

## M11\*1.25 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.

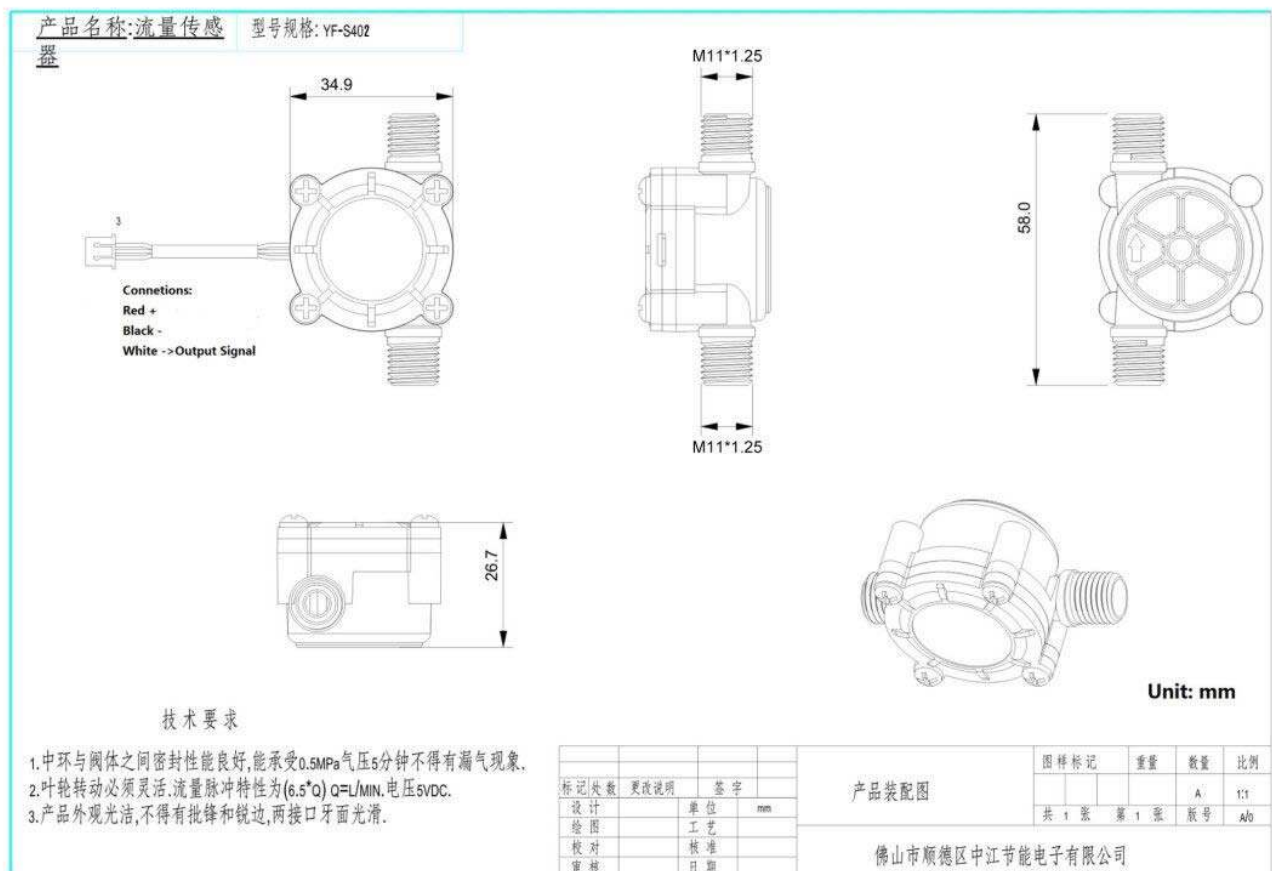
### Specification

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	$\leq 10\text{mA(DC 5V)}$
Operating Temperature	$\leq 80^{\circ}\text{C}$
Liquid Temperature	$\leq 120^{\circ}\text{C}$

Operating Humidity	35%~90%RH
Water Pressure	≤0.8MPa
Storage Temperature	-25°C~+80°C
Storage Humidity	25%~95%RH

## Mechanic Dimensions

Thread size : M11\*1.25



## 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

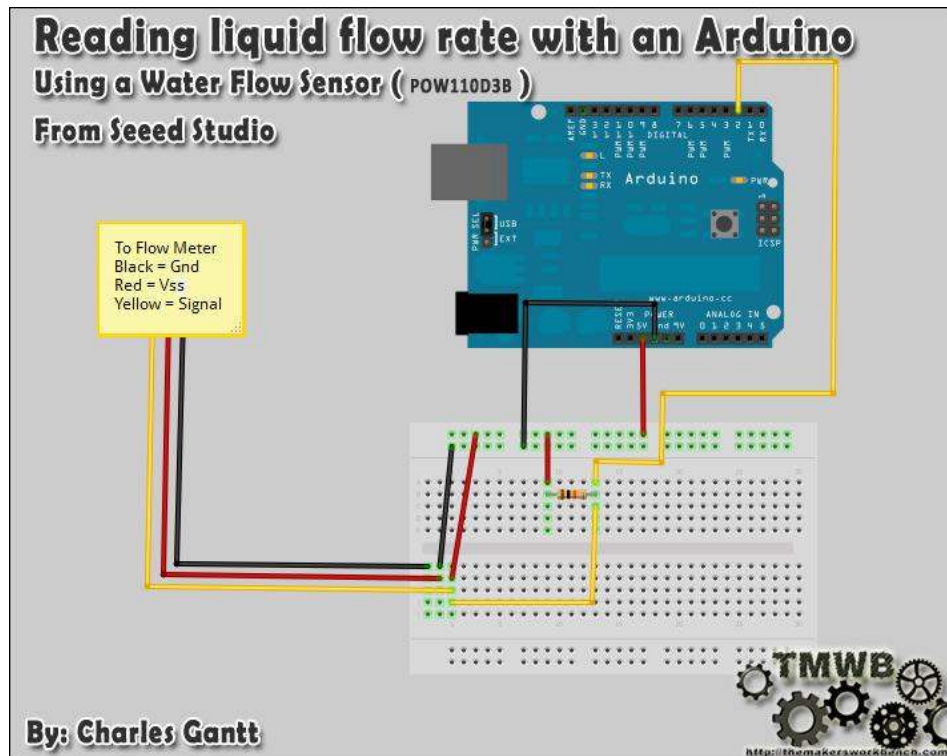
This is part of a project I have been working on and I thought I would share it here since there have been a few threads on how to read water flow rate in liters per hour using the Water Flow Sensor found in the Seeed Studio Depo. It uses a simple rotating wheel that pulses a hall effect sensor. By reading these pulses and implementing a little math, we can read the liquids flow rate accurate to within 3%. The threads are simple G $\frac{3}{4}$  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

```
1// reading liquid flow rate using Seeeduino and Water Flow Sensor from Seeedstudio.com
2// Code adapted by Charles Gantt from PC Fan RPM code written by Crenn
3@thebestcasescenario.com
4// http://themakersworkbench.com http://thebestcasescenario.com http://seeedstudio.com
5
6volatile int NbTopsFan; //measuring the rising edges of the signal
7int Calc;
8int hallsensor = 2; //The pin location of the sensor
9
10void rpm () //This is the function that the interupt calls
11{
12  NbTopsFan++; //This function measures the rising and falling edge of the
13
14  hall effect sensors signal
15}
16// The setup() method runs once, when the sketch starts
17void setup() //
18{
19  pinMode(hallsensor, INPUT); //initializes digital pin 2 as an input
20  Serial.begin(9600); //This is the setup function where the serial port is
21
```

```

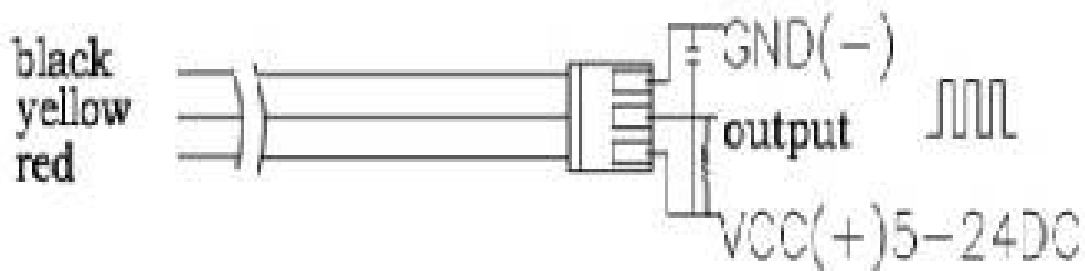
22 initialised,
23 attachInterrupt(0, rpm, RISING); //and the interrupt is attached
24}
25// the loop() method runs over and over again,
26// as long as the Arduino has power
27void loop ()
28{
29 NbTopsFan = 0; //Set NbTops to 0 ready for calculations
30 sei(); //Enables interrupts
31 delay (1000); //Wait 1 second
32 cli(); //Disable interrupts
33 Calc = (NbTopsFan * 60 / 73); //(Pulse frequency x 60) / 73Q, = flow rate
34
35 in L/hour
36 Serial.print (Calc, DEC); //Prints the number calculated above
37 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  $\pm 3\%$  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%

## FAQ

### What materials is water flow sensor made of?

Nylon with fiber, avoiding strong acid and strong base.

### Is the water flow sensor safe for drinking water?

Yeah, it has been used on drinking machine.

### What thread type does this sensor have? British or NPT?

It has BSP thread. We have two kinds of water sensors. The black is standard(Thread major diameter) and the white one is smaller(Thread minor diameter). You can refer to [BSP details](#).

## Tech Support

Please submit any technical issue into our [forum](#) or drop mail to [techsupport@seeed.cc](mailto:techsupport@seeed.cc).