4	System RUN On / Off
5	Mode button (see uses below)
6	Set button (see uses below)
7	Reset alarm to resume running

Operating Modes

Mode	Description
Standard Mode	The standard mode is the default and should be used unless the system is connected to a holding tank with float sensors (Dual Float Switch, SKU: P-5900). Setting to standard mode: - Press and hold "Set" button for 3 seconds and release. - Press "Reset" button once. - Press and hold "Mode" button for 3 seconds and release.
Level Mode	This mode must be used when the system is connected to a holding tank using float sensors. The system will automatically power on and off according to the set height of the float switches. Setting to level mode: - Press and hold "Set" button for 3 seconds and release. - Press "Set" button once. - Press and hold "Mode" button for 3 seconds and release.

Settings & Performance

Setting	Description
Flow Rate measured in liters per minute (L) 	The flow rate can be controlled by tightening or loosening the inflow water valve. A higher flow rate will decrease the concentration of free available chlorine (FAC) and a lower flow rate will increase the concentration of FAC. Displaying the flow rate: 1. Press and hold "Set" button for 3 seconds and release. LED display will begin to blink. 2. Press "Mode" button until liters per minute (L) setting is displayed.
Voltage (V)	The voltage is a performance measurement and is not adjustable. Displaying the voltage: 1. Press and hold "Set" button for 3 seconds and release. LED display will begin to blink. 2. Press "Mode" button until voltage (V) setting is displayed.
Ampere (A) Max. ampere: 22 Min. ampere: 13	The ampere is an adjustable setting. The range is from 13 to 22 ampere. Higher settings will increase the concentration of free available chlorine (FAC). Adjusting the ampere: 1. Press and hold "Set" button for 3 seconds and release. LED display will begin to blink. 2. Press "Mode" button until ampere (A) setting is displayed. 3. Press "Set" button to increase the ampere. Press "Reset" button to decrease the ampere. 4. Press and hold "Mode" button for 3 seconds and release to complete.
Pump Speed (PS) Max. speed: 0 Min. speed: 19	The pump speed is an adjustable setting. The range is from 0 to 19. Lower settings will increase the pump speed and thus increase the additive dosed into the electrolysis cell. For most purposes, the pump speed should be kept in mid-range. Adjusting the pump speed: 1. Press and hold "Set" button for 3 seconds and release. LED display will begin to blink. 2. Press "Mode" button until pump speed (PS) setting is displayed. 3. Press "Set" button to increase the pump speed. Press "Reset" button to decrease the pump speed. 4. Press and hold "Mode" button for 3 seconds and release to complete.

System Alarms

Error Code	Reason	Action
Err 1	Low Flow	Check the flow of the feed water into the equipment. Once corrective action has been taken to sustain the water flow above 1 L/min, press the "Reset" button to cancel the alarm. If unresolved, contact the service center.
Err 2	Low Current	Disconnect additive tank and refill with a new brine. Re-attach the tank once completely dissolved. Press the "Reset" button to cancel the alarm. If unresolved, contact the service center.
Err 3	High Current	Disconnect additive tank and refill with a new brine. Re-attach the tank once completely dissolved. Press the "Reset" button to cancel the alarm. If unresolved, contact the service center.
Err 4	Low Voltage	The voltage is abnormally low. Please contact the service center for further assistance.
Err 5	Fan Error	The cooling fan is not functioning. Please contact the service center for further assistance.

Safety Precautions

Risk	Precautions
Ventilation Risks	Electrolyzed water contains small quantities of hydrogen (H₂) that is released from the solution into the air. Hydrogen, if accumulated, can be explosive. Electrolyzed water contains free chlorine molecules. Free chlorine molecules have the potential to form chlorine gas (Cl₂) when the pH of the solution becomes acidic (below pH 4). Chlorine gas, if inhaled, can cause respiratory irritation or injury and is a health risk. • Equipment must be installed in a ventilated area to avoid the accumulation of gases. • Do not install equipment near heat sources over 400 °C (750 °F).
Electric Shock and Fire Risks	• Only use certified outlets. A GFCI outlet is recommended. • Do not place the equipment in water or allow the equipment to be exposed to external sources of water. • Do not operate equipment if the electric cord is damaged. • Do not operate equipment in environments of relative humidity greater than 95%. • In the event of an electric shock or fire, equipment must be removed from the power source immediately.

Additive Formulas

Formula	HOCl Solution	Formula Instructions
1	Using Formula 1 the system will generate a free chlorine solution in which over 25% of the chlorine molecules will be hypochlorous acid (HOCl). pH 7 – 8 GOOD	Formulation • 28% food grade salt (NaCl) • 72% water (tap water, reverse osmosis or distilled) When preparing a 2-liter additive tank: 1. Add 550 g (about 2 cups) of salt.* 2. Fill the remainder with water (1400 mL). 3. Shake until the salt is fully dissolved. * No iodine or other additives (i.e. kosher salt).
2	Using Formula 2 the system will generate a free chlorine solution in which over 70% of the chlorine molecules will be hypochlorous acid (HOCl). pH 6 – 7 BETTER	Formulation • 28% food grade salt (NaCl) • 72% food grade 5% white distilled vinegar When preparing a 2-liter additive tank: 1. Add 550 g (about 2 cups) of salt.* 2. Fill the remainder with 5% distilled vinegar (1400 mL). 3. Shake until the salt is fully dissolved. * No iodine or other additives (i.e. kosher salt).
3	Using Formula 3 the system will generate a free chlorine solution in which over 95% of the chlorine molecules will be hypochlorous acid (HOCl). pH 4.5 – 6 BEST	ATTENTION: Proper personal protective equipment is required when preparing additive with hydrochloric acid (HCl). Formulation • 72% water (tap water, reverse osmosis or distilled) • 19% food grade salt (NaCl) • 9% hydrochloric acid (HCl) When preparing a 2-liter additive tank: 1. Add 380 g of salt.* 2. Add 1440 mL of water. 3. Shake until the salt is fully dissolved. 4. Add 180 mL of hydrochloric acid (HCl).** * No iodine or other additives (i.e. kosher salt). Use technical grade HCl (32%) for general sanitation. For food contact, must use FCC grade HCl (30–37%).

Changing the Additive

Replenish the additive tank when it runs low. If the additive runs out, the system will stop and display Err 2.

1. Power off the system.
2. Open the tank storage front door – lift it up first, then open it.
3. Remove the suction line and cap from the additive tank.
4. Add manufactured additive into the tank.
5. Replace the cap and the suction line.
6. Power on the system and press the “Reset” button.



Scan to watch the brine change video

Point a phone camera at the code, or go to youtu.be/zxwt-ktji74

Controlling Concentration

The settings below are recommendations for reaching approximate concentrations of free available chlorine (FAC) in solution, measured in parts per million (ppm). Three variables can be adjusted to change the concentration.

1. Flow rate (L/min) – controlled by the blue valve allowing feed water to flow into the system.
2. Ampere (A) – controlled by system settings.
3. Pump speed (PS) – controlled by system settings.

Using Additive Formula 1

Water and food grade salt

Flow Rate	17 A	22 A
1 L/min	120 ppm	180 ppm
2 L/min	96 ppm	140 ppm
3 L/min	85 ppm	100 ppm
4 L/min	74 ppm	80 ppm
5 L/min	52 ppm	65 ppm
6 L/min	39 ppm	50 ppm

Using Additive Formula 2

Distilled white vinegar and food grade salt

Flow Rate	17 A	22 A
1 L/min	124 ppm	194 ppm
2 L/min	108 ppm	154 ppm
3 L/min	94 ppm	127 ppm
4 L/min	86 ppm	102 ppm
5 L/min	71 ppm	91 ppm
6 L/min	58 ppm	69 ppm

Using Additive Formula 3

Water, food grade salt and HCl

Flow Rate	17 A	22 A
1 L/min	220 ppm	278 ppm
2 L/min	198 ppm	243 ppm
3 L/min	143 ppm	202 ppm
4 L/min	121 ppm	184 ppm
5 L/min	89 ppm	137 ppm
6 L/min	71 ppm	108 ppm

ppm can vary depending on the quality of the water, the salt and the temperature of the water.

Measuring Concentration

The concentration of free available chlorine (FAC) can be measured with standard chlorine test paper. The range and sensitivity measurable are 10, 50, 100 and 200 ppm.

For greater accuracy, or to measure high range free available chlorine levels, the chlorine concentration can be measured with a high range chlorine photometer.

Supplies for measuring free chlorine concentration can be found at ecoloxtech.com/shop – search for the SKU listed below.

Chlorine Test Paper

SKU: P-1050

Chlorine Photometer

SKU: P-1047

Routine Maintenance

Over time and depending on use, mineral scale can build up on the electrolysis cells. Mineral scale build-up depends on the quality of the inflow water. If the hardness of the feed water is less than 80 ppm, scale will build up very slowly and the system may not require maintenance for many years.

Using the incorrect salt can cause mineral scale to build up very quickly. If mineral scale does build up, the electrical current required to generate a free chlorine solution of hypochlorous acid will be disrupted.

When to carry out maintenance

When the actual ampere of the system drops to a level below 90% of the set ampere, the system's electrolysis cells should be descaled of mineral deposits.

How to carry out maintenance

Run the system using additive Formula 3 with hydrochloric acid (HCl). The HCl will descale the mineral deposits from the electrolysis cells. Run the system until the actual ampere returns to the set ampere. This could take 30 minutes or several hours depending on the amount of scale.

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