

ACCESSORIES

FC 202D	pH electrode with built-in temperature sensor, DIN connector, 1 m cable (3.3'), PVDF body & conic tip for use in the food industry
HI 7004L	pH 4.01 buffer solution, 500 mL bottle
HI 7006L	pH 6.86 buffer solution, 500 mL bottle
HI 7007L	pH 7.01 buffer solution, 500 mL bottle
HI 7009L	pH 9.18 buffer solution, 500 mL bottle
HI 7010L	pH 10.01 buffer solution, 500 mL bottle
HI 70300L	Electrode storage solution, 500 mL bottle
HI 7061L	General purpose cleaning solution, 500 mL bottle
HI 70630L	Acid cleaning solution for meat grease and fats, 500 mL bottle
HI 70631L	Alkaline cleaning solution for meat grease and fats, 500 mL bottle
HI 70632L	Cleaning & disinfection solution for blood products, 500 mL bottle
HI 70640L	Cleaning solution for milk deposits, 500 mL bottle
HI 70641L	Cleaning & disinfection solution for dairy products, 500 mL bottle
HI 70642L	Cleaning solution for cheese deposits, 500 mL bottle
HI 710007	Blue shockproof rubber boot
HI 710008	Orange shockproof rubber boot
HI 721312	Rugged carrying case

HI 99161 is supplied with **FC 202D** pH electrode, pH 4 and pH 7 buffer sachets, **HI 700642** cleaning solution (2 x 20 mL), batteries, rugged carrying case and instructions.

HI 99161 is in compliance with the CE directives.



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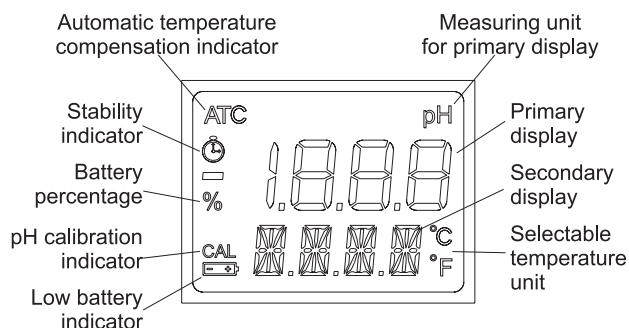
HI 99161 Instruction Manual Waterproof pH Meter for Dairy Products

The meter is supplied with a pH electrode specially designed for use in the food sector.

FC 202D pH electrode with built-in temperature sensor, features a rugged, easy to clean, PVDF body with a strong conic tip ideal for measurements in semisolids such as meats and cheeses. The electrode is also provided with a free diffusion sleeve type reference junction which prevents the typical problems of clogging in viscous liquids such as milk or condiments.

SPECIFICATIONS

Range	0.00 to 14.00 pH 0.0 to 60.0°C / 32.0 to 140.0°F
Resolution	0.01 pH 0.1°C / 0.1°F
Accuracy (@20°C/68°F)	±0.01 pH ±0.1°C / ±0.2°F
Typical EMC Deviation	±0.03 pH ±0.5°C / ±1°F
Temperature Compensation	Automatic, 0 to 60°C (32 to 140°F)
pH Calibration	Automatic, 1 or 2 point with 2 sets of memorized buffers (pH 4.01/7.01/10.01 or 4.01/6.86/9.18)
pH Electrode	FC202D (included)
Battery Type/Life	4 x 1.5V AAA/ approx. 1000 hours
Environment	0 to 50°C (32 to 122°F); RH 100%
Dimensions	150x80x36mm (5.9x3.1x1.4")
Weight	210 g (7.4 oz.)



OPERATIONAL GUIDE

To connect the probe

Connect the **FC 202D** probe to the DIN socket on the top of the meter by aligning the pins and pushing in the plug. Tighten the nut to ensure a good connection. Remove the protective cap from the probe before taking any measurements.

To turn the meter on and to check battery status

Press and hold the ON/OFF/MODE button for 2 seconds. All the used segments on the LCD are visible for a few seconds, followed by a percent indication of the remaining battery life (e.g. % 100 BATT).

To freeze the display

Press and hold the SET/HOLD button, until HOLD appears on the bottom display. The reading will be frozen on the LCD (e.g. pH 5.73 HOLD).

Press any button to return to normal mode.

To turn the meter off

From normal measuring mode, press ON/OFF/MODE. OFF appears on the bottom display. Release the button.

pH MEASUREMENT & CALIBRATION

- Make sure the meter has been calibrated before use.
- If the electrode has been left dry, soak it in **HI 70300** storage solution for one hour to reactivate.
- Insert the tip of the probe in the sample to be tested.
- Wait until the stability indicator \square on the LCD is turned off.
- The LCD shows the pH value automatically compensated for temperature and the temperature of the sample.
- If measurements are taken in different samples successively, clean the probe tip thoroughly to eliminate cross-contamination. For cleaning procedure choose the suitable **Hanna cleaning solution** (see "Accessories" section).

pH calibration

- Press and hold the ON/OFF/MODE button, until OFF on the bottom display is replaced by CAL.
- Release the button. The LCD displays "pH 7.01 USE" or "pH 6.86 USE" (if you selected the NIST buffer set).
- For a *single point pH calibration*, place the probe in any buffer from the selected buffer set (eg. pH 7.01 or pH 4.01 or pH 10.01). The meter automatically recognizes the buffer value and displays OK for 1 second.

If the pH 7.01 buffer (or 6.86 if you selected the NIST buffer set) was used, press the ON/OFF/MODE button to return to the pH measuring mode.

- For a *two point pH calibration*, place the probe in pH 7.01 (or 6.86, if you selected the NIST buffer set). The LCD displays the recognized buffer value and OK for 1 second and then "pH 4.01 USE".

Place the probe in the second buffer solution (pH 4.01 or 10.01, or, if using NIST, pH 4.01 or 9.18). When the second buffer is recognized, the LCD displays OK for 1 second and the meter returns to normal measuring mode.

To reset to the default calibration

To clear a previous calibration, press the ON/OFF/MODE button after entering the calibration mode. The bottom LCD displays ESC for 1 second and the meter returns to normal measuring mode. The "CAL" symbol on the LCD disappears and the meter resets to the default calibration.

METER SETUP

- Press and hold the ON/OFF/MODE button for about 6 seconds, until CAL on the bottom display is replaced by TEMP and the current temperature unit (e.g. TEMP °C). Then:
- **for °C/°F selection**, use the SET/HOLD button. After the temperature unit has been selected, press ON/OFF/MODE to enter the buffer set selection mode; press ON/OFF/MODE twice to return to the normal measuring mode.
- **to change the calibration buffer set**, after setting the temperature unit, the meter will show the current buffer set: pH 7.01 BUFF (for 4.01/7.01/10.01) or pH 6.86 BUFF (for 4.01/6.86/9.18). Change the set with the SET/HOLD button, then press ON/OFF/MODE to return to normal mode.

BATTERY REPLACEMENT

The meter displays the remaining percentage when turned on. When the battery level is below 5%, the \square symbol on the bottom left of the LCD lights up to indicate a low battery condition. If the battery level is low enough to cause erroneous readings, the Battery Error Prevention System (BEPS) turns the meter off.

The batteries are accessed by separating the front and back halves of the meter. Unscrew the 4 screws located on the back of the meter. Remove the back and carefully replace all the four AAA batteries located in the battery compartment, while paying attention to their polarity.

Re-attach the back, making sure that the gasket is in place to ensure a watertight seal.

WARRANTY

All Hanna Instruments **meters are warranted for two years** against defects in workmanship and materials when used for their intended purpose and maintained according to instructions. **The probes are warranted for a period of six months.**

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 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.