

Scattered Radiation Transmitter

Model ES-S228TB



Main features

- Adopts thermoelectric sensing elements, with high measurement accuracy.
- Transparent double-layer glass cover with a light transmittance of up to 95%, good sensitivity, special surface treatment to prevent dust adsorption
- Spectral range reaches 0.3~3 μ m
- Short response time, small error and temperature compensation, more accurate measurement within the range

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

ES-S228TB scattered radiation transmitter consists of two parts: the solar total radiation transmitter and the scattered shading ring. The solar total radiation transmitter adopts the thermoelectric principle and used to measure solar radiation in the spectral range of 0.3~3 μ m. The sensing element adopts a winding electroplated thermopile, and the sensing surface is a black coating with high absorption rate. The thermal effect of radiation is used to absorb solar radiation and convert it into a thermoelectric potential. Auto temperature compensation ensure measure solar radiation more accurately. A double-layer glass cover is used above the sensing surface, which can not only reduce the impact of air convection on the equipment, but also block the radiation of the outer cover itself.

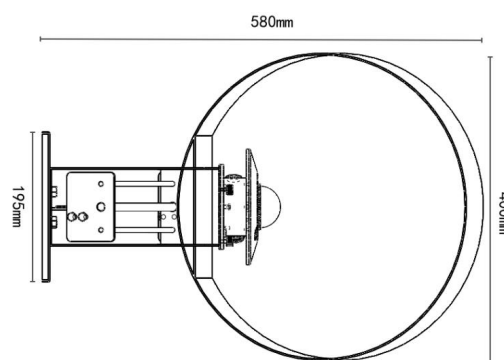
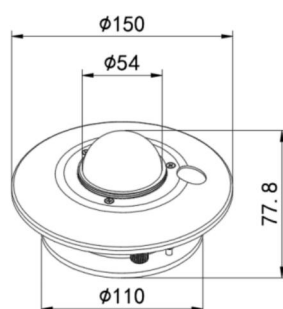
The function of the scattered shading ring is to ensure that the direct radiation of the sun can be continuously blocked from sunrise to sunset. The shading ring consists of a shading ring, a ruler, a screw adjustment screw, a bracket, and a chassis. The ruler is engraved with latitude and declination scales, and the corresponding parameters can be adjusted through the screw handle. The ruler and the bracket are fixed on the chassis and fixed for measurement according to the geographical latitude of the mounting location.

Application

They are widely used in solar energy utilization, meteorology, agriculture and air pollution etc.

Dimension

Unit:mm



Specification

Power supply	10V~30V DC
Power consumption	0.2W
Output signal	RS485 (Modbus-RTU)
Working temperature	-40°C~60°C
Working humidity	0%~95%RH, Non-condensing
Sensitivity	7~14 $\mu\text{V}\cdot\text{W}\cdot\text{m}^2$
Internal resistance	200-400 Ω
Response time (95%)	$\leq 30\text{s}$
Non-linear error	$\leq \pm 3\%$
Corresponding error of directionality	$\leq \pm 30\text{W}/\text{m}^2$
Temperature response error	$\leq \pm 3\%$ (-30°C~+50°C)
Spectral range	0.3~3 μm
Measuring range	0-2000W/m ²
Resolution	1W/m ²
Accuracy	$\pm 3\%$
Annual stability	$\leq \pm 3\%$
Cosine response error	$\leq \pm 5\%$
Tilt response error	$\leq 2\%$
Zero drift	$\leq 6\text{ W}/\text{m}^2$
Latitude scale range	0~55°
Declination range	$\pm 25^\circ$ (North latitude is positive)
Ring diameter	$\Phi 400$

Order guide

ES-S228TB	scattered radiation transmitter		
	CODE	Material	
	A	Aluminum shell	
		CODE	Signal output
		1	RS485
ES-S228TB	A	1	Order example