



# **PH / ORP Controller**

## **Programming and Operations Manual**

Rev: 07/21/08

**CHECK FOR FREE MANUAL UPDATES AT [www.jpotechinc.com](http://www.jpotechinc.com)**

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## SUGGESTED SEQUENCE FOR INITIAL START UP

The following is a suggested sequence for initially using your pH/ORP meter.

1. Read the manual and familiarize getting into and out of screens as well as change values.

2. Go the SETUP screen and enter the values and settings you want to work with. Channels or Relays not needed can be disabled.

3. Get material for the calibration procedure. Connect probe to either Channel 1 or Channel 2.

4. Go to the CALIBRATION screen and calibrate the meter.

Since the meter was preliminarily calibrated already, calibrate with the temperature set at AUTO or MANUAL (enter a value) in the TMP ADJ screen. NOTE: the temperature compensation element is located in the cable end and not in the probe itself. Therefore, the cable end must be immersed in the buffers to get the proper calibration. Bring the temperature of cable to liquid temperature may take 5 minutes or more.

5. Go to the PROPORTIONING screen and set for ENABLED or DISABLED. (Too prevent over runs, we suggest ENABLED.)

6. Go to the Main screen (RLY#1 and/or RLY#2) and enter the SETPOINT, WINDOW, and ALARM values you want to use.

**REMEMBER:** Pressing and Releasing BOTH keys together will reset a value to all zeros or, if not in a flashing state, bring you back to the MAIN screen. You will need to do this when you are finished in the CALIBRATION section and the SETUP section.

## OVERVIEW OF PH/ORP METER MENU OPERATION

The following manual demonstrates how a user of the ph/orp meter can navigate through the menu system and change parameters as needed. The main menu headings have no user adjustable settings, however all submenus behind the main menu screens do consist of adjustable settings. All navigation is performed using the keypad (two keys—*SELECT* and *CHANGE*). The *SELECT* key will not change any existing information. It only provides a way to move through the menu or move the flashing cursor. The *CHANGE* key is used to change a value or option.. There are four input values to this meter: pH1/OPR1, pH2/ORP2, Temperature for pH1/ORP1 and, Temperature for pH2/ORP2. These inputs are identified as “Channel” inputs 1,2,3, and 4 respectively. NOTE: **Pressing and Releasing both keys at same time will reset values to zero if cursor is flashing or return you to the first screen.**

### RELAY STATUS and USER INPUT MENUS

When the unit is powered up, the user should see the **RLY1** screen which as shown to the right and indicate the range being read by the probe. The temperature will be shown if channel 3 is set for TMP. From the **RLY1** screen, the user has access to 3 submenus (**SETPOINT**, **WINDOW**, and **ALARM**). THESE THREE SCREENS SET THE PARAMETER OF THE RELAY. These screens are accessed by pressing and holding the *SELECT* button until the cursor begins to flash. Toggling the *SELECT* key will move the cursor, the *CHANGE* key will change values. This procedure must be repeated to access any of these submenus. To leave the submenus and accept the selected options press and hold the *SELECT* key while in the submenu. The user will be returned to the **RLY1** menu.

1. **SETPOINT**: The setpoint is the desired value at which the pumps will **not pump**. This value is determined by the user and set using the *CHANGE* key to cycle through values. Note: to move cursor one spot to the right from within submenus, press and release the *SELECT* button.
2. **WINDOW**: The value of the window setting will be either above or below the setpoint and will represent the point at which the pumps will operate **continuously**.
3. **ALARM**: The alarm value is usually set beyond the **WINDOW** value. If this level is reached, an alarm will be triggered after a predetermined delay (1-99sec—this is set in the **ALARM DELAY** menu under **SETUP**—See Below).

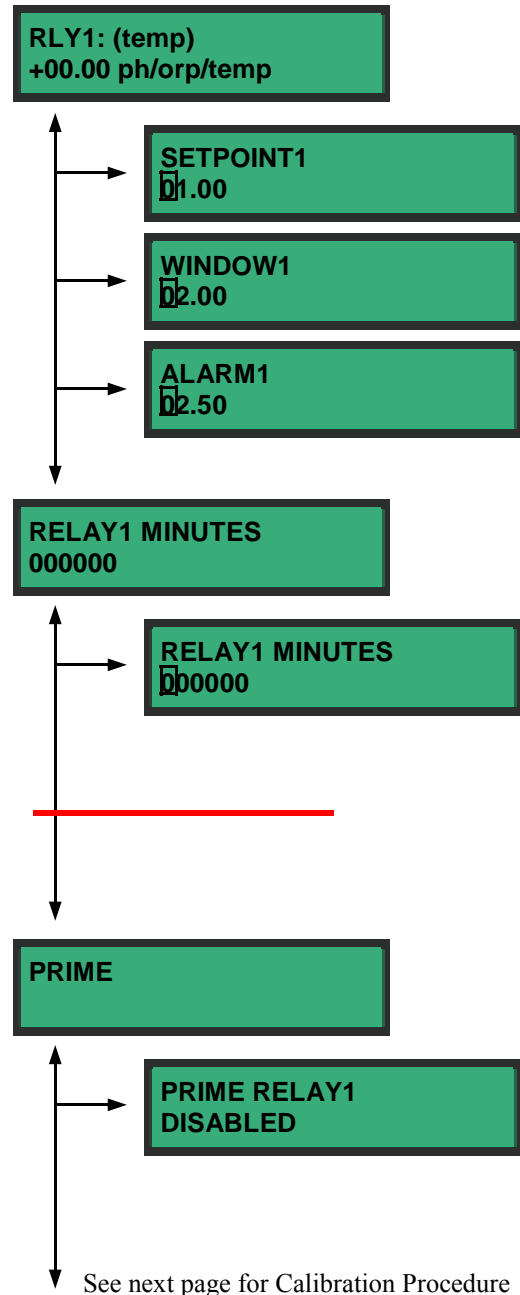
Pressing and holding the *SELECT* key after setting values in the **ALARM** submenu will bring you back to the **RLY1** screen. From here simply press and release the *SELECT* key to toggle to the next main menu. The user will now be at the **RELAY1 MINUTES** menu. As in all cases, to enter the submenu press and hold the *SELECT* key until the cursor flashes.

1. **RELAY1 MINUTES**: The total “on/off” time cycles of the unit is shown in this menu. The user can either reset this to zero or enter a value or leave alone.

*\*The entire procedure listed above can be repeated for setting the parameters of the remaining 2 relays*

After completing the parameters for the three relays, return to the main menu by pressing and releasing both keys simultaneously. Using the *SELECT* key, toggle until the **PRIME** screen is displayed. Press and hold the *SELECT* key to enter it’s submenu. **This function is used for occasional add or to prime pumps (Rly1 or 2) if needed.**

1. **PRIME RELAY**: After entering this screen, toggling the *SELECT* key changes the Relay that will be affected by the *CHANGE* key. The *CHANGE* key will toggle between **DISABLED** and **ENABLED** states of the relays. **Priming will not work if the relay is disabled in the setup menu.** Once finished, Press and Hold the *SELECT* key to back out of this screen.



## SETUP and USER INPUT MENUS

### PH/ORP Calibration Procedure

In a 'first time' or complete calibration, it is necessary to do the following:

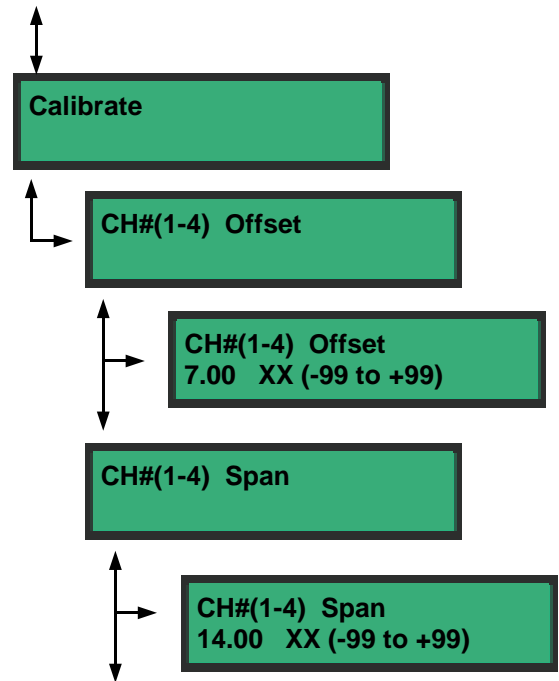
If channel 1 or 2 are to be calibrated and this channel is set to PH: Set 'Temperature adj' for this channel to disabled before calibrating (find in SETUP screens).

It is not necessary to change your temperature setting in CHAN#3 and CHAN#4 screens if you are only making a minor adjustment to calibrate this meter. **You do not need to do anything to the temperature setting when calibrating for ORP.**

For each CHANNEL, there is an OFFSET value and a SPAN value. For pH the value range is from 0 to 14 with a value of 7 being neutral. The OFFSET value ideally should be calibrated to a pH of 7.0 (0.00mV) and the SPAN value ideally should be calibrated to a pH of either 0.0 (+414mV) or 14.0 (-414mV) depending on your solution to test. This unit comes pre-calibrated using a buffer of 7.0 and 4.0. For ORP, the range is -1000 mV to a +1000 mV with "0" being the OFFSET and either plus or negative 1000 being the SPAN.

For PH:

1. Place the pH probe into a buffer of 7.00 pH.
2. Toggle with the SELECT key to the Calibration screen.
3. Press and Hold the SELECT key to bring up the "Channel 1 Offset screen.
4. Press and Hold the SELECT key again to get behind this screen to the screen that calibrates the Offset. This screen will show the pH value the probe is measuring on the lower left and a calibration number on the lower right.
5. Toggle the CHANGE key to bring the pH value shown down or toggle the SELECT key to bring the pH value shown up. Toggle either one so that the pH value on the left equals 7.00. Press and Hold the SELECT key to lock in the calibration number and to back out of that screen.
- 6 Toggle the SELECT key again to go to the CHANNEL 1 SPAN screen. Place the probe into a pH solution of either 4.01 or 10.0
7. Press and Hold the SELECT key to get behind this calibration screen. Again, the number in the lower left is the pH reading and the number to the lower right is the calibration value. Adjust like the Offset but your target will be either 4.01 or 10.0. Press and Hold the SELECT key to lock in and back out.
8. Do the same procedure for CHANNEL #2.
9. **Calibrating ORP is done the same way.**



Remaining Channels

#### For Temperature:

Generally this does not need to be done since it was resistively calibrated at the factory.

Place a 1000 Ohm resistance across the input channel (#3 or #4) to be calibrated. Adjust the **Offset** to read 0°C or 32°F depending on your display setting.

Place a 1391.6 Ohm resistance across the input channel(#3 or #4)to be calibrated. Adjust the **Span** to read 100.0°C or 212.0°F.

**NOTE: When using a non-Temp. Compensated cable, you must enter a temperature value of the bath into the MANUAL setting in the TEMP ADJ screen. Use the AUTO setting for a Temp. compensated cable.**

**TO GET OUT OF THE CALIBRATION SCREEN, PRESS AND RELEASE BOTH THE SELECT KEY AND THE CHANGE KEY TOGETHER. THIS BRINGS YOU BACK TO THE MAIN SCREEN.**

## SETUP and USER INPUT MENUS

Toggle the **SELECT** key to get to the **SETUP** screen shown at right. This section is used to set the physical hookup to the corresponding channels. Press and hold the **SELECT** key to enter the first submenu.

1. **\*CHANNEL#1:** Channel#1 can either be **DISABLED**, **PH** or **ORP**. Note: The setting must be set for type of probe attached to the meter. In order to set the appropriate option, the user must press and hold the **SELECT** key until the cursor is flashing and then cycle through the three options using the **CHANGE** key. When the desired option is displayed press and hold **SELECT** key to accept the option and return to the **CHANNEL#1** main menu.
2. **\*CHAN#1 TMP ADJ:** Press the **SELECT** key to enter the **CHAN#1 TMP ADJ** submenu. Only if **PH** was selected in the **CHANNEL#1** options screen will the **CHAN#1 TMP ADJ** screen be displayed. To change the options press and hold the **SELECT** key until the cursor flashes. Select either the **DISABLED**, **AUTO**, or **MAN** option. If the **MAN** option is selected, the user will then have to specify a temperature value.
3. Use the same procedure for **CHAN#2** and **CHAN#2 TMP ADJ**.

**\*Note: When using a non-Temp. Compensated cable, you must enter a temperature value of the bath into the MANUAL setting in the TEMP ADJ screen. Use the AUTO setting for a Temp. compensated cable.**

If Auto is selected for temperature compensation then the corresponding temperature channel (3 or 4) will automatically be enabled.

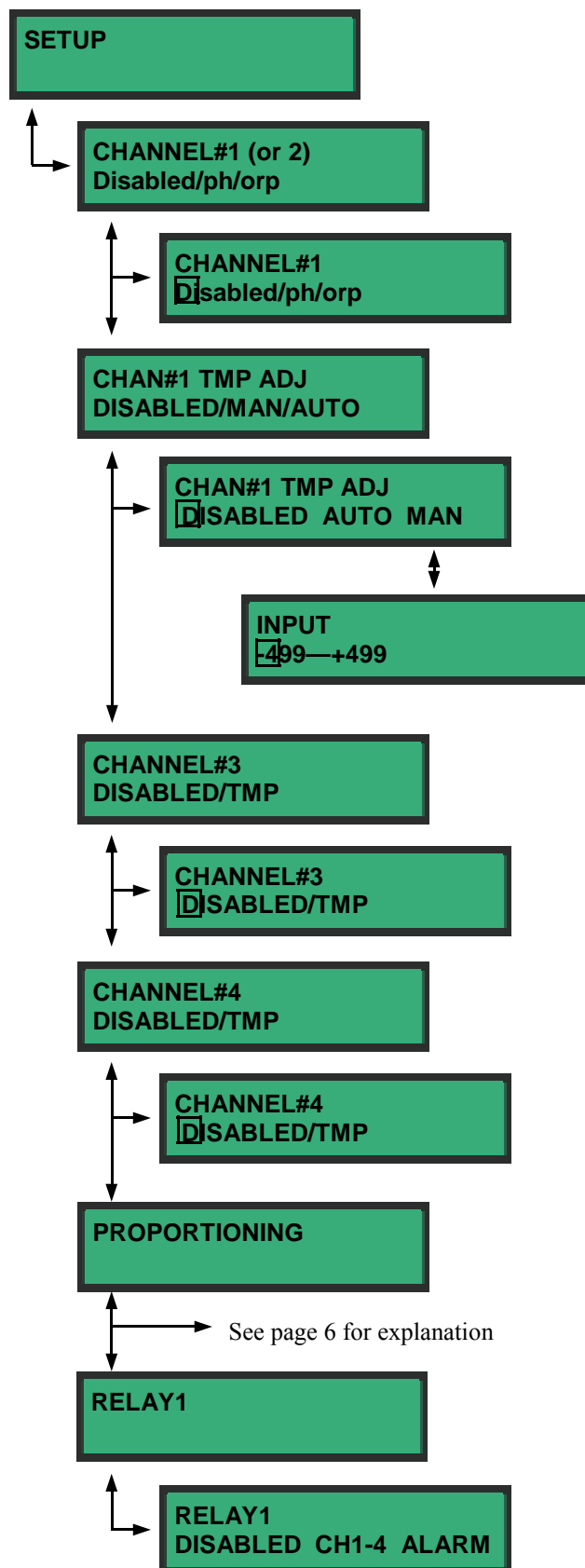
Toggle the **SELECT** key to move to **CHANNEL#3**

1. **\*CHANNEL3:** From this screen press and hold the **SELECT** key until the cursor flashes. Then choose either **DISABLED** or **TEMP1**. If the option set in the **CHANNEL#1** screen included **PH** and the **CHAN#1 TMP ADJ** option was set to **AUTO**, the user must select **TEMP**. After the appropriate option is selected, push and hold the **SELECT** key to accept the option and return to the **CHANNEL#3** screen. Channel#3 is the temperature input for Channel#1.
2. **CHANNEL4—Same as channel 3.** Channel#4 is the temperature input for Channel#2.

After the Channel options have been set, press and hold the **SELECT** key until the cursor stops flashing. Press the **SELECT** key again to display the **RELAY1** screen.

1. **RELAY1:** From this screen, the user will press and hold the **SELECT** key to enter the submenu. By pressing the **CHANGE** key the user can cycle through the options which include the ability to **DISABLE** the relay, have the relay read from **CHANNEL#1**, **CHANNEL#2**, **CHANNEL#3**, or **CHANNEL#4**, or set it as an **ALARM**. [Normally, Relay 1 is set for **CHAN#1**, Relay 2 is set for **CHAN#2**, and Relay 3 is set for **ALARM**.]

**\*This entire procedure is repeated for **RLAY2** and **RLAY3****



## SETUP and USER INPUT MENUS

After completing the parameters for the three relays, toggle the **SELECT** key to advance to the **PUMP MX. ON TIME** screen.

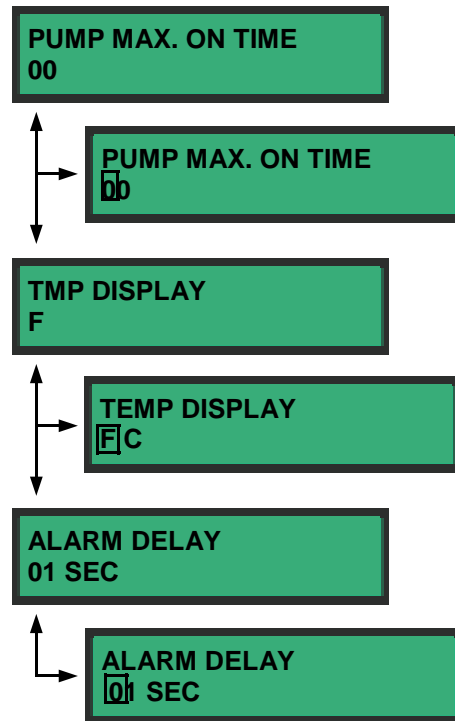
1. **PUMP MAX ON TIME**: This function is used primarily when **PROPORTIONING** is **ENABLED**. The value set in this screen is the maximum time the pump will run if the **WINDOW** value is reached before the meter checks the pH value. If the pH value is between the **SETPOINT** and **WINDOW** values, the time the pump will run will be proportional to the % of pH being read. For example, with a Max On Time of 30 seconds, and the pH reading is halfway between the **SETPOINT** and **WINDOW** values, the pump will run only 15 seconds (**HALF** the time) before checking the pH value. As the pH value gets closer to the **SETPOINT**, the less time the pump will run. One cycle is an **ON/OFF** state of the pump. This value can be set for any value between 1 and 99 seconds. A typical value would be 30 Seconds.

After setting up pump max. on time, return to the **PUMP MAX ON TIME** main menu by pressing the **SELECT** key until the cursor stops flashing. Using the **SELECT** key cycle through the menus until the **TEMP DISPLAY** menu is displayed.

1. **TEMP DISPLAY**: From this screen press and hold the **SELECT** key until the cursor flashes. Then choose either **F** (Fahrenheit) or **C** (Celsius) using the **CHANGE** key. **NOTE: SETPOINTS and ALARMS do not recalculate after changing this parameter. The user will have to adjust the temperatures accordingly.**

After setting up **TMP DISPLAY**, return to the **TMP DISPLAY** main menu by pressing and holding the **SELECT** key until the cursor stops flashing. Using the **SELECT** key cycle through the menus until the **ALARM DELAY** menu is displayed.

**ALARM DELAY**: To prevent pre-mature alarms due to fluctuations of pH, this screen sets the amount of time that will pass before the alarm relay is activated. Press and hold the **SELECT** key until the cursor flashes. Then choose a value between 1 and 99 seconds using the **CHANGE** key. This will become the time in which an alarm will be triggered after reaching the **ALARM** state setting determined previously (in main **RELAY#1** or **#2** screen).



**PROPORTIONING (DISABLED):**

Acts essentially as an ON/OFF switch. The pump on-time is equal to 100% of the **MAX ON TIME**. In other words, the pump will remain OFF until the PH/ORP reading increases and becomes equal to the **WINDOW** setting. At this time it will remain ON until it falls back to the **SETPOINT**.

**Important:** The only time the pump will change its state is if it achieves either the **WINDOW** value or the **SETPOINT** value.

The figures to the right show non-proportioning examples when the **WINDOW** value is set higher than the **SETPOINT** and when the **WINDOW** value is set lower than the **SETPOINT**.

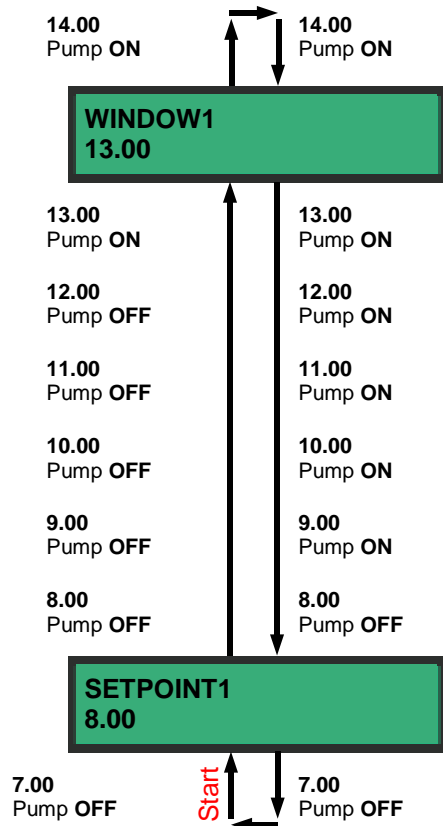


Figure 1: Window value above Setpoint

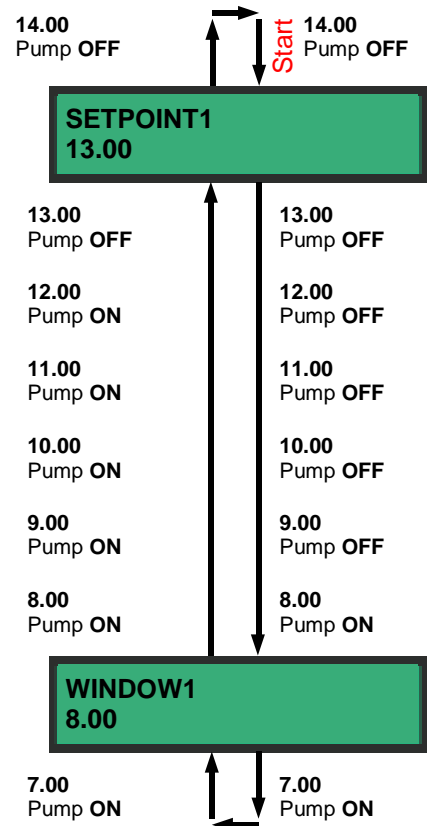


Figure 2: Window value below Setpoint

**PROPORTIONING (ENABLED):**

Allows the pumps to operate at a proportion equal to the percentage move of the PH/ORP reading between the **SETPOINT** and **WINDOW** values. If the PH/ORP reading increases through 20% of this range then the pump will operate for 20% of the **MAX ON TIME** (fig.2). If the PH/ORP reading reaches the **WINDOW** setting, the pump will operate for the full **MAX ON TIME**. As the PH/ORP reading begins to fall so does the percentage of pump on time until it reaches the **SETPOINT** value where it will not pump.

The figures to the right show non-proportioning examples when the **WINDOW** value is set higher than the **SETPOINT** and when the **WINDOW** value is set below the **SETPOINT**.

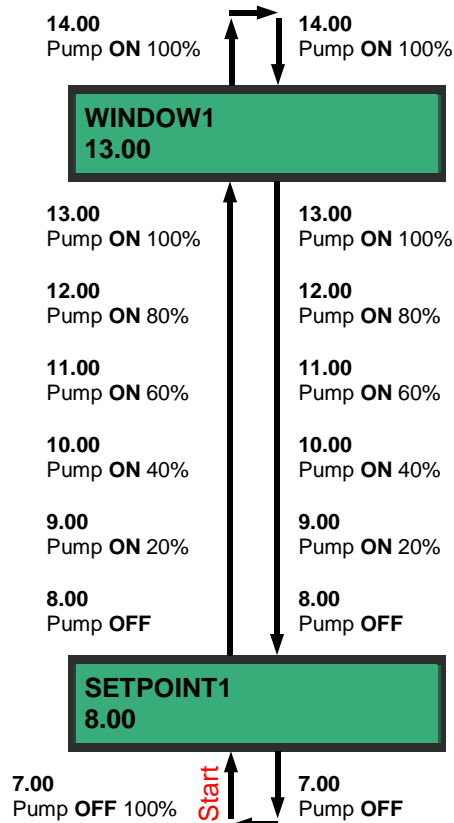


Figure 3: Window value above Setpoint

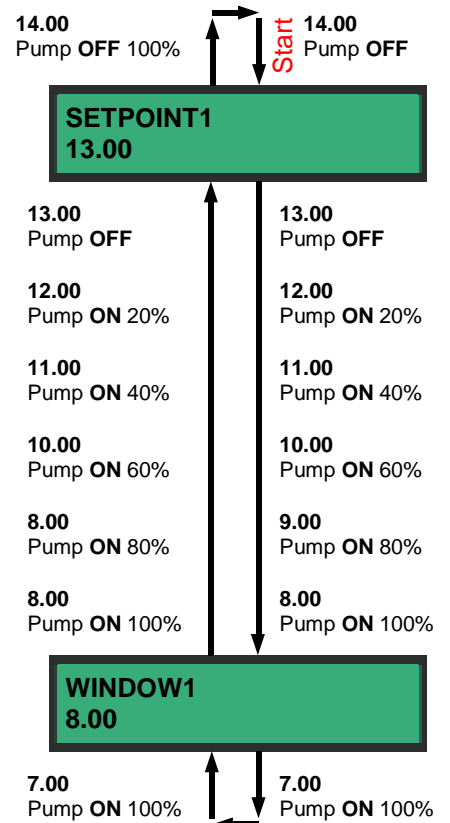


Figure 4: Window value below Setpoint

# MAINTENANCE

The PERISTALTIC Series of metering pumps require a minimal amount of maintenance to achieve optimal performance. Periodically check the squeeze tube for cracks, deterioration, or swelling. The squeeze tube will typically need to be replaced about every 6 months (chemical compatibility and duty cycle can cause this interval to vary). NOTE: Squeeze tubes are NOT a warranty item.

**VERY IMPORTANT:** When replacing squeeze tubes, **DO NOT TWIST THE TUBES WHEN FITTING THEM AROUND THE ROLERS.** Insert them so they remain flat in the same plane. (The writing on the tubes should be inline on both sides of the rollers.)

Applying lube to the squeeze tube once a month will extend the life of the tube, minimize wear on other contacting parts, and promote smoother pump operation. Use Knight Tube Lube (P/N 245-4-SQZLUBE) or an equivalent silicone-based lubricant.

1. Remove the faceplate of the pump.
2. Apply a thin bead of Tube Lube to the inner surface (the side that the rollers contact) of the squeeze tube between the 9 o'clock and 3 o'clock positions. Avoid getting the lube near the pinch points where the bottom of the faceplate grips the tube.
3. Put the faceplate back on the pump  
Activate the pump under normal conditions—the lubricant will be evenly distributed as the pump rotates.

**CAUTION:** To avoid severe or fatal shock, always disconnect main power when servicing the unit.

## PARTS LIST FOR PH-PMP-3/2

ITEM	PART NUMBER
ELASTIC SQUEEZE TUBE ( Standard with unit. Good for weak to strong alkalis, weak to medium acids.)	245-4-ELSQTUB
THERMISTANT SQUEEZE TUBE (Has superior acid-resistant and alkali-resistant qualities.)	245-4-TMSQTUB
FLUORO-VITON SQUEEZE TUBE ( Good for Strong solvents and acids.)	245-4-FVSQTUB
SQUEEZE TUBE LUBRICANT	245-4-SQZLUBE
24 VDC PERISTALTIC GEAR MOTOR	245-4-GEARMOTOR-FV
ROLLER FOR PERISTALTIC UNITS	245-4-ROLLER
FACEPLATE FOR PERISTALTIC UNITS	245-4-FACEPLATE
ROLLER / TUBE BODY HOUSING	245-4-PMPBODY
RED/BLACK TWISTED PAIR SIGNAL WIRE	210-1-TWPR22RD
DELIVERY TUBING—50' ROLL (Polyethylene 1/4' OD, rigid wall tubing)	245-4-PLYTB50
DELIVERY TUBING—100' ROLL	245-4-PLYTB100
PERISTALTIC HINGE	245-4-HINGE

NOTE: CHECK YOUR SQUEEZE TUBES PERIODICALLY FOR INTEGRITY (ABLE TO EXPAND AFTER BEING SQUEEZED BY THE ROLLERS).

ORDER BY:

PHONE: 1-262-642-7671  
FAX: 1-262-642-7681  
E-MAIL [sales@jptechinc.com](mailto:sales@jptechinc.com)

POST: JP TECH, INC.  
P.O. BOX 863  
East Troy, WI 53120  
USA

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## Questions For Troubleshooting pH Electrodes:

Questions to ask **before** sensor is returned: (Call first for a RMA numbers)

1. **How OLD is the sensor?** The 4 digit date code should be heat stamped into the top cap.  
First 2 numbers are the fiscal week of the year, the last 2 are the year. For example, 0306 is the third week of January in 2006.  
Bulb electrodes have a 12 month warranty and flat surface electrodes have a 6 month warranty.  
Warranty covers material and workmanship only.  
Mis-application or chemical attack is NOT covered.  
If the electrode is older than 12 months ( 6 months for flat), they need to purchase a new electrode.

2. **What does the electrode read in 7.0 buffer and in 4.0 buffer ?**

Check readings in buffers before moving any further.

Constant readings between 6.2 and 6.8, may indicate a cracked pH glass, or stem.  
NOT a warranty replacement if visible crack is evident.

A constant reading of 7.00 indicates an electrical short inside the electrode or cable.  
This can be a warranty replacement, if cable or connector is not damaged.

Slow or sluggish response, (more than 30 seconds to respond to change)  
Indicates a coating on the electrode, or aged electrode or very low temperature.  
NOT a warranty replacement. Electrode should be cleaned & re-tested.

Inability to calibrate sensor to 7.00 pH indicates a coating on the electrode , low ionic sample, or organic solvent.  
NOT a warranty replacement.  
Electrode should be cleaned & re-tested.

Inability to calibrate sensor in 4 buffer indicates a coating on electrode or aged electrode.  
NOT a warranty replacement

Readings go to 14 pH or off-scale.  
Electrical open circuit.  
This can be a warranty replacement  
Unstable or drifting readings indicate plugged reference or electrode not plugged into meter or broken cable wire or defect in meter.  
PERHAPS a warranty replacement

3. **Inspection**

**Look** for visible signs of coating, scratches etching or breakage of pH glass.  
**Look** for obvious signs of cuts, or breaks on cable or connector  
Warranty does NOT cover mishandling/misuse by customer.  
pH electrodes are sensitive, and delicate analytical instruments.

4. **What is the application for this sensor?**

5. **Electrode calibrates in buffer, but when I install it into my system, the reading is fixed or the reading drifts all over the place.**

**The electrode worked for a short time, and then it died.  
I installed another electrode, and it lasted for about the same time, and it also died.**

These are both classic symptoms of a Ground loop.  
The user should take a multi-meter out to the installation.  
One lead of the meter should be immersed into the water.  
The other lead should be connected to an earth ground (or known electrical ground bus).  
Measure for millivolts.  
The presence of any millivolts is cause for ground loop failure.  
Ground loops can be solved in several ways.  
The quick and dirty solution is the use of our expensive Ground Loop "DA SERIES" electrodes.

An ORP electrode installed in-line, is a useful way of checking if there is ground loop in a closed piping system.  
One lead of the multimeter is connected to the center pin of the ORP electrode.  
If an ORP electrode is not available, the user may take a pipe plug, and drill out a small hole.  
A wire is inserted into the hole, and the hole is sealed with epoxy or other sealant.  
That wire is connected to the multimeter, and the other lead connected to electrical ground.

### **The Care and Feeding of a pH Electrode**

#### **STORAGE:**

ALL pH electrodes must always be kept wet. DO NOT STORE DRY !  
Electrodes are best stored in the SOAKER SOLUTION that came with the probe.

If soaking solution is not available, store in Buffer 4.0  
If not buffer 4.0 is not available, store in buffer 7.0  
If buffers are not available, store in TAP WATER.  
DO NOT STORE IN De-Ionized, distilled or PURE WATER.

#### **CLEANING:**

Treat the delicate pH measuring surface as you would a pair of eyeglasses.

Soft coatings may be removed by vigorous stirring in water or buffer.

Hard mineral salts may be removed by submersing in a dilute 5% HCl acid or a citric acid bath for 10 – 15 minutes.

Oily coatings may be removed by using household detergent or isopropyl alcohol  
Caution: DO NOT use Acetone or other organic solvents.

PROTEIN build-up may be removed using an enzyme based solution, such as Terg-A-Zyme cleaner manufactured by Alconox.

\* \* \* \* \*

You may wipe the sensing surface using a soft cloth with care, but a toothbrush or other abrasive brush will likely scratch the delicate glass.

Following cleaning, calibrate the electrode.

## **JP TECH, INC.**

### **LIMITED PRODUCT WARRANTY**

JP Tech warrants to first user of each new JP Tech product or component that it is free from defect in material and workmanship. The obligations of JP Tech under this warranty are expressly limited to the following:

- JP Tech will repair or replace, at its option, any defective components for a period of twelve (12) months from date of shipment. No charges are covered for the removal or replacement of defective components.
- This warranty applies only if the product is defective under normal use. It does not apply to breakage or defect from accident, alteration, misuse, or abuse of the product or component. In addition, this warranty is effective only if the product or component is installed in a location and manner prescribed by JP Tech's instructions and only if it is so maintained. This warranty becomes null and void if the product or component is altered by anyone other than JP Tech, its authorized representatives, or by expressed written authorization for a specific situation.
- If JP Tech elects to send a service technician to a customer site to repair a defect, the cost of transportation and/or living expenses will be paid for by the customer. Should the defect turn out to be the result of the customer's misuse, improper installation, or maintenance of the product or component, the customer will be responsible for the full cost of the service call including labor charges plus the aforementioned travel and living expenses.
- JP Tech will repair or replace any defective part within a product at the sole discretion of JP Tech. If JP Tech should choose to supply a part to the customer as a no-charge warranty replacement, the customer assumes all cost of installation associated with the replacement part. If the product needs to be returned for warranty service, a Returned Material Authorization (RMA) must be issued by JP Tech prior to such return. All returned material must be sent freight prepaid or it will not be accepted by JP Tech irrespective of warranty issues.
- There are no implied warranties of merchantability or of fitness for a particular purpose. The above warranty is made in lieu of all other guarantees or warranties, express or implied. JP Tech distributors or OEMs who purchase JP Tech products for resale are not authorized to assume any other obligation or liability for JP Tech.
- JP Tech will in no case or under any circumstances be liable for special, incidental or consequential damages, loss of profit or commission for any loss caused by any delay in production or shipment of product, or defect of any kind in any product or component covered by the sale. Without limitation, JP Tech will not be so liable with respect to furnishing of any product, or component, delay in such furnishing, use, resale, or other cause. JP Tech's liability arising out of the supply of any product or component, its use, resale or other disposition, or out of any guarantee or warranty, express or implied, or any other cause, shall in no way exceed the cost to JP Tech of the product or component which JP Tech agrees to repair or replace. JP Tech's liability for any product or component terminates upon expiration of the applicable repair or replacement period.

This implementation of this warranty may, under separate agreement, be subrogated to exclusive distributors or manufacturers who shall assume all or portions of the liability associated with warranty costs.

This warranty may be modified, wholly or in part, at any time by JP Tech without notice to past or future customers. The warranty revision in effect at the time of shipment shall prevail in any claims rendered.

## **JP TECH, INC.**

### **TERMS AND CONDITIONS OF SALE**

The purchase of any products or services supplied by JP Tech shall be governed by the terms of this agreement. Purchaser of these products and services acknowledges and agrees to these terms without modification by any competing document or any agreement not reduced to writing and authorized by an officer of JP Tech, Inc.

- Pricing is the effective price at the time of the order. If the shipment of product is postponed by buyer, the price may be changed to reflect any price changes enacted by JP Tech. Prices may be changed by JP Tech at any time for any reason without notice to purchaser except for accepted orders not affected by a purchaser initiated delay. Prices, unless otherwise stipulated, do not include shipping and handling charges.
- Certain products may require initial and progress payments before the commencement and continuation of design, engineering, component procurement, and manufacture. These products will not be shipped until all progress payments have been made. Cancellation of any orders in progress will necessitate the forfeitures of any payments received to date as well as payment of any costs accrued in excess of paid amounts.
- Orders must be accepted by JP Tech at their home office. Acceptance of any purchase order, regardless of the method, is conditioned on assent of buyer to the terms and conditions contained herein.
- Sales are FOB point of shipment. Sales terms are net 30 days from date of shipment. Present or future sales, use, or other taxes on sales, installation or use shall be paid by purchaser. Purchaser shall pay 1% interest per month on all outstanding amounts due to JP Tech. Interest accrual shall begin on the 31<sup>st</sup> day after shipment for all outstanding amounts.
- All sales are final. Any decisions to accept return of product after shipment and receipt by purchaser shall be at the sole discretion of JP Tech and not until payment has been made and agreement by purchaser to pay all shipping, cancellation, and restocking charges that may accrue.
- Shipping dates given prior to shipment are estimated, actual delivery will be based on factory and engineering loading at the time of manufacture as well as the availability of parts required for manufacture. JP Tech shall not be liable for any costs or damages arising out of or related to any delays in shipment or delivery, including but not limited to liquidated damages, unless otherwise agreed in writing.
- JP Tech may change design or construction of any product or component in any way they see fit. Upgrades for previously purchased products may be available for certain products for a price that will be determined when appropriate.
- Except as provided herein, any controversy, claim or dispute arising out of or related to any order or sale or breach thereof, including but not limited to any breach of warranty claims, shall be litigated in state court, Walworth or Waukesha Counties, Wisconsin, and shall be governed by the laws of Wisconsin. If JP Tech is the prevailing party, JP Tech shall be entitled to collect all reasonable fees and costs, including court costs and attorney fees.