

## GAIN EXPRESS WQM-397

# GAIN EXPRESS WQM-397 5-in-1 Water Quality Tester

## Instruction Manual

### 1. INTRODUCTION

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This manual provides detailed instructions for the GAIN EXPRESS WQM-397 5-in-1 Water Quality Tester. This device is designed for accurate measurement of pH, Total Dissolved Solids (TDS), Salinity, Specific Gravity (S.G), and Temperature. It features online monitoring via the Tuya Smart app and is suitable for various applications including aquariums, hydroponics, pools, and aquaculture.

### 2. PRODUCT FEATURES

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- **Multifunctional Measurement:** Measures pH, TDS, Salinity, Specific Gravity (S.G), and Temperature.
- **APP Remote Control (Tuya Smart):** Monitor and manage measurements conveniently from your smartphone or other smart devices.
- **Wide Range of Applications:** Ideal for aquariums, hydroponics, laboratories, spas, swimming pools, and other water quality testing programs.
- **Alarm Function:** Set safety ranges for each parameter via the app. Receive notification alerts on your smartphone if test results fall outside the defined limits.
- **Compact Design:** The device measures 100 x 75 x 22 mm and weighs approximately 120 grams, enhancing portability and practicality.

### 3. PACKAGE CONTENTS

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Verify that all items are present in the package before proceeding with setup.

- 1 x GAIN EXPRESS WQM-397 5-in-1 Water Quality Tester

- 1 x pH Electrode
- 1 x EC/TDS/Salinity/S.G Electrode
- 1 x Power Adapter
- 1 x Accessory Pack (including pH buffer powders for calibration, suction cups, screws)
- 1 x User Manual



Image 3.1: Contents of the GAIN EXPRESS WQM-397 package, including the main unit, electrodes, power adapter, and calibration powders.

## 4. PRODUCT OVERVIEW

Familiarize yourself with the components and controls of the WQM-397 tester.



Image 4.1: Labeled diagram showing the main unit, LCD screen, Power/WiFi button, Mode button, Temp/Calibration button, Charging port, pH electrode, and EC electrode.

- **LCD Screen:** Displays measurement readings and status.
- **Power/WiFi Button:** Turns the device on/off and controls WiFi connectivity.
- **Mode Button:** Cycles through different measurement parameters (pH, TDS, Salinity, S.G, Temperature).
- **Temp/Calibration Button:** Used for temperature unit selection and calibration procedures.
- **Charging Port:** For connecting the power adapter.
- **pH Electrode:** Sensor for pH measurement.
- **EC Electrode:** Sensor for TDS, Salinity, and Specific Gravity measurements.

## 5. SETUP

### 5.1 Initial Device Setup

1. **Connect Electrodes:** Carefully connect the pH electrode and the EC electrode to their respective ports on the main unit. Ensure connections are secure.
2. **Power On:** Connect the power adapter to the charging port and a power outlet. Press the Power/WiFi

button to turn on the device.

3. **Placement:** Use the provided suction cups or screws to mount the main unit in a suitable location, ensuring the electrodes can be submerged in the water to be tested.

## 5.2 App Installation and Connection (Tuya Smart)

1. **Download App:** Download the "Tuya Smart" app from your smartphone's app store (available for iOS and Android).
2. **Register/Login:** Open the app and register a new account or log in with an existing one.
3. **Add Device:** In the Tuya Smart app, tap the "+" icon to add a new device. Follow the on-screen instructions to connect the WQM-397 tester to your home WiFi network. Ensure your device's WiFi indicator is blinking, indicating pairing mode.
4. **Confirmation:** Once connected, the device will appear in your Tuya Smart app, allowing you to monitor readings remotely.



Image 5.1: Overview of the Tuya Smart app interface, displaying various water quality parameters and settings.



Image 5.2: Illustration of mobile application monitoring, showing real-time data and compatibility with iOS and Android.

## 6. OPERATING INSTRUCTIONS

## 6.1 Taking Measurements

1. **Submerge Electrodes:** Ensure both the pH and EC electrodes are fully submerged in the water sample you wish to test.
2. **Select Mode:** Press the 'MODE' button on the device to cycle through the different measurement parameters (pH, TDS, Salinity, S.G, Temperature). The selected parameter will be displayed on the LCD screen.
3. **Readings:** Allow a few moments for the readings to stabilize on the LCD screen. The current readings will also be updated in the Tuya Smart app.



Image 6.1: Example of pH measurement, showing the device displaying a pH value and temperature, with a pH scale for reference.

# APP INTERFACE



Image 6.2: Example of TDS measurement, illustrating the device displaying a TDS value and temperature, with a chart indicating TDS levels.



Image 6.3: Examples of Salinity and Specific Gravity (S.G) measurements, showing the device displaying respective values and temperatures in different aquatic environments.

## 6.2 Alarm Function

The alarm function allows you to set custom safety ranges for each parameter (pH, TDS, Salinity, S.G, Temperature) directly within the Tuya Smart app. If any measured value falls below the lower limit or exceeds the upper limit, the app will send a notification alert to your smartphone.

## 6.3 Data Export

The Tuya Smart app supports exporting measurement data, typically in Excel format, for further analysis and record-keeping. Refer to the app's specific settings for data export options.

## 7. CALIBRATION

Regular calibration ensures the accuracy of your water quality tester. The WQM-397 supports easy calibration using standard buffer solutions.

1. **Prepare Buffer Solutions:** Use the provided pH buffer powders (pH 4.00, pH 6.86, pH 9.18) to prepare standard calibration solutions according to their instructions.

2. **pH Calibration:** Submerge the pH electrode into the first pH buffer solution (e.g., pH 6.86). Press and hold the 'TEMP/CAL' button until the calibration mode is activated. Follow the on-screen prompts or app instructions to complete the calibration for that point. Repeat for other pH buffer solutions as needed.
3. **TDS/Salinity/S.G Calibration:** Refer to the detailed instructions in the Tuya Smart app or the device's specific manual section for EC/TDS/Salinity/S.G calibration, as this may require specific standard solutions.
4. **Rinse Electrodes:** Always rinse electrodes thoroughly with distilled water between different buffer solutions and after calibration.

## 8. MAINTENANCE

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### 8.1 Electrode Care

- **Rinsing:** Always rinse the electrodes with distilled or deionized water before and after each use to prevent contamination.
- **Storage:** Store pH electrodes in a suitable electrode storage solution or a pH 4 buffer solution when not in use. Do not store dry. EC electrodes can typically be stored dry after rinsing.
- **Cleaning:** If electrodes become dirty or readings become unstable, clean them gently according to the manufacturer's recommendations (e.g., soaking in a mild cleaning solution).
- **Replacement:** Electrodes have a limited lifespan and may need replacement over time to maintain accuracy.

### 8.2 Device Cleaning

Wipe the main unit with a soft, damp cloth. Do not use abrasive cleaners or submerge the main unit in water.

## 9. TROUBLESHOOTING

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- **Inaccurate Readings:**
  - Ensure electrodes are clean and properly submerged.
  - Perform calibration with fresh buffer solutions.
  - Check electrode lifespan; replace if necessary.
- **Device Not Powering On:**
  - Verify power adapter connection and power outlet functionality.
- **WiFi Connection Issues:**
  - Ensure the device is within range of your WiFi router.
  - Check if the WiFi indicator on the device is blinking for pairing mode.
  - Restart the device and your router.
  - Confirm correct WiFi password entry in the Tuya Smart app.
- **App Not Displaying Data:**
  - Ensure the device is connected to WiFi and linked in the Tuya Smart app.
  - Check your internet connection on your smartphone.
  - Restart the app.

## 10. SPECIFICATIONS

Detailed technical specifications for the GAIN EXPRESS WQM-397 Water Quality Tester.

	PLAGE DE MESURE	RÉSOLUTION	PRÉCISION
pH:	0~14pH	0.01pH	±0.1pH
TDS:	0~19900ppm (0~199.0ppt)	1ppm (<1999ppm); 10ppm (>1999ppm)	±2%F.S
Salinity:	0~199.0ppt	1ppm (<1999ppm); 10ppm (>1999ppm)	±2%F.S
S.G:	0.990~1.400	0.001	
Temperature:	0~50°C (32~122°F)	0.1°C (0.2°F)	±1.0°C
Compensation de température:	0~50°C		
Température de fonctionnement:	0~50°C		
Dimensions:	100 x 75 x 22mm		




Image 10.1: Detailed specifications table for the 5-in-1 water quality tester.

Parameter	Measurement Range	Resolution	Accuracy
pH	0.00 ~ 14.00 pH	0.01 pH	±0.1 pH
TDS	0 ~ 19900 ppm (0 ~ 199.0 ppt)	1 ppm (<1999ppm); 10 ppm (>1999ppm)	±2% F.S
Salinity	0 ~ 199.0 ppt	1 ppm (<1999ppm); 10 ppm (>1999ppm)	±2% F.S
S.G	0.990 ~ 1.400	0.001	
Temperature	0°C ~ 50°C (32°F ~ 122°F)	0.1°C (0.2°F)	±1.0°C
Temperature Compensation	0°C ~ 50°C		
Operating Temperature	0°C ~ 50°C		
Dimensions	100 x 75 x 22 mm		

- **Manufacturer:** Gain Express Holdings Ltd.
- **Product Reference:** WQM-397
- **Product Dimensions (L x W x H):** 15.6 x 18.4 x 6.4 cm; 490 grams (packaged)
- **Batteries Included:** No
- **Batteries Required:** No (operates via power adapter)
- **Country of Origin:** China

## 11. WARRANTY AND SUPPORT

Information regarding product warranty and dedicated customer support channels was not provided in the product details. Please refer to your purchase documentation or contact the retailer for specific warranty terms and support options.

**Spare Parts Availability:** Information regarding the availability of spare parts is currently unavailable.

## 12. APPLICATIONS

The GAIN EXPRESS WQM-397 Water Quality Tester is suitable for a wide range of applications:



Image 12.1: Visual representation of various applications including Hydroponics, Industrial Sewage, Swimming Pools, Aquaculture, Tap Water, and Laboratories.

- **Hydroponics:** Monitoring nutrient solutions for optimal plant growth.
- **Aquariums:** Maintaining healthy aquatic environments for fish and plants.
- **Swimming Pools & Spas:** Ensuring water safety and quality.
- **Aquaculture:** Managing water parameters for fish farming.
- **Laboratories:** General water quality analysis.
- **Industrial Sewage:** Basic monitoring of wastewater.
- **Tap Water:** Checking the quality of drinking water.

