



Ultra-Precise Liquid Level Controller II (UPLC-II)



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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SYSTEM FEATURES

- New and Improved Pump. Highest quality and accuracy
- Fully automatic operation - Can be programmed for "fill mode" or "drain mode"
- High reliability metal LiterMeter3 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

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. (Pump operation is dependent upon the water level in relation to the Sensor Tube).

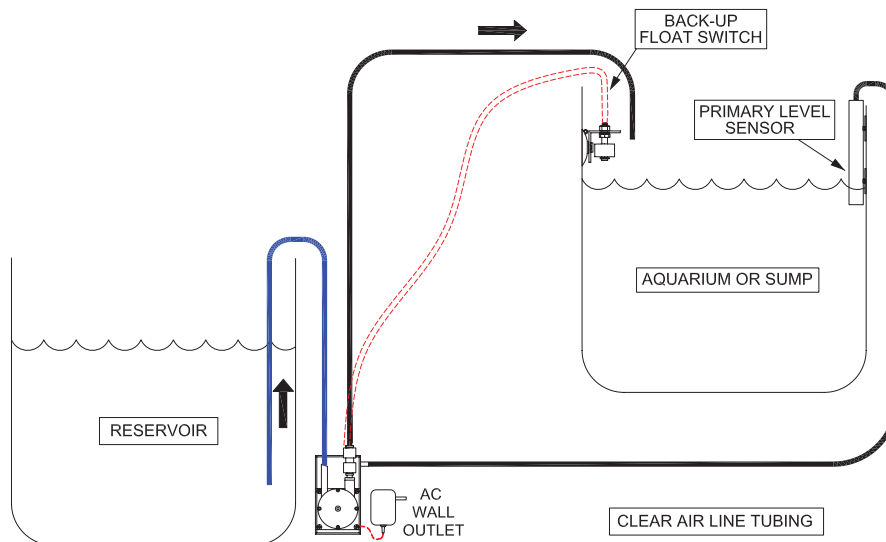
The pump can operate in either “fill mode” or “drain mode”, when the water level changes. The Sensor Tube can be pre-set to operate with a minimal change in water level.

The UPLC runs on a 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

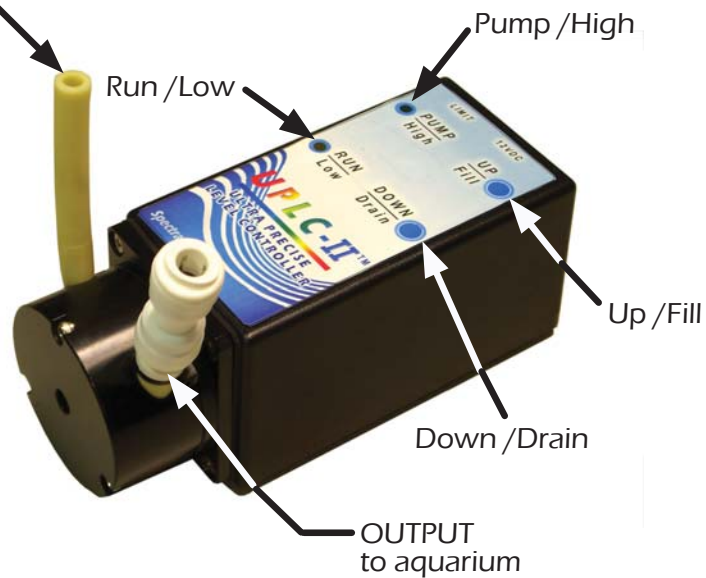
Amber LED: The Amber "run" LED blinks once per second to indicate proper module operation.

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

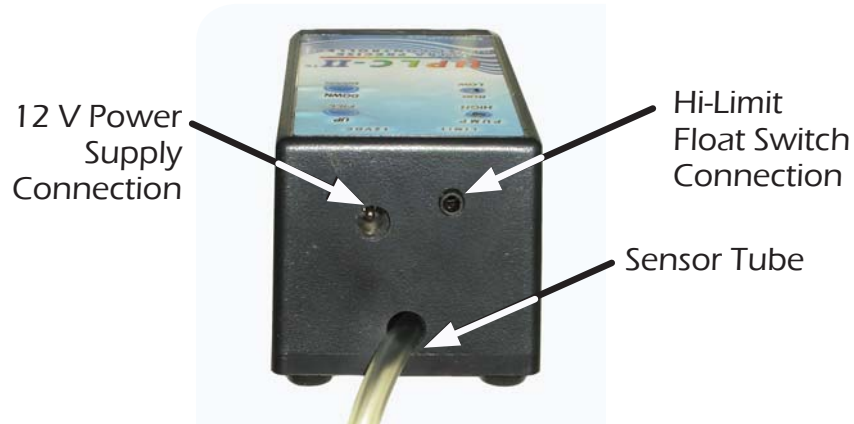
Down Push-Button: Sets low set point and decreases "ON-time" %.

INPUT
(from reservoir)

Press-fit the end of a piece of 1/4" polyethylene tubing into the rubber **inlet** hose at least 3/4". This is connected to the supply reservoir. This reservoir needs to be vented to prevent occlusion.



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!



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SETTING THE SENSOR'S LEVEL:

You can set the UPLC to either FILL or DRAIN. Follow instructions below for set-up of the Air-Line Sensor Tube:



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. Submerge the sensor tube into the water at the lower level you want the UPLC to "turn-on" . Now, press the DOWN button. (The "turn-on" level is now saved).
3. The High LED will now blink until the Sensor Tube is positioned in the water at the upper, or "turn-off" point. Now, press the UP button. (The "turn-off" level is now saved).

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. Submerge the Sensor tube into the water at the lower level you want the UPLC to "turn-off" . Now, press the DOWN button. (The "turn-off" level is now saved).
3. The High LED will now blink until the Sensor Tube is positioned in the water at the upper, or "turn-on" point. Now, press the UP button. (The "turn-on" level is now saved).

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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.

To change the ON-time:

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

The amber 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 amber light will blink three times.

If the "ON-time" reaches its highest or lowest limit, the amber 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:

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 a 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 and tubing from the head.
- 4: If they are dirty, clean the three white rollers, tubing, lid and body with a cloth soaked in De-Solv-it[®] (available in most grocery stores), acetone, or petroleum spirits. Make sure you remove all gummy deposits, then rinse parts with water and dry. Next, wipe the motor shaft clean. If you use acetone, be careful not to spill 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: Remove the tubing from the pump head as shown in Fig. B-3.
- 6: Replace tubing assembly with a new or re-furbished tubing assembly. Reinstall by inserting the tubing into the outlet port of the pump body. (Fig. B-4)
- 7: 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 and the plastic "wear strip" is positioned to the inside. See Fig. B-5.
- 8: Place two of the three rollers into the pump body, pushing them against the tubing. Hold them in position with your left thumb and then push the third roller into place. (Fig. B-6 and B-7)
- 9: Carefully align and press the pump head assembly onto the motor shaft. (Fig. B-8)
- 10: Push the pump head firmly against the pump body and check for proper alignment. (Fig. B-9)
- 11: Use the 3/32" Allen Hex Key to re-install the three pump head bolts. (Fig. B-10)
- 12: Replace the union connector on the output port stud. (Fig. B-11)
- 13: The final assembly should look like Fig. B-12.

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SERVICING PUMP



Fig. B-1

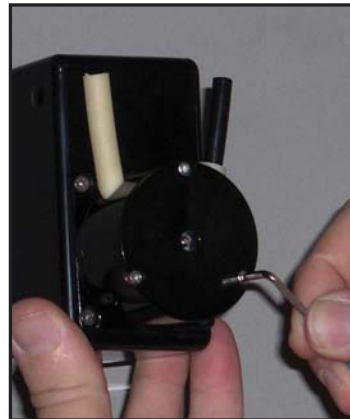


Fig. B-2



Fig. B-3

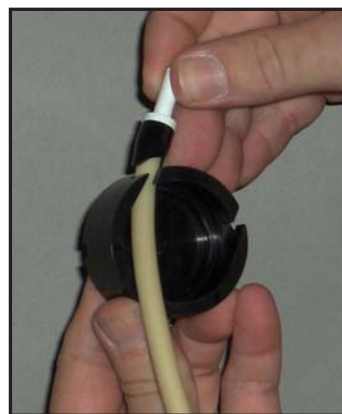


Fig. B-4



Fig. B-5



Fig. B-6

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SERVICING PUMP

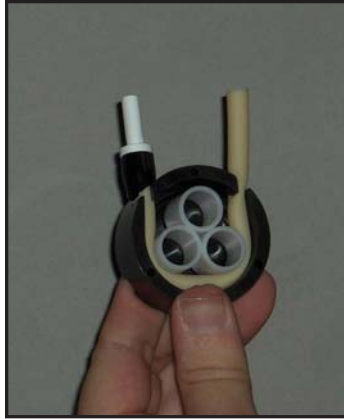


Fig. B-7



Fig. B-8



Fig. B-9



Fig. B-10



Fig. B-11



Fig. B-12

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TROUBLESHOOTING:

Symptom	Remedy
Noise	The LiterMeter Pump Module is considered the quietest pump on the market, but the pump will produce some noise. Here are some suggestions to limit any perceived noise. <ol style="list-style-type: none">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.2. Secure the attached tubing from vibrating against nearby walls, cabinets or other objects.
No LED's are lit	Power supply failure <ol style="list-style-type: none">1. Replace power supply
Pump 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">1. Check the ends of the tubing. Kalkwasser or other substances may be blocking the lines at either tubing end.2. Loose connection on the Suction side will cause it to lose its prime.

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FIVE YEAR LIMITED WARRANTY:

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, or FIVE YEARS, whichever comes first.