HUIDU TECHNOLOGY

灰度科技
HUIDU TECHNOLOGY

Product Specification

HD-S208

V2.0 20200314

Contents

I Features Introduction

1.1 Overview

HD-S208 is a grayscale technology sensor set in Shenzhen. The supporting LED control system is suitable for public places such as construction sites, factories and mines, traffic intersections, squares, and large enterprises to monitor the emission of suspended particulate matter from air pollution. Simultaneous monitoring of dust, noise, temperature, humidity, wind speed, wind direction and other data.

1.2 Component Parameter

Component	Sensor type
Wind direction sensor	Wind direction
Wind velocity sensor	Wind velocity
Multifunctional louver box	Temperature and humidity
	Light sensor
	PM2.5/PM10
	Noise
Remote receiver	Infrared remote control
Main control box	/

II Detailed description of the component

2.1 Wind velocity

2.1.1 Product description

RS-FSJT-N01 wind speed transmitter is small and light in size, easy to carry and assemble. The three-cup design concept can effectively obtain wind speed information. The shell is made of polycarbonate composite material, which has good anti-corrosion and anti-corrosion characteristics. The long-term use of the transmitter is free of rust and the internal smooth bearing system ensures the accuracy of information collection. It is widely used in wind speed measurement in greenhouses, environmental protection, weather stations, ships, terminals, and aquaculture.

2.1.2 Function features

- Range：0-60m/s，Resolution 0.1m/s

- Anti-electromagnetic interference treatment
- Bottom outlet method, completely eliminate the aging problem of aviation plug rubber mat, still waterproof after long-term use
- Using high-performance imported bearings, the rotation resistance is small, and the measurement is accurate
- Polycarbonate shell, high mechanical strength, high hardness, corrosion resistance, no rust, long-term use outdoors
- The structure and weight of the equipment have been carefully designed and distributed, the moment of inertia is small, and the response is sensitive.
- Standard ModBus-RTU communication protocol for easy access

2.1.3 Main Specifications

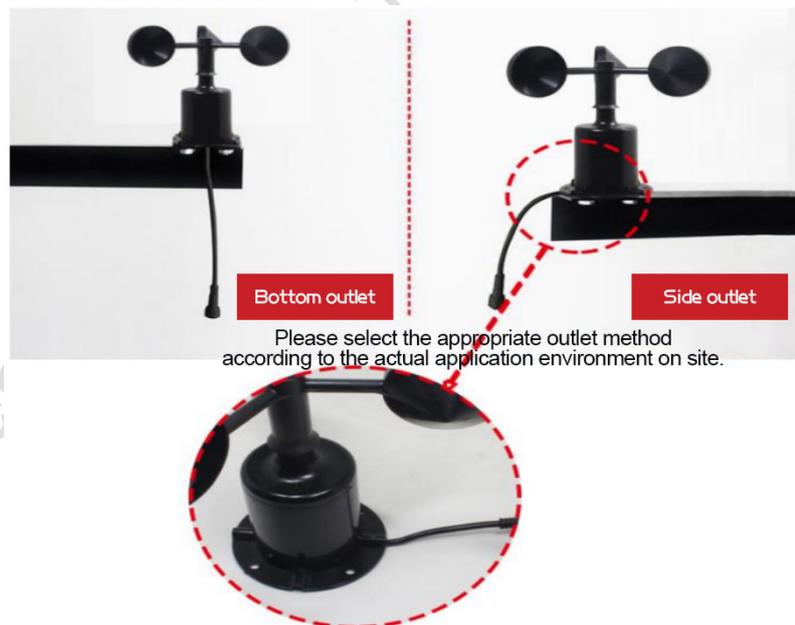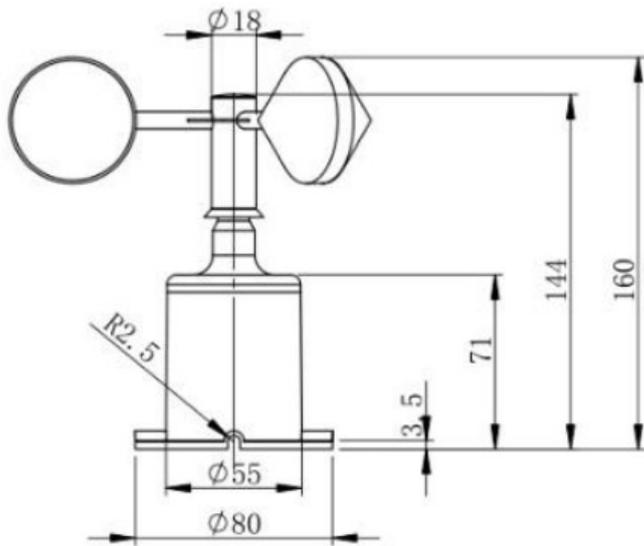| DC power supply (default)	5V DC
Power consumption	≤0.3W
Transmitter circuit operating temperature	-20℃~+60℃，0%RH~80%RH
Resolution	0.1m/s
Measuring range	0~60m/s
Dynamic response time	≤0.5s
Starting wind speed	≤0.2m/s

2.1.4 Equipment List

- Transmitter equipment   1Set
- Mounting screws 4
- Certificate, warranty card, calibration certificate, etc.
- Aviation head wiring 3 meters

2.1.5 Installation method

Flange mounting, threaded flange connection makes the lower tube of the wind speed sensor firmly fixed on the flange, the chassis is Ø65mm, and four mounting holes of Ø6mm are opened on the circumference of Ø47.1mm, which are tightly fixed by bolts. On the bracket, the whole set of instruments is kept at an optimal level, the accuracy of the wind speed data is ensured, the flange connection is convenient to use, and the pressure can be withstood.

Ø18

Overall height： 160
Spindle height： 144
Spindle height： 71
Base diameter： φ80

unit： mm

R2.5

144

160

71

3.5

Ø55

Ø80

R65

4-Ø4.5

Ø50

Ø68

Ø182

Mounting aperture： φ4.5
Distribution diameter： φ68

unit： mm

2.2 Wind direction

2.2.1 Product description

RS-FXJT-N01-360 wind direction transmitter is small and light in size, easy to carry and assemble. The new design concept can effectively obtain wind direction information. The shell is made of polycarbonate composite material, which has good anti-corrosion and anti-erosion characteristics. It can ensure the long-term use of the transmitter without deformation, and at the same time with the internal smooth bearing system, ensuring the accuracy of information collection. It is widely used in wind direction measurement in greenhouses, environmental protection, weather stations, ships, terminals, and aquaculture.

2.2.2 Function features

- Range：0~359.9 degree
- Anti-electromagnetic interference treatment
- High-performance imported bearings, low rotational resistance and accurate measurement
- Polycarbonate shell, high mechanical strength, high hardness, corrosion resistance, no rust, long-term use outdoors
- The structure and weight of the equipment have been carefully designed and distributed, the moment of inertia is small, and the response is sensitive.
- Standard ModBus-RTU communication protocol, easy to access

2.2.3 Main Specifications

DC power supply (default)	5V DC
Power consumption	≤0.3W
Transmitter circuit operating temperature	-20℃~+60℃，0%RH~80%RH
Measuring range	0-359.9°
Dynamic response in time	≤0.5s

2.2.4 Equipment List

- Transmitter equipment   1Set
- Mounting screw transmitter equipment   4
- Certificate, warranty card, calibration certificate, etc.
- Air head wiring 3 meters

2.2.5 Installation method

Flange mounting, threaded flange connection makes the lower tube of the wind direction sensor firmly fixed on the flange, the chassis is Ø80mm, and four mounting holes of Ø4.5mm are opened on the circumference of Ø68mm, which are tightly fixed by bolts. On the bracket, the whole set of instruments is kept at an optimal level to ensure the accuracy of the wind direction data. The flange connection is convenient to use and can withstand large pressure.

Please note: When installing, let the **arrow** on the sensor rush to the north to avoid measurement errors.

North

Bottom outlet

Side outlet
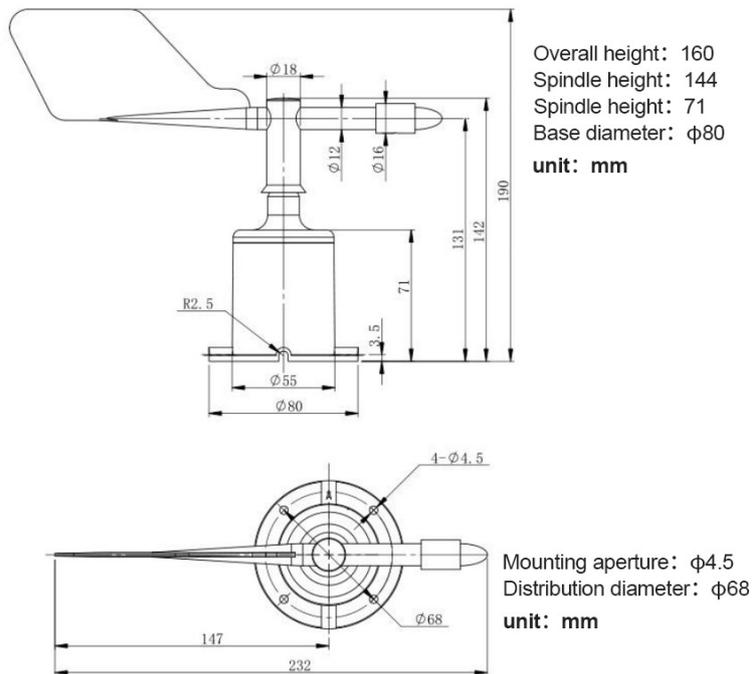
Please select the appropriate outlet method according to the actual application environment on site.

2.2.6 Dimensions

Overall height：160
Spindle height：144
Spindle height：71
Base diameter：φ80
unit：mm

Mounting aperture：φ4.5
Distribution diameter：φ68
unit：mm

2.3 Multifunctional louver box

2.3.1 Product description

The integrated shutter box can be widely used for environmental detection, integrating noise collection, PM2.5 and PM10, temperature and humidity, atmospheric pressure and illumination. It is installed in the louver box. The equipment adopts standard DBUS-RTU communication protocol and RS485 signal output. The communication distance can be up to 2000 meters (measured). The transmitter is widely used in various occasions such as measuring ambient temperature and humidity, noise, air quality, atmospheric pressure and illumination, etc. It is safe and reliable, beautiful in appearance, convenient to install and durable.

2.3.2 Function features

- Long service life, high sensitivity probe, stable signal and high precision. The key components are imported and stable, and have the characteristics of wide measuring range, good linearity, good waterproof performance, convenient use, easy installation and long transmission distance.
- Noise acquisition, accurate measurement, range up to 30dB~120dB.
- PM2.5 and PM10 are collected at the same time, the range is 0-6000ug/m3, the resolution is 1ug/m3, the unique dual-frequency data acquisition and automatic calibration technology, the consistency can reach ±10%
- Measuring the ambient temperature and humidity, the measuring unit is imported from Switzerland, the measurement is accurate, the range is -40~120 degrees.
- Wide range of 0-120Kpa air pressure range, can be applied to a variety of altitudes.
- The light collection module uses a high-sensitivity photosensitive probe with a light intensity range of 0 to 200,000 Lux.
- Using a dedicated 485 circuit, the communication is stable, and the power supply is 10~30V wide.
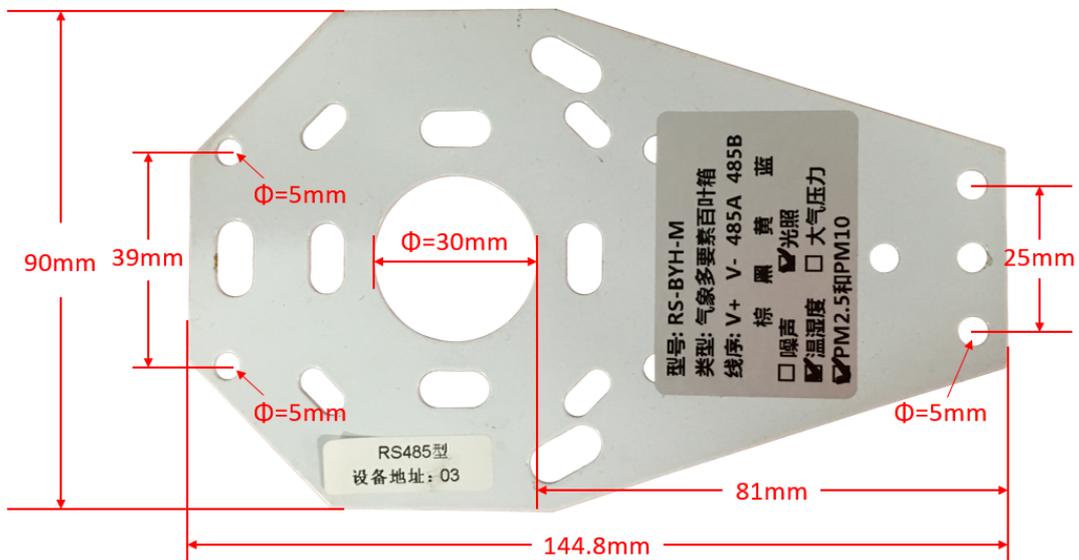
2.3.3 Main Specifications

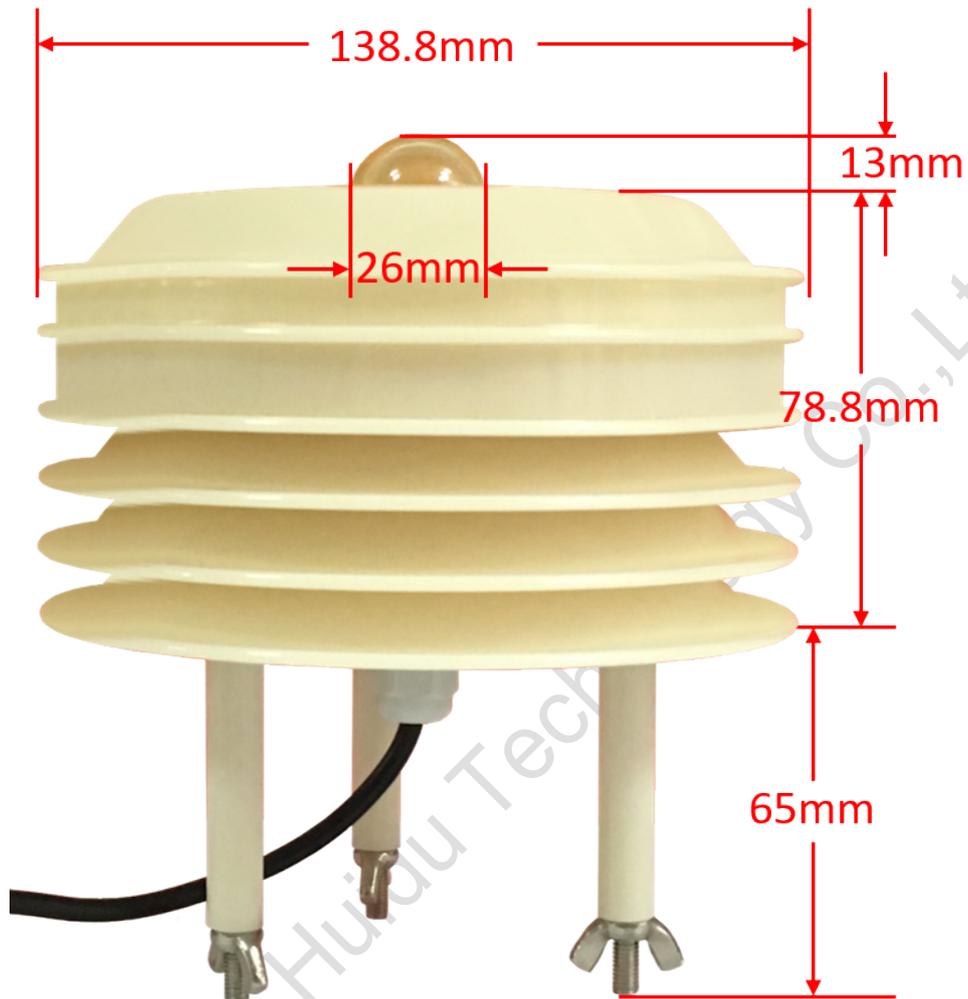|		
DC power supply (default)	5VDC	
Maximum power consumption	RS485 Output	0.4W
Precision	humidity	±3%RH(5%RH~95%RH,25℃)
	temperature	±0.5℃（25℃）
	Light intensity	±7%(25℃)
	Atmospheric pressure	±0.15Kpa@25℃ 75Kpa
	noise	±3db
	PM10 PM2.5	±1ug/m3
Range	humidity	0%RH~99%RH
	temperature	-40℃~+120℃
	Light intensity	0~20万 Lux
	Atmospheric pressure	0-120Kpa
	noise	30dB~120dB
	PM10 PM2.5	0-6000ug/m3
Long-term stability	humidity	≤0.1℃/y
	temperature	≤1%/y
	Light intensity	≤5%/y
	Atmospheric pressure	-0.1Kpa/y
	noise	≤3db/y
	PM10 PM2.5	≤1ug/m3/y
Response time	Temperature and humidity	≤1s
	Light intensity	≤0.1s
	Atmospheric pressure	≤1s
	noise	≤1s
	PM10 PM2.5	≤90S
output signal	RS485 output	RS485(Standard Modbus communication protocol)

2.3.4 Equipment List

- Transmitter equipment 1
- Installation screws 4
- Certificate, warranty card, calibration certificate, etc.
- Aviation head wiring 3 meters

2.3.5 Installation method

2.3.6 Housing size

138.8mm

13mm

26mm

78.8mm

65mm

2.4 Infrared remote control

2.4.1 Product description

The remote control sensor is used to switch programs, pause programs, small size, low power consumption, simple operation and other characteristics. The remote receiver and remote control are used together.

2.4.2 Main Specifications

DC powered (default)	5V DC
Power consumption	≤0.1W
Remote control effective distance	Within 10m, at the same time affected by the environment
Dynamic response time	≤0.5s

2.4.3 Equipment List

- Infrared remote control receiver
- Remote control

2.4.4 Installation method

The remote control receiving head is attached to an unobstructed, remotely controllable area.

3M Glue
3M glue is mainly used for fixed receivers

2.4.5 Shell Size

19mm

24mm

14mm

2.5 External temperature and humidity

(Choose three from wind speed, wind direction, and shutter box)

2.5.1 Product description

The sensor can be widely used in environmental detection, integrates temperature and humidity, and has small volume, low power consumption, simple and stable.

2.5.2 Main Specifications

DC powered (default)	5V DC
Measuring range	temperature ：-40℃~85℃ humidity：0~100%rh
Measurement accuracy	temperature：±0.5℃，Resolution 0.1℃ humidity：±5%rh，Resolution 0.1rh
Ingress protection	44
Output Interface	RS485
Protocol	MODBUS RTU
mailing address	1-247
Baud rate	1200bit/s，2400bit/s，4800 bit/s，9600 bit/s，19200 bit/s

Average power consumption	＜0.1W

2.5.3 Equipment List

■   Aviation head wiring 1.5 meters

2.5.4 Installation Method

Indoor wall installation, ceiling installation.

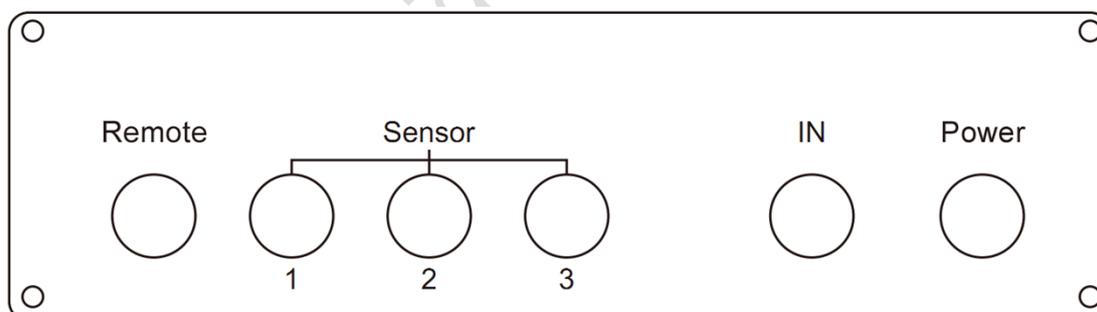## 2.5.5 Shell Size

15mm

75mm

2.6 Main control box

2.6.1 Product description

The sensor main control box is powered by DC5V, the aluminum profile is oxidized and painted, and the air head is foolproof. Each interface corresponds to an LED indicator, which indicates the connection status of the corresponding interface component.
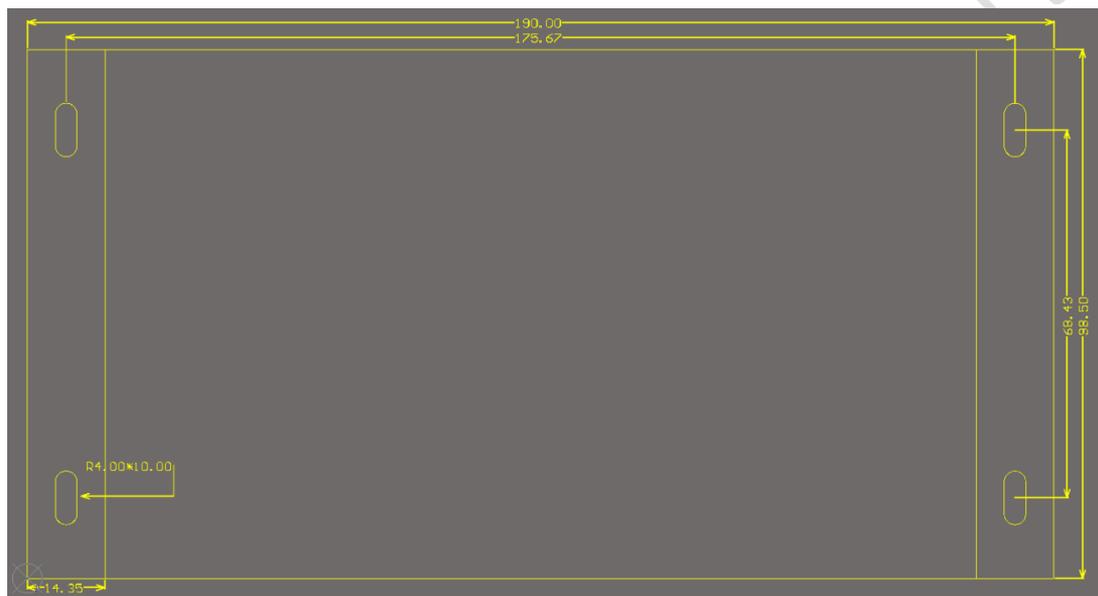
2.6.2 Interface definition

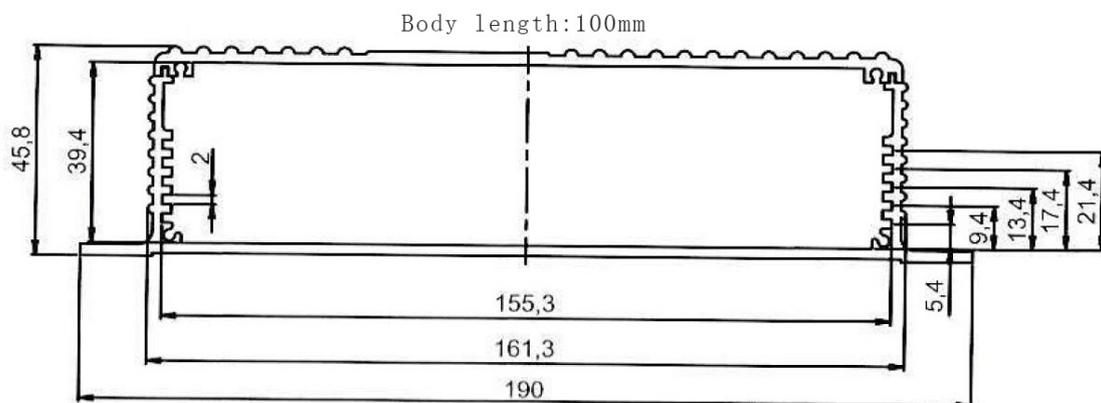| Aviation interface	Component
Temp	Temp
Sensor 1/2/3	Wind direction sensor
	Wind speed sensor
	Multifunctional louver box
IN	LED control card

2.6.3 Equipment List

- equipment 1
- Air head wiring 3 meters (connecting LED control card and power supply)

2.6.4 Installation method

Unit: mm

2.6.5 Housing size

III Assembly rendering

Multi-function Sensor box

Wind speed

Wind direction

Environmental monitoring

Temp 19℃   Humid 19℃

Wind speed 3LV

Noise 42dB   PM2.5 41.1

LED Screen