



# Environmental protection / dust / industry Intelligent dust sensor

## Specification

Model: SDS019

Version: V1.4



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Spet. 1<sup>st</sup> 2018



## Catalogue

Overview.....	1
Characteristic.....	1
Scope of Application.....	1
Working principle.....	2
Technical Index.....	2
Recommended Installation Methods.....	4
Contact.....	6



## Overview

SDS019 is an industrial dust sensor based on the principle of laser scattering method, which is suitable for the detection of dust concentration in the field, road dust and environmental protection;

SDS019 is a smart dust sensor, capable of automatic dust removal, automatic reduce humidity, automatic humidity calibration, automatic monitoring of the failure of the sensor and alarm.

SDS019 has function of automatic temperature protection, automatic dust removal, sensor fault automatic repair and alarm function, so that it can greatly reduce the maintenance workload. Greatly improve the service life of harsh environment sensors.

## Characteristic

- Automatic dust removal: reduce dust pollution, suitable for high concentration of dust pollution in the environment;
- Automatic dehumidification function, reduce the influence of humidity on the measurement accuracy;
- Automatic heating in ultra low temperature environment, prolong the service life of laser and fan;
- Humidity calibration: using humidity calibration formula to minimize the influence of humidity;
- Quick response: frequency update data for 1Hz;
- Easy integration: 458 and TTL serial output;
- Multiple protocols: Modbus and Nova manufacturer two protocols;
- High resolution: minimum diameter of up to 0.3 micron particles;
- The small amount of maintenance: automatic dust removal, automatic temperature protection, automatic alarm, fault repair, greatly reduce the manual maintenance.
- Standard certification: products have been certified by CE/FCC/RoHS.

## Scope of Application

It is applicable for building Site, road dust detection, manufacturers of high pollution monitoring, environmental protection and large data monitoring.



## Working Principle

- It makes use of the principle of laser scattering: when particle pass cross the laser point it will produce weak light scattering, particle scattering light intensity is related to the diameter of the particle diameter, through different intensity influent to different size particles in real time. It is according to the calibration method, to keep our data in line with the official.
- Professional intelligent dust concentration monitoring technology: monitoring accuracy is improved, automatic repair sensor fault, automatic fault alarm, greatly reduce the workload of manual maintenance.
- In the case of high humidity, it can start heating module automatically which can reduce humidity.
- Dust removal principle: automatic timing clean sensor.

## Technical Index

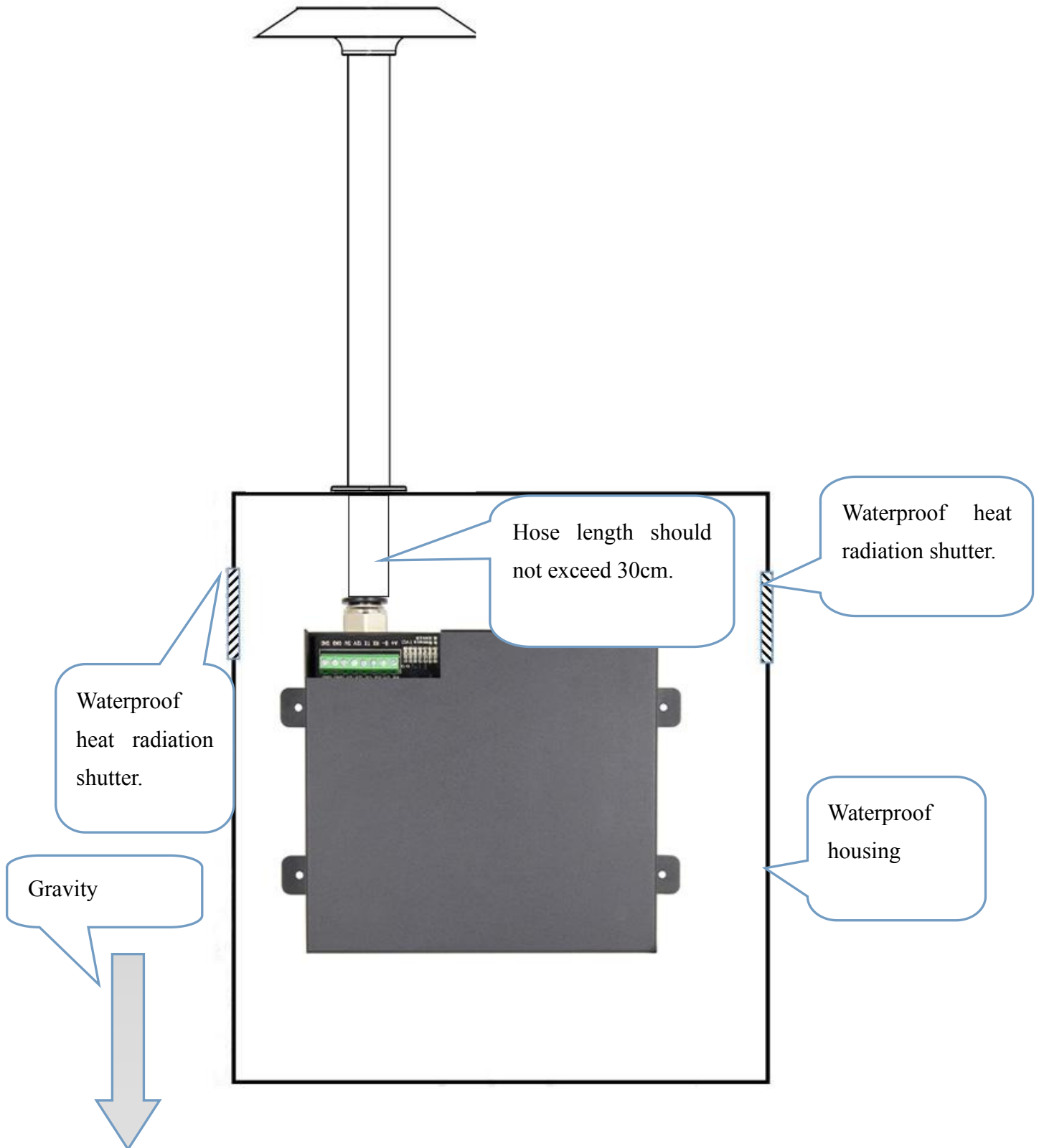
NO.	Item	Parameter	Remarks
1	Measurement parameter	PM2.5+PM10	sub-model: SDS019-25
		PM100 [TSP]	sub-model: SDS019-100
		PM2.5+PM10+PM100	sub-model: SDS019-125
2	Range	PM2.5: 0.0-1999.9 $\mu\text{g}/\text{m}^3$ PM10: 0.0-2999.9 $\mu\text{g}/\text{m}^3$ PM100: 0.0-29999 $\mu\text{g}/\text{m}^3$	
3	Rated voltage	DC5V [4.8V~5.2V] DC12V [10V~30V]	Support two kinds of power supply voltage
4	Rated power	5 W	
5	Sleep power	0.24 W	
6	Temperature Range	-20-60 $^{\circ}\text{C}$	



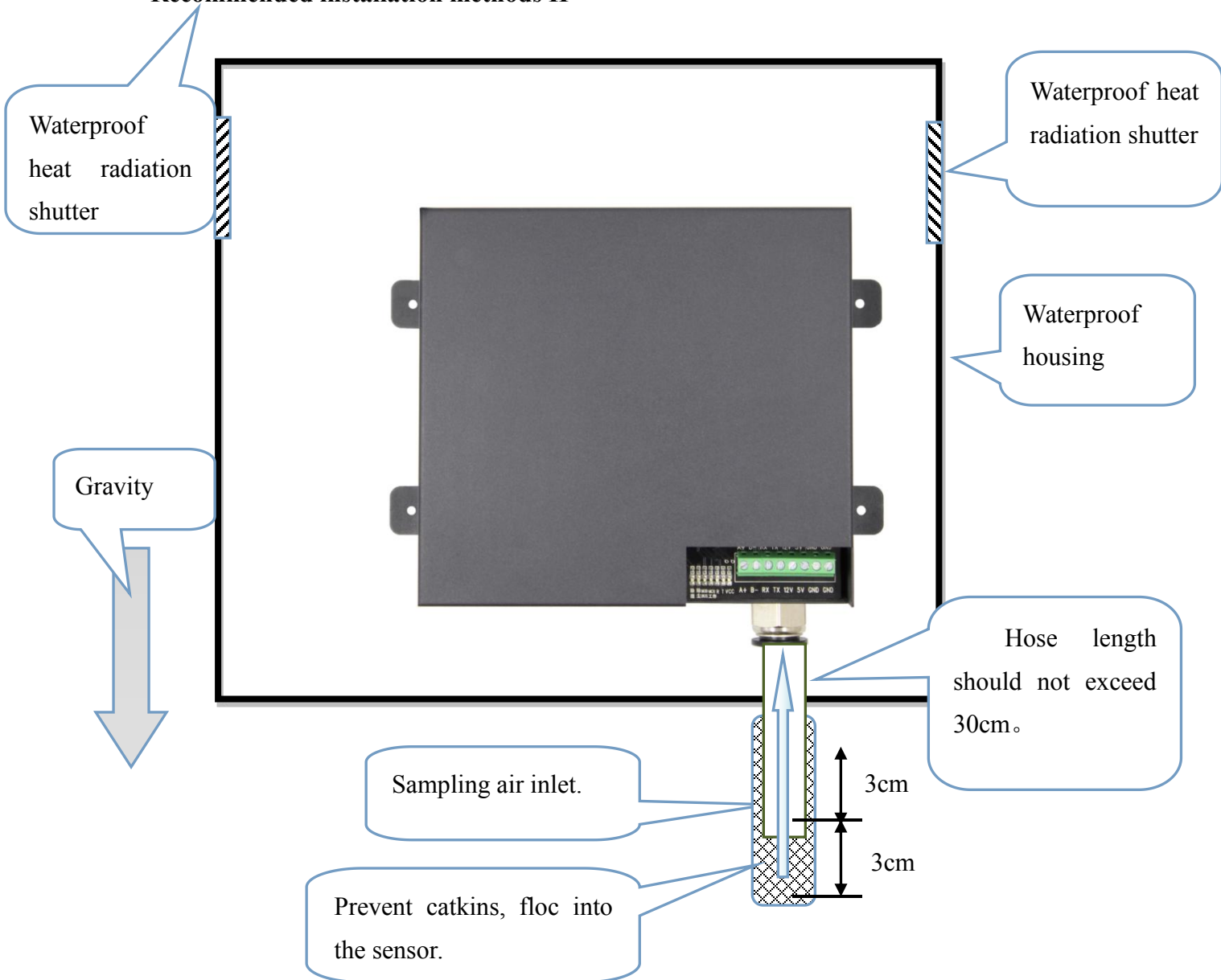
7	Humidity Range	0-98%RH()	
8	Air Pressure	86KPa~110KPa	
9	Corresponding Time	1S	
10	Communication Interface	RS-485 + Uart TTL	Can be customized
11	Communication Protocol	Modbus-RTU+诺方厂家协议	Can be customized
12	Counting Efficiency	PM2.5: 70%@0.3 $\mu$ m 98%@0.5 $\mu$ m PM10: 70%@0.3 $\mu$ m 98%@0.5 $\mu$ m PM100: 70%@0.7 $\mu$ m 98%@1.0 $\mu$ m	
13	Relative Error	PM2.5: max of $\pm$ 10% and $\pm$ 8 $\mu$ g/m <sup>3</sup> PM10: max of $\pm$ 15%and $\pm$ 10 $\mu$ g/m <sup>3</sup> PM100: max of $\pm$ 18% and $\pm$ 30 $\mu$ g/m <sup>3</sup>	
14	Product Error	180x165x82mm	Not include installation and air inlet
15	Hose Size	outside diameter: 16mm	
16	Life Time	3 years	below 40 $^{\circ}$ C
17	Standard Certification	CE/FCC/RoHS/CPA	

# Recommended installation methods

## Recommended installation methods I



**Recommended installation methods II**



**Detailed list of equipment and accessories**

NO.	Name	Quantity	Remarks
1	Sensor	1	
2	Hose	30cm	
3	Protective net	1	
4	Data line	1	Only for sample
5	TTL to USB module	1	

**Contact**

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