



## Water Flow Sensor - 1/8" SKU: SEN0216

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### Introduction

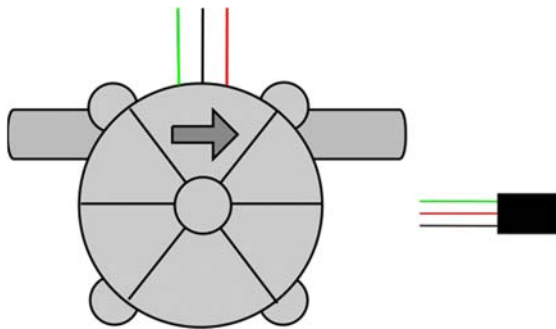
The Water Flow sensor measures the rate of a liquid flowing through it. The YF-S401 water flow sensor consists of a plastic valve body, flow rotor and hall effect sensor. It is usually used at the inlet end to detect the amount of flow. When liquid flows through the sensor, a magnetic rotor will rotate 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 6 mm hose 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

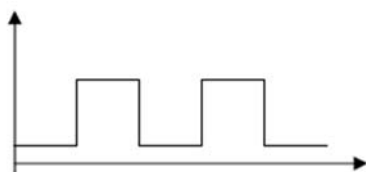
- Inner Diameter: 4 mm
- Outside diameter: 7 mm
- Proof Water Pressure: <math><0.8\text{ MPa}</math>
- Water Flow Range: 0.3-6 L/min
- Voltage Range: 5~12 V
- Operating Current: 15 mA (DC 5V)
- Insulation Resistance: >100 M $\Omega$
- Accuracy:  $\pm 5\%$  (0.3-3L/min)
- The Output Pulse High Level: >4.5 VDC (DC input voltage 5 V)
- The Output Pulse Low Level: <0.5 VDC (DC input voltage 5 V)
- Output Pulse Duty Ratio: 50%  $\pm$  10%
- Water-flow Formula: 1L = 5880 square waves
- Working Humidity Range: 35% ~ 90% RH (no frost)
- Dimension: 58\*35\*26 mm/2.28\*1.37\*1.02 inches
- Weight: 30g

## Board Overview



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

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

## Requirements

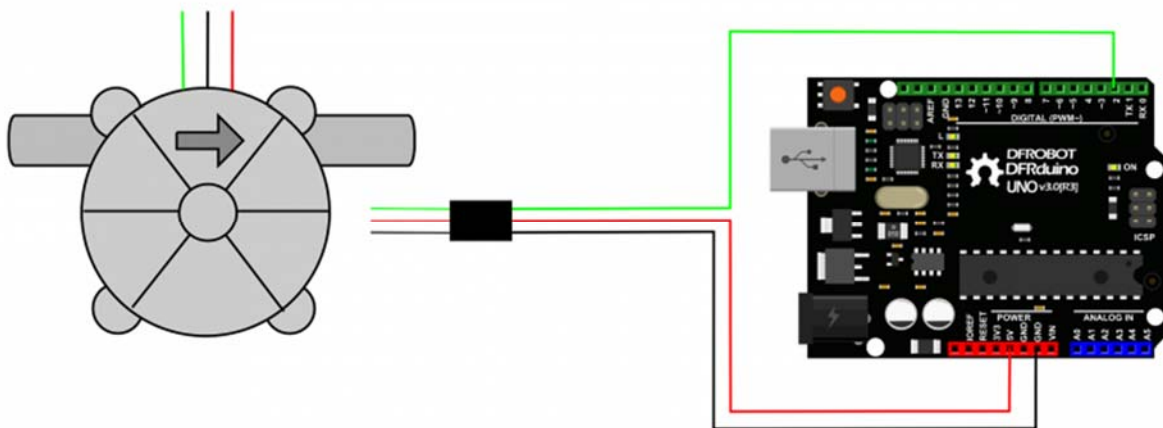
### Hardware

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)  
<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>  
6
```

```
7 GNU Lesser General Public License.
8 See <http://www.gnu.org/licenses/> for details.
9 All above must be included in any redistribution
10 *****/
11
12 /*****Notice and Trouble shooting*****/
13 1.Connection and Diagram can be found here http://www.dfrobot.com/wiki/index.php?title=Water\_Flow\_Sensor\_-\_1/8%22\_SKU:\_SEN0216
14 2.This code is tested on Arduino Uno.
15 *****/
16 volatile double waterFlow;
17 void setup() {
18   Serial.begin(9600); //baudrate
19   waterFlow = 0;
20   attachInterrupt(0, pulse, RISING); //DIGITAL Pin 2: Interrupt 0
21 }
22 void loop() {
23   Serial.print("waterFlow:");
24   Serial.print(waterFlow);
25   Serial.println(" L");
26   delay(500);
27 }
28
29 void pulse() //measure the quantity of square wave
30 {
31   waterFlow += 1.0 / 5880.0;
32 }
```

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## FAQ

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