

MLS-3401 EasyFill™ System User Manual

Thank you for purchasing the *Level Waters™* MLS-3401 **EasyFill™** Electronic Filling System. The system is the smallest automatic, completely electronic filling system on the market.

The system 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 MC-01B Sensing Unit is the main component in the system and it uses no 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 the MLS-3401 or our full line of professional leveling systems, visit us on the web at www.aquilitysystems.com.

Safety Overview



The **EasyFill™** Pond Filling System 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:

Never mount the power supply in an outdoors environment where it will get wet. The power supply is **for indoor use only and must be housed in a weather-protected receptacle for outdoor use.**

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.

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 MLS-3401 Automatic Pond Filling System is simple to install, requiring simple PVC pipe installation and screw mounting the sensing unit and 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
- ¾" 24VAC Fill Valve
- 24V 300ma Power Module
- 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 power wires or the unit may not sense properly and doing so will void the warranty.

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

Warning! **The MC-01B requires the water to be electrically isolated from ground. If it is not, the sensor will not shut the valve off.**

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.

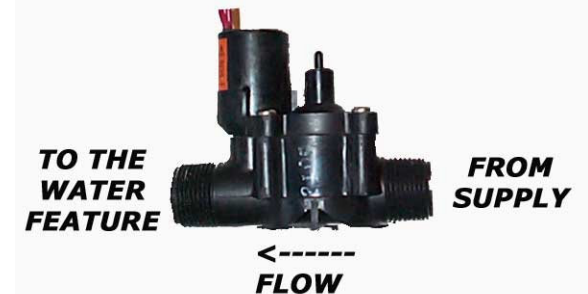
Position the **EasyFill™** sensing unit so that the probe window faces down toward the water with the bottom edge of the window at the lowest water level desired. **DO NOT** completely submerge sensor! To avoid overflows, the bottom of the sensor probes should fall approximately 1-½ - 2 inches below 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 sensor height adjustment is desired, the MNT-EZ adjustable mount will need to be installed (sold separately). This is an option is not 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 (flow arrow on bottom) 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

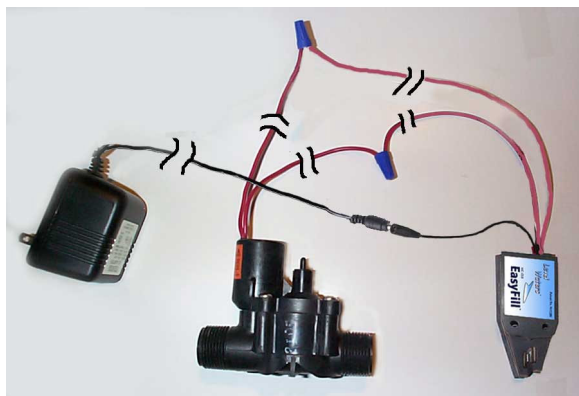
Wiring the **EasyFill™** sensing unit to the power supply and fill valve requires that each connection be sealed from water using self-adhering tape and electrical sealant.

Warning! **Do not plug the power supply in until all wiring is complete and leads are not exposed!** Remove precut insulation from sensor and power supply wire ends. . Connect wires as shown in the diagram above and table below 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. Plug the power supply connector into the black sensor power connector and seal with self-adhering tape. Apply a liquid electrical sealant

(available at most hardware stores) to each connection. We recommend that the unit be tested before weatherproofing the connectors.

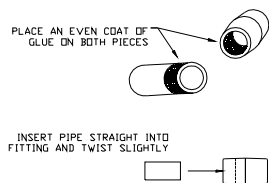
Note: It does not matter which red wire from the valve are used when wiring.

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



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. **If the probes are clean**, placing a small amount of 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, to remove debris and film. No other maintenance is required.

Troubleshooting

The MLS-3401 **EasyFill™** Automatic Pond Leveling System 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.

- ✓ Clean the probes thoroughly with the supplied wire brush.
- ✓ Water may not be seasoned. Add a small amount of salt or water is at ground potential (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 or:
 Aquility Systems, Inc.
 6949 SW 21st Ln. info@AquilitySystems.com
 Gainesville, FL 32607

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