CDG-10B Solar Radiation Sensor

For weather automation applications

Features

- Designed on silicon-cell principle
- No moving parts, no maintenance, can work in any altitude• Strong corrosion resistant ability
- High sensitivity
- Low power consumption
- Light weight, long service life
- Used as sunshine duration sensor
- The effect of cosine error on measurement can be effectively reduced, and the solar radiation can be accurately measured when the solar altitude Angle is small

CDG-10B Solar Radiation Sensor is designed on basis of silicon-cell principle. It is mainly used for measuring solar radiation within 300-1100nm wavelength. If the sensing face is downwards, it can test the reflected radiation and solar radiation on the incident to the inclined plane. If shad is added, it can test the scattered radiation. It is widely used to monitor the solar radiation in meteorology, solar energy, agriculture, construction materials aging and atmospheric pollution and etc.

Typical installation locations

- Top of building
- Solar energy
- Open areas
- Outdoor locations

Design structure

The wavelength range of solar radiation energy can be measured is usually between 0.3 and 1.1μm, which can meet the observation needs of solar radiation.

With a temperature compensation unit or good temperature characteristics, accurate measurement data can be obtained over a wide temperature range.It has good waterproof and dust-proof performance and can work normally in various harsh environments.

Easy installation

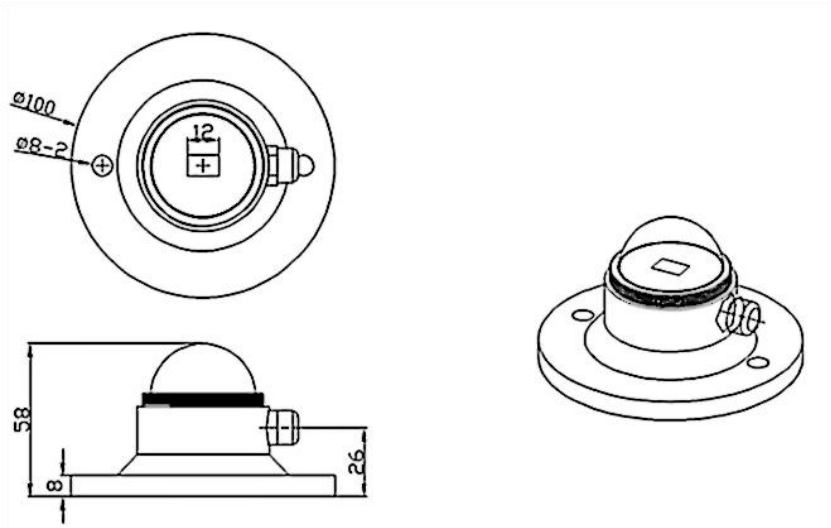
Open without shelter: It should be installed in an open area without shelter from tall buildings, trees, etc., to ensure that it can fully receive solar radiation. Sensors usually need to be mounted horizontally to ensure measurement accuracy. You can calibrate using a level to ensure that the sensor is mounted on a level surface。

Reliable operation

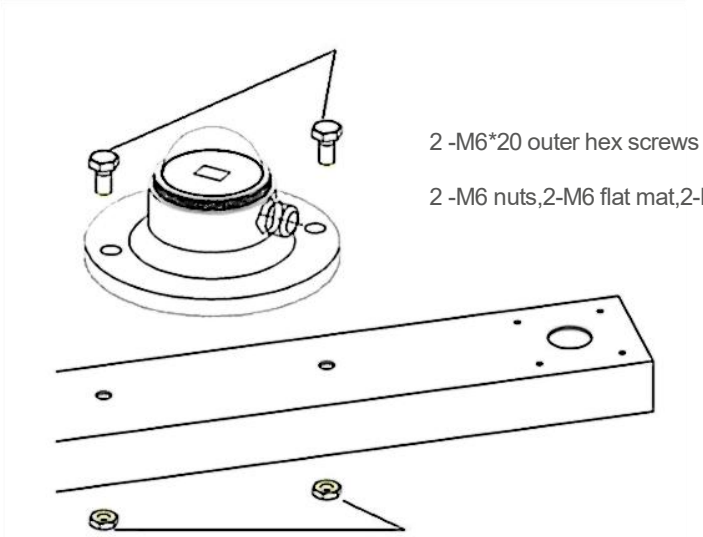
Usually made of high-strength materials, such as aluminum alloy, can withstand a variety of harsh environmental conditions, such as wind and rain, sand, high temperature, low temperature and so on. The housing is well sealed to prevent moisture, dust and other impurities from entering the interior of the sensor, affecting its performance and life.It can accurately measure the intensity and spectral distribution of solar radiation. The sensor has high sensitivity, low noise and good linearity, which can maintain stable performance under different environmental conditions.

Dimensions & installing

CDG-10B connector dimension



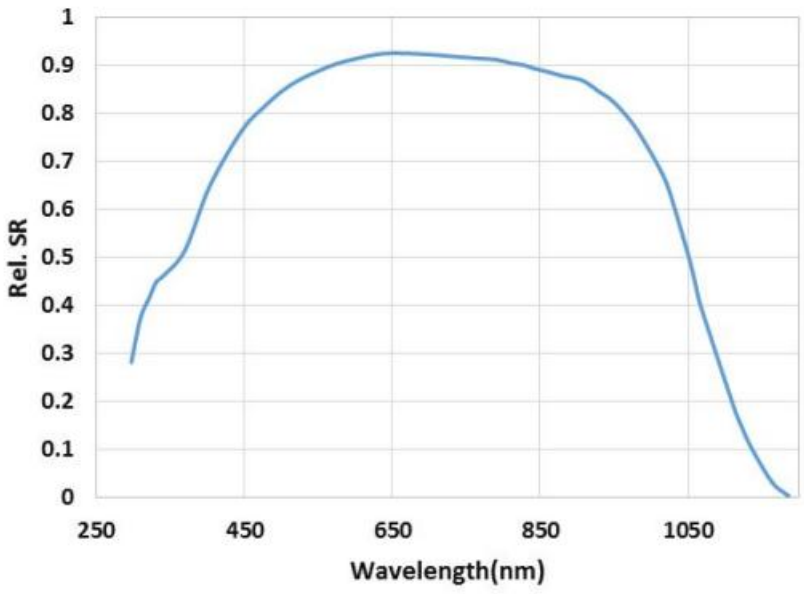
Movable pole bracket



2 -M6*20 outer hex screws

2 -M6 nuts,2-M6 flat mat,2-M6 Spring washers

Spectral response



Technical data

Measurement performance, models CDG-10B

Item	Specifcations
Spectral range	300～1100nm
Supply	5V,12-24VDC
Range	0-1500W/m^2
Resolution	1W/m^2
Output	0-5V,4-20mA,RS485
Response time	≤5s
Cosine correction	≤±10%(Solar elevation angle=10°)
Non-linear	≤±3%
Temperature effect	±0.08%/℃
Stability	≤±2%/year
Operating Temperature	-40℃-+80℃
Ingress Protection	IP65
Weight(unpacked)	420g
Shell material	Aluminum alloy
Storage Condition	10℃-60℃@20%-90%RH

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
CDF-20B	Combined Wind Speed & Direction	RS485 4-20MA 0-5V 0-10V	Integrated wind speed and direction
CDF-21A	Ultrasonic Wind Speed & Direction	RS232/RS485(Modbus/NMEA-0183), Voltage(0-5V),Current(4-20mA) optional	Ultrasonic principle
CDW-33A	Atmospheric Temperature,Humidity & Pressure	RS485	Shelter installation
CDQ-T6A	Miniature Ultrasonic Automatic Weather	RS485	Wind speed & direction temp & humidity &pressure
CDY-12A	Economical Tipping Bucket Rainfall	Pulses(@10kΩ&0.01uF),RS485	Diameter :φ200mm, height: 271mm
CDG-10B	Solar Radiation	0-5V,4-20mA,RS485	Spectral range:300～1100nm
CDG-11B	Pyranometer	0-20mV,RS485	Spectral range:300～3000nm Class one
CDG-12B	PAR sensor	0-5V 4-20mA RS485	Spectral range:400～700nm
CDG-13B	Ultraviolet(UV) Radiation	0-5V 0-10V 4-20mA RS485	Spectral range:280～400nm
CDG-14A	Illuminance Sensor	0-5V 0-10V 4-20mA RS485	Spectral range:380～780nm
CDG-17B	Scattering Radiometer	RS485	Spectral range:280～3000nm

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