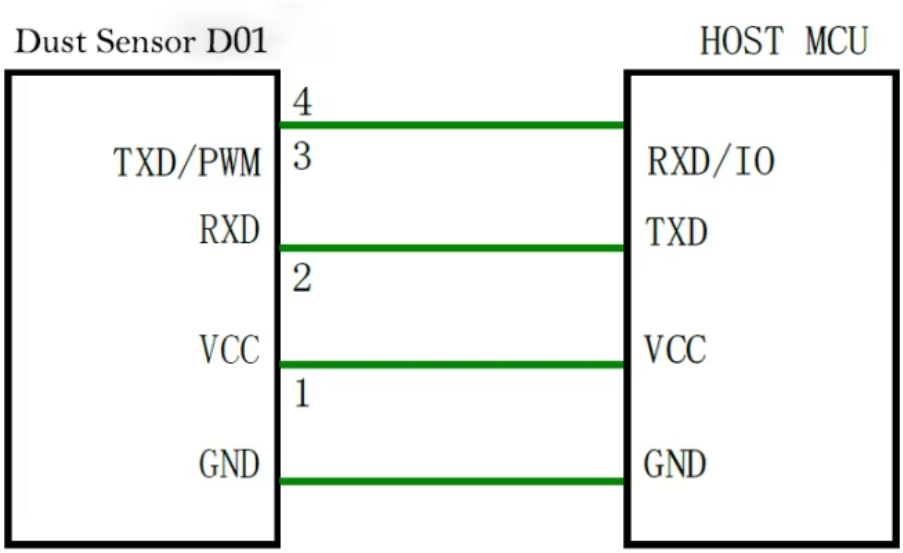
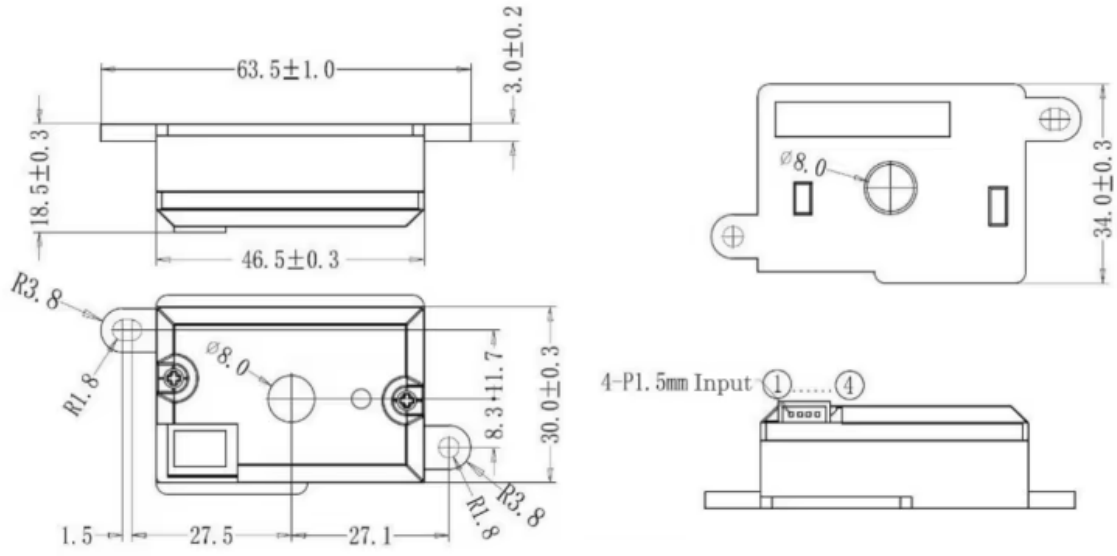
DC01 Infrared PM2.5 Sensor de calidad del aire. Datasheet

Infrared particle sensor module specifications	
Detection type	PM0.3~PM10
Detection range	5~2500μg/m³
Detection accuracy	±20μg/m³ or ±20reading(@25±2℃,50%±10%)
Power-on stability time	≤10s
Operating voltage	DC 5V±5%， Ripple less than 50mV
Stand-by current	≤15mA
Output	UART
Input	ZH1.5mm-4P Connector
Operating conditions	-20℃~+75℃,0~95%RH(No condensation)
Storage conditions	-40℃~+85℃,0~95%RH(No condensation）
Life-time	8 yeaars since produced
Physical Size	46*34*18.15mm(L*W*H)

- **Application Circuit**

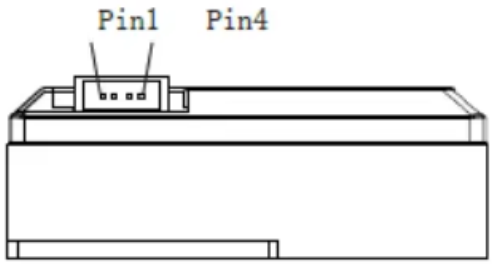


- **Product appearance and size (tolerance: ±0.5mm)**



Note: No tolerance specified: ±0.5mm, mounting holes on both ends can be removed

- **Pin diagram**



Pin number	Pin name definition	Pin function description	Pin electrical characteristics
Pin 1	GND	power negative	no reverse protection
Pin 2	VCC	power positive(+5V)	
Pin 3	RXD	RXD pin of the module UART interface	TTL level @ 5V
Pin 4	TXD	TXA pin of the module UART interface	open-circuit output, internal pull-up resistor connected to the power positive

- **UART configuration**

Baud rate: 9600bps Check bit: None Stop bit: 1 bit Data bit: 8

A frame of serial output data includes 4 bytes, and the data format is as follows:

Characteristic Byte	Byte 1	Byte 2	Check Byte
0xA5	DATAH	DATAL	SUM

Characteristic byte: fixed value 0*A5.

Data byte: DATAH is the high 7 bits of the concentration value, and DATAL is the low 7 bits of the concentration value.

Check byte: the low 7 bits of the sum of all bytes before the check byte.

Serial data conversion formula: Concentration value = DATAH (bit[6:0])*128 +DATAL (bit[6:0])

(Note: The PM2.5 dust concentration value obtained from the dust sensor needs to be calibrated with a K value coefficient based on the TSI instrument's photometric method. It is generally recommended to use 0.4.)

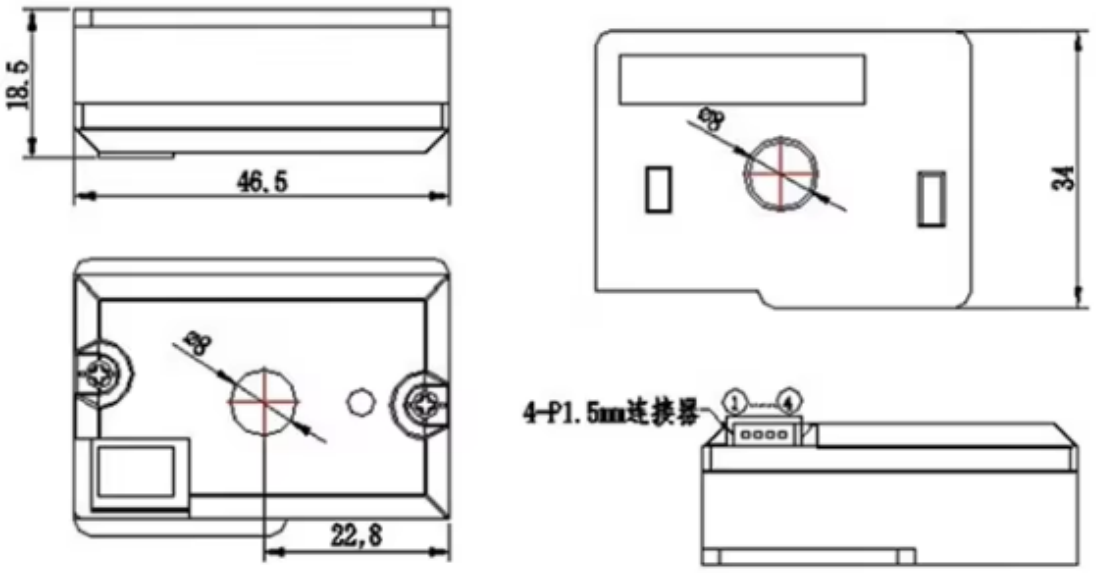
For example, if the serial output is 4 bytes of data: 0*A5 0*01 0*2C 0*52,

then DATAH = 0*01= 1, DATAL = 0*2C = 44,

Concentration value = 1 ×*128 + 44 = 172 μg/m³.

- **PWM output**

The sensor outputs a PWM signal through the PWM pin (pin 4), and the PWM cycle is 1.2 seconds. The dust concentration value is calculated based on the width of the low-level pulse. For example, if the low-level pulse width is 50ms, the corresponding dust concentration is 50ug/m3. The concentration output range is from 5ug/m3 to 1000ug/m3. The concentration value has undergone software filtering internally, and the fluctuation range is relatively small. Note: Due to individual differences in products, the maximum output value is within the range of 990-1010ug/m³.



注：未注公差：±0.5mm