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How to Use Water Flow Sensor - Arduino Tutorial

By codebender_cc in CircuitsArduino

Introduction: How to Use Water Flow Sensor - Arduino Tutorial

In this tutorial you will learn how to use one water flow sensor with an Arduino board.

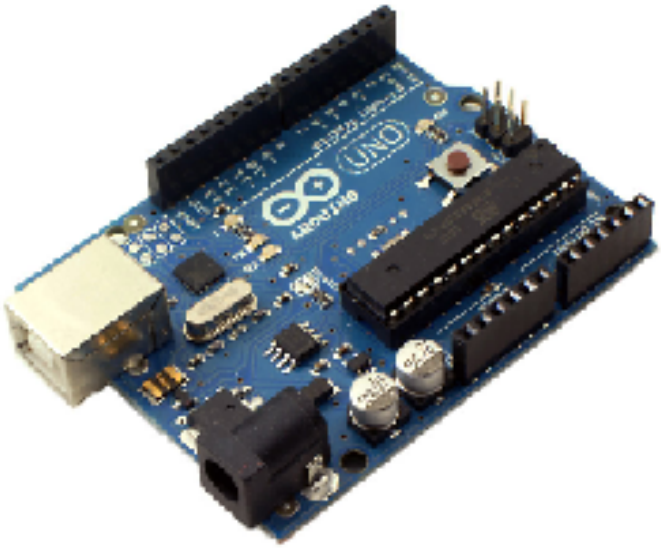
The water flow sensor consists of a plastic valve body, a water rotor and a hall-effect sensor. When the water flows through the rotor, rotor rolls and the speed of it changes with a different rate of flow. The hall-effect sensor outputs the corresponding pulse signal.

This type of sensor can be found on different diameters, water pressure (MPa) and flow rate (L/m) ranges. Make sure to select one that will cover your needs. The sensor that I have it has 20mm diameter, <1.75Mpa water pressure and ~30 L/m flow rate range.

In this tutorial we will use the serial monitor for printing the water flow rate in liters per hour and the total of liters flowed since starting.

So let's get started!

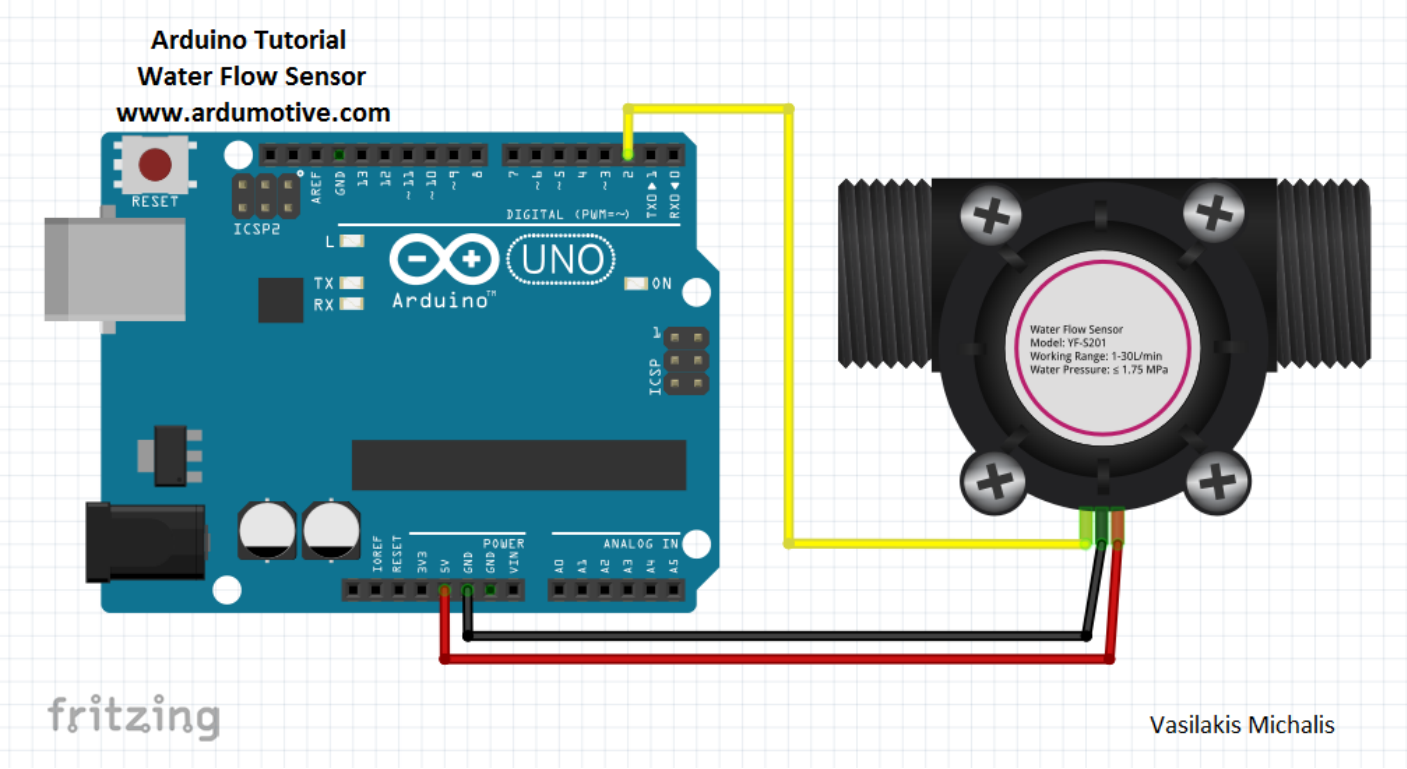
Step 1: What You Will Need



For this tutorial you will need:

- Arduino uno
- Water flow sensor
- 3 breadboard cables

Step 2: The Circuit



The connections are pretty easy, see the above image with the breadboard circuit schematic.

Step 3: The Code

Here's the code, embedded using Codebender!

Try downloading the Codebender plugin and clicking on the "Run on Arduino" button to program yo ur Arduino board with this sketch. And that's it, you've programmed your Arduino with this sketch!

[arduino-tutorial] Water Flow Sensor (https://codebender.cc/sketch:304865?referrer=mi.vasilakis) by mi.vasilakis (https://codebender.cc/user/mi.vasilakis?referrer=mi.vasilakis)

Edit | Clone & Edit | Download

```
1  /*
2  Liquid flow rate sensor -DIYhacking.com Arvind Sanjeev
3
4  Measure the liquid/water flow rate using this code.
5  Connect Vcc and Gnd of sensor to arduino, and the
6  signal line to arduino digital pin 2.
7
8   */
9
10 byte statusLed    = 13;
11
12 byte sensorInterrupt = 0;  // 0 = digital pin 2
13 byte sensorPin       = 2;
14
15 // The hall-effect flow sensor outputs approximately 4.5 pulses per second per
16 // litre/minute of flow.
17 float calibrationFactor = 4.5;
18
19 volatile byte pulseCount;
20
21 float flowRate;
22 unsigned int flowMilliLitres;
23 unsigned long totalMilliLitres;
24
25 unsigned long oldTime;
26
27 void setup()
28 {
29
30   // Initialize a serial connection for reporting values to the host
```

(/?referrer=mi.vasilakis) (https://codeben referrer=mi.vasil

To program your Arduino from your browser, install the codebender app or Arduino Create Agent for codebender. Learn more (https://codebender.cc/static/plugin)

Please select a board | Run on Arduino

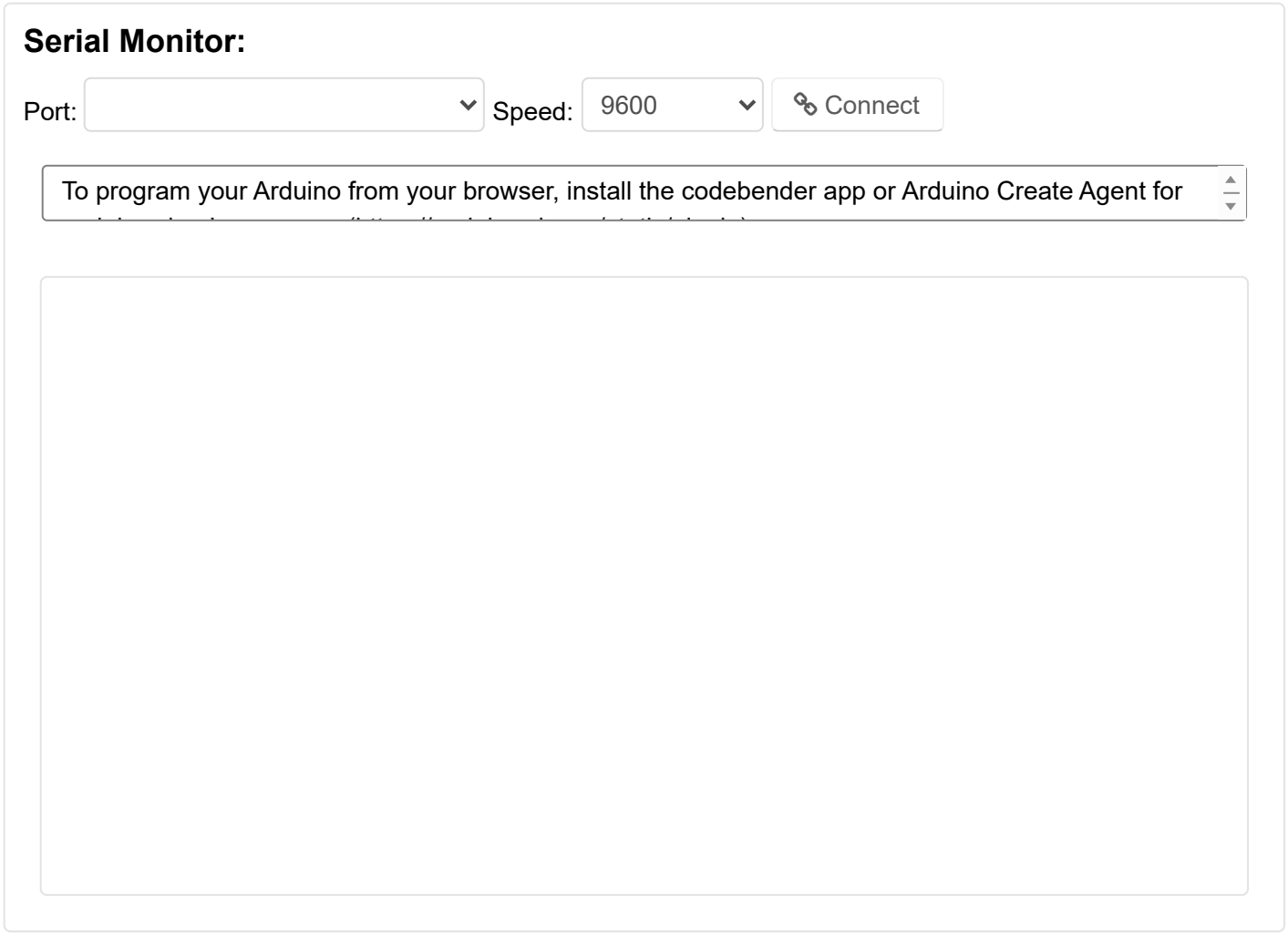
You can keep playing with that by clicking the "Edit" button and start making your own modifications to the code. For example you can change in the line 58 the "1000" ms delay time.

Step 4: Serial Monitor

Press the connect button below to start the serial communication.

Connect your sensor with your water tap, or just blow on it.

Note: The back side of the sensor show with one arrow the correct flow side.



Step 5: Well Done!

You have successfully completed one more Arduino "How to" tutorial and you learned how to use th e water flow sensor.

I hope you liked this, let me know in the comments.

There will be more of them, so make sure to click Follow button!

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