New Type Soil Humidity Sensor

Description

This new type capacitive soil humidity sensor differs from other resistive sensors, adopting capacitive sensing principle to detect soil humidity.

It is divided into the signal end and the detected end. When it is inserted into soil, the signal end will output analog value.

The segmented the wire connection and casing pipe enhance its waterproof performance.

Since the circuit is not exposed at the detected end, the corrosion problem of sensor is avoided, extending life expectancy.

The built-in chip supports 3.3~5.5V working environment, Arduino, ESP32, micro:bit and controller. As to mini PC, you need an ADC module (analog signals are converted into signals)

Parameters

Control chip: TLC555

Communication interface: output analog value

Rated voltage: 3.3 ~ 5.5 VDC

Output voltage: 0 ~ 3.0 VDC

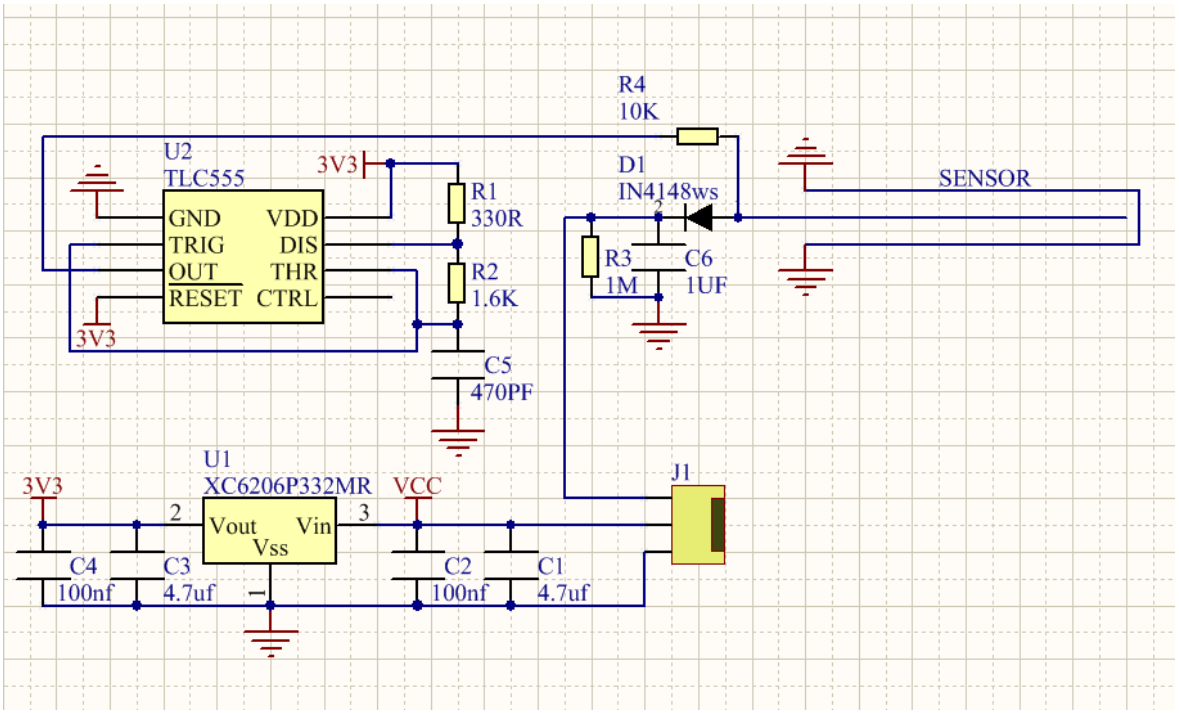
Working current: <5mA

Product size: signal end: 31.6mmx23.7mm

Detection end: 23.8mm*83mm

Operating temperature range: 1°C ~ 50°C

Schematic Diagram



Connection Diagram

Pin	Description
G	Ground
V	3.3V/5V
S	Analog data output

Test Code

```
//*****************************************************************************
void setup() {

  Serial.begin(9600); //set baud rate to 9600

}

void loop() {

  int val;//define the function val

  val = analogRead(A0); //set the analog value detected by the soil sensor to
val

  Serial.println(val); //serial port prints out the analog value detected by soil
```

```
      humidity sensor


  delay(500);//delay in 0.5s


}
//*********************************************************************************
```

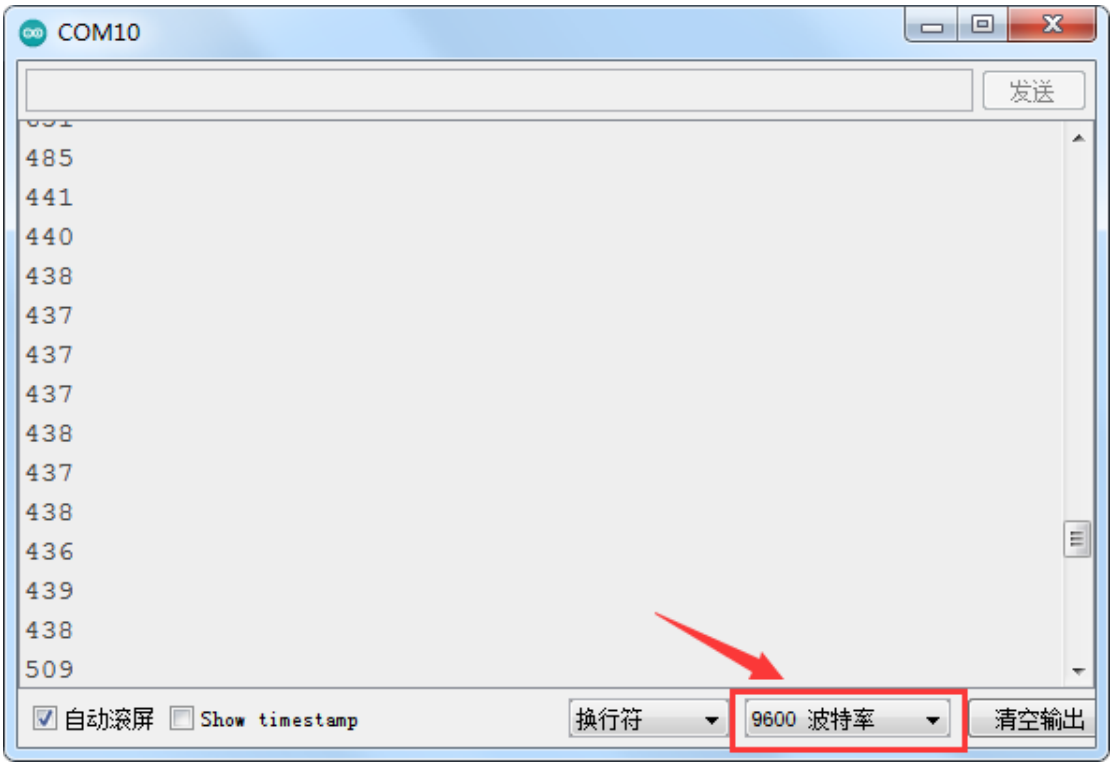
Test Result

Upload code to the control board, power up with a USB cable and set baud rate to 9600.

Insert this sensor into water and keep liquid level below the white warning line

(the depth is taken as the depth of inserting into the soil. Record the detected analog value that represents 100% humidity.

The output value is minimum in the water, that is, humidity is not proportion to value. As shown below:


COM10
发送
485
441
440
438
437
437
437
438
437
438
436
439
438
509
自动滚屏
Show timestamp
换行符
9600 波特率
清空输出