AIR QUALITY SENSOR MODULE

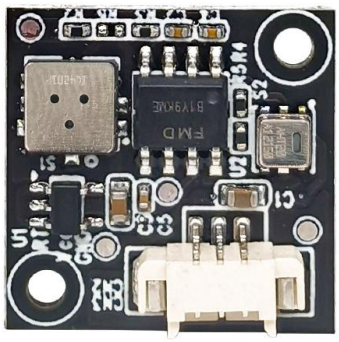
Instructions

深圳市诺金传感有限公司

Shenzhen Nuojin Sensor Co., LTD

AIR Quality Sensor with Temperature and humidity module
（SSAM03）

Product Description



SSAM03 air quality sensor with temperature and humidity sensor module can accurately detect the air quality in the current environment, smoke and air odor, and can be used as a purifier smart home vehicle products scene; while SSAM03 module can detect the temperature and humidity of the surrounding environment, provide accurate data reference.

Sensor Characteristics

- ✧ High precision, long life, low temperature resistance
- ✧ Fast response speed, immediately response after startup
- ✧ Good resistance to toxicity
- ✧ Simple docking, using level output or single bus mode [cost saving, concise and reliable]
- ✧ Durable and reliable, more than 3 years
- ✧ Excellent accuracy, repeatability, linearity and consistency
- ✧ Strong ability to resist electromagnetic interference
- ✧ With fixed mounting hole, easy to install

The main application

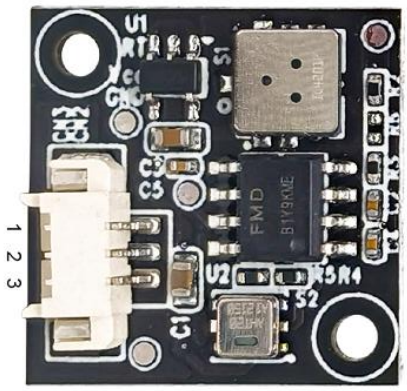
Air purifier、Smart ashtray、Intelligent fresh air system、Smart home、Infant ambient air detection alarm、Portable air detector

Technical indicators

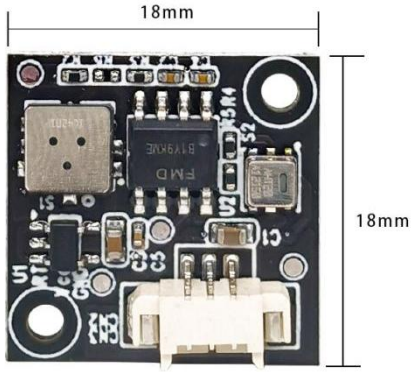
Product model	SSAM03
Product type	MEMS semiconductor sensor
Standard package	Ceramic package is mounted on the PCB
Detect gas	smoke, VOC, alcohol
Detection concentration	0～500ppm(ethanol)
Resolution	1ppm
Operating temperature	-10-55℃
Operating humidity	10-90RH
Preheating time	None. Starts immediately after start up
Response time（T90）	<5s
Recovery time（T10）	<5s
Temperature detection range	-40 ~ 85 ℃
Temperature resolution	0.01 ℃
Accuracy of temperature	±0.3(Typical values)　±1 (Limit values)
Humidity detection range	0 ~ 100 %RH
Humidity resolution	0.024
Accuracy of humidity	±2(Typical values)　±5 (Limit values)
Power consumption	<40mW
Life	≥ 3 years

Interface Definition

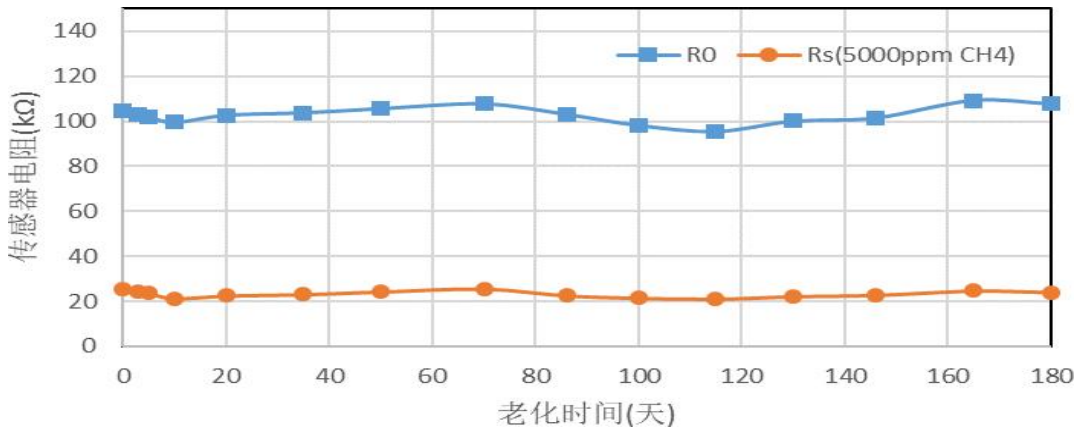
pin	Pin connect
1	Single bus protocol output
2	VCC（3.3V）
3	GND



Size: module size 18*18mm, thickness 3mm. Pin spacing is 1.25mm



Stability：



传感器模块的长期稳定性

Long-term stability of the sensor module

(Note: All tests in the figure were performed under standard test conditions)

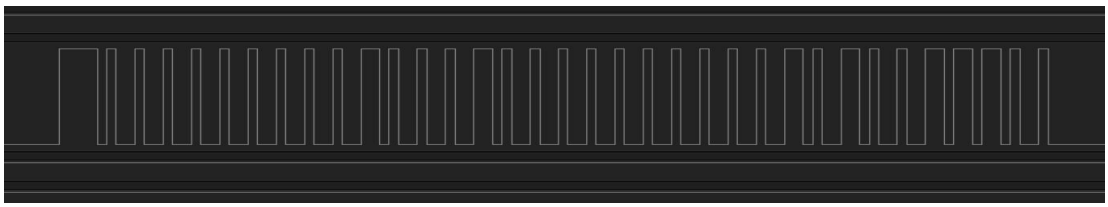
Communication protocol

Single bus mode,sent 3bit data +32bit data per time
3bit data ： one synchronous head, two bit data;
Synchronous head: 20ms high, 5ms low,
data code:
0：high 5ms low 10ms
1：high 10ms low 5ms
Send data per time：synchronous head, two bit data【00，or 01，or 10】
data code：

00：The air is clean；
01：The air is not very good；
10：The air is not clean；

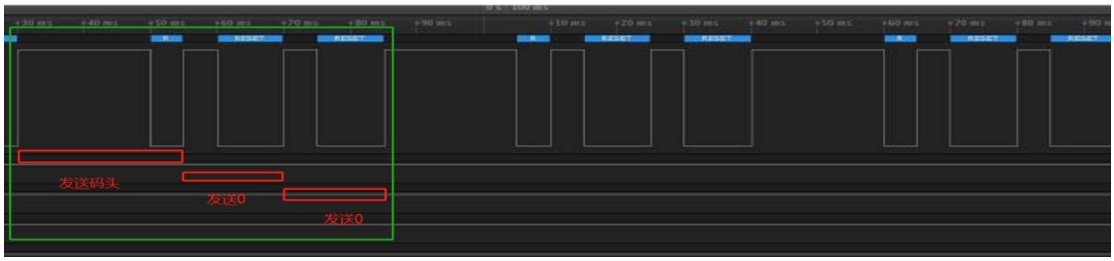
32bit data： temperature and humidity data , the first 16bit is temperature data [high level in front], and the last 16bit is humidity data; temperature and humidity data unit is 0.1 [0.1 degrees, 0.1%RH respectively]
The temperature and humidity of 16bit is in 16 decimal form format;
The above data is circulated on the bus;

Example: The data of the picture are respectively:



The air is clean；
TTemperature：T=B0000000100010000=272=27.2℃；
Humidity：RH=B0000001010011100=668=66.8%RH

The following data only shows the previous 3bit data, only used to refer to its data code format;



Cautions

Please do not put the module in organic solvent (include silica gel and other cementing
compound), painting, medicament, oils and fuels, high concentration gas etc.

Please do not impact or vibrate the module seriously.

Please warm up for 5 min before first using.

Please do not use the module related with personal safety.

Please do not install the module in the severe convection environment.

Please do not put in the module in high concentration organic gas for long time.