

Industrial Dust Sensor

Specifications

Product Number: SDS026-F

Version: V1.6



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2022-03-25

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Overview

SDS026 is a high-range industrial environmental particle sensor based on the principle of laser scattering method. It supports an external temperature and humidity probe (optional), and can perform automatic humidity calibration on the data; industrial-grade lasers and photosensitive components, and sheath gas protection is added to the optical components. The structure greatly improves the service life of the sensor in harsh environments and greatly reduces the maintenance workload. The sensor is suitable for online dust concentration detection of construction site dust, road dust and environmental protection. .

Characteristic

- Accurate data: laser detection principle, industrial-grade laser light source;
- High range: PM2.5 range is 0-20mg/m³, PM10 range is 0-50 mg/m³, PM100 range is 0-100 mg/m³, sensor resolution is 1 μ g/m³;
- Automatic humidity calibration: equipped with a temperature and humidity sensor (optional), with high accuracy, the device can realize the automatic humidity calibration function to minimize the impact of humidity on the value;
- Stable flow: Active sampling method is adopted, and the sampling component can be selected with constant-current intake fan, the flow is stable, and high-performance electromagnetic pump can also be selected, which can meet the long-distance long-distance high negative pressure sampling;
- Fast response: the data update frequency is 1Hz;
- Easy to integrate: RS485 and UART TTL serial output;
- High resolution: the minimum diameter of PM2.5/PM10 resolution particles is 0.3 microns;
- Small maintenance: The optical part is added with a sheath gas protection structure, which improves the service life of the sensor in harsh environments and greatly reduces the manual maintenance workload;
- Hose design: It can be connected to an external hose, which is convenient for integration.

Scope of Application

Dust detection on construction sites and roads, factory boundary monitoring of high-polluting enterprises, and environmental protection big data monitoring.

Working Principle

The principle of laser scattering is adopted: when the laser irradiates the particles passing through the detection position, weak light scattering will be generated, and the light scattering waveform in a specific direction is related to the particle diameter. The real-time particle number concentration of the diameter is obtained according to the calibration method to obtain the unified mass concentration with the official unit.

The optical part sheath gas protection structure technology improves the service life of the sensor in harsh environments and greatly reduces the manual maintenance workload.

Technical Indicators

NO	Project	Parameter	Remark
1	Measurement output	PM2.5+PM10+PM100	
2	Range	PM2.5: 0.0--20mg/m ³ PM10: 0.0--50mg/m ³ PM100: 0.0--100mg/m ³	
3	Input voltage	DC12V [9~25VDC]	
4	Rated power	3 W	
5	Sleep power	0.24 W	
6	Working Temperature	-20~60°C	
7	Humidity Range	0-99%RH	
8	Working Atmospheric Pressure	86KPa~110KPa	
9	Response Time	1S	

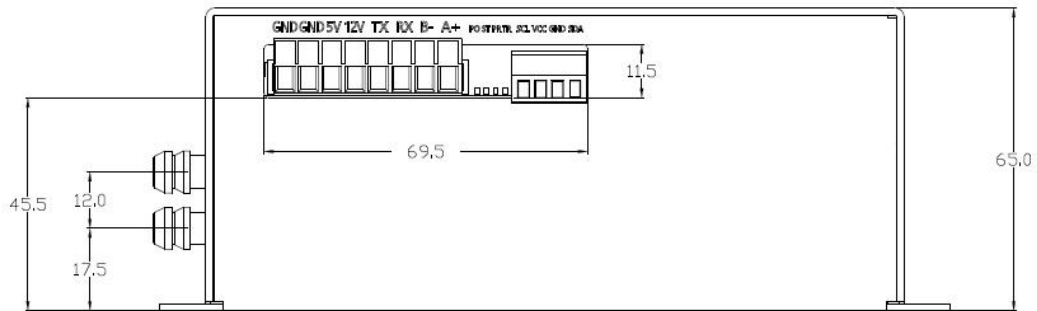
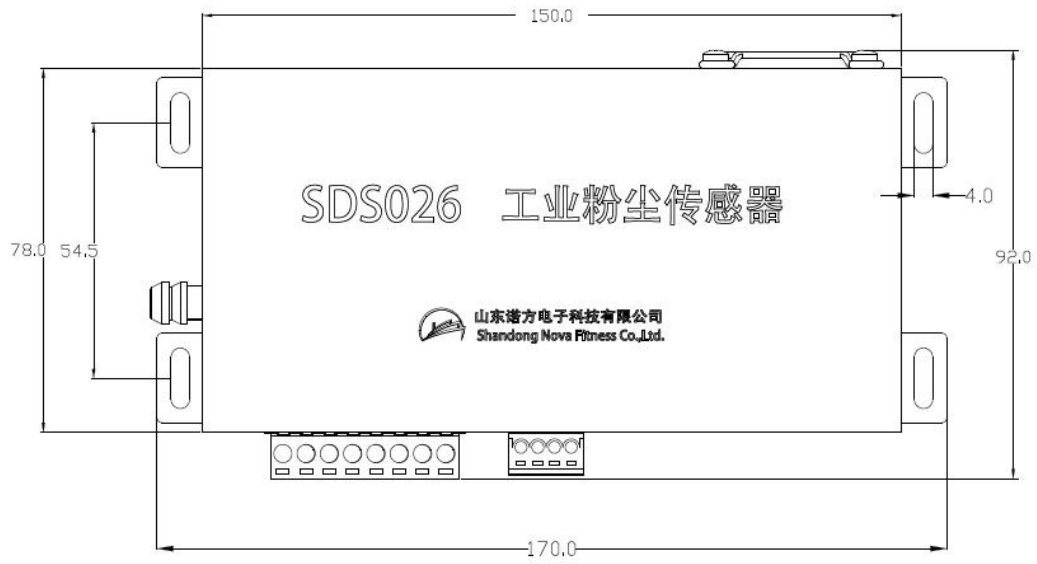
10	Communication Interface	RS485 + UART TTL	Can be customized
11	Protocol	Modbus-RTU	Can be customized
12	Counting Efficiency	70%@0.3 μ m 98%@0.5 μ m	@25 $^{\circ}$ C 50%RH
13	Relative Error	Max of \pm 10%and \pm 8 μ g/m ³ @PM2.5 Max of \pm 15%and \pm 10 μ g/m ³ PM10 Max of \pm 18%and \pm 30 μ g/m ³ PM100	@25 $^{\circ}$ C, 50%RH
14	Product Size	150x78x65mm	
15	Hose size	Inside diameter: ϕ 8mm outside diameter: ϕ 12mm	
16	Life	3years	Below 40 $^{\circ}$ C

Interface Specification

Pin	Name	Remark
1	A+	A+ of 485 communication, 485 standard level
2	B-	485 communication B-, 485 standard level
3	Tx	TTL serial port send TX, level 5VDC
4	Rx	TTL serial port receiving RX, level 5VDC
5	12V	DC 12V working voltage (input range 9-25VDC)
6	5V	DC 5V power supply (only for sensor parameter setting)
7	GND	Equipment
8	GND	Equipment

Product Specifications

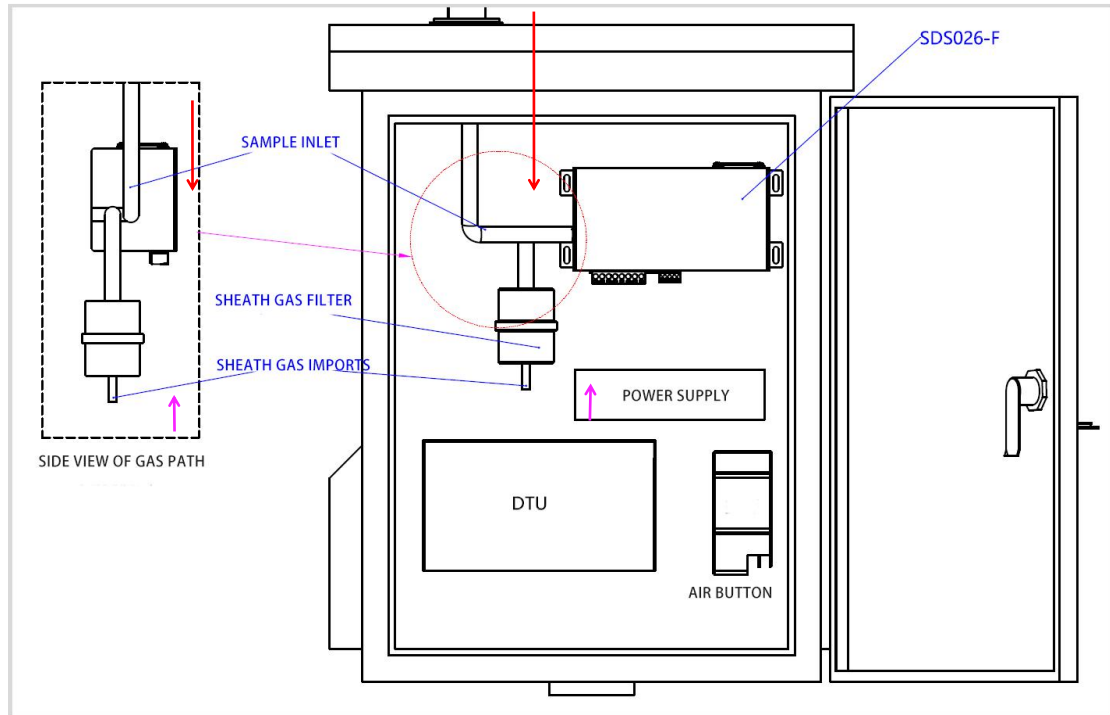
(Unit: MM)



Guidance on the optimal installation of equipment

Installation method

Under the general atmospheric environment, the optimal installation method of the equipment is shown in the following figure:



Equipment and Accessories List

Number	Name	Quantity	Remark
1	Host	1	
2	Protective Net	1	Be sure to equip or use accessories with similar
3	Data Line	1	Only for sample
4	TTL to USB	1	
5	Filter Element	1	Sheath gas structure one

Contact

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