

SolarTech Power Solutions

PV Inverter Parameter Comparison



Overview

What are the parameters of a PV inverter?

Aside from the operating voltage range, another main parameter is the start-up voltage. It is the lowest acceptable voltage that is needed for the inverter to kick on. Each inverter has a minimum input voltage value that cannot trigger the inverter to operate if the PV voltage is lower than what is listed in the specification sheet.

How to choose a solar inverter?

It is recommended to match that range when selecting the inverter and the PV array parameters. Inverter MPPT is discussed in EME 812 (11.3 DC/DC Conversion). In most applications, the solar inverters are exposed to ambient conditions such as solar radiation, temperature, and humidity.

What parameters should be considered when stringing an inverter and PV array?

Both the maximum voltage value and operating voltage range of an inverter are two main parameters that should be taken into account when stringing the inverter and PV array. PV designers should choose the PV array maximum voltage in order not to exceed the maximum input voltage of the inverter.

What are inverter specifications?

Specifications provide the values of operating parameters for a given inverter. Common specifications are discussed below. Some or all of the specifications usually appear on the inverter data sheet. Maximum AC output power This is the maximum power the inverter can supply to a load on a steady basis at a specified output voltage.

How efficient are solar inverters?

As power is processed and converted from one shape to another, the solar inverters are expected to perform these tasks with the highest possible

efficiency. This is because we wish to deliver maximum PV generated power to the load or the grid. Typical efficiencies are in the range of more than 95% at rated conditions specified in the datasheet.

What is inverter efficiency?

Inverter efficiency is discussed in EME 812 (11.5. Efficiency of Inverters). Depending on the topology, most modern inverters have built-in MPP trackers to insure maximum power is extracted from the PV array. Each inverter comes with a voltage range that allows it to track the maximum power of the PV array.

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