



Micro Flow Sensor

(Model: F1013)

Manual

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Zhengzhou Winsen Electronics Technology Co., Ltd

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F1013 Micro Flow Sensor

Profile

F1013 micro flow sensor adopts thermodynamic principle to detect the gas flow, and it has high accuracy and good repeatability. The built-in temperature sensor makes the product has the function of professional temperature compensation calibration. At the same time, the output is linear analog voltage which is convenient to use.



Features

- Latest MEMS Sensor chip technology
- High accuracy, quick response, good repeatability
- Detection micro flow accurately
- It is calibrated completely and temperature compensated.

Main Applications

- Industrial process control
- Air and environment protection
- Portable detector

Technical Parameters Stable1.

Model	F1013			
Measuring Range ^①	20、30、50、100、200、500、1000、1200、2000sccm ^②			
	Min	Typical	Max	Unit
Full Scale Output	4.90	5.00	5.10	V
Zero Output	0.96	1.00	1.04	V
Output Impedance	-	200	-	Ω
Working Voltage	7.0	10.0	14.0	V
Working Current	15	25	30	mA
Accuracy	-	±1.5	±2.5	%F.S
Repeatability	-	±0.3	±0.5	%F.S
Annual Drift ^③	-	±0.1	±0.5	%F.S
Pressure range ^④	-	-	200	kPa
Response Time	5	10	15	ms
Working Temp. ^⑤	-25		65	℃
Storage Temp.	-40		90	℃

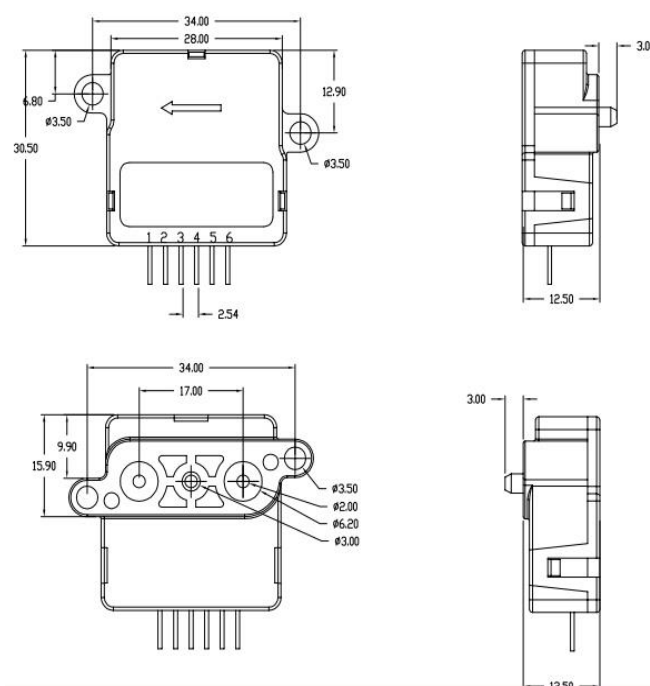


Fig1.Sensor Structure

Note:

- ① The measuring range within 20-2000sccm is available and regular measuring ranges such as 20、30、50、100、200、500、1000、1200、2000sccm.
- ② sccm means standard-state cubic centimeter per minute. Standard-state: gas temperature is 0°C and pressure is 101.325 kPa.
- ③ The testing environment is room temperature and clear air.
- ④ The pressure range of 1 MPa can be customized.
- ⑤ The temperature compensation is for the tem. range of 0-50°C and the compensation performance can't be ensured beyond the temperature range.

Pins Definition

Stable 2.Pins definition

Pin	Function
1	Null
2	Null
3	GND
4	VCC
5	OUT
6	Null

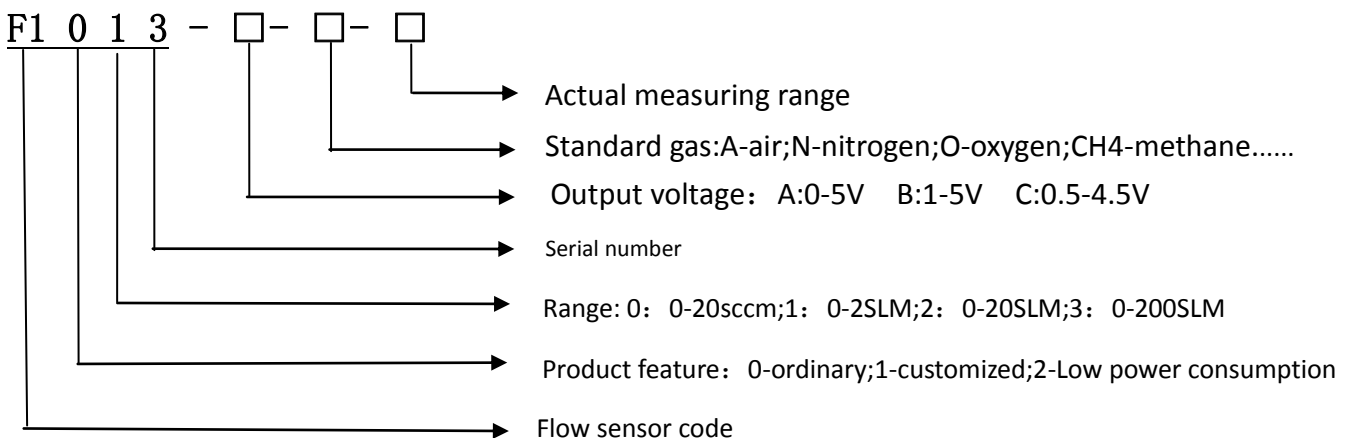
Calculation for Airflow

Actual flow=full scale * (sensor actual output voltage-zero output voltage) / (full scale output voltage-zero output voltage)

For example: the sensor full scale is 1000 sccm, the sensor zero output voltage is 1V and full scale output voltage is 5V, and the actual output is 2.5V.

Then the actual flow=1000sccm * (2.5V - 1V)/(5V- 1V) = 375sccm

Naming Rule



Cautions

1. Prohibit to use it in strong corrosive gas, toxic gas, explosive gas environment.
2. If measured gas medium contains dirt, the sensor's lifespan will be shorten. We suggest users equip the sensor flow inlet with 5 micrometer precise filter.
3. The sensitivity of the product will reduce or be damaged if it contacts to water.
4. The wrong connecting of power supply will damage the internal circuit.

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