CDW-21A Dust Sensor

For weather automation applications

Features

- High Sensitivity
- Fast response time
- Excellent stability
- Light construction
- Long service life
- There is no need to wait for a long time to warm up, which improves the convenience and efficiency of use
- Good frequency response
- High level of protection (IP65, etc.)
- Flexible installation, easy to install and use in different places

CDW-21A Dust Sensor using laser scattering principle, detecting the existence of dust particle concentration in the air, the minimum can detect 1.0um particles, has a good consistency and stability.According to different usage environment ,there are indoor type and outdoor type to select.

Typical installation locations

- Environment quality
- Warehousing
- Public place
- Animal husbandry

Design structure

The working principle of the infrared dust sensor is to use the scattering principle of light to detect the dust concentration in the air. Specifically, it does this by emitting infrared light, and when dust particles in the air scatter with the infrared light, the receiver picks up the scattered light and converts it into an electrical signal. Through the analysis and processing of electrical signals, the concentration of dust in the air can be obtained.

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Easy installation

Choose the appropriate installation position: Avoid direct interference from wind, direct sunlight or other external factors that may affect the normal operation of the sensor. At the same time, the installation height should be determined according to the specific monitoring needs and environmental characteristics, for example, in a closed environment such as a factory workshop, it can be installed at a height of 1.5 meters to 2 meters from the ground; For open places such as mines, it may be necessary to install it at a height of 5 to 10 meters above the ground. In addition, when installing a dust sensor on an air purification device, it usually must be installed vertically, and it is recommended to install it on the front panel, while ensuring that the air movement generated by the purifier air duct does not affect the position of the sensor.

Reliable operation

Infrared dust sensors usually have strong anti-interference ability and can effectively resist the influence of electromagnetic interference, vibration and other factors in the external environment. This allows the sensor to work stably even in complex industrial environments, providing users with accurate dust concentration data.
It has good detection ability for different particle size dust particles. Whether it is fine PM2.5 particles or larger PM10 particles, infrared dust sensors can accurately detect their concentration, providing comprehensive data support for environmental monitoring and air quality assessment.

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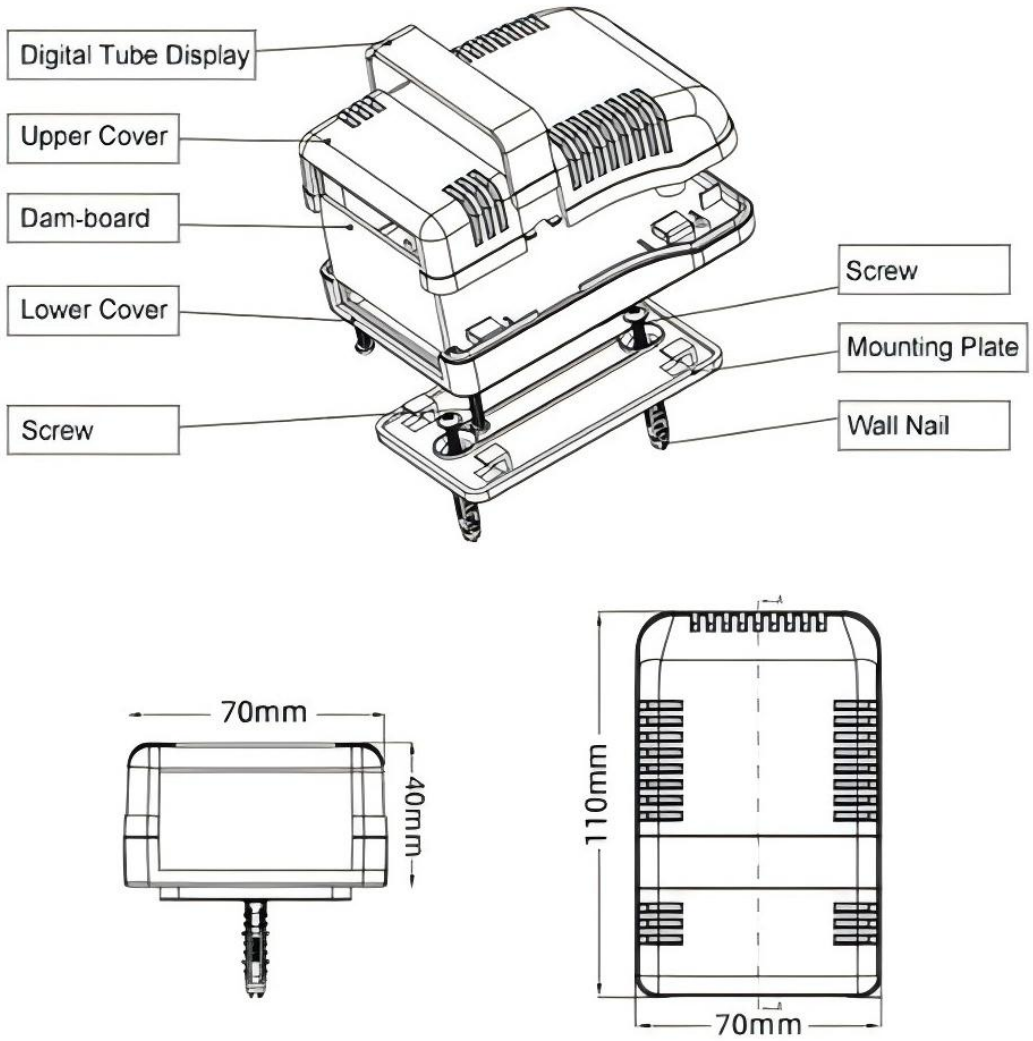
Dimensions & installing

CDW-21A connector dimension



Mounting

1.Install the product in stable environment area, avoid direct sunlight, away from windows air-conditioning, heating and other equipment. Otherwise it will cause atmospheric pressure measurement inaccuracies.

2. It is recommended to install in the cabinet open to the atmosphere,for example: instrument shelter

Technical data

Measurement performance, models CDW-21A

Item	Technical Specification
Sampling object	PM1.0,PM2.5,PM10 Concentration
Range	0-1000ug/m3
Accuracy	±3%FS@25℃
Supply	5VDC,12-24VDC
Output	4-20mA,0-5V,0-10V,RS485
Power Consumption	<50mA@24V(4-20mA)
Warm Up Time	3min
Response Time	<90s
Temperature Drift	≤0.2%FS/℃
Stability	<±2%FS
Repeatability	<±1%FS
Operating Temperature	-20℃-+50℃@15-80%RH
Storage	-40-60℃@20%-90%RH
Shell material	ABS

Model number	Type	Output	Special features
CDF-10A	Wind speed	Pulses(PNP) RS485 4-20MA 0-5V	Three cup plastic wind speed
CDF-11A	Wind direction	RS485 4-20MA 0-5V	Plastic wind direction sensor
CDG-10B	Solar radiation	0-5V,4-20mA,RS485	Spectral range:300～1100nm
CDG-14A	Illuminance sensor	0-5V 0-10V 4-20mA RS485	Spectral range:380～780nm
CDY-12A	Economical Tipping Bucket Rainfall	Pulses(@10kΩ&0.01uF),RS485	Diameter :φ200mm, height: 271mm
CDW-10A	Wall-mounted Barometric Pressure	RS485,4-20mA,0-5V, 0-10V	Barometric range 600-1100hPa(mbar)
CDW-12A	CO2 sensor	4-20mA,0-5V,RS485	Range 0-2000ppm ,0-5000ppm,0-10000ppm
CDW-13B	Noise sensor	RS485	Range 30-130dB
CDW-14A	Paste Type Temperature	PT100 PT1000 RS485	Range -50-+100℃, -20-+50℃
CDW-21A	Dust sensor	RS485 4-20mA,0-5V,0-10V	PM1.0,PM2.5,PM10
CDW-22A	Leaf Wetness	4-20mA,0-5V,0-2V,RS485	Wetness: 0-100% Temperature: -40-+80℃
CDW-33A	Atmospheric Temperature,Humidity & Pressure	RS485	Shelter installation
CDW-15A	O2 Concentration	4-20mA,0-5V,0-10V,RS485	Range 0-30%
CDW-16A	SO2 Concentration	4-20mA,0-5V,0-10V,RS485	Range 0-20PPM 0-2000PPM
CDW-17A	NH3 Concentration	4-20mA,0-5V,0-10V,RS485	Range 0-100PPM 0-1000PPM 0-5000PPM
CDW-18A	H2S Concentration	4-20mA,0-5V,0-10V,RS485	Range 0-100PPM 0-1000PPM
CDW-19A	CO Concentration	4-20mA,0-5V,0-10V,RS485	Range 0-1000PPM 0-2000PPM
CDW-1T0	Visibility sensor	RS485	Range 0-10Km/0-20Km/0-30Km
CDW-1TX	Multi-in-one gas Sensor	RS485	Multi-parameter integration

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