



**DFROBOT**  
DRIVE THE FUTURE

# SKU:SEN0509



## Introduction

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This capacitive pipeline liquid level sensor of high sensitivity is suitable for non-metallic pipes with a diameter of 6mm. The sensor outputs digital high/low level (low when liquid detected) and adopts 3-pin DuPont connector, which can be widely used in beverage machines, small water pipe level detection, and infusion pipe level detection scenarios.

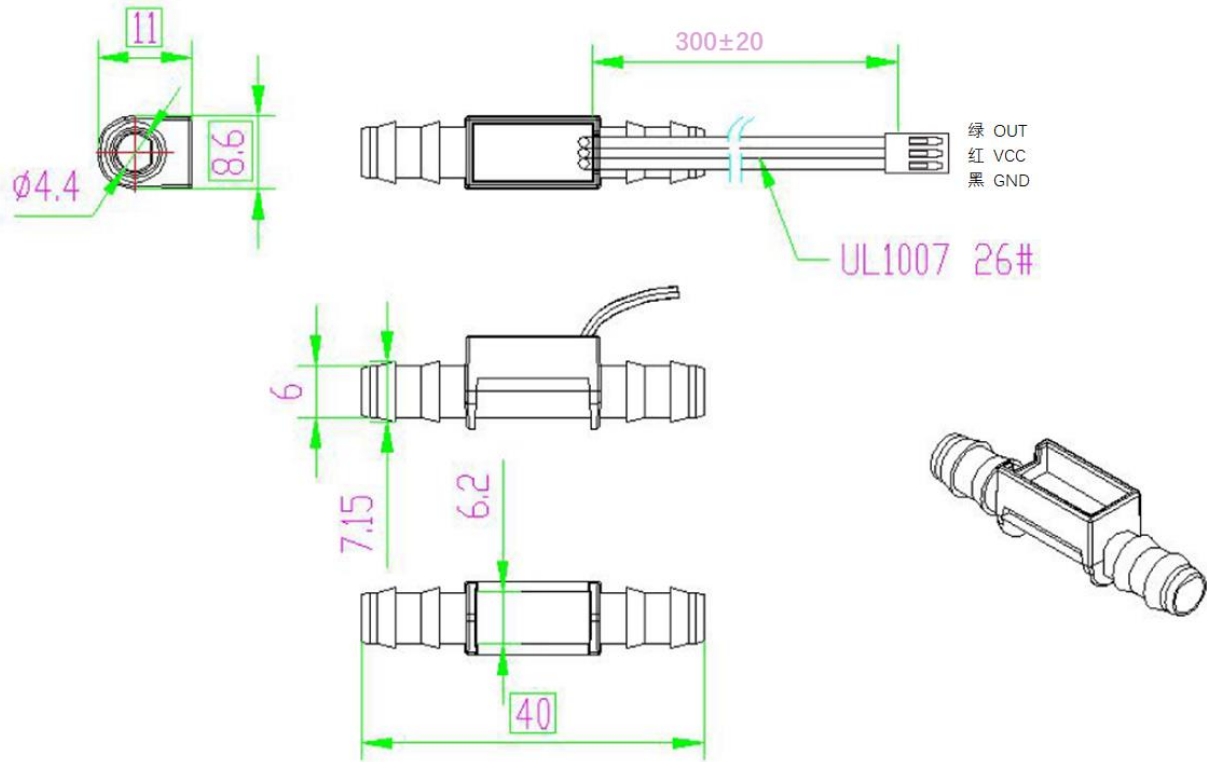
**Working Principle:** The liquid level sensor uses the sensing capacitance of water to detect the presence of liquid. When there is no liquid approaching the sensor, the sensor has a certain static capacitance due to the distributed capacitance. When the liquid level slowly rises close to the inductor, the parasitic capacitance of the liquid will be coupled to the static capacitor, causing the final capacitance of the inductor to become larger. The changed capacitance signal is then input to the control IC for signal conversion, which will change. The capacitance is converted into the amount of change of an electrical signal, and then a certain algorithm detects and judges the degree of the change. When the amount of change exceeds a certain threshold, the liquid level is considered to reach the sensing point.

## Specification

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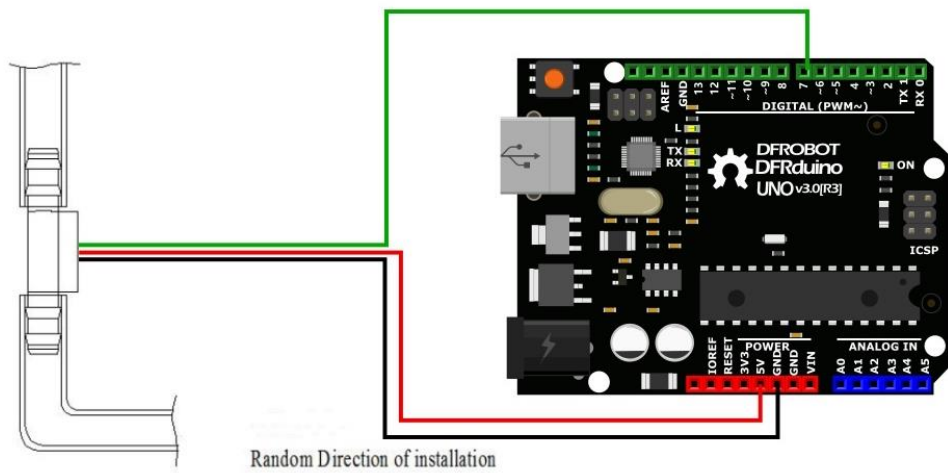
- Working Voltage: 2.5~5.5VDC
- Working Current: 5V290uA 3V235uA
- Output: low (liquid detected), high level (no liquid detected)
- Hysteresis:  $\pm 0.25\%$ FS
- Interval Medium: plastic
- Protection Level: IP62
- Operating Temperature: -20~100°C
- Weight: 3g

# Dimension



# Tutorial

## Connection Diagram



## Sample Code

Click to download [Arduino IDE](#)

```
int ledPin = 13; // LED connected to digital pin 13
int inPin = 7;   // pushbutton connected to digital pin 7
int val = 0;    // variable to store the read value

void setup()
{
  pinMode(ledPin, OUTPUT);    // sets the digital pin 13 as output
  pinMode(inPin, INPUT);     // sets the digital pin 7 as input
}

void loop()
{
  val = digitalRead(inPin); // read the input pin
  digitalWrite(ledPin, val); // sets the LED to the button's value
}
```

## Result

If the sensor detects liquid, the onboard LED of UNO will turn off. If no liquid is detected, the onboard LED of UNO will turn on.

## FAQ

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For any questions, advice or cool ideas to share, please visit the [DFRobot Forum](#).



[https://wiki.dfrobot.com/Capacitive\\_Pipeline\\_Liquid\\_Level\\_Sensor\\_SKU\\_SEN0509/8-3-22](https://wiki.dfrobot.com/Capacitive_Pipeline_Liquid_Level_Sensor_SKU_SEN0509/8-3-22)