

SolarTech Power Solutions

What is a photovoltaic inverter module



Overview

What does a solar inverter do?

Because of its main functions, the inverter is known as the “heart and brain” of the PV system. converting direct current into alternating current for use in the home. monitoring the current and voltage values of the solar modules to ensure they’re always delivering the best possible output.

What is a PV inverter and how does it work?

One critical task of the inverter is to make sure that the PV modules are always working at their optimum power levels: Depending on temperature and irradiation intensity, there is always a precise combination of electrical current and voltage that allows a PV module to achieve its maximum power, which is also called its maximum power point or MPP.

What power category should a photovoltaic inverter be used for?

The appropriate power category for the inverter will depend on the size of the photovoltaic system, so the best thing to do is to get advice from a professional installer in your area. Because of its main functions, the inverter is known as the “heart and brain” of the PV system.

What types of inverters are used in photovoltaic applications?

This article introduces the architecture and types of inverters used in photovoltaic applications. Inverters used in photovoltaic applications are historically divided into two main categories: Standalone inverters are for the applications where the PV plant is not connected to the main energy distribution network.

How to pair a solar inverter with a PV plant?

In order to couple a solar inverter with a PV plant, it’s important to check that a few parameters match among them. Once the photovoltaic string is designed, it’s possible to calculate the maximum open-circuit voltage

(Voc,MAX) on the DC side (according to the IEC standard).

What is the I-V curve of a solar PV module?

As a standard rule, this curve is available in each PV module's datasheet and is calculated according to the Standard Test Condition, STC: (1000 W/m², 25 °C, IAM 1.5). To better understand IAM, read How Radiation and Energy Distribution Work in Solar PV. Figure 3 - Example of I-V curve of a PV module. Image courtesy of PVEducation.

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