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With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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

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### Introduction

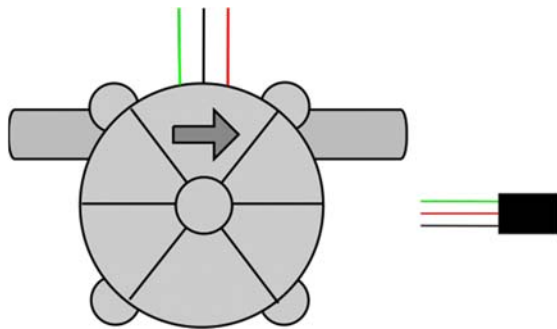
The Water Flow sensor measures the rate of a liquid flowing through it. The YF-S401 water flow sensor consists of a plastic valve body, flow rotor and hall effect sensor. It is usually used at the inlet end to detect the amount of flow. When liquid flows through the sensor, a magnetic rotor will rotate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

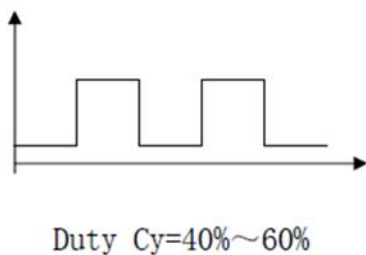
- Inner Diameter: 4 mm
- Outside diameter: 7 mm
- Proof Water Pressure: <0.8 MPa
- Water Flow Range: 0.3-6 L/min
- Voltage Range: 5~12 V
- Operating Current: 15 mA (DC 5V)
- Insulation Resistance: >100 MΩ
- Accuracy:  $\pm 5\%$  (0.3-3L/min)
- The Output Pulse High Level: >4.5 VDC (DC input voltage 5 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



## Tutorial

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

## Requirements

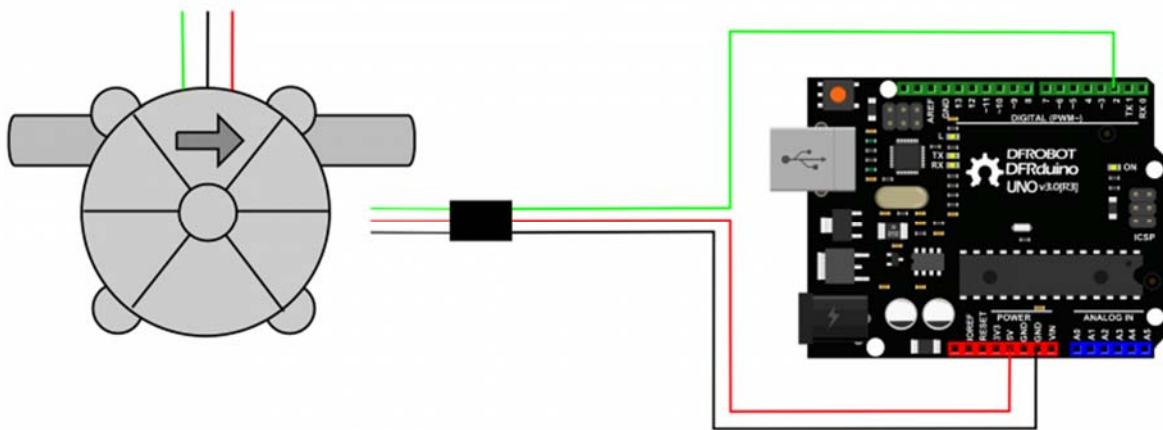
### Hardware

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](#).