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You can read the recommendations in the user guide, the technical guide or the installation guide for HANNA INSTRUMENTS HI 98121. You'll find the answers to all your questions on the HANNA INSTRUMENTS HI 98121 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 98121 Waterproof pH / ORP & Temperature Meter



WARRANTY

HI 98121 is warranted for one year against defects in workmanship and materials when used for its 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 Return 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. This manual will provide you with the necessary information for 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.

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. Each meter is supplied with:

- HI 73127 pH electrode
- HI 73128 Electrode removal tool
- 4 x 1.5V batteries

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
D462,024

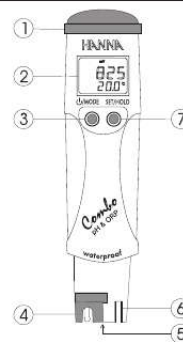
GENERAL DESCRIPTION

HI 98121 is a waterproof pH, ORP and temperature meter. The housing has been completely sealed against humidity and designed to float. All pH readings are automatically temperature compensated (ATC), and temperature values can be displayed in °C or °F units. The meter can be calibrated at one or two points for pH (with auto-buffer recognition and against five memorized buffer values), while the mV (ORP) range is factory calibrated.

Measurements are highly accurate with a unique stability indicator right on the LCD. This meter is 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 (BEP) 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.

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. ORP electrode
7. SET/HOLD button

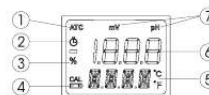
CE DECLARATION OF CONFORMITY



Recommendations for Users
Before using this product, make sure that it is entirely suitable for the environment in which it is used. The glass bulb at the end of the electrode is sensitive to electrostatic discharges. Avoid touching the glass bulb and the ORP electrode at all times. 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 voltages at the measurement surface exceed 24 VAC or 60 VDC. To avoid damages or burns, do not perform any measurement in microwave ovens.

ACCESSORIES

- HI 73127 Replaceable pH electrode
- HI 73128 Electrode removal tool
- HI 70004P pH 4.01 solution, 20 ml sachet (25 pcs)
- HI 70006P pH 6.86 solution, 20 ml sachet (25 pcs)
- HI 70007P pH 7.01 solution, 20 ml sachet (25 pcs)
- HI 70009P pH 9.18 solution, 20 ml sachet (25 pcs)
- HI 70101P pH 10.01 solution, 20 ml sachet (25 pcs)
- HI 7004M pH 4.01 solution, 230 ml bottle
- HI 7006M pH 6.86 solution, 230 ml bottle
- HI 7007M pH 7.01 solution, 230 ml bottle
- HI 7009M pH 9.18 solution, 230 ml bottle
- HI 7010M pH 10.01 solution, 230 ml bottle
- HI 7021M ORP test solution (40 mV), 230 ml bottle
- HI 7022M ORP test solution (470 mV), 230 ml bottle
- HI 7061M Electrode cleaning solution, 230 ml bottle
- HI 70500M Electrode storage solution, 230 ml bottle
- HI 7091M Pretreatment reducing solution, 230 ml
- HI 7092M Pretreatment oxidizing solution, 230 ml



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 unit for primary display

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Manual abstract:

This manual will provide you with the necessary information for 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. This instrument is in compliance with the IEC 61010-1:2011. **FUNCTIONAL DESCRIPTION CE DECLARATION OF CONFORMITY HI 98121 Waterproof pH / ORP & Temperature Meter 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 · 4 x 1.5V batteries Note: Conserve all packing material until the instrument has been observed to function correctly. Any defective item must be returned in its original packing.

Recommendations for Users Before using this product, make sure that it is entirely suitable for the environment in which it is used. The glass bulb at the end of the electrode is sensitive to electrostatic discharges. Avoid touching the glass bulb and the ORP electrode at all times. 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 voltages at the measurement surface exceed 24 VAC or 60 VDC.

@@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. US DESIGN PATENT D462,024 **GENERAL DESCRIPTION** HI 98121 is a waterproof pH, ORP and temperature meter. The housing has been completely sealed against humidity and designed to float. All pH readings are automatically temperature compensated (ATC), and temperature values can be displayed in °C or °F units. The meter can be calibrated at one or two points for pH (with auto-buffer recognition and against five memorized buffer values), while the mV (ORP) range is factory calibrated. Measurements are highly accurate with a unique stability indicator right on the LCD. This meter is 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. 1. 2. 3. 4. 5. 6. 7. Battery compartment Liquid Crystal Display (LCD) ON/OFF/MODE button HI 73127 pH electrode Temperature sensor (behind) ORP electrode SET/HOLD button ACCESSORIES HI 73127 HI 73128 HI 70004P HI 70006P HI 70007P HI 70009P HI 70010P HI 7004M HI 7006M HI 7007M HI 7009M HI 7010M HI 7021M HI 7022M HI 7061M HI 70300M HI 7091M HI 7092M Replaceable pH electrode Electrode removal tool pH 4.01 solution, 20 mL sachet (25 pcs) pH 6.

86 solution, 20 mL sachet (25 pcs) pH 7.01 solution, 20 mL sachet (25 pcs) pH 9.18 solution, 20 mL sachet (25 pcs) pH 10.01 solution, 20 mL sachet (25 pcs) pH 4.01 solution, 230 mL bottle pH 6.

86 solution, 230 mL bottle pH 7.01 solution, 230 mL bottle pH 9.18 solution, 230 mL bottle pH 10.01 solution, 230 mL bottle ORP test solution (240 mV), 230 mL bottle ORP test solution (470 mV), 230 mL bottle Electrode cleaning solution, 230 mL bottle Electrode storage solution, 230 mL bottle Pretreatment reducing solution, 230 mL Pretreatment oxidizing solution, 230 mL 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 unit for primary display IST98121 05/05 SPECIFICATIONS Range -2.00 to 16.00 pH ±1000 mV -5.0 to 60.

0°C / 23.0 to 140.0°F Resolution 0.01 pH 1 mV 0.1°C or 0.1°F Accuracy (@20°C/68°F) pH MEASUREMENTS & CALIBRATION Taking measurements Select pH mode with the SET/HOLD button. @@@@ After testing aggressive chemicals. c) Where high accuracy is required. d) At least once a month. @@Release the button.

@@@@@ To reset to the default values and clear a previous calibration, press the SET/HOLD button after entering the calibration mode and before the first point is accepted. The secondary LCD displays "CLR" for 1 second, the meter resets to the default calibration and the CAL tag on the LCD disappears. **ELECTRODE MAINTENANCE** · When not in use, rinse the electrodes with water to minimize contamination and store them with a few drops of HI 70300 storage solution in the protective cap after use. **DO NOT USE DISTILLED OR DEIONIZED WATER FOR STORAGE PURPOSES.** · If the electrodes have been left dry, soak in storage solution for at least one hour to reactivate them.

· To prolong the life of the electrodes, it is recommended to clean them monthly by immersing them in the HI 7061 cleaning solution for half an hour. Afterwards, rinse it thoroughly with tap water and recalibrate the meter. · The pH electrode can be easily replaced by using the supplied tool (HI 73128).

Insert the tool into the probe cavity as shown below. ±0.

05 pH ±2 mV ±0.5°C or ±1°F ±0.02 pH ±2 mV ±0.3°C or ±0.6°F Automatic for pH pH: at 1 or 2 points with 2 sets of memorized buffers (pH 4.01/7.01/10.01 or pH 4.01/6.86/9.

18) ORP: factory calibrated Typical EMC Deviation Temp. Compensation Calibration Electrode Environment BatteryType / Life Auto-off Dimensions Weight HI 73127 pH electrode (included) -5 to 50°C (23 to 122°F); RH 100% 4 x 1.5V / approx. 250 hours After 8 minutes of non-use 163 x 40 x 26 mm (6.4 x 1.6 x 1.0") 100 g (3.5 oz) ORP MEASUREMENTS Taking measurements Select ORP mode with the SET/HOLD button. Submerge the electrode in the solution to be tested. @@The ORP (mV) value is shown on the primary LCD while the secondary LCD shows the temperature of the sample.

Rotate the electrode counterclockwise. Pull the electrode out by using the other side of the tool. OPERATIONAL GUIDE To turn the meter on and to check battery status Press and hold the /MODE button until the LCD lights up.



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All the used segments on the LCD will be visible for 1 second (or as long as the button is pressed), followed by the percent indication of the remaining battery life (E.g. % 100 BATT). To freeze the display While in measurement mode, press the SET/HOLD button until HOLD appears on the secondary display. The reading will be frozen on the LCD. Press any button to return to normal mode. @@ OFF will appear on the secondary display. @@@@The batteries should be replaced soon. @@To change the batteries, remove the 4 screws located on the top of the meter. SETUP Setup mode allows the selection of temperature unit and pH buffer set. To enter the Setup mode, select pH mode and then press the /MODE button until CAL on the secondary 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 the /MODE button to enter the buffer set selection mode; press the /MODE button 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 NIST 4.01/6.86/9.18). Change the set with the SET/HOLD button, then press /MODE to return to the normal measuring mode. Note: If measurements are taken in different samples successively, rinse the probe thoroughly to eliminate cross-contamination; and after cleaning, rinse the probe with some of the sample to be measured. · For a two-point calibration, place the electrode in pH 7.01 (or pH 6.86) buffer. After the first calibration point has been accepted, the "pH 4.01 USE" message .



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