

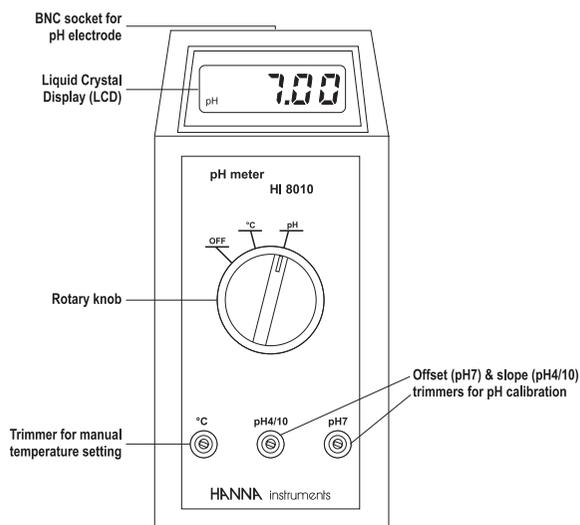
## Instruction Manual

# HI 8010 Portable pH Meter



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## FUNCTIONAL DESCRIPTION



## WARRANTY

This meter is warranted for two years against defects in workmanship and materials when used for their intended purpose and maintained according to instructions. Electrodes are warranted for six months. This warranty is limited to repair or replacement free of charge. Damage due to accidents, misuse, tampering or lack of prescribed maintenance are not covered. If service is required, contact the dealer from whom you purchased the instrument. If under warranty, report the model number, date of purchase, serial number and the nature of the problem. If the repair is not covered by the warranty, you will be notified of the charges incurred. If the instrument is to be returned to Hanna Instruments, first obtain a Returned Goods Authorization Number from the Customer Service department and then send it with shipment costs prepaid. When shipping any instrument, make sure it is properly packaged for complete protection.

## PRELIMINARY EXAMINATION

Remove the instrument from the packing material and examine it carefully to make sure that no damage has occurred during shipment. If noticeable damage is found, notify your dealer.

HI 8010 comes supplied complete with HI 1230B pH electrode, calibration screwdriver, 1 x 9V battery and instructions.

**Note:** Save all packing material until you are sure that the instrument functions correctly. Any defective items must be returned in the original packing together with the supplied accessories.

## SPECIFICATIONS

Range	0.00 to 14.00 pH
Resolution	0.01 pH
Accuracy (@20°C/68°F)	±0.01 pH
Typical EMC Deviation	±0.05 pH
Calibration	Manual, 2-point through trimmers
Temperature Compensation	Manual, through trimmer from 0 to 100°C (32 to 212°F)
Probe	HI 1230B double junction, gel-filled, pH electrode with BNC connector and 1 m cable (included)
Environment	0 to 50°C (32 to 122°F); RH max 95%
Power Supply	1 x 9V battery approx. 100 hours of continuous use
Dimensions	185x82x53 mm (7.3x3.2x2.1")
Weight	265 g (9.3 oz.)

HI 8010 is in compliance with the CE directives.

## OPERATIONAL GUIDE

- Slide off the battery compartment cover on the back of the meter and install the supplied 9V battery, while paying attention to its polarity.
- Connect the pH electrode to the BNC socket on the top of the meter and remove the electrode protective cap.
- Immerse the electrode (at least 4 cm/1.5") and an accurate thermometer (eg. *ChecktempC*) in the sample to be tested, as close as possible one to the other.
- Turn the rotary knob to the °C position to display the temperature setting. With the provided screwdriver, adjust the °C trimmer to read on the LCD the temperature measured by the thermometer.
- Turn the rotary knob to the pH position, shake the electrode briefly and allow the reading to stabilize. The display will show the pH value compensated for the manually adjusted temperature.
- After measurements, switch the meter OFF by turning the rotary knob to the OFF position, disconnect the electrode from the meter and store it with a few drops of **HI 70300** solution in the protective cap.

### Notes:

- Before taking measurements, make sure the meter is calibrated.
- If the electrode has been left dry, soak the tip in **HI 70300** storage solution for at least one hour to reactivate it.
- For a faster response time when using **refillable electrodes**, unscrew the refill hole cap.
- If measurements are taken in different samples successively, it is recommended to clean the electrode thoroughly to eliminate cross-contamination. After cleaning, rinse the electrode with some of the sample to be measured.



## CALIBRATION PROCEDURE

For better accuracy, a frequent calibration of the meter is recommended. Moreover, the instrument should be calibrated:

- a) when the pH electrode or the battery is replaced;
- b) at least once a month;
- c) after testing aggressive chemicals;
- d) where extreme accuracy is required.

### Preparation

- Pour small quantities of pH 7.01 (**HI 7007**) and pH 4.01 (**HI 7004**) solutions into two clean beakers.
- For accurate calibration use two beakers for each solution: the first one for rinsing the electrode, the second one for calibration.
- For accurate readings, use pH 7.01 (**HI 7007**) and pH 4.01 (**HI 7004**) if samples to be measured are acidic, or pH 7.01 (**HI 7007**) and pH 10.01 (**HI 7010**) for alkaline measurements.
- If calibration to NBS standards is required, use pH 6.86 (**HI 7006**) instead of pH 7.01 and pH 9.18 (**HI 7009**) instead of pH 10.01.

### Procedure

- Remove the protective cap from the electrode, rinse and immerse it in pH 7.01 buffer and stir gently. Wait a couple of minutes for the reading to stabilize.
- Measure the solution temperature with a *ChecktempC*, e.g. 20°C.
- Set the rotary knob to the °C position to display the manual temperature setting and adjust the °C trimmer until the LCD shows the measured temperature.
- Set the rotary knob to the pH position, wait for the reading to stabilize and with a small screwdriver adjust the pH7 trimmer until the LCD shows the pH value at the above temperature (see pH vs. temperature chart on the buffer bottle).

- Rinse and immerse pH electrode and thermometer in pH 4.01 or pH 10.01 buffer (2<sup>nd</sup> calibration point); stir gently.
- Wait a couple of minutes, then adjust the pH4/10 trimmer until the LCD shows the pH value at the noted temperature (see pH vs. temperature chart on the buffer bottle).

The calibration is now complete and the meter is ready for use.

## BATTERY REPLACEMENT

When the battery becomes weak, the instrument automatically switches the display off. It is recommended to replace the battery immediately. Replacement must only take place in a non-hazardous area using an alkaline 9V battery. Remove the battery cover and replace the old battery with a new one, while paying attention to its polarity.

**Note:** After changing the battery, recalibrate the meter.

## ACCESSORIES

<b>ChecktempC</b>	Electronic thermometer (range: -50 to 150°C)
<b>HI 1230B</b>	Plastic-body, double junction, gel-filled, combination pH electrode with BNC connector and 1 m cable
<b>HI 1332B</b>	Plastic-body, double junction, refillable, combination pH electrode with BNC connector and 1 m cable
<b>HI 70030M</b>	Electrode storage solution, 230 ml bottle
<b>HI 7004M</b>	pH 4.01 buffer solution, 230 ml bottle
<b>HI 7006M</b>	pH 6.86 buffer solution, 230 ml bottle
<b>HI 7007M</b>	pH 7.01 buffer solution, 230 ml bottle
<b>HI 7009M</b>	pH 9.18 buffer solution, 230 ml bottle
<b>HI 7010M</b>	pH 10.01 buffer solution, 230 ml bottle
<b>HI 7061M</b>	General cleaning solution, 230 ml bottle
<b>HI 7082</b>	Refilling electrolyte solution for double junction electrodes, 3.5M KCl, 30 ml bottle, 4 pcs