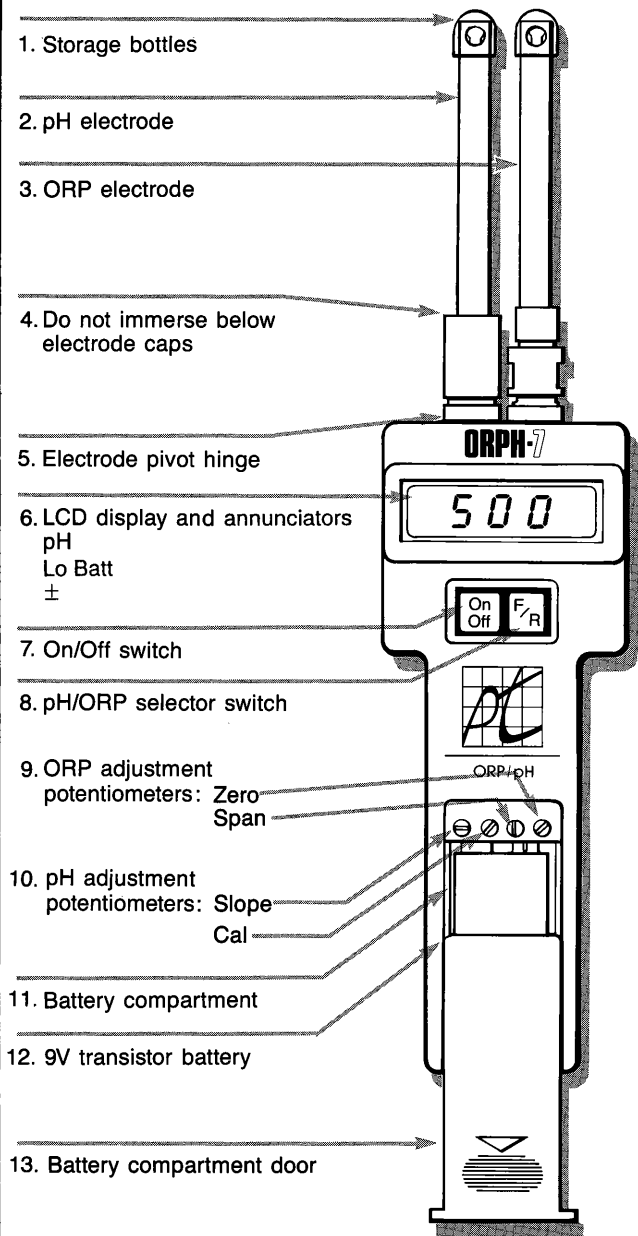


ORpH-7 pH/ORP



OPERATING INSTRUCTIONS

1. Deploy electrodes in either the 90° or 180° measurement position.
2. Energize by depressing the On/Off switch once.
3. Immerse electrodes into solution to be measured. For proper operation, immerse electrodes 1/2 their length.
4. Agitate electrodes briefly and observe the reading.
5. To change parameters, depress the F/R switch once.
6. Observe the second reading.
7. Rinse electrodes thoroughly and return pH and ORP electrodes to storage compartment.

CALIBRATION INSTRUCTIONS

Your instrument has been pre-calibrated prior to shipment. Calibration should be performed periodically with fresh pH buffers ORP can be tested using Quinhydrone & pH buffers.

pH MODE

1. Rinse the pH probe in distilled water.
2. Insert in #7 buffer solution.
3. Slide back the battery compartment cover to the first stop exposing the adjustment pots.
4. Adjust the "Cal" pot until the display reads 7.00.
5. Remove probes, rinse and insert in a #4 or 10 buffer solution.
6. Adjust the "Slope" pot until the display reads the correct value.

ORP MODE

Your instrument has been pre-calibrated at the factory using a mV calibrator. The "Zero" pot has been adjusted for 0 mV. The "Span" pot has been adjusted at 1000 mV. Do not adjust these pots.

ORP electrodes cannot be calibrated, only tested. To test your ORP system, use the following procedure:

1. Turn your Pocket Pal on.
2. Add approximately one gram Quinhydrone to 250 ml of the pH buffer. The following table shows the theoretical millivolts to be expected between a platinum ORP electrode and the four (4) molar silver/silver chloride reference when they are immersed in buffers saturated with Quinhydrone. Note that the actual measurements will probably differ in absolute value from these because of a number of factors relating to the chemistry; but the different values between the various solutions will hold within a few millivolts.

pH buffer(25° C)	QUINHYDRONE VS. 4M AG/AgCl	Differ.
0.0	+499 mV	----
4.01	+262 mV	237 mV
6.86	+ 93 mV	169 mV
9.18	- 44 mV	137 mV

HELPFUL HINTS

1. Electrodes should be rinsed thoroughly after each test.
2. If electrode will be stored for more than 1 day, be sure to remove the battery and also replace the protective caps. Fill the cap with a small amount of pH 4 buffer or tap water.
3. For best results, calibrate pH with a buffer that is within 3 pH units of the test sample.