Solar hybrid air conditioner ghana

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Solar air conditioners consume significantly lesser power than conventional air conditioners. However, many people want to understand how solar air conditioners work before they proceed to buy one. So, I did some research on solar air conditioners.

Generally, there are two types of solar air conditioners; a) hybrid solar air conditioners and b) pure solar air conditioners. Hybrid solar air conditioners partially replace their power from the grid with the power generated by their solar panels to reduce the electricity cost. Meanwhile, pure solar air conditioners only use the power generated by their solar panels to operate during the day while charging their batteries for night use, resulting in zero electricity cost.

Hybrid solar air conditioners are sometimes known as ACDC solar air conditioners. On the other hand, pure solar air conditioners are also known as DC air conditioners or 100% solar air conditioners.

The compressor, inverter drive, fan motors and other components of solar air conditioners are powered by direct-current (DC) instead of alternating-current (AC) that power conventional air conditioners.

Some solar air conditioners don’t have DC-powered components. Instead, they are modified conventional air conditioners that utilize an inverter to convert the DC power from solar panels to AC power for operation.

A hybrid solar air conditioner has a DC air conditioner that connects to a few solar panels and a power outlet. In countries like Malaysia and Singapore, a 9000 BTU DC air conditioner requires about 800W of solar power or around 4 pieces of 200W solar panels.

Hybrid solar air conditioners are configured such that the primary source of power is from the solar panels while the power from the grid serves as a backup. Many hybrid solar air conditioners nowadays don’t require a separate inverter to convert the grid power from AC to DC.

Hybrid solar air conditioners are more suitable for daytime use as they don’t have batteries to store solar power for night use. With hybrid solar air conditioners, about 70% of the electricity cost can be saved depending on location.

However, during cloudy days, the DC air conditioner may draw power from the grid due to insufficient power is generated from the solar panels. Besides, some hybrid solar air conditioners may reduce cooling power in order to stay 100% on solar power for as long as possible.

Hybrid solar air conditioners are more practical for commercial buildings because they don’t go

offline when there is no solar power. Instead, they simply use the power from the grid just like a normal air conditioner.

A pure solar air conditioner has a DC air conditioner that connects to a few solar panels and batteries. Unlike hybrid solar air conditioners, pure solar air conditioners usually have one or two more solar panels.

As for the batteries, it is depending on how long the DC air conditioners need to run without the power from the solar panels. Nevertheless, it is common to have a 500Ah battery attached to a 9000 BTU pure solar air conditioner.

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