

## SolarInnovate Energy Solutions

**The wattage of photovoltaic modules is higher than that of inverters**



## Overview

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PV module and inverter selection are two of the most important decisions in PV system design. Ensuring that these components will work together is important from a technical, reliability, and economic perspective.

How much power does a solar inverter use?

With the rapid development of solar cell and photovoltaic module technology, the nominal power of PV modules now regularly breaks through from 400W+ to 500W+ and even to 600W+. The rapid development and increase in power of modules has put forward new requirements for inverter adaptation.

Why does PV module output rarely produce power at rated output?

This common question has a simple answer. In real world conditions, PV module output rarely produces power at the rated output due to thermal losses. PV module power is a product of DC current and DC voltage. In a PV module, the DC voltage is a function of PV module cell temperature. That is, DC voltage goes down as cell temperature goes up.

Should a 9 kW PV array be paired with an AC inverter?

Thus a 9 kW PV array paired with a 7.6 kW AC inverter would have an ideal DC/AC ratio with minimal power loss. When the DC/AC ratio of a solar system is too high, the likelihood of the PV array producing more power than the inverter can handle increases.

Which Inverter should be used with high-power PV modules?

As you can see, the operating current and short-circuit current of the high-power PV module are both large. The current of the PV module corresponding to 210mm can reach more than 17A. Therefore, any inverter being considered for use with high-power PV modules must meet the following requirements: 1. Higher String or MPPT Current.

What is a good DC/AC ratio for a solar inverter?

Because the PV array rarely produces power to its STC capacity, it is common

practice and often economically advantageous to size the inverter to be less than the PV array. This ratio of PV to inverter power is measured as the DC/AC ratio. A healthy design will typically have a DC/AC ratio of 1.25.

How much power does a PV module have?

The PV module power of 182mm silicon wafers can exceed 540W, and the PV module power of 210mm silicon wafer exceeds 600W. Some module manufacturers have combined their new technologies to reach module power of 700W+. Utilizing high power PV modules has many advantages.

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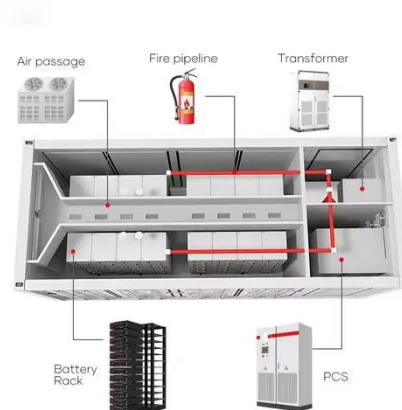


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