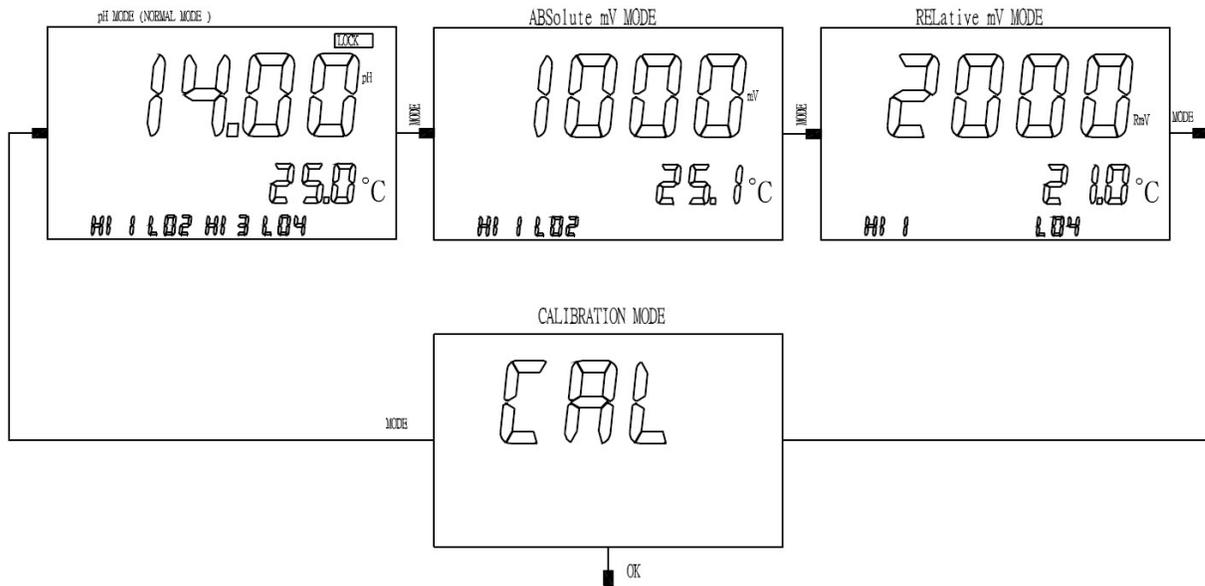


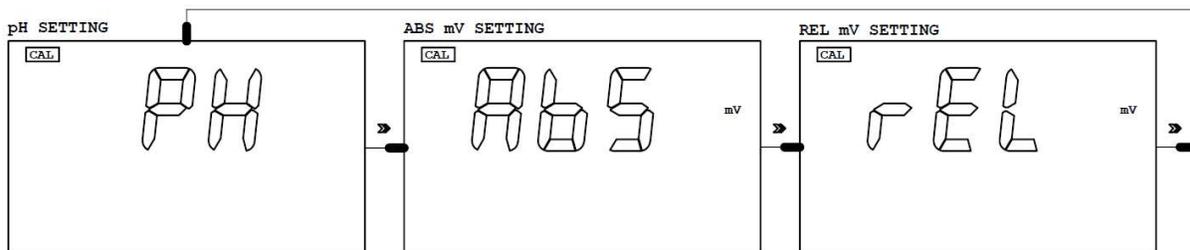
AP210 Calibration Sheet

ORP Calibration

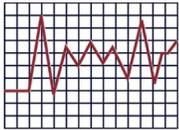
1. Put the ORP probe/sensor into the calibration solution and make note of the offset.
2. From the main menu, press [MODE] to display the **CAL** screen.



3. Press [OK] to go to the **Password Check** screen and press [OK] to go to the **Calibration/Setting Select** screen.



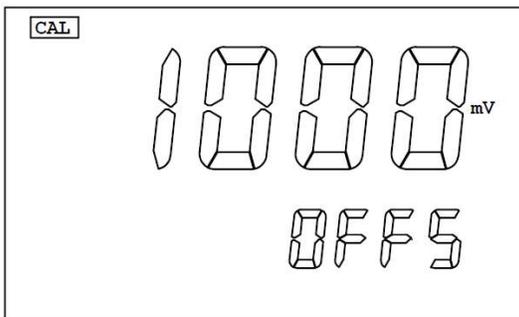
4. Scroll to find the **rEL** (relative mV Setting) and press [OK] to advance to the **Temperature Probe Select** screen and press [OK].



PULSE INSTRUMENTS

3233 Mission Oaks Blvd., Unit P Camarillo, CA 93012 Phone: (800) 462-1926 Fax: (800) 878-9172

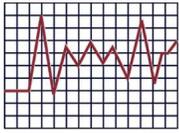
5. Once you are in the OFFSET Setting screen, plug in the offset in step 1 and press **[OK]** to save.



This screen selects the OFFSET for relative ORP. The value here will be subtracted from the absolute ORP reading to display the relative ORP reading. The equation is :

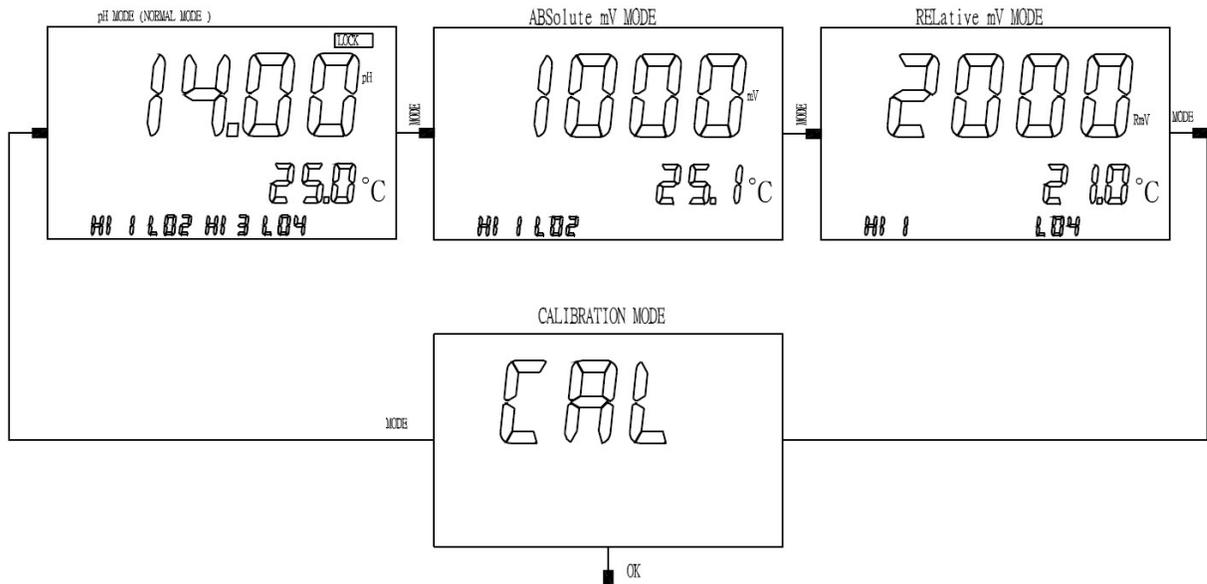
$$\text{“REL mV”} = \text{“ABS mV”} - \text{“Offset”}$$

6. Once the screen displays **SAVE** at the bottom, press and hold **[MODE]** to return to the **Home** screen.

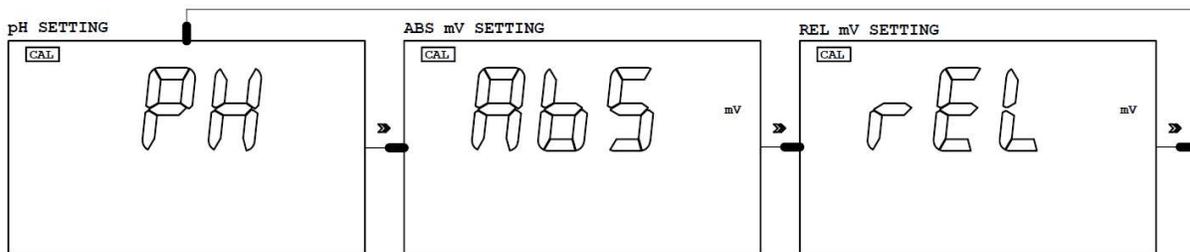


pH Calibration

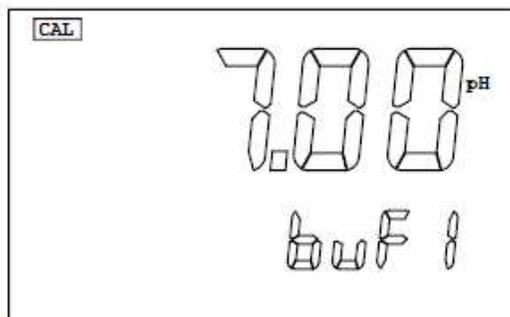
1. From the MAIN display mode, press the [MODE] key to go to **CAL** screen then press [OK]



2. Press [OK] to go to the **Password Check** screen and press [OK] to go to the **Calibration/Setting Select** screen.

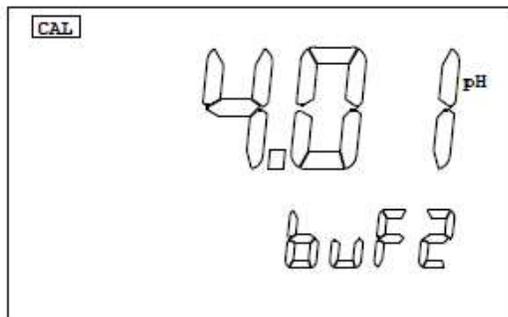
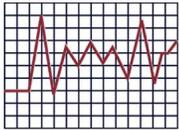


3. Scroll to find the **pH** and press [OK] to advance to the **Temperature Probe Select** screen and press [OK].
4. Select the correct buffer at **pH BUFFER I SELECT** screen.



This screen selects the buffer for standardization calibration. The user can select "7.00pH" or "6.86pH". Press [▲] or [▼] keys to select the buffer then the [OK] key to save your selection.

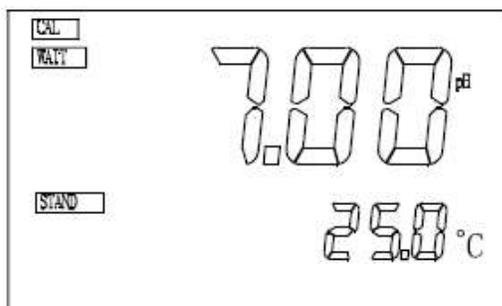
5. Select the correct buffer at **pH BUFFER II SELECT** screen.



This screen selects the buffer for slope calibration. The user can select “1.68pH”, “4.00pH”, “4.01pH”, “9.18pH”, “10.01pH” or “12.46pH”. Press the [▲] or [▼] keys to select the buffer then the [OK] key to save your selection.

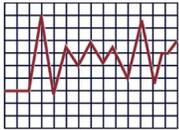
The next two steps are for actual pH electrode calibration.

6. Clean the pH electrode and temperature probe with de-ionized or distilled water.
7. Place the pH electrode and Temperature probe into buffer 1.
8. Press the [OK] key to start the **STANDARDIZATION** calibration. A “WAIT” message will blink indicating that the instrument is waiting for a stable reading. The display will be locked to the buffer value corresponding to the temperature of buffer 1 (See chapter **IX. pH Buffers** in the manual). When a stable reading is reached, the unit will blink a “SAVE” message at MINOR LCD display.



This is the actual pH calibration. The initial display will be the chosen buffer for **pH BUFFER 1 SELECT**. The “STAND” annunciator will blink indicating the unit is waiting for the user to start the calibration. Put the cleaned electrode and temperature probe in buffer 1. Press the [OK] key will start the calibration. For Detailed instructions please see **Step-by-Step pH Calibration**

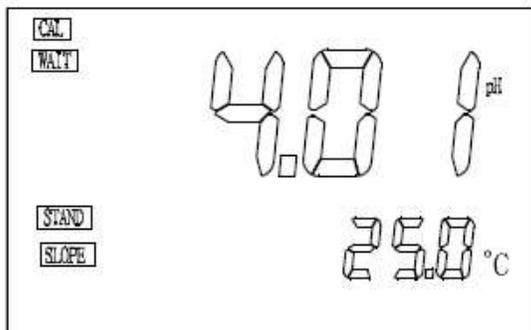
9. Press the [OK] key to save the **STAND** calibration and prepare to do a **SLOPE** calibration **OR** press the [↓] key to *recalibrate* buffer 1 and see step 9. If “**OVER**”(OVER) or “**Undr**”(UNDER) (See chapter **VIII. ERROR DISPLAYS AND TROUBLESHOOTING** in the manual) is displayed or a blinking “**SAVE**” does not show after more than few minutes then something is wrong with your buffer 1 or electrode. Be sure your buffer 1 is correct or change a new electrode and repeat from step.
10. Clean the pH electrode and temperature probe with the de-ionized/distilled water.
11. Place the pH electrode and Temperature probe into buffer 2.



PULSE INSTRUMENTS

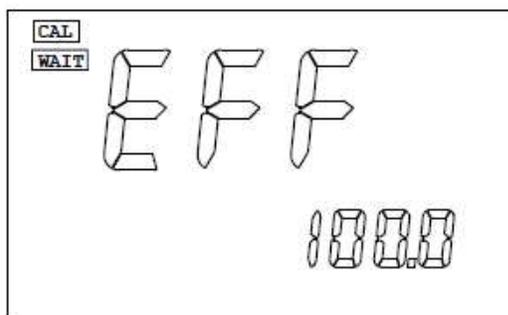
3233 Mission Oaks Blvd., Unit P Camarillo, CA 93012 Phone: (800) 462-1926 Fax: (800) 878-9172

12. Press the [OK] key to start the **SLOPE** calibration. A “**WAIT**” message will blink indicating that the instrument is waiting for a stable reading. The display will be locked to the buffer value corresponding to the temperature of buffer 2 (See chapter **IX. pH Buffers** in the manual). When a stable reading is reached, the unit will blink a “**SAVE**” message at the MINOR LCD display.



After finishing the Buffer I calibration the unit will move to this screen. The initial display will be the chosen buffer for **pH BUFFER II SELECT**. The “**SLOPE**” annunciator will blink indicating that the unit is waiting for the user to continue the calibration. Put the cleaned electrode and temperature probe in buffer II. Pressing the [OK] key will start the calibration. For

13. Press the [OK] key to save the SLOPE calibration **OR** press the [↓] key to recalibrate buffer 2 and see step 12. If “**OVER**” (OVER) or “**Undr**” (UNDER) (See chapter **VIII. ERROR DISPLAYS AND TROUBLESHOOTING** in the manual) is displayed or a blinking “**SAVE**” does not show after more than few minutes then something is wrong with your buffer 2 or electrode. Be sure your buffer 2 is correct or change a new electrode and repeat from step.



This screen will display the efficiency of the pH electrode from its last calibration. This screen is for user information only and will automatically change to the 4mA setting after 4 seconds.

The equation of Efficiency is:

$$\text{Efficiency} = (\text{new slope} / \text{ideal slope}) \times 100\%$$

We recommend that you use a new electrode, if the electrode efficiency is lower than 80%.

14. Once the screen displays **SAVE** at the bottom, press and hold [MODE] to return to the **Home** screen.