

## SolarTech Power Solutions

# The greater the inverter current the greater the power



IP65/IP55 OUTDOOR CABINET

IP54/55

OUTDOOR ENERGY STORAGE CABINET

OUTDOOR BATTERY CABINET



## Overview

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What is a power inverter?

A power inverter, inverter, or invertor is a power electronic device or circuitry that changes direct current (DC) to alternating current (AC). The resulting AC frequency obtained depends on the particular device employed. Inverters do the opposite of rectifiers which were originally large electromechanical devices converting AC to DC.

What is a DC inverter & how does it work?

As we know, the basic function of the inverter is to convert DC power to AC power because most of our electrical needs are for AC. The inverter is connected directly to either the power source (solar PV array or wind turbine) or the charge controller, depending on whether backup storage batteries are used.

Why is inverter efficiency important?

This is where inverter efficiency comes into play. Think of your inverter like a translator—its job is to convert the DC (direct current) electricity from your solar panels or batteries into AC (alternating current) power that your appliances can use. And like any translator, it's not always perfect. Some energy gets lost in the process.

How do inverters calculate current?

The current calculation of inverters is determined by their efficiency and battery voltage. Understanding amperage for different inverter wattages is crucial for safe and effective use. It determines how many devices you can power and how long your inverter can function.

What is the AC output voltage of a power inverter?

The AC output voltage of a power inverter is often regulated to be the same as the grid line voltage, typically 120 or 240 VAC at the distribution level, even

when there are changes in the load that the inverter is driving. This allows the inverter to power numerous devices designed for standard line power.

How much energy does an inverter use?

So less energy is output than is input. In fact, inverter efficiency can vary dramatically between products, on average it is between 85% and 95%. For example, if you have an inverter with 85% efficiency it means only 85% of your battery power is being sent to your appliances. The other 15% is lost/used up in the inverter.

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