Water Flow Sensor - 1/8" SKU: SEN0216

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Water Flow Sensor - 1/8"

Introduction

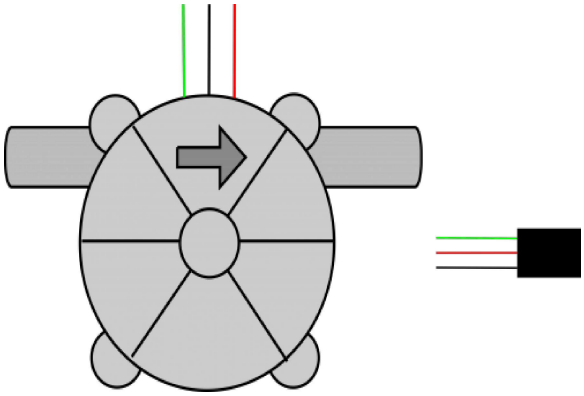
The Water Flow sensor measures the rate of a liquid flowing through it. The YF-S401 water flow sensor consists of a plastic valve body, flow rotor and hall effect sensor. It is usually used at the inlet end to detect the amount of flow. When liquid flows through the sensor, a magnetic rotor will rotate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

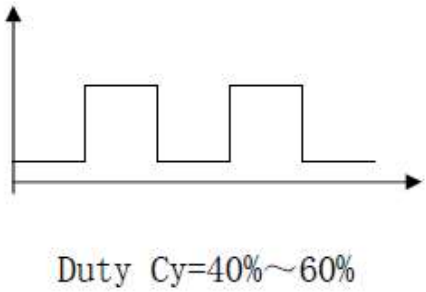
Board Overview



(/wiki/index.php/File:SEN0216_With_Cable.png)

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

Pulse Signal



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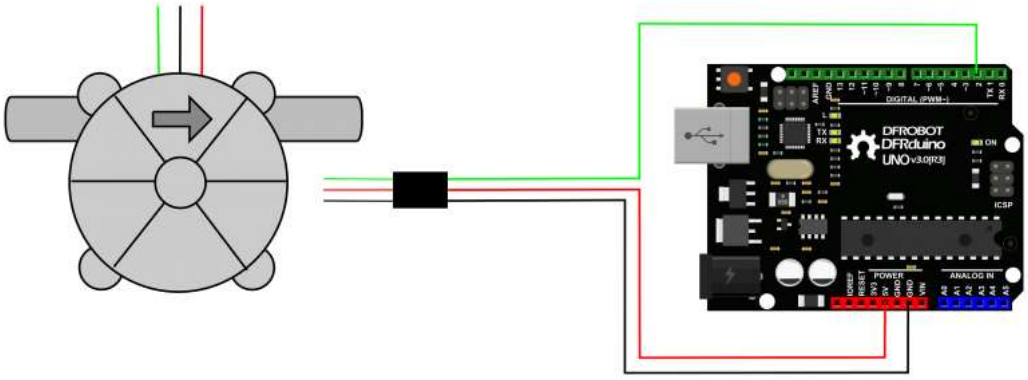
Tutorial

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%7C)

Connection Diagram



(/wiki/index.php/File:SEN0216_CONNET.png)

Sample Code

```
/*****************************************************
 This example reads Water flow sensor Sensor.

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 *****************************************************/

/***********Notice and Trouble shooting***************
 1.Connection and Diagram can be found here  http://www.dfrobot.com/wiki/index.php?title=Water_Flow_Sensor_-_1/8%22_SKU:_SEN0216
 2.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 / 5880.0;
}
```

FAQ

For any questions, advice or cool ideas to share, please visit the **DFRobot Forum** (http://www.dfrobot.com/forum/).

More

CAD File (https://github.com/Arduinolibrary/DFRobot_Water_Flow_Sensor/raw/master/SEN0216_CAD.dwg)

(http://www.dfrobot.com/) Shopping from **DFRobot Store** (https://www.dfrobot.com/index.php?route=product/product&search=sen0216&description=true&product_id=1531) or **DFRobot Distributor**. (http://www.dfrobot.com/index.php?route=information/distributorslogo)