PRODUCT OVERVIEW

Grid-connected PV weather station

Model ES-W3100



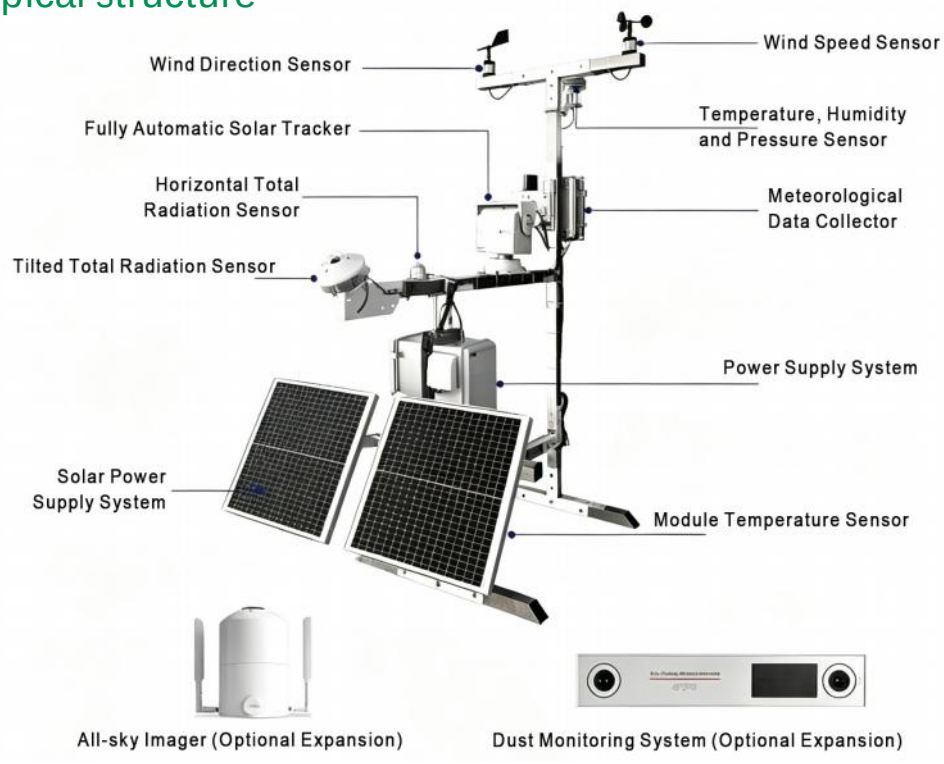
Main features

- Monitoring multiple parameters, covering all core meteorological elements, and supporting extended functions such as sand and snow thickness monitoring.
- High-frequency sampling and real-time transmission: Data is typically collected at intervals of 1 minute or less.
- Anti-interference and redundancy design: Employs lightning protection and electromagnetic interference resistance technologies.
- Automatic calibration and fault diagnosis: Features automatic sensor calibration and built-in fault module.
- Integrated photovoltaic-specific algorithms: Includes a built-in PV performance ratio (PR value) calculation model.
- Supports integration with third-party platforms (such as SCADA systems) for data visualization and intelligent analysis.

Introduction

ES-W3100 grid-connected photovoltaic (PV) weather station is a modern device integrating photovoltaic power generation and meteorological monitoring. It utilizes solar panels to convert solar energy into electricity, while being equipped with high-precision meteorological sensors to monitor and record meteorological elements such as wind speed, wind direction, temperature, humidity, and sunlight in real time. The device employs Internet of Things (IoT) technology, supporting remote data transmission and online monitoring to ensure data accuracy and reliability. The product has a built-in large-capacity storage chip capable of storing more than one year's worth of meteorological data and supports multiple communication interfaces for easy connection and communication with computers, enabling remote wireless connectivity. Furthermore, the grid-connected PV weather station is environmentally friendly, utilizing solar power to reduce greenhouse gas emissions and contributing to environmental protection.

Typical structure



Tel: +86 28 87436908
Tax: +86 28 60253688
www.ecosentec.com
Email: info@ecosentec.com

Specification for sensors

ITEMS	Range	Accuracy	Resolution
Ambient temperature	-50 ~ 90°C	± 0.2°C	0.1°C
Ambient humidity	0-100%RH	2%RH (less than 80%) 3%RH (greater than 80%)	0.1%RH
Wind speed	0-60m/s	±3%+0.03V m/s	0.1m/s
Wind direction	0- 360°	±3°	1°
Air pressure	300-1100hPa	±0.3hPa	0.1hPa
Component temperature	-50-150°C	±0.2°C	0.1°C
Tilted total radiation	0-4000w/m2	≤2%	1w/m2
Horizontal total radiation	0-4000w/m2	≤2%	1w/m2
Direct radiation	0-2000w/m2	≤2%	1w/m2
Diffuse radiation	0-2000w/m2	≤2%	1w/m2
Sunshine hours	0-24h	± 0.1h	0.1h
Dust monitoring	50~100%	90~100% Measurement accuracy ±1% of the reading (FS) 80~90% Measurement accuracy ±3% 50~80% Measurement accuracy ±5%, processed by internal precision algorithm	0.1%
Rainfall	0-999mm	≤4%	0.2mm / 0.5mm

Specification for the data collector

PARAMETERS	DESCRIPTION	REMARKS
Working temperature	-40°C～+70°C	Unit °C
Working humidity	0～95%RH	Unit % RH
Number of storage units	(Number of channels * 2 + 6)	Unit row When configured with 5 elements, it can store 1.04 million entries. When configured with 55 elements, it can store 140,000 entries.
Number of registers	You can configure up to 77 registers	
Working voltage	DC12V	Unit V
Power dissipation	0.6W	Unit W
Weight	2.5	Unit KG
Size	310x221x104	Unit mm

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