

SolarInnovate Energy Solutions

Container energy storage liquid cooling principle



Overview

The liquid cooling system utilizes pumps to circulate the cooling medium, which comes into contact with the batteries, absorbs heat, and then carries it away for dissipation, thereby maintaining the batteries' operation within an appropriate temperature range. What is a 5MWh liquid-cooling energy storage system?

The 5MWh liquid-cooling energy storage system comprises cells, BMS, a 20'GP container, thermal management system, firefighting system, bus unit, power distribution unit, wiring harness, and more. And, the container offers a protective capability and serves as a transportable workspace for equipment operation.

How are energy storage batteries integrated in a non-walk-in container?

The energy storage batteries are integrated within a non-walk-in container, which ensures convenient onsite installation. The container includes: an energy storage lithium iron phosphate battery system, BMS system, power distribution system, firefighting system, DC bus system, thermal management system, and lighting system, among others.

What is a liquid cooling unit?

The product installs a liquid-cooling unit for thermal management of energy storage battery system. It effectively dissipates excess heat in high-temperature environments while in low temperatures, it preheats the equipment. Such measures ensure that the equipment within the cabin maintains its lifespan.

What is a liquid cooling thermal management system?

The liquid cooling thermal management system for the energy storage cabin includes liquid cooling units, liquid cooling pipes, and coolant. The unit achieves cooling or heating of the coolant through thermal exchange. The coolant transports heat via thermal exchange with the cooling plates and the liquid cooling units.

What is a liquid cooling system?

This project's liquid cooling system consists of primary, secondary, and tertiary pipelines, constructed by using factory prefabrication and on-site assembly within the cabin. The primary liquid cooling pipes utilize 304 stainless steel, whereas the secondary and tertiary pipes are made from PA12 nylon tubing.

How does a liquid cooling unit work?

3.12.1.3 The design of the liquid cooling unit must align with the cabin structure, adequately addressing dust prevention needed in the operating environment. The liquid cooling pipeline operates in a closed loop. The coolant, propelled by a pump, circulates through the cold plate, exchanging heat with the batteries, which raises its temperature.

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Energy Storage Liquid Cooling Container Design: The Future

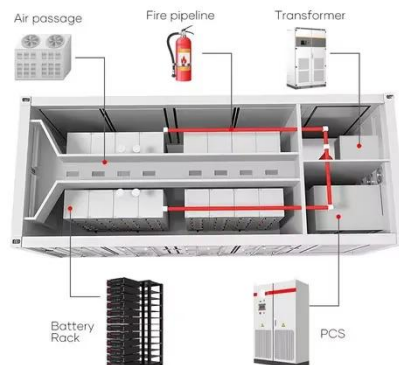
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Liquid Cooling Container Energy Storage System Design

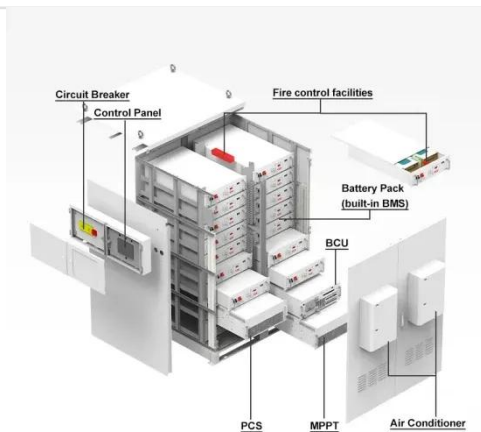
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