CARE AND USE OF THE VP 601
Liquid Level Sensor System

Parts of the Liquid Level Sensor System

**VP 601** – The VP 601 is the Liquid Level Sensor Control Module that includes the following features: amplifier, AC outlet control, current loop control and power supply.

**VP 601A** – The VP 601A is the fiber optic LED Liquid Level Sensor.

**VP 601B** – The VP 601B is the SBS Mounting System for positioning the Liquid Level Sensor (VP 601A) next to a reservoir. The reservoir is placed on the SBS platform with the Liquid Level Sensor positioned either the outside wall the reservoir, on either the length or width. The height of the Liquid Level Sensor can be adjusted to set the desired liquid level.

**VP 601C** – The VP 601C is an optional connector (DB15) if a peristaltic pump (Barnant Masterflex # 7550-20) is used to move liquid into reservoir.

**VP 601D** – Tubing pinch valve, comes with power supply
1. Outlet Light Indicator – Indicator light to visually show when power is available to the AC Outlet (Fig. 1 Item 2).

2. AC Outlet – Provides an AC power outlet which is toggled On/Off by the Liquid Level Sensor.

3. Power Switch – Turns power On/Off of entire system.

4. Control Loop Output – Connection port for the VP 601C cable. Provides an Open/Closed connection which is toggled by the Liquid Level Sensor.

5. Din Rail – Rail to secure amplifier to box.

6. Power Inlet – Provides power to the entire system.

7. Amplifier Input – Connection port for the amplifier.

OPERATION

Initial Setup
1. Attach power chord to power inlet.

2. Attach the VP 601A sensor to the amplifier by lifting the plastic cover up, moving the lock lever down, inserting the sensor’s tips into the amplifier port, and moving lock lever back up. Figure 3 item 1 shows the placement of the lock lever.

3. Connect amplifier to the VP 601 at the Amplifier Input (Figure 2 Item 7).

4. Connect VP 601C cable to Control Loop Output (Figure 1 Item 4), if using a peristaltic pump. Connect power cord to AC Outlet (Figure 1 Item 2) if using AC device.

5. Secure the Liquid Level Sensor (VP 601A) to the side of the reservoir using either the VP 601B or any other means necessary.
Overview of Amplifier
The amplifier provides the logic between the VP 601A Liquid Level Sensor and the AC outlet and control loop outlet on the VP 601. The amplifier determines whether or not the liquid level is high enough and turns On or Off the outlets on the VP 601. This parameter is set up by setting a switch value in the amplifier and when the current readout is above or below the switch value, the outlets turns On or Off.

Fig. 3

1. VP 601A Lock Lever – Lever to release/lock sensor to amplifier.
2. Status Indicator – LED light to visual show status of amplifier.
3. Set Button – Sets the switch level value.
4. Switch Level Display – Value at which amplifier’s output will toggle On/Off.
7. Mode Button – Provides access to advanced options.
8. L/D ON Button – Reverses direction of amplifier’s output.

VP 601A Setting Up Amplifier Values
The setup process requires setting the switch level (Figure 3 Item 4). This value tells the amplifier at which level the VP 601 should turn On/Off.

1. Mount Liquid Level Sensor LED to reservoir.
2. Setting the switch value is a two step process:
   a. Press the set button without any liquid in the reservoir.
   b. Fill the reservoir with liquid and press the set button again. The switch value is now set and when the current level goes above or below, the VP 601 outputs will either turn On or Off.
**Change Direction of Output**
The L/D ON button changes the direction of output so that the VP 601 will either turn off or on the outlets when the current value is above or below the set switch value. When it is set to L-on, the amplifier will turn on when the current value is above the set switch value and off when it is below. When it is set to D-on, the amplifier will turn on when the current value is below the set switch value and turn off when the current value is above.

1. Press the L/D ON button (Figure 3 Item 8).
2. Use the Manual Button (Figure 3 Item 6) to change between L-on and D-on.
3. Press L/D ON button to save selection.

**VP 601B Setup**

![Fig. 4](image1.png) ![Fig. 5](image2.png)

1. Attach the VP 601A sensor to the VP 601B by screwing in the two screws (Figure 4 Items 1 and 2). Springs behind the sensor are used to provide a snug fit against the reservoir.
2. The fiber optic wire is fed through the large hole (Figure 4 Item 5).
3. Figures 4 & 5 show the two different orientations the sensor can be placed in.
4. Two set screws (Figure 4 Items 3 & 4) allow the vertical adjustment of the sensor.

**VP 601C Cable**
1. Connect one end of the cable to the Control Output Loop (Figure 1 Item 4) on the VP 601 and the other end to the peristaltic pump.

**VP 601D Pinch Valve**
1. Place tubing through the pinch valve.
2. Attach one end of the power supply connector to the pinch valve and the other end to the AC outlet on the VP 601.
Default Amplifier Settings
Press and hold mode button for 3 seconds to access the advanced options. Below are the settings that are set upon shipping.

- MEGA
- Set Std
- Seg - Func
- on-d offd
  - on-d 130
  - offd 330
- detc Std

Refer to the Keyence Instruction Manual for more information.

WARRANTY

V&P Scientific, Inc. warrants this product to be free from defects in material and workmanship when used under normal laboratory conditions for one year. This warranty begins from the date of delivery by V&P Scientific.

In the event this product fails under normal laboratory conditions within the specified period of time because of a defect in material or workmanship, V&P Scientific will, at its option, repair or replace the product. Damage to the product caused by user negligence is not covered.

Please keep the special shipping carton in case the unit needs to be shipped back to V&P Scientific. Please contact V&P Scientific at the address below for return authorization and shipping instructions.

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SAFETY PRECAUTIONS

The use of motor controls, like that of all utilization of concentrated power, is potentially hazardous. The degree of hazard can be greatly reduced by proper design, selection, installation, and use, but all hazards cannot be completely eliminated.