What Are The Different Types Of Solar Inverters

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When deciding to go solar, choosing the right equipment for the job is crucial. The most important piece of solar equipment are the solar panels, as these will be producing your power. However, the next more important piece of equipment is the solar inverter.Not many homeowners know about solar inverters or what their role is in a solar panel system.What are solar inverters? How do they work? What are the different types of solar inverters?

What many homeowners don"t know is that solar panels produce a form of electricity that most homes cannot use. This electricity is direct current (DC) electricity. The form of electricity almost all homes use is alternating current (AC) electricity.

Solar Inverters have the task of turning all the electricity produced by solar panels into usable power. It does this by converting the direct current, which flows in one direction, into alternating current, which flows back and forth very rapidly.

Each different type of solar inverter has its advantages and disadvantages. It"s important to understand these differences, as well as the pros and cons of each solar inverter type, before choosing which is right for your solar panel system.

String inverters, also known as central inverters, are the oldest and most common type of solar inverter used today. They work by connecting a string of solar panels to one single inverter, which converts the total DC input into AC output.

Pros:Because string inverters are the oldest type of solar inverters, they are also the most reliable. After decades of being on the market, string inverters have had most of the kinks worked out. They are also the least expensive solar inverter option.

String inverters are also centrally located on the side of your house or near the side of a ground-mount. This allows easier access to monitor, repair, or replace the inverter.

Cons:While string inverters are reliable, they are also less efficient at optimizing solar energy output. Because string inverters are connected to an entire string of solar panels, shading on one solar panel will cut the power output of the entire string.

Also, string inverters only offer total-system monitoring as opposed to panel-level monitoring. This can be a disadvantage when diagnosing issues with solar production, and it can also be unfortunate for those solar homeowners who want a more granular level of monitoring.

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Power optimizers are located on the back of each solar panel, and they work in conjunction with a string inverter to convert DC to AC. They do this by conditioning the DC electricity from each panel and sending that conditioned DC to the string inverter to convert to AC electricity.

Pros:Because power optimizers can condition the DC electricity produced by each individual solar panel, they can decrease the impact of shading on individual panels. If one solar panel is partially shaded, it will not degrade the output of the entire string as with a simple string inverter setup.

Power optimizers also have the benefit of allowing panel-level monitoring, along with system-level monitoring thanks to the string inverter. This means any issues with solar output can be diagnosed more easily, with each solar panel being monitored individually. It also allows the homeowner to see a more detailed level of monitoring.

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