



Technical Data Sheet

**Particle Size and Dust
Concentration Sensor**

PSDC-A: PM10 / PM2,5

PSDC-D: PM10 / PM2,5 / PM1,0



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PSDC-A / PSDC-D Dust Sensor using laser scattering principle, detecting the existence of dust particle concentration in the air, the minimum can detect 1.0 μ m particles, has a good consistency and stability. According to different usage environment, there are indoor type and outdoor type to select.

Features

- High Sensitivity
- Fast Response
- Low Power Consumption
- Excellent Stability
- Long Service Life
- High precision, wide measuring range
- Compact size
- Easy installation

Technical Specifications

Item	Technical Specifications
Sampling Object	For PSDC-A: PM10 / PM2.5 For PSDC-D: PM10 / PM2.5 / PM1.0
Range	0-1000 μ g/m ³
Accuracy	$\pm 3\%$ FS @25
Supply	5VDC, 12-24VD
Output	4-20mA, 0-5V, 0-10V, RS485
Power Consumption	<50mA@24V (4-20mA)
Warmup Time	3mins
Response Time	<90s
Temperature Drift	$\leq 0.2\%$ FS/°C
Stability	< $\pm 2\%$ FS
Repeatability	< $\pm 1\%$ FS
Operating Temperature	-20°C to +50°C@15-80%RH
Storage	-40°C to 60°C@20-90%RH
Shell Material	ABS
Cable Length	5m

Applications

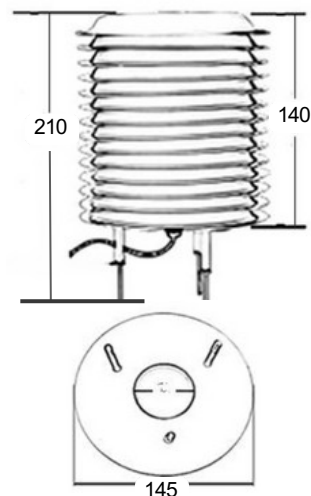
- Air Quality Monitoring
- Smart Home
- Warehousing
- Public Place
- Workshop
- Clear Room

Electrical Connections

Connector (cable)	Current/Voltage	Current/Voltage	RS485
Red(pin1)	V+	V+	V+
Black(pin4)	V-	V-	V-
Yellow(pin2)	PM1.0	PM2.5	RS485A
Green(pin3)	PM2.5	PM10	RS485B
Brown	PM 10		

Dimensions

Units: mm



1. Communication parameters (factory default)

Baud rate: 9600bps, Data bits: 8, Stop bit: 1, Check bit: no, Address: 0x01

2. Examples for read data

Host Scan Order :

Slave id	Function code	Address_H	Address_L	Quantity_H	Quantity_L	CRC_L	CRC_H
0x01	0x03	0x00	0x00	0x00	0x03	0X05	0XCB

Sensor Response

Slave id	Function code	Number of bytes	PM1.0 (Unsigned integer 2 bytes)	PM2.5(Unsigned integer 2 bytes)	PM10 (Unsigned integer 2 bytes)	CRC_L	CRC_H
0x01	0x03	0x06	0x0030	0x003A	0x0068	0X40	0X92

PM1.0: (0030)H = (48)D = 48 μ g/m³,
 PM2.5: (003A)H = (58)D = 58 μ g/m³,
 PM10: (0068)H = (104)D = 104 μ g/m³

3. Examples for modify the address (after the restart to take effect)

Host Scan Order (change 01H to 02H) :

Slave id	Function code	Address_H	Address_L	New id_H	New id_L	CRC_L	CRC_H
0x01	0x06	0x00	0x30	0x00	0x02	0x08	0x04

Sensor Response (the same as the Host send):

Slave id	Function code	Address_H	Address_L	New id_H	New id_L	CRC_L	CRC_H
0x01	0x06	0x00	0x30	0x00	0x02	0x08	0x04

Note: If you forget the original address, you should use the broadcast address (FEH) (ensure that no other devices on the bus at this time.

4. Register description

Register name	Function code	Register address	Data type	Data length (byte)	R/W	Remark
PM1.0	0x03	0x0000	Unsigned integer	2	R	μ g/m ³
PM2.5	0x03	0x0001	Unsigned integer	2	R	μ g/m ³
PM10	0x03	0x0002	Unsigned integer	2	R	μ g/m ³
Modify Sensor address	0x06	0x0030	Unsigned integer	1	W	0-0xFF