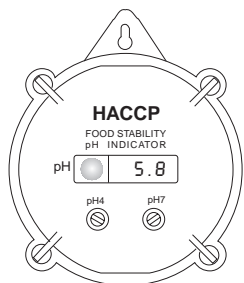


Instruction Manual

HI 981400

pH Indicator with Alarm Signal for HACCP Control



WARRANTY

The **HI 981400 pH Indicator** is warranted for two years against defects in workmanship and materials when used for their intended purpose and maintained according to instructions. This warranty is limited to repair or replacement free of charge.

Damages due to accident, 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 failure. 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.

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Hanna Instruments reserves the right to modify the design, construction and appearance of its products without advance notice.

Dear Customer,

Thank you for choosing a Hanna product.

Please read carefully this manual before using the meter.

If you need additional technical information, do not hesitate to e-mail us at tech@hannainst.com.

This instrument is in compliance with the **CE** directives.

PRELIMINARY EXAMINATION

Remove the instrument from the packing material and examine it carefully. If any damage has occurred during shipment, immediately notify your Dealer or the nearest Hanna Customer Service Center.

The meter is supplied with:

- Calibration screwdriver
- pH 4.01 and 7.01 buffer solutions (20 mL each)
- 12 Vdc power adapter and instructions

Note: Conserve all packing material until the instrument has been observed to function correctly. Any defective item must be returned in its original packing.

GENERAL DESCRIPTION

HI 981400 is a pH indicator specially designed for pH control in foodstuffs.

The pH value is one of the most important indicators of food quality and safety. pH of raw ingredients, such as milk and meat, is measured to ensure the quality standards of products. pH is also monitored at different stages of food processing to guarantee safety and enhance quality.

HI 981400 is also provided with a flashing LED that indicates if the measured pH exceeds the selected limit.

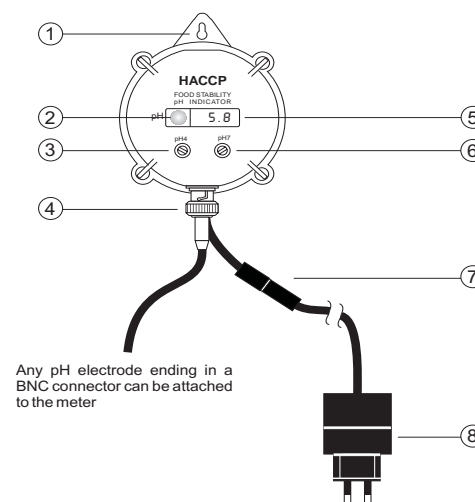
Hanna Instruments offers several pH electrodes specially designed for the food industry, such as the **FC 200B** with open junction, and the **FC 230B** with stainless steel blade for direct meat measurement.

Thanks to the built-in hook, the meter can be easily hanged right above the sample for continuous monitoring.

The meter can be calibrated at one or two points.

You no longer need to worry about battery changes because the unit runs without interruption on 12 Vdc power supply.

FUNCTIONAL DESCRIPTION



1. Molded eye
2. Alarm LED
3. "pH 4" calibration trimmer
4. BNC connector for pH electrode
5. Liquid Crystal Display
6. "pH 7" calibration trimmer
7. Power supply connector
8. 12 Vdc power adapter (included)

SPECIFICATIONS

Range	0.0 to 14.0 pH
Resolution	0.1 pH
Accuracy (@ 25°C/77°F)	±0.2 pH
Typical EMC Deviation	±0.2 pH
Setpoint	4.6 to 7.5 pH
Alarm	LED blinks when measurement exceeds the setpoint value
Calibration	Manual, 1 or 2 point, with offset (pH 7) and slope (pH 4) trimmers
Power Supply	12 Vdc adapter (included)
Dimensions	86 x 110 x 43 mm (3.4 x 4.3 x 1.7")
Weight	150 g (5.3 oz.)

OPERATIONAL GUIDE

pH ELECTRODE

- Any combination pH electrode provided with a BNC connector can be attached to the controller. See our General Catalog for a complete range of Hanna pH electrodes.
- Do not be alarmed if white crystals appear around the electrode protective cap. This is normal with pH electrodes and they dissolve when rinsed with water.
- When not in use, rinse the electrode with water and store it with a few drops of storage (**HI 70300**) solution in the protective cap. NEVER USE DISTILLED OR DEIONIZED WATER FOR STORAGE PURPOSES.
- If the electrode has been left dry, soak the tip in a storage (**HI 70300**) or pH 7 (**HI 7007**) solution for at least one hour to reactivate it.
- To minimize clogging and provide longer life for the pH electrode, it is recommended to clean it monthly. Immerse the tip of the electrode in the **HI 7061** solution for half an hour, then rinse it with tap water.

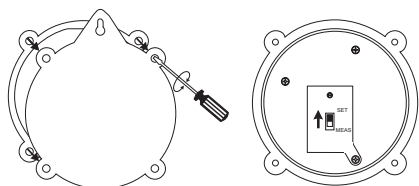
TAKING pH MEASUREMENTS

- Turn the meter on by connecting the 12 Vdc power adapter to the meter and the mains.
- Connect a pH electrode to the indicator.
- Remove the protective cap from the pH electrode and immerse the tip (4 cm/1½") in the sample.
- Allow the reading to stabilize.

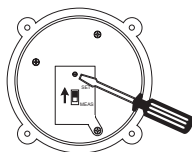
ADJUSTING THE SETPOINT

You can select the setpoint value in the 4.6 to 7.5 pH range. A visual indication (red LED) will alert you when the measured pH exceeds the set value.

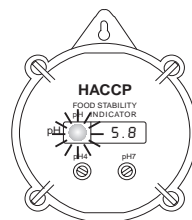
- To access the MEASURE/SET switch and the setpoint adjustment trimmer, remove the rear panel.
- Move the switch upwards to visualize the setpoint.



- With a small screwdriver adjust the setpoint trimmer to display the desired value. The setpoint is factory set at 5.5 pH.



- Move the switch back downwards to return to the measurement mode.
- Close the meter while making sure the gasket is in place before tightening the screws.
- Whenever the pH reading exceeds setpoint, the alarm LED blinks to warn the user.



CALIBRATION

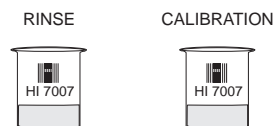
For better accuracy, frequent calibration of the instrument is recommended. In addition, the instrument must be recalibrated whenever:

- The pH electrode is replaced
- After testing aggressive samples
- Where higher accuracy is required
- At least once a month
- When the electrode has been used for a long time

PREPARATION

Pour small quantities of pH 7.0 (HI 7007) and pH 4.0 (HI 7004) solutions into two clean beakers.

For accurate calibration use two beakers for each buffer solution, the first one for rinsing the tip of the electrode and the second one for calibration.



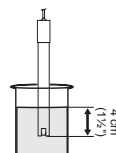
A complete range of Hanna buffer solutions in single-use sachets is available for a more hygienic calibration.

CALIBRATION PROCEDURE

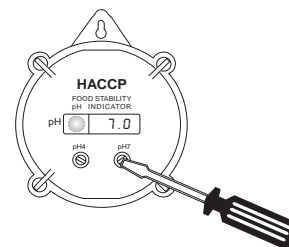
- Turn the meter on and make sure that the MEASURE/SET switch is on the MEASURE mode.
- Remove the protective cap from the electrode, rinse and immerse it in pH 7.0 buffer solution.
- Stir gently and wait a couple of minutes for the reading to stabilize.



Note: The electrode should be submerged approximately 4 cm (1½") in the solution.



- With the supplied calibration screwdriver, adjust the "pH 7" trimmer until the display shows "pH 7.0".



- Rinse and immerse the electrode in pH 4.0 (or pH 10) solution (second calibration point) and stir gently.
- Wait a couple of minutes, then adjust the "pH 4" trimmer until the display shows the "pH 4.0" (or "pH 10.0").



The pH calibration is now complete.

Recommendations for Users

Before using this product, make sure that it is entirely suitable for the environment in which it is used. Operation of this instrument in residential areas could cause unacceptable interference to radio and TV equipment.

The glass bulb at the end of the electrode is sensitive to electrostatic discharge. Avoid touching this glass bulb at all times. During operation, ESD wrist straps should be worn to avoid possible damage to the electrode by electrostatic discharge.

Any variation introduced by the user to the supplied equipment may degrade the instrument's EMC performance.

To avoid electrical shock, do not use this instrument when voltage at the measurement surface exceeds 24 Vac or 60 Vdc.

To avoid damage or burns, do not perform any measurement in microwave ovens.



ACCESSORIES

FC 200B	Conic, open junction pH electrode
FC 230B	pH electrode with optional blade
FC 098	Stainless steel blade, 20 mm (0.8")
FC 099	Stainless steel blade, 35 mm (1.4")
HI 70004P	pH 4.01 solution, 20 mL sachet (25 pcs)
HI 70007P	pH 7.01 solution, 20 mL sachet (25 pcs)
HI 70010P	pH 10.01 solution, 20 mL sachet (25 pcs)
HI 7004M	pH 4.01 solution, 230 mL bottle
HI 7007M	pH 7.01 solution, 230 mL bottle
HI 7007M	pH 7.01 solution, 230 mL bottle
HI 70300M	Electrode storage solution, 230 mL bottle
HI 7061M	Electrode cleaning solution, 230 mL bottle
HI 710005	12 Vdc power adapter, US plug
HI 710006	12 Vdc power adapter, European plug