

1. Features

- PM2.5 Sensor (PM1.0, PM2.5, PM10 Simultaneous output)
- Minimum detection size : 0.3 μ m
- Concentration range : 0.1 μ g/m³ to 500 μ g/m³
- Laser-based light scattering particle sensing : 90° light scattering type
- Real-time measurement
- Particle size segregation structure
- Compact size (42mm x 32mm x 13mm)
- PM concentration output
- Particle count output (optional)
- Built-in temperature / humidity sensor (optional)
- Output : USART output (temperature / humidity optional)
- External shielding for noise suppression



2. Applications

- Indoor air quality monitoring system
- Air purifier, air conditioner/heater
- Smoke detector
- IoT devices
- Portable air quality monitoring system

3. Overview

The SSP100 dust sensor measures the dust concentration in the air in real time using an optical sensor and a laser diode.

After measuring the laser light scattered from the dust particles with a photo diode, you can accurately measure the dust particles floating in the air through digital signal analysis.

This sensor physically filters large particles exceeding PM10(10 μ m), analyzes PM1.0, PM2.5, and PM10 particles through analog and digital algorithms, and outputs the concentration as a digital signal.

In addition, it is an ideal sensor that can be applied to air purifiers, air conditioners, indoor/outdoor air quality monitoring systems, etc. by applying noise suppression and external shielding cans for stable sensor operation.

Due to ongoing research and product improvement, specifications are subject to change without notice

4. Specifications

Characteristic	Parameter
Operating principle	Laser-based light scattering
Detection (minimum detection size)	0.3 μm
Output data	PM1.0, PM2.5 and PM10 in $\mu\text{g}/\text{m}^3$
Concentration range	1 $\mu\text{g}/\text{m}^3$ to 500 $\mu\text{g}/\text{m}^3$
Accuracy	$\pm 15\%$ or $\pm 10\ \mu\text{g}/\text{m}^3$
Response time	< 5s
Supply Power (at 25°C $\pm 5^\circ\text{C}$)	5V $\pm 0.5\text{V}$, < 85 mA
Operating temperature Storage temperature	-10°C ~ +60°C -20°C ~ +70°C
Humidity (operating and storage)	0 %RH to 95 %RH non-condensing
Output protocol	USART - baud rate : 115,200bps, data bits : 8bit , stop bits : 1bit, parity : none
Fan Noise	< 25dB(A)
Physical Size / weight	42mm(W) x 32mm(D) x 13mm(H) / 25g
Shield can	SUS304
Connector Type	12505WR-06A00
Life-time	3 years or more (depending on the environment)

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