

Ecosmarte Planet Friendly, Inc. Programmable Control Box Manual *Initial Setup*

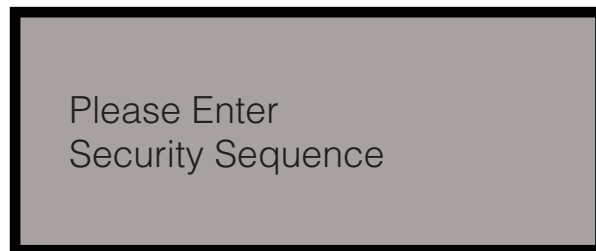
When power to the controller box is first turned on, the following message is displayed on the screen as shown below:



Language Setting Screen

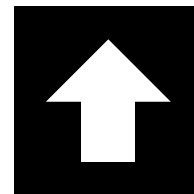
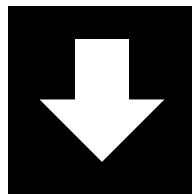
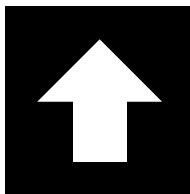
Choose Language

Wait for this screen to pass automatically (about 5 seconds), and then the “security screen” will be displayed as shown below:

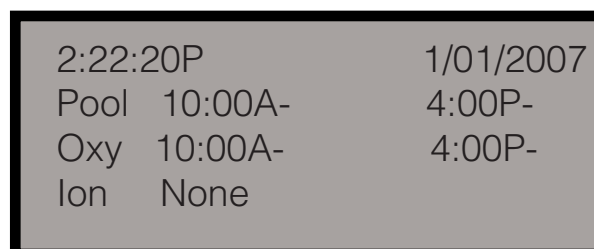


To continue, press the keys: “Up, Down, Up” in succession. This sequence of buttons will always unlock and activate your keypad. This is to protect your system from any accidental programming by an unauthorized source (children, neighbors, pool services, etc.)

Security Sequence




When the security sequence is entered correctly, the display will change to the “Home Screen.”





Now, it is time to set up the DATE and TIME of your box. Press "CLOCK" or "DATE" to setup either or both values. You will get the following screen:



10:18:07P 1/04/2014
Press CLOCK to set
the DATE and TIME
or NEXT to continue

Press "CLOCK" or "TIME" a second time to continue setting up the DATE and TIME of your box. The  arrow key will return you to the "Home Screen." Upon pressing "CLOCK" or "DATE" the display will read as follows:



Use   >< Keys to set
Day and Date
TU 1/04/2014
Press NEXT when done



The cursor automatically starts on the day of the week. Press the "UP" or "DOWN" arrows until the correct day of the week is displayed.



Then, press the "RIGHT" arrow key to move the cursor across the LCD to the month. Continue this process until the correct year, day, month, and day of the week is displayed. At any time, use either the "LEFT" or "RIGHT" arrow keys to move within the LCD. Use "UP" and "DOWN" to change any values.

When all values are correct, press the "NEXT WEEK" key to move onto the next screen where you can setup the correct time. The screen is displayed as follows:



Use   >< Keys to set
Time
10:18:27A
Press NEXT when done

The cursor automatically starts under the "hour" clock. Use the "UP" and "DOWN" keys to set the correct hour. Then press the "RIGHT" arrow key to switch to minutes. Repeat process until the correct time is displayed. Then press the "NEXT WEEK" key to complete the setup. The display will then return to the "Home Screen." The correct TIME and DATE should be displayed across the top.

Home Screen

2:22:20P	1/01/2007
Pool 10:00A-	4:00P+
Oxy 10:00A-	4:00P+
Ion None	

+ Plus sign indicates output is occurring

Pool Function

The next step is to setup the parameters for your pool pump. The "POOL" key allows you to set the pool Start and Stop times. If you received an Ecosmarte controller with the Pool Pump Relay Option, your pool pump will be turned ON and OFF at the Start and Stop times set with this function.

Press the "POOL" key to display the following screen:



Use ↑ ↓ > < Keys to set		
	Start	Stop
Pool	8:00A-	4:00P-
Press NEXT when done		

The cursor automatically starts below the hour hand of the start time. Use the "UP" and "DOWN" arrow keys to set the appropriate hour. Then press the "RIGHT" arrow key to move to the minute hand. At any time, use either the "LEFT" or "RIGHT" arrow keys to move within the LCD. Use "UP" and "DOWN" to change any values. When all values are correct, press the "NEXT WEEK" key to return to the "Home Screen."

Special Notes

"OXY" and "ION" start and end times **MUST** be set within the "POOL" start and end times or no power will be delivered, although the LCD will display your selected values (this is a safety feature). In addition, even if you do not own a pump timer, you must set the "POOL" start and end times according to when you manually turn your pump on and off. Therefore we assure that we are never ionizing or oxidising when the water is not flowing. Those without a firemans switch on their timer must turn the pool heater off 15 minutes before the "POOL" is turned off.

Upon completing the setup for the "POOL" time, the "Home Screen" will display the new settings.

10:42:09P	5/22/2007
Pool 8:00A-	5:00P+
Oxy 10:00A-	4:00P+
Ion None	

OXY Function

The next step is to setup the "OXY" mode. Typically residential pools should run 6-10 hours per day, commercial pools 18-24 hours per day. This is how long you are going to want to set the "OXY" mode. It is strongly recommended that the running time of the oxygen should be done during day-light hours. The parameters for "OXY" mode must also be set within the "POOL" parameters. Now press the "OXY" key and the screen will display as shown:



Use ↑ ↓ >< Keys to set
Start Stop
Oxy 8:00A- 4:00P-
Press NEXT when done

The cursor automatically starts on the hour hand of the start time. Use the "UP" and "DOWN" arrow keys to set the hour hand. Then press the "RIGHT" arrow key to move to the minute hand. Repeat the same process until the start time (hours/minutes) and the stop time (hours/minutes) are set to run "OXY" for the appropriate length of time, and within the pool pump parameters. Press "NEXT WEEK" when all values are correct.

The screen should now display the correct TIME, DATE, POOL "On" and "Off" and OXY "On" and "Off." The "Home Screen" will look as follows:

8:51:04A	5/22/2007
Pool 8:00A-	4:00P+
Oxy 8:00A-	4:00P+
Ion None	

Next Week Function

The next step is to setup your ION mode. The NEXT WEEK feature allows you to set a DAY and a TIME period for Copper Ionization to occur. The ionization will occur once per week on the day and the time selected with this feature. It is NOT recommended that future ION settings be programmed without an operating history. Actual Ion time needed is often less than one full Oxy cycle.

Special Note

If you select manual or ION, which will turn ION on for the POOL run time, or OXY run time, the setting for NEXT WEEK will need to be reset. In addition, no OXY or ION will actually occur outside the time parameters entered for pool.

Warning

Never set OXY or ION to start and stop during times when your pool pump is not running.

Setting Multiple Days of Ionization

Use ↑ ↓ > < Keys to set
Day Run Start Stop
SU OFE 10:00A- 4:00P-
Press NEXT when done

Manual Function

The Manual feature is used to set the Ionization time to be equal to the POOL run time. This feature is usually used at start-up when you fill your pool or need to make a gross adjustment in the copper level in your water.



To activate this, simply push the “MAN” key once. This will set your ION time to be equal with your POOL run time, and your OXY time will read NONE. Your pool will now ionize when your pump is running. If you need to manually ionize longer, simply go into your POOL setup, and change the start and stop times of your pump. Then return to the “Home Screen” and press the “MAN” key to change the ION start and stop times. Your screen will now look as shown:

10:09:51P	5/22/2007
Pool 10:00A-	4:00P+
Oxy None	
Ion 10:30A-	3:30P+

Actual ION hours required to get your first residual will be a function of total gallons, TDS (total dissolved solids) and pH below 7.2 of your pool. A water test seeking 0.5ppm copper should be taken before 10 hours of POOL and ION running time have passed. pH will rise during initial ionization, therefore, daily adjustments may be necessary at first.

The manual override key “MAN” is the most convenient method to put copper constantly to your pool. Select the “OXY” key to switch the unit back to oxygen equal to your programmed POOL run time.

AUTOMATION

Your water will become predictable after three weeks and the ION and CO2 values can auto repeat for weeks after dialing them in with water tests. Set “ION” to come on the day before you or your service tests the copper each week.

ACC Function



The last function on the box to be discussed is the “ACC” key. The first feature listed is CO2, the other items are not relevant for residential pools or water features.

Pushing the arrow key pointing to the right will bring you to the screen where you can choose between “Timed”, “ON” or “OFF” modes.

Use ↑↓ >< Keys to set
CO2 Output Enable
CO2 TIMED
Press NEXT when done

Setting CO2 Feed & pH Time

The programmable controller will automatically split your minutes per day. Your CO2 setting will be split into 4 equal increments beginning at pool start time. Minimum setting is 4 minutes per day (or OFF).

For further technical support, please email us at:
larryc@ecosmarte.com

SET YOUR POOL UP

www.ecosmartecloud.com/register
FREE LIFETIME CLOUD SUBSCRIPTION
Use your email for your username and water1 for your
initial password

INSTRUCTIONAL VIDEO

ONLINE:
www.ecosmarte.com/onlinesupport.html
Password: customer2007

Automated CO2 Feature Enhancements

Use ↑ ↓ > < Keys to set
CO2 Output Enable
CO2 TIMED
Press NEXT when done

Changing the setting should be done after install. All CO2 users must use the ACC keypad, choose CO2 ON. The right arrow key will bring you to the next screen that allows you to choose between several options such as “ON”, “TIMED” and “OFF”. It is strongly recommended that CO2 feed feature be set on “TIMED” option.

Feature	Setting >
CO2 Feed	OFF
PH Sense	OFF
↑ More Features ↓	



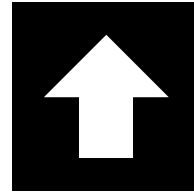
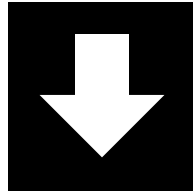
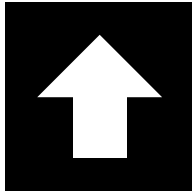
The “NEXT” button will bring you to the screen where CO2 injection time should be set. Use the right arrow key to move cursor to the next necessary entry (from hours to minutes). The up and down arrow keys allow you to program or change the number of hours/minutes per day. It is a rule that Southern pools should begin at 40 minutes (minimum time is 4 minutes).

Use ↑ ↓ > < Keys to set
CO2 Output Enable
CO2 TIMED
Press NEXT when done

All pools should make an initial major pH down adjustment with Muriatic Acid before depending on the CO2. The pool should be monitored three times the first week, minutes modified upward or downward as needed. CO2 minutes are injected four times per day with the first injection occurring at the beginning of the programmed pool run time.

Note

Default settings on CO2 feeds constant gas to pool to confirm no leaks at install. You must re-select “TIMED” and use the right arrow key to get minutes to appear on the cursor. Your tank can drain in one day if the time is not entered correctly. CO2 pH control is a maintenance only method. Acid supplement is required in early weeks of use.



Security Sequence

Unlocks keypad at any time to enter information

SECURITY SEQUENCE

- 1) Your new unit will prompt you to enter the security sequence (up, down, up)
- 2) Each time you want to enter information into the operating unit, you first need to touch the keypad and then enter the security sequence.



Increases or decreases values when pressed.
Holding down the keys will run the numbers faster.



The right arrow is pressed when correct values are entered.
Both arrows will move cursor to the various number fields within the LCD. The right arrow will return back to the first cursor position when at the end of a line.



Either button will allow you to change the time, date, or day of the week. A "Super Cap" instead of a battery will give you an operating clock of at least 100 hours if power is interrupted.

ZERO:SALT

ZERO:CHLORINE



The POOL button tells Ecosmarte unit the maximum hours your pool is running. The Ecosmarte unit will not output outside of the programmed pool run time. Note: Pool Heater must turn off 15 minutes before the pool to avoid plumbing damage due to heat.



The OXY button is used to setup the number of hours oxygen your pool needs per day (Oxygen purifies water in plumbing 6-10 hours per day).



The ION/CU button is used to program the amount of copper ionization that is delivered to the pool. Press ION to change the start and stop times. Press OXY to stop ionizing immediately when copper ppm is reached. At setup confirm all settings after using this button.



MAN will change the default from POOL = OXY to POOL = ION. Ideal at new fill or when you wish to ionize today. Will auto repeat, so you must press OXY when ION levels are at reach.



NEXT/ENTER allows you to select future day for copper to ionize your pool or to oxidize and ionize on the same day. Will repeat each week if function is not turned off. This key also allows completion of ALL programming tasks.



ACC activates pool pump relay option, CO2 pH sensor, a visual or audio alarm for pH range, and power to chambers and CU sensors (when it becomes available). TDS and water temperature are future upgrades, as is remote computer windows interface.

PROGRAMMING MEMORY

Your unit retains all values in the RAM programmed for 7 consecutive days without power to the box. No battery is utilized.

CO2 Swimming Pool Installation Guide

1. Confirm 110V outlet cord and CO2 tubing will reach target install area, which is as close as possible to swimming pool on the return lines.
2. Plug in electrical timer or Ecosmarte Programmable Controller.
3. Select are and measure 7", mark pipe.
4. Cut PVC and clean pool pipe ends & chamber fittings.
5. Using PVC glue, install chamber fittings to the pool pipe ends. Let dry, then screw the chamber onto the fittings.
6. Screw flow regulator into CO2 cylinder, and connect 1/2" pressure hose from regulator to the solenoid. NOTE: CO2 cylinder must be standing up.
7. With solenoid "OFF," open valve on CO2 tank slowly until open all the way. Then turn 1/4 turn back. Test all fittings between tank and solenoid for leaks using soapy water. Tighten any loose fittings.
8. Start using 30 minutes per day on pools, 3 minutes on spas. Modify as test results dictate with twice weekly testing.

Specifications

ELECTRICAL

- Manual: 110V, 60 Hz
- Programmable: 12V
- CE, UL Listed Solenoid
- Power Cord

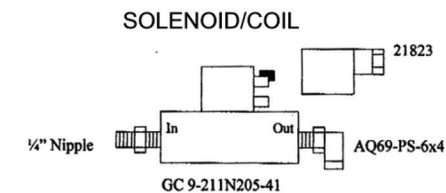
PLUMBING

- Maximum tank PSI: 3000
- Maximum operating PSI: 60
- CGA 320 valves, tanks, fittings

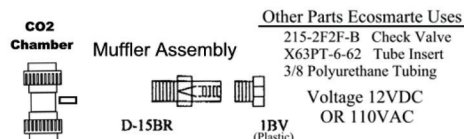
CO2

- Indoor installations require vented rooms
- Northern units should avoid freezing; 5lb cylinders fit inside the cabinet
- Direct sunlight above 120 degrees fahrenheit on Southern units should be avoided

CO2 Assembly Components



INJECTION CHAMBER



Programmable Tips

At Start-Up

- The MAN or manual override will put copper constantly to your pool until the initial residual reaches .5 ppm.
- pH is controlled in minutes per day and you cannot over adjust it using carbonic acid. You can lower your time in minutes the third week to save CO2 gas.
- A 20 lb cylinder weighs 35 lbs FULL, 15 lbs EMPTY. Gauges are not accurate and a \$5 bathroom scale can be put under your tank.
- Profile your pool on the Ecosmarte Cloud. Go to www.ecosmartecloud.com/register and use your email address for your username and water1 for your initial password.

TYPICAL CO2 TANK LIVES

20 LB	20 MIN PER DAY	8 WEEKS
35 LB	40 MIN PER DAY	6 WEEKS
	60 MIN PER DAY	4 WEEKS
50 LB	20 MIN PER DAY	20 WEEKS
	40 MIN PER DAY	10 WEEKS
	60 MIN PER DAY	6 WEEKS

REPLACEMENT PARTS

CO2 SOLENOID \$85
(4 YR-5YR)
INJECTOR CELL \$297
(4YR-5YR)
Warranty is three years

PROBLEM SOLVES

1. Programmable box chatters
 - a) Metal remover is in the water
 - b) Salt level is over 600
 - c) Phosphates are over 1000ppb

Turn off box immediately. Call tech support at 612-866-1200 for directions.
2. "Low Voltage" plate alarm ionize/oxidize modes
 - a) Chamber leads hooked up wrong
 - b) Metal remover, salt, or phosphate levels are too high
 - c) The entire chamber needs cleaning

Continued operation will crash the software in the INTEL chip requiring factory re-install

Programmable Applications

- Residential Spa
- Residential Pool
- 100% Chemical-Free Water Features - Pond, Waterfall, Fountain
- Cooling Tower - Chillders, Swamp Coolers
- Closed Loop - Process Water, Scale and Fungus Control
- Greywater - Soft Oxidation, Bacteria Control

IMPORTANT SAFETY INSTRUCTIONS

When installing and using this electrical equipment, basic safety precautions should always be followed, including the following:

1. Read and follow instructions
2. (For all units) WARNING - To reduce the risk of injury, do not permit children to use this product unless they are closely supervised at all times.
3. (For cord and plug connected units) WARNING - Risk of electric shock. Connect only to a grounding type receptacle protected by a ground fault circuit-interrupter (GFCI). Contact a qualified electrician if you cannot verify that the receptacle is protected by a GFCI.
4. (For cord and plug connected units) Do not bury cord. Locate cord to minimize abuse from lawn mowers, hedge trippers, and other equipment.
5. (For cord and plug connected units) WARNING - To reduce the risk of electric shock, replace damaged cord immediately.
6. (For cord and plug connected units) WARNING - To reduce the risk of electric shock, do not use extension cord to connect unit to electric supply; provide a properly located outlet.
7. SAVE THESE INSTRUCTIONS

Eliminate Acid

WiFi Compatible

1-800-IONSWIM

612-866-1200

www.ecosmarte.com

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