Operating Manual

OAKTON®

EcoTestr™ pH1 Pocket Tester

CE

Keypad Functions

Short press = <2 seconds

Long press = >2 seconds

MEAS	1. Short press to turn on; long press to turn off. 2. When turned off, long press to enter setup mode. 3. In mode setting, short press to change parameter.
CAL ↵	1. When turned on, long press to enter calibration mode. 2. In calibration mode, short press to confirm calibration. 3. In mode setting, short press to confirm parameter selection.

Calibration

1. For first-time use or if the tester hasn't been used for a long time, pour some buffer/storage solution to the Fill line in the probe cap, and soak probe for about 15 to 30 minutes to hydrate the pH sensor.
2. Short press ⏻/MEAS to turn on. Rinse in distilled water in a clean cup and use tissue paper to gently dab off excess water.
3. Long press CAL/↵ to enter calibration mode; short press ⏻/MEAS to exit.
   Note: Always start calibration with pH 7.00 buffer.
4. Insert the probe in pH 7.00 calibration solution, stir gently, and leave it to stand. Wait for the measurement stability icon (☺) to appear and stay on the display (see Fig 1); then short press CAL/↵ to complete the 1st calibration. Tester returns to measurement mode, and the calibration icon "**M**" appears on bottom left side of display.

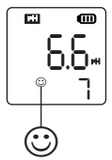


Figure 1

5. Rinse probe in distilled water. Long press CAL/↵ to enter calibration mode. Insert the probe in pH 4.00 calibration solution, stir gently, and let it stand. Wait for the stability icon (☺) to appear and stay on the display; then short press CAL/↵ to complete the 2nd point calibration. Tester returns to measurement mode, and calibration icons "**L**" and "**M**" will appear on bottom left side of display.

Notes:

- Tester will automatically recognize pH buffer solution. Users can choose 1, 2, or 3 calibration points. The 1st calibration must be in a calibration solution of pH 7.00, then followed by the 2nd or 3rd calibration. For details, please refer to the following table:

Calibration	Solutions	Indication icons	Recommended accuracy and range
1-point	pH 7.00	**M**	Accuracy ≥0.1 pH
2-point	pH 4.00 and 7.00	**L M**	Range <7.0 pH
	pH 7.00 and 10.01	**M H**	Range >7.0 pH
3-point	pH 4.00, 7.00, and 10.01	**L M H**	Wide measuring range

Measurement

1. Short press ⏻/MEAS to turn on the tester. Rinse in distilled water in a clean cup and use tissue paper to gently dab off excess water.
2. Stir probe in sample solution, leave it to stand. Wait for the stability icon (☺) to remain on, then take a reading.

Notes:

- If you see some white crystalline solid leaked out of the pH probe, that's the reference solution (3M KCL) inside the probe. It is **NOT** a sign of any defective issue. It is a normal phenomenon when the probe is stored dry for a period of time. It proves that the junction of the probe is working well. Users can simply rinse the probe in distilled water to remove the solids and use the tester as usual.
- After each test, user should rinse the pH probe thoroughly with distilled water or purified water.
- When using premixed pH calibration buffer solutions, we recommend replacing the solution after 10 to 15 times of use to maintain accuracy.
- This tester will **NOT** give accurate or stable pH readings when testing distilled or deionized water. This is because distilled or deionized water do not have enough ions present for the electrode to function properly. To measure the pH of distilled or deionized water, users need to use a specialized instrument. When testing purified water like spring water or drinking water, it will take longer for the readings to stabilize (typically 3 to 5 minutes) because there are very few ions left to be detected by the sensor.
- Do **NOT** store probe in purified water because that will cause permanent damage to the pH probe. Purified water is only recommended for rinsing the probe. The probe should be stored in 3M KCL pH electrode storage solution for best accuracy or stored in the pH 4.00 calibration solution as an alternative if storage solution is not handy.
- Storing the probe dry will **NOT** cause permanent damage to it. It will only temporarily cause the probe to lose its sensitivity, which can always be restored by soaking in the storage solution or pH 4.00 calibration solution.

Setting the Parameters

When tester is off, long press ⏻/MEAS to enter setup mode. Short press ⏻/MEAS to switch from P1 to P2 to P3. Short press CAL/↵ and parameter will flash, then short press ⏻/MEAS to choose desired parameter. Short press CAL/↵ to confirm parameter selection. Long press ⏻/MEAS to return to measurement mode.

Symbol	Menu setting	Selection	Factory default
P1	Select pH buffer	USA – NIST	USA
P2	Select temperature unit	°F – °C	°C
P3	Restore to factory default	No – Yes	No

Notes:

- There are two types of possible standard pH buffer solutions (P1):

Icons		pH standard buffer solution series	
		USA series	NIST series
Three-point calibration	**L**	1.68 pH or 4.00 pH	1.68 pH or 4.01 pH
	M	7.00 pH	6.86 pH
	H	10.01 pH or 12.45 pH	9.18 pH or 12.45 pH

Self-Diagnostic Messages

Symbol	Self-diagnosis information	How to fix
	Wrong pH calibration solution, or measured value is not within the range of the tester.	• Check if calibration solution is correct. • Check if probe is damaged. • Check if there is any air bubble in the glass bulb sensor.*
Er 1	Calibration order not performed correctly.	The 1st point calibration must be pH 7.00. Perform the 2nd point calibration (pH 4.00) immediately after the 1st point. Do NOT turn off the tester until user conducts the 2nd point calibration, otherwise user will need to restart the process with the 1st point calibration.
Er 2	CAL/↵ is pressed before measurement is stable (☺ appears and stays)	Wait for the measurement stability icon (☺) to appear and stay, then press CAL/↵.

*If you find any air bubble in the glass bulb of the pH sensor, simply invert the probe for a few times to remove it. The existence of an air bubble in the glass bulb will significantly decrease the accuracy of measurement.

Specifications

pH	Range	0 to 14.0 pH
	Resolution	0.1 pH
	Accuracy	±0.1 pH
	Calibration points	1, 2, or 3 points
	Automatic temperature compensation	32 to 122°F (0 to 50°C)
Temperature	Range	32 to 122°F (0 to 50°C)
	Resolution	0.1°F/°C
	Accuracy	±0.9°F (0.5°C)

Power: four AAA batteries (included); >400 hours of continuous operation

Low-voltage warning: battery status icon flashes

Auto power-off: tester automatically turns off after 8 minutes of nonuse

IP rating: IP67 (waterproof), floats on water when sensor cap is on

Dimensions (L x W x H): 7" x 1.5" x 1.25" (17.8 x 4 x 3.1 cm)

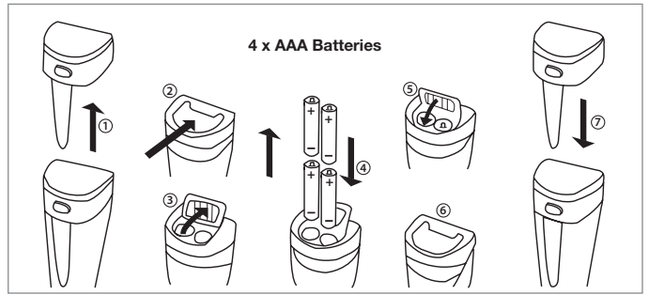
Weight: 3.8 oz (107 g)

Ordering Information

Model	Product description	Catalog number
pH1	EcoTestr pocket pH tester	35634-05

Battery Installation

The tester uses four AAA batteries. Please install batteries according to the following steps. Note the correct direction of battery installation: the positive side (+) of every single battery must face up. Incorrect installation of batteries will cause damage to the tester and create a potential hazard.



1. Pull the battery cap up.
2. Slide the battery cap along the direction of arrow.
3. Open the battery cap.
4. Insert the batteries **(ALL POSITIVE SIDES FACING UP)**.
5. Close the battery cap.
6. Slide and lock the battery cap along the direction of arrow.
7. Fit the tester's cap while making sure to push all the way down. The tester's waterproof design may be compromised if the cap is not fitted correctly.

Warranty

We warrant this instrument to be free from defects in material and workmanship and agrees to repair or replace free of charge, at option of Oakton Instruments, any malfunctioned or damaged product attributable to responsibility of Oakton Instruments, for a period of **two years** from the delivery (a **six-month** limited warranty applies to probes). This warranty does not apply to defects resulting from actions such as misuse (violation of the instructions in this manual or operations in the manner not specified in this manual), improper maintenance, and unauthorized repairs. Warranty period is the time limit to provide free service for the products purchased by customers, not the service life of the tester or probe.

Oakton Instruments reserves the right to update the information in this manual without giving notice in advance.

OAKTON® INSTRUMENTS

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