RAIN SENSOR MODULE

Description

The rain sensor module is an easy tool for rain detection. It can be used as a switch when raindrop falls through the raining board and also for measuring rainfall intensity. The module features, a rain board and the control board that is separate for more convenience, power indicator LED and an adjustable sensitivity though a potentiometer.

The analog output is used in detection of drops in the amount of rainfall. Connected to 5V power supply, the LED will turn on when induction board has no rain drop, and DO output is high. When dropping a little amount water, DO output is low, the

switch indicator will turn on. Brush off the water droplets, and when restored to the initial state, outputs high level.

Specifications

- Adopts high quality of RF-04 double sided material.
- Area: 5cm x 4cm nickel plate on side,
- Anti-oxidation, anti-conductivity, with long use time;
- Comparator output signal clean waveform is good, driving ability, over 15mA;
- Potentiometer adjust the sensitivity;
- Working voltage 5V;
- Output format: Digital switching output (0 and 1) and analog voltage output AO;
- With bolt holes for easy installation;
- Small board PCB size: 3.2cm x 1.4cm;
- Uses a wide voltage LM393 comparator
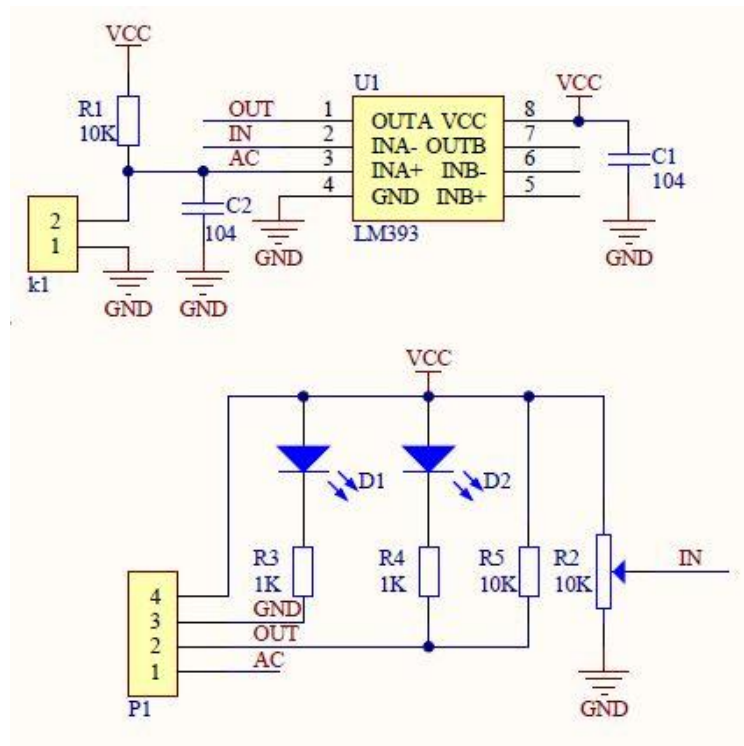
Pin Configuration
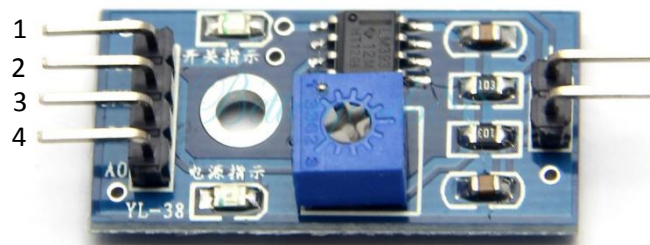
1. VCC: 5V DC
2. GND: ground
3. DO: high/low output
4. AO: analog output

Wiring Diagram

1 2 3 4
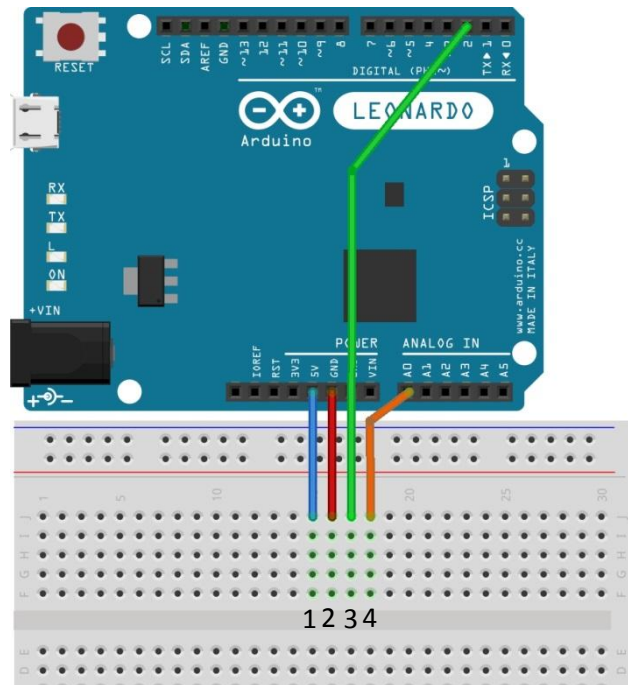
Schematic Diagram

Sample Sketch

```
void setup(){
  Serial.begin(9600);
  pinMode(2, OUTPUT);
}

void loop(){
  //analog output
  if(analogRead(0)<300) Serial.println("Heavy Rain");
  else if(analogRead(0)<500) Serial.println("Moderate Rain");
  else Serial.println("No Rain");

//  //digital output
//  if(digitalRead(2) == HIGH) Serial.println("No Rain
Detected");
//  else Serial.println("Rain Detected");

  delay(250);
}
```

How to Test

The components to be used are:

- Microcontroller (any compatible arduino)
- Rain sensor module
- Pin connectors
- Breadboard
- USB cable

1. Connect the components based on the figure shown in the wiring diagram using pin connectors. VCC pin is connected to the 5V power supply, GND pin is connected to the GND, DO pin is connected to a digital I/O pin and the AO pin is connected to the analog output pin. Pin number will be based on the actual program code.
2. After hardware connection, insert the sample sketch into the Arduino IDE.
3. Using a USB cable, connect the ports from the microcontroller to the computer.
4. Upload the program.
5. See the results in the serial monitor.

Testing Results

The serial monitor shows the results when the raining module was soaked with water. Based on the amount of water, the analog output can read different levels of amount of water drop.
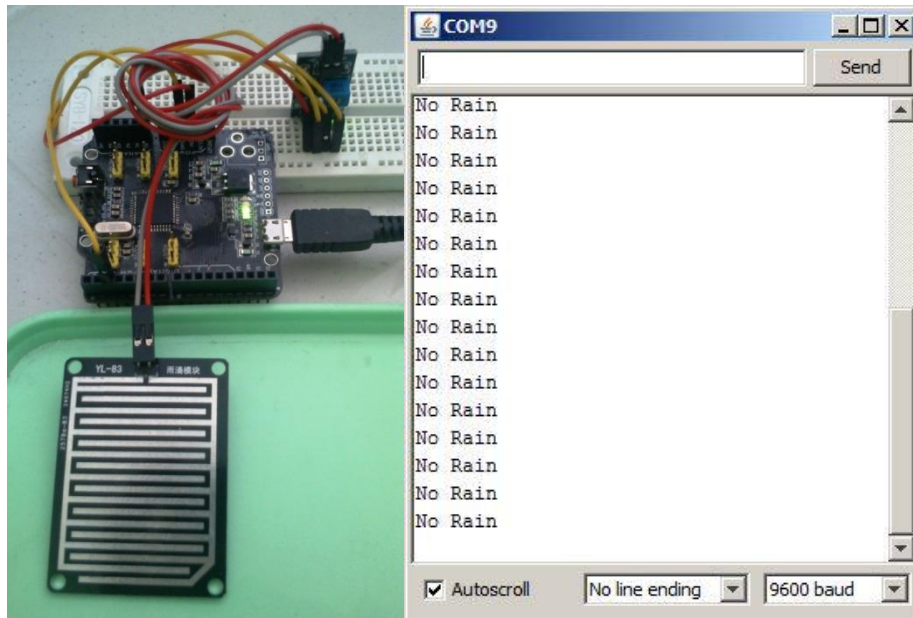
As water is continuously dropped to the module,