PRODUCT OVERVIEW

Total solar radiation sensor (Class B)

Model ES-S228T-B

Main features

- Meets Class B standards according to ISO9060 and VMO technical specifications.
- Utilizes high-precision thermopile semiconductor processing technology for enhanced accuracy.
- A high-quality 1mm protective cover and fully enclosed design prevent interference
- Allows all-weather data calibration, suitable for sunny, cloudy, and overcast conditions

Compliance

The electromagnetic compatibility in accordance with the following applicable directives:
LVD 2014/35/EU Low Voltage
EMC 2014/30/EU Electromagnetic Compatibility
EMC 2014/35/EU Electromagnetic Compatibility

Introduction

The ES-S228T-B total radiation sensor is a shortwave total radiation sensor used for solar radiation observation. It is a Class-I total radiation sensor conforming to the latest ISO 9060 and WMO technical standards.

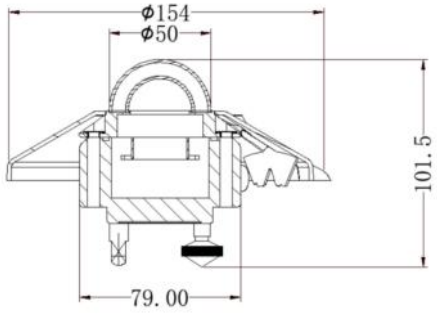
The ES-S228T-B total radiation sensor measures solar radiation received by a horizontal plane from a solid angle of 2π steradian degrees (hemispherical direction), measured in W/m². The ES-S228T-B operates in a completely passive mode, utilizing a thermopile sensor to generate an output voltage proportional to the incident radiation flux. The use of two spherical glass domes reduces measurement errors, particularly thermal offset, resulting in high measurement accuracy.

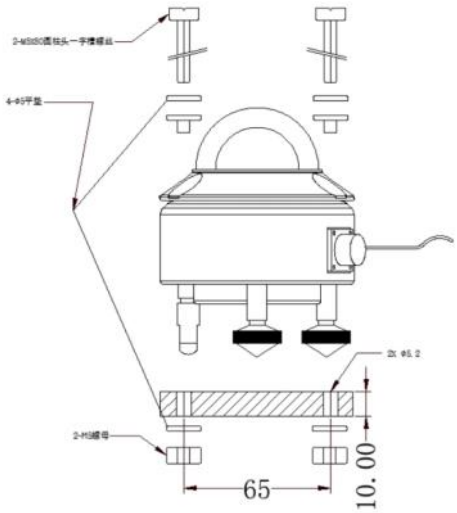
Application

Used for meteorological observation, building physics, climate, and solar energy harvesting experiments. A common application is as part of a weather station to measure outdoor solar radiation.

Dimension

Unit:mm





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Specification

Classified according to ISO 9060/WMO standards	Grade B/Good Quality
Response time (95% response)	<10s
Zero-point offset:(a) Corresponding to 200 W/m² net thermal radiation (ventilation)	<15 W/m²
Zero-point offset:(b) Response to Ambient Temperature Variation of 5 K/h	<4W/m²
Stability (Variation/Year, Percentage of Full Scale)	±1.5%
Nonlinearity	±1%(100~1000 W/m²)
Directional Response	±20 W/m²
Temperature Response	<4%(-10~40°C)
Tilt Response	<2%
Sensitivity Range	7-14μV/(W/m²)
Operating Temperature	-40～+80°C
Internal Resistance	<50Ω
Standard Cable Length	None
Measurement Range	0~2000W/m²
Cable Replacement	Users can remove and install cables
Spectral Range	280~3000 nm (50% transmittance)
Reading Requirements	One differential voltage channel or one single-ended voltage channel
Horizontal Calibration	Includes bubble level and adjusting feet
Solar Exposure Uncertainty	±2%
Weight (excluding cable)	0.8kg
Calibration Traceability	WRR traceability, procedure according to ISO9847
Recommended Calibration Cycle	Biennially
Output Signal	Original output 0～20mV,Optional RS485/4～20mA output (not for external transmitter)

Order guide

ES-S228T-B	Solar radiation sensor		
	CODE	Material	
	A	Total solar radiation sensor (class B)	
		CODE	Signal output
		1	0-20mA
		2	4-20mA
		3	RS485
ES-S228T-B	A	1	Order example

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