

Instruction Manual

PH5 / PH6 / ION 5 / ION6

Handheld pH/ mV/ ION/ Temperature Meter



ENGLISH

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1 INTRODUCTION

This manual contains the operating features of this meter. At some points this manual will refer to our website www.eutechinst.com, for further explanation and background information, it will be indicated with this symbol: 

On this website you can also find additional information regarding applications, measuring theories and hints & tips.

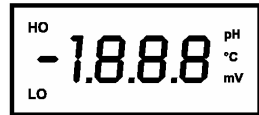
At the final page of this manual you can find information about the specifications of this meter, warranty issues and how to return your product to us.

2 DISPLAY AND KEYPAD FUNCTIONS

2.1 Display

The meter has a large custom LCD consisting of 4-digit segments.

- indicators for pH, mV or °C (Temperature) (there is no ION indicator)
- “HO” : HOLD function is activated
- “LO” : low battery condition.



2.2 Keypad

ON / OFF	Powers on and shuts off the meter.
CAL	Enters into calibration mode & To abort without confirming any set value.
HOLD / ENTER	HOLD: Freezes the measured reading ENTER: Press to confirm values or selections
▲ / ▼	Available on ION 5/6 for de- and increment of values
MODE / INC	MODE: Selects measurement mode for Ion, pH, mV and Temperature. INC: to change the calibration value (PH5 / PH6)

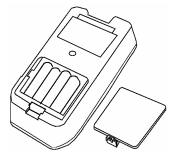
2.3 Removing & Inserting the Rubber Boot

1. Removing the rubber boot: Disconnect the electrodes. Push the meter from the bottom edge out of the rubber boot.
2. Replacing the boot: Slide the meter in from the top, than push the bottom down until it clicks in.



2.4 Inserting New Batteries

The battery compartment is at the back of instrument. Open the compartment by pushing the in the direction of the arrow and lift the cover. Note the polarity of battery. Place cover back and press down until it locks tight.



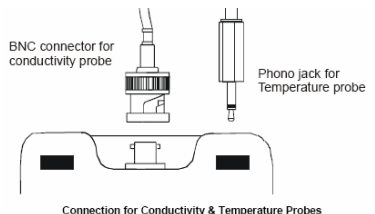
2.5 Battery Replacement

A “LO” annunciator alerts you when battery power is running low.

Caution: Power off the meter when changing battery.

2.6 Connecting the Electrode and Temperature Sensor

1. Connecting electrode: Rotate the locking ring clockwise until it locks.
2. Removing electrode: Rotate the connector counterclockwise and slide the connector off the socket.
3. Insert the mini phono jack of temperature sensor into the meter as shown. Unplug the phono jack for measuring without temperature compensation.



CAUTION: Do not pull on the electrode cord to avoid internal wire breakages.

3.1 Important calibration information

The Ion 5/6 can be calibrated up to 3-points (minimum 2 point). pH calibration is possible up to 3 points using USA or NIST standards or at 2 points with Low Ionic standards. New calibration values will override existing data.

USA standards	pH 4.01	pH 7.00	pH 10.01
NIST standards	pH 4.01	pH 6.86	pH 9.18
PB standards	pH 4.10	pH 6.97	

Perform at least a 2-point calibration at 25°C using standard buffers, starting with pH 7.00 (USA), pH 6.86 (NIST) or pH 6.97 (Pb) followed by other buffers. Calibration at 1-point should be performed with a buffer close to the expected sample value or at pH 7.00, pH 6.86 or pH 6.97.

Note: Use new buffer solutions during calibration.

Note: Do not reuse buffers, it may be contaminated and affect the calibration.

Note: Always store buffers in a dry, cool environment.

Note: Remove the plastic protective cap of the electrode and condition the glass bulb by soaking it in tap water for 1-2 hours before use.

Note: Always rinse the probes with tap water or rinse solution before and after each calibration / sample measurement to avoid cross-contamination.

Note: No ion calibration values are stored into the meter's memory

Note: The ion calibration options available include 0.1, 1.0, 10.0, 100.0 ppm.

3.1.1 Selection of pH buffer standards

Set the meter to accept either USA, NIST or Low Ionic buffer standards before calibration. Factory default is USA standard.

1. Press and hold **MODE**.
2. Press **ON** to switch on the meter. Display shows "bUF".
3. Press **ENTER**.
4. Press **MODE** to select USA, NIST or Pb.
5. Press **ENTER** to confirm.

3.1.2 Resetting the User Calibrated Values

This will reset the last Ion/pH/mV calibrated values, temperature offset (if set) will not be erased.

1. Press and hold **CAL**.
2. Press **ON** to switch on the meter. Display shows "rSt".
3. Press **MODE** to abort. Press **ENTER** to confirm.

3.2 Calibration

1. Pour a known pH, ISE or mV (PH6 only) buffer into a clean, dry container.
2. Press **ON** to switch on the meter.
3. Press **MODE** to select the correct mode (if necessary).
4. Rinse the electrode with distilled water and blot it dry if necessary.
5. Dip the electrode and temperature probe into the buffer. Swirl gently and wait for reading to stabilize.
6. Press **CAL**. The display shows "CA" momentarily followed by the current reading (flashing).
 - a. For ION calibration:
 - i. use ▲ or ▼ to select the desired value
 - ii. Press **ENTER** and let the value stabilize
 - b. For mV calibration:
 - i. Press **INC** to adjust the reading (maximum adjustment ± 50 mV)
7. Press **ENTER** to confirm, the LCD displays "CO" momentarily.
8. For 2 or 3-point calibration, repeat step 4 to 7 with other buffers.

Note: To exit without confirming the calibration value, press **CAL**.

3.3 Temperature Calibration

3.3.1 With Temperature probe

1. Connect the temperature probe to the meter.

2. Press **MODE** to select Temperature mode.
3. Dip the electrode into a solution of known temperature (i.e. a temperature bath). Allow time for the built-in temperature sensor to stabilize.
4. Press **CAL**. The LCD shows "**CA**" momentarily and displayed reading flashes.
5. Press **▲** or **▼** (for Ion 6) or **INC** (for pH 5/6) to select the desired temperature. Maximum adjustment is ± 5 oC from factory default.
6. Press **ENTER** to confirm, the LCD displays "**CO**" momentarily.

Note: To exit without confirming the calibration value, press **CAL**.

3.3.2 Without Temperature probe (no ATC)

If no temperature probe is used, the meter compensates for pH based on a manually set temperature or at 25.0 oC (factory default).

1. Press **MODE** until "**oC**" shows in LCD.
2. Press **CAL**. The LCD shows "**CA**" momentarily and displayed reading flashes.
3. Press **▲** or **▼** (for Ion 6) or **INC** (for pH 5/6) until the desired temperature is shown.
4. Press **ENTER** to confirm, the LCD displays "**CO**" momentarily.

Note: To exit without confirming the calibration value, press **CAL**.

4 MEASUREMENT

4.1 Taking Measurements

1. Rinse the electrode with de-ionized or distilled water. If the electrode has dehydrated, soak it for 30 minutes in electrode storage solution.
2. Switch the meter on.
3. Press **MODE** to select the correct mode.
4. Dip the electrode(s) into the sample.
5. Stir the probe gently to create a homogeneous sample.
6. Allow time for the reading to stabilize.

Note: Press **MODE** to toggle between conductivity, TDS and pH readings.

4.2 Millivolt (mV) Reference Check (for Ion 5/6 only)

The mV mode in Ion 5/6 is used for the diagnosis of ISE or pH electrode for its condition. Press the **MODE** key to access mV mode, the "**mV**" annunciator in LCD is displayed. The displayed value shows the absolute mV value of ISE or pH electrode being measured.

4.3 HOLD Function

Lets you freeze the display and hold the measured value.

1. Press **HOLD** to hold a measurement. "HO" will appear on the display.
2. Press **HOLD** again to release the held value.

Note: If the meter is shut off the HOLD value will be lost.

5 ELECTRODE CARE AND MAINTENANCE

Always keep the ISE capped dry and pH/ORP electrode bulb wet. Store the pH/ORP glass bulb with storage solution. Other pH buffers are also suitable. **NEVER** use deionised water for storage. Wash the probes thoroughly with distilled water after each use. Clean the pH/ORP electrode using a mild detergent. Wipe the probe with a soft tissue paper. Avoid touching the glass membrane with your fingers. Wash thoroughly in tap water and then in distilled water. Recalibrate the meter after cleaning the electrode.

6 TROUBLESHOOTING

Problem	Cause	Solution
No display	Batteries not in place.	a) Insert batteries. b) Re-insert batteries in correct polarity.
“LO” in the LCD	Low battery	Replace batteries with fresh ones.
Unstable reading	a) Electrode not deep enough in sample b) Dirty electrode. c) Broken electrode	a) Place electrode deeper in sample. b) Clean electrode and recalibrate. c) Replace electrode.
“Er1”	Buffer value out of tolerance	Use new pH buffer solution and recalibrate.
“Er2”	Single point calibration	Perform at least 2 point calibration (for Ion 5/6)
“Er3”	ISE slope not within the specified tolerance	Check ISE is in good working condition (for Ion 5/6).
“Er4”	Any calibration points not within 1 decade	Ensure any calibration points between each other must be within 1 decade (for Ion 5/6).
Not able to calibrate	a) Display freezes b) Faulty electrode	a) Release reading by pressing HLD. b) Replace electrode.

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