Chillwind ESS50

Flexible Grid-Tied Energy Storage System

The Chillwind ESS50 is a complete fully integrated battery energy storage system (BESS). It is ready to be connected to the grid for applications as grid support, peak shaving, and renewable energy integration.

With a compact immersion liquid-cooled design, it delivers high efficiency, safety, and rapid response times. The system is ideal for farmers, industrial, commercial, and utility-scale applications, supporting dynamic energy needs and ensuring grid stability.

The product line uses direct immersion liquid cooling technology, which not only optimizes energy efficiency but also significantly enhances thermal management and safety. This solution addresses the critical challenges of overheating, providing reliable battery systems built for the most demanding applications.

KEY FEATURES

- Extremely compact
- Immersion cooled
- High fire safety
- Fast response (charge to discharge)
- Integrated inverter and battery
- Advanced BMS
- 19” rack
- Weight 300kg

Chillwind ESS50

Performance data

Max Power (bi-directional)	Up to 50kW
Nominal AC voltage	400VAC
Max AC current	Max 72A (Adjustable lower limit)
Frequency	50 or 60Hz
Communication protocol	Modbus TCP/IP
Minimum operating temperature	+8°C
Maximum operating temperature	+45°C
Dimensions (D*W*H)	600*600*1610mm
Weight (fully equipped)	300kg
Cabinet protection class	IP20
Environmental management	Immersion liquid cooled
Standards / certificates	UL1973, UL9540A, UL9540, UN3536, NFPA855/68/69, IEC60529

Functions

Peak shaving	Lower your demand charges and reduce costs by shifting your power reliance from the grid to a battery system, effectively smoothing peak consumption. This approach also enables you to increase available power without the need for a grid connection upgrade.
Voltage and grid support	Enhance grid stability and participate in flexibility markets by leveraging your battery energy storage system. Maintain stable voltage levels while monetizing your system's flexibility through ancillary services such as FFR, FCR, and standard ramp FCAS, maximizing both performance and revenue potential.
Arbitrage	Optimize energy costs by using your battery system to power loads during peak electricity rates and recharge when rates are lower, ensuring efficient energy management and cost savings.
Renewable energy	Maximize the efficiency of solar and wind energy by storing excess generation for later use, ensuring reliable and sustainable energy availability.
Flexibility market	Maximize the value of your battery energy storage system by monetizing its flexibility—sell stored energy or provide ancillary services like frequency regulation to support grid stability and generate revenue.
Fast response	Support frequency regulation and emergency power backup.