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You can read the recommendations in the user guide, the technical guide or the installation guide for HANNA INSTRUMENTS HI 9033. You'll find the answers to all your questions on the HANNA INSTRUMENTS HI 9033 in the user manual (information, specifications, safety advice, size, accessories, etc.). Detailed instructions for use are in the User's Guide.

User manual HANNA INSTRUMENTS HI 9033
User guide HANNA INSTRUMENTS HI 9033
Operating instructions HANNA INSTRUMENTS HI 9033
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Instruction manual HANNA INSTRUMENTS HI 9033

Instruction Manual
HI 9033 • HI 9034
Waterproof
Multi-Range
EC and TDS Meters
for Field Applications



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Manual abstract:

hannainst.com PRELIMINARY EXAMINATION Dear Customer, Thank you for choosing a HANNA instruments® product. Please read this instruction manual carefully before using the instrument. It will provide you with the necessary information for a correct use of the instrument, as well as a precise idea of its versatility. If you need additional technical information, do not hesitate to e-mail us at tech@hannainst.com. directives. These instruments are in compliance with the 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 76302W conductivity probe with 1 m (3.

3') cable · Calibration screwdriver · Battery (1 x 9V) · Rugged carrying case · Instruction manual Note: Save all packing materials until you are sure that the instrument functions correctly. Any defective item must be returned in the original package together with the supplied accessories. TABLE OF CONTENTS

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..... 18 GENERAL DESCRIPTION HI 9033 and HI 9034 multi-range conductivity and TDS meters, have been designed for extended use in wet, humid, dusty and muddy conditions. These meters utilize the latest in four-ring potentiometric technology which has been proven to provide higher accuracy than the common amperometric method. HI 9033 can measure conductivity in four ranges.

This allows the user to analyze samples from deionized water to brine without having to switch or recalibrate the probe. HI 9034 measures total dissolved solids (TDS) in three ranges to offer the highest accuracy when performing measurements in diverse applications such as HVAC, waste water treatment and reverse osmosis. All three ranges can be activated at the touch of a button without having to change the probe. Both meters perform measurements with ATC (automatic temperature compensation) which adjusts for the effects of temperature. These portable instruments also feature BEPS (Battery Error Prevention System) technology that alerts the user when low batteries could affect the readings. 3 2 FUNCTIONAL DESCRIPTION & SPECIFICATIONS OF HI 9033 1) 2) 3) 4) 5) 6) 7) 8) 9) 10) 11) Battery compartment Probe socket Liquid Crystal Display Measure unit Low battery indicator ON/OFF key 19.99 mS/cm range selection key Calibration trimmer 199.9 S/cm range selection key 1999 S/cm range selection key 199.9 mS/cm range selection key 1) 2) 3) 4) 5) 6) FUNCTIONAL DESCRIPTION & SPECIFICATIONS OF HI 9034 Battery compartment Probe socket Liquid Crystal Display Low battery indicator ON/OFF key 19.99 g/L range selection key 7) Calibration trimmer 8) 1999 mg/L range selection key 9) 199.

9 mg/L range selection key 0.0 to 199.9 S/cm / 0 to 1999 S/cm 0.00 to 19.99 mS/cm / 0.00 to 199.9 mS/cm Resolution 0.1 S/cm / 1 S/cm 0.01 mS/cm / 0.1 mS/cm Accuracy (@20°C/68°F) ±1% F.

S. (excluding probe error) Typical EMC Deviation ±1% F.S. Calibration Manual, 1 point, through trimmer Temperature Compensation Automatic, 10 to 50°C (50 to 122°F) with β=2%/°C Probe HI 76302W with 1 m (3.3') cable (included) Battery Type / Life 1 x 9V / APPROX. 100 hours of continuous use Environment 0 to 50°C (32 to 122°F); RH max 100% Dimensions 196 x 80 x 60 mm (7.7 x 3.1 x 2.4") Weight 425 g (0.9 lb).

) 4 Range 0.0 to 199.9 mg/L / 0 to 1999 mg/L 0.00 to 19.99 g/L Resolution 0.1 mg/L / 1 mg/L / 0.01 g/L Accuracy (@20°C/68°F) ±1% F.S. (excluding probe error) Typical EMC Deviation ±1% F.S.

Calibration Manual, 1 point, through trimmer Temperature Compensation Automatic, 10 to 50°C (50 to 122°F) with β=2%/°C Probe HI 76302W with 1 m (3.3') cable (included) Battery Type / Life 1 x 9V / APPROX. 100 hours of continuous use Environment 0 to 50°C (32 to 122°F); RH max 100% Dimensions 196 x 80 x 60 mm (7.7 x 3.1 x 2.

4") Weight 425 g (0.9 lb.) Range 5 FUNCTIONAL DESCRIPTION OF HI 76302W CONDUCTIVITY PROBE OPERATIONAL GUIDE INITIAL PREPARATION 1 Each meter is supplied complete with a 9 V battery. Remove the back cover, unwrap the battery and install it while paying attention to its polarity its (see "Battery Replacement" section). Connect the probe to the meter securely by aligning the pins with the socket, pushing the plug in and tightening the threaded ring.

Make sure that the sleeve is properly inserted on the probe, with the holes towards the top of the probe (i.e. the end nearest to the cable). 3 2 4 1) 2) 3) 4) Watertight screened cable (1 m / 3.3') 4 stainless steel rings Air-release holes PVC protective sleeve Make sure that the meter has been calibrated before taking any measurements (see "Calibration" section for details). TAKING MEASUREMENTS To take measurement, place the probe into the solution to be tested while making sure that the holes are completely submerged. Tap and stir the probe to remove any air bubbles trapped inside the PVC sleeve. Turn the instrument on by pressing the ON/OFF key, and then select the desired range by pressing the corresponding key. @@@@ If possible, use plastic beakers to minimize any EMC interference. @@@@ Temperature" section).

@@@@@ · When the reading is stable, adjust the calibration trimmer to read the solution conductivity value @25°C. For example if using HI 7032, turn the trimmer until the display shows 1382 mg/L @25°C. The calibration is now complete and the instrument is ready for use. @@@@ For example, for HI 7032 adjust the trimmer to read 1251 mg/L (see "TDS vs. Temperature" section). If the instrument cannot be calibrated, refer to the "Probe Maintenance" section. PROCEDURE FOR HI 9034 · Fill a beaker with 8 cm (3¼") of TDS calibration solution (if possible fill two beakers, one for rinsing the probe and one for calibration). @@@@@@ 1999 mg/L). ON/OFF 1999mg/l 10 11 CONDUCTIVITY VS. TEMPERATURE TDS VS.

TEMPERATURE The conductivity of an aqueous solution is the measure of its ability to carry an electrical current by means of ionic motion. The conductivity increases with increasing temperature. In fact, it is affected by the type and number of ions in the solution, and by the viscosity of the solution itself. Both parameters are temperature dependent. The dependency of conductivity on temperature is expressed as a relative change per degree Celsius at a particular temperature, commonly as percent per degree Celsius (%/°C).

The TDS value in aqueous solutions is directly proportional to conductivity.

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The ratio between the two parameters depends on the solution and it is usually set to a factor of 0.5 (corresponding to a solution of CaCO₃). This means that 1 S/cm is equal to 0.5 mg/L (ppm) of TDS.

°C 0 5 10 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 °F 32 41 50 59 60.8 62.6 64.4 66.2 68 69.8 71.6 73.4 75.2 77 78.8 80.

6 82.4 84.2 86 87.8 HI 7030 (S/cm) HI 7031 (S/cm) HI 7033 (S/cm) HI 7034 (S/cm) HI 7035 (S/cm) HI 7039 (S/cm) °C 0 5 10 15 ice 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 shipping costs prepaid. When shipping any instrument, make sure it is properly packaged for complete protection. OTHER ACCESSORIES HI 76302W 4-ring conductivity probe with built in temperature sensor and 1 m (3.3') cable HI 98501 ChecktempC electronic thermometer (-50.

0 to 150°C) HI 710005 115 Vac / 12 Vdc power adapter, US plug HI 710006 230 Vac / 12 Vdc power adapter, European plug HI 721317 Rugged carrying case HI 731326 Calibration screwdriver (20 pcs) All rights are reserved. Reproduction in whole or in part is prohibited without the written consent of the copyright owner. Hanna Instruments reserves the right to modify the design, construction and appearance of its products without advance notice. 16 17 CE DECLARATION OF CONFORMITY Recommendations for Users Before using these products, make sure that they are entirely suitable for the environment in which they are used. @@@@Avoid touching this metal band at all times.

@@@@To avoid electrical shock, do not use these instruments 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. In particular cases the meters could turn off. Simply press the ON/OFF key to turn on. 18 19 SALES AND TECHNICAL SERVICE CONTACTS Australia: Tel.

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