Garosa Water Conductivity Sensor Module

Garosa Water Conductivity Sensor Instruction Manual

Model: Water Conductivity Sensor Module

Brand: Garosa

1. Introduction

This manual provides detailed instructions for the Garosa Water Conductivity Sensor, designed for accurate liquid quality monitoring. This sensor is suitable for various applications, including domestic water quality testing and hydroponics systems. It measures the Total Dissolved Solids (TDS) value, which indicates the cleanliness of water.

Image: The Garosa Water Conductivity Sensor, showing the main module board connected to the waterproof probe and a separate wire harness.

2. Product Features

- **Water Quality Testing:** Designed for general household water quality measurement and hydroponics, reflecting water cleanliness through TDS values. Tap water typically measures within 100 ppm, while purified water is usually within 10 ppm.
- **Data Transmission:** Unlike standard TDS pens, this sensor can transmit data to a control system, enabling long-term online monitoring and water quality analysis.
- **Wide Voltage Compatibility:** Operates with a power supply voltage of 3.3-5.5V and provides an analog output of 0-2.3V, making it compatible with both 5V and 3.3V control systems.
- **Waterproof Probe:** Features an AC excitation source for measurement, which prevents probe polarization, extends probe life, and enhances signal stability. The probe and its wire are waterproof and can be fully immersed.
- **Easy Integration:** Designed for plug-and-play functionality, simplifying integration into existing control systems.

Image: The sensor module and its waterproof probe displayed on a flat surface, highlighting its compact design.

3. Specifications

Parameter	Value
Input Voltage	DC 3.3~5.5V
Output Signal	0~2.3V (Analog)
Working Current	3~6mA
Measurement Range	0~1000ppm (Parts Per Million)
Measurement Accuracy	±10% F.S. (Full Scale) at 25°C
Module Size	Approx. 42 x 32mm (1.7 x 1.3in)
Module Interface	XH2.54-3P
Electrode Interface	XH2.54-2P
Overall Length (Probe + Cable)	Approx. 83cm (32.7in)
Item Weight	45 Grams (1.59 ounces)

Image: The sensor module and probe laid out to illustrate the total length of the cable and probe assembly, approximately 83cm.

4. Setup

The Garosa Water Conductivity Sensor is designed for straightforward integration. Follow these steps to set up your sensor:

1. **Connect the Probe:** Connect the waterproof probe to the signal adapter board using the XH2.54-2P electrode interface.
2. **Connect to Control System:** Connect the signal adapter board to your control system (e.g., Arduino, Raspberry Pi) via the XH2.54-3P module interface. Ensure your control system provides a DC 3.3-5.5V input voltage.
3. **Power On:** Once connected, power on your control system. The sensor will begin to operate.

The sensor is plug-and-play, meaning it requires minimal configuration once physically connected. Refer to your control system's documentation for specific analog input reading procedures.

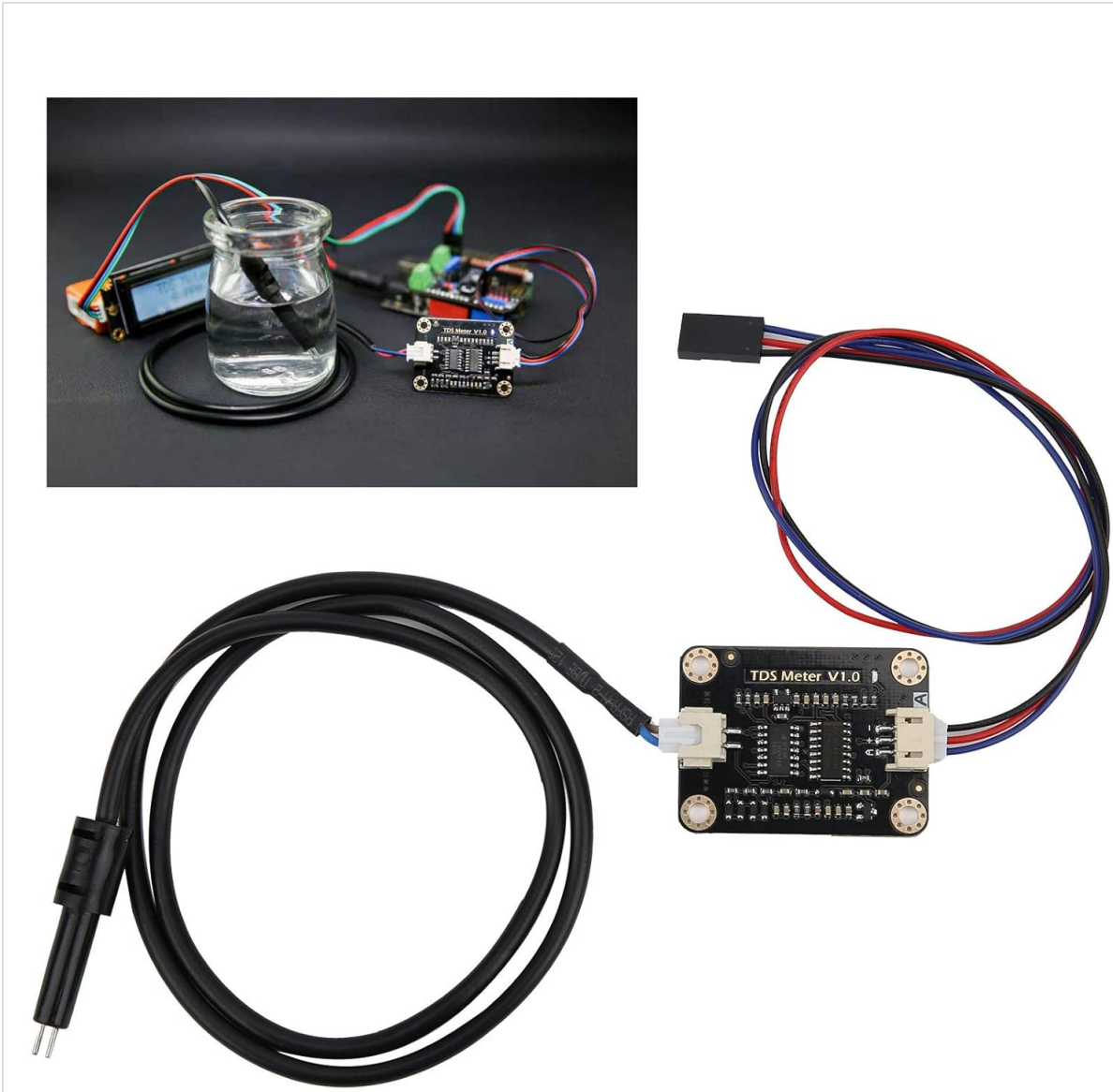

Image: The sensor module connected to a development board, with the probe immersed in a glass of water, demonstrating a typical setup for water quality measurement.

5. Operating Instructions

Once the sensor is set up, you can begin monitoring water quality. The sensor outputs an analog signal (0-2.3V) corresponding to the TDS value (0-1000ppm).

1. **Immerse the Probe:** Carefully immerse the waterproof probe into the liquid you wish to test. Ensure the probe head and wire are fully submerged, but keep the connection interface and signal adapter board dry.
2. **Read Data:** Your connected control system will read the analog output signal from the sensor. This signal can then be converted into a TDS value using appropriate calibration or conversion formulas provided by your control system's programming.
3. **Interpret Results:**
    - TDS values for typical tap water are generally below 100 ppm.
    - Purified water typically has TDS values below 10 ppm.
    - Higher TDS values indicate a greater concentration of dissolved solids, suggesting lower water purity.

The sensor uses an AC excitation source for measurement, which helps prevent probe polarization and ensures stable, accurate readings over time.

Image: A person in protective gear collecting a water sample from a natural environment, illustrating the application of water quality testing.

Image: The sensor module and probe positioned near an aquarium, demonstrating its potential use in monitoring water quality for aquatic environments.

6. Maintenance

Proper maintenance ensures the longevity and accuracy of your Garosa Water Conductivity Sensor.

- **Probe Cleaning:** Regularly clean the probe to remove any buildup or residue that may affect readings. Use distilled water or a mild cleaning solution recommended for conductivity probes.
- **Temperature Limitations:** Do not use the TDS probe in water above 55°C (131°F), as this can damage the sensor and affect accuracy.
- **Placement:** When taking measurements, ensure the probe is not placed too close to the edge of the container, as this can influence the accuracy of the display.
- **Waterproofing:** While the probe head and wire are waterproof, the connection interface and the signal adapter board are **not** waterproof. Always ensure these components remain dry to prevent damage.
- **Storage:** Store the sensor in a clean, dry environment when not in use.

Image: A detailed view of the waterproof probe tip, emphasizing its design for immersion in liquids.

7. Troubleshooting

If you encounter issues with your Garosa Water Conductivity Sensor, consider the following:

- **No Reading or Inaccurate Readings:**
  - Check all connections to ensure they are secure and correctly wired.
  - Verify that the input voltage to the signal adapter board is within the specified range (DC 3.3~5.5V).
  - Ensure the probe is clean and free of any residue.
  - Confirm the water temperature is below 55°C.
  - Ensure the probe is not too close to the container's edge.
- **Sensor Not Responding (DOA):**
  - If the board appears to be "Dead On Arrival" (DOA), double-check power connections and ensure the control system is functioning correctly.
  - Test with a different power source or control system if possible to isolate the issue.
- **Misinterpretation of "Conductivity Sensor":**

- Note that while the product is listed as a "Conductivity Sensor," it specifically measures Total Dissolved Solids (TDS), which is related to conductivity but is not an EC (Electrical Conductivity) meter. The output is a TDS value in ppm.

8. Safety Information

Observe the following safety precautions:

- Do not expose the signal adapter board or connection interfaces to water or excessive moisture.
- Ensure proper electrical connections to avoid short circuits or damage to the sensor or control system.
- Keep the device out of reach of children.
- Do not attempt to modify or disassemble the sensor beyond what is described in this manual.

9. Warranty and Support

Specific warranty details for the Garosa Water Conductivity Sensor are not provided in this manual. For warranty claims, technical support, or further inquiries, please refer to the product packaging or contact Garosa customer service directly through their official channels or the retailer from whom the product was purchased.

You may also visit the Garosa Store on Amazon for more information and contact options.