

Instruction Manual

PC 10

Waterproof Hand-held pH/Conductivity/Temperature Meter



OAKTON®

**EUTECH
INSTRUMENTS**

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68X230401

Rev 5 08/04



ISO 9001
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Preface

This manual serves to explain the use of the Waterproof PC 10 hand-held meters. It functions as a step by step guide to help you operate the meter and as a handy reference guide. It is written to cover as many anticipated applications of the Waterproof PC 10 meters as possible. If there are doubts in the use of this meter, please do not hesitate to contact the nearest Authorised Distributor.

Eutech Instruments/ Oakton Instruments cannot accept any responsibility for damage or malfunction to the meter caused by improper use of the instrument.

The information presented in this manual is subject to change without notice as improvements are made, and does not represent a commitment on the part of Eutech Instruments Pte Ltd/ Oakton Instruments.

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1. INTRODUCTION

Thank you for selecting the Waterproof PC 10 portable meter. The meter is a microprocessor-based instrument that measures pH, conductivity, and temperature with just one probe. This meter has many user-friendly features – all of which are completely accessible through the water-resistant membrane keypad.

Your meter includes 4 “AAA” batteries and a combination pH / conductivity / temperature probe with 3-meter submersible cable. Please read this manual thoroughly before operating your meter.

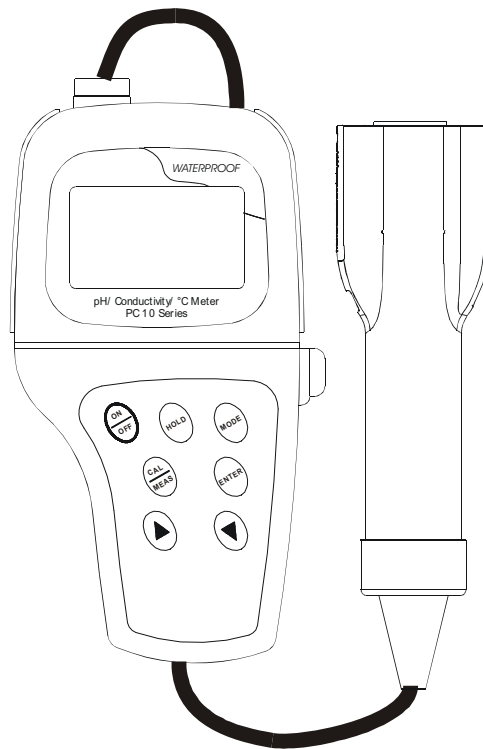


Figure 1: Waterproof PC 10 portable meter

2. DISPLAY AND KEYPAD FUNCTIONS

2.1. Display

The LCD has a primary and secondary display.

- The primary display shows the measured pH or conductivity (μS or mS) reading.
- The secondary display shows the temperature in $^{\circ}\text{C}$.

The display also shows error messages, keypad functions and program functions. See Figure 2.

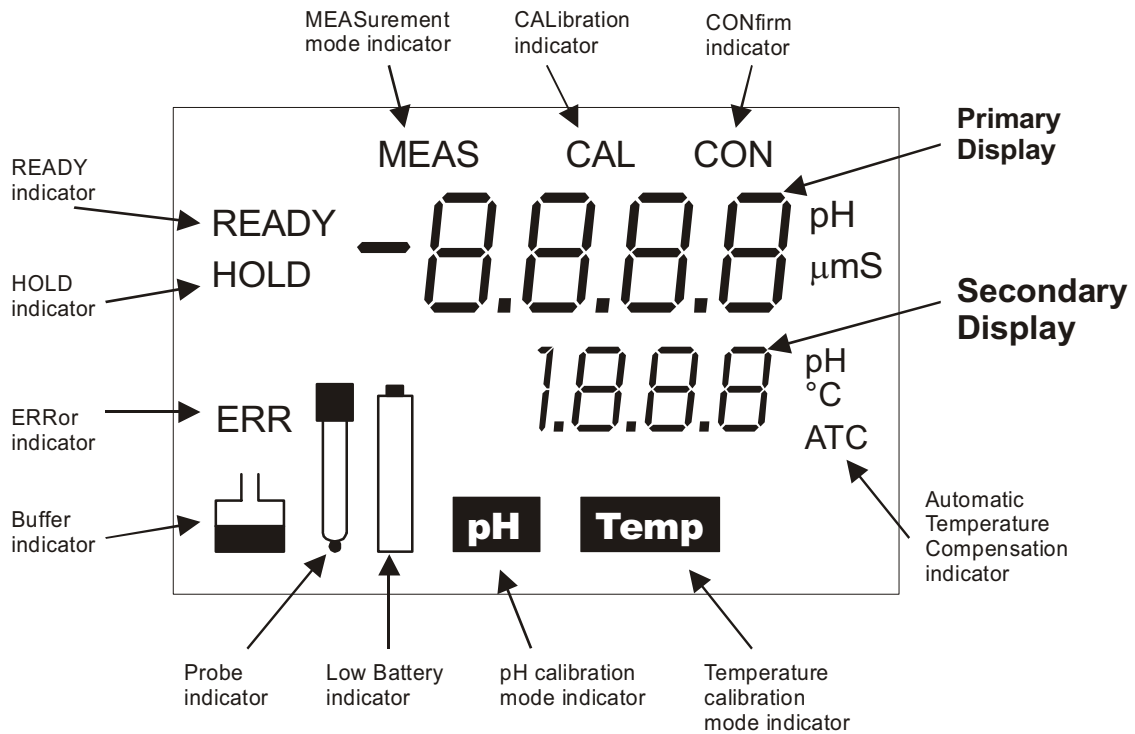


Figure 2: A full LCD screen

2.2. Keypad

The large membrane keypad makes the instrument easy to use. Each button, when pressed, has a corresponding graphic indicator on the LCD. See Figure 3.

Key	Function
ON/OFF	Powers on and shuts off the meter. The meter powers on in the mode it was shut off in. For example, if you shut the meter off in Conductivity measurement mode, the meter will be in Conductivity measurement mode when you switch the meter on.
HOLD	Freezes the measured reading. To activate, press HOLD while in measurement mode. To release, press HOLD again.
MODE	Selects the measurement parameter (conductivity or pH). Press MODE to toggle between pH and Conductivity mode.
CAL/MEAS	Toggles user between Calibration and Measurement mode. If you were in Conductivity Measurement mode, press CAL/MEAS to enter Conductivity Calibration mode. If you were in pH Measurement mode, press CAL/MEAS to enter pH Calibration mode. <i>NOTE: Temperature calibration is accessible from pH Calibration mode; see pages 10 for instructions.</i>
ENTER	Press to confirm your calibration values in Calibration mode.
▲ / ▼	Scrolls values up and down in Calibration mode. In pH mode, ▲ / ▼ scrolls through the auto buffer values 4.00, 7.00 and 10.00. In Conductivity and Temperature Calibration mode, ▲ / ▼ lets you increase or decrease the calibration value.

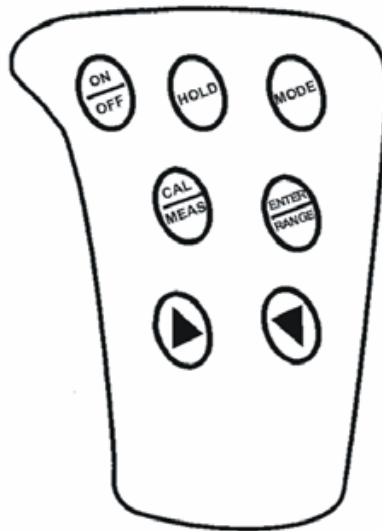


Figure 3: Keypad membranes of Waterproof PC 10

3. PREPARATION

3.1 Inserting the Batteries

The meter is packaged with 4 “AAA” alkaline batteries required for operation. To insert the batteries into the meter, follow the procedure outlined below.

1. Use a Philips screwdriver to remove the two screws holding the battery cover. See Figure 6 below.
2. Remove battery cover.
3. Insert batteries. Follow the diagram inside the cover for correct polarity.
4. Replace the battery cover into its original position using the two screws removed earlier.

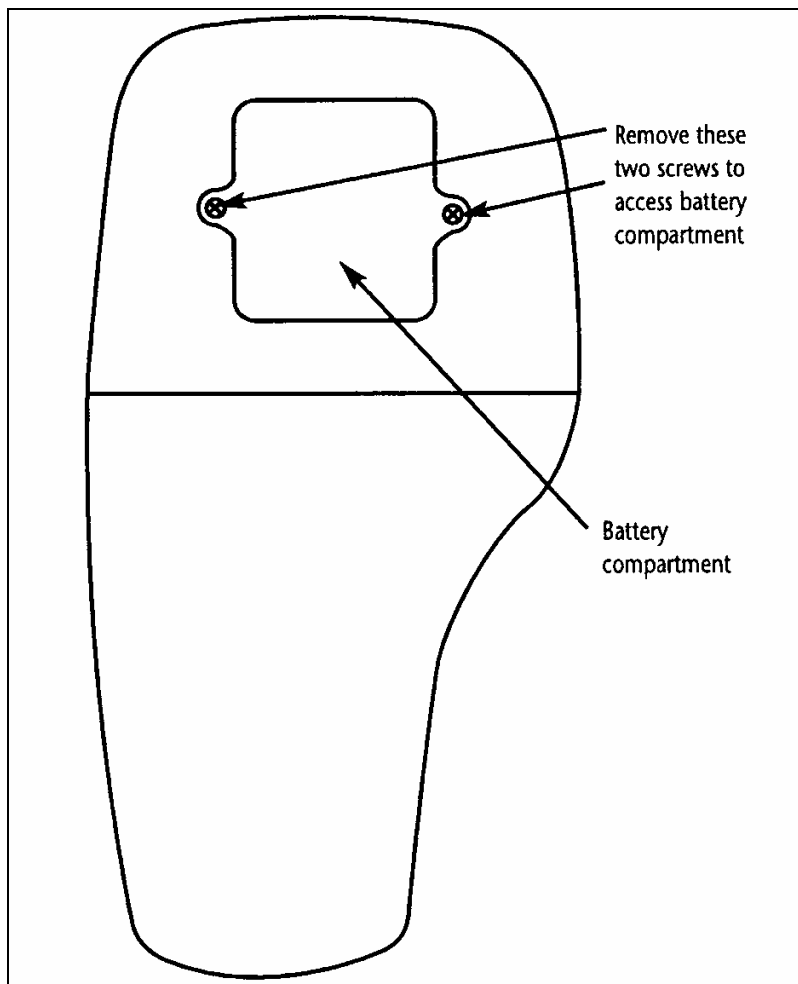


Figure 4: Battery Compartment

3.2 Connecting the Probe

The Waterproof PC 10 meter uses a special combination pH / Conductivity / Temperature probe. The probe cable has a notched 6-pin connector to attach the probe to the meter.

NOTE: Do not substitute other probes or electrodes. For replacement probe, see the "Accessories" section, page 21-23.

NOTE: Keep connector dry and clean. Do not touch connector with soiled hands.

To connect the pH / Conductivity / Temperature probe:

1. Line up the notch and 6 pins of the meter's connector with the holes in the probe's connector. Push down and screw the metal sleeve to lock the probe connector into place. See Figure 5.
2. To remove probe, unscrew the metal sleeve and slide up the probe connector. While holding onto metal sleeve, pull probe away from the meter.

CAUTION: Do not pull on the probe cord or the probe wires might disconnect.

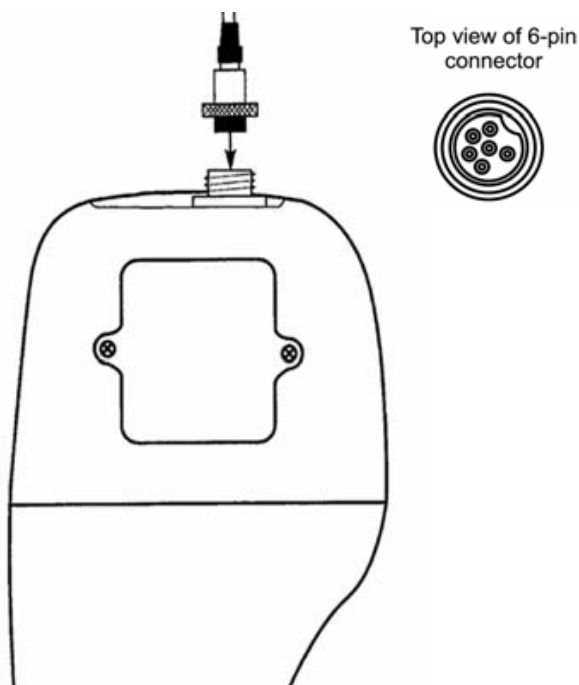


Figure 5: Probe Connector

4. CALIBRATION

4.1. Important Information on Meter Calibration

When you recalibrate your meter, old pH and conductivity calibration data are replaced on a point by point basis. For example, if you previously calibrated your meter at pH 4.0, 7.0, and 10.0, and you recalibrate at pH 7.0, the meter retains the old calibration data at pH 4.0 and pH 10.0.

To completely recalibrate your meter, or when you use a replacement probe, it is best to set the meter to its factory defaults and recalibrate the meter at all points.

To reset the meter to its factory defaults:

1. While in Measurement mode, press CAL/MEAS and hold for 3 seconds.
2. The meter will prompt RST in the lower display and CAL in the upper display. See Figure 6.
3. Press ENTER to reset your meter to its factory defaults. If you do not want to erase existing calibration data, press CAL/MEAS to escape this mode.



Figure 6: Reset to factory defaults

For information on how to calibrate your meter:

See Section 4.3 on page 8 for Temperature calibration.

See Section 4.4 on pages 10 for pH calibration.

See Section 4.5 on pages 12 for conductivity calibration.

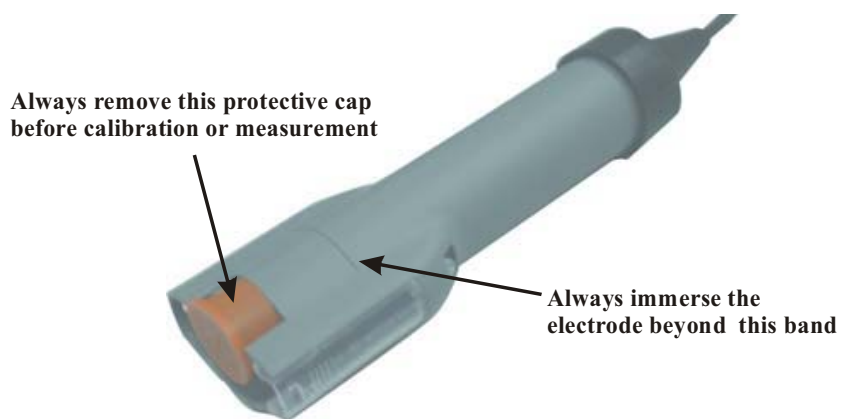
4.2. Preparing the Meter for Calibration

The pH/conductivity/temperature probe included with this meter is designed for use with this meter only. Do not substitute other types of probes or electrodes. For a replacement probe, see the “Accessories” section, page 21.

Be sure to remove the protective cap of the pH probe before calibration or measurement. Always immerse the probe beyond the electrode band.

Immerse the probe in tap water for 10 minutes before calibrating or taking readings to hydrate the pH electrode surface and minimise drift.

Rinse your probe in DI water after use. Storage in electrode storage solution is ideal. Alternatively, pH 4.0 or 7.0 calibration standards can be used for short term storage. Do not reuse buffer solutions after calibration. Contaminants in the solution can affect the calibration, and eventually the accuracy of the measurements.



4.3. Temperature Calibration

The built-in temperature sensor included in the probe is factory calibrated. Calibrate your sensor only if you suspect temperature errors may have occurred over a long period of time or if you have a replacement probe.

1. Turn the meter on. Press MODE to select pH Measurement mode.
2. Press the CAL/MEAS key to enter pH calibration mode. The CAL indicator will appear above the primary display.

See Figure 10.

3. While in pH calibration mode, press the MODE key to enter temperature calibration mode. The primary display shows the temperature reading with zero offset and the secondary display shows you what the temperature value was initially.

See Figure 11.

4. Dip the probe into a solution with known temperature (i.e. a temperature bath). Allow sufficient time for the meter's temperature reading to stabilize.
5. Press the ▲ or ▼ key to set the primary display reading to the correct temperature value. (i.e. the temperature of the temperature bath)

See Figure 12.

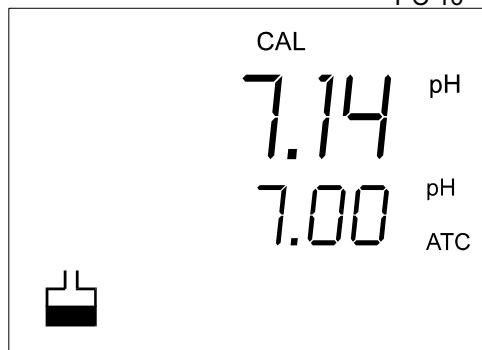


Figure 7: Enter pH Calibration mode

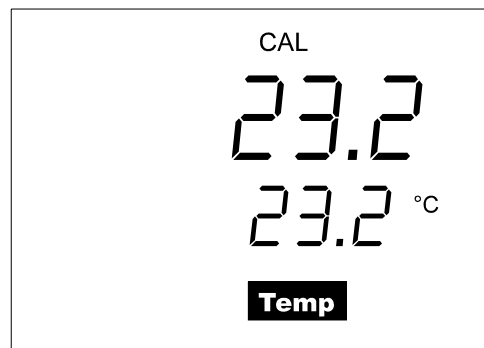


Figure 8: Initial temperature value

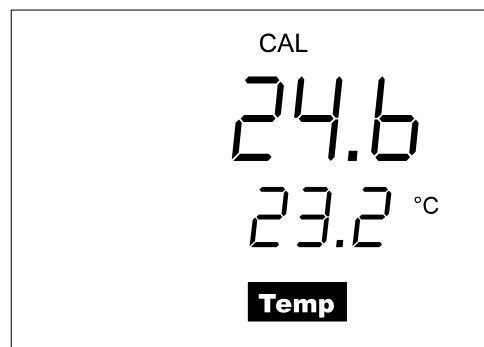


Figure 9: Adjust temperature value

6. Press the ENTER key to confirm temperature calibration. The CON indicator will flash to confirm calibration.

See Figure 13.

NOTES

To exit from Temperature Calibration mode without confirming calibration, DO NOT press ENTER in step

6. Press CAL/MEAS instead.

Temperature calibration is restricted to $\pm 5^{\circ}\text{C}$ from the initial value displayed during calibration (shown in the secondary display).

Since temperature readings affect the accuracy of the pH and conductivity measurements, it is strongly recommended to carry out pH and conductivity calibration after a temperature calibration is done.

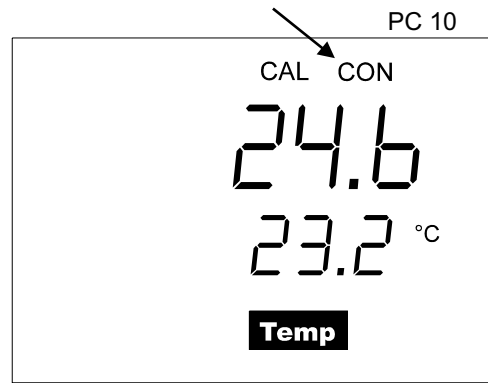


Figure 10: CONFIRM temperature calibration

4.4. pH Calibration

This instrument is capable of up to 3-point pH calibration to ensure accuracy across the entire pH range of the meter. You can perform 1, 2, or 3 point calibration with standard pH buffers of 4.01, 7.00 and 10.00.

We recommend that you perform at least 2-point calibration using standard buffers that covers the expected sample range. You can also perform a 1-point calibration, but make sure that the buffer value is close to the sample value you are measuring.

This meter features three pre-programmed pH buffers (pH 4.01, 7.00 and 10.00). The meter automatically recognizes and calibrates to these standard buffer values, which makes pH calibration faster and easier.

Calibrating for pH:

1. If necessary, press the MODE key to select pH mode. The pH indicator appears in the upper right hand corner of the display.
2. Rinse the probe thoroughly with DI water or a rinse solution. Do not wipe the probe; this causes a build-up of electrostatic charge on the glass surface.
3. Dip the probe into the calibration buffer. The end of the probe must be completely immersed into the sample. Stir the sample using the probe gently to create a homogeneous sample.
4. Press CAL/MEAS to enter pH calibration mode. The primary display will show the measured reading while the smaller secondary display will indicate the pH standard buffer solution.

See Figure 11.

NOTE: If using a pH buffer other than pH 7, press the ▲ or ▼ key to scroll up or down until the secondary display value is the same as your pH buffer value (pH 4.00, 7.00 or 10.00).

5. Wait for the measured pH value to stabilize. The READY indicator will display when the reading stabilizes.

See Figure 12.

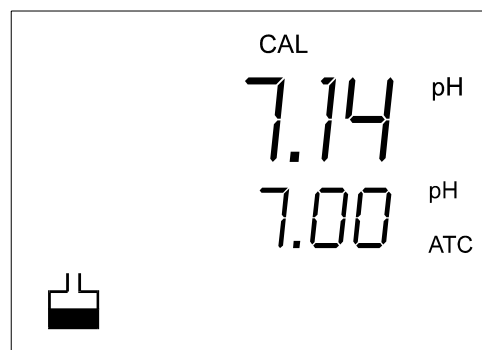


Figure 11: Calibration at pH 7.00

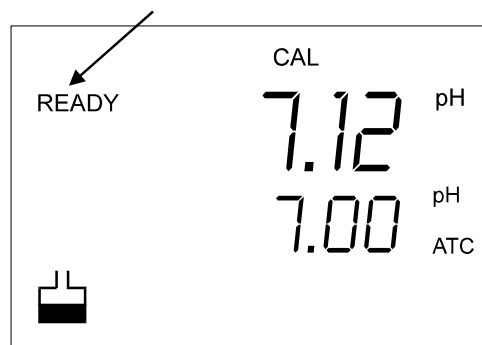


Figure 12: READY is displayed when reading is stable

- After the reading has stabilized and the READY indicator is displayed, press ENTER to confirm calibration. A confirming indicator (CON) flashes and disappears. The meter is now calibrated to the buffer indicated in the secondary display.

See Figure 13.

The secondary display automatically scrolls to the next buffer calibration option.

If you are performing multi-point calibration, go to step 7.

If you are performing one-point calibration, go to step 10.

- Press the ▲ or ▼ key to select the next buffer value you want to calibrate (pH 4.00, 7.00 or 10.00).

See Figure 14.

- Rinse the probe with DI water or a rinse solution, and place it in the next pH buffer you want to calibrate.
- Follow steps 5 to 8 for all calibration processes (up to 3 points).
- When calibration is complete, press CAL/MEAS to return to pH measurement mode.



Figure 13: CONFIRM calibration point



Figure 14: Next calibration point

NOTES

To exit from pH Calibration mode without confirming calibration, DO NOT press ENTER in step 6. Press CAL/MEAS instead.

If the selected buffer value is not within ± 1.00 pH from the measured pH value:

The electrode and buffer icon blink and the ERR annunciator appears in the lower left corner of the display. These indicators also flash if the buffer used is not the same as the buffer value on the secondary display.

4.5. Conductivity Calibration

The Important Information on Conductivity Calibration

Your meter has four measuring ranges. You can calibrate one point in each of the measuring ranges (up to four points). If you are measuring values in more than one range, make sure to calibrate each of the ranges you are measuring.

The following table lists the corresponding conductivity range. You should calibrate each range using a solution that falls between the values in the “recommended calibration solution range” column.

Conductivity Range	Recommended Calibration Solution Range
0.00 to 19.99 μS	6.00 to 17.00 μS
0.0 to 199.9 μS	60.0 to 170.0 μS
0 to 1999 μS	600 to 1700 μS
0.00 to 19.99 mS	6.00 to 17.00 mS

NOTE:

Minimum calibration value should be 20% of full scale for the specific range. E.g.: The **LOWEST** calibration value for the range of **0.00 to 19.99 μS** is 4.00 μS .

When you recalibrate your meter, old calibrations are replaced on a range basis. For example, if you previously calibrated your conductivity meter at 1413 μS in the 0 to 1999 μS range and you recalibrate at 1500 μS (also in the 0 to 1999 μS range), the meter will replace the old calibration data (1413 μS) in that range. The meter will retain all calibration data in other ranges.

To completely recalibrate your meter, or when you use a replacement probe, it is best to clear all calibration data in memory. To erase all the old conductivity data, see Section 4.1: Important Information on Meter Calibration.

NOTE:

These meters are factory set to a temperature coefficient of 2.00% per $^{\circ}\text{C}$. For most applications this will provide good results. The factory default value for normalization temperature is 25 $^{\circ}\text{C}$.

4.6. Calibrating for Conductivity:

1. Pour out two separate portions of your calibration standard and one of DI water into separate clean containers.
2. If necessary, press MODE key to select Conductivity Mode. The μS and mS indicator will appear on the right side of the display.
3. Rinse your probe with DI water, then rinse the probe in one portion of the calibration standard. Immerse the probe into the second portion of the calibration standard. The meter auto ranging function selects the appropriate conductivity range (four ranges are possible). Be sure the probe is free from air bubbles and sufficient calibration standard is used to cover the conductivity sensor. Wait for the reading to stabilize. The READY indicator lights when the reading is stable.

See Figure 18

4. Press the CAL/MEAS key. The CAL indicator appears above the primary display. The primary display shows the measured reading and the secondary display shows the temperature.

See Figure 19.

5. Press the ▼ or ▲ key to scroll to the value of your conductivity standard. Press and hold the ▼ or ▲ keys to scroll faster. See Figure 20.

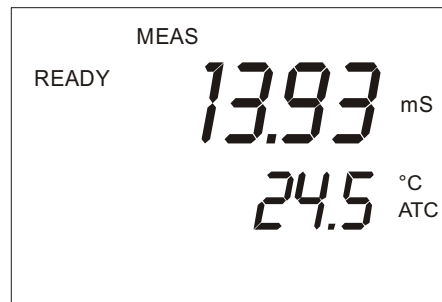


Figure 15: Stabilized measurement



Figure 16: CAL Indicator



Figure 17: Adjust to standard value

6. Press the ENTER key to confirm calibration. Upon confirmation, the CON indicator appears briefly. The meter automatically switches back into Measurement mode. The display now shows the calibrated, temperature compensated conductivity value.

See Figure 21.

7. For calibration in other ranges (maximum: four ranges) repeat steps 1 through 6 with the appropriate calibration standards.



Figure 18 CONFIRM the calibration value

NOTES:

To exit from Conductivity Calibration mode without confirming calibration, DO NOT press ENTER in step 6. Press CAL/MEAS instead.

If the calibration value input into the meter is different from the initial value displayed by more than 20%, the ERR annunciator appears in the lower left corner of the display.

5. MEASUREMENT

The READY indicator appears on the display when the readings stabilise. It will turn off if the readings start to fluctuate.

NOTE: Be sure to remove the protective cap of the pH electrode before measurement.

To take readings:

1. Rinse the probe with DI water before use to remove any impurities adhering to the probe body. If the pH electrode has dehydrated, soak it for 30 minutes in tap water.
2. Switch on the meter. The MEAS annunciator appears on the top center of the LCD. The ATC indicator appears in the lower right hand corner to indicate Automatic Temperature Compensation. See Figure 22.
3. Dip the probe into the sample.

NOTE: When measuring a sample, make sure that the probe is immersed beyond the electrode band. See figure in Section 4.2. Stir the sample using the probe gently to create a homogenous sample. Allow time for the readings to stabilize. Note the readings on the display. When the readings are stable, the READY annunciator appears.

4. To toggle between pH and conductivity readings, press the MODE key. See Figures 23 and 24.

NOTE: Conductivity readings are auto ranging and will automatically move to the correct range (four ranges possible).

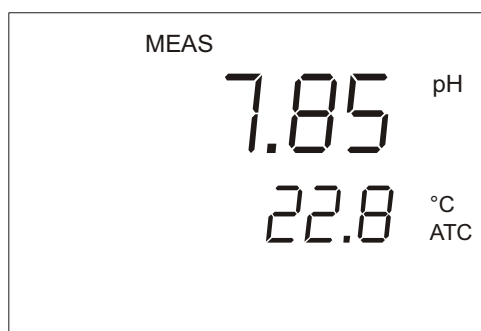


Figure 19: Measurement mode

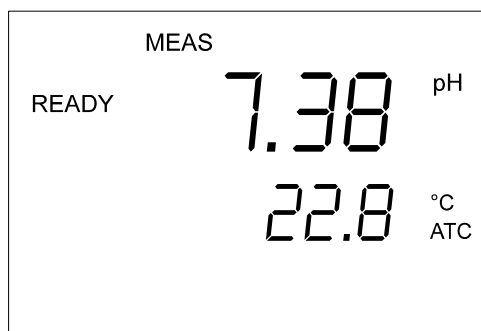


Figure 20: READY

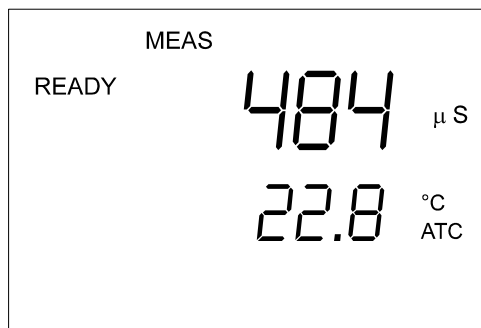


Figure 21: Conductivity mode

6. HOLD FUNCTION

This feature lets you freeze the value of the pH or conductivity reading for a delayed observation. HOLD can be used any time when in MEAS mode.

1. To hold a measurement, press the HOLD key while in measurement mode. "HOLD" will appear on the display.

See Figure 25.

2. To release the held value, press HOLD again. Continue to take measurements.

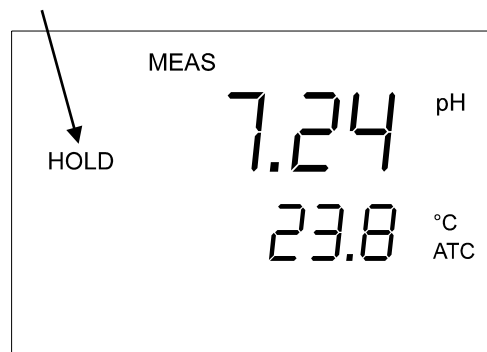


Figure 22: HOLD function

NOTE: This meter will hold a reading for up to 20 minutes, after which time the meter will automatically shutoff to conserve batteries without retaining the value that was held.

7. PROBE CARE AND MAINTENANCE

Under typical operating conditions, the probe will need to be replaced every 6 to 12 months. In extreme applications, the probe may wear out sooner. Proper care and maintenance will help you receive the maximum probe life and ensure more accurate readings.

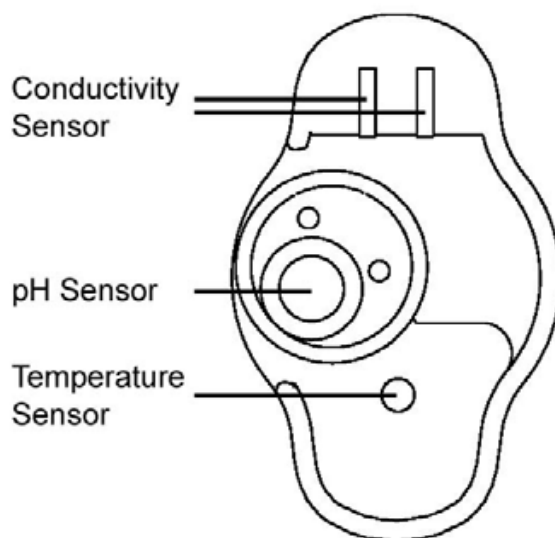
Keep the probe clean. Before use, rinse the probe twice. Be sure to remove the protective cap of the pH probe before use and always immerse the probe beyond the electrode band. For the best accuracy, soak your probe in electrode storage solution, pH 4.0 buffer, or tap water for at least 5 to 10 minutes before calibration.

Gently stir the probe in the solution while you take readings. Tap the probe gently against the bottom and sides of your container to remove any air bubbles, which may interfere with accuracy.

Clean the probe thoroughly by immersing it in an agitated mild detergent bath. To clean the conductivity cell, remove the plastic sleeve and use a cotton swab soaked in isopropyl alcohol to clean the steel pins. Wipe the steel pins if needed with soft tissue paper. Replace the sleeve which is necessary for calibration and measurement. DO NOT wipe the pH bulb as it may cause static build-up. After cleaning the probe, rinse the probe well with clean water. Recalibrate the meter after cleaning the probe.

Do not strike the probe against any hard surface. Do not immerse the probe in oily solutions.

Store the probe in its cap filled with electrode storage solution. To order a replacement probe and other accessories, see "Accessories" section on page 21 .



8. TROUBLESHOOTING

Problem	Cause	Solution
No display when turned on	<ol style="list-style-type: none"> 1. Batteries not in place. 2. Batteries not in correct polarity (+ and -). 3. Weak batteries 	<ol style="list-style-type: none"> 1. Check that batteries are in place and making good contact. 2. Reinsert batteries with correct polarity. 3. Attach optional AC adapter (only for Standard PC 10 meter) or replace batteries.
Unstable readings	<ol style="list-style-type: none"> 1. Air bubbles in probe. 2. Dirty probe. 3. Probe not deep enough in sample. 4. External noise pickup or induction caused by nearby electric motor. 5. Broken probe. 6. Temperature is changing 	<ol style="list-style-type: none"> 1. Tap probe to remove bubbles. 2. Clean the probe and recalibrate. 3. Make sure sample entirely covers the probe sensors. 4. Move or switch off interfering motor. 5. Replace probe. See page 21. 6. Wait for temperature reading to stabilise.
"OR" on upper display	<ol style="list-style-type: none"> 1. Probe is shorted. 2. Probe is in an out-of-range solution. 3. Broken probe. 	<ol style="list-style-type: none"> 1. Test probe. Make sure probe is fully connected to meter. 2. Use different solution. 3. Replace probe. See page 21.
Temperature reading erratic or lower display reads "OR".	<ol style="list-style-type: none"> 1. Temperature sensor is dirty. 2. Temperature of solution is out of range. 	<ol style="list-style-type: none"> 1. Clean temperature sensor with isopropyl alcohol. 2. Heat or cool solution.
Slow response	<ol style="list-style-type: none"> 1. Dirty / Oily probe. 	<ol style="list-style-type: none"> 1. Clean probe. See "Probe Care & Maintenance", page 19.

9. ERROR MESSAGES

LCD Display	Indicates	Cause	Solution
Err annunciator	Unrecognised input from keypad	Wrong input in selected mode.	Release key. Select valid operations depending on mode.
CAL & Err annunciators blink.	Calibration error.	Wrong value input at calibration. Dirty probe.	Check your input value, clean probe. See Calibration sections or Probe Maintenance section.
Battery indicator blinks	Low battery level.	Need new batteries or battery connection is bad.	Clean battery contacts. Replace batteries with fresh ones, noting polarity.
Err 1 (in primary display)	Memory write error.	Instrument too old (> 10 years). Hardware failure.	Turn meter on and off again. If message persists, return unit*.
Err. 2 (in primary display)	Checksum error.	Batteries too weak. Hardware failure.	Press ENTER, then turn off meter. Change batteries. Recalibrate. Return unit *.
Err. 3	A/D converter error.	Faulty hardware	Return unit *.

* See “Warranty” on page 24 and “Return of Items” on page 25.

If an error message appears in the primary display (the upper row of larger digits), switching off the meter and switching it on again may eliminate the error message. See Figure 26 below.

If error persists, or the meter shows incorrect values, return the meter.

For a complete diagram of the LCD display, see Figure 2 on page 2.

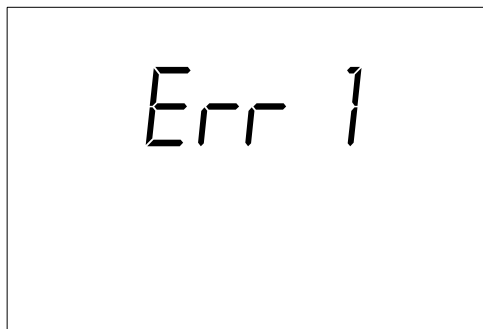


Figure 23: Error message on LCD

10. SPECIFICATIONS

Mode	pH	Temperature	Conductivity
Range	0.00 to 14.00 pH	0.0 to 100.0 °C	0 to 19.99 µS 0 to 199.9 µS 0 to 1999 µS 0 to 19.99 mS
Resolution	0.01 pH	0.1 °C	0.01 µS 0.1 µS 1 µS 0.01 mS
Accuracy	± 0.01 pH	± 0.5 °C	±1% Full Scale +1 digit
Calibration	Up to three points (pH 4.01, 7.00, 10.01) with automatic buffer recognition	Offset in 0.1 °C increments	Up to four points (one point per range)
Conductivity Cell constant (k)			1.0
Conductivity Temperature Coefficient			2.00 % per °C fixed
Temperature Compensation	Automatic from 0 to 50 °C		
Operating Temperature	0 to 50 °C		
Power	four 1.5 V AAA-sized batteries (included) or AC adapter (only for Standard PC 10 meter; optional; order separately on “Accessories” section)		
Battery life	>50 hours		
Dimensions	Waterproof PC 10 meter: 19 cm (L) x 10 cm (W) x 6 cm (H) Boxed: 24 cm (L) x 23 cm (W) x 7 cm (H) Probe: 180 mm (L) x 51 mm (Diameter), with 3-m cable		
Shipping weight	0.92 kg		

11. ACCESSORIES

11.1. Replacement Meter and Meter accessories

Eutech Instruments

Item	Ordering Code
Waterproof PC 10 pH / Conductivity / Temperature meter and electrode (EC-COMBI03M / 35630-50)	EC-PCWP10/03K includes kit (EC-PCWP-KIT)
Replacement pH / Conductivity / Temperature electrode. Combination double-junction pH sensor with 2-pin stainless steel conductivity cell, 3 m (10-ft) cable	EC-COMBI03M
Kit for Waterproof PC 10 Meter – Plastic Carrying Case comprises 1 x pH 7.00, 1413 μ S and 12.88 mS KCl (60 mL) and 1 x rinse bottle (480 mL– empty)	EC-PCWP-KIT)
Hard carrying case for Standard & Waterproof PC 10	EC-WPDRYKIT
Replacement red cap for pH sensor	15X278301
Replacement clear cover for conductivity sensor	15X278601

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Item	Ordering Code
Waterproof PC 10 pH / Conductivity / Temperature meter and electrode (EC-COMBI03M / 35630-50)	35630-02
Replacement pH / Conductivity / Temperature electrode. Combination double-junction pH sensor with 2-pin stainless steel conductivity cell, 3 m (10-ft) cable	35630-50
Waterproof PC 10 Kit; includes pH / Conductivity / Temperature meter (35630-02) and electrode (35630-50), Hard carrying case, pH pouches (3 each of pH 4, 7, 10, and rinse), conductivity pouches (447, 1413, 2764, 15000 μ S).	35630-62
pH / Conductivity / Temperature electrode. Combination double-junction pH sensor. 173 mm (6.8") length x 35mm (1.375") diameter. 3 m (10-ft) cable.	35630-52
pH / Conductivity / Temperature electrode. Combination double-junction pH sensor. 173 mm (6.8") length x 35mm (1.375") diameter 7.6 m (25-ft) cable.	35630-54
pH / Conductivity / Temperature electrode. Combination double-junction pH sensor. 173 mm (6.8") length x 35mm (1.375") diameter. 30.5 m (100-ft) cable.	35630-56
Hard carrying case for Waterproof PC 10	35632-98
Replacement red cap for pH sensor	00120JQ
Replacement clear cover for conductivity sensor	00120JP

11.2. Calibration Solutions

Note: pH buffer solutions have ± 0.01 pH accuracy at 25 °C.

Item	Eutech Instruments Ordering Code	Oakton Instruments Ordering Code
pH 4.01 buffer solution, 480 mL bottle (1 pint)	EC-BU-4BT	00654-00
pH 7.00 buffer solution, 480 mL bottle (1 pint)	EC-BU-7BT	00654-04
pH 10.01 buffer solution, 480 mL bottle (1 pint)	EC-BU-10BT	00654-08
pH 4.01 buffer pouches, 20 mL x 20 each	EC-BU-4BS	35653-01
pH 7.00 buffer pouches, 20 mL x 20 each	EC-BU-7BS	35653-02
pH 10.01 buffer pouches, 20 mL x 20 each	EC-BU-10BS	35653-03
12.88 mS Calibration Solution in 480-mL bottle (1 pint)	EC-CON-1288BT	00606-10
10 μ S Conductivity Pouches, 20 mL x 20 each	EC-CON-10BS	35653-09
447 μ S Conductivity Pouches (20 units x 20 mL per box)	EC-CON-447BS	35653-10
1,413 μ S Conductivity Pouches(20 units x 20 mL per box)	EC-CON-1413BS	35653-11
2,764 μ S Conductivity Pouches(20 units x 20 mL per box)	EC-CON-2764BS	35653-12
15,000 μ S Conductivity Pouches(20 units x 20 mL per box)	EC-CON-15000BS	35653-13

Conductivity standard solutions have $\pm 1\%$ accuracy at 25°C.

Pouches are individually sealed packets containing 20 mL of calibration solution designed for single-use.

12. WARRANTY

This meter is supplied with a **three** -year warranty, **six**-month warranty for probe against significant deviations in material and workmanship.

If repair or adjustment is necessary and has not been the result of abuse or misuse within the designated period, please return – freight pre-paid – and correction will be made without charge. Eutech Instruments/ Oakton Instruments will determine if the product problem is due to deviations or customer misuse.

Out of warranty products will be repaired on a charged basis.

Exclusions

The warranty on your instrument shall not apply to defects resulting from:

- Improper or inadequate maintenance by customer
- Unauthorised modification or misuse
- Operation outside of the environment specifications of the products

13. RETURN OF ITEMS

Authorisation must be obtained from our Customer Service Department or authorised distributor before returning items for any reason. A "Return Goods Authorisation" (RGA) form is available through our authorised distributor. Please include data regarding the reason the items are to be returned. For your protection, items must be carefully packed to prevent damage in shipment and insured against possible damage or loss. Eutech Instruments/ Oakton Instruments will not be responsible for damage resulting from careless or insufficient packing. A restocking charge will be made on all unauthorised returns.

NOTE: Eutech Instruments Pte Ltd/ Oakton Instruments reserves the right to make improvements in design, construction, and appearance of products without notice.