



# Cycle Sensor

## Model CS1PH1-2HP

### 240 VAC

## Installation Instructions

**Risk of electrocution is possible when installing this product. Disconnect power source before installation!**

### Step 1: Install in Enclosure and Mount the Cycle Sensor

Install backplate to inside of enclosure using two standard screws. Then install sensor to backplate using one of the standard screws and one self-tapping screw as the holes on the backplate do not line up to the holes for the sensor. See our installation video at this link: <https://vimeo.com/248374371>

Mount the Cycle Sensor in the desired location and wire the unit according to the appropriate wiring diagram on the following pages. Make sure all local, state, and national electrical codes are followed. While setting the Cycle Sensor, to prevent electrical shock, do not touch the wiring terminals or electric components. Touch the control buttons only.

Make sure a faucet or valve is open before starting the pump. Apply power to the Cycle Sensor and pump. After power is energized, the pump will probably run for about 5 seconds and shut down while displaying "DRY" on the screen. This means the "Current Adjust" is set too high. Press "Manual Reset" or toggle the breaker off and on to reset the Cycle Sensor and get the pump running again. You must press and HOLD the "Current Adjust" button within 5 seconds of the pump starting to keep the Cycle Sensor from tripping out on "DRY" run. The pump will not shut off while holding the "Current Adjust" button.

While holding the "Current Adjust" button and pushing the "up" or "down" arrow, the display number should scroll up or down accordingly. (If the numbers do not change while holding the "Current Adjust" and "Down" button, the unit is locked. To unlock or release the "Current Adjust" button, quickly press and HOLD the up and down buttons at the same time for a couple of seconds until the display reads "ULOC" for unlock.) Within 5 seconds of releasing the "up and down buttons" press and HOLD the "Current Adjust" button to keep the pump running. While holding the "Current Adjust" and "down arrow" buttons at the same time, the display will scroll the current adjust number to a lower setting. Scroll the current adjust number to a low number like to 1.0 or 2.0. This will keep the Cycle Sensor from tripping out on DRY run while you are getting it set up correctly.

### Step 2: Determining and Setting the Current Adjustment Setting

With the Cycle Stop Valve adjusted properly (if applicable) and the pump is running, close all faucets and valves to let the pressure tank fill. While the pressure tank is filling, observe the numbers on the display. Just before the tank is full and the pressure switch shuts the pump off, note the lowest number you saw on the display.

**Note:** If the pressure switch shuts the pump down before completing this step, you will need depressurize the system by opening a valve, and repeat the process.

Multiply the lowest number you saw on the display times .95. Then hold the "Current Adjust" button and "up" arrow button until the display reads the number you calculated. Releasing the "Current Adjust" button will save the setting.

In the event of a tankless system or a pump start relay, use your smallest demand or zone to "observe" the lowest setting the pump is running on. Multiply this number times .95 to get the proper setting for the "Current Adjust" setting. Then HOLD the "Current Adjust" button and "up" arrow until the display reads the calculated number. Releasing the "Current Adjust" button will save the setting.

### **Step 3: View the Dry Run Restart Delay Setting**

To view the Dry Run Restart Delay Setting, push and hold the "Restart Delay" button. The display will show the number of minutes the pump will be off before automatically resetting from a dry run condition. The restart delay can be set from 1 minute to 300 minutes (5 hours). Most wells need at least 15-20 minutes to recover before restarting the pump. But some may need longer and the delay time needs to be adjusted accordingly. A setting of "000" means manual reset only, which is recommended when pumping from lakes, rivers, ponds, and cistern storage tanks that will not automatically recharge. Releasing the "Restart Delay" button saves the settings on the display.

### **Step 4: Set the Rapid Cycle Setting**

The "Rapid Cycle" setting needs to be slightly lower than the number of seconds it takes to fill the pressure tank to the pressure switch shut off point. Turn on a faucet and let water out of the pressure tank until the pump starts. As soon as the pump starts close the faucet and check your watch. Note how long it takes in seconds to fill the tank to the pressure switch shut off point. Multiply the number of seconds it takes to fill the tank and shut off the pump times .75.

To set the Rapid Cycle Setting, push and hold the "Rapid Cycle" button. The display will show the number of seconds the pump is required to run without locking out on a rapid cycle condition. Change this number by holding the "Rapid Cycle" button and pressing either the "Up" or "Down" button until the display matches the number you get after multiplying pump run time by .75. Release the "Rapid Cycle" button to save the setting. To disable the rapid cycle protection, use the "000" setting.

### **Step 5: Observe the Operation of the System**

Observe the operation of the system, insuring that the pump control is set correctly. If the settings are too sensitive or not sensitive enough, repeat appropriate step and reset.

### **Step 6: Lock Settings**

When you are happy with all the adjustments you can lock the Cycle Sensor if desired so no one can change your settings. Hold the "UP" and "DOWN" arrows at the same time until the display reads "LOC". The Cycle Sensor can still be manually reset, but the settings cannot be changed until the unit is again unlocked as in Step 1.

Sold by:  
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