EC60 Pocket Conductivity Tester
EC/TDS/Salinity/Temp.

CE ISO 9001:2008 IP67 WATERPROOF
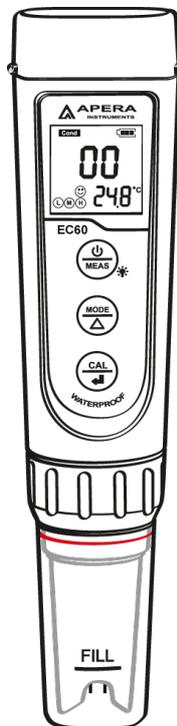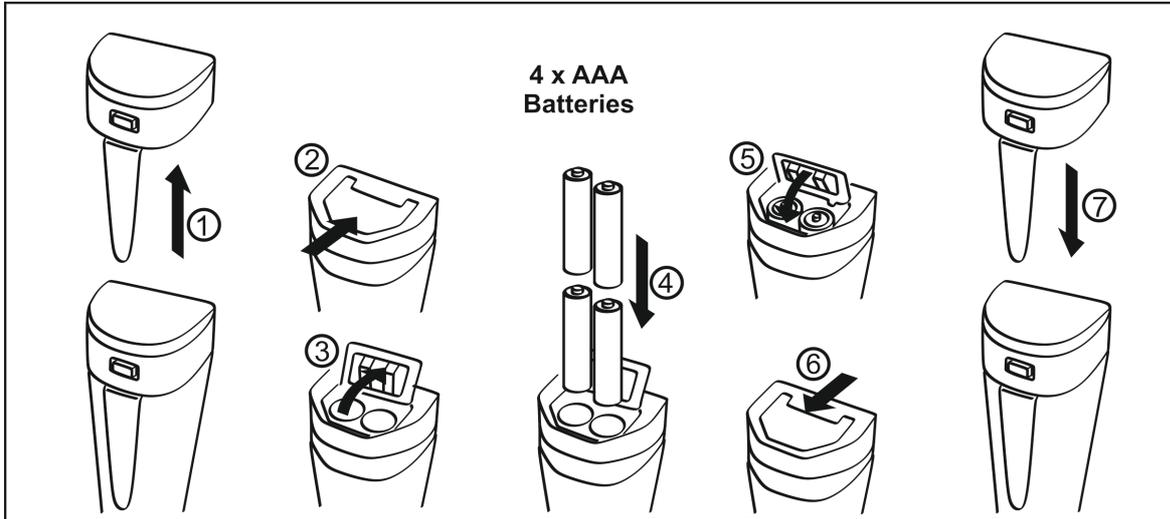
APERA INSTRUMENTS, LLC

www.aperainst.com

EC60 Pocket Conductivity Tester Instruction Manual

1 Battery Installation

Please install batteries according to the following steps. Please note polarity:

"+" (anode) is upward; "-" (cathode) is downward.

2 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. 3. In measurement mode, short press to turn on backlight.	
MODE △	1. In measurement mode, short press to switch parameter COND → TDS → SAL 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, short press to unlock.	
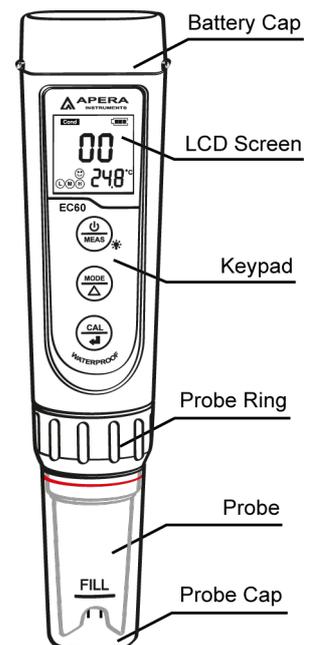
3   Complete Kit
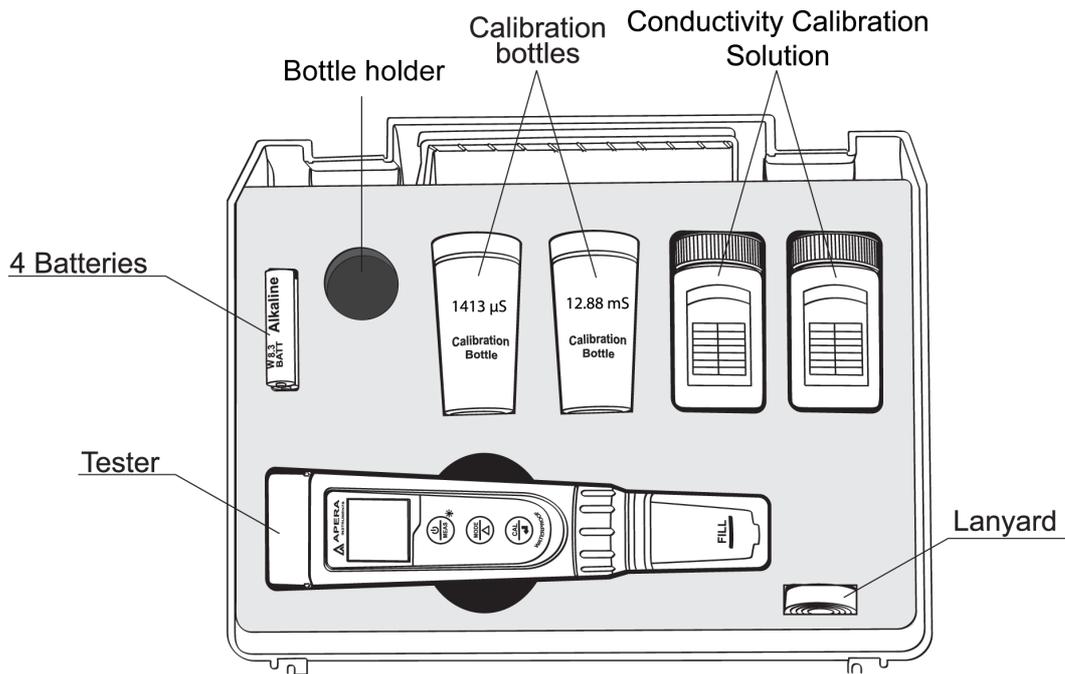
Graph - 2

4   Conductivity Calibration

1) Rinse the probe in distilled water and dry it. Short press (⏻/MEAS) to turn on the tester.

2) Pour 1413 µS and 12.88 mS calibration solution to accordant calibration bottles with proper amount (about half of the calibration bottles' volume).

3) Long press (CAL/↵) to enter calibration mode; Short press (⏻/MEAS) to exit.

4) Dip the probe into 1413 µS calibration solution. Stir gently, leave it to stand, LCD displays ☺ (Diagram 3), short press (CAL/↵) to complete 1-point calibration. The tester returns to measuring mode, and calibration icon (M) appears at the button left of LCD.

5) Rinse probe in distilled water and dry it. Follow the steps in 4.2-4.3 to complete 2nd point calibration in 12.88 mS calibration solution, tester returns to measuring mode, calibration icons (M) (H) display on bottom left of LCD.

Diagram - 3

5　Conductivity Measurement

1) Short press ⏻/MEAS to turn on tester. Rinse probe in distilled water and dry it.

2) Stir probe in the sample solution gently, leave it to stand. Get readings after the smile icon comes up and stays.

3) Press MODE △ to switch from Conductivity to TDS or salinity.

6　Notes

1) The tester adopts 84 µS (sold separately), 1413 µS and 12.88 mS standard calibration solutions. Users can use 1-3 point calibrations as needed. For most circumstances, calibrating in 1413 µS to complete 1st point calibration will meet testing requirements.

Calibration Icons	Calibration Solution	Measuring Range
Ⓛ	84 µS/cm	0 to 200 µS/cm
Ⓜ	1413 µS/cm	200 to 2000 µS/cm
Ⓗ	12.88 mS/cm	2 to 20 mS/cm

2) The tester has already been calibrated after manufacture. Usually users can use the tester right away, or test it in the calibration solutions to test its accuracy. When error is large, calibrate it before using.

3) The factory default temperature compensation coefficient is 2.0%/˚C. Users can adjust it in P3 parameter setting according to the following table or laboratory data.

Solution	Temp. Compensation Coefficient
NaCl	2.12%/˚C
5% NaOH	1.72%/˚C
Diluted Ammonia	1.88%/˚C
10% Hydrochloric Acid	1.32%/˚C
5% Sulfuric Acid	0.96%/˚C

4) TDS is proportional to the value of conductivity. The TDS coefficient ranges from 0.40 to 1.00. Users can adjust TDS coefficient by experimental data or experience in P4. The following chart lists some commonly used TDS coefficients for reference (Factory default value is 0.71).

Conductivity and TDS coefficient

Conductivity of the solution	TDS Coefficient
0~100 μS/cm	0.60
100~1000 μS/cm	0.71
1~10 mS/cm	0.81
10~100 mS/cm	0.94

5) Salinity is proportional to the value of conductivity. Its coefficient is 0.5. Users only need to calibrate conductity, and then switch to TDS and/or salinity to take measurements.

6) The tester has self-diagnosis functions:

Symbol	Self-Diagnosis information	How to fix
Er 1	Wrong calibration solution, which exceeds the recognizable range of the meter.	1. Check if calibration solution is correct 2. Check if probe is damaged.
Er2	⟮CAL⟯ is pushed before measurement becomes stable (☺ comes up)	Wait for the smile icon to stay, and then short press ⟮CAL⟯

7   Parameter Setting

1) Parameter Setting Chart

Symbol	Content	Parameter	Factory Default
P1	Auto Hold	Off-On	Off
P2	Backlight	Off-1-On	1 (1 min auto-off)
P3	Temp. Compensation Coefficient	0.00 to 4.00%	2.00%
P4	TDS Coefficient	0.40 to 1.00	0.71
P5	Salinity Unit	ppt-mg/L	ppt
P6	Temperature Unit	˚C-˚F	˚C
P7	Restore to Factory Defualt	No-Yes	No

2) Parameter Setting

When turned off, long press $\left(\frac{\cup}{MEAS}\right)$ to enter parameter setting →short press $\left(\frac{MODE}{\triangle}\right)$ to switch P1-P2… →P7. Short Press $\left(\frac{CAL}{\llcorner}\right)$, parameter flashes→short press $\left(\frac{MODE}{\triangle}\right)$ to choose parameter, → short press $\left(\frac{CAL}{\llcorner}\right)$ to confirm →Long press $\left(\frac{\cup}{MEAS}\right)$ to switch off.

3) Parameter setting notes

a) Auto Hold (P1):

Set "On" to turn on auto hold function. When reading has been stable for 10 seconds, the meter will lock the reading automatically, and HOLD icon will appear. Press $\left(\frac{CAL}{\llcorner}\right)$ to unlock and continue measuring.

b) Backlight (P2):

Off – turn off the backlight; On – turn backlight always on; 1 – backlight lasts 1 minute

c) Restore to factory default (P7):

Select "Yes" to restore the meter's calibration and other parameters back to factory default value. When meter's calibration or measuring is performing abnormally, users can perform this function. After restoring to factory default, conduct calibration and measurement again.

8 Technical Specifications

Conductivity	Range	0-200.0 µS, 0-2000 µS, 0-20.00 mS
	Resolution	0.1/1 µS, 0.01 mS
	Accuracy	±1% F.S
	Calibration	1-3 points automatic calibration
TDS	Range	0-100,0 ppm, 0-1000 ppm, 0-10.00 ppt
	Resolution	0.1/1 ppm, 0.01 ppt
Salintiy	Range	0-10.00 ppt
	Resolution	0.01 ppt
Temperature	Range	0-50˚C
	Resolution	0.1˚C
	Accuracy	±0.5˚C

9 Other Functions and Parameters:

Screen	STN 180˚ viewing angle. Blue backlit: measuring mode; Green backlit: calibration mode
Readings' Lock	**HOLD**
Low battery reminder	▭ flashes to remind to replace batteries
Automatic power-off	Auto power-off if no operation in 8 minutes
Waterproof level	IP67, floats on water
Power supply	AAA batteries*4
Battery Life	1000 hours
Dimensions/Weight	Meter: 40*40*178mm/133g Carrying case: 255*210*50mm/438g

10 Probe Replacement

Twist off the probe ring, unplug the probe, plug in the new replacement probe (pay attention to the electrode's position), and screw on the probe ring. The model for EC60 tester's replacement probe is EC60-E (AI209)

11 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 APERA INSTRUMENTS, LLC, any malfunctioned or damaged product attributable to responsibility of APERA INSTRUMENTS, LLC for a period of **two years** from the delivery (a **six-month** limited warranty applies to electrodes). 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 electrode.

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