



Solar Radiation Sensor, 180° Field of View, Conform to the WMO Standards

Overview

The **BS200-03 Pyranometer** is designed based on the thermopile principle, utilizing electroplated, multi-contact thermopiles as its sensing element. Its surface is coated with a high-absorption black layer to efficiently capture solar radiation. The hot junctions are positioned on the exposed surface, while the cold junction is located within the instrument body. When solar radiation heats the surface, the temperature difference between the hot and cold junctions generates an electromotive force through the thermoelectric effect, which is directly proportional to the intensity of the incoming radiation.

To ensure accurate and stable performance, the device incorporates a built-in temperature compensation circuit. This feature minimizes the influence of ambient temperature variations on the sensor's output, maintaining consistent measurement reliability. The overall design enhances sensitivity while reducing environmental interference, making the **BS200-03** suitable for precise solar radiation monitoring applications.

Features

- ✓ Conform to the WMO Standards
- ✓ Suitable for Harsh Environment
- ✓ With Horizontal Bubble
- ✓ High Sensitivity
- ✓ Double Transmission Glass
- ✓ Visual Desiccant Window
- ✓ Easy Installation

Applications

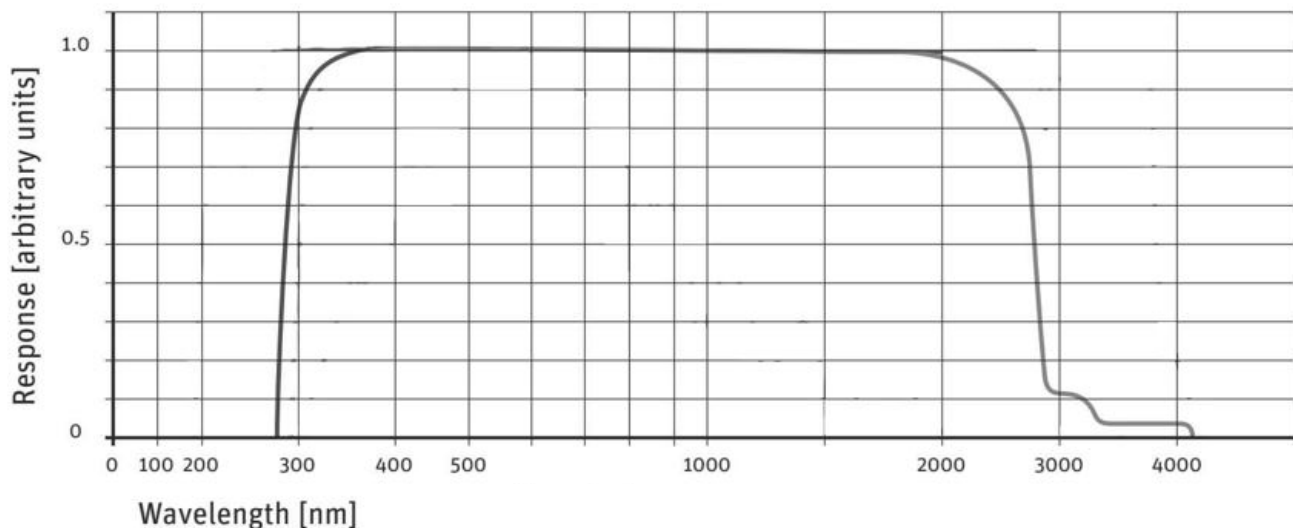
- ✓ Solar Energy and Photovoltaic Power Generation
- ✓ Agriculture and Forestry Monitoring
- ✓ Crop Growth Monitoring
- ✓ Tourism Eco
- ✓ Weather Stations

Technical Specifications

Item	Specification
Spectral Range	300 ~ 3200nm
Operating Voltage	5V, 12 ~ 24VDC①
Range	0 ~ 2000W/m ²
Output	0 ~ 20mV, 0 ~ 5V, 4 ~ 20mA, RS-485
Sensitivity	7 ~ 14μV*W ⁻¹ *m ²
Internal Resistance	350Ω
Non-Linearity	<±2%
Measuring Angle	2π Solid Angle
Response Time	≤20s(99%)
Zero Drift (Temperature Drift: 5k/h)	±5W/m ²
Stability	±2%/Year
Cosine Correction	≤±7%(Solar Elevation Angle=10°)
Temperature Effect	±2%(-10°C ~ 40°C)
Operating Temperature	-40°C ~ 80°C
Recalibration Interval	2 Years
Desiccant	Silica gel Desiccant
Weight (Unpacked)	2.5kg
Pack	Aluminum Alloy Instrument Box
Dimension	ø185*120mm
Installation Bracket (Optional)	Horizontal Bracket or Adjustable Angle Bracket
Ingress Protection	IP65
Storage Condition	10°C ~ 60°C@20% ~ 90%RH

①If you choose to 0-20mv signal output, without power supply.

Spectral Response



Output Characteristics

- **0 ~ 20mV**

Solar radiation values(W/m2)= Voltage output value(μV)/sensitivity coefficient(μV*W-1*m2), Each product is with one sensitivity coefficient respectively (It is mentioned on the product's label).

- **0 ~ 5V**

Solar radiation values(W/m2)=(V/5)*2000(Where V is output voltage value,unit:V)

- **4 ~ 20mA**

Solar radiation values(W/m2)=((I-4)/16)*2000 (Where I is output current value,unit:mA)

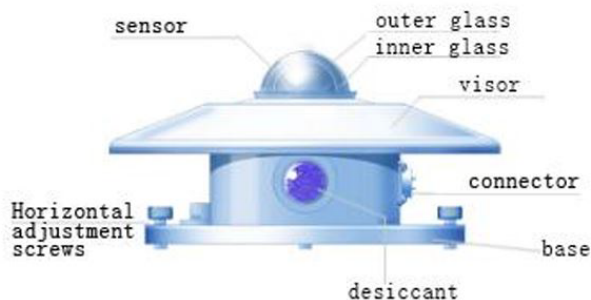
- **RS-485**

MODBUS-RTU

Mounting and Maintenance

- The sensor should be installed in the open air without any shield above the sensing surface.
- The sensor connector should be faced to the north, fix it after the horizontal position is well adjusted.
- Please check the filter cover regularly & make sure it is clean.
- Please do not remove or loose the filter cover, otherwise the accuracy will be affected.
- Please make sure the desiccant to be dry .(If the color of desiccant is changed from blue to red or white, it should be replaced,it is recommended to replace the desiccant every 6 month.)
- The sensitivity is recommended to be re-calibrated after two years use.

Dimension



Parameter Selection Table

Remark	Series	Type	Supply	Output	Cable Length	
BS						
	200					
		03				
			A			5VDC
			B			12 ~ 24VDC
			X			Other
				A		4 ~ 20mA
				B		0 ~ 5V
				C		0 ~ 20mV(Without Power Supply)
				D		RS-485
				X		Other
					2500	Units: mm (typ)
					3000	Units: mm
					...	Units: mm

Example: BS200-03 BA2500 Supply: 12 ~ 24V, Output: 4 ~ 20mA, Cable Length: 2.5m.

For comprehensive details, visit: www.buraq.com/BS200-03