

ASHATA ASHATAxow87hr60q

ASHATA Analog TDS Water Quality Detection Sensor User Manual

Model: ASHATAxow87hr60q

1. INTRODUCTION

This manual provides essential information for the proper installation, operation, and maintenance of your ASHATA Analog TDS Water Quality Detection Sensor. Please read this manual thoroughly before using the product to ensure optimal performance and longevity.

Understanding TDS: TDS stands for Total Dissolved Solids. It represents the concentration of dissolved solid particles in a given volume of water, expressed in milligrams per liter (mg/L) or parts per million (ppm). Generally, a higher TDS value indicates a greater amount of dissolved substances in the water, which can correlate with lower water cleanliness. This sensor is designed to help you monitor water quality by measuring its TDS value.

2. PRODUCT FEATURES

- **Plug and Play Design:** The TDS probe is engineered for continuous immersion in water and offers straightforward plug-and-play functionality for ease of use.
- **Wide Compatibility:** Supports a broad power supply voltage range of 3.3V to 5.5V and provides a 0V to 2.3V analog signal output, ensuring compatibility with both 5V and 3.3V control systems (e.g., Arduino).
- **Stable Measurement:** Utilizes an AC signal for excitation during measurement. This method effectively prevents probe polarization, extends the lifespan of the probe, and enhances the stability of the output signal.
- **Versatile Application:** Ideal for water quality testing in various environments, including domestic water systems and hydroponic setups.

3. SPECIFICATIONS

Parameter	Value
-----------	-------

Parameter	Value
Input Voltage	3.3V ~ 5.5V
Output Signal	0V ~ 2.3V (Analog)
Working Current	3mA ~ 6mA
TDS Measurement Range	0 ~ 1000ppm
TDS Measurement Accuracy	±10% F.S. (at 25°C)
Signal Adapter Board Size	Approx. 42 x 32mm (1.7 x 1.3 inches)
Module Interface	XH2.54-3P
Electrode Interface	XH2.54-2P
TDS Probe Length	60 cm (23.62 inches)
Analog Sensor Line Length	20 cm (7.87 inches)
Item Weight	0.704 ounces
Product Dimensions	0.39 x 0.39 x 0.39 inches

4. SETUP

Follow these steps to set up your ASHATA Analog TDS Water Quality Detection Sensor:

- 1. Connect the TDS Probe:** Connect the waterproof TDS probe to the signal adapter board using the XH2.54-2P interface. Ensure a firm connection.
- 2. Connect to Control System:** Connect the signal adapter board to your chosen control system (e.g., Arduino, Raspberry Pi) via the XH2.54-3P interface. Ensure the wiring for power (VCC), ground (GND), and analog output (AOUT) is correct according to your control system's pinout.
- 3. Power Supply:** Verify that your control system provides a stable power supply voltage within the specified range of 3.3V to 5.5V to the sensor module.
- 4. Immerse Probe:** Carefully immerse the TDS probe into the water you intend to test. Ensure the probe's electrodes are fully submerged and free from air bubbles for accurate readings.

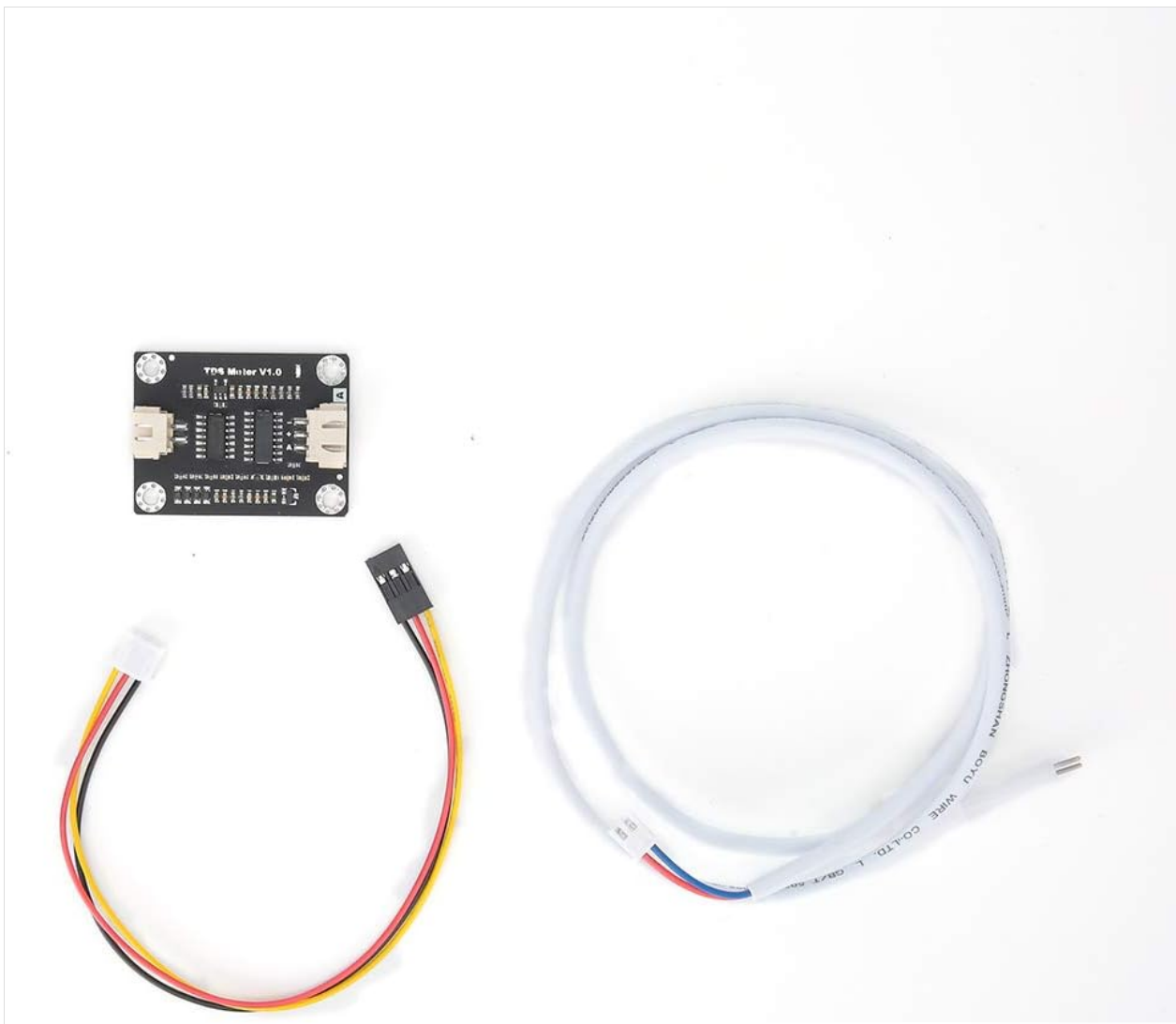


Image: The ASHATA TDS sensor board with its connected cables, illustrating the setup for integration with a control system.



Image: Close-up view of the connection cables for the ASHATA TDS sensor, showing the XH2.54-3P and XH2.54-2P connectors.

5. OPERATING INSTRUCTIONS

Once the sensor is properly set up and powered, it will begin to measure the TDS value of the water. Here's how to interpret and utilize the sensor's output:

1. **Analog Output:** The sensor provides an analog voltage output ranging from 0V to 2.3V. This voltage is proportional to the TDS value of the water.
2. **Data Conversion:** Your control system will need to read this analog voltage using an Analog-to-Digital Converter (ADC). A specific conversion formula or calibration process will then be required to translate the raw analog readings into meaningful TDS values in ppm. Refer to your control system's documentation or online resources for TDS sensor calibration examples.
3. **Stable Readings:** The sensor's use of an AC signal for excitation helps maintain stable readings and prevents the degradation of the probe electrodes over time.
4. **Real-time Monitoring:** With proper programming, you can achieve long-term online monitoring and analysis of water quality, allowing you to track changes in TDS values over time.

Plug and play

Easy to use, Waterproof TDS probe, 3.3~5.5V wide supply voltage and 0~2.3V analog signal output, Compatible with 5V, 3.3V control system.

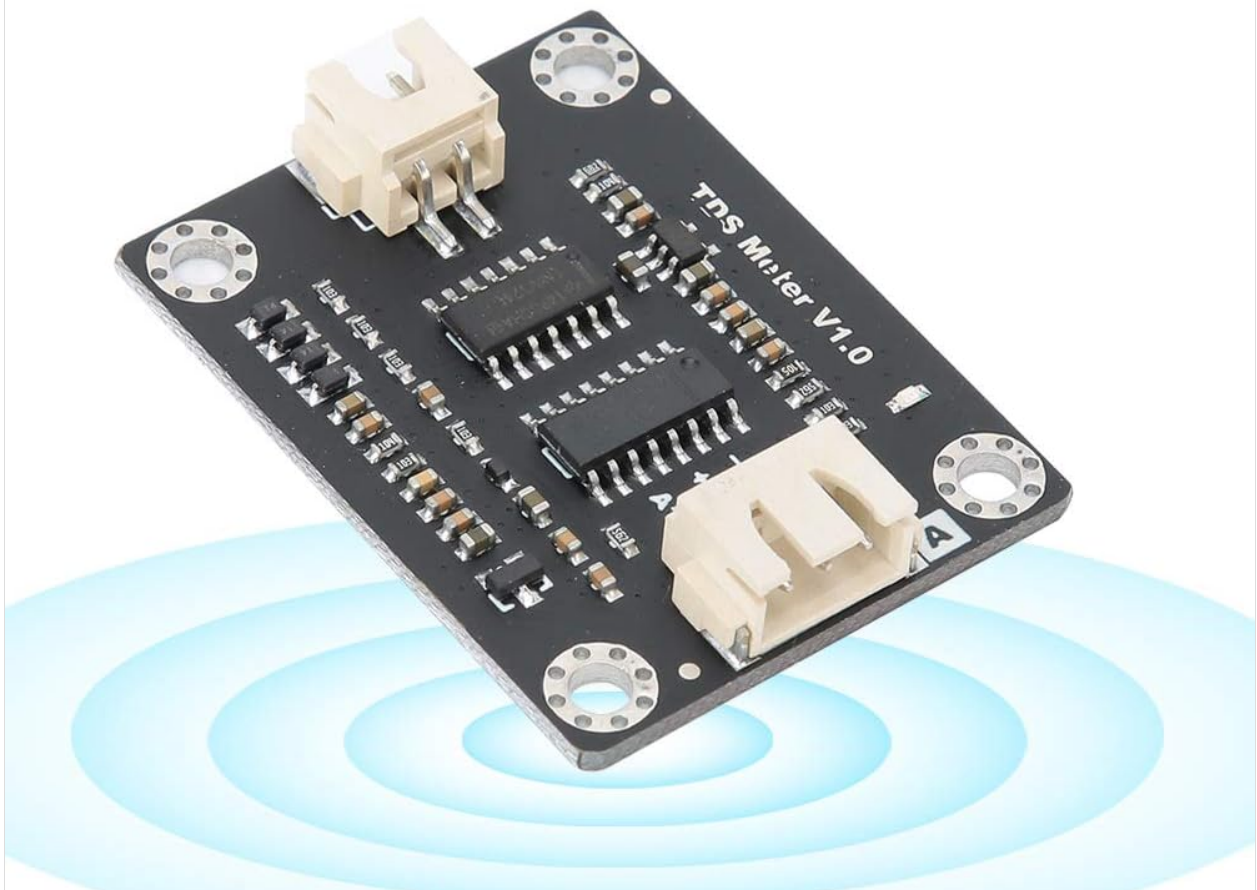


Image: Top view of the ASHATA TDS Meter V1.0 board, showing the main components and connectors for operation.

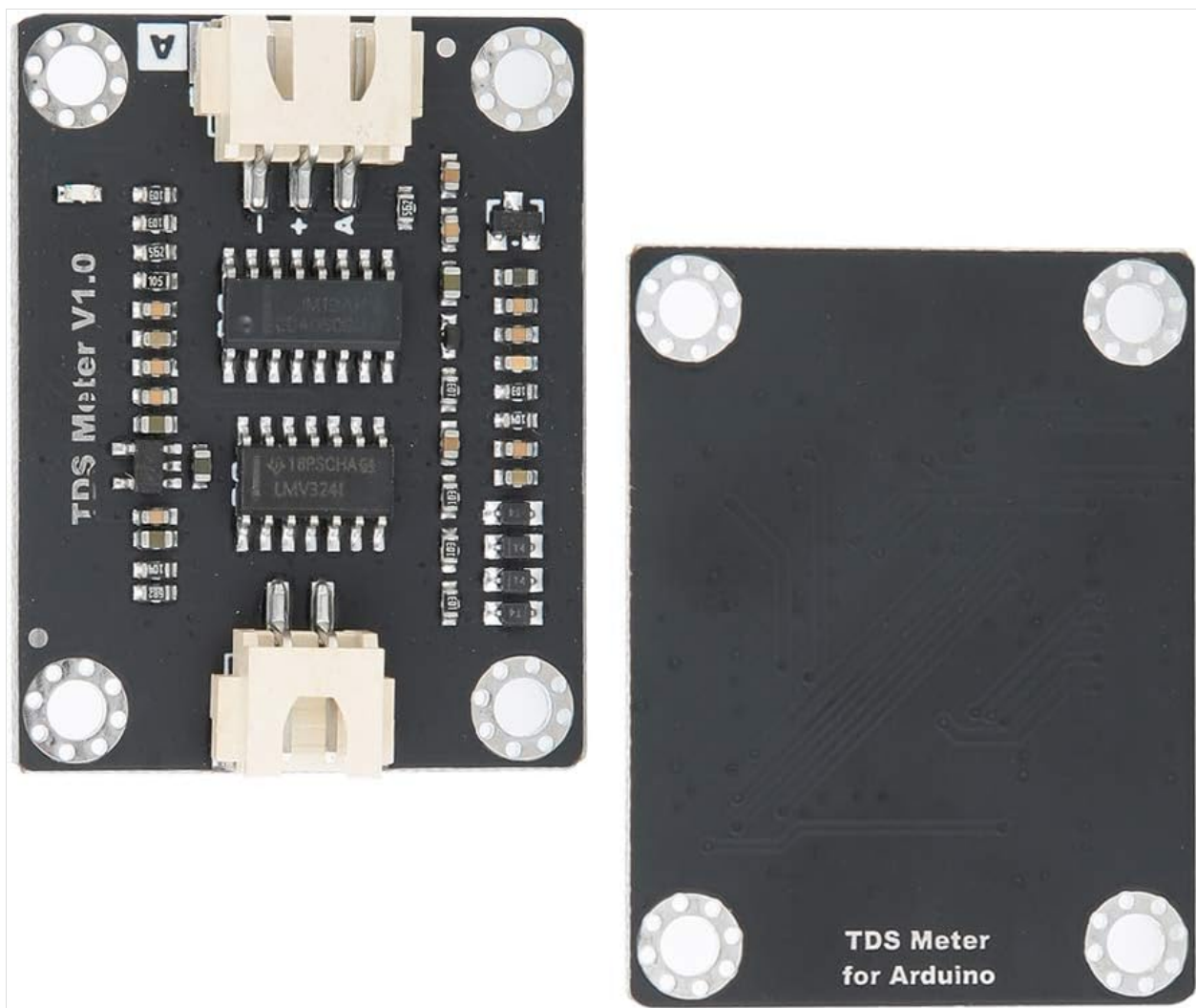


Image: Top and bottom views of the ASHATA TDS Meter V1.0 board, highlighting its compact design and internal circuitry.

6. MAINTENANCE

Proper maintenance ensures the accuracy and extends the lifespan of your TDS sensor:

- **Regular Inspection:** Periodically inspect the TDS probe for any visible physical damage, corrosion, or accumulation of deposits on the electrodes.
- **Cleaning the Probe:** If deposits are observed, gently clean the probe electrodes. Rinse the probe thoroughly with distilled water. Avoid using abrasive materials or harsh chemicals, as these can damage the electrodes.
- **Storage:** When the sensor is not in use for an extended period, ensure the probe is clean and dry. Store the entire unit in a clean, dry environment away from extreme temperatures and direct sunlight.
- **Preventing Polarization:** While the sensor's AC signal measurement design inherently reduces probe polarization, consistent cleaning and proper usage contribute to its long-term stability.

7. TROUBLESHOOTING

If you encounter issues with your ASHATA Analog TDS Water Quality Detection Sensor, refer to the following troubleshooting guide:

- **No Reading or Inaccurate Readings:**
 - **Check Connections:** Ensure all cable connections between the probe, adapter board, and control system are secure and correctly wired.

- **Verify Power Supply:** Confirm that the sensor module is receiving power within the specified 3.3V to 5.5V range.
 - **Probe Submersion:** Make sure the TDS probe electrodes are fully submerged in the water and that there are no air bubbles trapped around them.
 - **Clean Probe:** Refer to the Maintenance section and clean the probe electrodes to remove any potential buildup that might interfere with readings.
 - **Software/Code Check:** Review your control system's code to ensure the analog input pin is correctly configured and the conversion formula from voltage to TDS (ppm) is accurate.
 - **Calibration:** If possible, test the sensor with water of a known TDS value to verify its calibration.
- **Probe Polarization Concerns:**
 - The sensor is designed with an AC signal excitation to minimize polarization. If you suspect polarization issues, ensure the sensor is correctly wired and operating within its specified parameters. Regular cleaning also helps prevent this.

8. WARRANTY AND SUPPORT

ASHATA is committed to providing high-quality products. We maintain strict quality control standards to ensure your satisfaction.

Customer Support: If you have any questions, concerns, or encounter any issues with your ASHATA Analog TDS Water Quality Detection Sensor, please do not hesitate to contact ASHATA customer support. Our team is ready to assist you and ensure you have a satisfactory experience with our product.

Please refer to your purchase documentation or the ASHATA official website for specific warranty terms and contact information.