Operating Manual

OAKTON®

EcoTestr™ CTS1 Pocket Tester

CE

Special Notes

- The batteries have been pre-installed. Please pull out the insulating paper before first-time use. When replacing batteries, the positive side (+) of every single battery must face up. Please check the detail in "Battery Installation" section.
- Before shipment, the factory adds in some water droplets to the tester's cap. This ensures that the probe keeps its sensitivity. This practice of adding several drops of water into the cap to keep sensor activation is highly recommended when storing the tester.

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 MODE)	1. In measurement mode, long press to enter calibration mode, short press to switch Conductivity, TDS and Salinity. 2. In calibration mode, short press to confirm calibration. 3. In mode setting, short press to confirm parameter selection.

Calibration

1. The tester only needs to be calibrated for conductivity, then press (CAL MODE) to switch to Conductivity → TDS→ Salinity.
2. Press (CAL MODE) and switch to conductivity mode, rinse the probe in distilled water and shake off excess water.
3. Long press (CAL MODE) to enter calibration mode; short press (MEAS) to exit.
4. Dip the probe into 1413 µS/cm calibration solution. Stir gently, leave it to stand. Wait for the measurement stability icon (☺) to appear and stay on the display, then short press (CAL MODE) to complete the 1st calibration. Tester returns to measurement mode, and calibration icon **"M"** appears on the bottom left side of display.
5. Rinse probe in distilled water and shake off excess water. Repeat #3 and #4 to complete 2nd calibration in 12.88 ms/cm calibration solution. Tester returns to measurement mode, and calibration icon **"M"** and **"H"** will appear on the bottom left side of display.

Measurement (Conductivity, TDS & Salinity)

1. Short press (MEAS) to turn on the tester, short press (CAL MODE) to switch to the desired measurement mode (Conductivity, TDS or salinity). Rinse probe in distilled water and shake off excess water.
2. Stir the probe in the sample solution gently, leave it to stand. Wait for the stability icon (☺) to stay on screen, then take the reading.
3. Rinse off the probe thoroughly in distilled water after each test.

Notes:

- If probe response is slow, we recommend soaking the probe in 12.88 mS/cm solution for 15 to 30 minutes to restore its sensitivity. Re-calibrate the tester after rinsing. Please add several drops of water into the cap to keep sensor activation when storing the tester.
- The tester adopts 1413 µS/cm and 12.88 mS/cm standard calibration solutions. User can use 1 or 2 point calibrations as needed. For most circumstances, calibrating in 1413 µS/cm to complete 1st point calibration will meet testing requirements.

- The tester has already been calibrated before leaving factory. User can use the tester immediately or can test it in the standard calibration solutions to evaluate its accuracy. If error is large, calibrate the tester before using.
- We recommend replacing the calibration solution after 5 to 10 calibrations to maintain accuracy.
- The surface coating of probe sensor bar is firm platinum black processed with special techniques. It improves measuring performance and coating firmness. If the probe is contaminated. it can be gently brushed with a soft brush in warm soap water or alcohol.

Setting the Parameter

When test is off, long press (MEAS) to enter setup mode → short press (MEAS) to switch P1-P2...P5, short press (CAL MODE) and parameter will flash →press (MEAS) to choose desired parameter → short press (CAL MODE) to confirm parameter selection → long press (MEAS) to return to measurement mode.

Symbol	Menu setting	Selection	Factory default
P1	Select conductivity range*	Aut* – µS – mS	Aut
P2	Select TDS factor	0.40~1.00	0.71
P3	Select salinity unit	ppt – g/L	ppt
P4	Select temperature unit	℃ – ℉	/
P5	Restore to factory default	No – Yes	No

Notes:

- Conductivity range (P1) description: Aut - all ranges: 0~2000 µS/cm, 0.01~20.00mS/cm. Once the readings are greater than 2000 µS/cm, the unit will automatically become mS/cm.

  1 mS/cm = 1000 µS/cm. µS - only µS/cm range: 0~2000 µS/cm; mS/cm - only mS/cm range: 0.01~20.00 mS/cm.

- TDS factor (P2) description: User can adjust TDS factor by experimental data or experience. The following chart lists some commonly used TDS factors for reference:

Conductivity of the solution	TDS factor (P2)
0 to 100 µS/cm	0.60
100 to 1000 µS/cm	0.71
1 to 10 mS/cm	0.81
10 to 100 mS/cm	0.94

- Restore to factory default (P5) description: Select "Yes" in P5 to restore the calibration to the theoretical values and parameter setting to original values. When tester's calibration or measurement performs abnormally, this function can be adopted so the tester returns to factory default setting and then users can conduct calibration or take measurements again.

Self-Diagnostic Messages

Symbol	Self-diagnosis information	How to fix
Er 1	Wrong calibration solution, or measured value is not within the range of the tester	• Check if calibration solution is correct. • Check if probe is damaged.
Er 2	(CAL MODE) is pressed before measurement is stable (☺ appears and stays)	Wait for the measurement stability icon (☺) to appear and stay, then press (CAL MODE)

Specification

Conductivity	Range	0~200.0µS/cm, 0~2000µS/cm, 0~20.00mS/cm
	Resolution	0.1/1µS/cm，0.01 mS/cm
	Accuracy	±1%FS
	Calibration points	1~2 points; auto standard recognition
	Automatic temperature compensation	3 to 122 ˚F（0~50 ℃）
TDS	Range	0~100.0ppm, 0~1000ppm, 0~10.00ppt
	Accuracy	±1%FS
	Automatic temperature compensation	32 to 122 ˚F（0~50 ℃）
Salinity	Range	0~10.00ppt（ppm）
	Accuracy	±1%FS
	Automatic temperature compensation	32 to 122 ˚F（0~50 ℃）
Temperature	Range	32 to 122 ˚F（0~50 ℃）
	Resolution	0.1 ˚F/˚C
	Accuracy	±0.9 ˚F（0.5℃）

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
CTS1	EcoTestr pocket conductivity/TDS/salinity tester	35462-11
—	1413 µS Conductivity Standard 500 mL	00653-18
—	12.88 mS conductivity standard 500 mL	00606-10

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.
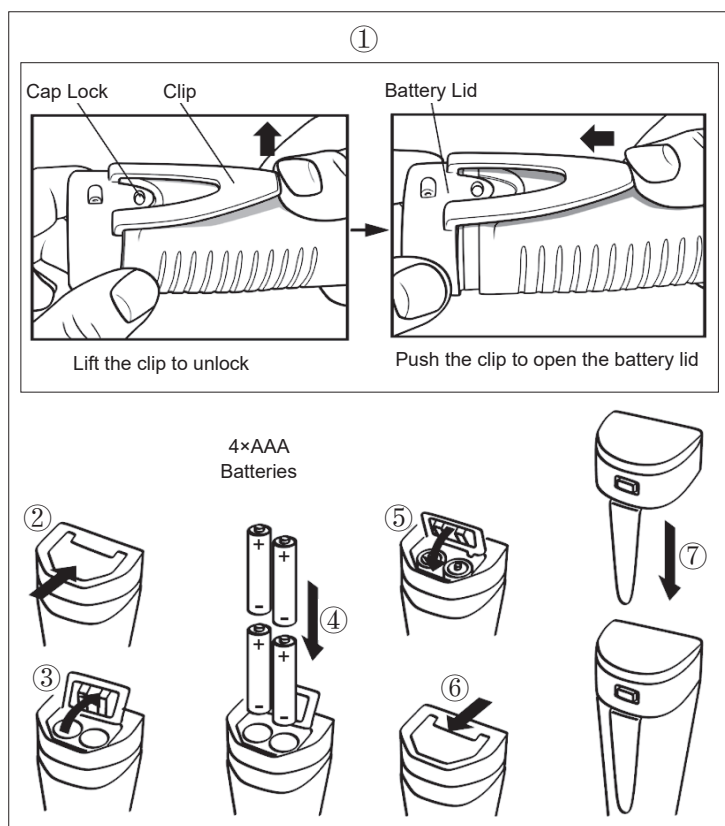
1. Pull the battery cap up.
2. Slide the battery cap along the direction of arrow.
3. Open the battery cap.
4. Insert the batteries **(ALL POSITIVE SIDES FACING UP).**
5. Close the battery cap.
6. Slide and lock the battery cap along the direction of arrow.
7. Fit the tester's cap while making sure to 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.

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