G1/4" Water Flow Sensor

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

Specification

Mini. Working Voltage	DC 4.5V
Max. Working Current	15mA(DC 5V)
Working Voltage	5V～24V
Flow Rate Range	0.3～6L/min
Load Capacity	≤10mA(DC 5V)
Operating Temperature	≤80C
Liquid Temperature	≤120C
Operating Humidity	35%～90%RH
Water Pressure	≤2.0MPa
Storage Temperature	-25C～+80C
Storage Humidity	25%～95%RH

Mechanic Dimensions

Sensor Components

No.	Name	Quantity	Material	Note
1	Valve body	1	PA66+33%glass fiber	
2	Stainless steel bead	1	Stainless steel SUS304	
3	Axis	1	Stainless steel SUS304	
4	Impeller	1	POM	
5	Ring magnet	1	Ferrite	
6	Middle ring	1	PA66+33%glass fiber	
7	O-seal ring	1	Rubber	
8	Electronic seal ring	1	Rubber	
9	Cover	1	PA66+33%glass fiber	
10	Screw	4	Stainless steel SUS304	
11	Cable	1	1007 24AWG	

Usage Example

Note: This example is abstracted from the forum, which was done by Charles Gantt. Thanks for his contribution.Let's see how it works.

Reading Water Flow rate with Water Flow Sensor

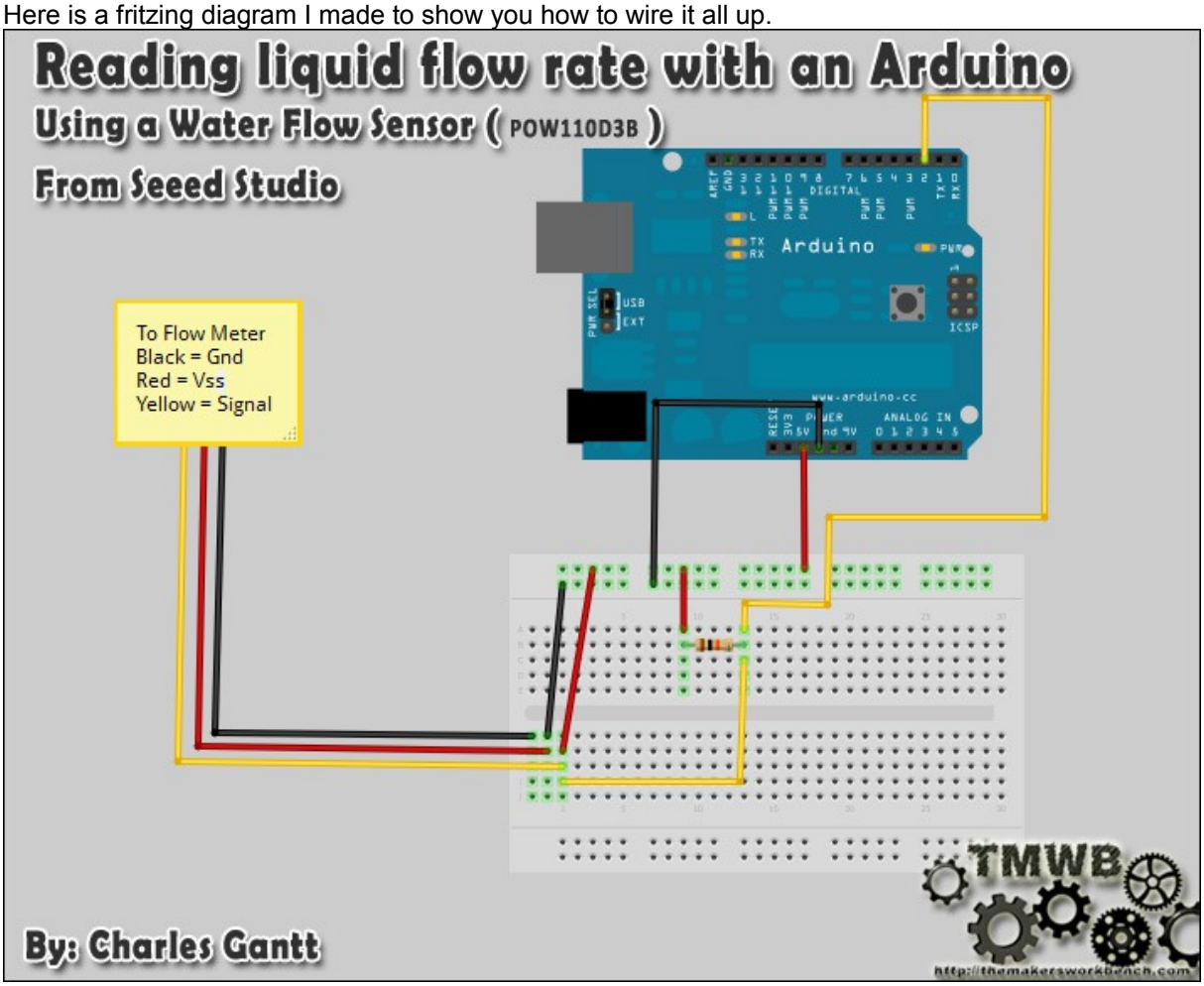
This is part of a project I have been working on and I thought I would share it here since there have been a few threads on how to read water flow rate in liters per hour using the Water Flow Sensor found in the Seeed Studio Depo. It uses a simple rotating wheel that pulses a hall effect sensor. By reading these pulses and implementing a little math, we can read the liquids flow rate accurate to within 3%. The threads are simple G3/4 so finding barbed ends will not be that hard.

Hardware Installation

You will need Seeeduino / Arduino ,Water Flow Sensor,10K resistor,a breadboard and some jumper wires.

Wiring up the Water Flow Sensor is pretty simple. There are 3 wires: Black, Red, and Yellow. Black to the Seeeduino's ground pin Red to Seeeduino's 5v pin The yellow wire will need to be connected to a 10k pull up resistor.and then to pin 2 on the Seeeduino.

Here is a fritzing diagram I made to show you how to wire it all up.



Once you have it wired up you will need to upload the following code to your Seeeduino. Once it is uploaded and you have some fluid flowing through the Water Flow Sensor, you can open the serial monitor and it will display the flow rate, refreshing every second.

Programming

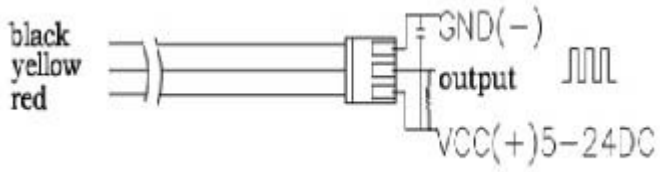
```
// reading liquid flow rate using Seeeduino and Water Flow Sensor from
Seeedstudio.com
// Code adapted by Charles Gantt from PC Fan RPM code written by Crenn
@thebestcasescenario.com
// http:/themakersworkbench.com http://thebestcasescenario.com
http://seeedstudio.com

volatile int NbTopsFan; //measuring the rising edges of the signal
int Calc;
int hallsensor = 2;    //The pin location of the sensor

void rpm ()     //This is the function that the interupt calls
{
  NbTopsFan++;  //This function measures the rising and falling edge of the

hall effect sensors signal
}
// The setup() method runs once, when the sketch starts
void setup() //
```

```
{
  pinMode(hallsensor, INPUT); //initializes digital pin 2 as an input
  Serial.begin(9600); //This is the setup function where the serial port is

initialised,
  attachInterrupt(0, rpm, RISING); //and the interrupt is attached
}
// the loop() method runs over and over again,
// as long as the Arduino has power
void loop ()
{
  NbTopsFan = 0;   //Set NbTops to 0 ready for calculations
  sei();      //Enables interrupts
  delay (1000);   //Wait 1 second
  cli();      //Disable interrupts
  Calc = (NbTopsFan * 60 / 73); //(Pulse frequency x 60) / 73Q, = flow rate

in L/hour
  Serial.print (Calc, DEC); //Prints the number calculated above
  Serial.print (" L/hour\r\n"); //Prints "L/hour" and returns a  new line
}
```

You can refer our forum for more details about Reading Water Flow rate with Water Flow Sensor.

Wiring Diagram

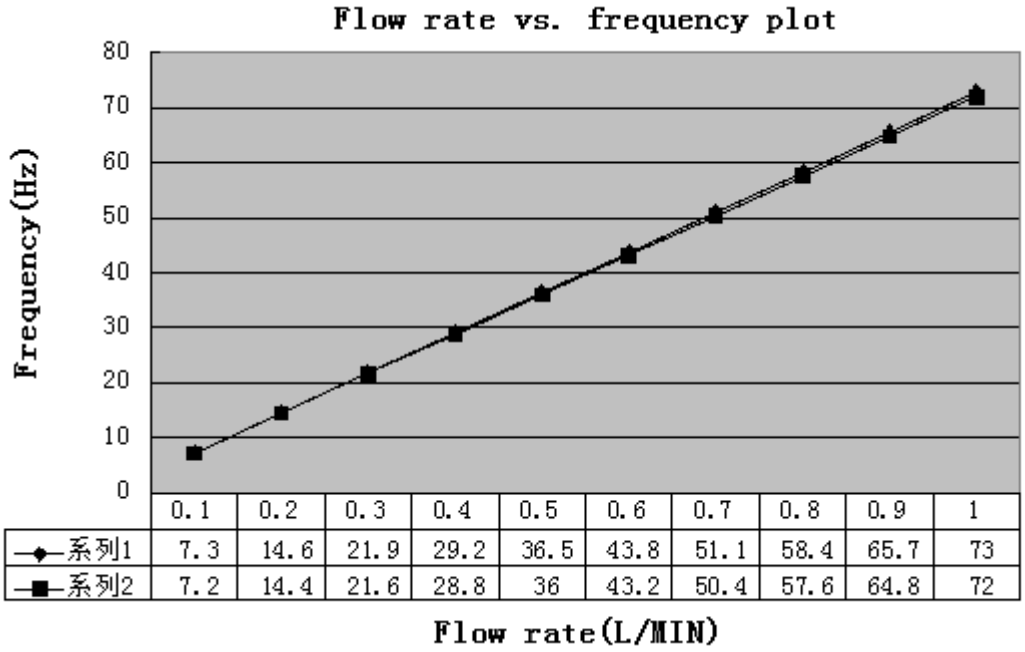
The external diameter of thread the connections use is 1.4mm.



Output Table

Pulse frequency (Hz) in Horizontal Test= 73Q, Q is flow rate in L/min. (Results in +/- 3% range)

Output pulse high level	Signal voltage >4.5 V(input DC 5 V)
Output pulse low level	Signal voltage <0.5V(input DC 5V)
Precision	3% (Flow rate from 1L/min to 10L/min)
Output signal duty cycle	40%～60%



	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1
系列1	7.3	14.6	21.9	29.2	36.5	43.8	51.1	58.4	65.7	73
系列2	7.2	14.4	21.6	28.8	36	43.2	50.4	57.6	64.8	72

Flow rate(L/MIN)