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## EQQIFJM MF-X51

# User Manual for Portable Water Quality Tester

Model: MF-X51 | Brand: EQQIFJM

## 1. PRODUCT OVERVIEW

The EQQIFJM MF-X51 Portable Water Quality Tester is a versatile 5-in-1 device designed for accurate measurement of pH, EC (Electrical Conductivity), TDS (Total Dissolved Solids), Salinity, and Temperature. It features a highly sensitive probe with automatic temperature compensation and a high-contrast VA display for easy reading.



Image: The EQQIFJM MF-X51 Portable Water Quality Tester, showing its compact design and display.



Image: Diagram illustrating the 5-in-1 capabilities of the MF-X51 meter: pH, EC, TDS, Salt, and Temperature measurement.

## 2. PACKAGE CONTENTS

Upon opening the package, please verify that all the following items are included:

- 1 x Water Quality Tester (MF-X51)
- 1 x User Manual (this document)
- 3 x pH Calibration Powder (for pH 4.00, 6.86, and 9.18)



Image: Contents of the MF-X51 package, including the tester, user manual, and pH calibration powders.

### 3. SETUP AND BATTERY INSTALLATION

The MF-X51 tester is powered by 4 x 1.5V LR44 button cells. These batteries are included and pre-installed. If replacement is needed:

1. Locate the battery compartment at the top of the device.
2. Unscrew the battery compartment cap.
3. Insert four LR44 button cells, ensuring correct polarity (+/-).
4. Securely screw the cap back on to maintain the IP67 waterproof rating.

## Highly Sensitive Probe

Accurately detects water quality with external high-precision temperature sensor for automatic temperature compensation, suitable for various environments



## High-Contrast Display

Clear backlit display for nighttime reading



## High-Capacity Battery with Energy-Saving Function

Powered by 4pcs LR44 1.5V button batteries, long-lasting and easy to replace, automatically shuts off after 5 minutes of inactivity to save energy



Image: Close-up view of the MF-X51's highly sensitive probe, high-contrast display, and the battery compartment with LR44 batteries.

## 4. OPERATING INSTRUCTIONS

Follow these steps for accurate measurements:

1. **Power On:** Gently rotate to open the protective cap. Press the **ON/OFF** button to power on the device. The screen will display pH/Temp.

## Instructions



Gently rotate to open the protective cap, press the ON/OFF button to power on, the screen will display pH/Temp



Immerse the test pen electrode into the solution to be tested (the solution level should not exceed the immersion line), stir gently and wait briefly until the reading stabilizes, then record the value



Press and hold HOLD/TEMP to switch to temperature mode and read temperature value



Press MODE/CAL button to switch between pH/EC/TDS/SALT modes



Press and hold CAL button for calibration: immerse in 4.00/6.86/9.18 pH standard solution, hold CAL button for 3 seconds, the screen will flash for 3 seconds indicating successful calibration



Image: Illustration of the MF-X51 display after powering on, showing pH and temperature readings.

- Immersion:** Immerse the test pen electrode into the solution to be tested. The solution level should not exceed the immersion line. Stir gently and wait briefly until the reading stabilizes, then record the value.
- Switching Temperature Units:** Press and hold the **HOLD/TEMP** button to switch between temperature mode and read temperature value in Celsius or Fahrenheit.
- Switching Measurement Modes:** Press the **MODE/CAL** button to switch between pH, EC, TDS, and SALT modes.

# TDS Reference Range

Dissolved solids content per liter (mg/L)



0-20	High purity ideal drinking water
20-50	Moderate purity boil before drinking
50-100	Mineral water drinkable after treatment
100-200	Hard water requires softening
200-400	May cause scaling acceptable for daily use
400-500	Poor quality unpleasant taste
500+	High pollution health risk

Image: Chart showing the TDS reference range and corresponding water quality interpretations.

# PH LEVEL 0-14.00pH



Image: Chart illustrating the pH level scale from 0-14.00pH, indicating acidity and alkalinity.

# TEMP Range (0-60°C/32-140°F)

## Automatic Temperature Compensation

Temperature affects measurement accuracy, especially for high-precision requirements.

Auto heating

25°C

Auto cooling

Temperature too low   Proper temperature   Temperature too high

Image: Diagram explaining the automatic temperature compensation feature of the MF-X51, which ensures accuracy across different temperatures.

## 5. CALIBRATION

Regular calibration ensures the accuracy of your MF-X51 tester. pH calibration is crucial and powder is provided.

### pH Calibration:

1. Prepare the pH buffer solutions using the provided powders (pH 4.00, pH 6.86, pH 9.18) according to their instructions.
2. Immerse the electrode in the first pH buffer solution (e.g., pH 6.86).
3. Press and hold the **MODE/CAL** button for 3 seconds. The screen will flash for 3 seconds indicating successful calibration.
4. Rinse the electrode with distilled water and dry it gently.
5. Repeat the process for other pH buffer solutions (e.g., pH 4.00 and pH 9.18) as needed for higher accuracy across the range.

## Instructions



Gently rotate to open the protective cap, press the ON/OFF button to power on, the screen will display pH/Temp



Immerse the test pen electrode into the solution to be tested (the solution level should not exceed the immersion line), stir gently and wait briefly until the reading stabilizes, then record the value



Press and hold HOLD/TEMP to switch to temperature mode and read temperature value



Press MODE/CAL button to switch between pH/EC/TDS/SALT modes



Press and hold CAL button for calibration: immerse in 4.00/6.86/9.18 pH standard solution, hold CAL button for 3 seconds, the screen will flash for 3 seconds indicating successful calibration



Image: Visual guide for the pH calibration process, showing the display after successful calibration at pH 4.00, 6.86, and 9.18.

## 6. MAINTENANCE

- **Electrode Cleaning:** After each use, rinse the electrode thoroughly with distilled water to prevent contamination and ensure accurate readings.
- **Storage:** Always replace the protective cap after use. Store the tester in a cool, dry place. Do not store the electrode dry; keep it moist with a few drops of storage solution or distilled water in the cap.
- **Battery Replacement:** Replace batteries when the display becomes dim or the device fails to power on.
- **Automatic Shut-off:** The device features an energy-saving function that automatically shuts off after 5 minutes of inactivity.

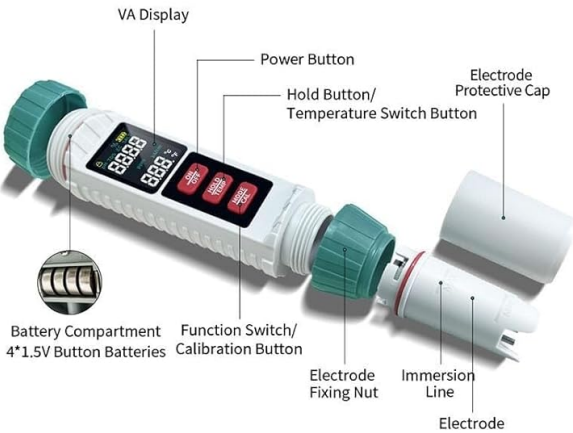
## 7. TROUBLESHOOTING

Problem	Possible Cause	Solution
Inaccurate readings	Electrode is dirty or dry; Calibration is needed; Battery low.	Clean the electrode; Perform calibration; Replace batteries.
Device does not power on	Batteries are dead or incorrectly installed.	Check battery polarity; Replace batteries.
Display is dim	Low battery.	Replace batteries.
Readings fluctuate excessively	Insufficient immersion; Air bubbles on electrode; Contaminated sample.	Ensure proper immersion; Gently tap to remove bubbles; Use a clean sample.

## 8. SPECIFICATIONS

APPLICABLE SCENARIOS ...

### Product Specifications



Model: <b>MF-X51</b>	Net Weight: <b>109g</b>
Measurement Range: <b>EC/TDS/SALT/PH /TEMP</b>	Waterproof Rating: <b>Ip67</b>
Accuracy: <b>±2%F.S.</b>	Operating Temperature: <b>0°C-60°C/32-140°F</b>
Battery: <b>1.5V*4(LR44)</b>	Dimensions: <b>Φ40*118.25mm</b>

\*Dimensions may vary by 2-3mm, please refer to the actual item

Image: Detailed diagram of the MF-X51 highlighting its components and key specifications.

Parameter	Value
Model	MF-X51
pH Range	0-14.00 pH
EC Range	0-10000 $\mu$ S/cm, 10-400 mS/cm (Effective range 1-200 mS/cm)
TDS Range	0-10000 ppm, 10-200 ppt (Effective range 1-100 ppt)
Salinity Range	0-10000 ppm, 10-200 ppt (0.1%-25%)
Temperature Range	0-60°C / 32-140°F
Accuracy	$\pm$ 2% F.S.
Waterproof Rating	IP67
Display	VA screen
Battery	4 x 1.5V LR44 button cells
Auto Sleep	5 minutes
Net Weight	109g
Dimensions	$\Phi$ 40*118.25mm

## 9. WARRANTY AND SUPPORT

For warranty information and technical support, please refer to the contact details provided by your retailer or visit the official EOQIFJM website. Keep your purchase receipt as proof of purchase.