

Maintenance's Guide

PL-700AL pH/ORP/Conductivity/TDS/Salt/DO/Temp.

PL-700PC pH/ORP/Conductivity/TDS/Salt/Temp.

PL-700PD pH/ORP/DO/Temp.

PL-700PV pH/ORP/Temp.



Index

Introduction:.....	3
PREVENTIVE MAINTENANCE	3
Calibrate the electrical conductivity analyzer using a known solution (one point calibration).....	4
Place the electrodes in the calibration solution.	5
General maintenance procedures to the body of the electrical conductivity analyzer	6
Electrode cleaning.....	7
Membrane Cap Replacement:.....	8

Introduction:

We thank you for having purchased PL-700 series bench top multi-parameters meter.

Before using the instrument, please note that the operation instructions should be read carefully, which will help you to operate and maintain the instrument, as well as to avoid trouble caused by unsuitable operation and maintenance.

PL-700 series bench top multi-parameters meter employs leading edge technology with integrated microprocessor, which is suitable for measurement in water solutions for institutes, industrial labs and production fields.

The information presented in this manual is subject to change without notice as improvements are made.

PREVENTIVE MAINTENANCE

Electrical conductivity analyzers normally need to be calibrated before use to ensure the quality and accuracy of the readings. The procedures that are carried out are the following:

1. One point calibration. It is performed under normal operating conditions and use. It uses a reference solution of known electrical conductivity.
2. Two-point calibration. It is performed if very precise measurements are required. It uses two reference solutions of known electrical conductivity. Likewise, if the instrument is used sporadically and if the maintenance it receives is occasional.

Calibrate the electrical conductivity analyzer using a known solution (one point calibration).

1. Connect the equipment to an electrical outlet suitable for its voltage.
2. Set the temperature selector to room temperature.
3. fit meter
4. Remove the electrodes from the storage container. Electrodes should always be stored in a suitable KCl solution. Some are kept in distilled water, but others in a different solution recommended by the electrode manufacturer 1 . If for any reason the electrode dries out, it is necessary to soak it for at least 24 hours before using it again.
5. Rinse the electrode with distilled water, over an empty beaker.
6. Dry the electrode with an element that absorbs residual surface moisture, but does not impregnate the electrode. Do not rub the electrode. This procedure should be performed whenever the electrodes are used in various solutions, to reduce the possibility of contamination.

Place the electrodes in the calibration solution.

1. Immerse the electrode in the standardization solution so that the bottom of the electrode does not touch the bottom of the beaker. This will decrease the risk of the electrode breaking against the bottom of the container. If the test requires that the solution be kept in motion by using a magnetic stirrer, take care that the stir bar does not hit the electrode, as it could break it.
2. Turn the function selector from the Stand by position to the pH position.
3. This action connects, in the electrical conductivity analyzer, the electrode to the electrical conductivity measurement scale so that the reading can be made.
4. Set the meter to read the conductivity of the calibration solution, using the button marked Cal 1, so that the pH of the calibration solution can be read.
5. Place the function selector in the Stand by position.

General maintenance procedures to the body of the electrical conductivity analyzer

1. Examine the exterior of the equipment and assess its general physical condition. Verify cleaning of covers and adjustment of them.
2. Test the connection cable and your coupling system. Check that they are in good condition and that they are clean.
3. Examine the computer controls. Check that they are in good condition and that they can be operated without difficulty.
4. Verify that the metro is in good condition. For this verification, the instrument must be disconnected from the power line. Adjust the pointer to zero (0), using the adjustment screw which is usually located under the pointer pivot. If the equipment has an indicator screen, check its normal operation.
5. Confirm that the power indicator light–bulb or diode–operates normally.
6. Check the condition of the electrode holder arm. Examine the mechanism for assembly and fixing the electrode, in order to foresee that the electrode is not released. Check that the height adjustment operates correctly
7. Check the batteries –if applicable–; Change if necessary.
8. Carry out a functional test by measuring the conductivity of a known solution.
9. Inspect leakage flows and ground connection.

Electrode cleaning

The cleaning class required by the electrode depends on the type of contaminant that could have affected it. The most common procedures are summarized below.

1. General cleaning. Soak the pH electrode in a 0.1 M hydrochloric acid (HCl) or 0.1 M HNO₃ solution for 20 minutes. Rinse under running water before use.
2. Removal of deposits and bacteria. Soak the pH electrode in a 1:10 solution of household bleach for 10 minutes. Rinse with plenty of water before use.
3. Oil and grease cleaning. Rinse the pH electrode with mild detergent or methyl alcohol. Rinse with water before use.
4. Cleaning of protein deposits. Soak the pH electrode in 1% pepsin in 0.1 M hydrochloric acid for 5 minutes. Rinse with water before use.
5. After any cleaning operation, it is a good idea to rinse with deionized water and refill the reference electrode before use.

Membrane Cap Replacement:

1. Do not touch the membrane as skin oils will interfere with the oxygen permeability rate of the membrane.

Replace the cap carefully.

2. It is recommended that the probe remain attached to the meter during this replacement process.
3. Unscrew the cap firmly and carefully from the probe.
4. Rinse the old electrolyte solution from the Cathode and Anode.
5. Use the supplied Polishing Strips to clean, polish, shine, and/or remove scratches from the cathode. Be sure to moisten the cloth before polishing the cathode.
6. Do not over-polish the sensitive gold cathode.
7. Set the new replacement membrane cap on a flat surface. Leave the cap in this position during the replacement process.
8. Fill the membrane cap with the electrolyte solution up to the bottom of the threads on the inside of the cap.
9. Tap the membrane cap to release and prevent air bubble in electrolyte solution.
10. Keeping the cap in a fixed position on a flat surface, carefully insert the probe into the new cap by first dipping and removing the probe several times from the cap. With each dip, push the probe progressively deeper into the bonded cap. Finally, screw the probe

slowly onto the cap until fully tightened. The dipping and removal technique minimizes the introduction of air bubbles into the electrolyte solution. Air bubbles in the electrolyte can affect measurements.

11. It is normal that excess electrolyte solution will leak out the cap during this replacement since it minimizes the introduction of air pockets. Clean off the excess electrolyte before use.

