Micro Flow Sensor

（Model：F1031）

Manual

Version： 2.0

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Zhengzhou Winsen Electronics Technology Co., Ltd

Statement

Thanks for purchasing our product. In order to let customers use it better and reduce the faults caused by misuse, please read the manual carefully and operate it correctly in accordance with the instructions. If users disobey the terms or remove, disassemble, change the components inside of the sensor, we shall not be responsible for the loss.

The specific such as color, appearance, sizes &etc, please in kind prevail.

We are devoting ourselves to products development and technical innovation, so we reserve the right to improve the products without notice. Please confirm it is the valid version before using this manual. At the same time, users' comments on optimized using way are welcome.

Please keep the manual properly, in order to get help if you have questions during the usage in the future.

Zhengzhou Winsen Electronics Technology CO., LTD

F1031 Micro Flow Sensor

Profile

F1031 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.Technical Parameters

Model	F1031			
Measuring Range①	20、35、50、100、150、200 SLM②			
	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 Drift③	-	±0.1	±0.5	%F.S
Pressure range④	-	-	100	kPa
Response Time	5	10	15	ms
Working Temp.⑤	-25		65	℃
Storage Temp.	-40		90	℃

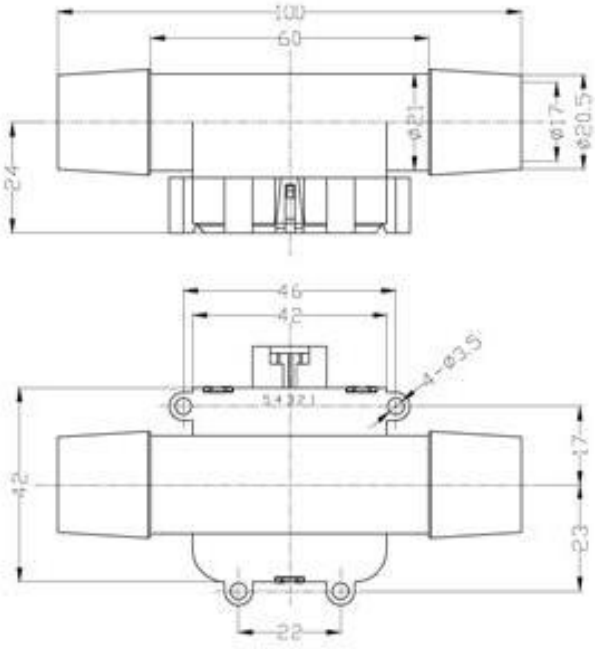

Fig1.Sensor Structure

Note:

①The measuring range within 20-200SLM is available and regular measuring ranges such as 20、35、50、100、150、200SLM.Customized fee will be charged for other ranges.

②SLM means standard liter per minute. Standard-state: gas temperature is 0℃ and pressure is 101.325 kPa.

③The testing environment is room temperature and clear air.

④If higher pressure range is needed, please fix the four screw holes on the back of the sensor.

⑤The temperature compensation is for the tem. range of 0-50℃ and the compensation performance can't be ensured beyond the temperature range.

Pins Definition

Stable 2.Pins definition

Pin	Function
1(yellow or blue)	OUT
2(red)	VCC
3(black)	GND

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 100 SLM, the sensor zero output voltage is 1V and full scale output voltage is 5V, and the actual output is 3.5V.

Then the actual flow=100 SLM * (3.5V - 1V)/(5V- 1V) = 62.5SLM

Naming Rule

F1 0 3 1 - □- □- □

- □ → Actual measuring range
- □ → Standard gas:A-air;N-nitrogen;O-oxygen;CH4-methane……
- □ → Output voltage： A:0-5V B:1-5V C:0.5-4.5V
- 1 → Serial number
- 3 → Range：0：0-20sccm；1：0-2SLM；2：0-20SLM；3：0-200SLM
- 0 → Product feature：0-ordinary;1-customized;2-Low power consumption
- F1 → Flow sensor code

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.

Zhengzhou Winsen Electronics Technology Co., Ltd
Add: No.299, Jinsuo Road, National Hi-Tech Zone, Zhengzhou 450001 China
Tel: +86-371-67169097/67169670
Fax: +86-371-60932988
E-mail: sales@winsensor.com
Website: www.winsen-sensor.com