Large Range Industrial Dust Sensor Specifications

Product model: SDS036

Version: V1.1

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Contents

Overview

SDS036 is a large-range industrial dust sensor based on the principle of laser scattering, which can accurately measure the mass concentration of TSP . Through the standard Modbus-RTU protocol, the data is transmitted to various intelligent terminals , reducing human participation and realizing unmanned intelligent monitoring. In various high-pollution occasions, continuous real-time monitoring can be realized 7*24 hours, reducing risks and costs.

SDS036 has higher measurement accuracy and anti-pollution ability. The SDS036 large-range industrial dust sensor adopts industrial-grade lasers and photosensitive components, combined with the latest generation of light-scattering particle monitoring technology, carefully adjusted optical and gas path structures, and a new generation of high-frequency weak signal processing circuits and high-precision particles. The identification algorithm ensures long-term effective operation in various high-pollution situations, and truly reflects the mass concentration of various high-pollution situations.

Features

- Accurate data: single-particle laser scattering principle, industrial-grade laser light source.
- Concentration range: 0~1000mg/ m^3
- High reliability: Carefully adjust the optical and gas path structure, equipped with all industrial-grade components, to ensure long-term effective operation in high-pollution environments .
- Stable flow rate: Active sampling method is adopted, and constant flow intake fan is adopted; the flow rate is stable and reliable.[Optional air pump version, convenient for external air pump module]
- Fast response: second-level data update.
- interface: RS485 and UART TTL serial output;[4G is optional]
- Fully automatic measurement: remote control, wireless transmission, real-time data upload to the Internet of Things platform.
- Circuit safety: with ESD , overvoltage, overcurrent, reverse connection protection to ensure the stability and reliability of the circuit.

- Convenient installation: simple installation structure and high versatility.
- Safe and friendly: low-voltage power supply, no electric shock; no radioactive source, no light pollution.
- Sampling flow rate: 3.4L/min 【Adjustable flow rate】

Scope of application

Coal mines, flour mills, mines, cement plants, power plants, construction sites, workshops and other high pollution scenes.

Working principle

Using the principle of laser scattering, through precise optical design and air path designed according to the principle of fluid mechanics , the particles in the sampled air pass through the beam with a high probability in turn to generate weak scattered light; through the precise optical signal collection device, the scattered light is collected collected and projected onto a highly sensitive, high bandwidth photodetector. By identifying and analyzing the scattered pulses of the particles, the signal intensity corresponding to the particles is obtained; through the calibration procedure, the particle size of the particles is obtained; after conversion and aerodynamic

calibration, the mass concentration of the particles is calculated.

Technical Indicators

No.	Project	Parameter	Remark
1	Measurement output	TSP mass concentration	
2	Range	0-1000mg/ m^3	
3	Input voltage	DC12V [9~25VDC]	The recommended power supply is not less than 12V 2A
4	Rated power	2W	
5	Sleep power	0.24W	
6	Range of working temperature	-20-60 ℃	
7	Humidity range	0-99%RH	
8	working atmospheric pressure	86KPa~110KPa	
9	Response time	1S	
10	Communication Interface	RS-485 + UART TTL	customizable
11	Protocol	Modbus-RTU	customizable
12	Relative error	±20 % and ±100 μ g /m^3 max.	@25 ℃ ,50%RH

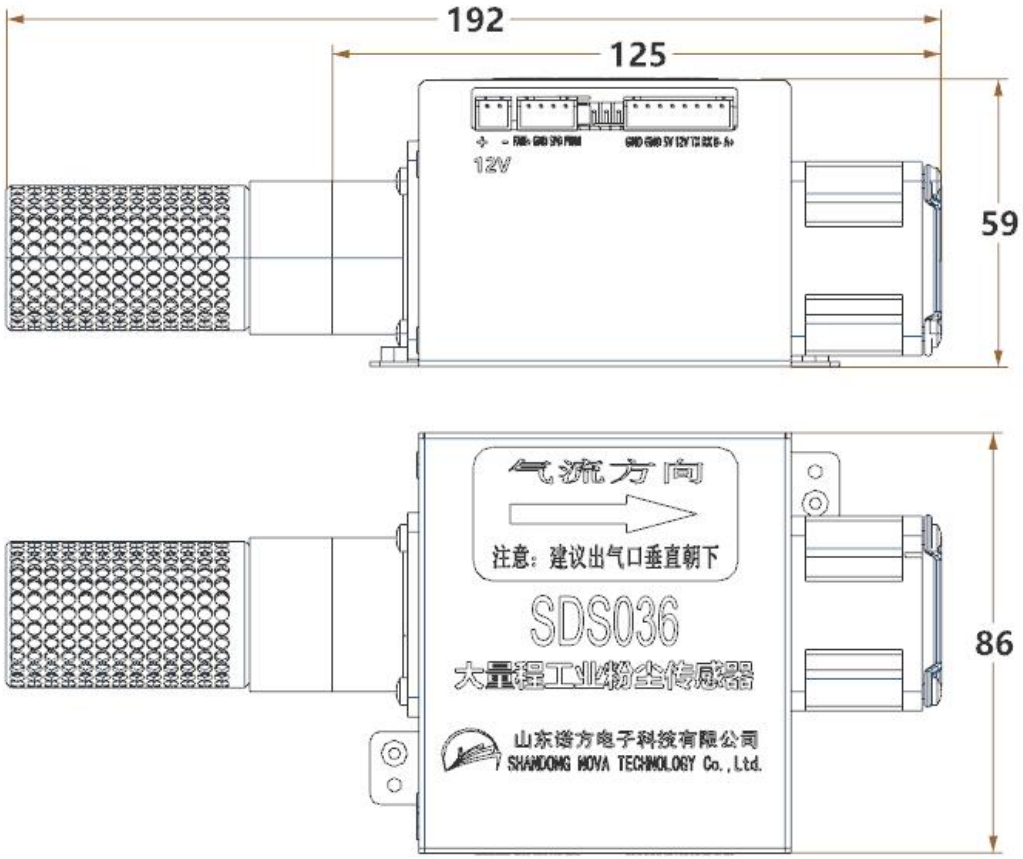
13	Certification standards	CE/FCC/ROHS	@25 ℃ ,50%RH
14	Product Size	125*86*59mm	Does not contain flocculent net
15	Life	3 years	below 40 ℃

Interface Description

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 sends TX , level 5VDC
4	Rx	TTL serial port receives 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

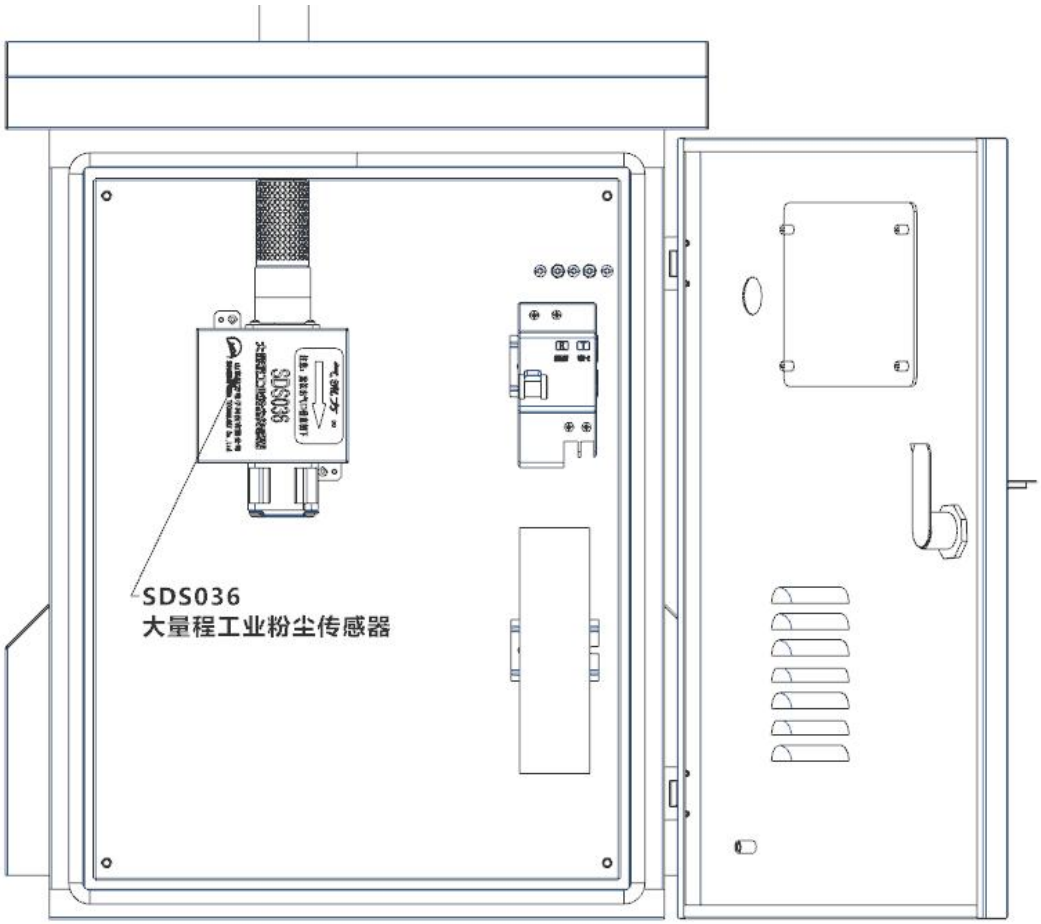
Product specification

(unit: MM)



Guidance on the optimal installation method of equipment

In general atmospheric environment, the optimal installation method of the equipment is shown in the figure below



Detailed list of equipment and accessories

NO.	Name	Quantity	Remark
1	the host	1	
2	Anti-fluff tube	1	Chassis integration optional With hose connector

3	data line	1	For debugging, only provided when purchasing the prototype
4	TTL to USB module	1	

Equipment scrapped

Waste electrical and electronic products should meet the national requirements for comprehensive utilization of resources, environmental protection, labor safety, and protection of human health. It is recommended that they be handed over to processors with qualifications for recycling electrical and electronic products.

Contact

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