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Ymir 5k

5MWh Liquid Cooling Battery Energy Storage System

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TECLOMAN 5MWh liquid cooling energy storage system adopts 314Ah LFP cells, maximum capacity up to 5MWh, extremely high energy density.

The system is integrated-designed, with built-in three-level BMS, UPS, liquid cooling system and fire suppression system.

Flexible configurations allows multiple applications for utility scale energy storage power plants, and the energy density is increased by 40% compared with the previous product, which can significantly save cost and space.

Product Introduction

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Compact Structure

Allows 20ft standard container shipment, no internal space wasted.

314Ah LFP Cells

High energy density, specialized for energy storage system, super safe and super intelligent.

Liquid Cooling Thermal Management System

Temperature difference inside the container <5°C.

C4 Anti-corrosion Protection

three-layer coating, applicable in harsh environment, lifetime up to 25 years.

Multi-level FSS

Equipped with module-level fire suppression system and container-level fire suppression system, gas detector, ventilation system, sprinkler system and automatic pressure relief devices.

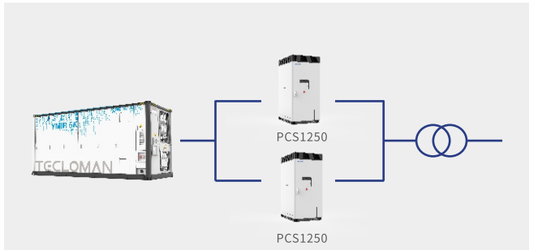
Three-level Circuit Breaker Mechanism

Pack level DC circuit breaker and battery cluster level DC circuit breaker lead to lower risk of PCS AC circuit breaker failure.

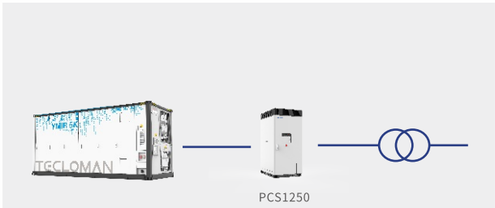
Product Features

Typical Configurations

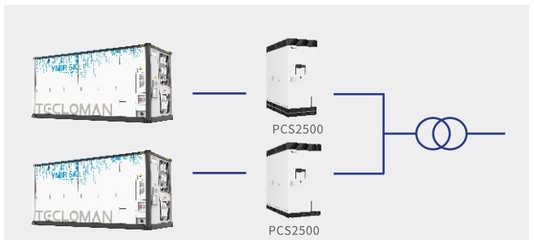
Typical Configurations



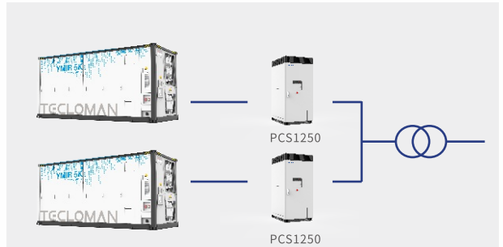
2-hour system 2.5MW5MWh



4-hour system 1.25MW5MWh



2-hour system 5MW10MWh



4-hour system 2.5MW10MWh

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Typical Applications

Power Generation Side

On the power generation side, it can be used for new energy grid connecting and consumption, frequency regulation of the power plant, peak shaving, etc.

Distribution Side

In the distribution side, it can help with frequency regulation and voltage adjustment, peak shaving, dynamic expansion etc.

User Side

On the user side, it can be applied for peak-valley arbitrage, backup supply in commercial & industrial parks, and micro-grid (integration of PV+BESS+EV charging, and power supply in isolated areas).

Application Scenarios

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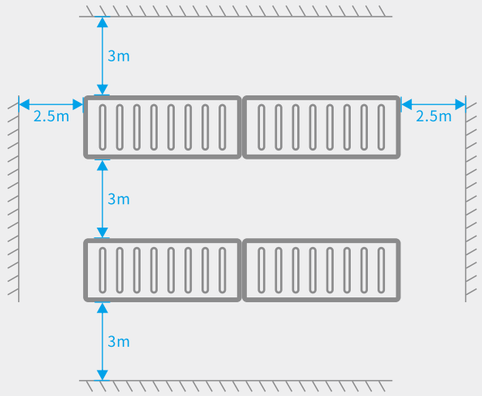
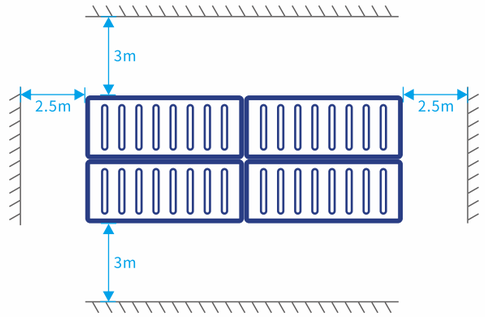
NO.1

High energy density, back to back installation allowable, significantly saving installation space.

Previous solution：



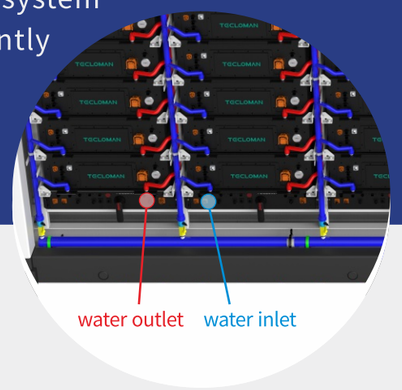
Current solution：



36.4㎡ of space can be saved among every 4 containers.

NO.2

Intelligent liquid-cooling temperature control technology and multi-level sub-control liquid-cooling piping design enables temperature difference <3°C at the PACK level, temperature difference at the system level <5°C, and significantly improves the system thermal management performance and significantly ease the temperature rise.
In turn, the battery cycle life and the project revenue can be improved.



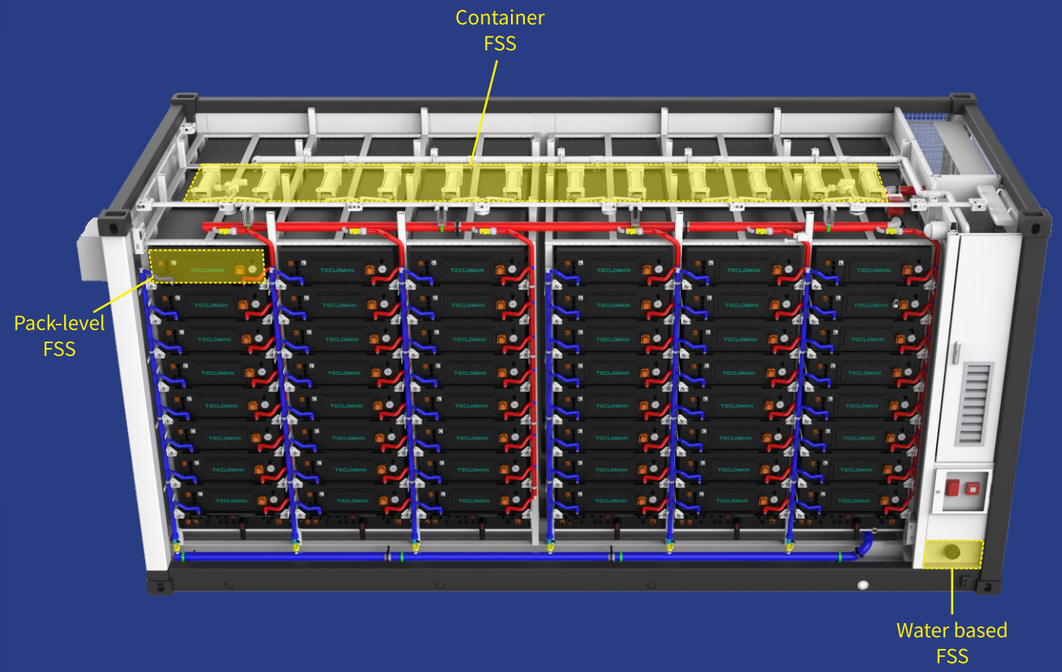
Product Advantages

NO.3

Multi-level BESS safety management. Pack-level fire FSS, container FSS and water based FSS are combined together, to ensure cell safety monitoring.

NO.4

Separate compartments design for the whole system.
Integrate video monitoring system, temperature & humidity control system and water immersion detecting system in the compartments. The application of water and electricity separation and separately control technology, significantly ensures the security of the electrical cabin, and the stable operation of the fire monitoring as well.



Detailed Design

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Product Specification

Model	TBAT-5016-15-L
Container Size	20ft
Cell Type	LFP
Cell Capacity	314 Ah
Pack Size	1P104S
No. of Packs per Rack	4
Max. Cell Voltage	3.6 V
Min. Cell Voltage	2.8 V
Rack Size	1P416S
No. of Racks	12
Nominal Voltage	1331.2 V
Voltage Range	1164.8 ~ 1497.6V
Nominal Capacity	3768 Ah
Battery Capacity(@BOL)	5.016 MWh
C-rate	0.5 C
Charge/Discharge Current	1884 A
Ambient Temperature	-25 ~ 50 °C
Cooling Method	Liquid cooling
Relative Humidity	⩽95%RH，non-condensing
Allowable Altitude	⩽5000m（>3000m needs to be customized）
Protection Degree	IP54
Anti-corrosion	C4
FSS	Aerosol
Weight	43 T
Dimension(W*D*H)	6058×2438×2896 mm