Calibration Certificate

This certificate guarantee that the product has been inspected and tested in accordance with the published specifications.

The instrument has been calibrated by using equipment which was already calibrated to standards traceable to international standards.

Model: 7200

Serial no.: _____

Date _____

CE

User's Guide

ISO9001 ISO9002

MADE IN TAIWAN

7200

pH/mV/Conductivity/TDS/Salt/Temp Waterproof Tester

INDEX

Introduction:

Thank you for selecting model PHH-7200 microprocessor--based waterproof pH/Conductivity/Temp tester. It is possible to measure a wide range of pH, ORP, Conductivity, TDS, Salinity and Temperature with a replaceable electrode. We recommend that you read and follow the manual carefully.

Features:

※ Large LCD displays pH or ORP or Conductivity or TDS or Salinity and Temperature simultaneously.
※ Waterproof IP-57 standard and rugged design for field use conveniently. It floats on water.
※ Automatic Temperature Compensation (ATC) and degree °C/°F switchable.
※ Displays function mode automatically during insert sensor module.
※ Icon **PH** **ORP** **COND** **TDS** **Salt** and unit **pH, mV, µS, mS, ppm, ppt, °C, °F** for recognition easy during select function mode.
※ Displays Maximum/Minimum value and data hold.
※ Low battery and consumption indicator. Auto shut off after 10 minutes of non use.
※ Easy to replace Conductivity cell, pH electrode or ORP electrode module by user.

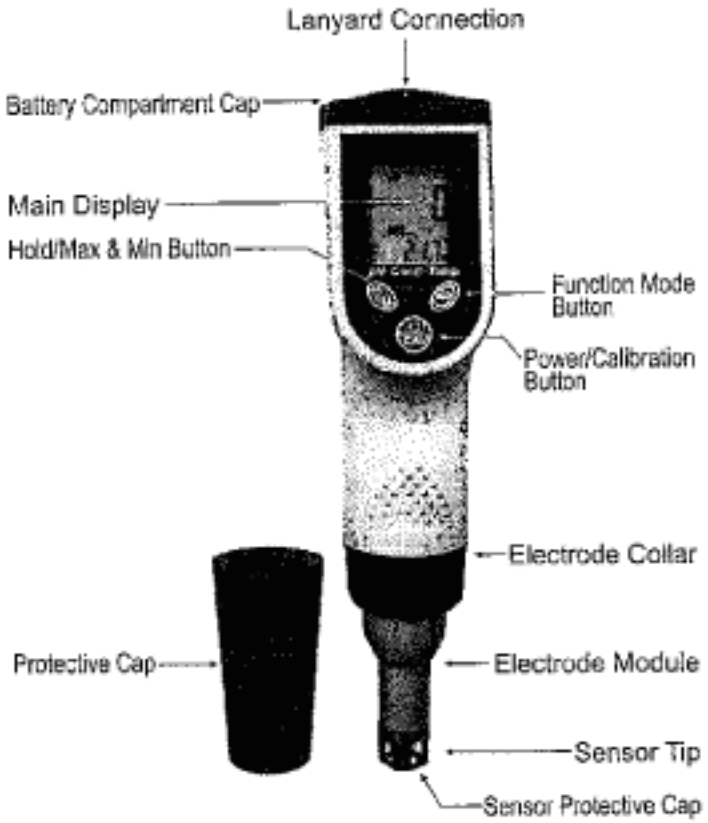
Specifications:

7200			
	pH	ORP	Temp.
Range	-2 ~ 16.00	-1000 ~ 1000	0 ~ 90.0 °C
Accuracy	± 0.01 + 1 digit	± 2 + 1 digit	± 0.2 °C + 1 digit
Resolution	0.01 pH	1 mV	0.1 °C
ATC	0 ~ 90 °C		
Calibration	4.00, 7.00, 10.01		

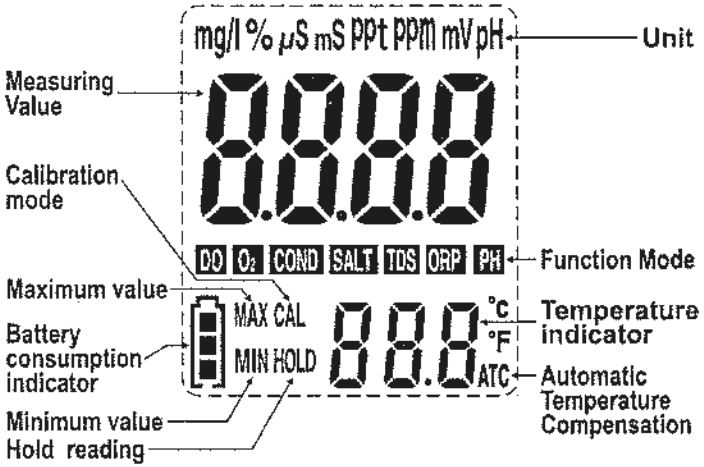
	Conductivity	TDS	Salinity
Range	0 ~ 2000 µS 2.00 ~ 20.00 mS	0 ~ 1300 ppm 1.30~13.00 ppt	0 ~ 1000 ppm 1.00~12.00 ppt
Accuracy	± 2% FS (Cond. - TDS - Salt)		
Resolution	1 µS/0.01 mS	1 ppm/0.01 ppt	1 ppm/0.01 ppt
ATC	0 ~ 50 °C		
Calibration	0 µS, 1413 µS, 12.88 mS		

Power	DC1.5V × 4 battery (UM-4/AAA)
Dimensions	Meter: 195 × 40 × 36 mm, Kits: 230 × 205 × 50 mm
Weight	Meter: 135g (with battery), Kits: 780g

Device Description:



Display Description:



Functions of keyboard:

(CAL) Power/Calibration

1. Press button to switch power On or Off.
2. Press and hold button to enter calibration mode.

(MODE) Function Mode

1. Press button to select the desired measurement mode Conductivity, TDS or Salinity.
2. Press and hold button to change degree °C or °F

(H/M) Hold/Max & Min

1. Press button to enter Hold mode.
2. Press and hold button to enter Maximum/Minimum mode. Press button with light to get Maximum and Minimum value.
3. Press and hold button again to exit this mode and return to measurement mode.

Operating procedure:

Accessories

Upon receiving the shipment, inspect the container and equipment for any signs of damage. Remove the packing list and verify that you have received all equipments:

Meter, Conductivity cell, Buffer solution pH 4 & 7, Standard solution 1413 µS/cm, Soaking solution, Lanyard, Battery(has been installed), Instruction manual, Carrying case.

Optional: ORP electrode

Preparation

1. Remove the protection cap and/or unscrew soaking bottle(pH, ORP only) from meter to rinse the electrode with clean water and wipe it dry. Don't leak soaking solution from bottle, and replace bottle when end of usage.
2. Press (CAL) button to turn the meter power on.

Note: Don't touch or wipe the surface of inner black sensor of conductivity cell.

Calibration

< pH >

1. Make sure the sensor is pH electrode, or check the icon **PH** shows at LCD display.
2. Dip the electrode into the buffer solution pH 7. Stir gently and wait until the display stabilized. Press and hold (CAL) button to enter calibration mode until the display appears icon **CAL**, and then flash 7.00. When the display stop flashing and indicates "SA", then "End" while calibration is ending, and return to measurement mode.

3. Rinse the electrode with clean water and wipe it dry. Dip the electrode into the buffer solution pH 4. Stir gently and wait until the display stabilized. Press and hold (CAL) button to enter calibration mode until the display appears icon **CAL**, and then flash 4.00. When the display stop flashing and indicates "%" (percentage of slope), then "SA", then "End" while calibration is ending, and return to measurement mode.
4. After slope calibration pH 4 or pH 10, the display will indicate percentage of slope (PTS) to show the status of electrode. If the PTS is below 70% or above 130%, the electrode must be replaced. A slope of 100% is ideal.

Note: (1) Icon "SA" will not appear if the 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.

< Conductivity >

1. Make sure the sensor is Conductivity cell, or check the icon **COND**, **TDS** or **Salt** shows at LCD display.
2. Dip the conductivity cell into the standard solution 1413 μS/cm. Stir gently and wait until the display stabilized. Press and hold (CAL) button to enter calibration mode until the display appears icon **CAL**, and then flash 1413 μS/cm. When the display stop flashing and indicates "SA", and then "End" while calibration is ending, and return to measurement mode.
Note: (1) If reading are not 0 μS/cm while the meter in air and doesn't dip it into any solution, then calibrate it in air to make reading becomes 0 μS/cm firstly.

(2) Calibrated by 12.88 mS/cm standard solution would be better for measuring high conductivity solution. The 12.88 mS/cm solution is optional.
(3) The icon **COND** will display automatically during enter calibration mode.
(4) "SA" will not appear if the calibration fails.

Measurement

< pH >

1. After calibration, rinse the electrode with clean water and wipe it dry. Dip the electrode into sample solution to be measured. Stir gently and wait until a stable reading can be obtained.

< ORP >

1. Insert ORP electrode, and the icon **ORP** will show at LCD display automatically.
2. Calibration is not necessary for ORP. But it could be tested with a specific ORP solution to check electrode is good or bad.
3. Rinse the electrode with clean water and wipe it dry. Dip the electrode into sample solution 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 protective cap and soaking bottle. The soaking bottle should be always kept wet by adding soaking solution.

< **Conductivity** >

1. After calibration, rinse the conductivity cell with clean water and wipe it dry. Dip the conductivity cell into sample solution to be measured. Stir gently and wait until a stable reading can be obtained.
2. Press (MODE) button to select the desired measurement mode Conductivity, TDS or Salinity.

Note: (1) The display will appear "_ _ _ _" when it is over measuring range.
(2) The unit will auto-range to µS/cm or mS/cm, ppm or ppt.
(3) After measurement, rinse the electrode with clean water and replace the protective cap.

Functions mode

1. Press (H/M) button to enter hold function mode. The icon **HOLD** will appear, and the reading value can be locked shows on display. Return to measurement mode while pressing button again.
2. Press and hold (H/M) button to enter measuring maximum and minimum function mode until the display appears flash icon **MAX** and **MIN**. The value of maximum and minimum will show at display while pressing button with light. To exit this mode, press and hold (H/M) button until icon **MAX** and **MIN** disappear, and return to measurement mode.
3. Press (MODE) button to select the desired measurement mode Conductivity, TDS or Salinity during insert Conductivity cell.
4. Press and hold (MODE) button to change Degree °C or °F

Note: (1) The display could not auto shut off under the status of MAX/MIN mode.
(2) Change a new battery when the battery indicator flashing.

Maintenance:

Battery replacement

1. Loosen the screw by screwdriver from battery compartment cap.
2. Replace the fresh AAA(UM-4) type battery, and note polarity.
3. Replace the battery compartment cap, and tighten with screw by screwdriver.

Note: (1) Be sure the correct position of battery by polarity
(2) Don't lose the O-ring which has been mounted on cap.

Electrode replacement

1. Unscrew the electrode collar counterclockwise, and remove it completely.
2. Pull the electrode module out from the tester.
3. Plug an new electrode module into the tester socket carefully.
4. Replace and tighten the electrode collar to make a good seal.

Applications:

Agriculture · Anti-freeze recycling · Aquarium · Boiler · Chemical industry · Cooling tower · Drinking water · Fish farming · Food industry · Garden husbandry · Hydroponic · Laboratory usage · Plating industry · Swimming pool & Spa · Water treatment