Operating Manual

OAKTON®
ORPTestr® 5 Pocket Tester

Thank you for purchasing the Oakton® ORPTestr® 5 Pocket Tester. Please carefully read this operating manual before using the product to obtain an accurate and reliable test result and avoid unnecessary damage to the tester or probe.

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Features

- Large easy-to-read LCD with 3-color backlight
- Replaceable single-junction sensor saves you money
- Stability and battery status icons
- Auto power-off function conserves battery life
- IP67 waterproof rating

Keypad Functions

Short press = <2 seconds   **Long press** = >2 seconds

⏻/MEAS	1. Short press to turn on the tester and long press to turn off the tester. 2. When turned off, long press to enter parameter setting mode. 3. In measurement mode, short press to turn on backlight.
MODE △	1. In calibration mode, short press to change calibration value (unidirectional). 2. In mode setting, short press to change parameter (unidirectional).
CAL ↵	1. Long press to enter calibration mode. 2. In calibration mode, short press to confirm calibration. 3. When measured value is locked (HOLD icon), short press to unlock.

Preparation Before Use

1. Pour certain amount of storage solution (KCl) into the probe cap, soak the probe for 3 to 5 minutes to activate the sensor (if frequently used, there is no need to soak).

2. The soaking solution is 3M KCl solution; preferably Oakton Electrode Storage Solution (SKU 00653-04). Users can also make it themselves by dissolving 25 g KCl in 100 ml of distilled water.

ORP Calibration

1. Clean electrode in distilled water and dry it.

2. Pour a small amount of 222 mV ORP standard solution (SKU 80055-90, 500-mL bottle) into the calibration bottle.

3. Short press ⏻/MEAS key to turn the meter on. Long press CAL/↵ key to enter calibration mode. If you need to exit calibration mode, short press ⏻/MEAS key.

4. Dip electrode in the ORP standard solution (Zobell's solution), stir gently, and allow it to stand still in the calibration solution until a stable reading is reached. When measurement stability icon (☺) appears and remains on the screen (see Fig. 1), press MODE/△ key to adjust the calibration value according to the table below (also on the buffer bottle's label).
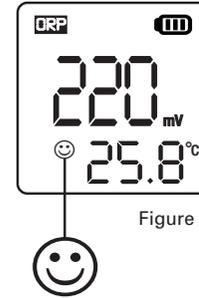

Figure 1

ORP Standard Buffer Solution Calibration Reference Table

Temperature (ºC)	mV	Temperature (ºC)	mV
10	242	30	215
15	235	35	209
20	227	38	205
25	222	40	201

For example, if the temperature is around 25ºC, then adjust the calibration value to 222 mV. If the temperature is around 20ºC, then adjust the calibration value to 227 mV. Short press CAL/↵ key to complete the calibration.

ORP Measurement

Press ⏻/MEAS key to power on, clean the probe in distilled water, and gently dry it. Place the probe in the tested solution and stir gently and let it stand still. Read the measurement after the stability icon (☺) appears and remains on.

Notes

Usually there's no need to calibrate for ORP testing. When not used for a long time, users can test the unit in 222 mV ORP standard buffer. If the error is large, recalibrate according to the steps above.

Cleaning and Activating the ORP Probes

After long-time use, the surface of the platinum sensor can be contaminated and cause inaccuracy and slow response time. If that happens, the followed methods can be adopted to clean and activate:

A. For contamination caused by inorganic substances, dip the probe into 0.1 mol/L dilute hydrochloric acid for 30 minutes. Clean it with distilled water, soak in KCL storage solution (SKU 00653-04) for 6 hours, and then it will be ready for use.

B. For contamination caused by organic substances and oiliness, clean the platinum surface with dishwashing liquid and wash with distilled water. Soak for 6 hours in storage solution (SKU 00653-04) and then it will be ready for use.

C. If the platinum surface is so severely contaminated that an oxide film forms, use toothpaste to clean the platinum surface, and then wash it with distilled water. The probe will be ready for use again after 6 hours of soaking in the storage solution (SKU 00653-04).

Setting the Parameters

When tester is off, long press ⏻/MEAS key to enter parameter setting mode. Short press MODE/△ key to switch from P1 to P2…P6. Short press CAL/↵ key and parameter will flash, then short press MODE/△ key to choose desired parameter. Short press CAL/↵ key to confirm selection. Long press ⏻/MEAS key to exit parameter setting mode.

Symbol	Menu setting	Selection	Factory default
P1	Set low measurement alarm	−1000 to +1000 mV	−1000
P2	Set high measurement alarm	−1000 to +1000 mV	1000
P3	Select Automatic Lock (HOLD)	Off – On	Off
P4	Select backlight	Off – 1 – On	1 (1-min auto-off)
P5	Select temperature unit	°C – °F	°C
P6	Restore to factory default	No – Yes	No

A. High and Low Measurement Heads-Up Examples (P1 and P2)

Heads-up when measured value ≤120 mV: Preset low value = 120 mV, highest value = 1000 mV, when measured value is ≤120 mV (stability icon (☺) displays on LCD) the red backlight appears on display.

Heads-up when measured value ≥150 mV: Preset high value = 150 mV, lowest value = −1000 mV, when measured value is ≥150 mV (stability icon (☺) displays on LCD) the red backlight appears on display.

Heads-up when measured value in range of 120 mV and 150 mV: Preset low value = 120 mV, highest value = 150 mV, when the measured value is <120 mV or >150 mV (stability icon (☺) displays on LCD) the red backlight appears on display.

B. Automatic Lock (P3)

Select "On" to activate auto lock function. When reading is stable for more than 10 seconds, the tester will lock the value automatically, and "**HOLD**" icon will appear on the bottom left of the screen. Press CAL/↵ key to cancel HOLD on reading.

C. Backlight (P4)

Select "Off" to turn off backlight function, "On" to turn on backlight function, or "1" to have backlight last for 1 minute.

D. Temperature Unit (P5)

Select °C or °F; the factory default is °C.

E. Factory Default Setting (P6)

Select "Yes" to recover tester calibration to theoretical value (pH value in zero potential is 7.00, slope is 100%), parameter setting return to initial value. This function can be used when instrument does not work well in calibration or measurement. Calibrate and measure again after resetting the unit to factory default status.

Self-Diagnostic Messages

Symbol	Self-diagnosis information	How to fix
Er2	CAL/↵ is pressed before measurement is stable (☺ appears)	Wait for the measurement stability icon (☺) to appear and stay, then press CAL/↵.

Specifications

ORP (mV)	Range	±1000 mV
	Resolution	1 mV
	Accuracy	±0.2% full-scale
Temperature	Range	32 to 122°F (0 to 50°C)
	Resolution	0.1°F/°C
	Accuracy	±0.9°F (0.5°C)

Display: LCD with three-color backlight. Blue = measurement; Green = calibration; Red = alarm

Reading lock: HOLD icon

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. 5" (17.8 x 4 x 4 cm)

**Weight**: 4.7 oz (133 g)

Ordering Information

Model	Product description	Catalog number
ORP5	ORPTestr 5 pocket tester	35634-54
—	Replacement sensor for ORPTestr 5	35634-58

Sensor Replacement

Screw off the sensor ring, unplug the sensor, plug in the new replacement sensor (pay attention to the probe's position), and rescrew on the sensor ring

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.

4 x AAA Batteries
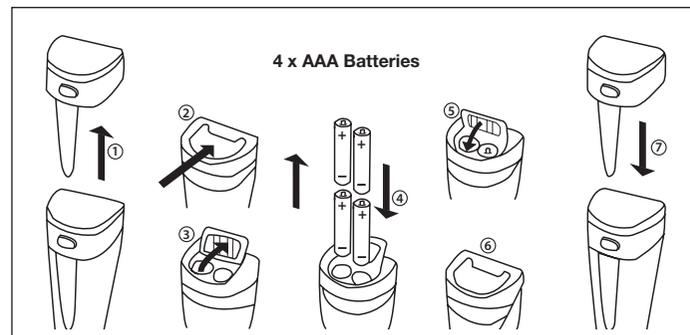
1. Pull the battery cap up.

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 sensors). 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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