User's Guide

PCT-407 pH/ORP/Conductivity/TDS/Salt/Temp. Meter

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Introduction:

We thank you for having purchased PCT-407 portable pH/Cond/TDS/Salt/Temp meter.

Before using the instrument, please note that the operation instructions should be read carefully, which will help you to operate and maintain the instrument, as well as to avoid trouble caused by unsuitable operation and maintenance.

PCT-407 portable meter employs leading edge technology with integrated microprocessor, which is suitable for measurement in water solutions for institutes, industrial labs and production fields.

The information presented in this manual is subject to change without notice as improvements are made.

Features:

1. Microprocessor based designed.
2. Large LCD built into adjustable "flip-up" cover, which can display pH or ORP or Conductivity and Temperature simultaneously.
3. Rugged design for handheld or bench top use, neck-strap for "hands-free" operation.
4. Automatic Temperature Compensation(ATC)
5. Memory function stores and recalls up to 150 points. MAX/MIN and data Lock. ℃ or ℉ are available.
6. Simple to calibrate by one keyboard for 5 points buffer, calibration value can be adjusted as needed.
7. Indicate percentage of slope (PTS) after calibration
8. Auto shut off after 10 minutes of non use.

Specifications:

|	pH	ORP	Temp.
Range	-2.00~16.00 pH	-1999 ~ -200 mV	0~110 ℃
		-199.9 ~ 499.9 mV	
		500 ~ 2000 mV	
Accuracy	±0.01+1 digit	±2+1 digit	±0.2+1 digit
Resolution	0.01 pH	0.1/1 mV	0.1 ℃
Compensation	ATC: 0~100 ℃	N/A	

	Conductivity	TDS	Salt
Range	0.0~ 199.9µS	0.0~131.9 ppm	0.0~99.9 ppm
	200~ 1999µS	132~1319 ppm	100~999 ppm
	2.00~ 19.99 mS	1.32~13.19 ppt	1.00~9.99 ppt
	20.0~ 200.0 mS	13.2~132.0 ppt	10.0~100.0 ppt
Accuracy	±2% FS	±2% FS	±2% FS
Resolution	0.1/1µS/0.01/0.1 mS	0.1/1ppm/0.01/0.1ppt	0.1/1ppm/0.01/0.1ppt
Compensation	ATC: 0~50 ℃	ATC: 0~50 ℃	ATC: 0~50 ℃

Accessories:

Upon receiving the shipment, please inspect the container and equipment for any signs of damage. Please verify that you have received the corresponding accessories as below:
pH electrode, Conductivity cell, Temp. probe, Buffer 7.00 x 50ml, Buffer 4.01 x 50ml, 1413µS x 50ml, Neck-strap, 9V battery, Optional: ORP electrode.

Display Description:
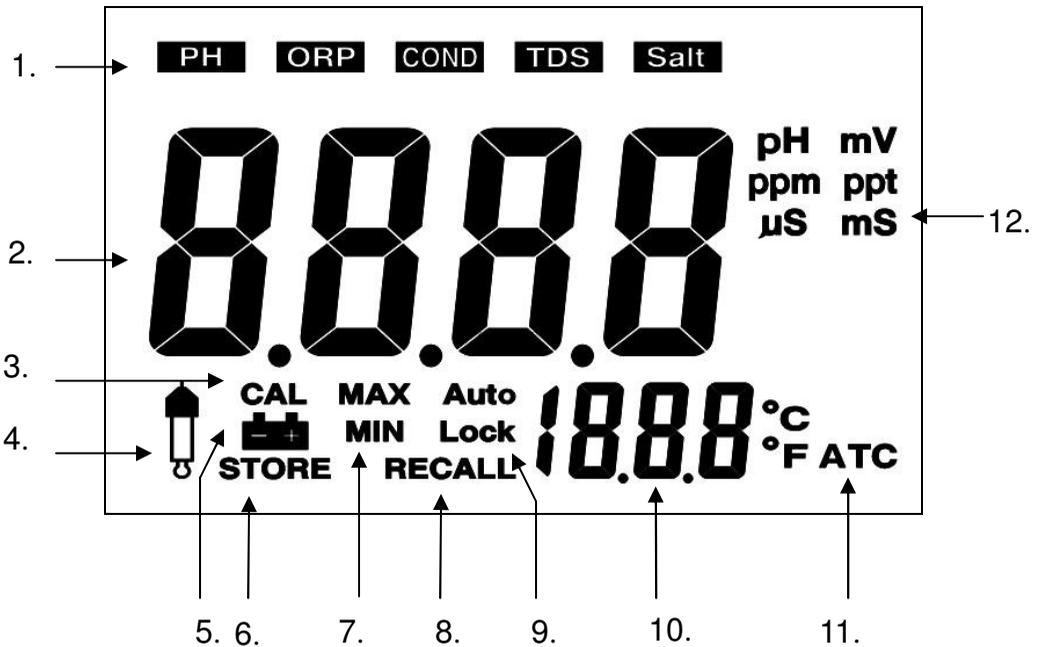
1. Function Mode
2. Measuring Value
3. Calibration Mode
4. Calibration error indicator
5. Battery power low Indicator
6. Reading stored indicator
7. MAX & MIN Value
8. Recall Mode
9. Auto lock or manually lock current reading
10. Temperature Indicator
11. Auto Temperature Compensation
12. Unit

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Device Description:

Adjustable Flip-up cover

Main Display

Power/Calibration

Up

Down

Lock/Max/Min

Mode

Store/Recall

Neck Strap

pH/ORP Input

AC/DC Adaptor

T/Probe Input

Cond. Input

Functions of Keyboard:

LOCK MAX/MIN	Lock the current reading, press for 3 sec. to enter or exit MAX/MIN mode. In this mode, press to browse MAX and MIN reading.
STO RCL	Store the current reading. Press 3 sec. to enter Recall mode.
▼ ▲	In Recall mode, browse records. Press both together 3 sec. to enter advanced setting (see page 10).
MODE	Choose different function mode. Press 3 sec. to switch ℃/℉, or switch pH-mV or ORP-mV(in ORP mode)
CAL	Turn on or off power. Press 3 sec. to enter calibration mode

Preparation:

1. Fully extend the hinged cover, open the battery compartment by a coin and connect 9V battery.
2. Remove the protection cap from the pH electrode or Conductivity cell, and connect to connector.
3. Connect the Temp. probe to meter and turn on the power switch.
4. Rinse the electrode with clean water and wipe it dry.

Calibration:

<pH>

1. Make sure the sensor is pH electrode.
2. Dip the electrode into the buffer solution pH 7.00. Stir gently and wait until the reading is stable. Press and hold ⬡ for 3 sec. to enter calibration mode. The display will appear **CAL** and flashing 7.00. When the display stops flashing and indicates "**SA**", then "**End**" while calibration ends, and will return to measurement mode.
3. Rinse the electrode with clean water and wipe it dry. Dip the electrode into the buffer solution pH 4.01 as previous steps.
4. After slope calibration, pH 4.01 or pH 10.01, the display will indicate the percentage of slope (PTS) to show the status of the electrode. If the PTS is below 70% or above 130%, the electrode must be replaced. A slope of 100% is ideal.

Note:

1. Calibration error indicator icon will appear, and "**Err**" instead of "**SA**", if calibration fails.
2. When doing a 2 or 3 point calibration, Calibrate with buffer pH 7 first, and then follow with buffer pH 4 or pH 10.
3. pH calibration type "**USA**" or "**NIST**" can be changed in advanced setting.
4. The calibration points of "**USA**" are 1.68, 4.01, 7.00, 10.01 and 12.45.
5. The calibration points of "**NIST**" are 1.68, 4.01, 6.86,

9.18 and 12.45.

<ORP>

Calibration is not necessary for ORP. However, it could be tested with specific ORP standard solution to check whether the electrode is good.

<COND, TDS, Salt>

1. Make sure the probe is Conductivity cell.
2. Dip the cell into the standard solution 1413 µS/cm. Stir gently and wait until the reading is stable. Press and hold ⊙̄CAL for 3 sec. to enter calibration mode. The display will appear **CAL** and flashing 1413µS/cm. When the display stops flashing and indicates "**SA**", then "**End**" while calibration ends, and will return to measurement mode.

Note:

1. Calibrated by 12.88 mS/cm standard solution would be better for measuring high conductivity solution.
2. The icon **COND** will display automatically during calibration mode.
3. Calibration error indicator icon will appear, and "**Err**" instead of "**SA**", if calibration fails.
4. If the reading is not 0 µS/cm while the cell is in the air and not dipped into any solution, calibrate it in the air to make reading becomes 0 µS/cm.
5. The calibration point of Conductivity are 0, 84 µS/cm, 1413 µS/cm, 12.88 mS/cm and 80.0 mS/cm.

Measurement:

\<pH\>

1. Press (MODE) to choose pH mode.
2. After calibration, rinse the pH electrode with clean water and wipe it dry. Dip the electrode into the sample solution which is going to be measured. Stir gently and wait until a stable reading can be obtained.

\<ORP\>

1. Insert ORP electrode, and press (MODE) to choose ORP mode.
2. Rinse the ORP electrode with clean water and wipe it dry. Dip the electrode into the sample solution which is going to be measured. Stir gently and wait until a stable reading can be obtained.

Note:

1. The display will appear "----" when it is over measuring range.
2. After measurement, rinse the electrode with clean water. Replace the soaking bottle. The soaking bottle should be always filled with soaking solution (4M KCL).
3.

\<COND, TDS, Salt\>

1. Insert Conductivity cell, and press (MODE) to choose COND, TDS or Salt mode.
2. After calibration, rinse the conductivity cell with clean

water and wipe it dry. Dip the electrode into the sample solution which is going to be measured. Stir gently and wait until a stable reading can be obtained.

Note:

1. The display will appear "----" when it is over measuring range.
2. The unit will auto-range to µS/cm or mS/cm, or ppm or ppt.
3. After measurement, rinse the cell with clean water and replace the protective cap.
4. Don't touch or wipe the surface of the inner black plate of the conductivity cell.

MAX/MIN mode:

1. Press and hold (LOCK MAX/MIN) button until the display appear flashing **MAX** and **MIN** icons to enter MAX/MIN. Press (LOCK MAX/MIN) lightly to browse MAX and MIN value during this mode.

2. To exit this mode, press and hold (LOCK MAX/MIN) button again until the flashing **MAX** and **MIN** icons disappear and return to measuring mode.

Store and Recall mode:

1. In measuring mode, press (STO RCL) to store the current reading. The **Store** icon and the ordinal of this record will appear on the display.

2. Press and hold (STO RCL) for 3 sec. to enter Recall mode. In this mode, use (▼) or (▲) to browse records. Press and hold (STO RCL) to exit this mode and return to measuring mode.

3. In Recall mode, press (▼)(▲) together for 3 sec. to clean all the records in the memory.

Advanced Setting:

1. In pH or TDS measuring mode, press ⌄⌃ together for 3 sec. will enter advanced setting.

2. In pH advanced setting,

    (1) Press (STO/RCL) to set **"pH calibration type"**, and use ⌄ or ⌃ to choose **"USA"** or **"NIST"**. Then press (MODE) to confirm and return to measuring mode.

    (2) Press (LOCK/MAX/MIN) to turn on or off **"Auto Lock"** function. Use ⌄ or ⌃ to choose on or off. Then press (MODE) to confirm and return to measuring mode.

3. In TDS advance setting, press (STO/RCL) to set the ratio between conductivity and TDS. Use ⌄ or ⌃ to adjust ratio from 0.5 to 1.0. Then press (MODE) to confirm and return to measuring mode.

4. In any advanced setting, press (○/CAL) to reset all settings to factory setting (except "ph calibration type" and "Auto Lock").