

EcoloxTech

OPERATION MANUAL

EcoloxTech 240 System



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Specifications

Model	EcoloxTech 240
Power	AC100/220V 50/60HZ 180W
Dimensions	32 x 17 x 42 cm (12.5 x 6.5 x 16.5 inches)
Weight	11.8 kg (26 lbs.)
Production Cell	Single cell without a membrane
Concentration Range	Up to 150 ppm (measured in free available chlorine)
Ampere Settings	13 to 22 amp
Pump Speed Settings	0 to 19 (high to low)

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 (higher will damage the electrolysis cells)
Humidity	Less than 96% Relative Humidity (RH)
Minimum Flow Rate	3 L/min
Maximum Water Pressure	40 PSI

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

Operational Modes

<p>Standard Mode</p> 	<p>The standard mode must be used when no storage tank has been installed for storing electrolyzed water.</p> <p>Setting to standard mode:</p> <ol style="list-style-type: none"> 1. Press and hold "Set" button for 3 seconds and release 2. Press "Reset" button once 3. Press and hold "Mode" button for 3 seconds and release
<p>Level Mode</p> 	<p>This mode must be used when connecting the system to a holding tank using a float sensor. The system will automatically stop running when the water level reaches a sufficient level to activate the float sensor.</p> <p>Setting to level mode:</p> <ol style="list-style-type: none"> 1. Press and hold "Set" button for 3 seconds and release 2. Press "Set" button once 3. Press and hold "Mode" button for 3 seconds and release

Settings & Performance

Flow Rate measured in
Liters per minute (L)



The flow rate can be controlled by tightening or loosening the feed water valve. A higher flow rate will decrease the ppm and a lower flow rate will increase the ppm.

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 generate a more concentrated solution of electrolyzed water which can be measured in free available chlorine (mg/L or ppm).

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.

<p>Pump Speed (PS) Max. speed: 0 Min. speed: 19</p>	<p>The pump speed is an adjustable setting. The range is from 0 to 19. Lower settings will increase the pump speed and therefore generate a more concentrated solution of electrolyzed water which can be measured in free available (mg/L or ppm).</p> <p>Adjusting the pump speed:</p> <ol style="list-style-type: none"> 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.
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System Alarms

Error Code	Reason	Action
Err1	Low Flow	Check the flow of the feed water into the equipment. Once corrective action has been taken to sustain the water flow above 3 L/min, press the "Reset" button to cancel the alarm. If unresolved, contact the service center.
Err2	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.
Err3	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.
Err4	Low Voltage	The voltage is abnormally low. Please contact the service center for further assistance.
Err5	Fan Error	The cooling fan is not functioning. Please contact the service center for further assistance.

Safety Precautions

<p>Ventilation Risks</p>	<p>Electrolyzed water contains small quantities of hydrogen gas (H₂), chlorine dioxide gas (ClO₂), and ozone gas (O₃) that is released from solution into the air. These gases, 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. 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)</p>
<p>Electric Shock and Fire Risks</p>	<p>Only use certified outlets. Do not place the equipment in water or allow the equipment to be exposed to external sources of water. Do not operate equipment if 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.</p>

Brine / Additive Formulas

Formula	Quality of Product	Formula
<p>1</p>	<p>Generates electrolyzed water at up to 100 ppm of free available chlorine of which over 25% is hypochlorous acid.</p>	<ul style="list-style-type: none"> • 28% Food Grade Salt (NaCl). • 72% Tap Water <p>When preparing 2 Liter additive tank:</p> <ol style="list-style-type: none"> 1. Add 550 g (≈2 cups) of table salt* 2. Fill remainder with water (1400 mL) 3. Shake until salt fully dissolved <p>*Salt must not contain iodine or other additives</p>
<p>2</p>	<p>Generates electrolyzed water at up to 90 ppm of free available chlorine of which over 70% is hypochlorous acid.</p>	<ul style="list-style-type: none"> • 28% Food Grade Salt (NaCl). • 72% Food Grade 5% White Distilled Vinegar <p>When preparing 2 Liter additive tank:</p> <ol style="list-style-type: none"> 1. Add 550 g (≈2 cups) of table salt* 2. Fill remainder with 5% white distilled vinegar (1400 mL) 3. Shake until salt fully dissolved <p>*Salt must not contain iodine or other additives</p>

3	Generates electrolyzed water at up to 150 ppm of free available chlorine of which over 90% is hypochlorous acid.	<p>ATTENTION: Proper personal protective gear required when preparing additive with hydrochloric acid (HCl).</p> <ul style="list-style-type: none"> • 72% Tap Water • 19% Food Grade Salt (NaCl). • 9% FCC Grade Hydrochloric Acid (35% - 37% HCl solution) <p>When preparing 2 Liter additive tank:</p> <ol style="list-style-type: none"> 1. Add 380 g of table salt* 2. Add 1440 mL of water 3. Shake until salt fully dissolved 4. Add 180 mL of hydrochloric acid <p>*Salt must not contain iodine or other additives</p>
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Changing Additive



Replenish additive tank if:

System displays Error 2 or the chlorine test strips do not turn purple in hypochlorous acid solution.

How to replenish the additive:

- Power Off system
- Remove suction line and cap from additive tank
- Add 2 cups of food grade table salt to additive tank
- Fill remainder of additive tank with tap water
- Replace cap and shake until dissolved
- Replace suction line
- Power On system and press “Reset” button

Calibration

The following settings are recommendations for obtaining approximate concentrations of free available chlorine (FAC) in solution. There are many variables that can alter these results, particularly the water quality.

There are 4 variables used below for adjusting the concentration of the solution.

1. Brine / Additive Formula – formula 1, formula 2, or formula 3
2. Flow Rate (L/min) - controlled by the feed water flowing into the equipment
3. Ampere (A) - controlled by system settings
4. Pump Speed (PS) - controlled by system settings

Additive Formula 1 (Water and Food Grade Salt)

Flow Rate 3.0 L/min

	17.5 A	22.0 A
0 PS	85 ppm	100 ppm
2 PS	82 ppm	96 ppm
4 PS	79 ppm	92 ppm
6 PS	76 ppm	88 ppm
8 PS	73 ppm	86 ppm
10 PS	70 ppm	82 ppm

Additive Formula 1 (Water and Food Grade Salt)

Flow Rate 4.0 L/min

	17.5 A	22.0 A
0 PS	64 ppm	80 ppm
2 PS	62 ppm	77 ppm
4 PS	60 ppm	74 ppm
6 PS	58 ppm	71 ppm
8 PS	56 ppm	68 ppm
10 PS	54 ppm	65 ppm

Additive Formula 1 (Water and Food Grade Salt)

Flow Rate 5.0 L/min

	17.5 A	22.0 A
0 PS	60 ppm	75 ppm
2 PS	57 ppm	71 ppm
4 PS	54 ppm	67 ppm
6 PS	51 ppm	63 ppm
8 PS	48 ppm	59 ppm
10 PS	45 ppm	55 ppm

Additive Formula 2 (Distilled White Vinegar and Food Grade Salt)

Flow Rate 3.0 L/min

	17.5 A	22.0 A
0 PS	75 ppm	90 ppm
2 PS	72 ppm	86 ppm
4 PS	69 ppm	82 ppm
6 PS	66 ppm	78 ppm
8 PS	63 ppm	76 ppm
10 PS	60 ppm	72 ppm

Additive Formula 2 (Distilled White Vinegar and Food Grade Salt)

Flow Rate 4.0 L/min

	17.5 A	22.0 A
0 PS	54 ppm	70 ppm
2 PS	52 ppm	67 ppm
4 PS	50 ppm	64 ppm
6 PS	48 ppm	61 ppm
8 PS	46 ppm	58 ppm
10 PS	44 ppm	55 ppm

Additive Formula 2 (Distilled White Vinegar and Food Grade Salt)

Flow Rate 5.0 L/min

	17.5 A	22.0 A
0 PS	50 ppm	65 ppm
2 PS	47 ppm	61 ppm
4 PS	44 ppm	57 ppm
6 PS	41 ppm	53 ppm
8 PS	38 ppm	49 ppm
10 PS	35 ppm	45 ppm

Additive Formula 3 (Water, Food Grade Salt, and FCC Grade HCl)

Flow Rate 3.0 L/min

	17.5 A	22.0 A
0 PS	115 ppm	150 ppm
2 PS	110 ppm	144 ppm
4 PS	105 ppm	138 ppm
6 PS	100 ppm	132 ppm
8 PS	95 ppm	126 ppm
10 PS	90 ppm	120 ppm

Additive Formula 3 (Water, Food Grade Salt, and FCC Grade HCl)

Flow Rate 4.0 L/min

	17.5 A	22.0 A
0 PS	74 ppm	95 ppm
2 PS	70 ppm	90 ppm
4 PS	66 ppm	85 ppm
6 PS	62 ppm	80 ppm
8 PS	58 ppm	75 ppm
10 PS	54 ppm	70 ppm

Additive Formula 3 (Water, Food Grade Salt, and FCC Grade HCl)

Flow Rate 5.0 L/min

	17.5 A	22.0 A
0 PS	66 ppm	85 ppm
2 PS	62 ppm	80 ppm
4 PS	58 ppm	75 ppm
6 PS	54 ppm	70 ppm
8 PS	50 ppm	65 ppm
10 PS	46 ppm	60 ppm

Measuring Concentration

The concentration of electrolyzed water can be measured in free available chlorine (FAC). The predominant free chlorine molecule is hypochlorous acid (HOCl). Chlorine test papers can be used which are chemically treated to indicate free available chlorine levels. Range and sensitivity is 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 or Colorimeter.

Routine Maintenance

Over time and depending on use, deposits can build-up on the electrolysis cells. These deposits can disrupt the electrical current required to generate the quality of electrolyzed water intended per the system settings. When the actual Ampere of the system drops to a level below 90% of the set Ampere, the system is due for maintenance. When this occurs, contact EcoloxTech support to schedule routine maintenance.