



# Auto Top-Off & Ultra-Precise Liquid Level Controller II (UPLC-II-G6)



## INSTALLATION MANUAL

# SpectraPure®

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*PACKING LIST FOR UPLC-II:*

**IF ANY OF THE ITEMS LISTED BELOW ARE MISSING PLEASE CONTACT SPECTRAPURE PRIOR TO INSTALLATION.**

- |                                  |                      |
|----------------------------------|----------------------|
| - Module w/ Sensor Tube Attached | - 12' White Tubing   |
| - 12v / 800ma Power Supply       | - Operations Manual  |
| - Grey Float Switch Assembly     | - Blue Warranty Card |
| - Allen Wrench                   |                      |

**ALL RETURNS WITHOUT RMA# WILL BE REFUSED. CLAIMS  
MUST BE WITHIN 10 DAYS FROM RECEIPT.**

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**SpectraPure®Inc.** 480.894.5437 Call us toll-free 1.800.685.2783

2167 East Fifth St, Tempe, Arizona 85281

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## SYSTEM FEATURES

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- Highest Quality and Accuracy – New and Improved “Gen 6” LiterMeter3 Pump. Model Numbers ending in “-G6” have Teflon-coated pumps and have two “thrust washers” added.
- Fully automatic operation - Can be programmed for “fill mode” or “drain mode”
- High reliability metal pump housing
- Virtually maintenance free
- No check valves to clog or seals to leak
- Self-priming and anti-siphoning
- Hi-limit float switch for fail-safe operation
- High delivery pressure - over 40 psi
- Compact size and cool operation
- Kalkwasser safe
- No damage to the pump if run dry
- Quiet operation and low power consumption
- Complete system consumes less than 3 Watts when pump is on
- Extended **5-year Warranty**

## SYSTEM SPECIFICATIONS:

- **Pump Flow Rate:** Adjustable in 10% Steps up to 180 mL/min
- **Dimensions:** 7.5" x 3.7" x 2.2" (19 cm. x 9.4 cm. x 5.6 cm.)
  
- **Maximum Daily Total (per Pump):** 360 liters (95 gals.)
- **Draw Height:** from maximum **25 feet** (7.7 meters) below
- **Delivery Height:** to maximum **60 feet** (18.5 meters) above
- 115VAC / 12VDC wall-mounted power supply
- Can be powered by 12VDC battery

**SpectraPure® Inc.** assumes no responsibility for water damage due to leaks or misapplications of our products. It is the user's responsibility to determine that the system is leak-free and properly installed.

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## OPERATION

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The Sensor Tube should be mounted in the sump where the water level changes due to evaporation. It can be mounted using the two suction cups and a dab of silicone sealant under each cup. (Pump operation is dependent upon the water level in relation to the Sensor Tube).

The pump can operate in either "fill mode" or "drain mode" when the water level changes. The Sensor Tube can be pre-set to operate with a minimal change in water level.

FILL mode works to keep a tank topped-off, adding water to an upper limit. DRAIN mode works like a sump pump in a basement, removing water down to a lower limit.

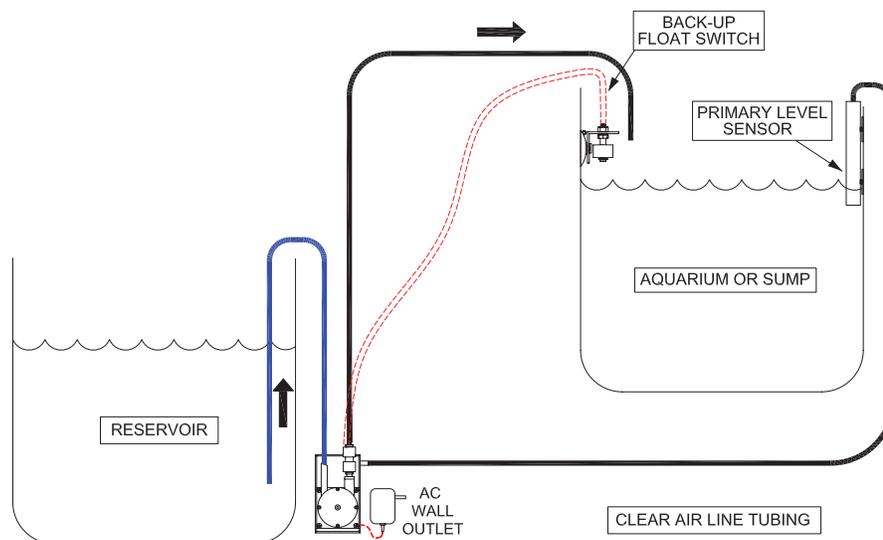
The UPLC runs on a recurring ten-second cycle. The pump can be on for any number of seconds each cycle, including zero (always off) and ten (always on). After the UPLC is powered up, use the UP and DOWN buttons to adjust the ON-time in 10% steps. (This value is saved even after a loss of power).

### The High-Limit Float Switch:

can be mounted with a dab of silicone sealant under its suction cup. Position it so any abnormal rise in the sump will float the switch and kill power to the UPLC control module.

## SET-UP DIAGRAM:

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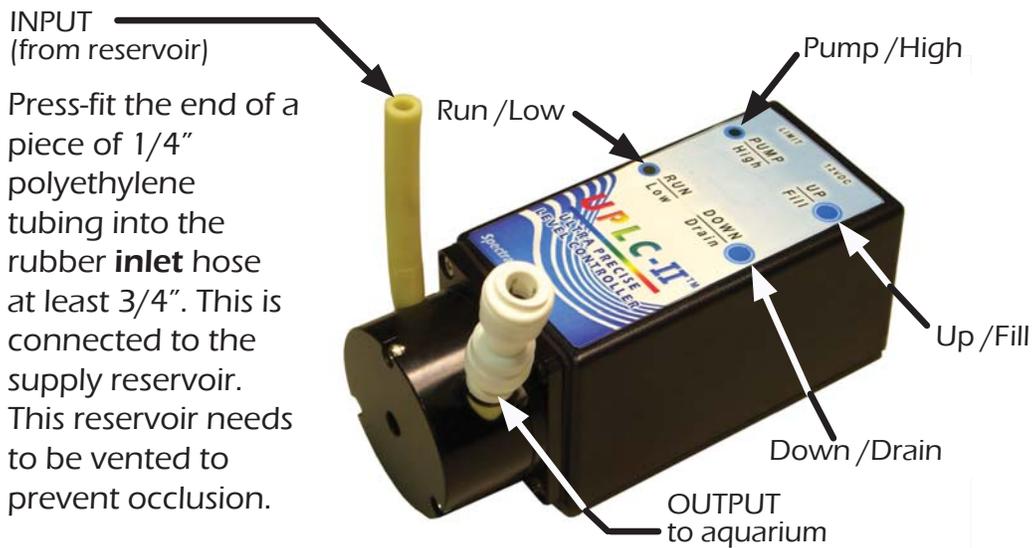
## CONTROLS:

Green LED: The Green "PUMP" LED will be lit when the pump is running

Red LED: The Red "RUN" LED blinks once per second to indicate proper module operation.

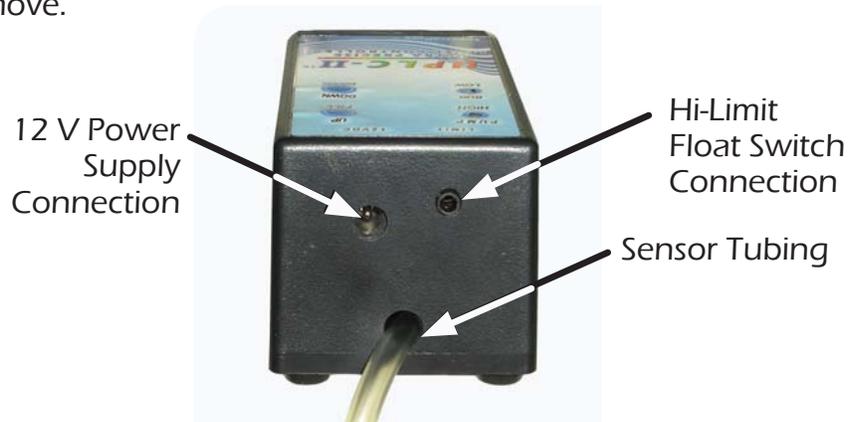
"UP" Push-Button: Sets high set point and increases "ON-time" %.

"DOWN" Push-Button: Sets low set point and decreases "ON-time" %.



**This system is not water-proof. Saltwater damage is not covered in our five year warranty. Do not let the Pump Module fall into the water!**

*Always run a new pump dry for 20 minutes before putting it into service.* Be sure to observe the rollers revolving around the rotating motor shaft through the hole in the end of the pump head. See Page 8 if the rollers don't move.



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## **SETTING THE SENSOR'S LEVEL:**

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You can set the UPLC to either FILL or DRAIN. Follow instructions below to set-up the Air-Line Sensor Tube. This procedure can be performed in a glass of water, as well as your sump.



NOTE: In both cases, pressing the UP button directly after pressing the DOWN button will set the difference in levels to be minimal, typically less than 0.10"

### **Set-Up for the FILL MODE:**

1. Press and hold the UP (Fill) button while connecting the power to the UPLC. (The Low LED will blink rapidly.)

2. Make a mark (with a water-proof marker) about two inches from the open end of the Sensor Tube. Submerge the Sensor Tube until the water level matches the mark. Press the DOWN button. This will save this water level as the lower-level set-point.

3. The High LED will now be blinking. The UPLC is now asking for the distance (or difference) between the lower-level set-point and the higher-level set-point. This difference can be anything between "minimal" and four inches (near the top of the Sensor Tube).

4. Move the Sensor Tube down farther into the water to the desired higher-level set-point and press the UP button. This will save the higher-level set-point.

### **Set-Up for the DRAIN MODE:**

1. Press and hold the DOWN (Drain) button while applying power to the UPLC. (The Low LED will blink rapidly)

2. Follow Steps 2 through 4 above.

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## ADJUSTING THE "ON-TIME":

Now that you have set the FILL or DRAIN mode, you can adjust how much the pump runs by pressing the UP or DOWN buttons.

When you first start up the UPLC-II, the ON-time will be set to 10, or always on. The pump will run at a rate of approx. 200 ml/min.

To change the ON-time:

1. Press the DOWN button once to decrease the "ON-time" by 10%.

*The red light will blink rapidly as acknowledgment.*

2. Adjust the "ON-time", by either using the UP or DOWN buttons, until you reach the setting you need for your application.

*You can press and hold the UP or DOWN button to step through multiple "ON-time" settings. Each time the "ON-time" changes by 10%, the red light will blink three times.*

*If the "ON-time" reaches its highest or lowest limit, the red light will blink once per second.*



### "ON-TIMES" FOR UPLC-II PUMP:

- 10 - Pump will always be on until the sensor shuts it off due to change in water level - 100%
- 9 - Pump runs for 9 blinks (seconds) and off for 1 blink (second) - 90%
- 8 - Pump runs for 8 blinks (seconds) and off for 2 blinks (seconds) - 80%
- 7 - Pump runs for 7 blinks (seconds) and off for 3 blinks (seconds) - 70%
- 6 - Pump runs for 6 blinks (seconds) and off for 4 blinks (seconds) - 60%
- 5 - Pump runs for 5 blinks (seconds) and off for 5 blinks (seconds) - 50%
- 4 - Pump runs for 4 blinks (seconds) and off for 6 blinks (seconds) - 40%
- 3 - Pump runs for 3 blinks (seconds) and off for 7 blinks (seconds) - 30%
- 2 - Pump runs for 2 blinks (seconds) and off for 8 blinks (seconds) - 20%
- 1 - Pump runs for 1 blink (second) and off for 9 blinks (seconds) - 10%
- 0 - Pump is always OFF - 0%

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## ***SERVICING THE PUMP MODULE:***

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These instructions apply to ALL SpectraPure Pump Products. It is recommended that the pump head be inspected and cleaned, or the tubing replaced per the following procedure.

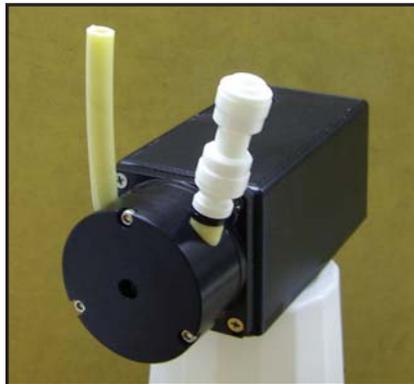
- 1: If you are just inspecting the pump head, it is not absolutely necessary to disconnect the two tubings from the head, but it might make this task easier (Fig. B-1).
- 2: Use the provided 3/32" Allen Hex Key to remove the three bolts in the pump head and lift the pump head away from the motor shaft. (Fig. B-2)
- 3: Remove the three white rollers from the pump head. (Fig. B-3)
- 4: If they are dirty, clean the three white rollers, tubing, head and base plate with a cloth soaked in De-Solv-it<sup>®</sup> (available in most grocery stores), acetone, or petroleum spirits. Common "lighter fluid" also works well. Make sure you remove all gummy deposits, then rinse parts with water and dry. Next, wipe the motor shaft clean. Be careful not to spill solvents on the plastic case or it will damage the finish. Keep cleaning fluids away from the bearing at the base of the motor shaft.
- 5: If you are replacing the tubing assembly, remove the tubing from the pump head as shown in Fig. B-4. Replace the tubing assembly with a new tubing assembly. Reinstall by inserting the tubing into the outlet port of the pump head. (Fig. B-5)
- 6: Pinch the other end of the tubing and insert it through the slot at the inlet port of the pump body. Manipulate the tubing so that it conforms to the inside diameter of the pump body. Be sure that the tubing is completely pushed down into the output port so the tie-wrap is within 1/16" of the pump body and the plastic "wear strip" is positioned to the inside so the rollers will contact the wear strip evenly. Insert one of the "thrust washers" as shown. (Fig. B-6)
- 7: Place two of the three rollers into the pump body, pushing them against the tubing and thrust washer (Fig. B-7). Hold them in position with your left thumb and then push the third roller into place. (Fig. B-8)

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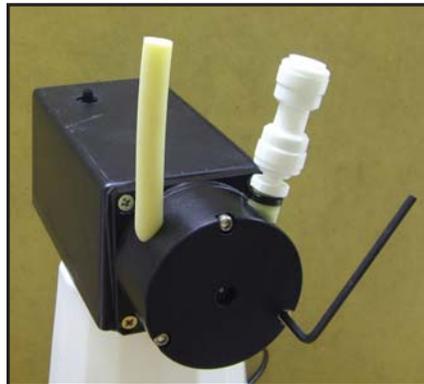
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## SERVICING PUMP



**Fig. B-1**



**Fig. B-2**



**Fig. B-3**



**Fig. B-4**



**Fig. B-5**



**Fig. B-6**

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## SERVICING PUMP



Fig. B-7



Fig. B-8



Fig. B-9

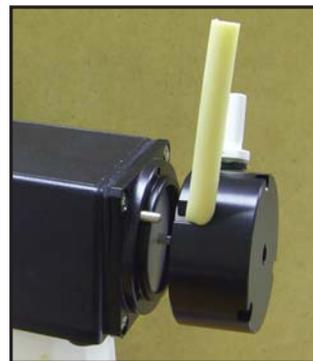


Fig. B-10



Fig. B-11



Fig. B-12

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- 8: Install a second thrust washer over the motor shaft. (Fig. B-9)  
Carefully line-up the locator pin with the slot in the inlet port. (Fig. B-10)
- 9: Press the pump head firmly against the pump plate and check for proper alignment. (Fig. B-11) Use the 3/32" Allen Hex Key to re-install the three pump head bolts. (Fig. B-12)
- 10: Replace the union connector on the output port stud. The final assembly should look like Fig. B-1.
11. Run the pump dry for 20 minutes. Be sure to observe the rollers revolving around the rotating motor shaft through the hole in the end of the pump head.

## **TROUBLESHOOTING:**

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Symptom	Remedy
Noise	The LiterMeter Pump Module is considered the quietest pump on the market, but the pump may produce some noise. Here are some suggestions to limit any perceived noise. <ol style="list-style-type: none"><li>1. Do not attach the Pump Module to a box or enclosure that will act as a "speaker" and amplify the vibration of the pump.</li><li>2. Secure the attached tubing from vibrating against nearby walls, cabinets or other objects.</li></ol>
No LED's are lit	Power supply failure <ol style="list-style-type: none"><li>1. Replace power supply</li></ol>
Green Pump LED is on, but rollers are not turning	Determine if drive shaft is rotating by observing it through the hole at the end of the pump head. If not: Call Technical Support. If shaft is turning: The pump head needs to be cleaned.
Pump is running and rollers are turning but no fluid is being pumped	<ol style="list-style-type: none"><li>1. Check the ends of the tubing. Kalkwasser or other substances may be blocking the lines at either tubing end.</li><li>2. Loose connection on the Suction side will cause it to lose its prime.</li></ol>

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## ***FIVE YEAR LIMITED WARRANTY:***

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SpectraPure, Inc. warrants each new LiterMeter Precision Dosing System to the original owner only to be free of defects in material and workmanship for a period of 5 years from the date of receipt.

SpectraPure's liability under this warranty shall be limited to repairing or replacing on SpectraPure's option, without charge, F.O.B. SpectraPure's factory, any product of SpectraPure's manufacture. SpectraPure will not be liable for any cost of removal, installation, transportation, or any other charges which may arise in connection with a warranty claim.

Products which are sold but not manufactured by SpectraPure are subject to warranty provided by the manufacturer of said products and not by SpectraPure's warranty. SpectraPure will not be liable for damage or wear to products caused by abnormal operating conditions, accident, abuse, misuse, unauthorized alteration, or repair, or if the product was not installed in accordance with SpectraPure's printed installation and operating conditions or damage caused by power failures, freezing, flood, fire, or acts of God.

## **- WARRANTY SUPPORT -**

As confident as we are in our Pump Technology, we request that you fill out and return the Warranty Card in order to take full advantage of our FIVE YEAR WARRANTY. This even includes tubing replacements for as long as you own the UPLC-II, or FIVE YEARS, whichever comes first.