

SolarInnovate Energy Solutions

Communication inverter power



Overview

This discussion explores the key communication technologies used by inverters, including wired and wireless systems, power line communication (PLC), standard protocols, and the integration of Internet of Things (IoT). What communication methods do micro inverters use?

This ensures that the inverter's operation can be displayed on the monitoring and maintenance platform. The mainstream micro inverter manufacturers in the global market primarily transmit and control data through communication methods such as WiFi, PLC, RS485, Sub-1G, and Zigbee. Below is an overview of each brand's communication methods:.

How does an inverter communicate with a monitoring platform?

The communication between the inverter and the monitoring platform relies on a communication protocol in terms of software and mainly uses a monitoring stick module as a medium or bridge for data transmission and reception in terms of hardware. This ensures that the inverter's operation can be displayed on the monitoring and maintenance platform.

How does a micro inverter work?

The micro inverter is connected to the router through a built-in WiFi module, transmitting the collected data to the server. It can also directly connect to a mobile app through WiFi for data exchange. RS-485 is an asynchronous serial communication protocol suitable for multi-node communication.

How does a micro inverter plc work?

The PLC module converts the operational data sent by the micro inverter into high-frequency signals through power lines and transmits them to the PLC receiver through the power grid. The receiver then connects the data to the router through a network cable, thereby connecting to the user's device. No additional wiring is required.

Why do inverter users need a third-party monitoring platform?

With the development of business models, users not only need to upload inverter data to their own monitoring platform, but also need to display or upload data to their company's cloud platform to achieve convenient and unified data management. This demand can be collectively referred to as "communication with third-party platforms".

Which power line communication options are implemented in different solar installations?

Figure 1 shows typical power line communication options implemented in different solar installations. These installations can be divided into communication on DC lines (red) and communication on AC lines (blue).

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U.S. officials Investigating Rogue Communication Devices in Solar Power

May 15, 2025 · U.S. energy officials have launched an investigation after discovering unauthorized communication equipment embedded within Chinese-manufactured solar power inverters ...

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