Dc to ac micro inverter

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So, you"ve read up on the financial and environmental benefits of solar power AC and decided to invest in a solar installation. At this point, you"ll need to start researching the two essential components of any solar power system: the solar panel and the inverter.

But what does an inverter actually do? Why are they so important? What"s the difference between an inverter and a microinverter? And what kind of inverter should you choose for your installation? We"ve pulled together all of the most important information you need to know about inverters, solar panels and energy currents - jargon-free - below.

Inverters are needed because the energy produced by solar panels - direct current (or DC) energy - can"t be used by most home electronics. DC to AC power inverters turn that DC power into alternating current (AC) power, so it can be channeled into a building"s outlets safely.

Traditional "string" inverters connect to multiple solar panels in series, taking in all of the DC power they produce and converting it as one big chunk of energy. Microinverters, on the other hand, are smaller and convert energy from each panel independently. This means they"re usually more reliable since, if one solar panel fails, power can still be converted from all of the other panels.

To understand how DC to AC inverters work, you first need to understand the difference between direct current (DC) energy and alternating current (AC).

In a direct current, electrons only flow in one direction. DC energy is a little more stable than AC energy, so it"s often used in situations where energy needs to be stored for future use - the batteries in your remote control, for example.

Next, let"s establish how solar panels work.

In solar panels, DC energy is generated when photons (light particles) displace the electrons from the silicon atoms you find in solar panels in a process called the "photovoltaic effect". Metal plates on the sides of each silicon "cell" in a solar panel then transfer these displaced electrons into wires, where they can flow through a microinverter and into a building (or onto the grid).

So, if direct current energy is more stable and is produced by solar panels, why do we need microinverters to convert it to AC energy?

Alternating current energy is less stable than direct current energy. The flow of electrons in an alternating current changes direction periodically, meaning that the voltage of the current also changes at regular

intervals.

All of the outlets in your home run on alternating current energy. Why? Because direct current energy is much harder to transport over long distances; if you tried to pipe DC electricity from a power station to homes, offices, or public buildings, most of it would be lost along the way.

Alternating current energy, on the other hand, is much easier to transport over a national grid. As a result, you"ll rarely find a building that doesn"t run on an AC current.

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