

CWP Instruments™

Operating Instructions for the 24-7 Nutrient Monitor

Specifications for the 24-7 Nutrient Monitor

Range:	0.0-14.0 pH	0 - 9990 PPM	41°F – 95°F
Resolution:	0.1 pH	10 PPM	1° F
Accuracy:	±0.1 pH	2% FS	±2°F
Calibration:	2-points 7/4 PH	1382 PPM/2.76 EC	25°C/77°F
Power supply:	DC 9v transformer (adapter's power plug-in uses center power, outer ground)		

Replacement or Repair Warranty (at the manufacturer's discretion):

- 12 months for defective parts and materials from date of manufacture on the Monitor Body.
- 12 month warranty on the PPM electrode.
- 6 month warranty on the pH electrode.

Proof of purchase required. Warranty does not cover water damage, submersion in liquids or abuse. Warranty will be void if the person calibrating the meter damages any calibration screw.

Operation of the 24-7 Nutrient Monitor

IMPORTANT INFORMATION

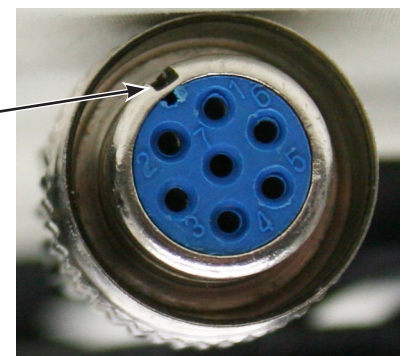
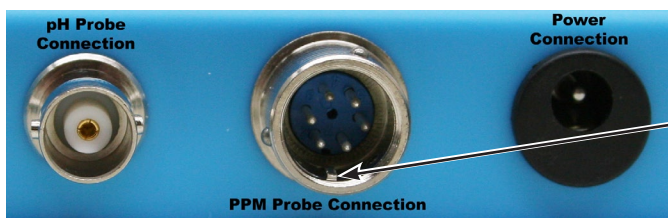
- Remove the rubber protectors from the pH electrode's BNG connector before attaching it to the 24-7 meter.



Rubber Protector On



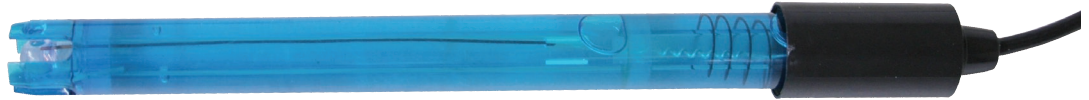
Rubber Protector Removed



Closeup of PPM Electrode Connector

- The PPM electrode uses a DIN connector. Find the guide notch on the PPM electrode's DIN connector match it to the DIN connector on the 24-7 meter. This will line up the holes and the pins for easy insertion. Insert and screw the DIN connectors together using the connector ring.
- You have purchased a scientific instrument requiring a delicate touch when calibrating. Read both calibration and troubleshooting sections to familiarize yourself with the meter's operation before calibrating. Be gentle; do not force the calibration screws past their stop. They are sensitive and have less than 1 turn total travel. Hold the screwdriver between thumb and index finger to turn the calibration screws. Take care in turning them as the screwdriver slots can be stripped if pressure is applied to the screws after their maximum travel has been reached. The warranty will be void if any calibration screw is stripped or damaged in any way.

pH



pH Measurement –

- Hang the pH electrode in the water or nutrient solution in such a manner that it is out of harms way and the currents in the tank will flow by. The monitor will constantly display the pH value of the solution.
- When not in use, store the electrode in this manner. Clean the electrode with Rejuve it! electrode cleaner, rinse with distilled water and blot dry with a clean cloth. Fill the plastic storage bottle with Store it! electrode storage solution. Insert the electrode through the storage bottle's cap and tighten.
- Occasionally clean the electrode with Rejuve It! electrode cleaner. This will rejuvenate the glass bulb by safely cleaning build-up from the glass.

pH Calibration –

1. If this is a new meter, skip step 1. Allow the electrode's glass bulb to sit in CWP's brand of electrode cleaner called Rejuve it! for 15 minutes. Using a soft toothbrush lightly scrub the glass bulb. Gently rinse with distilled water and blot the bulb dry. Be careful as the glass bulb is fragile. This procedure will help remove contaminants from the electrode's surface so that a true and proper calibration can be done.
2. Dip the pH electrode into a pH 7 buffer solution. Wait for the meters display to stabilize. Gently turn the pH 7 calibration screw until the display reads pH 7.00. Do not turn calibration screw past its stop.
3. Rinse the electrode with distilled water and blot it dry with a clean cloth.
4. Dip the electrode into a pH 4 buffer solution. Gently turn the pH 4 calibration screw until the display reads pH 4.00. Do not turn calibration screw past its stop.
5. If necessary, repeat procedure 1 to 4 until the display shows the correct values. If calibration is still not possible see the troubleshooting section. Rinse and blot the electrode dry each time before inserting the electrode in a buffer solution.

Troubleshooting –

If the meter fails to calibrate pH properly after using the Rejuve it! cleaner on the electrode, the pH calibration screws may need to be repositioned to center travel position before calibrating again. To do this, gently turn each pH calibration screw counterclockwise until it stops and then back clockwise until it stops. This will show you the full travel of the calibration screw. Now gently turn each calibration screw to the center or to its halfway position and start the calibration steps 2-4 again. If this does not allow for enough calibration screw travel during calibration, gently turn each calibration screw (from full clockwise position) counterclockwise to the 1/4 position and calibrate the meter again using steps 2-4. The starting position of the calibration screws is very important.

Note: If the meter fails to calibrate pH properly the pH electrode's life may be over and will need replaced. The item number for this part is CW505.

PPM

PPM Measurement –

- Hang the PPM electrode in the water or nutrient solution in such a manner that it is out of harms way and the currents in the tank will flow by. The monitor will constantly display the PPM value of the solution. You must multiply the number on the display by 10 to get the correct reading.



PPM Calibration –

- Remove the electrode shield and wipe the electrode with a clean cloth to remove sediment. Rinse the electrode with distilled water and again wipe it clean with a clean cloth to remove contamination. Replace the electrode shield and dip the electrode into CWP Instruments 1382 PPM/2.7 EC (500 PPM to 1 EC). Swish back and forth to dislodge air bubbles. When the display stabilizes, gently adjust the PPM calibration screw to make the display read 138 PPM.



Temperature

Temperature Measurement –

- Dip the PPM electrode (combination conductivity and temperature electrode) into the solution for measuring. The monitor will display the correct temperature after 10 minutes.

Calibration –

- Dip both the PPM electrode and a waterproof thermometer into a solution for 10 minutes to determine temperature. (Waterproof thermometers can easily be found at stores selling aquarium supplies). After the PPM electrode and thermometer have been submerged for 10 minutes, gently adjust the calibration screw on the meter to display the same temperature as the thermometer.

Note: Since the temperature sensor is combined with the conductivity (PPM) sensor, it is normal for the meter to measure conductivity (PPM) simultaneously when measuring temperature. Water temperature and air temperature will rarely be the same. Before calibration, allow a waterproof thermometer to stabilize in the solution to determine water temperature.

Placement -

- Place the 24-7 meter out of direct light, sprays of water and areas of high humidity. Hang the meter on a wall using the holes located on the back of the meter. Plug the 9 volt transformer into a surge protected outlet.

*The latest electronic components have been incorporated into this meter and will hold calibration for long periods of time. The monitors are all calibrated before leaving the factory.