The pH sensor module is an inexpensive and easy-to-use pH meter sensor module. This sensor module can be used with Arduino, microcontrollers, etc.

This analog pH meter, designed with a controller, features simple wiring and ease of use. It includes an onboard power indicator, BNC interface, and pH 2.0 interface. When using it, […].

Connect the pH sensor to the onboard BNC connector, and connect the onboard PH2.0 connector to the analog port of the Arduino controller. Through program control, you can easily...

Measure the pH value of the solution.

The sensor's electrodes are non-fillable composite electrodes in a plastic shell, consisting of a glass electrode and a reference electrode. It is the measuring element of a pH meter, used to measure the pH in aqueous solutions.

The activity of hydrogen ions, i.e., pH value.

The sensor comes in a sturdy black box with a high-quality black foam pad inside, providing ample protection for the components while maintaining a neat and aesthetically pleasing appearance. A user manual for the pH composite electrode is also included.

Ming Dynasty book.

Version 1:

Version 2:

Company Address: No. 27, Gongyi Avenue, Xinhua Town, Huadu District, Guangzhou City, Guangdong Province Taobao Store URL: http://auto-ctrl.taobao.com/ Website: www.logoele.com Alibaba: http://shop1362104267267.1688.com/

Contact number: 13622275829

QQ: 956183509

Email: logoele@163.com

AliExpress: http://www.aliexpress.com/store/727356

PH值检测传感器模块—带温度补偿 集成高阻抗运放

Technical indicators

- Module power supply: +5.00V
- **Module dimensions: 43mm × 32mm × 20mm**
- Measurement range: 0-14 pH
- Temperature measurement : 0-60ÿ
- Precision : ±0.1 pH (25ÿ)
- **Response time: ÿ1min**
- BNC interface type pH sensor
- PH2.0 interface (3-pin surface mount)
- Gain adjustment potentiometer
- Power indicator light

Usage steps

Notice:

Please use an external switching power supply to make the voltage as close as possible to +5.00V. The more accurate the voltage, the higher the precision!

The electrode needs to be calibrated with a standard buffer solution before each consecutive use. For more accurate results, the ambient temperature is best around 25ÿ.

The pH value must be reliable, and the closer it is to **the** measured value, the better. If the sample you are measuring is acidic, please calibrate the electrode using a buffer solution with a pH of 4.00.

Company Address: No. 27, Gongyi Avenue, Xinhua Town, Huadu District, Guangzhou City, Guangdong Province Taobao Store URL: http://auto-ctrl.taobao.com/ Website: www.logoele.com Alibaba: http://shop1362104267267.1688.com/

Contact number: 13622275829

QQ: 956183509

Email: logoele@163.com

AliExpress: http://www.aliexpress.com/store/727356

If you are measuring an alkaline sample, please calibrate the electrode using a pH 9.18 buffer solution. Segmented calibration is recommended for better accuracy. The **pH** electrode should be rinsed with water after each measurement of a solution with a different **pH ;** deionized water is recommended.

(1) First, connect the **pH** electrode through **the BNC** connector. Then, connect the **pH** sensor module to the power supply according to the diagram. The pH sensor output is an analog output, which can be connected to **an ADC** conversion device, such as the analog input port of an **Arduino .** After connecting, power on **the Arduino** main controller, and you will see the red indicator light on the **pH meter** circuit board light up. **(2) Write the sample code to**

the Arduino main controller. **(3)** Insert the **pH** electrode into a

standard solution with a **pH** value of 7.00, or directly short-circuit the two inputs of **the BNC** interface. Open the serial monitor of **the Arduino IDE ,** and you can see the currently printed **pH** value. The error will not exceed 0.3. Record the printed value at this time, and then compare it with 7.00. Modify the difference to **the Offset** in the program . For example, if the printed **pH** value is 6.88, the difference is 0.12. In the sample program, **change #define #define #define #define Offset 0.00 to #define #define #define #define Offset 0.12. (4)** Insert the **pH** electrode into the calibration solution with a **pH** value of 4.00. After waiting for one minute, adjust the gain

potentiometer to make the printed **pH** value as stable as possible at around 4.00 . At this time, the acidic section calibration is completed, and you can test **the pH** value of the acidic solution. Note: When measuring other solutions, the electrode must be cleaned. **(5) Relying on** the linear characteristics of the **pH** electrode

itself, after the above calibration, **the pH** value of the alkaline solution

can be directly measured. However, if you want to obtain better accuracy, it is recommended to recalibrate. The alkaline section calibration uses a standard solution with a **pH** value of 9.18. Similarly, adjust the gain potentiometer to make it stable at around 9.18. After calibration, you can now measure **the pH** value of the alkaline solution . After downloading the sample code, open the serial monitor of **the Arduino IDE** to see the results.

```
/* #
This sample codes is for testing testing testing testing the pH meter V1.0.
  # Editor: YouYou # Date:
  2013.10.21 2013.10.21 2013.10.21 2013.10.21
  # Ver: 0.1
  # Product: Product: Product: Product: pH meter
  # SKU : SEN0161 SEN0161 SEN0161
SEN0161 */

#define #define #define #define SensorPin          //pH meter Analog output to Arduino Arduino Arduino Arduino Analog Input 0 //deviation //deviation //
SensorPin SensorPin SensorPin 0 #define          deviation //deviation compensate compensate compensate
#define #define #define Offset 0.00 unsigned unsigned unsigned          //Store //Store //Store the average average average average value of the sensor feedback feedback feedback feedback
unsigned long int avgValue;

avgValue; avgValue; avgValue; void setup() setup()
    setup() setup() { pinMode(13,OUTPUT);
    pinMode(13,OUTPUT); pinMode(13,OUTPUT); pinMode(13,OUTPUT); Serial.begin(9600); Serial.begin(9600); Serial.begin(9600);

Serial.begin(9600); Serial.println("Ready"); Serial.println("Ready"); //Test the serial monitor monitor monitor
```

monitor Company Address: No. 27, Gongyi Avenue, Xinhua Town,

Huadu District, Guangzhou City, Guangdong

Province Taobao Store URL: **http://auto-ctrl.taobao.com/** Website: www.logoele.com Alibaba: http://shop1362104267267.1688.com/

Contact number: 13622275829

QQ: 956183509 E-

mail: logoele@163.com AliExpress:

http://www.aliexpress.com/store/727356

```
void loop()
{
    int buf[10]; buf[10]; buf[10]; buf[10];                    //buffer //buffer //buffer //buffer for read analog
    for(int for(int for(int for(int i=0;i<10;i++) i=0;i<10;i++) i=0;i<10;i++)    //Get 10 sample value from the sensor for smooth the value
    i=0;i<10;i++) {
        buf[i]=analogRead(SensorPin); buf[i]=analogRead(SensorPin); buf[i]=analogRead(SensorPin); buf[i]=analogRead(SensorPin);
        delay(10); delay(10); delay(10); delay(10);
    }
    for(int for(int for(int for(int i=0;i<9;i++) i=0;i<9;i++) i=0;i<9;i++)    //sort the analog from small to large
    i=0;i<9;i++) {
        for(int for(int for(int for(int j=i+1;j<10;j++) j=i+1;j<10;j++) j=i+1;j<10;j++) j=i+1;j<10;j++)
        {
            if(buf[i]>buf[j]) if(buf[i]>buf[j]) if(buf[i]>buf[j]) if(buf[i]>buf[j])
            {
                int temp=buf[i]; temp=buf[i]; temp=buf[i]; temp=buf[i];
                buf[i]=buf[j]; buf[i]=buf[j]; buf[i]=buf[j]; buf[i]=buf[j];
                buf[j]=temp; buf[j]=temp; buf[j]=temp; buf[j]=temp;
            }
        }
    }
    avgValue=0; avgValue=0; avgValue=0; avgValue=0;
    for(int for(int for(int for(int i=2;i<8;i++) i=2;i<8;i++) i=2;i<8;i++) i=2;i<8;i+    //take the average average average average value of 6 center sample
        +) avgValue+=buf[i]; avgValue+=buf[i]; avgValue+=buf[i]; avgValue+=buf[i];
    float phValue=(float)avgValue*5.0/1024/6; phValue=(float)avgValue*5.0/1024/6; phValue=(float)avgValue*5.0/1024/6; phValue=(float)avgValue*5.0/1024/6; //convert //convert //convert //convert the analog into millivolt millivolt millivolt millivolt
    phValue=3.5*phValue+Offset; phValue=3.5*phValue+Offset; phValue=3.5*phValue+Offset; phValue=3.5*phValue+Offset; //convert //convert //convert //convert the millivolt millivolt millivolt millivolt into pH value
    Serial.print(" Serial.print(" Serial.print(" Serial.print(" pH:");
    Serial.print(phValue,2); Serial.print(phValue,2); Serial.print(phValue,2); Serial.print(phValue,2);
    Serial.println(" Serial.println(" Serial.println(" Serial.println(" ");
    digitalWrite(13, digitalWrite(13, digitalWrite(13, digitalWrite(13, HIGH));
    delay(800); delay(800); delay(800); delay(800);
    digitalWrite(13, digitalWrite(13, digitalWrite(13, digitalWrite(13, LOW);
}
```

Maintenance and Precautions

When using the electrode for the first time or when reusing it after a long period of disuse, immerse the electrode bulb and core in a 3NKCL solution for 8 hours to activate them.

After removing the electrode protective cover, be careful that the sensitive glass bulb inside the plastic protective grid does not come into contact with hard objects. Any damage or scratches will cause the electrode to malfunction.

Company Address: No. 27, Gongyi Avenue, Xinhua Town, Huadu District, Guangzhou City, Guangdong Province Taobao Store URL: http://auto-ctrl.taobao.com/

Website: www.logoele.com Alibaba: http://shop1362104267267.1688.com/

Contact number: 13622275829

QQ: 956183509

Email: logoele@163.com

AliExpress: http://www.aliexpress.com/store/727356

龙戈电子
LONGGE DIANZI

Guangzhou Longge Electronic Technology Co., Ltd.

GuangZhou LOGOELE Electronic Technology Co., Ltd.

After measurement, when not in use, the electrode protective sleeve should be put on, and a small amount of 3.3mol /**L** potassium chloride solution should be placed inside the protective sleeve to keep the electrode bulb moist.

The electrode leads must be kept clean and dry, and short circuits at both ends of the output must be strictly prevented, otherwise the measurement results will be inaccurate or invalid.

Avoid prolonged immersion of electrodes in distilled water, protein solutions, or acidic fluoride solutions, and prevent contact with silicone greases.

If the gradient becomes slightly distorted after prolonged use, immerse the lower end of the electrode in 4% HF (hydrofluoric acid) for 3-5 seconds, then rinse with distilled water.

Then soak it in a potassium chloride solution to restore it to its original condition.

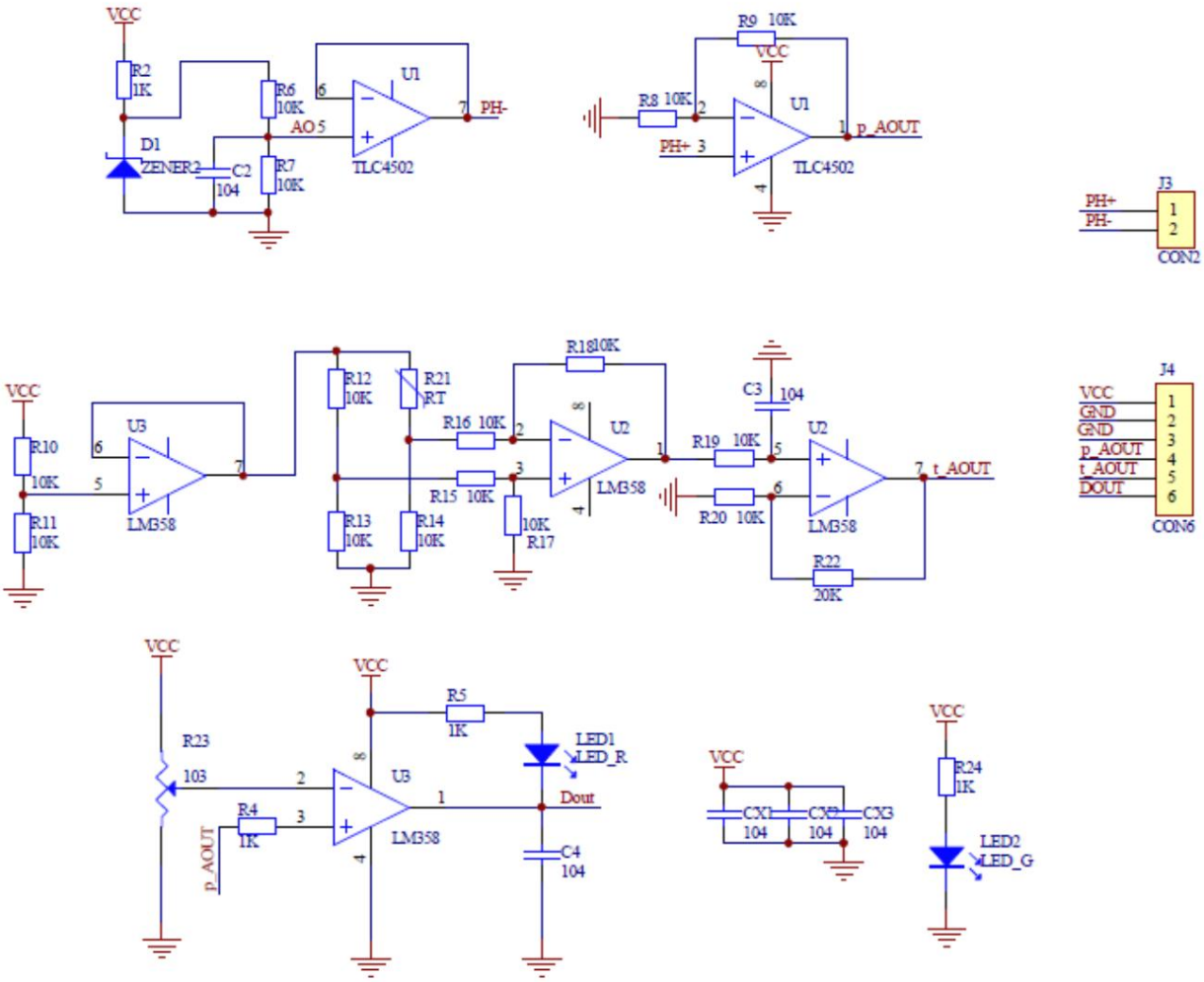
If the solution being tested contains substances that can easily contaminate the sensitive bulb or clog the liquid junction, causing electrode passivation, the resulting phenomenon is a decrease in the sensitive gradient or inaccurate readings. Thus,

The pollutant should be cleaned with an appropriate solution according to its nature to restore its original condition.

When selecting a cleaning agent, if it is a cleaning solution that can dissolve polycarbonate resin, such as carbon tetrachloride, trichloroethylene, or tetrahydrofuran, then the polycarbonate resin may be dissolved.

Applying this product to sensitive glass bulbs can cause electrode failure; please use with caution!

Reference circuit diagram:



Company Address: No. 27, Gongyi Avenue, Xinhua Town, Huadu District, Guangzhou City, Guangdong Province Taobao Store URL: http://auto-ctrl.taobao.com/ Website: www.logoele.com Alibaba: http://shop1362104267267.1688.com/

Contact number: 13622275829

QQ: 956183509

Email: logoele@163.com

AliExpress: http://www.aliexpress.com/store/727356