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You can read the recommendations in the user guide, the technical guide or the installation guide for HANNA INSTRUMENTS HI 9143. You'll find the answers to all your questions on the HANNA INSTRUMENTS HI 9143 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 9143 - HI 9145

Portable D.O. Meters
in Water-Resistant Casing



HANNA
instruments
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Manual abstract:

O. Meters in Water-Resistant Casing SAM PLE ppm °C ON/O FF HI 91 Micro 43 Auto processore Diss Cal o Oxyg lved en M eter CAL RAN GE HOL D FAC TOR www.hannainst.com Dear Customer, Thank you for choosing a HANNA product. Please read this instruction manual carefully before using the instrument. This manual will provide you with the necessary information for a correct use of the instrument. If you need additional technical support, 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 to make sure that no damage has occurred during shipping. If there is any damage, immediately notify your dealer.

Each meter is supplied complete with: · HI 76407/4 DO probe with 4 m (13') cable · 2 spare membranes with O-rings · Protective cap · HI 7041S electrolyte solution (30 mL) · Batteries (4 x 1.5V AA) · Instruction manual · Rugged carrying case Note: Save all packing material until you are sure that the instrument functions correctly. Any defective items must be returned in the original packing with the supplied accessories. TABLE OF CONTENTS Preliminary Examination ..

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Simple on-site calibration requires no chemical solutions. Just expose the probe to air and press the CAL button. In a few minutes, the meter is calibrated and ready to use. The new and improved HI 9143 and HI 9145 measure and display O2 from 0 to 300%, 0 to 45 mg/L and temperature from 0 to 50 °C. In addition to the features of HI 9145, HI 9143 also supplies the user with compensation of salinity and altitude factors. Both meters compensate for the temperature effect. 3 The dissolved oxygen probe is provided with a membrane covering the polarographic sensor elements, and a built-in thermistor for temperature measurement and compensation. @@@@2. 3. 4.

5. 6. 7. 8. 9.

10. D.O. @@probes are shipped dry. @@Shipping 1.

Remove the red & black plascap tic cap used for shipping purposes only. 2. Wet the sensor by soaking black the bottom (2.5 cm/1") of the probe in HI 7041S electrolyte red solution for 5 minutes. 3. Rinse the supplied membrane (HI76407A) with some electrolyte while shakFIRST ing it gently. INSERT SECOND Refill with fresh O RING FILL electrolyte. 4. Gently tap the THIRD sides of the TAP membrane with your finger to ensure that no air bubbles remain trapped. THEN SCREW BACK ON To avoid any damage, do not tap the membrane directly on the bottom.

5. Make sure that the rubber O-ring sits properly inside the membrane cap. 6. With the sensor facing down, screw the cap clockwise. Some electrolyte will overflow. When not in use, protect the membrane with the supplied cap. HI 9143 Range HI 9145 0.00 to 45.00 mg/L O2 0.0 to 300.

0% O2 0.0 to 50.0°C 0.01 mg/L / 0.1% O2 0.

1°C Resolution Accuracy (@20°C/68°F) ±1.5% FS (O2) ±0.5°C Typical EMC Deviation ±0.3 mg/L / ±3.5% O2 ±0.

5 °C Calibration Automatic, in air, at 100% Temperature Compensation Automatic, 0 to 50°C (32 to 122°F) Altitude Compensation 0 to 1900 m (resolution 100 m) Salinity Compensation 0 to 40 g/L (resolution 1 g/L) Probe Environment Power Supply 4 x 1.5V AA batteries; approx. 200 hours of continuous use; auto-off after 4 hours of inactivity; or input for 12 Vdc adapter Dimensions Weight 196 x 80 x 60 mm (7.7 x 3.1 x 2.4") 500 g (1.1 lb.) --- HI 76407/4 polarographic with 4 m (13') cable (included) 0 to 50°C (32 to 122°F); RH max 100% 6 7 CALIBRATION · For an accurate calibration, it is recommended to wait an additional 5-10 minutes to ensure optimum conditioning of the probe. Remove the protective cap. PROBE POLARIZATION The probe is under polarization with a fixed voltage of approximately 800 mV.

Probe polarization is essential for stable measurements with the same recurring degree of accuracy. With the probe properly polarized, oxygen is continually "consumed" by passing through the sensitive diaphragm and dissolving in the electrolyte solution contained inside the probe. If this operation is interrupted, the electrolyte solution continues to be enriched with oxygen until it reaches an equilibrium with the surrounding solution. Measurements taken with a nonpolarized probe give an oxygen level that indicates that of the test solution as well as any oxygen present in the electrolyte solution. This reading is obviously incorrect. The HANNA HI 9143 and HI 9145 oxygen meter automatically polarize the probe each time they are switched on. Calibration is simple and is recommended every time the meter is switched on. @@@@ · Switch the meter on. @@@@ · After approx. @@ · To exit the calibration mode at any time, press CAL.

@@@@@@@@@A moving stream will provide adequate circulation. @@Accurate readings are not possible while the liquid is stationary. @@@@@@@@@@Use the UP and DOWN keys to set the altitude from 0 to 1900 m, in steps of 100 m. SALINITY COMPENSATION HI 9143 Press FACTOR twice and "F2" will be displayed. Press the UP and DOWN keys to set the salinity between 0 and 40 g/L.

Press FACTOR again to display the temperature. SAMPLE ppm SAMPLE ppm F1 F2 or or HI 9145 With HI 9145, all the DO readings refer to the sea level.

Altitude affects the DO concentration by decreasing its value. The following table reports the maximum oxygen solubility at various temperatures and altitudes. The table provides an idea of the error that can be introduced at different altitudes and the quantity to be subtracted to correct the reading. Altitude above Sea Level (in meters) °C 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 0m 300 m 600 m 900 m 1200 m 1500 m 1800 m HI 9145 All DO readings refer to 0 g/L of salinity. Salinity affects the DO concentration by decreasing its value. The table below shows the maximum solubility of

oxygen at various temperatures and salinity levels. By using the table, the quantity to be subtracted to correct the reading can be calculated. °F 14.6 13.8 13.1
12.4 11.8 11.

3 10.8 10.3 9.9 9.5 9.1 8.7 8.4 8.1 7.8 7.

5 7.3 7.1 6.8 6.6 6.

4 14.1 13.3 12.7 12.0 11.

4 10.9 10.4 9.9 9.7 9.2 8.8 8.4 8.1 7.8 7.

5 7.2 7.1 6.9 6.6 6.4 6.2 13.6 12.9 12.2 11.

6 11.0 10.5 10.1 9.6 9.

2 8.7 8.5 8.1 7.8 7.

5 7.3 7.0 6.8 6.6 6.3 6.2 6.0 13.2 12.4 11.

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4 6.1 5.9 5.8 12.



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7 7.3 7.0 6.8 6.5 6.4 6.2 5.9 5.7 5.6 12.
3 11.6 11.0 10.4 9.9 9.
5 9.1 8.7 8.3 8.0 7.
7 7.3 7.1 6.8 6.6 6.3 6.1 6.0 5.7 5.6 5.

4 11.8 11.2 10.6 10.1 adapter, European plug 240 Vac/12 Vdc adapter, UK plug 230 Vac/12 Vdc adapter, South African plug 230 Vac/12 Vdc adapter, Australian plug A 12 Vdc power source can also be used to power the unit. Simply unscrew the protective cap on the top of the instrument and plug the power adapter into the socket. Note: The instrument uses the following configuration. + 16 - 17 **WARRANTY CE DECLARATION OF CONFORMITY** All Hanna meters are warranted for two years against defects in workmanship and materials when used for their intended purpose and maintained according to the instructions. Probes are warranted for six months. This warranty is limited to repair or replacement free of charge.

Damages 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 failure. If the repair is not covered by the warranty, you will be notified of the charge for repair or replacement. If the instrument is to be returned to Hanna Instruments, please obtain a Return Goods Authorization from the Customer Service Department and then send it with shipment cost prepaid.

@@@Any variation introduced by the user to the supplied equipment may degrade the instrument's EMC performance. To avoid electrical shock, do not use these instruments 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. 19 SALES & TECHNICAL SERVICE Australia: Tel. (03) 9769.

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