

LITMUSTIK® III

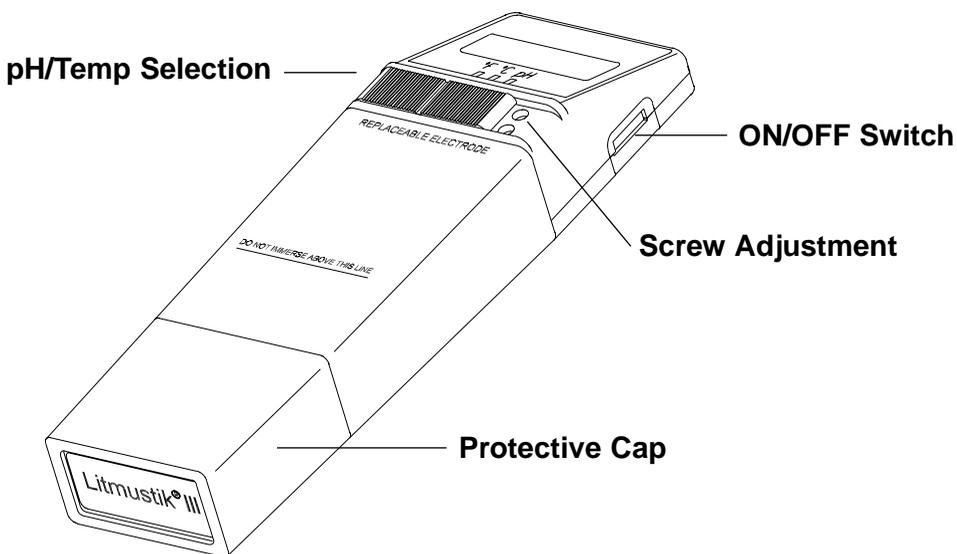
PHH-3X/PHH-3X-KIT

Pocket pH Tester



The PHH-3X pocket-size pH tester combines pH electrode, temperature sensor and readout into a single, compact unit. The electrode module contains a signal amplifier and a temperature sensor to let you take temperature-compensated readings. The electrode module is easily replaced, thus extending the life of this handy pocket tester. The electrode module detaches for easy replacement or battery removal.

The unit can be immersed up to 4" without damage. The PHH-3X has two-point calibration for both temperature and pH scales.



BEFORE FIRST USE

You must condition the unit before its first use. To do this, remove the protective cap and immerse the electrode in tap water for 30 minutes to hydrate the electrode and dissolve any crystals formed.



CAUTION: Never immerse the tester above the yellow plug-in electrode.

After conditioning the electrode, perform pH calibration (see the pH Calibration Section). Temperature is factory-calibrated; therefore, temperature calibration should not be necessary.

PH CALIBRATION

pH calibration is required to maintain instrument accuracy. Calibration should be performed on a regular basis; however, frequency of calibration is application dependent.

1. Turn on power switch at the right side of the unit and set the range switch to the pH position. Remove end cap and place tester in a container of pH 7.0 buffer solution. Stir gently and wait a few seconds.
2. After the reading has stabilized, adjust (S) trimmer with a small screwdriver to a reading of 7.0.
3. Rinse the electrode with distilled or deionized water. Shake the unit with a gentle snap motion to remove excess water from the probe.
4. Place the tester in a container of pH 4 or 10 buffer solution and adjust (Z) trimmer for a reading of 4.0 or 10.0.
5. Rinse the electrode with distilled or deionized water. Shake the unit with a gentle snap motion to remove excess water from the probe.
6. Repeat above steps as required.

TEMPERATURE CALIBRATION

1. Remove the end cap and place tester in a container of ice water. Allow 8 minutes for the reading to completely stabilize. Gently stir the ice water.
2. Set range switch to degrees F and adjust (Z) trimmer for a reading of 32.
3. Place the tester in a container of water at a known higher temperature within the meter's specified range. Allow a minimum of 8 minutes for the reading to completely stabilize. Adjust (S) trimmer for a reading of the known temperature on the display.
4. Repeat above steps as required.

OPERATING PROCEDURE

After calibration, sample measurements can be performed.

1. Dip tester in solution up to 1 inch level. **Under no circumstances immerse above the top of the yellow electrode.**
2. Stir gently and wait a few seconds.
3. When not in use, switch off the tester. To ensure optimum operation, electrode should be kept moist. If the soaker pad in bottom of protective cap is dry, pour pH 4.0 or 7.0 buffer solution into the cap to remoisten pad. Should the pad be missing, simply add pH 4.0 or 7.0 buffer to the cap and replace.

MAINTENANCE IS EASY!

Rinsing the electrode with distilled or deionized water between samples and after use will prevent cross contamination and help extend useful life. When using aggressive solutions, or solutions with heavy metals or proteins, take readings quickly and rinse electrode immediately afterwards with deionized water to remove any residue. This helps eliminate any possible contamination of the electrode.

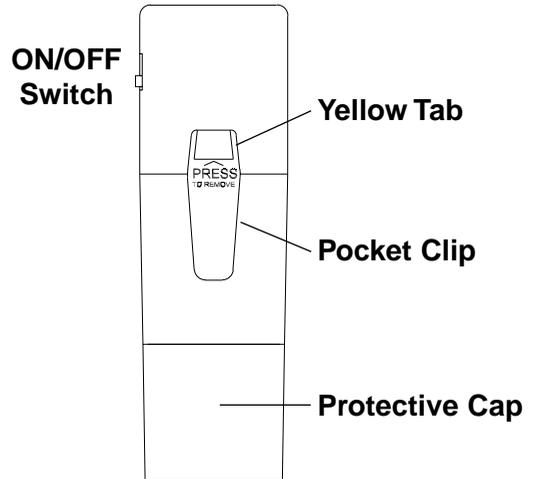
Maintaining the protective cap soaker pad by moistening with pH 4.0 or 7.0 buffer solution will help maximize electrode life. When the electrode will no longer calibrate or pH reading stays at a fixed value, replace the electrode module. pH electrode life is typically 6 months to 1 year depending on the application.

REPLACING THE ELECTRODE MODULE

To replace the electrode module:

1. Press the yellow tab on the back of the unit above the pocket clip and gently off pull the electrode module off the electronic assembly.
2. Slide the new electrode module onto the electronics assembly until the yellow tab locks into place.

Everytime the electrode module is replaced, you must perform pH calibration.



BACK SIDE OF pH TESTER

CHANGING BATTERIES

Remove the yellow plug-in electrode while pressing yellow lock above pocket clip. Replace old batteries with fresh ones, noting polarity as shown in the battery compartment. **Note:** No battery connector wires to break!

SPECIFICATIONS

pH

Range: 0.0 to 14.0 pH

Resolution: ± 0.1 pH

Accuracy: ± 0.1 pH ATC

TEMPERATURE

Range: 32 to 158°F (0 to 70°C)

Resolution: $\pm 1^\circ\text{C}$ or F

Accuracy: $\pm 1^\circ\text{C} + 1$ digit

GENERAL

Display: 2 1/2 digit 0.5" high LCD

Battery: Three 1.55 V (included)

Battery Life: 200 hr continuous

Dimensions: 6" H x 1.7" W x 0.9" D
(162 x 43 x 23 mm)

Weight: 4 oz (113 g)

REPLACEMENT PARTS

PHH-3X-R: Electrode Module

PH-BATT-3: 1.55 V Battery (3 req'd)

PHA-4: Buffer solution, pH 4.0

PHA-7: Buffer solution, pH 7.0

PHA-10: Buffer solution, pH 10.0



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WARRANTY

OMEGA ENGINEERING, INC. warrants this unit to be free of defects in materials and workmanship for a period of 13 months from date of purchase. OMEGA Warranty adds an additional one (1) month grace period to the normal one (1) year product warranty to cover handling and shipping time. This ensures that OMEGA's customers receive maximum coverage on each product.

If the unit should malfunction, it must be returned to the factory for evaluation. OMEGA's Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Upon examination by OMEGA, if the unit is found to be defective it will be repaired or replaced at no charge. However, this WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of being damaged as a result of excessive corrosion; or current, heat, moisture or vibration; improper specification; misapplication; misuse or other operating conditions outside of OMEGA's control. Components which wear or which are damaged by misuse are not warranted. These include contact points, fuses, and triacs.

In addition to our standard warranty period, OMEGA will extend the warranty period for one (1) additional year only if the warranty card enclosed with each instrument is returned to OMEGA.

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RETURN REQUEST/INQUIRIES

Direct all warranty and repair request/inquiries to the OMEGA Customer Service Department. BEFORE RETURNING ANY PRODUCT(S) TO OMEGA, PURCHASER MUST OBTAIN AN AUTHORIZED RETURN (AR) NUMBER FROM OMEGA'S CUSTOMER SERVICE DEPARTMENT (IN ORDER TO AVOID PROCESSING DELAYS). The assigned AR number should then be marked on the outside of the return package and on any correspondence. The purchaser is responsible for shipping charges, freight, insurance and proper packaging to prevent breakage in transit.

FOR **WARRANTY** RETURNS, please have the following information available BEFORE contacting OMEGA:

1. P.O. number under which the product was PURCHASED,
2. Model and serial number of the product under warranty, and
3. Repair instructions and/or specific problems relative to the product.

FOR **NON-WARRANTY** REPAIRS, consult OMEGA for current repair charges. Have the following information available BEFORE contacting OMEGA:

1. P.O. number to cover the COST of the repair,
2. Model and serial number of product, and
3. Repair instructions and/or specific problems relative to the product.

OMEGA's policy is to make running changes, whenever an improvement is possible. This affords our customers the latest in technology and engineering.

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WARNING: These products are not designed for use in, and should not be used for, patient-connected applications.

This device is marked with the international caution symbol. It is important to read the Setup Guide before installing or commissioning this device as the guide contains important information relating to safety and EMC.