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› HM Digital AquaPro AP-1 Handheld TDS and Temperature Tester User Manual

HM Digital AP-1

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1. PRODUCT OVERVIEW

The HM Digital AquaPro AP-1 is a handheld meter designed to accurately measure Total Dissolved Solids (TDS) and temperature in various water sources. It features automatic temperature compensation (ATC) for reliable readings across different temperatures, a waterproof casing, and digital calibration capabilities. This device is ideal for water purification applications, wastewater regulation, aquaculture, hydroponics, and general water quality testing.



Image 1.1: HM Digital AquaPro AP-1 Handheld TDS and Temperature Tester. This image shows the compact, white handheld device with an LCD screen and control buttons.

What's in the Box:

- HM Digital AquaPro AP-1 TDS/Temperature Tester
- Protective Cap
- 1 x CR2032 3V Button Cell Battery (pre-installed or included separately)

2. SAFETY INFORMATION

Please read all safety instructions before operating the device to ensure safe and proper use.

- **Battery Safety:** Ensure batteries are inserted correctly according to polarity markings. Do not mix old and new batteries or different types of batteries. Dispose of used batteries responsibly.
- **Water Exposure:** While the device features a waterproof casing, avoid submerging the entire unit for extended periods or in depths beyond its design. Do not expose the device to extreme temperatures or corrosive liquids.
- **Handling:** Handle the device with care. Avoid dropping or subjecting it to strong impacts.
- **Children:** Keep the device and its components, especially small batteries, out of reach of children.

3. SETUP

3.1 Battery Installation

The AquaPro AP-1 uses one CR2032 3V button cell battery. The battery may be pre-installed. If not, or if replacement is needed:

1. Locate the battery compartment on the back of the device.
2. Open the compartment cover.
3. Insert the CR2032 battery with the positive (+) side facing up.
4. Close the battery compartment cover securely.

3.2 Initial Calibration

The AquaPro AP-1 is factory calibrated with a 342 ppm NaCl solution. It is ready for use upon activation. Recalibration may be performed as needed (refer to Section 5).

4. OPERATING INSTRUCTIONS

4.1 Taking a Measurement

1. Remove the protective cap from the bottom of the meter.
2. Press the **ON/OFF** button to turn on the meter. The display will show the current temperature and TDS reading.
3. Immerse the meter's electrode section into the water sample, ensuring the water level is below the cap line but above the electrodes.
4. Gently stir the meter to dislodge any air bubbles.
5. Wait for the reading to stabilize (approximately 1-2 minutes). The LCD will display the TDS value in parts per million (ppm) and the temperature in Celsius or Fahrenheit.
6. After use, rinse the electrodes with distilled water and replace the protective cap.

4.2 Hold Function

To freeze the displayed reading, press the **HOLD** button. Press it again to release the hold and resume live measurement.

4.3 Temperature Display

The meter simultaneously displays temperature. To switch between Celsius (°C) and Fahrenheit (°F), press the **TEMP** button.

4.4 Automatic Shut-off

The AquaPro AP-1 features an automatic shut-off function that turns off the meter after 10 minutes of non-use to conserve battery life.

5. CALIBRATION

The AquaPro AP-1 can be recalibrated digitally using the push buttons, eliminating the need for a screwdriver. It is factory calibrated to 342 ppm.

5.1 Digital Calibration Procedure

1. Prepare a 342 ppm TDS calibration solution.

2. Turn on the meter and immerse the electrodes into the calibration solution.
3. Wait for the reading to stabilize.
4. Press and hold the **CAL** button until the display starts flashing.
5. Use the **UP** and **DOWN** buttons (often integrated with other function buttons) to adjust the reading to 342 ppm.
6. Once the desired value is set, press the **CAL** button again to confirm and save the calibration. The display will stop flashing.
7. Rinse the electrodes with distilled water after calibration.

6. MAINTENANCE

6.1 Cleaning the Electrodes

Regularly clean the electrodes to ensure accurate readings. Rinse the electrodes with distilled or deionized water after each use. If there is significant buildup, gently wipe with a soft cloth or cotton swab. Avoid abrasive materials that could damage the electrodes.

6.2 Storage

Store the meter with its protective cap on in a cool, dry place. Avoid direct sunlight and extreme temperatures. Do not store in calibration solution or tap water.

6.3 Battery Replacement

When the low battery indicator appears on the display, replace the CR2032 battery as described in Section 3.1.

7. TROUBLESHOOTING

- **No Display / Meter Not Turning On:**

Check battery installation. Ensure the CR2032 battery is correctly inserted and has sufficient charge. Replace if necessary.

- **Inaccurate or Fluctuating Readings:**

Rinse electrodes thoroughly with distilled water. Ensure the electrodes are fully immersed in the sample. Recalibrate the meter (refer to Section 5). Ensure the sample is not excessively turbulent.

- **Low Battery Indicator:**

Replace the CR2032 battery immediately to ensure continued accurate operation.

- **Meter Does Not Respond to Buttons:**

Try removing and reinserting the battery to reset the device. If the issue persists, the device may require service.

8. SPECIFICATIONS

Model Number	HMDAP1
TDS Range	0 - 5000 ppm (mg/L)
Temperature Range	0 - 80 °C (32 - 176 °F)
TDS Resolution	1 ppm

Temperature Resolution	0.1 °C/F
Accuracy	+/- 2%
Conversion Factor	NaCl (average 0.5)
Calibration	Digital via push button (factory calibrated to 342 ppm)
Automatic Temperature Compensation (ATC)	Yes
Housing	Waterproof
Power Source	1 x 3V CR2032 Button Cell Battery
Dimensions	14.99 x 2.79 x 1.27 cm (5.9 x 1.1 x 0.5 inches)
Weight	42.5 g (1.5 oz)
Material	Acrylonitrile Butadiene Styrene (ABS)

9. WARRANTY AND SUPPORT

The HM Digital AquaPro AP-1 comes with a standard manufacturer's warranty. Please note that the standard warranty typically does not cover damage caused by power surges or similar electrical events. It is recommended to use a surge protector if the device is used in environments prone to such issues. For technical support or warranty claims, please refer to the contact information provided with your purchase or visit the official HM Digital website.