Water Flow Sensor - 1/2” SKU: SEN0217

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Introduction

The Water Flow sensor measures the rate of a liquid flowing through it. The YF-S201 water flow sensor consists of a plastic valve body, flow rotor and hall effect sensor. It is usually used at the inlet end to detect the amount of flow. When liquid flows through the sensor, a magnetic rotor will rotate and the rate of rotation will vary with the rate of flow. The hall effect sensor will then output a pulse width signal. Connect it to a microcontroller and you can monitor multiple devices such as your coffee maker, sprinkler or anything else, and control the water flow rate to suit your needs!

- A 20 mm rifled pipe is recommended
- Avoid unit contact with corrosive chemicals
- The unit must be installed vertically, tilted no more than 5 degrees
- Liquid temperature should be less than 120 C to avoid damage to unit
Specification

- Inner Diameter: 11 mm
- Outside diameter: 20 mm
- Proof Water Pressure: <1.75 MPa
- Water Flow Range: 1-30 L/min
- Voltage Range: 3.5~12 V
- Operating Current: 15 mA (DC 5V)
- Insulation Resistance: >100 MΩ
- Accuracy: ±5% (2~30L/min)
- The Output Pulse High Level: >4.7 VDC (DC input voltage 5 V)
- The Output Pulse Low Level: <0.5 VDC (DC input voltage 5 V)
- Output Pulse Duty Ratio: 50% ± 10%
- Water-flow Formula: 1L = 450 square waves
- Working Humidity Range: 25% ~ 95% RH (no frost)
- Dimension: 62*36*35 mm/2.44*1.37*1.37 inches
- Weight: 52g

Board Overview

<table>
<thead>
<tr>
<th>Number</th>
<th>Color</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Green</td>
<td>Signal</td>
<td>Pulse Signal</td>
</tr>
<tr>
<td>2</td>
<td>Red</td>
<td>VCC</td>
<td>5~12V</td>
</tr>
<tr>
<td>3</td>
<td>Black</td>
<td>GND</td>
<td>GND</td>
</tr>
</tbody>
</table>

Pulse Signal

Duty Cy=40%~60%
Tutorial

In this Tutorial, we'll measure liquid flow using this sensor.

Requirements

**Hardware**
DFRduino UNO R3
Water flow sensor
Jumper Wires

**Software**
Arduino IDE, [Click to Download Arduino IDE from Arduino®](https://www.arduino.cc/en/Main/Software)

Connection Diagram

Sample Code

```
1 /********************************************************************************
2  This example reads Water flow sensor Sensor.
3
4 Created 2016-3-13
5 By berinie Chen <bernie.chen@dfrobot.com>
```
volatile double waterFlow;
void setup() {
  Serial.begin(9600);  //baudrate
  waterFlow = 0;
  attachInterrupt(0, pulse, RISING);  //DIGITAL Pin 2: Interrupt 0
}
void loop() {
  Serial.print("waterFlow:");
  Serial.print(waterFlow);
  Serial.println(" L");
  delay(500);
}

void pulse()  //measure the quantity of square wave
{
  waterFlow += 1.0 / 450.0;
}

FAQ
For any questions, advice or cool ideas to share, please visit the DFRobot Forum.