



Part Number: DFR0300

Description: Analog Electrical Conductivity Sensor / Meter V2 (K=1)

## **INTRODUCTION**

DF Robot Gravity: analog electrical conductivity meter V2 is specially used to measure the electrical conductivity of aqueous solution, and then to evaluate the water quality, which is often used in [water culture, aquaculture, environmental water detection](#) and other fields.

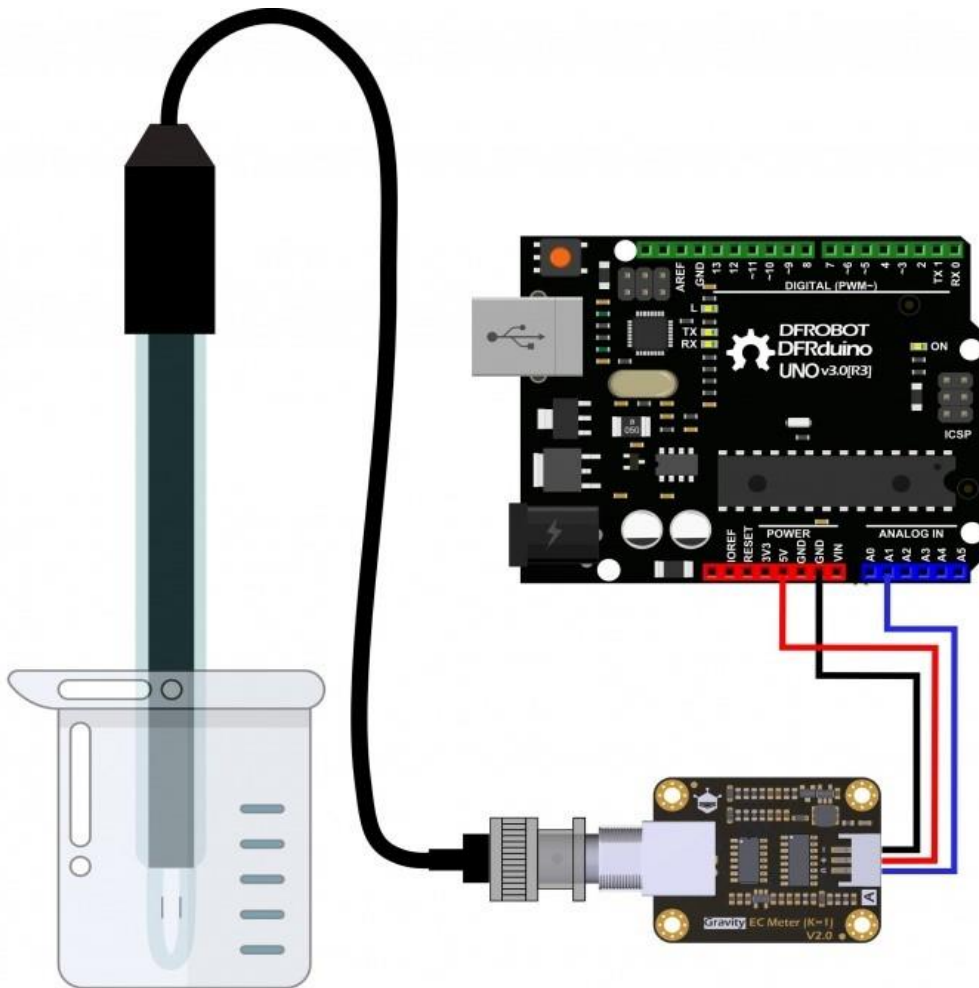
This product, as an upgraded version of electrical conductivity meter V1, greatly improves the user experience and data precision. It supports 3~5v wide voltage input, and is compatible with 5V and 3.3V main control board; The output signal filtered by hardware has low jitters; The excitation source adopts AC signal, which effectively reduces the polarization effect, improves the precision and prolongs the life of the probe; The software library uses two-point calibration method, and can automatically identify standard buffer solution, so simple and convenient.

With this product, main control board (such as [Arduino](#)) and the software library, you can quickly build an electrical conductivity meter, plug and play, no welding. DF Robot provides a variety of water quality sensor products, uniform size and interface, not only meet the needs of various water quality testing, but also suitable for the DIY of multi-parameter water quality tester.

Conductivity is the reciprocal of the resistance, which is related to the ability of the material to carry the current. In the liquid, the reciprocal of the resistance, the conductivity, is the measure of its ability to conduct electricity. Conductivity is an important parameter of water quality. It can reflect the extent of electrolytes present in water.

### **Tips:**

In order to ensure the measurement accuracy, it is strongly recommended to add a [temperature sensor](#) to measure the temperature, and achieve automatic temperature compensation. [DS18B20 waterproof temperature sensor](#) can also be used.



Arduino Connection Diagram

### Attention:

1.The probe is a laboratory-grade probe. Do not immerse in liquid for a long time. Otherwise this will shorten the life of the probe.

2.Platinum black layer is attached to the surface of the sheet metal in the probe.It should avoid any object touching it. It can only be washed with distilled water, otherwise the platinum black layer will be damaged, resulting in inaccurate measurement.

## *FEATURES*

- 3.0~5.0V wide voltage input
- Hardware filtered output signal, low jitter
- AC excitation source, effectively reduce polarization
- Gravity connector and BNC connector, plug and play, no welding
- Software library supports two-point calibration, and automatically identifies standard buffer solution, integrates temperature compensation algorithm
- Uniform size and connector, convenient for the design of mechanical structures

## *APPLICATIONS*

- Water quality monitoring.
- Aquaculture.
- Hydroponic & Aquaponic.

## *SPECIFICATION*

### **Signal Conversion Board (Transmitter) V2**

- Supply Voltage: 3.0~5.0V
- Output Voltage: 0~3.4V
- Probe Connector: BNC
- Signal Connector: PH2.0-3Pin
- Measurement Accuracy:  $\pm 5\%$  F.S.
- Board size: 42mm\*32mm/1.65in\*1.26in

### **Electrical Conductivity Probe**

- Probe Type: Laboratory Grade
- Cell Constant: 1.0
- Support Detection Range: 0~20ms/cm
- Recommended Detection Range: 1~15ms/cm
- Temperature Range: 0~40°C
- Probe Life: >0.5 year (depending on frequency of use)
- Cable Length: 100cm

## *SHIPPING LIST*

- Electrical Conductivity Probe (K=1,Laboratory Grade) x1
- Signal Conversion Board (Transmitter) V2 x1

- Standard Buffer Solution 1413us/cm x2
- Standard Buffer Solution 12.88ms/cm x2
- Gravity Analog Sensor Cable x1
- Waterproof Gasket x2
- Screw Cap for BNC Connector x1
- M3 \* 10 nylon pillar x4
- M3 \* 5 screw x8