



"Over 10,000 LG Sonic algae control products have been successfully installed in a wide range of applications in 52 different countries"



Leading in ultrasonic algae control

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LG SONIC Industrial Wet USER MANUAL



Leading in ultrasonic algae control

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1 INTRODUCTION

Congratulations on your purchase of the LG Sonic algae control solution!

LG Sonic has designed and constructed your LG Sonic device to the highest quality standards for years of reliable and accurate service. We hope you will enjoy using this device for a long time. However, this algae control device cannot function properly unless it is installed and maintained in the correct manner. Please read this document carefully in its entirety and follow the provided instructions for installation and usage of the LG Sonic in order to ensure optimal performance and the best possible results.



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Please observe that this manual does not create any legally binding obligations for LG Sonic towards the customer. All legally binding commitments and agreements are included exclusively in the applicable supply contract or Conditions of Sales.

This document is subject to changes without notice. The latest electronic version of this user manual can be downloaded from LG Sonic's official website.

2 SAFETY INSTRUCTIONS

Read and follow all instructions indicated on the product or provided with the product.

- 1 Do not use an extension cable for the ultrasonic transmitter, unless it is supplied by LG Sonic.
- 2 Do not place the ultrasonic transmitters in a swimming pool
- 3 Do not install or use the control box within 3 meter / 10 feet of the body of water.
- 4 Refer specifically to the National Electrical Code, ANSI/NFPA 70, for the installation of wiring and clearance distances from power and lighting conductors.
- 5 Installation work and electrical wiring must be done by qualified persons in accordance with all applicable codes and standards, including fire-rating for construction.
- 6 Do not use in bathrooms.



WARNING: Risk of electric shock

When used outdoors, install only with a covered class A GFCI protected receptacle that is weatherproof, connecting the power unit to the receptacle. If one is not provided, contact a qualified electrician for proper installation. Ensure that the power unit and cord do not interfere with completely closing the receptacle cover.

WARNING: Risk of fire

Installation involves special wiring methods to run wiring through a building structure. Consult a qualified electrician.



WARNING: Risk of electric shock

Mount the unit at a height greater than 30 cm / 1 foot from the ground surface.

- Ensure the power outlet used for the LG Sonic has a ground fault circuit interrupter.
- Make sure the entire installation is out of the reach of children.
- Never open the control box while in operation or while connected to power.
- Secure the control box at least 1 meter / 3 feet from the edge of the water and ensure that it is protected from direct sunlight and rain.
- Never place the control box under water, as this will result in electrocution.
- Handle the ultrasonic transmitter with care and protect it from shock or damage.
- Unplug the unit immediately if either of the two cables or the control box is damaged. Contact your dealer for further instructions.
- Always unplug the control box before performing any repairs, maintenance or other troubleshooting operations.
- Install the devices according to the instructions in chapter 4.
- Avoid skin contact with the ultrasonic transmitter in operation.



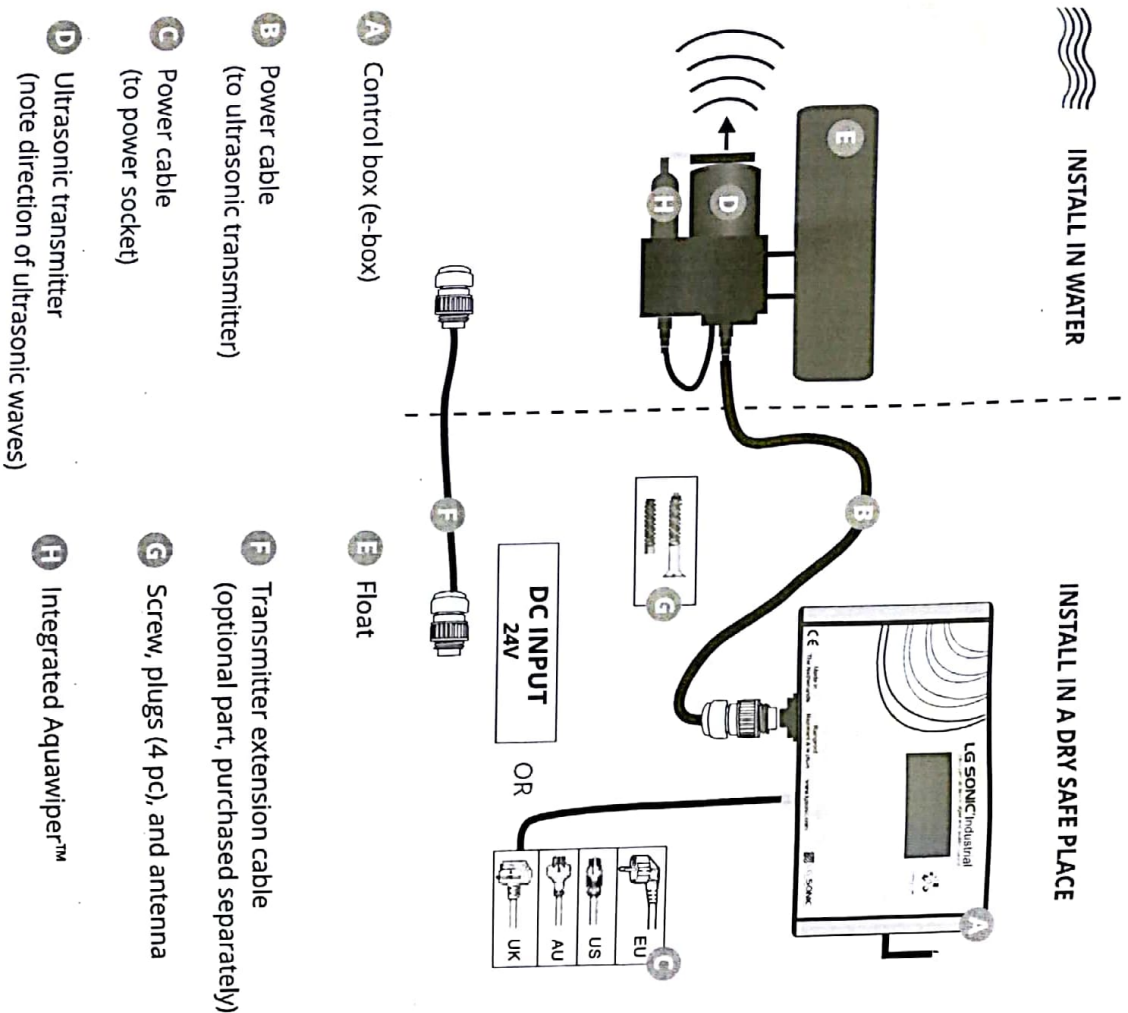
WARNING: Do not operate the ultrasonic transmitter out of the water

This will result in deformation of the ultrasonic transmitter head and will void your warranty.

SAVE THE INSTRUCTIONS

This manual contains important safety and operating instructions for power units.

3 COMPONENTS INCLUDED



4 INSTALLATION

Please always ensure that the voltage on the sticker of the control box matches the plug type and your electricity network before installation. Please contact your dealer immediately if this is not the case.

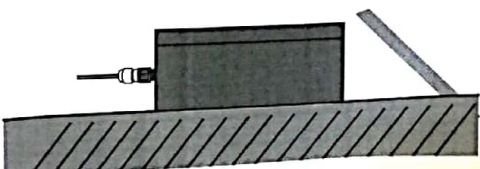
4.1 INSTALLATION OF THE CONTROL BOX

The electronic box of the Industrial Wet, called the control box, should be attached to a wall, with the cables facing downwards.

- 1 Remove the design strips on the sides of the control box by carefully pulling on them on both sides.
- 2 Mark the fixing holes from the control box at the place where the control box is to be mounted. Drill four corresponding holes into the wall.
- 3 Insert the four supplied wall plugs into the fixing holes.
- 4 Mount the control box on the wall with the supplied screws.
- 5 Carefully place the design strips back on the sides of the control box.



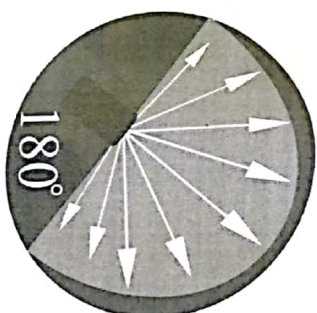
Make sure the connectors and wires always point downward. Always install the control box in such a way that it is protected from direct sunlight and rain. Use a separate enclosure if necessary.



4.2 INSTALLATION OF THE ULTRASONIC TRANSMITTER

The ultrasonic transmitter transforms the electricity into ultrasonic sound signals. These signals are inaudible. The ultrasonic transmitter is a very sensitive instrument that needs to be handled with the greatest care.

The ultrasonic sound waves are emitted from the ultrasonic transmitter in a 180 degree area from the front of the machine. The device needs to be placed in such a manner that as much of the water surface as possible comes into direct contact with the sound waves. The strongest ultrasonic signals are those that come straight out of the ultrasonic transmitter.



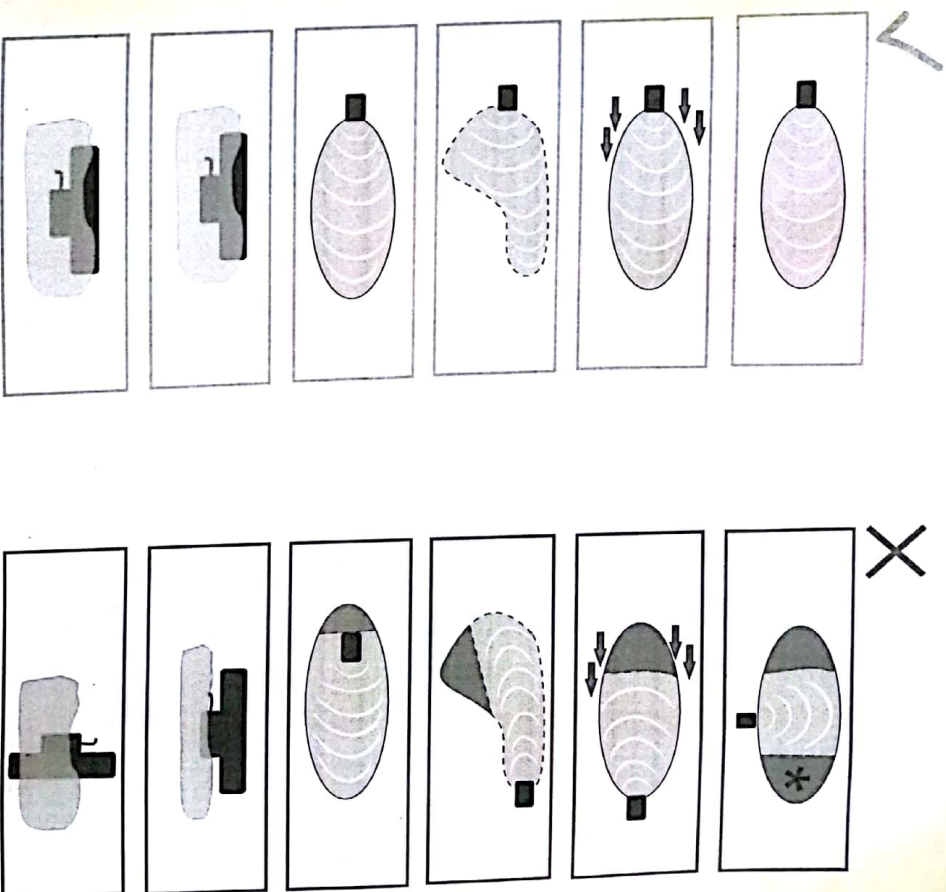
Step 1: Determine the optimal location of the ultrasonic transmitter

- Where much of the water surface comes into direct contact with the sound waves.
- Where the front of the unit follows the water current and/or wind direction (for water surfaces larger than 5-10 m²).
- Where there are no corners outside the reach of the ultrasonic transmitter, as this will greatly reduce the effectiveness of the device.
- With its backside as close to the water's edge as possible.

Step 2: Place the ultrasonic transmitter in the water

Step 3: Ensure that the ultrasonic transmitter is always completely below the surface of the water

Step 4: Always ensure that the ultrasonic transmitter is kept horizontal



* Dark areas remain untreated

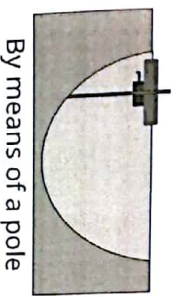
4.3 INSTALLATION OF THE FLOAT

All LG Sonic products come with a float.

This float ensures that the ultrasonic transmitter always remains in a position of about 20 cm / 0.65 feet horizontally below water surface. In this way the sound waves will be reflected when they touch the surface of the water. The sound will be spread more efficiently throughout the entire water reservoir.

The first 20 cm / 0.65 feet of the water column is where the highest concentrations of floating (unicellular) algae can be found, especially during the day.

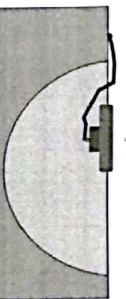
The float should be secured by means of a pole/spear, a rope, or a Flexi-Arm.



By means of a pole



By means of a rope



With the flexi-arm

4.4 INSTALLATION OF TWO UNITS

Use multiple ultrasonic transmitters when the water surface cannot be covered with one ultrasonic transmitter.

- 1 Never place the ultrasonic transmitters facing each other.
- 2 Never use multiple units if one unit is sufficient.
- 3 We recommend contacting your dealer for advice on the usage of multiple units.

For free placement assistance, email us at info@lgsonic.com. Make sure you have a site-plan with the accurate dimensions and configurations of your water reservoir.

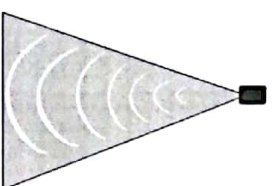
4.5 INSTALLATION EXAMPLES OF ONE UNIT



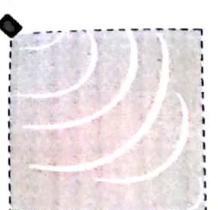
Top view oval



Top view circle



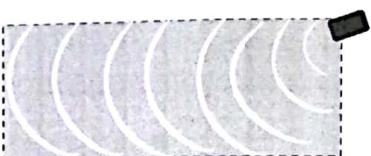
Top view triangle



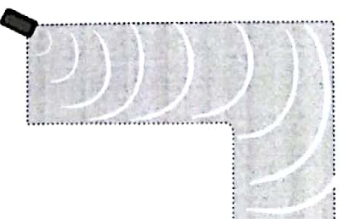
Top view square



Top view narrow rectangle



Top view broad rectangle

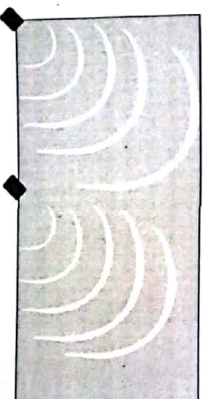
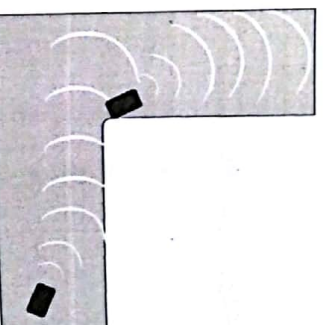


Top view broad L shape



Side view water tank container

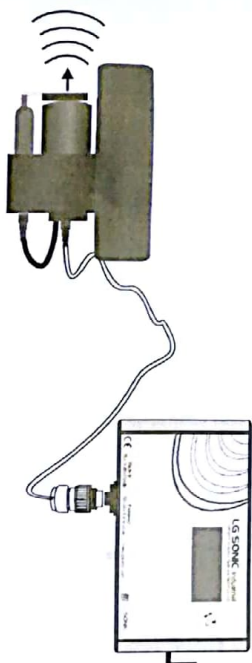
4.6 INSTALLATION EXAMPLES OF TWO UNITS



It is advised to contact your dealer for advice on the use of multiple ultrasonic transmitters.

4.7 ACTIVATION

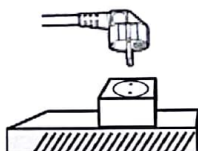
Step 1: Connect the ultrasonic transmitter cable(s) to the control box



Step 2: Connect the antenna to the control box

Step 3: Place the ultrasonic transmitter in the water

Step 4: Insert the power plug into the power socket



4.7.1 EXPLANATION OF THE LCD SCREEN

T1: Ultrasonic transmitter output number 1
(Depending on the model, the control box can have up to 4 ultrasonic transmitter outputs).

GSM Signal strength (1 to 5).



P02: Current ultrasonic program running on the ultrasonic transmitter.
12 different programs can be selected (P01-P12).

N/A: No ultrasonic transmitter output available.

4.7.2 GSM ACTIVATION AND CONFIGURATION

The control panel is underneath the basic cover. To access it, remove the strips on the sides of the control box, unscrew, and lift the cover.



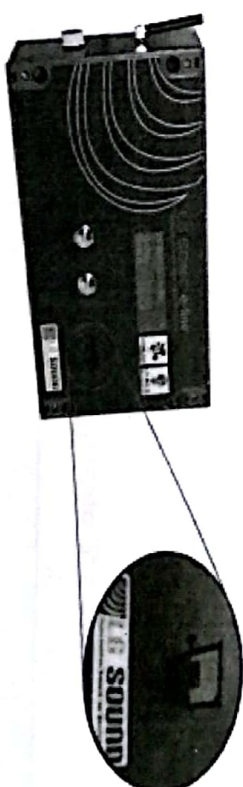
The GSM module has 3 functions:

- To change the ultrasonic program of individual ultrasonic transmitter(s).
- To request status.
- To receive error alerts.

1. Insert SIM card:

Make sure there is no PIN code on your SIM card. Make sure there is enough space on the SIM card to send and receive messages.

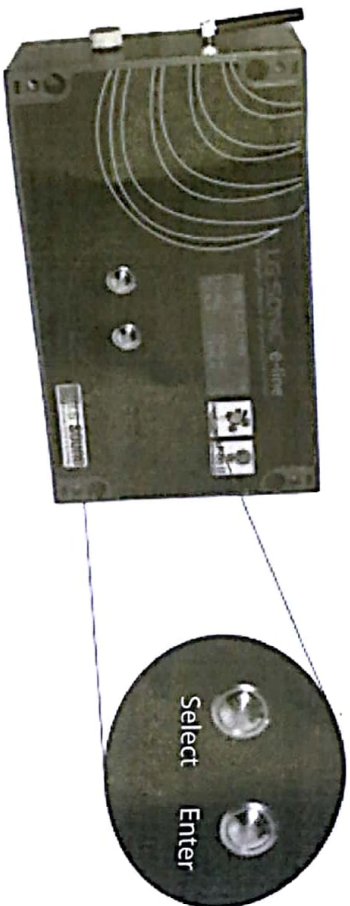
- Press the small button left of the SIM card holder.
- Gently pull the SIM card holder from the control box.
- Place the SIM card in the plastic SIM card holder and place it back into the control box.



2. Press both buttons simultaneously and hold for 3 seconds.

The following menu will appear:

- 1) SMS Phone Setup (To setup your mobile number)
- 2) Send SMS Testing (To send a "test SMS" to check if the GSM unit is working)
- 3) Off from battery
- 4) Exit Setup



3. Press the "select" button to move the cursor to option 1:
"SMS Phone Setup" Use the "enter" button to access:

The following menu will appear:

- 1) Enter Phone No (To connect the GSM unit to your mobile number)
- 2) Delete Phone No (To delete the set phone number)
- 3) SMS PIN code (Set the PIN code for your unit, see section 4.7.3.)
- 4) Exit



Always start the number with your country code.

Use the "+" symbol to make the country code. For example: +31

End the number by selecting "E" which appears after the "+" symbol.
For example: +31612345678E

4. Use the buttons to select:
1 "Enter Phone No".

Use the "Select" button to choose the digits of your phone number.
Use the "Enter" button to select the digit and move to the next.

5. The program offers 3 slots where a phone number can be entered.
Select the first slot by pressing the "enter" button once.
The cursor now moves to the first digit.

6. Exit the menu program and go back to the main screen.
On the main screen "System Ready" appears.



If the system does not accept the SIM card after entering it, unplug the device and plug it in again to reboot the system.

4.7.3 SET THE PINCODE OF THE DEVICE

1. Press both buttons for 3 seconds to enter the main menu.
2. Select option 1: "SMS Phone Setup".
3. In the next menu select 3: SMS PIN code.
4. The PIN code will appear behind the menu.
5. The default PIN code is 0000.
6. Use the "Select" and "Enter" buttons to set your personal PIN code, if necessary.



* Note: The PIN code is not the same as the SIM card code.

4.7.4 REQUEST OPERATION STATUS BY SMS

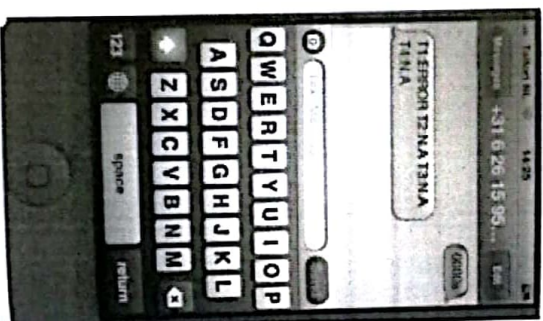
By typing a code in your regular SMS screen of your mobile phone, you can request the operational status of your device.

1. Send an SMS to the SIM card number in the control box with the code [PIN]s EXAMPLE: 0000s (the default PIN code is 0000 - to change the PIN code see section 4.7.3).

2. The device will send you a reply SMS.

3. Interpretation of the codes:

T1: Ultrasonic transmitter 1
P1/12: Ultrasonic program on which the ultrasonic transmitter is running
Error: Error ultrasonic transmitter
N.A.: No ultrasonic transmitter is connected or the transmitter is broken
OFF: No ultrasonic program selected or ultrasonic transmitter is off



4.7.5 SEND TEST SMS

A status alert as described in 4.7.4 can be sent to a mobile phone from the menu as well.

1. Enter the system menu by pressing the "Select" and "Enter" button at the same time for 3 seconds
2. Select option 2: "Send SMS Testing"
3. Press "Enter"
4. On the main screen of the device, you will see: "SMS Sent to Phone1"
5. A message will be sent to the selected phone number (go to section 4.7.2. to select a phone number).

4.8 CHANGE ULTRASONIC PROGRAM

The ultrasonic transmitters of the LG Sonic Industrial Wet can be set to a specific, preprogrammed ultrasonic program. Depending on the model of the control box, the LG Sonic Industrial Wet can support 1, 2, 3, or 4 ultrasonic transmitters that can be programmed independently.

The ultrasonic program can be changed by:

- Control buttons on the control box (4.8.1)
- Sending an SMS message (4.8.2)



The LG Sonic Industrial Wet products are all delivered with a specific program recommended by LG Sonic.

For an optimal result of the LG Sonic Industrial Wet it is advised to change the ultrasonic program ONLY after the recommendation of an LG Sonic representative.

4.8.1 BY CONTROL BUTTONS ON THE CONTROL BOX

On the main display, the 4 ultrasonic transmitters are indicated with T1, T2, T3 and T4.

1. Select the ultrasonic transmitter you want to change by pressing the "Select" button.
2. Press the "Enter" button.
3. By pressing the "Select" button, you can choose from the different frequency programs P01 to P12 and OFF.
4. Press the "Enter" button to activate a program.
5. The control box will confirm with 1 beep.
6. A confirmation SMS will be sent to the selected phone number.
(For explanation of the code in the SMS find section 4.7.4)

4.8.2 BY SENDING AN SMS MESSAGE

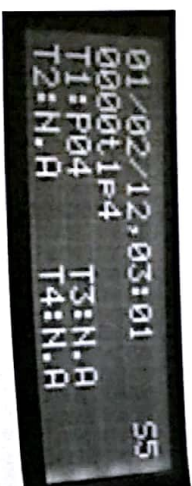
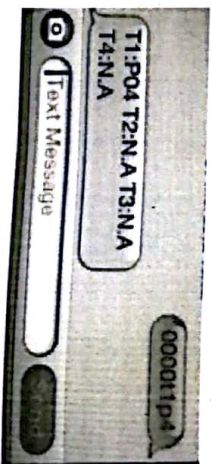
Send an SMS to the number of the SIM card inserted in your device with the code: [PIN][TRANSMITTER NR][PROGRAM NR] (the default PIN code is 0000 - to change the PIN code see section 4.7.3)

For example, send code:

- To set ultrasonic transmitter number 1 to program number 4: 0000t1p4
- To set ultrasonic transmitter number 3 to program number 5: 0000t3p5

(The control box will beep once, if the SMS is received).

- On the main screen of the control box, the SMS message that was sent to the device will appear.
- The program number on the main screen will change.
- The control box will send a confirmation message to your phone number. (For an explanation of the code, please see section 4.7.4)



5 USAGE

In order to operate effectively, the algae control system must be operating continuously, 24 hours a day. The speed with which the algae are killed will depend on the concentration of algae in your entire body of water (such as a lake, reservoir, or pond) and the size of your device in comparison with the amount of water. Thus, the amount of time that passes until you begin to see results will vary from a few days to a few weeks.

Even after the water is cleared of algae, the solution will be needed, as algae tend to come back if left untreated. Therefore, the device should remain running, so it can continue keeping the water mostly clear and free of algae.

After heavy rains, new algae might wash into your water reservoirs. Algal blooms might occur, which will be cleared by the algae control system in the course of a few days to a few weeks, depending on the amount of algae.

Different types of algae respond differently to treatment.

As certain types of algae die, they will float to the surface and must be removed as often as possible and at least twice a week, as this blanket of algae will disrupt the ultrasonic sound waves. Other algae will sink to the bottom, where they can be removed easily.

Finally, you should inspect the system regularly, as to whether the ultrasonic transmitter and the float are still in the optimal position as per section 4.2.

6 POWER OUTAGE ALARM SYSTEM

As a standard, The LG Sonic Industrial Wet comes equipped with a power outage alarm system. This alarm system activate after 3 hours of continuous operation (after plugging the device into AC power). The unit will send an automatic SMS message, if the power is off for more than 30 minutes (see section 4.7.2). The unit can also be switched off manually. Go to the menu option and choose option 3: Off from Battery.

7 MAINTENANCE

The maintenance activities described below can be performed by the user. Please contact your local dealer for all technical maintenance and repair activities.

7.1 MAINTENANCE OF THE CONTROL BOX

Frequently inspect the control box for damage. Check the power connection and the ultrasonic transmitter cord for damages. Damage to the control box can give rise to life-threatening situations. When damage to one or more parts of the products is found, first disconnect the device from its power supply and contact your local dealer. Your dealer can assist you with professional personnel to repair damages to the product.

7.2 MAINTENANCE OF THE ULTRASONIC TRANSMITTER

All LG Sonic Industrial Wet models are equipped with an automatic cleaning system, the Aquawiper™ in order to prevent damage to the ultrasonic transmitter and require minimal maintenance.

When the ultrasonic transmitter is covered with calcium scale, use a lightly acidic solution to remove it, such as kitchen vinegar. Warning: Always disconnect the power to the device before cleaning or handling it.

8 TROUBLESHOOTING

8.1 THE RESULTS APPEAR NEGATIVE

With filamentous algae (also known as string algae or blanket weed) it is not unlikely that the amount of algae seems to have grown after the activation of your system.

This is caused by reduced cohesion between the algal cells. When these cells are less closely connected, they will take up more space.

Living filamentous algae feels very much like a wire and are difficult to pull apart. There are, however, changes that appear when the algae have been affected by treatment: the longer their cells have been dead, the easier they can be pulled apart. Filamentous algae rise to the surface when they die, where they form a blanket that causes the ultrasound waves to be absorbed. This blanket needs to be removed as often as possible and at least twice a week in order for the system to continue to operate correctly.

Roaming algae

Algae that grow on the surface of other materials may still be stuck to those surfaces after dying, appearing as though they were still alive. However, if they are relatively easy to remove from the surface they are on, they are in fact dead. This is not true for black algae. Depending on the quantity of the algae, it sometimes takes some time before the algae appear to be dying (even for cyanobacteria, also known as blue-green algae). A very simple and effective way to test, whether the roaming algae are indeed dead is the 'bottle test'. Fill a bottle with treated water from your reservoir and let it sit for 24-48 hours in a quiet place. The bottle should be open and exposed to daylight.

If the algae have sunk to the bottom or are now floating on the surface, they are dead. However, if the water remains greenish and unclear, the treatment has not yet worked.

See the next section for instructions.

In a pond, where there is constant water movement (because of wind, fish, filters, fountains, and so on) it may take weeks before the algae are visibly dead.

8.2 THE ALGAE ARE NOT DYING

1. Check whether the control box is operating:
 - a. Check the LCD.
 - Check if the LCD is on or shows any other information.
 - Check if the ultrasonic transmitters are running a program (section 4.7.1).
 - If an ultrasonic transmitter is broken or off, the words "ERROR" or "OFF" are shown on the LCD behind the transmitter number (T1 - T4).
 - Check if one of the transmitters shows "OFF", then follow the instructions of section 4.8 to program the ultrasonic transmitter.
 - b. Request operational status by SMS, see section 4.7.4.
2. Check whether the center of the front of the transmitter (about 2 cm in diameter) is clean:
 - a. The ultrasonic transmitter appears to be clean.
 - The transmitter is working.
 - b. If the ultrasonic transmitter is not clean and a calcium-like layer or bio film has formed:
 - The sound waves are not being properly emitted.
 - Clean the transmitter with an acidic solution such as kitchen vinegar.
 - c. Check if the Aquawiper™ is still working by connecting the transmitter to the control box. This should make the wiper move. If it does not, contact your dealer.
3. Check if the ultrasonic transmitter is clean and emitting an ultrasonic program. If necessary, we can change the ultrasonic program to match the algae in your water:
 - a. Contact your dealer and inform him about the algae in your water by explaining the situation and sending pictures.
 - b. Your dealer will advise you of the most optimal ultrasonic program.
4. Check whether the control box shows the following message:
OverCur: There is a problem with the transmitter or wiper of your unit.
Please send the unit back to LG Sonic for repair.

9 GUARANTEE

LG Sonic, manufacturer of this device, has great confidence in its products and guarantees the quality of assembly and materials used.

The warranty is limited to materials and/or construction faults and is valid for THREE YEARS for the control box and the ultrasonic transmitters and TWO YEARS for the integrated Aquawiper™ after purchase date.

During this period, the necessary replacement of parts failing due to materials and/or construction faults will be made available at no cost to the purchaser. Any additional claim on the warranty, including compensation or consequential damage, is hereby explicitly exempted.

The above-mentioned warranty is only valid under these conditions:

1. The device must be correctly installed according to the instructions in this manual.
2. Every claim under the warranty becomes void when repairs, changes, adjustments or assemblies are made using parts not supplied by or approved in writing beforehand by LG Sonic. Additionally, any claim becomes void if installation took place that did not comply with the local regulations.
3. The warranty is valid for normal use following the installation instructions. Damage resulting from usage for other purposes than that for which the device is intended, overburdening, neglect or normal wear and tear are hereby explicitly exempted.
4. Claims made during the period of warranty do not result in an extension of this period.
5. Any claim under the warranty becomes void if the device is not cleaned at least once a year.
6. Any shipping costs are the responsibility of the buyer.
7. The warranty can only be honored if the statement of defect is accompanied by a copy of the invoice or proof of payment and a description of the defect.