Micro Flow Sensor

（**Model：F1031V**）

Manual

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Zhengzhou Winsen Electronics Technology Co., Ltd

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F1031V Micro Flow Sensor

Profile

The F1031V flow sensor uses the thermodynamic principle to detect flow rate of the gas medium in the flow channel, with good precision and repeatability. Temperature sensors are built-in and every one product is calibrated for temperature compensation. At the same time, it has linear analog voltage output, 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

Intensive care ventilator
Portable ventilator

Technical Parameters   Stable1.Technical Parameters

Model	F1031V			
Measuring Range[①]	100, 150, 200, 300SLM[②]			
	Min	Typical	Max	Unit
Full Scale Output	4.34	4.50	4.66	V
Zero Output	0.45	0.5	0.55	V
Output Impedance	-	1000	-	Ω
Working Voltage	4.95	5.0	14.0	V
Working Current	-	25	-	mA
Accuracy	-	±2.5	±4	%F.S
Repeatability	-	±0.5	±1	%F.S
Output Drift		0.12		%/℃
Signal noise	-	10	-	mV(Vrms)
Resistance	-	120	-	Pa/60SLM
Power consumption	-	125	-	mW/5V
Working pressure	-	-	100	kPa
Response Time[③]	-	50	-	ms
Working Temp.[④]	-25		65	℃
Storage Temp.	-40		90	℃

Fig1.Sensor Structure

Leading gas sensing solutions supplier in China!

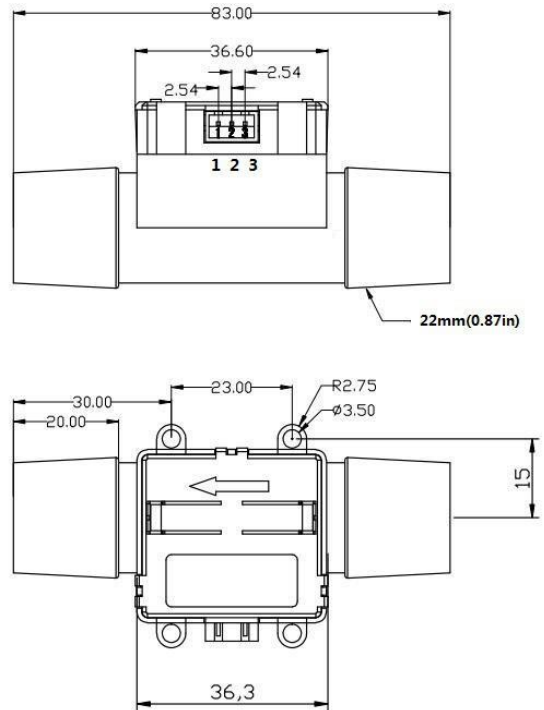**Note:**

①The measuring range within 20-300SLM.

②SLM means standard liter per minute. Standard-state: gas temperature is 20℃ and pressure is

101.325 kPa. The testing environment is room temperature and clear air.

③The response time could be customized for 15-1000ms.

④The 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(black or gray)	GND
2(red)	VCC
3(yellow)	OUT

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 200 SLM, the sensor zero output voltage is 0.5V and full scale output voltage is 4.5V, and the actual output is 3.5V.
Then the actual flow=200 SLM * (3.5V – 0.5V)/(4.5V- 0.5V) = 150SLM

Cautions

1.The air inlet and air outlet of the sensor need to be equipped with long straight pipe to ensure the product's performance. It is recommended to leave a straight pipe for the inlet with 10 times longer than the pipe diameter while the outlet will be 5 times longer.
2. If measured gas medium contains dirt, the sensor's lifespan will be shortened. 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.