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You can read the recommendations in the user guide, the technical guide or the installation guide for HANNA INSTRUMENTS HI 98130. You'll find the answers to all your questions on the HANNA INSTRUMENTS HI 98130 in the user manual (information, specifications, safety advice, size, accessories, etc.). Detailed instructions for use are in the User's Guide.

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Instruction Manual

HI 98129 • HI 98130 pH/EC/TDS/Temperature with Only One Tester



WARRANTY

HI 98129 and HI 98130 are warranted for one year against defects in workmanship and materials when used for their intended purpose and maintained according to instructions. The electrode is 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 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.

All rights are reserved. Reproduction in whole or in part is prohibited without the written consent of the copyright owner, Hanna Instruments.

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

Dear Customer,
Thank you for choosing a Hanna product. This manual will provide you with the necessary information for a correct operation. Please read it carefully before using the meter.
If you need additional technical information, do not hesitate to e-mail us at tech@hannainst.com.

These instruments are 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.

Each meter is supplied with:

- HI 73127 pH electrode
- HI 73128 electrode removal tool
- batteries (4 x 1.5V) 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.

US DESIGN PATENT
D 462,024

GENERAL DESCRIPTION

HI 98129 and HI 98130 are waterproof pH/EC/TDS/temperature meters. The housing has been completely sealed against humidity and designed to float. All pH and EC/TDS readings are automatically temperature compensated (ATC), and temperature values can be displayed in °C or °F units.

For EC/TDS readings, the EC/TDS conversion factor (CONV) is selectable by the user, as well as the temperature compensation coefficient (BETA).

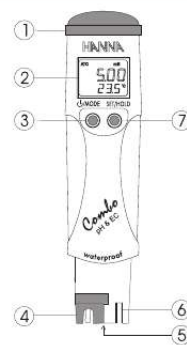
The meters can be calibrated at one or two points for pH (with auto-buffer recognition and optional five memorized buffer values), and at one point for EC. Measurements are highly accurate with a unique stability indicator right on the LCD.

These meters are also provided with battery level indication at start-up, and with a low battery symbol which warns the user when the batteries need to be replaced. In addition the Battery Error Prevention System (BEP5) avoids erroneous readings caused by low voltage level by turning the meter off.

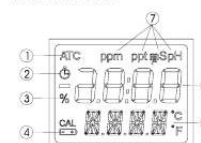
The HI 73127 pH electrode, supplied with the meter, is interchangeable and can be easily replaced by the user.

The stainless steel encapsulated temperature sensor is calibrated faster and more accurate temperature measurement and compensation.

FUNCTIONAL DESCRIPTION



1. Battery compartment
2. Liquid Crystal Display (LCD)
3. ON/OFF/MODE button
4. HI 73127 pH electrode
5. Temperature sensor (behind)
6. EC/TDS probe
7. SET/HOLD button



1. Automatic temperature compensation indicator
2. Stability indicator
3. Battery life percentage indicator
4. Low battery indicator
5. Secondary display
6. Primary display
7. Measuring units for primary display

SPECIFICATIONS

Range	0.0 to 60.0°C / 32.0 to 140.0°F 0.00 to 14.00 pH 0 to 3999 µS/cm (HI 98129) 0.00 to 20.00 mS/cm (HI 98130) 0 to 2000 ppm (HI 98129) 0.00 to 10.00 ppm (HI 98130)
Resolution	0.1°C / 0.1°F 0.01 pH 1 µS/cm / 1 ppm (HI 98129) 0.01 mS/cm / 0.01 ppm (HI 98130)
Accuracy	±0.05°C / ±1°F (800°C/800°F) ±2% ±1 (EC/TDS)
Typical EMC Deviation	±0.5°C / ±1°F ±0.02 pH ±2% ±1 (EC/TDS)
Temperature Compensation	automatic
Environment	with β = 0.0 to 2.4%/°C (EC/TDS) 0 to 50°C (32 to 122°F), RH 100%
TDS Factor	0.45 to 1.00 (CONV)
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) for pH; automatic, 0.1 point for EC/TDS
EC/TDS Calculations	HI 98129: HI7031 (1413 µS/cm) HI7032 (1392 ppm; CONV=0.5) HI7042 (1500 ppm; CONV=0.7) HI 98130: HI7038 (6.44 ppm; CONV=0.5) HI7039 (12.88 mS/cm; CONV=0.7)
Electrode (included)	HI 73127 pH electrode
Battery Type/Life	4 x 1.5V with BEP5, approx. 100 hours
Auto-off	after 8 minutes of non-use
Dimensions	163 x 45 x 26 mm (6.4 x 1.8 x 1.0")
Weight	100 g (3.5 oz.)

Recommendations for Users
Before using this product, make sure that it is entirely suitable for the environment in which it is used. Operations of this instrument in residential areas could cause unacceptable interferences to radio and TV equipment. The glass bulb at the end of the electrode is sensitive to electrostatic discharges. Avoid touching this glass bulb at all times.
Any vibration 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 of the measurement is above exceed 24 Vdc or 60 Vdc. To avoid damages or burns, do not perform any measurement in microwave ovens.

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Manual abstract:

This manual will provide you with the necessary information for a correct operation. Please read it carefully before using the meter. If you need additional technical information, do not hesitate to e-mail us at tech@hannainst.com. These instruments are in compliance with the directives. FUNCTIONAL

DESCRIPTION Range SPECIFICATIONS 0.0 to 60.0°C / 32.0 to 140.0°F 0.

00 to 14.00 pH 0 to 3999 µS/cm (HI 98129) 0.00 to 20.00 mS/cm (HI 98130) 0 to 2000 ppm (HI 98129) 0.00 to 10.

00 ppt (HI 98130) Resolution 0.1°C / 0.1°F 0.01 pH 1 µS/cm ; 1 ppm (HI 98129) 0.01 mS/cm ; 0.

01 ppt (HI 98130) Accuracy (@20°C/68°F) 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. Each meter is supplied with: · HI 73127 pH electrode · HI 73128 electrode removal tool · batteries (4 x 1.5V) 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. ±0.5°C / ±1°F ±0.05 pH ±2% f.s. (EC/TDS) ±0.

5°C / ±1°F ±0.02 pH ±2% f.s. (EC/TDS) automatic, with =0.0 to 2.4%/°C (EC/TDS) 0 to 50°C (32 to 122°F); RH 100% 0.45 to 1.00 (CONV) 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) for pH; automatic, at 1 point for EC/TDS Typical EMC Deviation Temperature Compensation Environment TDS Factor Calibration www.hannainst.com

com US DESIGN PATENT D462,024 1. 2. 3. 4. 5.

6. 7. Battery compartment Liquid Crystal Display (LCD) ON/OFF/MODE button HI 73127 pH electrode Temperature sensor (behind) EC/TDS probe EC/TDS Cal.solutions HI 98129: HI7031 (1413 µS/cm) HI7032 (1382 ppm; CONV=0.5) HI70442 (1500 ppm; CONV=0.7) HI 98130: HI7030 (12.88 mS/cm) HI70038 (6.44 ppt; CONV=0.5 or 9.02 ppt; CONV=0.

7) Electrode (included) Battery Type/Life Auto-off Dimensions Weight HI 73127 pH electrode 4 x 1.5V with BEPS/approx. @@The electrode is warranted for a period of six months. This warranty is limited to repair or replacement free of charge. @@@@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. All rights are reserved. Reproduction in whole or in part is prohibited without the written consent of the copyright owner, Hanna Instruments.

GENERAL DESCRIPTION HI 98129 and HI 98130 are waterproof pH/EC/ TDS/temperature meters.

The housing has been completely sealed against humidity and designed to float. All pH and EC/TDS readings are automatically temperature compensated (ATC), and temperature values can be displayed in °C or °F units. For EC/TDS readings, the EC/TDS conversion factor (CONV) is selectable by the user, as well as the temperature compensation coefficient (BETA). The meters can be calibrated at one or two points for pH (with auto-buffer recognition and against five memorized buffer values), and at one point for EC. Measurements are highly accurate with a unique stability indicator right on the LCD.

These meters are also provided with battery level indication at start-up, and with a low battery symbol which warns the user when the batteries need to be replaced. In addition the Battery Error Prevention System (BEPS) avoids erroneous reading caused by low voltage level by turning the meter off. The HI 73127 pH electrode, supplied with the meter, is interchangeable and can be easily replaced by the user. The stainless steel encapsulated temperature sensor facilitates faster and more accurate temperature measurement and compensation. SET/HOLD button Hanna Instruments reserves the right to modify the design, construction and appearance of its products without advance notice.

1. Automatic temperature compensation indicator 2. Stability indicator 3. Battery life percentage indicator 4. Low battery indicator 5. Secondary display 6. Primary display 7. Measuring units for primary display 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 interferences to radio and TV equipment. The glass bulb at the end of the electrode is sensitive to electrostatic discharges.

Avoid touching this glass bulb at all times. Any variation introduced by the user to the supplied equipment may degrade the instrument's EMC performance.

@@@@@% 100 BATT). @TEMP °C). @@@@Press either button to return to normal mode. @OFF will appear on the lower part of the display. Release the button. @@@@The CAL symbol on the LCD will disappear. The meter will be reset to the default calibration. @@@@Release the button.

@The CAL tag blinks on the LCD. @pH 7.01 or pH 4.01 or pH 10.01).

The meter will recognize the buffer value automatically. @@@@Rinse the electrode thoroughly to eliminate crosscontamination. Place the electrode in the second buffer value (pH 4.01 or 10.01, or, if using NIST, pH 4.

01 or 9.18). When the second buffer is recognized, the LCD will display OK for 1 second and the meter will return to the normal measuring mode. The CAL symbol on the LCD means that the meter is calibrated. To change the EC/TDS conversion factor (CONV) and the temperature compensation coefficient (BETA) · From measurement mode, press and hold the / MODE button until TEMP and the current temperature unit are displayed on the lower LCD. Eg. TEMP °C. · Press the /MODE button again to show the current conversion factor. Eg. 0.

50 CONV. · Press the SET/HOLD button to change the conversion factor. · Press the /MODE button to show the current temperature compensation coefficient · Eg. 2.1 BETA. · Press the SET/HOLD button to change the temperature compensation coefficient · @@Calibration procedure · From measurement mode, press and hold the / MODE button until CAL is displayed on the lower LCD. · Release the button and immerse the probe in the proper calibration solution:

HI7031 (1413 µS/cm) for HI98129 and HI7030 (12.88 mS/cm) for HI98130.

· Once the calibration has been automatically performed, the LCD will display OK for 1 second and the meter will return to normal measurement mode. · Since there is a known relationship between EC and TDS readings, it is not necessary to calibrate the meter in TDS The CAL symbol on the LCD means that the meter is calibrated. · Pull the electrode out by using the other side of the tool. · Insert a new pH electrode following the above instructions in reverse order. BATTERY REPLACEMENT The meter displays the remaining battery percentage every time it is switched on.



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When the battery level is below 5%, the symbol on the bottom left of the LCD lights up to indicate a low battery condition. The batteries should be replaced soon. If the battery level is low enough to cause erroneous readings, the meter shows "0%" and the Battery Error Prevention System (BEPS) will automatically turn the meter off. To change the batteries, remove the 4 screws located on the top of the meter. pH ELECTRODE MAINTENANCE · When not in use, rinse the electrode with water to minimize contamination and store it with a few drops of storage (HI 70300) solution in the protective cap after use. DO NOT USE DISTILLED OR DEIONIZED WATER FOR STORAGE PURPOSES. · If the electrode has been left dry, soak in storage solution for at least one hour to reactivate it. @@@@ Replace the top, making sure that the gasket is properly seated in place, and tighten the screws to ensure a watertight seal. pH MEASUREMENTS & CALIBRATION Taking measurements Select the pH mode with the SET/HOLD button. Submerge the electrode in the solution to be tested. The measurements should be taken when the stability symbol on the top left of the LCD disappears. The pH value automatically compensated for temperature is shown on the primary LCD while the secondary LCD shows the temperature of the sample. Calibration buffer set · From measurement mode, press and hold / MODE until TEMP and the current temperature unit are displayed on the lower LCD (E.g. TEMP °C).

· Press the /MODE button again to show the current buffer set: pH 7.01 BUFF (for pH 4.01/ 7.01/10.01) or pH 6.86 BUFF (for NIST set, pH 4.01/6.86/9.18). EC/TDS MEASUREMENTS & CALIBRATION Taking measurements Select either EC or TDS mode with the SET/HOLD button. Submerge the probe in the solution to be tested. Use plastic beakers to minimize any electromagnetic interferences. The measurements should be taken when the stability s.



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