

# Gravity PM2.5 Air Quality Sensor

SEN0460

## Product Overview

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For the most up-to-date information, visit [www.mouser.com](http://www.mouser.com) or the supplier's website.

## Description

The DFRobot Gravity PM2.5 Air Quality Sensor measures particulate matter like PM2.5, PM1.0, and PM10. The sensor is based on the principle of laser scattering to employ a digital universal particle sensor that can continuously collect and calculate the number of suspended particles of different sizes in the air per unit volume. With an easy-to-use Gravity interface, the air quality sensor works well with most main-controllers. The sensor can be embedded in various instruments and meters or environmental improvement equipment related to the concentration of suspended particulate matter in the air. This air quality sensor is typically suitable for smoking rooms, kitchens, hot springs, bathrooms, and other environments.



## Features

- Laser scattering principle and accurate measurement
- Zero false alarm rate
- Real-time response and support continuous acquisition
- Minimum recognizable particle size 0.3 $\mu$ m
- Six-sided all-around shielding, stronger anti-interference
- Ultra-thin design, only 12mm, suitable for portable devices

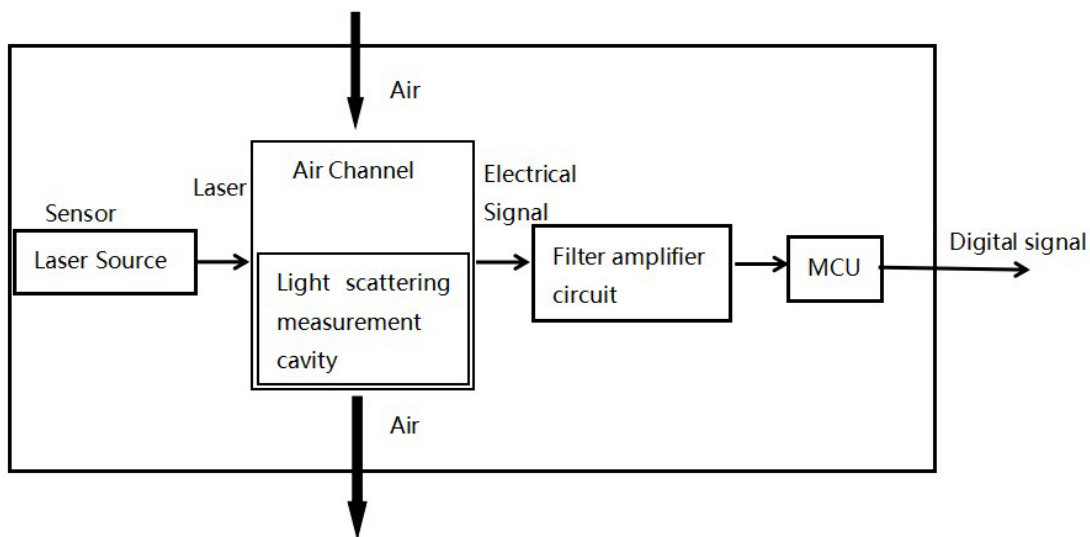
## Applications

- Environmental improvement equipment

## Specifications

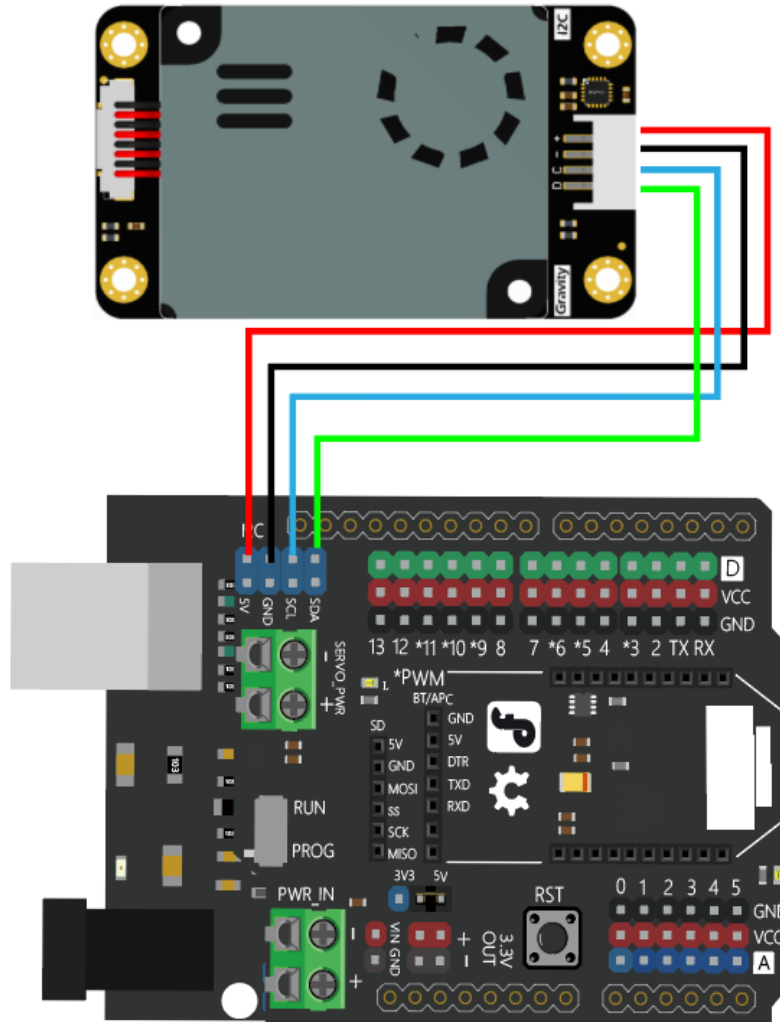
- 3.3V~5V working voltage range
- 100mA maximum working current
- $\leq 2\text{mA}$  standby current
- Data interface level:  $L < 0.8\text{V}$ ,  $H > 2.7\text{V}$  with maximum voltage level 3.3V
- Particle measurement range:
  - $0.3 \sim 1.0\mu\text{m}$  and  $1.0 \sim 2.5\mu\text{m}$ ;  $2.5 \sim 10\mu\text{m}$
- 50% @  $0.3\mu\text{m}$  98% @  $\geq 0.5\mu\text{m}$  particle counting efficiency
- $0 \sim 500\mu\text{g}/\text{m}^3$  effective range of particle mass concentration (PM2.5 standard value)
- $\geq 1000\mu\text{g}/\text{m}^3$  maximum range of particle mass concentration (PM2.5 standard value)
- $1\mu\text{g}/\text{m}^3$  resolution of particle mass concentration
- Consistency of particle mass concentration (PM2.5 standard value):
  - $\pm 10\%$  @  $100 \sim 500\mu\text{g}/\text{m}^3$
  - $\pm 10\mu\text{g}/\text{m}^3$  @  $0 \sim 100\mu\text{g}/\text{m}^3$
- 0.1L standard volume
- $< 1\text{s}$  single response time
- $\leq 10\text{s}$  comprehensive response time
- $-10^\circ\text{C}$  to  $60^\circ\text{C}$  working temperature range
- 0~95% (non-condensing) working humidity range
- $\geq 5$  years mean time between failures
- Product size:
  - 67mm x 40mm x 14mm / 2.64 x 1.57 x 0.55 inches

## Working of SEN0460 Sensor



The SEN0460 sensor adopts the principle of laser scattering, to make the laser irradiate the suspended particles in the air to produce scattering. At the same time collect the scattered light at a certain angle and obtain the curve of the intensity of the scattered light with time.

## Connection Diagram



## Mouser Part Number

[View Part](#)

To learn more, visit <https://www.mouser.com/new/dfrobot/dfrobot-gravity-pm2-5-air-quality-sensor/>