TDS Sensor Meter V1.0 Board Module – Accurate Water Quality Measurement for Arduino & ESP Projects

The **TDS Sensor Meter V1.0 Board Module** is an essential tool for measuring **Total Dissolved Solids (TDS)** in water, making it a perfect solution for **water quality monitoring** in both hobby and professional applications. Whether you're building a smart **IoT water purifier**, testing the **purity of drinking water**, or monitoring **hydroponics and aquaponics systems**, this sensor delivers precise and reliable readings that help you understand the true quality of your water.

[caption id="attachment_108520" align="aligncenter" width="376"]

TDS Sensor Meter V1.0 Board Module (Measuring Water Quality)[/caption]

What is TDS and Why It Matters

TDS (Total Dissolved Solids) represents the total amount of dissolved substances in water, such as minerals, salts, and metals. A high TDS level usually indicates impure water, while a lower TDS value suggests cleaner, purer water. Monitoring TDS is crucial for ensuring **safe drinking water**, maintaining **optimal plant growth** in hydroponics, and improving the **performance of filtration systems**.

The **TDS Sensor Meter V1.0** converts the electrical conductivity (EC) of water into a readable TDS value, allowing you to easily evaluate the purity of your water with your **Arduino, ESP32, or Raspberry Pi**.

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TDS Sensor Meter V1.0 Board Module (Measuring Water Quality)[/caption]

Key Features

🔷 **High Accuracy and Stability:**
Built with a high-quality analog TDS probe and signal conditioning circuit to ensure accurate and stable measurements across different water samples.

🔷 **Wide Measurement Range:**
Capable of detecting TDS values from **0 to 1000 ppm**, making it suitable for a wide range of applications—from tap water and well water to aquariums and laboratory testing.

🔷 **Analog Output Compatible:**
The sensor outputs an analog voltage that can be directly read by Arduino analog pins (A0–A5). It's easy to calibrate and integrate into any microcontroller-based system.

◆ **Easy Integration with Arduino & ESP Boards:**

Fully compatible with **Arduino UNO, Mega, ESP8266, ESP32, and other development boards**. The module comes with a 3-pin connector for quick connection and setup.

◆ **Corrosion-Resistant Probe:**

The included **stainless-steel TDS probe** ensures long-lasting durability, even with prolonged exposure to water, ensuring consistent readings over time.

◆ **Temperature Compensation Support:**

By adding a temperature sensor (like DS18B20), you can achieve **temperature-compensated readings**, improving accuracy in varying environmental conditions.

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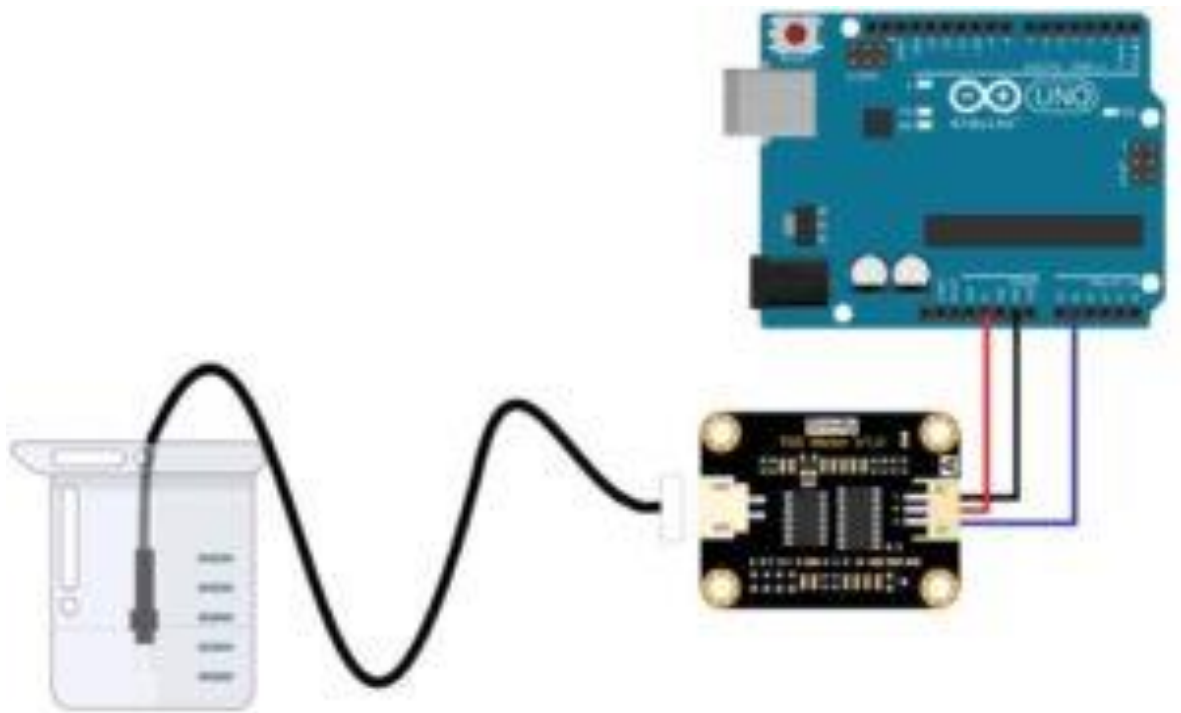
TDS Sensor Meter V1.0 Board Module (Measuring Water Quality)[/caption]

Technical Specifications

- **Module Name:** TDS Sensor Meter V1.0

- **Operating Voltage:** 3.3V – 5.5V

- **Output Signal:** Analog voltage (0 – 2.3V)

- **TDS Measurement Range:** 0 – 1000 ppm

- **Signal Type:** Analog

- **Compatible Boards:** Arduino, ESP8266, ESP32, Raspberry Pi, STM32

- **Probe Material:** Stainless steel (corrosion-resistant)

- **Cable Length:** ~60cm

- **Interface Type:** 3-pin connector (VCC, GND, AOUT)

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TDS Sensor Meter V1.0 Board Module (Measuring Water Quality)[/caption]

Applications

💧 **Water Quality Testing:**
Use it to measure the purity of **drinking water**, **tap water**, or **filtered water** to ensure it meets safe standards.

🌱 **Hydroponics & Aquaponics:**
Monitor the nutrient levels in your plant's water system. Maintaining the right TDS ensures plants receive the correct mineral balance for healthy growth.

🐠 **Aquarium Monitoring:**
Measure dissolved solids to keep fish and aquatic life in a balanced environment.

🏭 **Industrial & Laboratory Use:**
Useful for small-scale **industrial water testing**, **RO (reverse osmosis) system calibration**, and **educational lab experiments**.

🌊 **IoT Water Monitoring Projects:**
Ideal for smart systems that automatically track water quality and send data to online dashboards using **WiFi-enabled boards** like ESP8266 or ESP32.

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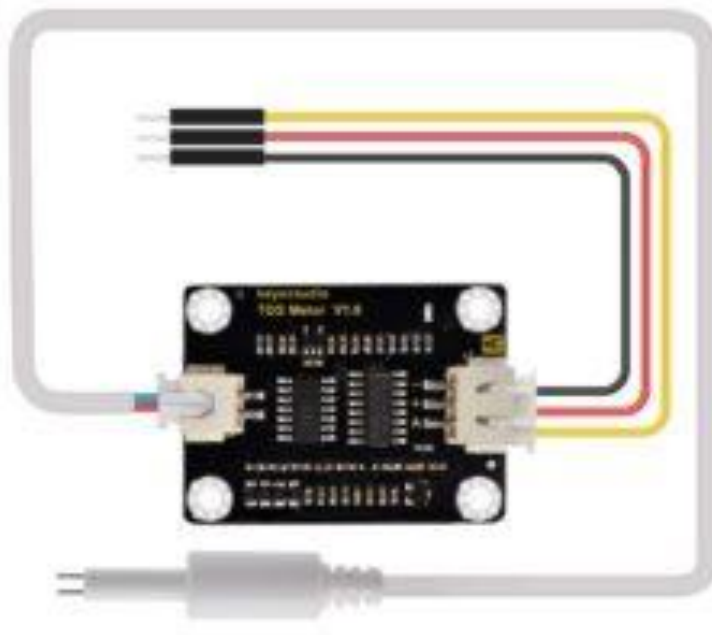
TDS Sensor Meter V1.0 Board Module (Measuring Water Quality)[/caption]

How It Works

The **TDS Sensor Meter V1.0** works by measuring the electrical conductivity (EC) of water and converting it into a readable TDS value. When connected to an **Arduino or microcontroller**, the module's analog output voltage changes according to the water's conductivity level. Using a simple code, you can easily convert this analog reading into parts per million (ppm) and display it on an **LCD, OLED screen, or web dashboard**.

Example Connection

- **VCC** → 5V (or 3.3V)

- **GND** → Ground

- **AOUT** → Analog input (e.g., A0 on Arduino)

Optional: Connect a **DS18B20 sensor** for temperature compensation to enhance reading accuracy.

Why Choose the TDS Sensor Meter V1.0

✔️ **Easy to use and integrate** – perfect for both beginners and professionals.

✔️ **Accurate readings** for a wide range of applications.

✔️ **Durable probe** design for long-term use.

✔️ **Compatible with multiple platforms** including Arduino, ESP, and Raspberry Pi.

✔️ **Ideal for IoT projects** focused on real-time water quality monitoring.

Conclusion

The **TDS Sensor Meter V1.0 Board Module** is a reliable and cost-effective solution for anyone interested in **monitoring water quality**. Its compatibility with popular microcontroller platforms, accuracy, and simplicity make it an excellent choice for **DIY electronics enthusiasts, IoT developers, and environmental engineers** alike.

From checking your home's water filter performance to maintaining perfect conditions in a hydroponic system, this sensor helps you **measure what matters — the purity of your water.**

[Sample Project](#)

Package Included:

- 1 X TDS circuit board

- 1 X Waterproof TDS probe

- 1 X Analog sensor line