

### • Description

The sensor is designed for the measurement of CO<sub>2</sub> concentration in gas phase. It has all the advantages from NDIR products, such as good selectivity, high sensitivity, long life and independence to O<sub>2</sub>.

### • Performance Characteristics

Output Mode: UART, PWM

Self calibration in every 24 hours

Single channel

Size: 57mm×26mm×16mm(L×W×H)

### • Environmental

Storage temperature: -40 °C ~ 70 °C

Working temperature : 0 °C ~ 50 °C

Working humidity: 0 % ~ 95%RH non-condensing

### • Main Application

Indoor air monitoring

Ventilating system

In cars

Smart house

Others

### • Interface

Pin Number	Function
1	VCC
2	GND
3	PWM Output
6	RX(UART)
7	TX(UART)
8	GND

### • Installation Instructions

Connect the module with a client through the double-row socket with distance of 2.54 mm. The module cannot work in dusty environment for a long time. Supply power should be in its proper range.

### • How To Place Order

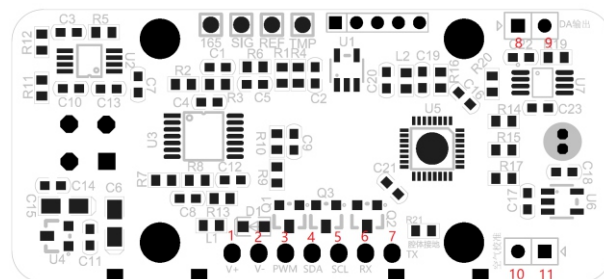
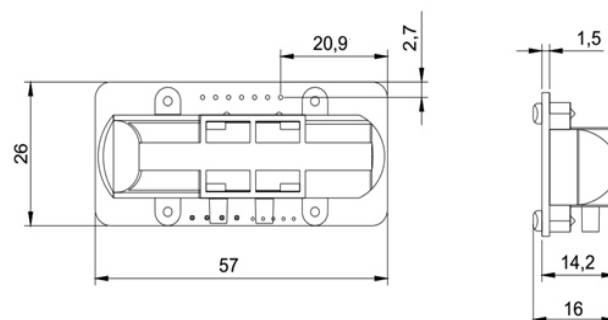
In order to get the product you want, please specify the following information when place your order:

- 1、 Model of the module.
- 2、 Measuring Range and detection accuracy of the module.

For example:

IRM300SS 0-5000ppm ±50ppm±5% reading

### Product Dimensions



All dimensions in mm

All tolerances ±0.20 mm unless otherwise stated

### Note

The performance data in this document was tested under standard conditions using the test circuit and test environment recommended by the NDIR CO<sub>2</sub> sensor. When module is started cold, the output concentration in the first two minutes are not stable.

Sensor performance varies under different environmental conditions, please contact us if you need more details.

### • Technical Data

Description	Parameter	Unit
Detection range	0-5000	ppm
Detection accuracy	±50ppm±5%reading	/
Life time	5(bye)~10(max)	Year
T <sub>90</sub>	diffusing:60	second
	pumping:10	second
Working voltage	5±0.5	V
Maximum current	I <sub>max</sub> : 130	mA
Light current	I <sub>avg</sub> : 60	mA
Preheat time	t <sub>warm</sub> :120	second
Frequency	1	Hz

### • PWM Output

PIN 3 is the PWM output, definition is:

Concentration range : 0ppm to 5000ppm CO<sub>2</sub> (5000ppm for example)

Cycle:1001 ms ±5%

High level output of initial period:0.5ms (nominally)

Central period:1000.0ms ±2%

Low level output of end period:0.5ms (nominally)

Formula to calculate the CO<sub>2</sub> concentration in PWM:

$$C_{ppm} = 5000 \times (TH - 0.5ms) / (TH + TL - 1ms)$$

where C<sub>ppm</sub> is the CO<sub>2</sub> concentration, unit in ppm ; TH is the time of high level in one cycle.

TL is the time of low level in one cycle.

