Dust PMS5003 laser sensor

Main characteristics

New patent structure

Six face all directional shielding, data is more stable

Detachable structure, easy to clean

Air inlet and outlet can be used for a wide range of users.

Working principle: laser scattering method

Technical index:

Minimum diameter: 0.3um

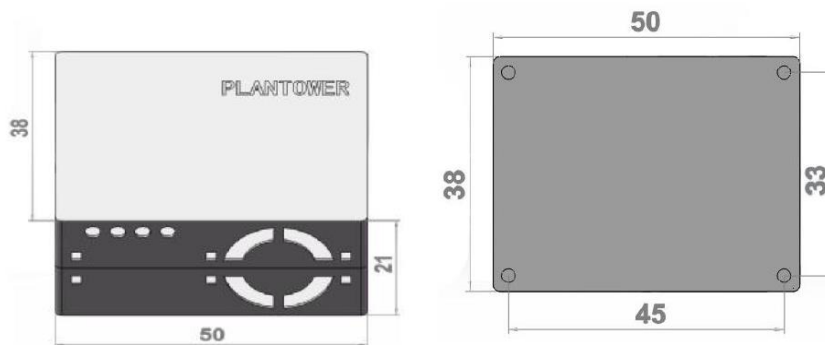Counting efficiency: >50%@0.3um;>98%@0.5um.

Digital interface definition

Pin number	Function	Explain
PIN1	VCC	Power supply DC5V
PIN2	GND	Negative power supply
PIN3	SET(Internal 50K pull-up)	Set pin 3.3V level
PIN4	RXD/I2C_SCL	Digital pin 3.3V level
PIN5	TXD/I2C_SDL	Digital pin 3.3V level
PIN6	RESET	Module reset signal 3.3V level
PIN7	PWM output	3.3V level only for single sensor output
PIN8	Mode selection (Internal 50K pull-up)	High or NC Serial port mode 3.3V level Low level I2C model

Note: SET=1 module is in the working state, and the module is electrically active to send data

Instruction change working mode

SET=0 module into low power standby mode

Dimensions:

Unit: mm

Description: PMS5003 using laser scattering theory, be able to get in the air suspended particulate matter concentration of 0.3 to 10 microns, and reliable data; built-in fan, digital output, high integration;

Feature

- Data is accurate: Laser detection, stability, consistency;
- Fast Response: scene-change response time less than 10 seconds;
- Ease of integration: serial output (or IO port output can be customized), comes with a fan;
- High resolution: minimum resolution particle diameter of 0.3 microns;

Scope:
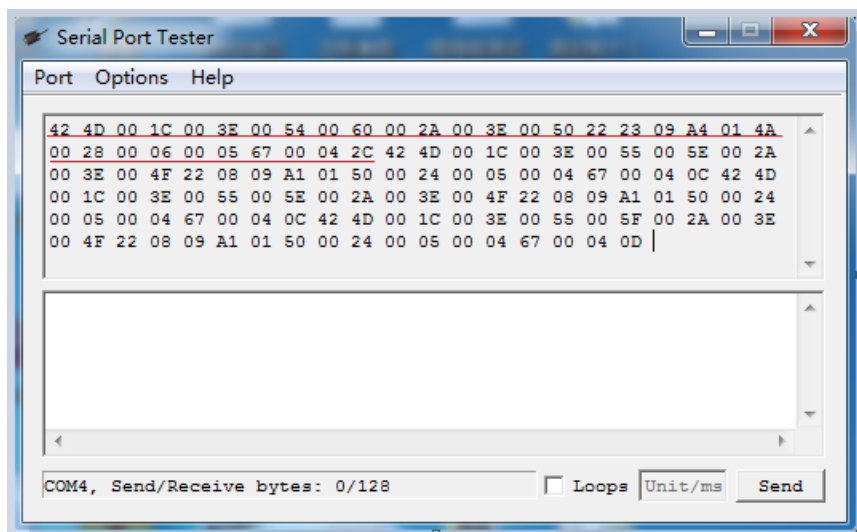
PM1.0 PM2.5 PM10 detector, purifiers;

Works

Using laser scattering theory: When laser irradiation by detecting the position of the particles will produce faint light

Scattering, in a particular direction of the light scattering particle diameter related waveform, waveform classification by different size system

Account the conversion formula can be different sizes in real-time particle number concentration, in accordance with the calibration methods

The official uniform concentration unit;

Technical parameters:

1. measuring diameter: 0.3-1.0um 1.0-2.5um 2.5-10um
2. the unit of measurement: ug / m3
3. the measurement accuracy: ug / m3
4. esponse time: <10s
5. the working current: 5V200ma @ work status 5V2ma @ standby
6. Data Interface: Serial (3.3VTTL level)
7. the module volume: 65x42x23mm

Begin with 42 as a group of data.

See the table below

Serial product level is TTL level, please use the TTL level of the serial port to the USB module.

The default serial baud rate: 9600Kbps

Parity bit: no　　　Stop bit: 1

Module to send data packets to define 32 bytes as follows:

Start 1	0X42(fixed)	
Start 2	0C4d(fixed)	
Frame length high eight bits	....	Frame length =2*13+2 (data + check bit)
Frame length low eight bits	....	
Data 1 high eight bits	....	Data 1 indicates PM1.0 concentration
Data 1 low eight bits	....	(CF=1, standard material, unit ug/m^3)
Data 2 high eight bits	....	Data 2 indicates PM2.5 concentration
Data 2 low eight bits	....	(CF=1, standard material, unit ug/m^3)
Data 3 high eight bits	....	Data 3 indicates PM10 concentration
Data 3 low eight bits	....	(CF=1, standard material, unit ug/m^3)
Data 4 high eight bits	....	Data 4 indicates PM1.0 concentration
Data 4 low eight bits	....	(atmospheric environment, unit ug/m^3)
Data 5 high eight bits	....	Data 5 indicates PM2.5 concentration
Data 5 low eight bits	....	(atmospheric environment, unit ug/m^3)
Data 6 high eight bits	....	Data 6 indicates PM10 concentration
Data 6 low eight bits	....	(atmospheric environment, unit ug/m^3)
Data 7 high eight bits	....	Data 7 said more than 0.1 litres in 0.3 um in diameter in the air a bit number
Data 7 low eight bits	....	
Data 8 high eight bits	....	Data 8 said more than 0.1 litres in 0.5 um in diameter in the air a bit number
Data 8 low eight bits	....	
Data 9 high eight bits	....	Data 9 said more than 0.1 litres in 1.0 um in diameter in the air a bit number
Data 9 low eight bits	....	
Data 10 high eight bits	....	Data 10 said more than 0.1 litres in 2.5 um in diameter in the air a bit number
Data 10 low eight bits	....	
Data 11 high eight bits	....	Data 11 said more than 0.1 litres in 5.0 um in diameter in the air a bit number
Data 11 low eight bits	....	
Data 12 high eight bits	....	Data 12 said more than 0.1 litres in 10 um in diameter in the air a bit number
Data 12 low eight bits	....	
Data 13 high eight bits	....	Data 13 (reserved)
Data 13 low eight bits	....	
Data and verification high eight bits	....	Check code = start1+ start 2+......Data 13 low eight bits
Data and verification low eight bits	....	