

MC-01B EasyFill™ Sensing Unit User Manual

Thank you for purchasing the *Level Waters*™ MC-01B **EasyFill**™ Electronic Sensing Unit. It is the smallest automatic, completely electronic water level sensing unit on the market. **The MC-01B is also available in a complete system, the MLS-3401 that includes a power unit and valve or the MLS-1002 with a 1" valve and power.**

The MC-01B incorporates a dependable patented sensing process in a economical design for those on a budget. It may be used in many applications including ponds, water gardens, fountains and other water features.

The Unit uses no external moving parts and will not clog like standard float valves can. It is hand assembled from PVC material instead of molded ABS plastic. PVC provides for better endurance in sunlight and heat and will extend the life of the components over time than using other plastics would.

Using our unique single plane geometric sensor design, the MC-01B provides dependable filling in a simple design to achieve an optimum water level. Installation is a snap with simple plumbing and wiring.

For more information on our full line of professional leveling systems, visit us on the web at www.aquilitysystems.com.



Safety Overview

The **EasyFill**™ Pond Water Level Sensing Unit is designed to provide the user a safe product that is easy to install and use. When installed as described in this manual, the system presents no unsafe shock hazards. However, altering any of the components may present an unsafe circumstance.

Some other considerations to keep in mind during installation and operations are as follows:

Always use a Class 2 power limiting supply.

Never mount a power supply made for indoor use in an outdoors environment where it will get wet. **Follow all**

manufacturer instructions when installing a power supply.

Do not insert metal objects into sensor probes while unit is turned on.

Do not break seals on unit. Doing so may expose the user to potentially dangerous voltages when unit is turned on and will void the warranty.

Do not plug the power supply in until all wiring is complete and leads are not exposed!

NEVER connect the sensor black lead to either power lead!

Always use safety equipment, such as eye protection, and dust mask when cutting PVC piping along with other normal safety precautions.

Always carefully follow all installation instructions.

Installation

The MC-01 Automatic Water Level Sensing Unit is simple to install. A 24VAC Class 2 power unit with sufficient power handling capability to power the supply valve (typically 350-400ma) and a 24VAC irrigation valve will be needed for installation. These may be purchased from many local hardware stores. We recommend the following components:

- Stancor 4124 24VAC 300ma power supply
- Toro 53380 24VAC ¾" MPT irrigation valve

Installation will also require simple PVC pipe installation and screw mounting the sensing unit along with simple wiring. The limited plumbing that is necessary to provide the system with filling water, requires only a hacksaw (or other appropriate saw), PVC cement and sufficient PVC and adapters.

Preparing for Installation

Open the package and ensure that all of the components are present and have not been damaged in shipping. Items included in the system are:

- MC-01B **EasyFill**™ Sensing Unit
- Mounting Accessory Kit

Identify where the **EasyFill**™ will be mounted. The fill valve should be mounted within reach of the control wires on the **EasyFill**™. An outside water feed, such as a spigot will need to be run to the valve and then to the water feature that will be filled.

A **weather-protected** receptacle for power will need to be located within a maximum of six feet of the **EasyFill**™ Sensing Unit to install the power module. **Do not** extend the wires on the power unit or the power leads of the sensor.

Warning! Always consult with an electrician when installing electrical wiring! Not doing so could result in a dangerous condition and/or noncompliance with electrical codes.

Installing the Sensing Unit

Determine a location where the **EasyFill**™ sensing unit will be mounted (try to find an inconspicuous place.). If the unit is to be mounted in a skimmer, locate the surface it will mount on and verify that the sensor window will maintain the level at the optimum height for the skimmer.



Position the **EasyFill**™ sensing unit so that the probe window faces down toward the water with the bottom edge of the window at the lowest water level desired. To avoid overflows, the bottom of the sensor probes should fall approximately 1-½ - 2 inches below the pond edge. The **EasyFill**™ has no capacity for delaying fills in turbulent waters due to ancillary water systems such as fountains and waterfalls. *Therefore care must be taken*

when choosing the mounting location and water level. If the sensor height will need to be adjusted, MNT-EZ adjustable mount will need to be installed. This will not be needed for most installations.

Mark the mounting surface to match the two mounting holes in the **EasyFill**™ housing. (If no holes are desired, the unit may be affixed using silicone sealant) Drill a small #4 pilot hole at the marks and screw the **EasyFill**™ snugly to the mounting surface with the #8 stainless screws provided. **DO NOT** over-tighten the screws!

Installing the Valve

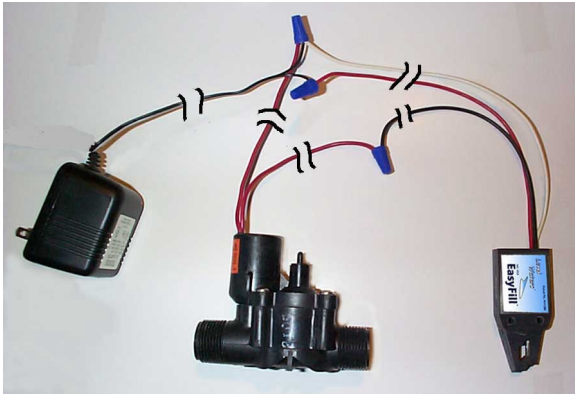
Plumb the input and output of the valve (follow manufacturer's instructions for valve) to an always-on water source using PVC pipe or garden hose (see 'Plumbing the Unit' for PVC installation tips). We recommend installing a ball valve on the output of the valve to control flow volume to the water feature.

Warning! The fill valve must be installed in an upright position with the wires extending upwards from the unit to function correctly.

Wiring the System

Wiring the **EasyFill**™ sensing unit to the power supply and fill valve requires that each connection be sealed from water using self-adhering tape and electrical sealant.

Warning! Do not plug the power supply in until all wiring is complete and leads are not exposed! NEVER connect the sensor black lead to either power lead! Doing so will could cause damage to the power unit and void the warranty!



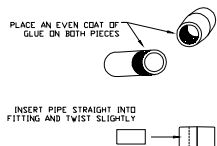
Remove pre-cut insulation from sensor and power supply wire ends. Connect wires as shown in Diagram 2 using wire nuts provided. Bend wire nut connection flat to length of wire and wrap with self-adhering tape making sure to create a proper watertight seal. Apply a liquid electrical sealant (available at most hardware stores) to each connection. We recommend that the unit be tested before weatherproofing the connectors.

Note: It does not matter which red wire from the valve or black wire from the power unit are used when wiring.

| Connection | Power Lead | Valve Lead | Sensor Lead |
|------------|------------|------------|-------------|
| 1 | 1 Black | 1 Red | White |
| 2 | 2 Black | --- | Red |
| 3 | --- | 2 Red | Black |

Plumbing the Unit

Using 3/4" PVC pipe (available at most hardware stores) run water supply from the fill valve outlet to the pond routing it the way desired.



Parts needed:

- Hacksaw (or other suitable fine-toothed saw)
- PVC glue
- Required lengths of 3/4" PVC
- Required angle adapters.

Cut and fit all PVC pipe from the fill valve to the water feature without gluing to make sure that the pipes are where the user desires them.

Clean and glue all parts with general PVC cement to form a watertight seal. Allow joints to dry for 24 hours before connecting water to the system.

Plug the power supply into the weather-protected receptacle. The unit is ready for operation

Operation

Once the **EasyFill™** is connected properly and plugged in it will fill anytime the water level drops below the sensor probe window. Depending on how turbulent the water is, the **EasyFill™** may cycle on and off from time to time or make a humming sound. This is normal and will subside once the water level has reached a point where the ends of the probes are completely submerged.

Note! Contrary to popular belief, pure water is not a good conductor. Some city water can be highly filtered, such as places in California, which can cause the EasyFill to not turn the valve off when water has not had time to season. Placing salt into the pond will resolve this issue until the water has time to season properly.

Note! If the level of the water at the time of power up is low, the unit will fill until the water level reaches the probes before turning off.

Maintenance

The **EasyFill™** requires very little maintenance. Periodically clean the sensor probes thoroughly with the supplied wire brush or equivalent to remove debris and film. No other maintenance is required.

Troubleshooting

The MC-01B **EasyFill™** Automatic Pond Leveling Sensor should maintain the level in your pond for many worry-free years. However, if you should experience problems with it, it may be caused by some of these common issues that can be resolved by the user:

- ✗ Pond overflows when filling
 - ✓ Verify valve is installed upright, flow direction is correct and manual fill screw is tight.
 - ✓ Readjust sensor height to lower water level.
 - ✓ Verify proper connection with the white wire from the sensor.
 - ✓ Water may not be seasoned. Add a small amount of salt (see operation note).
- ✗ Pond will not fill
 - ✓ Check to make sure power is available at receptacle.
 - ✓ Check for debris on sensor and clean per instructions.
 - ✓ Check to ensure connections are not damaged and are covered with weatherproof tape or sealant. Allow connections to dry if necessary and seal per the instructions.

Warranty

Aquility Systems, Inc warrants this product to the original purchaser for a period of two years against defects in material or workmanship when used for normal residential purposes it is intended for. In order to obtain a replacement unit or repair the existing unit, you must obtain a RMA number and return the complete unit, postage prepaid, to the place of purchase, or to the Aquility Systems facility. (6949 SW 21st Lane, Gainesville, FL 32607)

This warranty is intended to cover product defects only. Aquility Systems, Inc. is not liable for indirect, incidental or consequential damages in connection with the use of the Level Waters product covered by this warranty. This warranty does not cover any cost or expense incurred by the purchaser in providing substitute equipment or service during reasonable periods of malfunction or non-use of this product, while waiting for completion of repairs under this warranty. Some states do not allow exclusions of incidental or consequential damages, so the above exclusions may not apply in all states. This warranty gives you specific legal rights in your state, which vary from state to state.

If you wish to contact Aquility Systems, Inc., please direct inquiries to:
 Customer Service
 Aquility Systems, Inc.
 6949 SW 21st Ln.
 Gainesville, FL 32607 or info@aquilitysystems.com