Manuals+ — User Manuals Simplified.

CONRAD 2734647 Water Turbidity Test Sensor for Arduino User Manual

Contents

CONRAD

CONRAD 2734647 Water Turbidity Test Sensor for Arduino

Product Information

The Water Turbidity Test Sensor for Arduino is a sensor designed to measure the turbidity of water. It can be connected to an Arduino board and used to monitor the clarity of water in various applications.

Electrical Characteristic Curve:

The sensor's output voltage is inversely proportional to the turbidity value. The higher the turbidity value, the lower the output voltage. To convert the output voltage to turbidity units (NTU), the following formula can be used: 10-6 (PPM) = 1ppm = 1mg/L = 0.13NTU (empirical formula). For example, 3.5% turbidity is equivalent to 35000ppm, 35000mg/L, or 4550NTU.

Special Notice:

1. The top of the probe is not waterproof. Only the transparent part should be placed into water.
2. Pay attention to the power polarity when wiring to avoid damaging the sensor due to reversed connection.
3. The voltage should be DC5V. Be cautious of overvoltage to prevent burning the sensor.
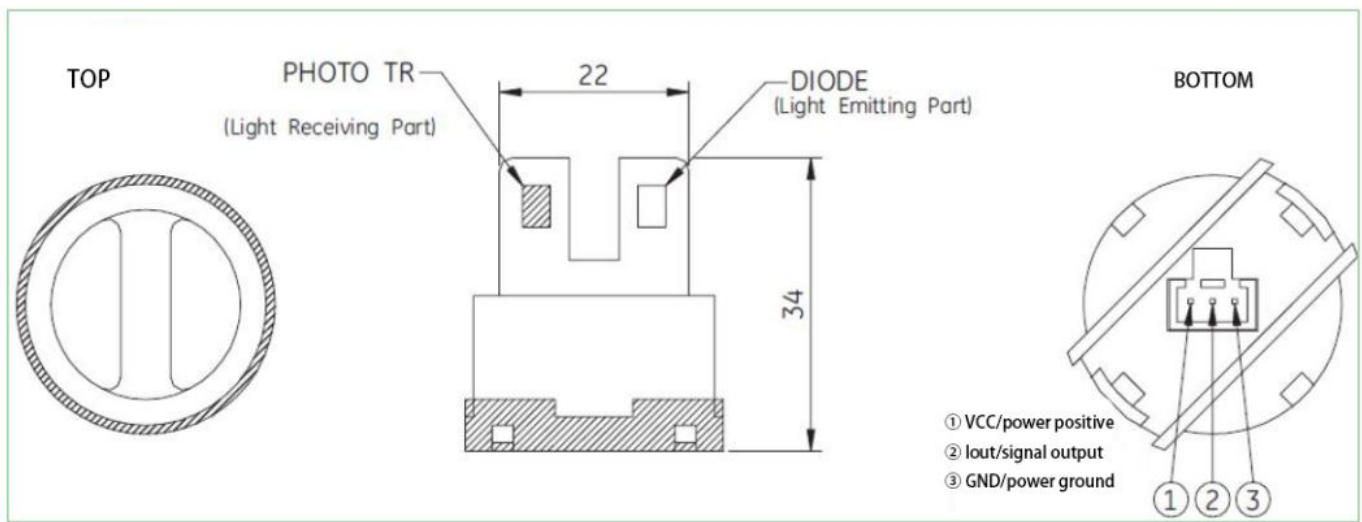
Product Usage Instructions

1. Connect the Water Turbidity Test Sensor to an Arduino board following the wiring instructions provided in the manual.
2. Upload the provided source code to the Arduino board.
3. Ensure that the probe's transparent part is submerged in water for accurate readings.
4. Power on the Arduino board and open the serial monitor on your computer.
5. The analog value read from analog pin A0 will be displayed in the serial monitor. This value corresponds to the voltage of the sensor's signal end.
6. Refer to the electrical characteristic curve to determine the turbidity degree of the water based on the voltage value.
7. Repeat the process for continuous monitoring and stability.

Description

The turbidity sensor detects water quality by measuring level of turbidity. The principle is to convert the current signal itself into the voltage output through the circuit. Its detection range is 0%-3.5% (0-4550NTU) , with an error range of ±05%F*S. When using, measure the voltage value of sensor's Signal end; then work out the water's turbidity by simple calculation formula. This turbidity sensor have both analog and digital signal output modes. The module has a slide switch. When slide the switch to A end, connect the signal end to analog port, can read the analog value to calculate the output voltage so as to get the turbidity degree of water. If slide to D end, connect signal end to digital port, can detect the water whether is turbidity by outputting HIGH or LOW level. You can turn the blue potentiometer on the sensor to adjust the sensitivity of sensor. Turbidity sensors can be used in measurement of water quality in rivers and streams, wastewater and effluent measurements, sediment transport research and laboratory measurements.
Note: the top of probe is not water-proof; can only place the transparent bottom part into water.

TOP — PHOTO TR (Light Receiving Part) | 22 | DIODE (Light Emitting Part) | **BOTTOM**

34

① VCC/power positive
② Iout/signal output
③ GND/power ground

① ② ③

Specification

- **Operating Voltage:** DC 5V
- **Operating Current:** about 11mA
- **Detection Range:** 0%–3.5%(0-4550NTU)
- **Operating Temperature:** -30℃~80℃
- **Storage Temperature:** -10℃~80℃
- **Error Range:** ±0.5%F*S
- **Weight:** 30 g

Electrical Characteristic Curve

The corresponding table of output voltage and concentration shows that the higher the turbidity value is, the lower the output voltage is. In the chart, many customers do not know how to convert the percent % to turbidity units (NTU).
The following conversion formula is obtained after verification: 10-6 (PPM)=1ppm=1mg/L=0.13NTU (empirical formula)
that is: 3.5%=35000ppm=35000mg/L=4550NTU
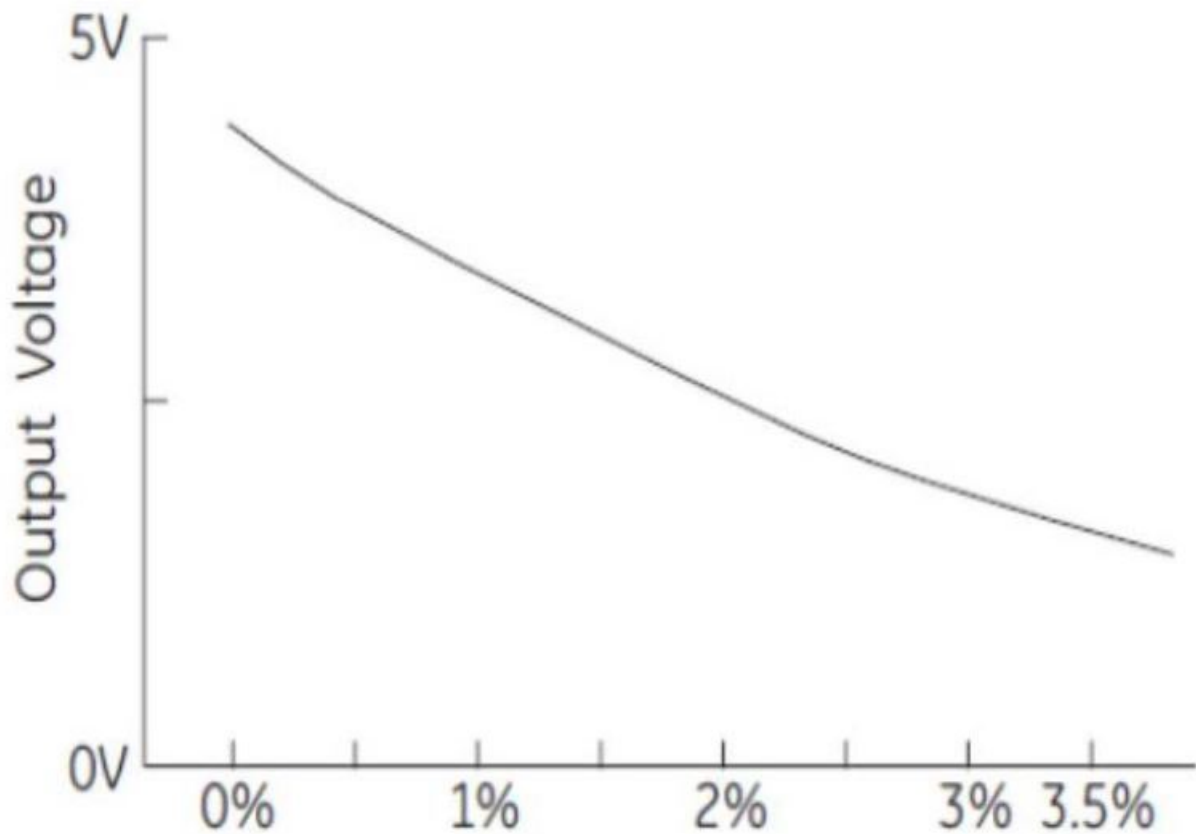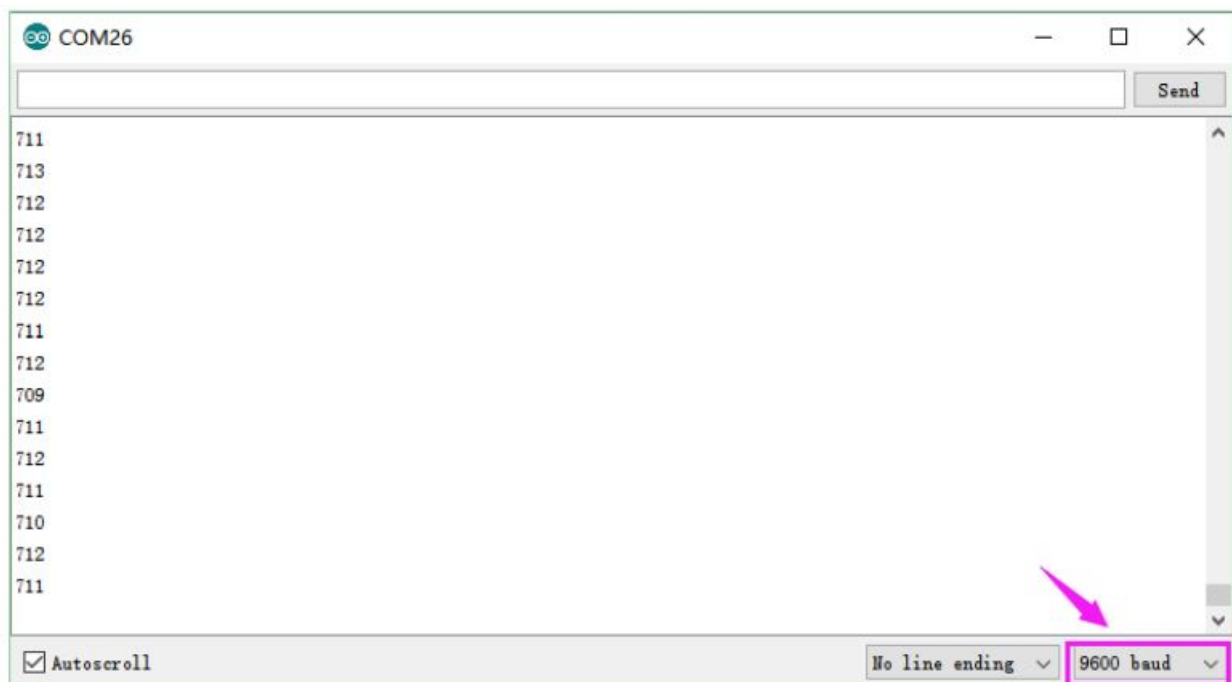
Special Notice:

1. The top of probe is not water-proof; can only place the transparent part into water.
2. Pay more attention to the power polarity when wiring. Avoid burning out the sensor due to reversed connection. The voltage can only be DC5V; pay close attention to the voltage to prevent overvoltage from burning the sensor.

Source Code

```
void setup() { // initialize serial communication at 9600 bits per second: Serial.begin(9600);}// the loop routine runs over and over again forever:void loop() { // read the input on analog pin 0: int sensorValue = analogRead(A0); // print out the value you read: Serial.println(sensorValue); delay(100); // delay in between reads for stability}
```

Test Result

In the experiment, we slide the switch to A end, then read the analog value shown below. The analog value 0-1023 corresponds to voltage 0-5V. We can work out the voltage of sensor's signal end by analog value, and then get the water's turbidity degree through electrical characteristic curve.

Documents / Resources

Water Turbidity Test Sensor for Arduino **Description** The turbidity sensor detects water quality by measuring level of turbidity. The principle is to convert the current signal itself into the voltage output through the circuit. Its detection range is 0%-3.9%, (0-4500NTU), with an error range of ±8NTU. When using, measure the voltage value of sensor's Signal end, then work out the water's turbidity by simple calculation formula. The turbidity sensor have both analog and digital signal output modes. The module has a slide switch. When slide the switch to A end, connect the signal.	[**CONRAD 2734647 Water Turbidity Test Sensor for Arduino**](#) [pdf] User Manual 2734647 Water Turbidity Test Sensor for Arduino, 2734647, Water Turbidity Test Sensor for Arduino, 2734647 Water Turbidity Test Sensor, Water Turbidity Test Sensor, Turbidity Test Sensor, Test Sensor, Sensor

References

- 🦾 [**Search - turbidity - products, projects and tutorials - DFRobot**](#)