

HM Digital COM-80

HM Digital COM-80 EC/TDS Hydro Tester User Manual

Model: COM-80 (EC/TDS HydroTester Series)

1. INTRODUCTION

The HM Digital COM-80 is a reliable and economically priced meter designed for measuring Electrical Conductivity (EC) and Total Dissolved Solids (TDS) in various water applications. This device is suitable for testing in hydroponics, gardening, pools, spas, aquariums, reef tanks, water ionizers, and drinking water. It features Automatic Temperature Compensation (ATC) for accurate readings across different temperatures and is water-resistant for durability.

2. PRODUCT FEATURES

- Measures Electrical Conductivity (EC) and Total Dissolved Solids (TDS).
- Four measurement scales: EC in μS (microsiemens) and mS (millisiemens); TDS in ppm (parts per million) and ppt (parts per thousand).
- Automatic Temperature Compensation (ATC) for consistent readings.
- Water-resistant housing.
- Auto-off function to conserve battery life.
- Data-hold function to freeze readings for easy recording.
- Low-battery indicator.
- Large, easy-to-read LCD display.

3. DEVICE OVERVIEW



Figure 1: Front view of the HM Digital COM-80 EC/TDS Hydro Tester with its protective cap in place. The display and control buttons are visible.



Figure 2: The HM Digital COM-80 EC/TDS Hydro Tester with the protective cap removed, revealing the measurement electrodes at the bottom.



Figure 3: The HM Digital COM-80 EC/TDS Hydro Tester displaying a measurement on its LCD screen, showing both ppm and temperature.

Controls and Display:

- **POWER/ENTER Button:** Turns the device on/off and confirms selections.
- **TEMP/CAL Button:** Switches between temperature units (°C/°F) and initiates calibration mode.
- **HOLD/MODE Button:** Freezes the current reading on the display and cycles through measurement modes (EC μ S, EC mS, TDS ppm, TDS ppt).
- **LCD Display:** Shows measurement readings, temperature, and mode indicators.

4. SETUP

4.1. Battery Installation

The HM Digital COM-80 requires three 1.5V button cell batteries (LR44 or equivalent). These are typically pre-installed. If replacement is needed:

1. Carefully open the battery compartment, usually located at the top or back of the device.
2. Insert the new batteries, ensuring correct polarity (+/-).
3. Close the battery compartment securely.

4.2. Initial Preparation

Before first use, or after prolonged storage:

1. Remove the protective cap from the bottom of the meter.
2. Rinse the electrodes with distilled water to remove any residue.
3. Gently blot dry with a clean, soft cloth or tissue. Do not rub the electrodes.

5. OPERATION

5.1. Taking a Measurement

1. Press the **POWER/ENTER** button to turn on the meter.
2. Immerse the electrode end of the meter into the sample solution up to the maximum immersion level indicated on the device. Ensure no air bubbles are trapped around the electrodes.
3. Gently stir the meter to ensure a homogeneous sample.
4. Wait for the reading to stabilize on the LCD display. The meter automatically compensates for temperature.
5. To hold the reading on the display, press the **HOLD/MODE** button once. Press again to release.
6. After measurement, rinse the electrodes with distilled water and replace the protective cap.

5.2. Switching Measurement Modes

The COM-80 can display readings in different units:

- While the meter is on, press the **HOLD/MODE** button repeatedly to cycle through the available modes: EC (μS), EC (mS), TDS (ppm), TDS (ppt).
- The selected unit will be displayed on the screen.

5.3. Changing Temperature Units

To switch between Celsius ($^{\circ}\text{C}$) and Fahrenheit ($^{\circ}\text{F}$):

- With the meter on, press the **TEMP/CAL** button once.
- The temperature unit on the display will change.

6. CALIBRATION

The HM Digital COM-80 is factory calibrated. For most general applications, frequent recalibration is not necessary. If recalibration is required due to significant drift or for highly precise applications, it is recommended to use standard calibration solutions (e.g., 1413 $\mu\text{S}/\text{cm}$ for EC or 1000 ppm for TDS) and follow the manufacturer's specific calibration procedure outlined in the full technical manual or by contacting HM Digital support.

7. MAINTENANCE

7.1. Cleaning the Electrodes

Proper cleaning ensures accurate readings and extends the life of your meter:

1. After each use, rinse the electrodes thoroughly with distilled or deionized water.
2. Gently wipe the electrodes with a soft, lint-free cloth or tissue. Do not use abrasive materials or harsh chemicals.
3. For stubborn residue, soak the electrode tip in a mild cleaning solution (e.g., a few drops of dish soap in water) for 10-15 minutes, then rinse thoroughly with distilled water.
4. Always replace the protective cap after cleaning and storage to keep the electrodes moist and protected.

7.2. Storage

Store the meter in a cool, dry place with the protective cap securely in place. Ensure the electrodes are clean before storage.

7.3. Battery Replacement

When the low-battery indicator appears on the display, replace the batteries as described in Section 4.1.

8. TROUBLESHOOTING

- **Inaccurate Readings:**
 - Ensure electrodes are clean (see Section 7.1).
 - Check if the meter needs calibration (see Section 6).
 - Verify the sample temperature is within the meter's operating range.
 - Ensure sufficient immersion of the electrodes in the sample.
- **Display Not Working/No Power:**
 - Check battery level and replace if necessary.
 - Ensure batteries are inserted with correct polarity.
 - Press the POWER/ENTER button firmly.
- **Slow Reading Stabilization:**
 - Ensure electrodes are clean.
 - Gently stir the meter in the solution to help stabilize.

9. SPECIFICATIONS

Feature	Detail
Measurement Range	EC: 0 - 9999 μ S; 0 - 9.99 mS TDS: 0 - 5000 ppm; 0 - 5.0 ppt
Resolution	EC: 1 μ S (0-9999 μ S); 0.01 mS (0-9.99 mS) TDS: 1 ppm (0-5000 ppm); 0.1 ppt (0-5.0 ppt)
Accuracy	$\pm$ 2% Full Scale
Temperature Compensation	Automatic (ATC) from 1-50 $^{\circ}$ C (33-122 $^{\circ}$ F)
Operating Temperature	0-50 $^{\circ}$ C (32-122 $^{\circ}$ F)
Power Source	3 x 1.5V LR44 button cell batteries
Battery Life	Approximately 100 hours of continuous use
Dimensions	6 x 0.6 x 1.3 inches (15.2 x 1.5 x 3.3 cm)
Weight	2.08 ounces (59 g)
Included Components	Protective cap, 3 x 1.5V button cell batteries
Display Type	LCD
Outer Material	Plastic

10. WARRANTY AND SUPPORT

10.1. Warranty Information

The HM Digital COM-80 Hydro Tester typically comes with a **1-year warranty** from the date of purchase, covering manufacturing defects. Please retain your proof of purchase for warranty claims. The warranty does not cover damage caused by misuse, accidents, or unauthorized repairs.

10.2. Customer Support

For technical assistance, troubleshooting beyond this manual, or warranty inquiries, please contact HM Digital customer support directly. Refer to the product packaging or the official HM Digital website for the most current contact information.

ASK A QUESTION ABOUT THIS MANUAL

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