



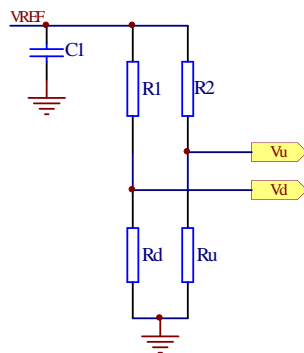
Product Features

- ◆ The sensor has high sensitivity and very small initial flow rate
- ◆ The sensor chip uses thermal mass flow measurement, without temperature and pressure compensation, to ensure the high precision measurement of the sensor
- ◆ The integration of multiple sensors on a single chip greatly improves the range ratio of sensors;
- ◆ The sensor has high zero point stability
- ◆ High stability across the full range
- ◆ Full range of high accuracy and excellent repeatability
- ◆ low power consumption
- ◆ Low-voltage damage
- ◆ Fast response time

Brief Introduction

The FSG4000 series small-flow gas mass flow sensors are specifically engineered for measuring and process control of low-flow gases. These sensors utilize our proprietary Micro-Electro-Mechanical System (MEMS) flow sensing chips, designed to handle clean gases across various pipe diameters. Featuring innovative encapsulation technology, they offer cost-effectiveness, easy installation, and eliminate the need for temperature or pressure compensation – making them a viable alternative to traditional volumetric or differential pressure flow sensors.

Figure 1, Sensing Bridge Circuit

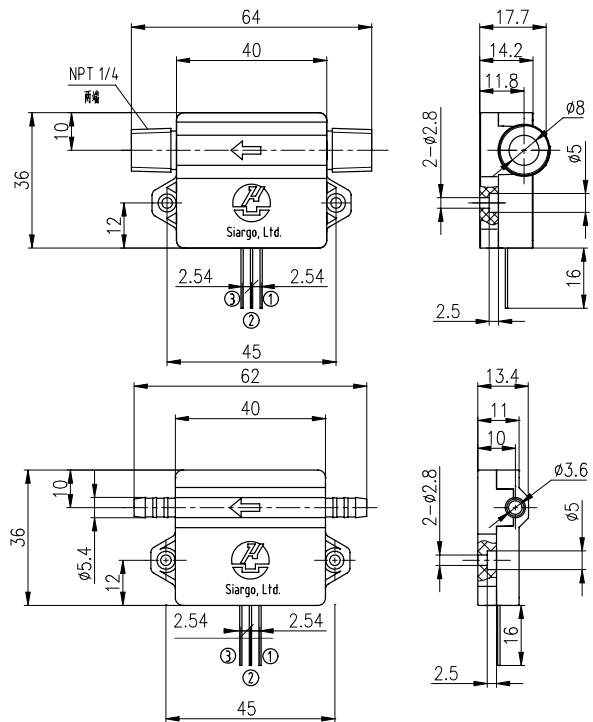


Performance Index

	FSG4003	FSG4008	unit
latus rec-tum	3	8	mm
maximumflow	1, 2, 5	10, 20	SLPM
Ratio of ran-ges	>100: 1		
accuracy	± (4%± 1%FS)		
repeitiveness	± 2 %		
Zero point output drift	± 30		mV
Output drift	0.2		%/
response time	10		ms
working power sup-ply	8~18Vdc, 50mA		
Mode of output	Linear, analog 0.5~4.5Vdc		
Maximum flow pressure loss	100	500	Pa
maximum working pressure	0.4		MPa
working temperature	-5~+55		
storage tempera-ture	-20~+65		
Humidity at work	<95		%RH
mechanical in-terface	Removable hose fitting	NPT 1/4	
Calibration method	Air (or other gases), 20°C, 101.325kPa		
weight	15	23	g

- Note: 1. The sensor needs to be preheated for one minute before use;
 2. The maximum flow rate change to prevent damage is: FSG4003 is 10SLPM/sec, and FSG4008 is 30SLPM/sec.

installation size

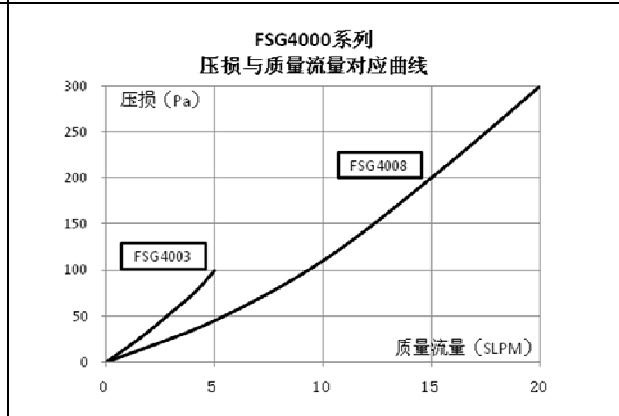
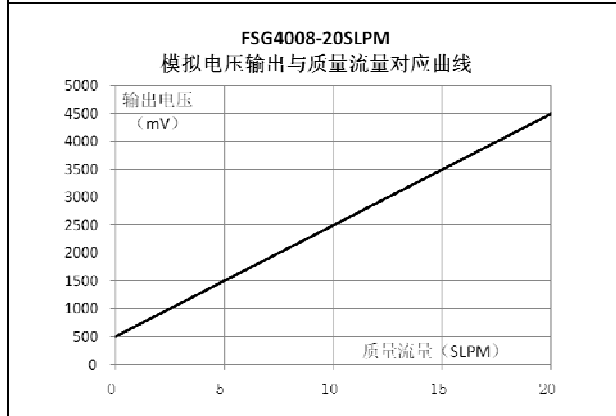
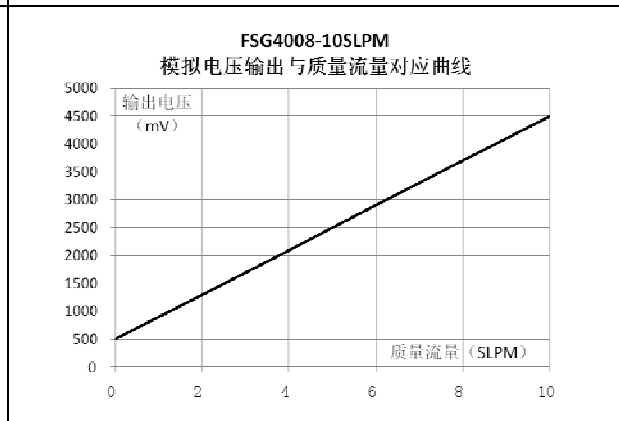
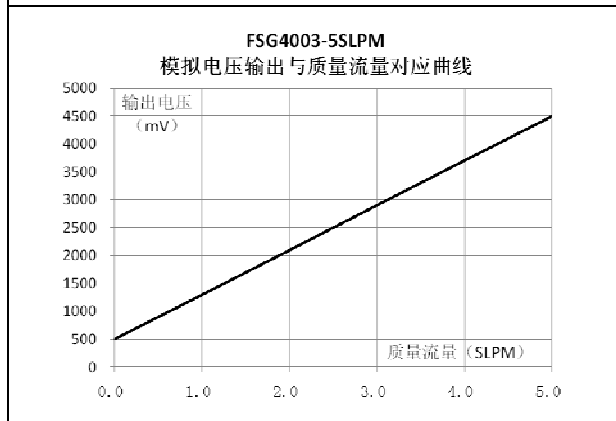
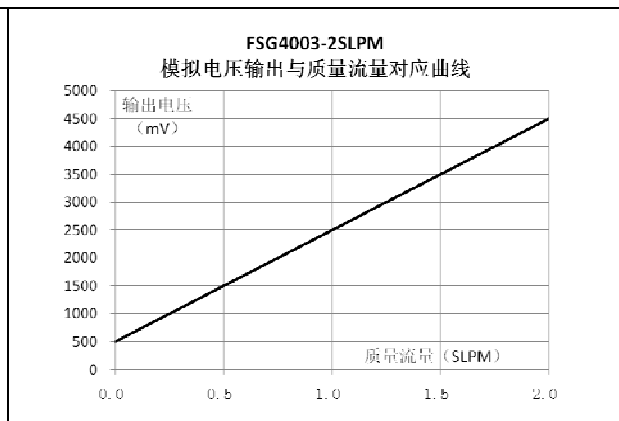
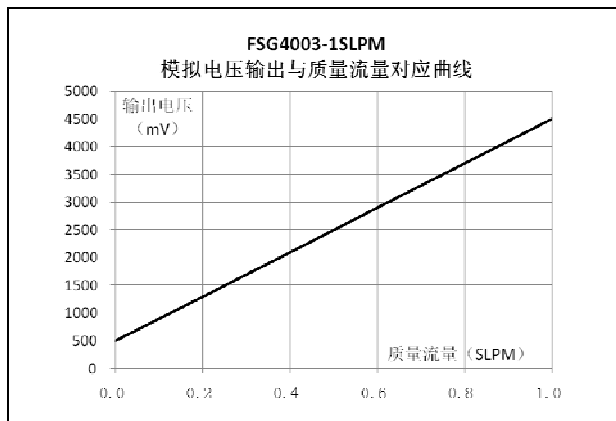


Definition of wiring

pin	Pin name	Pin definitions
1	Vout	Simulated output (+)
2	VCC	Input power supply is (+)
3	GND	Power/Signal ground (-)

Analog voltage output and typical output curve

FSG4003-1SLPM		FSG4003-2SLPM		FSG4003-5SLPM		FSG4008-10SLPM		FSG4008-20SLPM	
flow mass SLPM	analog voltage mV	flow mass SLPM	analog voltage mV	flow mass SLPM	analog voltage mV	flow mass SLPM	analog voltage mV	flow mass SLPM	analog voltage mV
0.0	500	0.0	500	0	500	0	500	0	500
0.2	1300	0.5	1500	1	1300	2	1300	5	1500
0.4	2100	1.0	2500	2	2100	4	2100	10	2500
0.6	2900	1.5	3500	3	2900	6	2900	15	3500
0.8	3700	2.0	4500	4	3700	8	3700	20	4500
1.0	4500			5	4500	10	4500		



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