

Megawatt-class solar container energy storage system air cooling design





Overview

What is a composite cooling system for energy storage containers?

Fig. 1 (a) shows the schematic diagram of the proposed composite cooling system for energy storage containers. The liquid cooling system conveys the low temperature coolant to the cold plate of the battery through the water pump to absorb the heat of the energy storage battery during the charging/discharging process.

What is a container energy storage system?

Containerized energy storage systems play an important role in the transmission, distribution and utilization of energy such as thermal, wind and solar power [3, 4]. Lithium batteries are widely used in container energy storage systems because of their high energy density, long service life and large output power [5, 6].

What is container energy storage temperature control system?

The proposed container energy storage temperature control system integrates the vapor compression refrigeration cycle, the vapor pump heat pipe cycle and the low condensing temperature heat pump cycle, adopts variable frequency, variable volume and variable pressure ratio compressor, and the system is simple and reliable in mode switching.

How much power does a containerized energy storage system use?

In Shanghai, the ACCOP of conventional air conditioning is 3.7 and the average hourly power consumption in charge/discharge mode is 16.2 kW, while the ACCOP of the proposed containerized energy storage temperature control system is 4.1 and the average hourly power consumption in charge/discharge mode is 14.6 kW.



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The air-cooling container storage system is mainly used in large-scale renewable energy generation and consumption, power grid peak regulation and frequency modulation, ...

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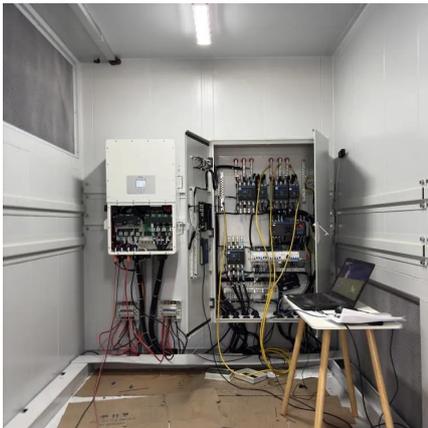
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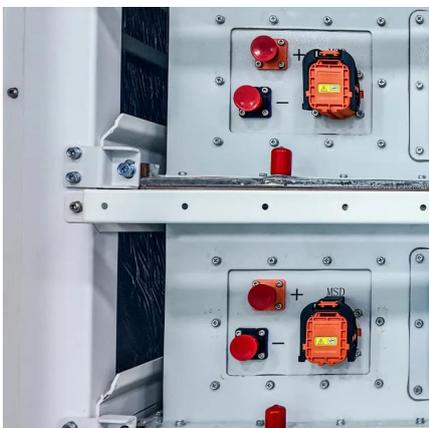


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