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Design of solar water pump off-grid system

Overview

How does a solar water pump work?

This work focuses on the design; fabrication and testing of water pump system powered by a solar photovoltaic (P.V) panel. Two 12V, 17AH battery was incorporated in the pump system to ensure storage and stability of power discharged. The system pumped water at an average of 30L/min within the hours of 1pm to 4pm at an hour interval.

What is a solar pump system?

In this tutorial, we delve into the intricacies of designing a solar pump system, a sustainable solution harnessing solar energy for water pumping. Ideal for remote or off-grid locations, these systems are increasingly pivotal in modern agriculture, livestock management, and rural water supply.

How do you design a solar water pumping system?

When designing a solar pumping system, the designer must match the individual components together. A solar water pumping system consists of three major components: the solar array, pump controller and electric water pump (motor and pump) as shown in Figure 1.

What are the components of a solar water pumping system?

A solar water pumping system consists of three major components: the solar array, pump controller and electric water pump (motor and pump) as shown in Figure 1. Note: Motor and pump are typically directly connected by one shaft and viewed as one unit, however occasionally belts or gears may be used to interconnect the two shafts.

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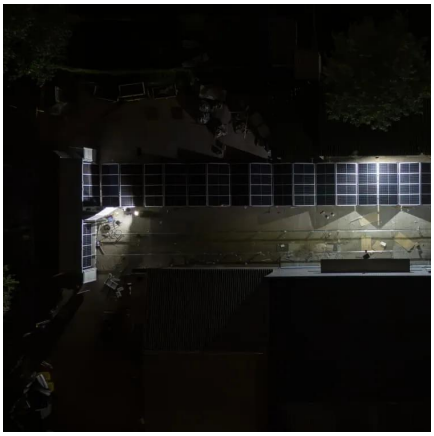

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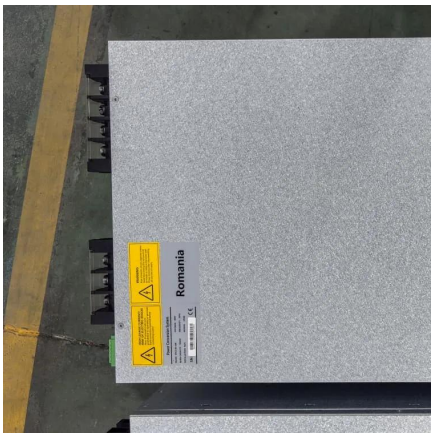

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