

(<https://www.dfrobot.com/product-1517.html>)

## Introduction

The **Water Flow sensor** (<https://www.dfrobot.com/product-1517.html>) 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 arduino microcontroller (<https://www.dfrobot.com/category-104.html>) 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

## specification

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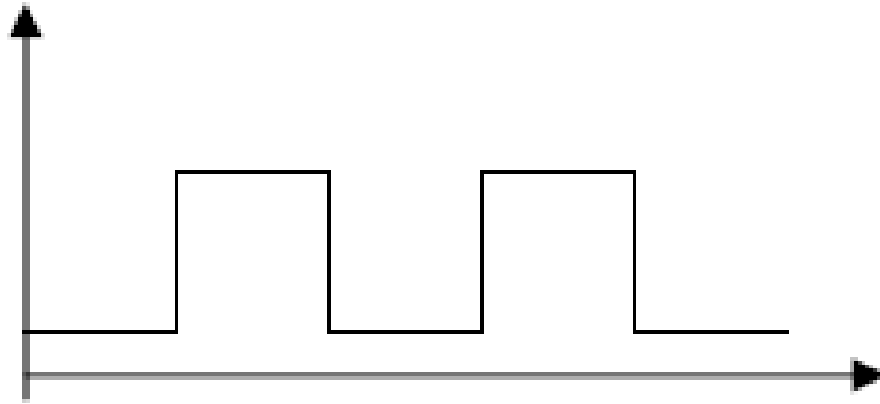
- Inner Diameter: 11 mm
- Outside diameter: 20 mm
- Proof Water Pressure: <1.75 MPa
- Water Flow Range: 1-30 L/min
- Voltage Range: 7.5 V
- Operating Current: 15 mA (DC 5V)
- Insulation Resistance: >100 MΩ
- Accuracy: ±5% (2~30L/min)
- The Output Pulse High Level: >4.7 VDC (DC input voltage 5 V)
- The 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

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Number	Color	Name	Description
1	Green	Signal	Pulse Signal
2	Red	VCC	5~12V
3	Black	GND	GND

### Pulse Signal



Duty Cy=40%~60%

## Tutorial

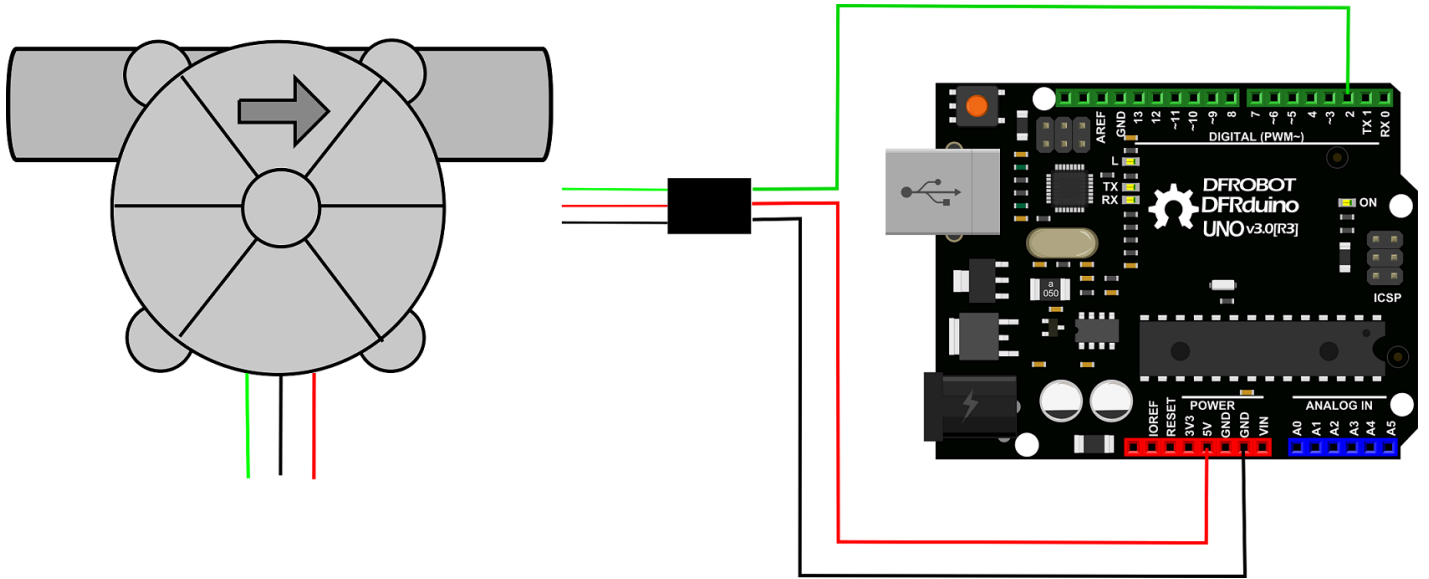
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In this Tutorial, we'll measure liquid flow using this sensor.

### 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

```
/*!
 * @file SEN0217.ino
 * @brief This example reads Water flow sensor Sensor.
 * @copyright Copyright (c) 2010 DFRobot Co.Ltd (http://www.dfrobot.com)
 * @license The MIT License (MIT)
 * @author berinie Chen <bernie.chen@dfrobot.com>
 * @version V1.0
 * @date 2016-3-13
 */

/*****Notice and Trouble shooting*****/
1.This code is tested on Arduino Uno.
*****/

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; // 450 pulses for 1 liter (see product parameters)
```

}

## FAQ

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Q&A	Some general Arduino Problems/FAQ/Tips
A	For any questions, advice or cool ideas to share, please visit the <b>DFRobot Forum</b> ( <a href="https://www.dfrobot.com/forum/">https://www.dfrobot.com/forum/</a> ).

## More Documentation

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