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TITAN SERIES

Battery Energy Storage System

Titan 3MWh-1.5MW-DP



The Titan 3MWh–1.5MW-DP is a high-performance liquid-cooled energy storage container designed for industrial, commercial, and grid-connected applications. With a rated energy capacity of 3.13 MWh and 1.5 MW of output power, it combines stable lithium iron phos-phate technology with intelligent cluster-level control for safe and efficient operation.

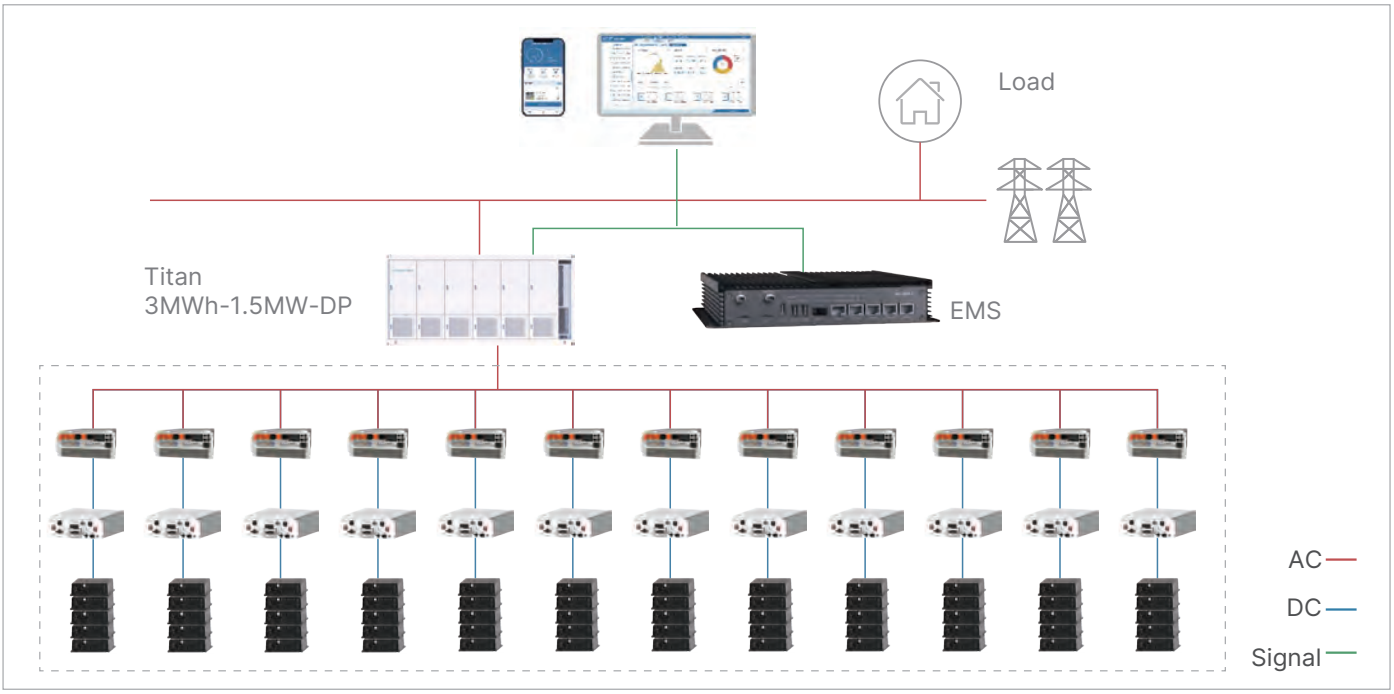
This model adopts a string-based architecture, enabling flexible configuration from 1.56 MWh up to 3.13 MWh through modular cluster scaling. Its active balancing system, integrated fire protection, and multi-layer safety design ensure long-term reliability, while maintaining a compact footprint for simplified site deployment.

An intelligent temperature equalization system keeps cell temperature differences within 2 °C, extending battery lifespan and improving system stability. Combined with high-efficiency PCS and low-power liquid cooling, the Titan 3MWh system achieves a total energy efficiency above 90%.

Equipped with an EMS supporting cloud-edge collaboration and standard communication protocols, the Titan 3MWh–1.5MW-DP enables real-time monitoring, remote management, and plug-and-play operation. It is ideally suited for peak shaving, demand response, renew-able smoothing, and mission-critical backup power scenarios.

User-side Energy Storage System Solutions

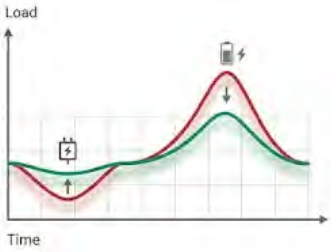
System Topology



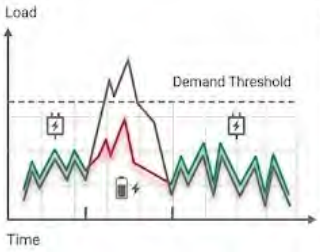
Industrial and commercial energy storage systems are increasingly deployed in high-demand environments such as smart cities, industrial parks, commercial zones, and office complexes - enabling intelligent energy management and operational efficiency across diverse applications.

Main application models of user-side energy storage

① Peak shaving and valley filling:



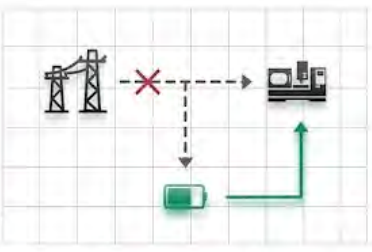
② Demand response:



③ Electricity trading:



④ Off-grid backup power supply:



01 Reduce peaks and fill valleys

By charging during off-peak hours for energy storage and discharging during peak hours for energy supply, the electricity costs of enterprises or parks can be reduced, saving electricity bills for customers at the power consumption end.

02 Off-grid backup power supply

In the event of a power outage, provide uninterrupted short-term power supply to important loads to reduce economic losses caused by sudden power failure of the loads.

03 Electricity trading

On the electricity market trading platform, short-term electricity trading is conducted in combination with load forecasting to maximize profits.

04 Demand response

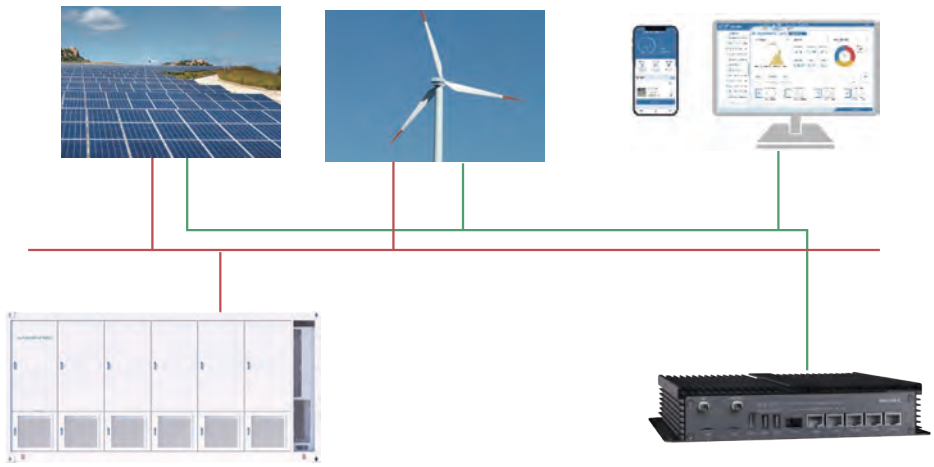
When the short-term power consumption exceeds the capacity of the transformer, the energy storage system discharges rapidly to meet the power demand of the load.

Power-side Energy Storage System Solutions

New energy generation, such as wind and solar, is inherently dependent on natural conditions, resulting in significant output fluctuations. At the same time, user demand often varies throughout the day, creating peaks and troughs that do not align with renewable generation profiles and leading to curtailment or wasted energy.

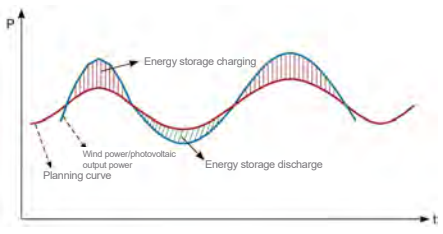
When paired with energy storage, wind and photovoltaic systems can achieve far more stable and controllable power output. Storage smooths generation variability, enhances dispatch accuracy, and improves both the economic value and predictability of renewable resources. It also increases grid-integration capacity, strengthens power quality, and reduces curtailment. In addition, energy storage contributes to system optimization by supporting peak shaving, frequency regulation, and reactive power compensation.

System Topology



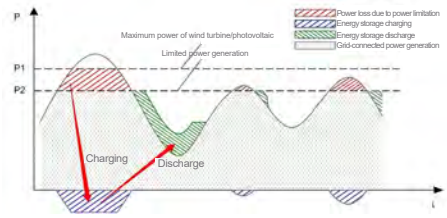
01 Reduce the waste of wind and solar energy

Address the insufficient capacity of the power grid, alleviate the problem of wind and solar power curtailment from renewable energy sources, and enhance energy utilization efficiency.



02 Track the planned output curve

To address the intermittent and fluctuating defects of new energy power generation, achieve smooth and controllable power supply.



Titan Series Technical Parameters

Model	Titan 3MWh-1.5MW-DP
Battery parameters	
Battery capacity	3.134MWh
Battery type	LFP3.2V/314Ah
Balanced approach	Active balance
System battery configuration	1P260S*12
Battery capacity of the DC side cabinet @BOL	261kWh*12
Rated voltage	DC832V
Battery voltage range	DC728V~936V
Rated output power	1500kW
Grid connection parameters	
Incoming line method	（3L+N+PE) three-phase four-wire system
Rated AC output frequency	50/60Hz
Total harmonic distortion of current	≤2%（Rated power）
Power factor	0.99
Rated AC output voltage	400V(-15%～15%)
System parameters	
Cabinet dimensions (width * height * depth)	6058*2896*2438mm
Grid-connected and off-grid	Support
Rated charge and discharge rate	≤0.5C
Weight	≈30T
Maximum cycle efficiency	≥90%
Protection grade	IP55
Anti-corrosion grade	C4（C5 Optional)
Operating temperature range	-30~+50°C（>45°C,Reduce power）
Working humidity range	0～95%(No condensation)
Working altitude	3000m (>2000m derating)
Cooling method for battery cabinets	Liquid cooling (liquid cooling medium: water + ethylene glycol)
Fire safety configuration	Combustible gas detector + smoke detector + temperature detector + ventilation system +(PACK level + cabinet level) aerosol fire extinguishing system + water fire extinguishing system
System communication interface	MODBUS-TCP/CAN/485
Product certification	
IEC UL UN38.3 EN	IEC 62619, IEC 62477, IEC 61000, EN 50549-1, UN38.3

* The actual product may differ slightly from the pictures.
* The specifications are subject to change without prior notice.

Kaixentec B.V.
Brouwerstraat 30, 2984AR Ridderkerk
The Netherlands

kaixentec.com
sales@kaixentec.com
+31 88 888 2994

Internal System Architecture



Safe and Reliable

- Utilizes lithium iron phosphate (LFP) cells with high thermal stability
- Multi-layer protection system including prevention, detection, suppression, and fault isolation
- Predictive safety analytics with real-time monitoring of cell status
- Electrical safety is ensured through integrated early warning and protection mechanisms

Efficient Operation

- High-efficiency PCS combined with low-power liquid cooling design
- Balanced thermal control ensures optimal system temperature
- Achieves system-level efficiency above 88% under rated conditions

System Security

- Cluster-level independent management prevents inter-cluster interference
- Faults in a single cluster are isolated and do not affect the full system
- Cell temperature difference maintained at ≤2 °C
- Extended battery cycle life by up to 20%

Plug and play

- High-density CTP construction reduces physical volume and maximizes energy density
- Integrated system design enables rapid on-site deployment
- Supports multi-level parallel connection for scalable applications
- Delivered ready to install with plug-and-play configuration

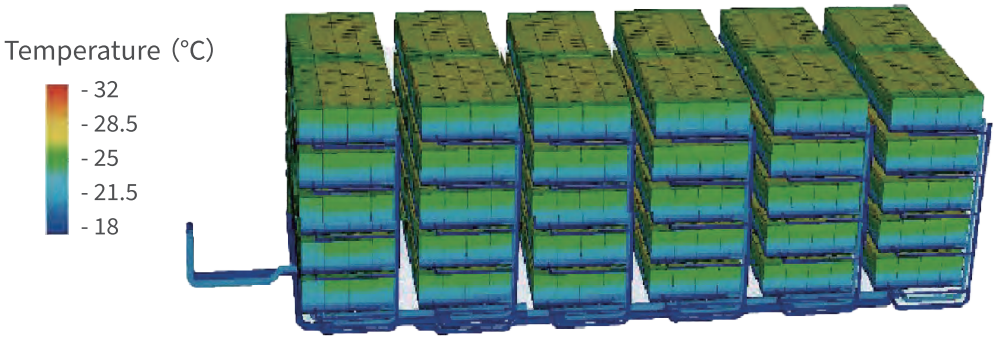
Advanced Fire Protection

Multi-level fire protection design and intelligent AI fault early warning

- PACK-level aerosol fire extinguishing system
- Cabinet-level aerosol fire extinguishing system



Intelligent Thermal Control



Intelligent temperature equalization maintains cell temperature difference within 2 °C, improving thermal balance and extending battery cycle life.

The Titan 3MWh–1.5MW-DP string energy storage system uses single-cluster management and provides a total capacity of 3.13 MWh. Its modular architecture allows the system to be configured from 1.56 MWh up to 3.13 MWh, enabling flexible expansion based on project requirements. The following diagram illustrates the system layout:



String energy storage system - 12 clusters

Titan 3.13MWh-1.5MW-DP



String energy storage system - 10 clusters

Titan 2.6MWh-1.25MW-DP



String energy storage system - 8 clusters

Titan 2.08MWh-1MW-DP



String energy storage system - 6 clusters

Titan 1.56MWh-750KW-DP



Energy Management System (EMS)



Summary

The EMS supports a wide range of functions, including real-time data acquisition, protocol conversion, energy management, lightweight edge computing, and local interface display. Integrated with the cloud management platform, it enables advanced features such as electricity consumption tracking, revenue analysis, intelligent O&M, alarm diagnostics, and fine-grained system control.

It is ideally suited for applications such as transformer zone management, industrial and commercial energy storage, integrated charging and storage systems, and photovoltaic-storage microgrids. The system is compatible with multiple communication protocols, including IEC61850, IEC104, Modbus, TCP/IP, DL/T645, MQTT, and HTTP.

Powered by AI-based optimization algorithms, the EMS supports forecasting and dispatching of renewable generation, demand-side response, charging infrastructure, building loads, and production schedules. This enables efficient use of renewable resources, dynamic load balancing, and comprehensive economic and carbon optimization across microgrid environments.

Product features

- High real-time performance, supporting data collection at the millisecond second level;
- High compatibility, compatible with devices from third-party manufacturers and supporting commonly used industry protocols;
- Rich peripheral interfaces;
- Supports multiple control strategies, such as peak shaving and valley filling, demand control, peak-valley arbitrage, and orderly charging, etc.
- Support carbon emission management;
- Optimal AI algorithm optimization
- Anti-reverse flow, anti-overload;
- Have local security controls;

EMS Technical Parameters

Model	Titan500-EMS	Remarks
System resources		
CPU	Four-core Cortex-A55	
NPU	1TOPS	
Main frequency	2GHz	Highest frequency
Memory	2GB/4GB LPDDR4	The memory can be optionally equipped with 2GB or 4GB
Storage	32GB+128G SSD	SSD solid-state drives are optional
System	Linux	
Peripheral resources		
Power supply	Dual-channel redundancy	DC 9~36V
Gigabit Ethernet	1(10/100/1000Mbps)	Optical port and electrical port are optional
100 Megabit Ethernet	4(10/100Mbps)	Ethernet in the same network segment
RS485	8	Isolated type
RS232	2	Isolated type
CAN	2	Isolated type
DI	4	
DO	4	For signal use only
start	2	
HDMI2.0	1	
Wireless communication	WiFi/BLE、4G/5G	Optional 5G
SIM card		
SD card		
Indicator light	30	
Environmental parameters		
Working temperature	-25~55°C	
Working humidity	5%~95%(No condensation and no freezing)	
Working altitude	Below 3000 meters	
Mechanical properties		
Mechanical dimensions	200x235x52 mm	
Protection grade	IP50	

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