## INTRODUCTION

DFRobot Gravity: Analog pH meter pro V2 is specifically designed to measure the pH of the solution and reflect the acidity or alkalinity. It is commonly used in various applications such as aquaponics, aquaculture, and environmental water testing.

As an upgraded version of pH meter pro V1, the secondary generation pH meter pro greatly improves the precision and user experience. The onboard voltage regulator chip supports the wide voltage supply of 3.3~5.5V, which is compatible with 5V and 3.3V main control board, such as Arduino and LattePanda. The output signal filtered by hardware has low jitter. The software library adopts the two-point calibration method, and can automatically identify two standard buffer solutions (4.0 and 7.0), so simple and convenient. It uses an industry electrode and has built-in simple, convenient, practical connection and long life, very suitable for online monitoring.

This industry pH combination electrode is made of sensitive glass membrane with low impedance. It can be used in a variety of PH measurements with fast response, good thermal stability. It has good reproducibility, difficult to hydrolysis, and basically eliminate the alkali error. Between 0 to 14 pH range, the output voltage of the electrode is linear. The reference system which consist of the Ag/AgCl gel electrolyte salt bridge has a stable half-cell potential and excellent anti-pollution performance. The ring PTFE membrane is not easy to be clogged, so the electrode is suitable for long-term online detection.

With this product, the main control board (such as Arduino), and the software library, you can quickly build the pH meter, plug, and play, no welding. DFRobot 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. You may also check Liquid Sensor Selection Guide to get better familiar with our liquid sensor series.

The pH is a value that measures the acidity or alkalinity of the solution. It is also called the hydrogen ion concentration index. The pH is a scale of hydrogen ion activity in solution. The pH has a wide range of uses in medicine, chemistry, and agriculture. Usually, the pH is a number between 0 to 14. Under the thermodynamic standard conditions, pH=7, which means the solution is neutral; pH<7, which means the solution is acidic; pH>7, which means the solution is alkaline.
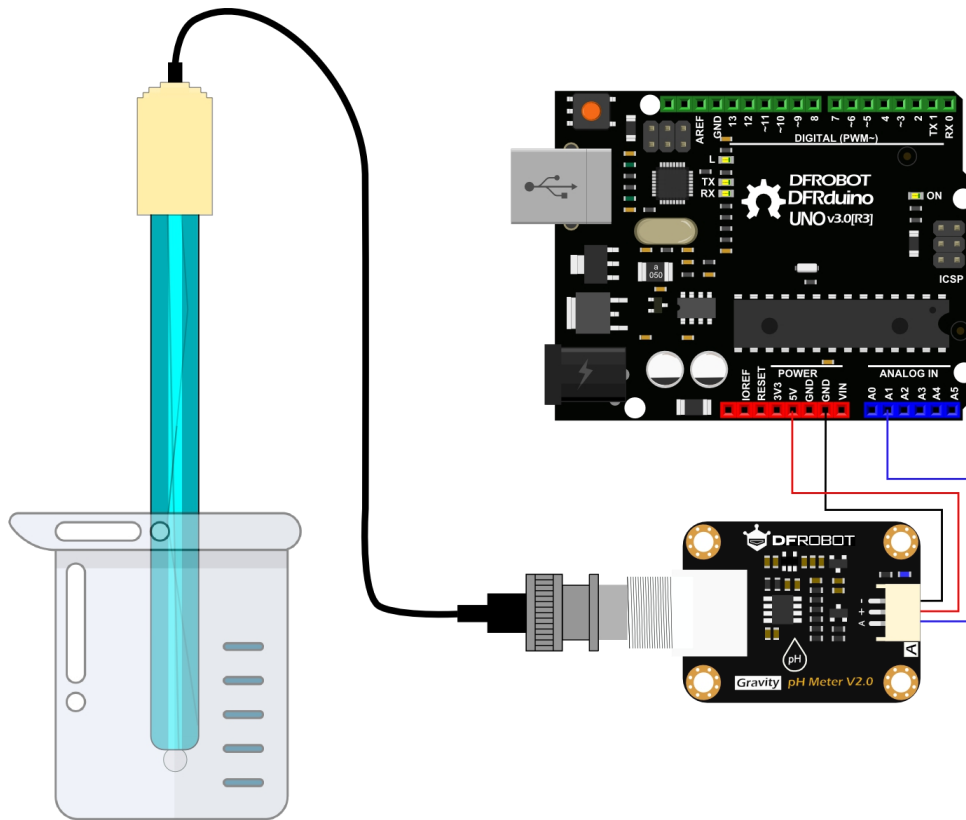
Arduino Connection Diagram

Attention：

1. The BNC connector and the signal conversion board must be kept dry and clean, otherwise, it will affect the input impedance, resulting in an inaccurate measurement. If it is damp, it needs to be dried.

2. The signal conversion board cannot be directly placed on a wet or semiconductor surface, otherwise, it will affect the input impedance, resulting in the inaccurate measurement. It is recommended to use the nylon pillar to fix the signal conversion board, allow a certain distance between the signal conversion board and the surface.

3. The sensitive glass bubble in the head of the pH probe should avoid touching with the hard material. Any damage or scratches will cause the electrode to fail.

4. After completing the measurement, disconnect the pH probe from the signal conversion board. The pH probe should not be connected to the signal conversion board without the power supply for a long time.

FEATURES

3.3~5.5V wide voltage input

Hardware filtered output signal, low jitter

Gravity connector and BNC connector, plug-and-play, no soldering required

Software library supports two-point calibration and automatically identifies standard buffer

solution

Uniform size and connector, convenient for the design of mechanical structures

Industrial Probe - Support 7*24 Measurement

Upgraded Transmitter - More Accurate and Stable

SPECIFICATION

Signal Conversion Board (Transmitter) V2
Supply Voltage: 3.3~5.5V
Output Voltage: 0~3.0V
Probe Connector: BNC
Signal Connector: PH2.0-3P
Measurement Accuracy: ±0.1@25℃
Dimension: 42mm*32mm/1.66*1.26in

pH Probe
Probe Type: Industrial Grade
Detection Range: 0~14
Temperature Range: 0~60°C
Accuracy : ± 0.1pH (25 ℃)
Response Time: <1min
Probe Life: 7*24hours >0.5 years (depending on the water quality)
Cable Length: 500cm

DOCUMENTS

·   Product wiki

SHIPPING LIST

pH Probe (Industrial Grade) x1
pH Signal Conversion Board V2 x1
Gravity Analog Sensor Cable x1
Waterproof Gasket x2
Screw Cap for BNC Connector x1
M3 * 10 nylon pillar x4
M3 * 5 screws x8