Hygrometer Modul V1.2
Datenblatt

Contents:

1. Description

This analog capacitive soil moisture sensor measures soil moisture levels by capacitive sensing, rather than resistive sensing like other types of moisture sensor.
It is made of a corrosion resistant material giving it a long service life.
Insert it into soil and impress your friends with the real-time soil moisture data.

2. Features

• Voltage: 5 V DC

• Interface: PH2.0-3P

• Connecting cable included

• Dimensions: 100 mm x 22.5 mm x 9.5 mm
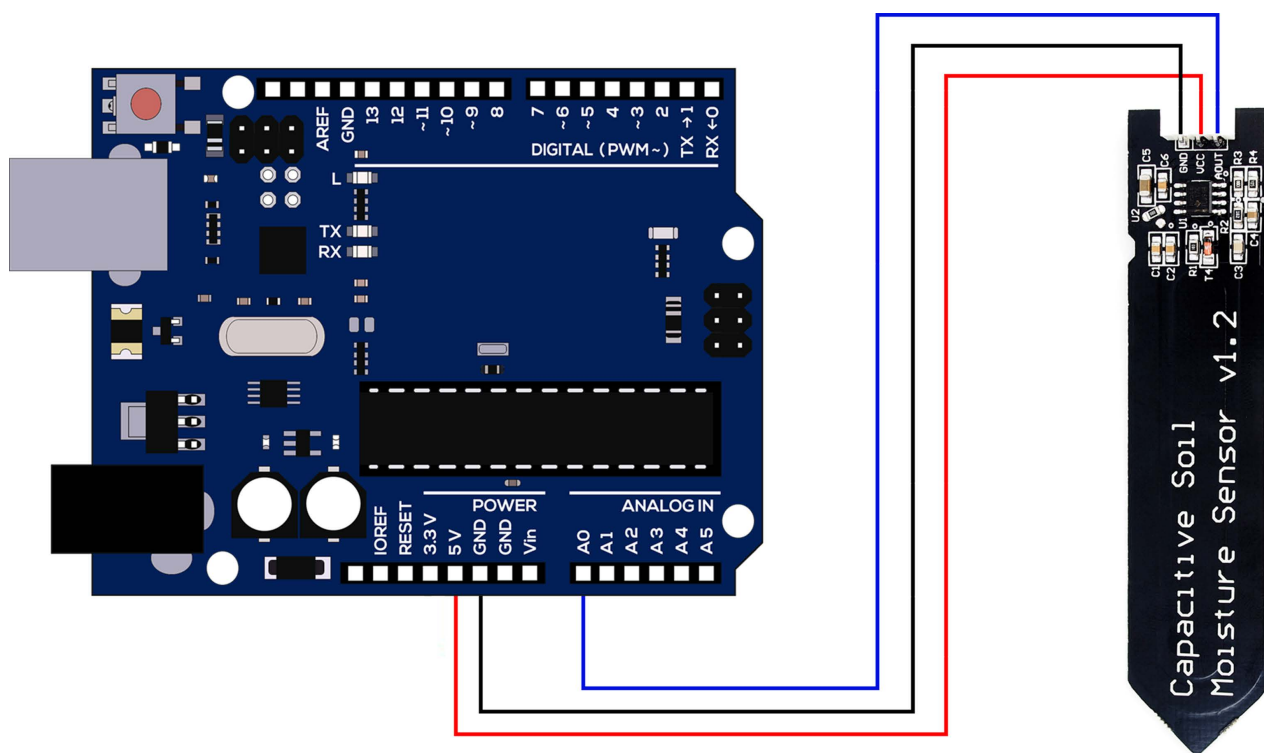
• Software: Arduino IDE V1.6.5

Note: In order to make these sensors work with your Raspberry Pi,

an ADC converter is required.

3. Applications

• Garden plants

• Moisture detection

• Intelligent agriculture

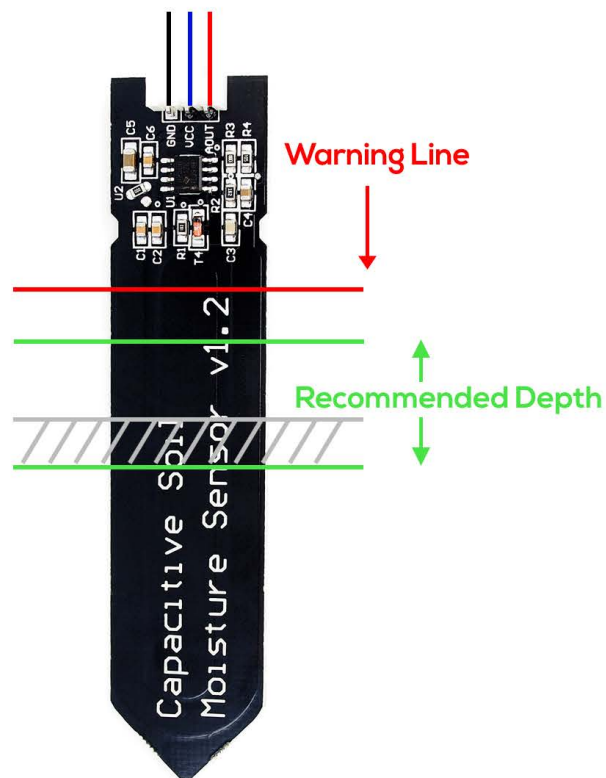Note: Please allow 0-3mm error due to manual measurement.

4. Connection Diagram

5. Calibration

Calibration Code

```
void setup() {
Serial.begin(9600); // open serial port, set the baud rate as 9600 bps
}
void loop() {
int val;
val = analogRead(0); //connect sensor to Analog 0
Serial.print(val); //print the value to serial port
delay(100);
}
```

1. Open the serial port monitor and set the baud rate to 9600
2. Record the sensor value when the probe is exposed to the air as "Value 1". This is the boundary value of dry soil "Humidity: 0%RH"
3. Take a cup of water and insert the probe into it no further than the red line in the diagram
4. Record the sensor value when the probe is exposed to the water as "Value 2". This is the boundary value of moist soil "Humidity: 100%RH"

Section Settings

The final output value is affected by probe insertion depth and how tight the soil packed around it is. We regard "value_1" as dry soil and "value_2" as soaked soil. This is the sensor detection range.
For example: Value_1 = 520; Value_2 = 260.
The range will be divided into three sections: dry, wet, water. Their related values are:

• Dry: (520 430]
• Wet: (430 350]
• Water: (350 260]

6. Test Code

```
const int AirValue = 520; //you need to replace this value with Value_1
const int WaterValue = 260; //you need to replace this value with Value_2
int intervals = (AirValue - WaterValue)/3;
int soilMoistureValue = 0;
void setup() {
Serial.begin(9600); // open serial port, set the baud rate to 9600 bps
}
void loop() {
soilMoistureValue = analogRead(A0); //put Sensor insert into soil
if(soilMoistureValue > WaterValue && soilMoistureValue < (WaterValue + int
ervals))
{
Serial.println("Very Wet");
}
else if(soilMoistureValue > (WaterValue + intervals) && soilMoistureValue
< (AirValue - intervals))
{
Serial.println("Wet");
}
else if(soilMoistureValue < AirValue && soilMoistureValue > (AirValue - in
tervals))
{
Serial.println("Dry");
}
delay(100);
}
```