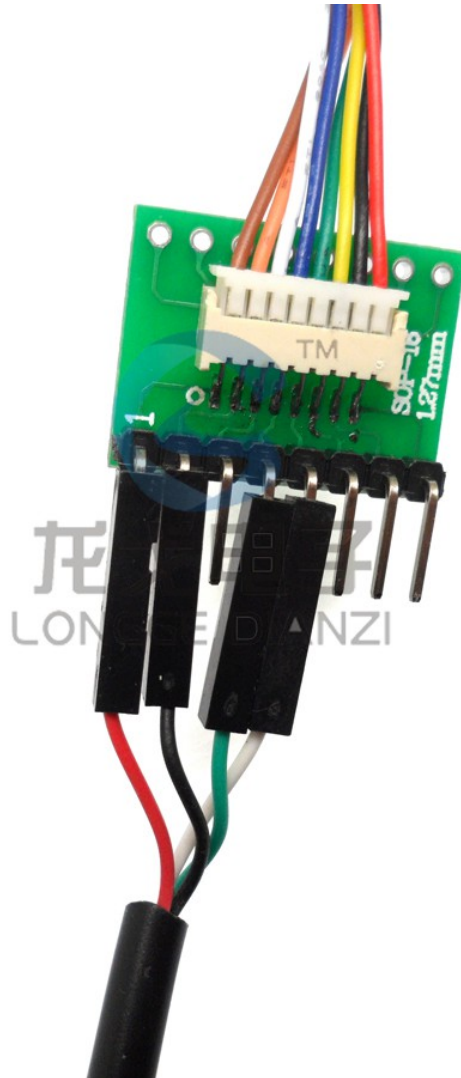


Laser dust sensor

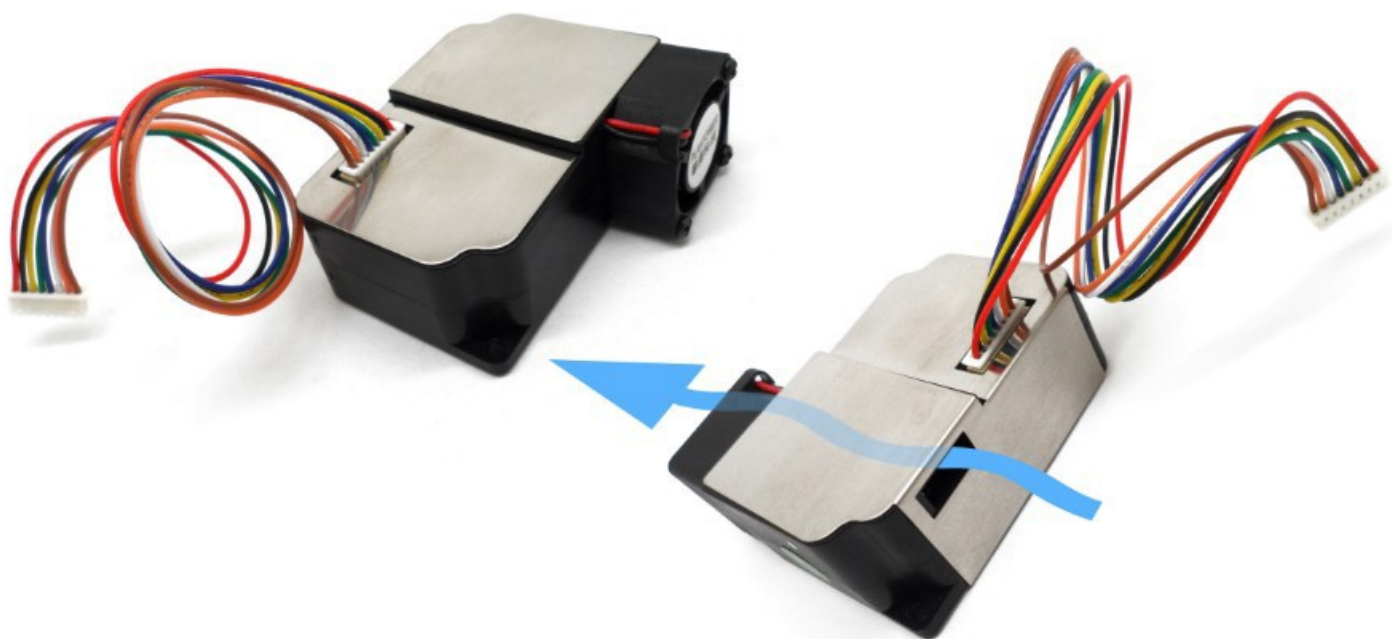
**(With adapter cable, connected directly
to the computer USB port)**





Laser dust sensor

PM1.0 PM2.5 PM10





Digital pins interface definition

PIN1	VCC	电源正 5V
PIN2	GND	电源负
PIN3	SET	设置管脚 /TTL 电平@3.3V
PIN4	RXD	串口接收管脚 /TTL 电平@3.3V
PIN5	TXD	串口发送管脚 /TTL 电平@3.3V
PIN6	RESET	模块复位信号 /TTL 电平@3.3V
PIN7\8	NC	悬空



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Product name: high accuracy laser type PM1.0 PM 2.5
PM10 Dust Sensor module

Description: PMS3003 Using laser light scattering principle to get air
0.3 ~ 10 Micron particulate concentration, stable and reliable data;
Built-in fan, digital output, high integration;

Features

Data is accurate: laser testing, stability, consistency;

Quick response: scene change response time is less than 10 Seconds;

Ease of integration: serial output (or IO Output port can be
customized), comes with A fan;

High resolution: resolution smallest particle diameter 0.3 Micron;

Scope of application:

PM1.0 PM2.5 PM10 Detectors, cleaners;

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Working principle

Using laser light scattering principle: when the laser light to detect the location of Particles will produce a faint light Scattering, the scattering of light in particular directions of wave and particle diameters, Through the different particle size of waveform classification system Taking into account the conversion formula you can get different sizes of particles in real time Concentration, in accordance with the calibration method Official unit of concentration;

Technical parameters:

- 1 Measurement diameters: 0.3-1.0um 1.0-2.5um 2.5-10um
- 2 Measurement units: ug/m³
- 3 Measurement accuracy: ug/m³
- 4 Response time: <10s
- 5 Work current: 5V200ma@ Work State 5V2ma@ Standby Fitness
- 6 Data interface: serial (3.3VTTL Level)
- 7 Module dimensions: 65x42x23mm

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Laser dust serial data display:



The screenshot shows the 'Snow Blue Serial Port Debug Assistant' (雪莉蓝串口调试助手) v1.2.0 Beta software interface. The window title is 'COM3 - Prolific USB-to-Serial Comm Port'. The interface is divided into several sections:

- 端口设置 (Port Settings):** Includes checkboxes for 'Standard Baud Rate' (checked), 'Baud Rate' (9600), 'Parity' (None), 'Data Bits' (8), and 'Stop Bits' (1). There is also an option for 'Do not auto-open when idle' (unchecked) and a 'Close Serial Port' button.
- 多机通讯功能设置 (Multi-machine Communication Function Settings):** Includes 'Mode' (Multi-machine communication function off) and 'Address' (DEC 001, HEX 01).
- 接收区设置 (Reception Area Settings):** Includes checkboxes for 'Receive and save as file...', 'Auto line conversion', 'Hexadecimal display' (checked), and 'Pause reception display'. There is a 'Clear reception buffer' button.
- 发送区设置 (Transmission Area Settings):** Includes checkboxes for 'Enable file data source...', 'Auto clear after sending', 'Auto send additional bits...', 'Hexadecimal input', and 'Auto loop sending'. There is a 'Loop time' field set to 1 *100ms and a 'Clear transmission buffer' button.
- 显示区 (Display Area):** A large text area showing received data in hexadecimal. A blue banner at the top of this area reads '正常显示状态' (Normal display status). Above the data are checkboxes for hardware flow control: 1.CD, 2.RXD, 3.TXD, 4.DTR (checked), 5.GND, 6.DSR, 7.RTS (checked), 8.CTS, 9.RI.
- 底部控制区 (Bottom Control Area):** Includes a 'Send CTRL+ENTER' button, a 'NONE' status indicator, and a row of buttons: '全部计数复位' (Reset all counts), '发送: 0' (Send: 0), '发送计数复位' (Reset send count), '接收: 9816' (Receive: 9816), and '接收计数复位' (Reset receive count).

起始符 1	0x42	(固定)
起始符 2	0x4d	(固定)
帧长度高八位	.....	帧长度=2x9+2(数据+校验位)
帧长度低八位	.....
数据 1 高八位	.....	数据 1 表示 PM1.0 浓度 (CF=1, 标准颗粒物) 单位 ug/m3
数据 1 低八位	.....
数据 2 高八位	.....	数据 2 表示 PM2.5 浓度 (CF=1, 标准颗粒物) 单位 ug/m3
数据 2 低八位	.....
数据 3 高八位	.....	数据 3 表示 PM10 浓度 (CF=1, 标准颗粒物) 单位 ug/m3
数据 3 低八位	.....
数据 4 高八位	.....	数据 4 表示 PM1.0 浓度 (大气环境下) 单位 ug/m3
数据 4 低八位	.....
数据 5 高八位	.....	数据 5 表示 PM2.5 浓度 (大气环境下) 单位 ug/m3
数据 5 低八位	.....
数据 6 高八位	.....	数据 6 表示 PM10 浓度 (大气环境下) 单位 ug/m3
数据 6 低八位	.....
数据 7 高八位	.....	数据 7 (保留)
数据 7 低八位	.....
数据 8 高八位	.....	数据 8 (保留)
数据 8 低八位	.....
数据 9 高八位	.....	数据 9 (保留)
数据 9 低八位	.....
数据和校验高八位	.....	校验码=起始符 1+起始符 2+.....+数据 9 低八位
数据和校验低八位	.....

Data 1.2.3 Read the to value is a TSI For standard data.

Data 4.5.6 Reading to the value of value is an atmosphere as the standard.

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TSI Profile

TSI As a leader in the design and production of precision measuring instruments, TSI Collaborative research institutes as well as customers around the world for many disciplines of measuring instruments Development of standards, including: atmospheric sciences, airflow, fluid dynamics, indoor air quality, and bio-hazardous. Located in United States territory's corporate headquarters And local offices throughout Europe and Asia makes TSI Every corner of the world. Every day, our dedicated staff in turning research into reality.

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