TITAN
SMART ENERGY

Intelligent Energy Storage & Solutions

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Global Clean Energy Leader
Committed to Smart and Green Power

Values

Customer-centricity & Contributor Orientation; Diligent Endeavor & Continuous Self-Renewal

Vision

To become a leading provider of energy system services via the intelligent integration of clean energy systems

Mission

Empower all industries through intelligent integration; build a zero-carbon ecosystem through boundless innovation

TITAN SMART ENERGY

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Global Development

Backed By Titan Wind Energy (002531.SZ)



3+GWh
Energy Storage Assets

2+GW
Wind Energy Assets

20 Years
New Energy Enterprise

30+
Global Manufacturing Hub

TOP
China Wind Farm Asset Size

500
Global Top New Energy Enterprises

Company Profile

Titan Smart Energy is a global innovator in next-generation energy storage. Guided by the belief that clean energy can be truly reliable, we have built a robust ecosystem covering R&D, manufacturing and digital services.

Our product portfolio integrates intelligent BESS, precision power conversion and cloud-based energy management to address the world’ s most complex energy storage challenges. With a global footprint and a relentless commitment to technological excellence, Titan Smart Energy is redefining how the world stores, manages and utilizes electrical power.

2018
Founded

300+
Global Projects Delivered

200+
Proprietary Patents & IP

3+GWh
Cumulative Energy Deployed



Development History

2018.09

- Titan Smart Energy was registered and established

2019.08

- The Intelligent Microgrid Laboratory was established
- Local intelligent microgrid control products were launched
- Cloud intelligent microgrid EMS products were launched

2020.01

- All in One air-cooled ESS (60kW/138kWh)
- Qualification for General Contracting of Power Engineering Construction (level 3) , License for Installation, Repair, and Testing of Power Facilities(level 4)
- Launch of modular PCS-60kW development

2021.12

- The first 3.38MWh liquid cooled ESS was produced
- 62.5kW modular PCS were available
- Changshu intelligent manufacturing base put into operation
- National high-tech enterprise

2022.05

- EPC general contracting of 150MW/300MWh(Jan-23 grid connection acceptance)

2023.01

- All in One liquid cooled ESS product was launched
- Cloud-Edge-End integrated solution was launched
- Cloud-based intelligent microgrid EMS 2.0 was launched
- Intelligent control product was launched

2023.04

- PV-ESS-charging project delivered
- Zero Carbon Park project delivered
- PV&ESS grid-connected project delivered
- PV-Energy Storage-direct current-flexible Loads project delivered
- PV&ESS off-grid project delivered

2023.12

- Awarded the "specialized, fine, unique, and innovative" small and medium enterprise title by shenzhen city

2024.01

- Won the bid for EPC general contracting of 750MWh

2024.04

- 261kWh liquid-cooled ESS cabinet launched
- EMS 3.0 for commercial and Industrial ESS launched

2024.06

- Transformer district ESS project delivered

2024.11

- Successfully delivered the zero-carbon park project and launched the Microgrid ESS
- Equipment at the manufacturing base in puyang, henan

2024.12

- 522kWh liquid-cooled ESS cabinet launched
- Manufacturing base in Guangdong

2025

- Won the bid for a 950MWh ESS Project
- Cumulative energy storage capacity delivered: 2.5 GWh
- Cumulative number of projects served: 300+

2026

- Launch of the hybrid energy storage product series
- Successful project deliveries in Southeast Asia, Africa, and Europe

Innovation Center





100+ R&D Engineers

12 Years Industry Experience

50% Engineers with a Master's Degree

15% of Annual Revenue R&D Investment

CE MSDS UN38.3 ISO 9001:2015 CERTIFIED COMPANY

The Titan Innovation Center is the core enabler of our technological leadership. By bringing together top-tier talent and state-of-the-art validation facilities, we ensure every solution delivers uncompromising reliability and long-term profitability.

Holistic Validation: Simulate extreme operating conditions to ensure optimal performance prior to deployment.
Rapid Iteration: Accelerate the concept-to-commercialization process, keeping clients ahead of market trends.
Global Compliance: Engineer solutions that adhere to rigorous international standards (IEC, UL, CE).

Smart Manufacturing Factory

Our global manufacturing network, anchored by four strategic production bases, ensures unwavering reliability. From cell pack assembly to system integration and final validation, every process is managed in-house. No handoffs, no compromises. Only consistent, high-volume production, ready for global delivery.

30000㎡
Workshop Area

3 GWh
Annual Production Capacity

2000+㎡
R&D Laboratory Area

4 Locations
Production Bases



Precision at Scale

Robotic arms, automated conveyors and smart fixtures minimize human error, ensuring standardized performance across all battery racks, cabinets and containers.



Trusted End-to-End Visibility

Full-chain traceability from raw materials to finished products ready for shipment. Real-time dashboards ensure confidence that every product meets specifications before shipment.



Proactive, Not Reactive

24/7 AI monitoring & SIPOC (Supplier-Input Process-Output-Customer) management, delivering design-driven, zero-defect manufacturing. We detect anomalies before they lead to field failures.



Pre-Deployment Validation

Every unit undergoes rigorous electrical, thermal and safety testing, simulating years of operational performance, in a matter of days, because reliability is engineered in the factory, not verified.

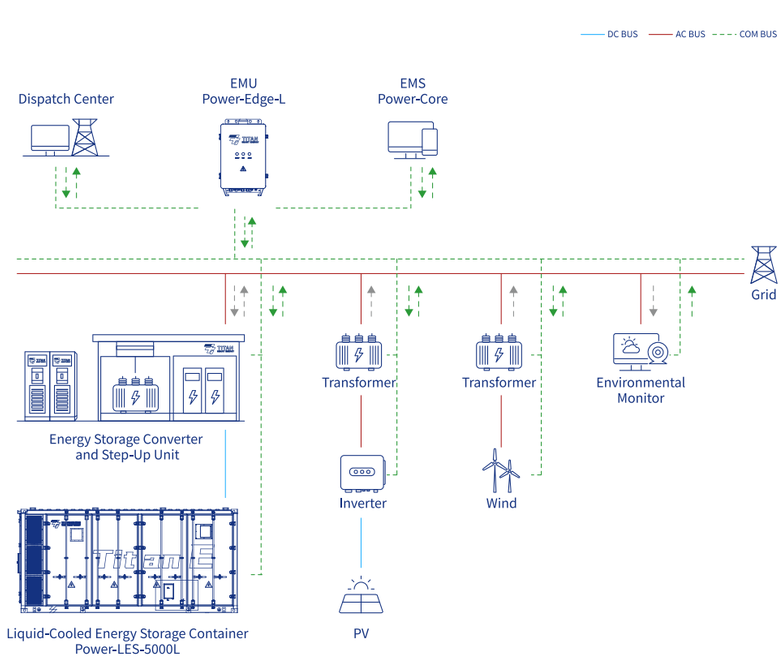
Grid-Side Energy Storage

Key Functions

- Demand Response
- Power Quality Management
- Renewable Energy Integration
- Peak Shaving & Frequency Regulation



- Suitable for medium and large-scale systems
- Enhance grid stability and improve power quality
- Reduce or defer investment in power plant equipment
- Increase self-consumption rate of green power and project ROI



Related Products



Power-Core



Power-Edge-L

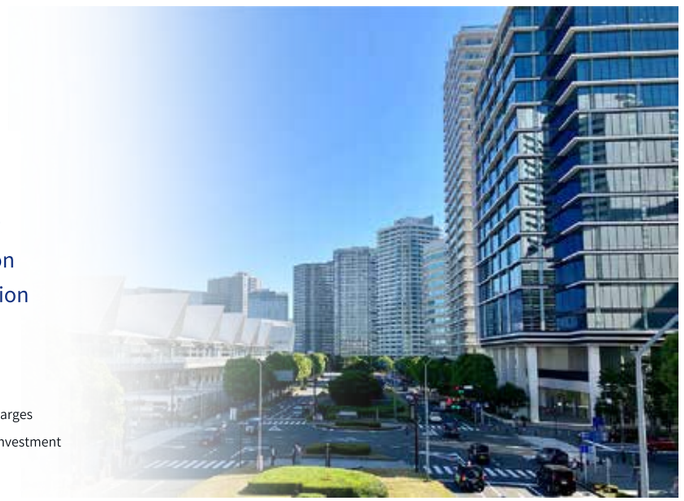


Power-LES-5000L

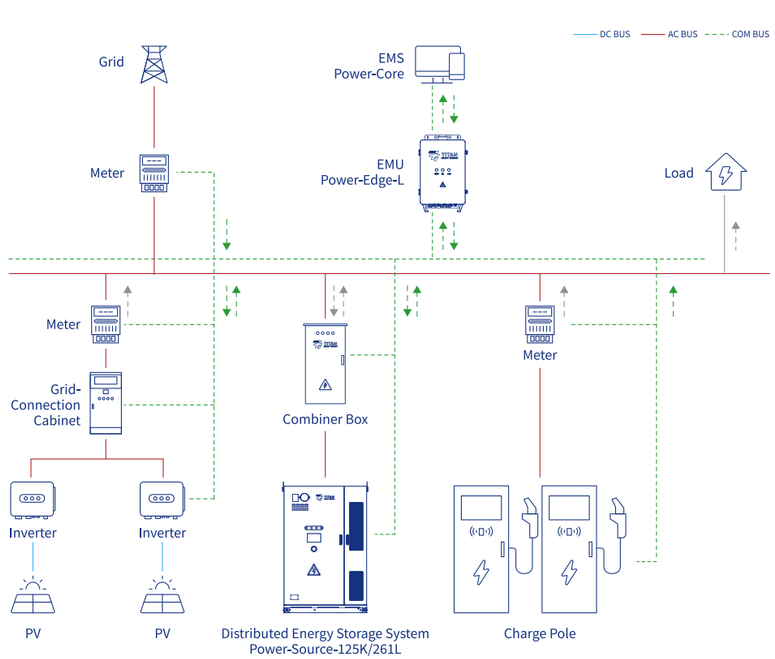
Industrial & Commercial User-Side Energy Storage

Key Functions

- Peak Shaving & Load Shifting
- PV + BESS Self-Consumption
- Voltage Support & Regulation
- Maximum Demand Management
- Three-Phase Imbalance Mitigation
- PV + BESS + EV Charging Integration



- Precisely reduce enterprise electricity costs
- Suitable for small and medium-sized systems
- Optimize energy strategy to lower basic capacity charges
- Improve PV utilization and address slow return on investment



Related Products



Power-Core



Power-Edge-L



Power-Source-125K/261L

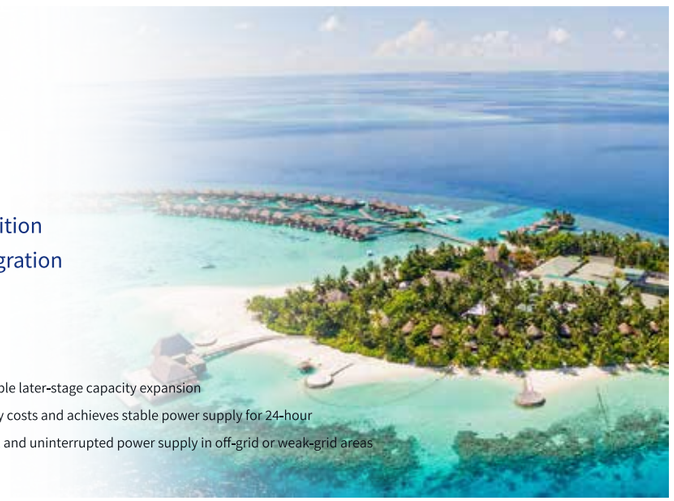


Power-Source-125K/261LA

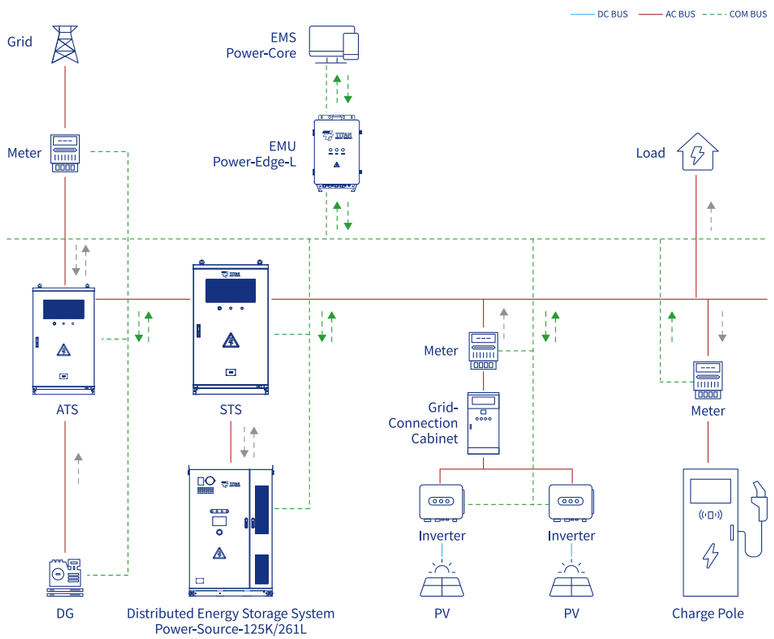
Microgrid & Off-Grid Energy Storage

Key Functions

- Emergency Backup Power
- PV + BESS Self-Consumption
- Islanded Microgrid Operation
- Seamless On-Grid / Off-Grid Transition
- PV + BESS + Diesel Generator Integration



- Adopting a modular cascading scheme for more flexible later-stage capacity expansion
- Multi-energy complementation reduces power supply costs and achieves stable power supply for 24-hour
- Suitable for industrial park microgrids, island resorts, and uninterrupted power supply in off-grid or weak-grid areas



Related Products



Power-Core



Power-Edge-L



Power-Source-125K/261L



Power-SC-STS-500K

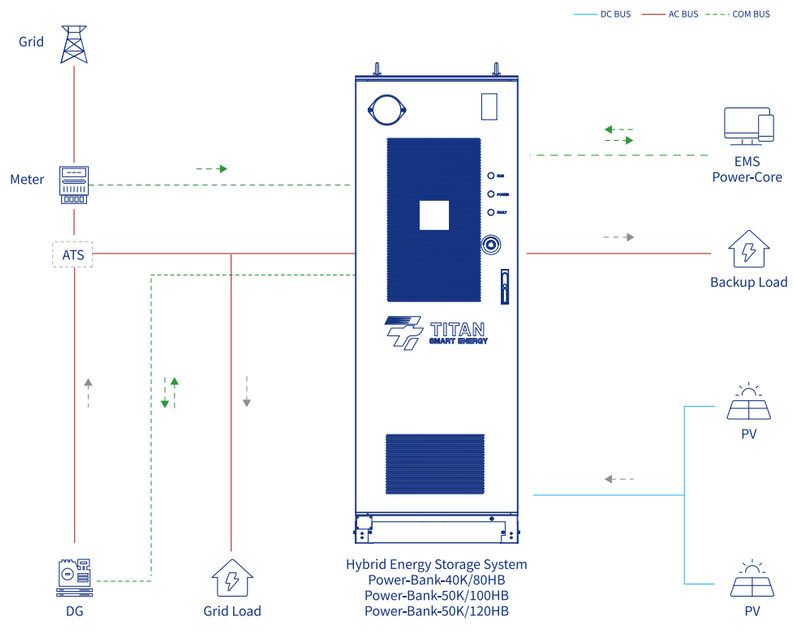
Small Microgrid & Off-Grid Energy Storage

Key Functions

- DC-Coupled PV + BESS
- Emergency Backup Power
- PV + BESS Self-Consumption
- Islanded Microgrid Operation
- Seamless On-Grid / Off-Grid Transition
- PV + BESS + Diesel Generator Integration



- Highly integrated “PV + Energy Storage + Diesel + Grid” four-in-one desig
- Supports parallel operation of multiple units and enables seamless switching
- Suitable for small industrial & commercial facilities, farms, villas, supermarkets, etc



Related Products



Power-Core



Power-Bank-40K/80HB
Power-Bank-50K/100HB
Power-Bank-50K/120HB

Hybrid Energy Storage System



Air-Cooled

Power-Bank-40K/80HB
Power-Bank-50K/100HB
Power-Bank-50K/120HB

Versatile Scenario Adaptability

- Diesel Generator Hybrid Operation
- Seamless grid transition in ⩽20 ms
- ⩽190%(40K) PV Oversizing, Dual PV Inputs
- ⩽150%(50K) PV Oversizing, Dual PV Inputs

Safe and Efficient

- Cycle life ⩾ 8,000 cycles
- Multi-level fire protection design
- Intelligent temperature control design

Smart Operation and Maintenance

- HMI 10-inch local display
- 24/7 monitoring & early warning
- Supports microgrids and diverse application scenarios

Simple and User-Friendly

- Easy and quick installation
- 100% Three-Phase Unbalanced Output
- Expandable modular design with flexible capacity options

Specification	Models	Power-Bank-40K/80HB	Power-Bank-50K/100HB	Power-Bank-50K/120HB
PV Side	Maximum Input Power	76.8 kW		
	Maximum Input Voltage	850 V		
	Start-up Voltage	250 V		
	MPPT Operating Voltage Range	200–800 V		
	Number of MPPT Channels	2		
	Number of Strings per MPPT Channel	1		
	Maximum Input Current	64 A*2		
Battery Side	Cell Type	LFP-314 Ah		
	PACK Series-Parallel Configuration	1P20S		
	Number of PACKS	4	5	6
	System Capacity	80.38 kWh	100.48 kWh	120.5 kWh
AC Side (ON Grid)	Rated Output Power	40 kVA	50 kVA	
	Rated Output Current	58 A	72.5 A	
	Maximum Input Current	116 A	145 A	
	Rated Output Voltage	3P + N + PE, 380/400 V		
	Rated Output Frequency	50/60 Hz (± 5 Hz)		
	THDi	< 3 %		
	Power Factor	-1~1		
AC Side (OFF Grid)	Rated Output Power	40 kVA	50 kVA	
	Rated Output Current	58 A	72.5 A	
	Rated Output Voltage	3P + N + PE, 380/400 V		
	Rated Output Frequency	50/60 Hz		
	Three-Phase Unbalanced Load Capacity	100 %		
System Parameters	Switching Time	⩽ 20 ms		
	Cooling Method	Intelligent Air-Cooled		
	Protection Rating	IP54		
	Operating Temperature Range	-20 °C ~+ 55 °C (> 45 °C Derating Required)		
	Humidity Range	0~95 % RH (non-condensing)		
	Altitude	2000 m (> 2000 m Derating Required)		
	Corrosion Resistance Rating	C4		
	Weight	≈1200 kg	≈1350 kg	≈1500 kg
	Fire Protection System	Smoke Detector + Heat Detector + Audible and Visual Alarm + Aerosol Fire Suppression		
	SOC Calibration Method	Automatic		
	Dimensions (W × D × H mm)	≈750 × 1300 × 2225 mm		
	Communication Interface	Ethernet/RS-485		
	Communication Protocol	Modbus TCP/Modbus RTU		
	Cycle Life	⩾ 8000 cycles（@25 °C, 0.5 P, DOD90 %, EOL70 %）		
	System Certification	UN38.3; MSDS; IEC62619; IEC63056		
	PCS Certification	IEC62109-1/-2; IEC62477-1; EN50549-1/-10		

Distributed Energy Storage System

Liquid-Cooled

Power-Source-125K/261L



Precise Thermal Control

Liquid-cooled thermal management ensures uniform heat dissipation, with in-pack temperature variance ⩽3 °C

Plug-and-play

Modular design, scalable on demand, plug-and-play

Long Lifespan

Premium battery cells provide ultra-long cycle life and efficient energy release

Safe & Reliable

6-fold electrical protection with proactive risk warning

Specification	Models	Power-Source-125K/261L
System Parameters	System Capacity	261 kWh
	Rated Power	125 kW
	Rated Grid Voltage	380/400V AC
	Voltage Range	-15 % ~ +15 %
	Rated Grid Frequency	50 Hz/60 Hz
	IP Rating	IP54
	Operating Temperature	-20~+55 °C (Derated Above 45 °C)
	Operating Humidity	0~95 % RH (non-condensing)
	Corrosion Resistance	C3 (C4/C5 Optional)
	Cooling Method	Liquid-Cooled
	Fire Protection System	Perfluorohexanone, Combustible Gas, Smoke, and Temperature Detection, Audible & Visual Alarm, Water Firefighting interface
	Dimensions (W × D × H mm)	1400 × 1400 × 2150 mm (Excluding Lifting Ring)
	Altitude	2000 m (Derated Above 2000 m)
	Total Weight	Approx. 2800 kg
	Communication Interface	RS-485/Ethernet
	Communication Protocol	Modbus RTU/Modbus TCP
DC Side Technical Parameters	Battery Type	LFP-314 Ah
	Cell	3.2 V/314 Ah
	System Configuration	1P260S
	DC Rated Voltage	832V DC
	DC Voltage Range	728V DC~936V DC
	Battery Pack IP Rating	IP67
	System Certification	GB/T36276; UN38.3; MSDS
	PCS Certification	IEC62109-1/-2; IEC62477-1; EN50549-1/-2/-10

Distributed Energy Storage System



Liquid-Cooled

Power-Source-125K/261LA

Compact

With a footprint of only 1.4㎡, it enables easy transportation and fast installation

High Integration

261 kWh energy in one cabinet with remarkable endurance

Efficient Cooling

Optimal in-pack duct design achieves highly efficient cooling with low energy consumption

Long Cycle Life

⩾8,000 times cycle life, excellent performance of battery system

Ultimate Safety

In-pack fire warning and protection with aerosol, prevents heat diffusion and thermal runaway

Flexible Expansion

Modular design, simplified parallel expansion

Specification	Models	Power-Source-125K/261LA
DC Side	Cell Type	LFP/314 Ah
	Pack Configuration	52.2 kWh/1P52S
	System Configuration	261 kWh/1P260S
	Rated DC Voltage	832 V
	DC Voltage Range	728~936 V
	Max. Charge/Discharge Rate	0.5 P
	Rated Output Power	125 kW
AC Side	Rated AC Voltage	400 V
	AC Voltage Range	±15 %
	Grid Type	3 P + N + PE
	Rated Frequency	50 Hz/60 Hz
	Power Factor	0.99/-1~ +1
	THDi	⩽ 3 %
	DC Ratio	＜ 0.5 % Ipn
	Max. Round Trip Efficiency	89 %
General	Cycle Life	⩾8,000 Cycles
	Communication	Modbus TCP/IP
	Fire Protection System	Aerosol, Water Firefighting Interface
	Ingress Rating	IP55
	Cooling Method	Liquid-Cooled + Forced-Air-Cooled
	Operating Temperature	-25 °C~55 °C (Derating Above 45 °C)
	Corrosion Resistance	C4 (C5 Optional)
	Humidity	0~95 % RH (non-condensing)
	Noise	⩽75 dB
	Altitude	3000 m (Derating Above 2000 m)
	Dimensions (W × D × H mm)	1050 × 1350 × 2400 mm
	Weight	2600 kg
	Safety/EMC Standard	UN38.3, IEC62619, IEC63056, EN/IEC62477-1, EN/IEC61000-6-2/-4, IEC62933, MSDS
	Grid Connection Standard	EN50549-1/-10, EN50549-2/-10, G99, VDE4105, NRS097, C10/11, CEI0-21, CEI0-16

Energy Management Unit



Power-Edge-L

- Rich Optimization Strategies
- Broad Compatibility

A smart energy controller designed for integrated cloud-edge-device solutions, supporting multi-device connectivity, energy management, edge computing, cloud-edge coordination, and remote operation and maintenance, among other features. It provides customers with the best personalized service solutions to ensure maximum returns.

Easy Deployment

- Lightweight design, versatile interfaces
- Adaptable to various scenarios

Maximum Reliability

- Dual-layer data security
- Long-duration backup power supply

Higher Returns

- Multi-strategy energy optimization
- Cloud-edge collaboration for efficiency

Smart O&M

- Second-level fault response
- Local and cloud-based O&M to reduce costs

Specification	Models	Power-Edge-L
Power Supply Parameters	Input Voltage Range	90~264V AC
	DC System Backup Time	Max. 2 Hours
	Grid Connection Type	L + N + PE
	Rated Power Consumption (W)	< 50 W
Communication Parameters	RS-485 Interface	6 Ports
	Ethernet Interface	1 Port WAN/4 Ports LAN
	CAN Interface	1 Port
	Wireless Interface	4G
	DI/DO Interface	4 Ports/6 Ports
	Communication Distance	RS-485 Cable Length: 500 m (Baud Rate 9600 bps) CAN Communication Length: 100 m (Baud Rate 250 kbps), Ethernet Cable Length: 100 m
General Parameters	Display	LED Indicator Light
	Relative Humidity	0~95 % RH (non-condensing)
	Operating Temperature	-30 °C ~ +60 °C
	Storage Temperature	-40 °C ~ +70 °C
	Altitude	< 2000 m
	IP Rating	IP54
	Cooling Method	Natural Cooled
	Corrosion Resistance	C3
Mechanical Parameters	Dimensions (W × D × H mm)	484 × 168 × 670 mm
	Installation	Suitable for Indoor or Outdoor Wall-Mounted Installation
	Weight	< 40 kg
	Cabinet Material	Metal

STS Grid-tied / Off-grid Switching Cabinet

Power-SC-STS-250K
Power-SC-STS-500K

- Autonomous Grid Switching
- Modular Architecture
- Millisecond Response



Simplified Maintenance

- Live maintenance without power interruption
- Servicing without affecting business continuity

Autonomous Operation

- Real-time EMS sensing with intelligent decision-making
- Autonomous grid switching eliminates the need for on-site supervision

Easy Deployment

- Active switching: 0 ms I Passive switching: <20 ms
- Continuous power to loads, ensuring no disruption to operations

Broad Compatibility

- Supports multi-unit parallel operation with PCS and EMS
- Multiple safety mechanisms for robust system integrity

Specification	Models	Power-SC-STS-250K	Power-SC-STS-500K
System Parameters	Grid-side Power	250 kW	500 kW
	PCS-Side Power	125 kW	250 kW
	Load-Side Power	125 kW	250 kW
	Load Access Circuits	1 Circuit (Switch Capacity 250 A)	1 Circuit (Switch Capacity 500 A)
	Grid / Off-Grid Switching Time	< 20 ms	
	Rated Voltage	380/400 Vac	
	Connection Mode	3P + N + PE	
	Load Bypass Function	Supported	
	Incoming Mode	AC Bottom Incoming	
Mechanical Parameters	Dimensions(W × D × H mm)	650 × 980 × 1700 mm (Excluding Lifting Ring Height)	1000 × 1046 × 1790 mm (Excluding Lifting Ring Height)
	Weight	Approx. 270 kg	Approx. 290 kg
	IP Rating	IP54	
	Corrosion Resistance	C3 (C4/C5 Optional)	
	Operating Temperature	-25~+55 °C (Derated Above 45 °C)	
	Operating Humidity	0~95 % RH (non-condensing)	
	Altitude	⩽4000 m (Derated Above 2000 m)	
	Cooling Method	Intelligent Air-Cooled	
	Communication Mode	CAN*2/LAN*2/RS-485*3	

Power Core Energy Management Platform









- Maximize revenue via dynamic response to electricity prices and load profiles.
- Data-driven end-to-end asset lifecycle management to maximize investment returns.
- Reduce staffing costs and streamline maintenance via remote monitoring and cloud collaboration.
- 24/7 AI monitoring ensures uninterrupted power supply, proactive alerts, and intelligent diagnostics.
- Digital monitoring and visual dashboards enable data-driven decision-making for improved accuracy.
- Enhance competitiveness and achieve low-carbon goals through end-to-end carbon-efficient operations/management.

Empower Your Energy Assets with End-to-End Digital Lifecycle Services





Permission Management

- Role-based Access Control
- Functional Permission Management

Scene Modeling

- Site Energy Flow Chart
- 3D Scene Reconstruction

Openness & Compatibility

- Third-party Device Compatibility
- Open Northbound Communication Interfaces

System Reporting

- Site O&M Report
- Customizable Data Report
- Equipment Health Diagnosis Report

Equipment Monitoring

- Full Lifecycle Service
- Equipment Safety Evaluation
- Second-level Data Monitoring
- Alarm Management & Notification

Business Operations

- Asset Management
- Digital O&M Service
- System Energy Flow

Power Core App



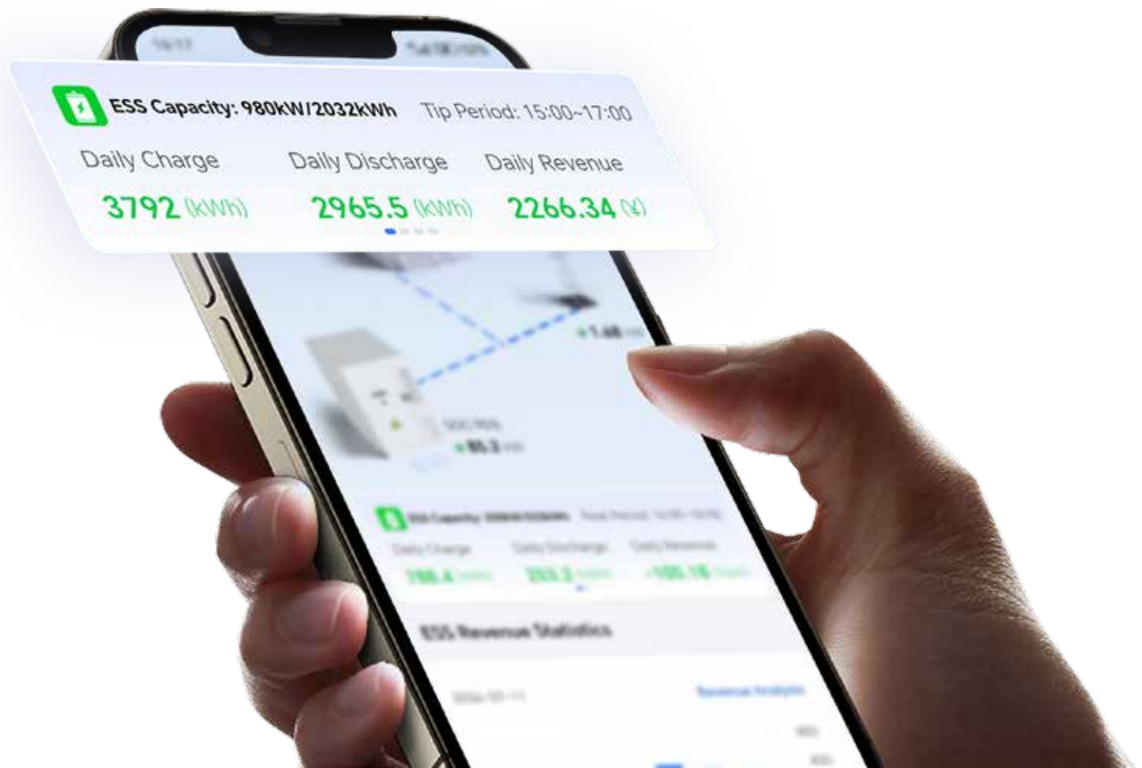
Site Monitoring

Monitor Energy Flow Diagrams in Real Time



Equipment Monitoring

Second-level Real-time Equipment Monitoring



Intelligent Energy Management Empowers Users to Maximize Revenue

Profit Analysis

Monitor revenue data in real time

Energy Report

Station Operation Energy Analysis Report

Data Analysis

Gain insights into power sources and power flow

System Strategy

Dynamic Adjustment of System Strategy









Service Philosophy

After-Sales Service Locations



Full Lifecycle Technical Support + Rapid Response Service System

Customized Solution Services

- Adaptation to specific use cases
- Projected investment returns
- Scalable design

Efficient After-Sales Service

- Rapid response mechanism
- Remote after-sales service
- Regular follow-up service

Pre-sales consultation

- Product knowledge support
- Policy subsidy consultations
- Project feasibility assessment

Commissioning Services

- On-site installation guidance
- Training for operations personnel
- Equipment calibration and optimization







Grid-Side Energy Storage
150MW/300MWh

Solutions

Energy storage deployment mitigates renewable energy fluctuations, enhances grid reliability.



Low-Carbon Park (Business and Exhibition Center)

575kW/1165kWh
850kWp PV

Solutions

An integrated PV + energy storage + power monitoring solution boosts local PV self-consumption and drives low-carbon industrial development and green energy transition.







Industrial & Commercial PV Storage Integration (Industrial Park)

980kW/2032kWh 3582kWp PV

Solutions

Leveraging existing PV capacity, cloud-edge collaboration enables cross-platform monitoring and remote meter reading—boosting green energy utilization and cutting annual electricity costs by approximately USD 56,000.



Industrial & Commercial Peak Load Shifting (Apparel Manufacturing Plant)

1375kW/2871kWh

Solutions

With energy storage deployment and high-efficiency control algorithms, peak shaving and valley filling reduce electricity costs and enhance power stability for high-power manufacturing clients.



Transformer-Side Energy Storage Applications (Livestock Farm)

125kW/261kWh

Solutions

Energy storage systems address key challenges of distribution transformers, including overload, PV curtailment, three-phase imbalance and low grid-side voltage.



Off-grid PV-ESS Microgrid (Food Processing Plant)

250kW/522kWh 300kWp PV

Solutions

An integrated off-grid PV-ESS-load microgrid is deployed to rapidly stabilize off-grid voltage and frequency, effectively eliminating factory downtime risks caused by grid constraints.



Industrial & Commercial Peak Load Shifting (Furniture Manufacturing Plant)
750kW 1566kWh



Industrial & Commercial PV Storage Integration (Textile Factory)
2088kWh 1440kWp PV



Industrial & Commercial Peak Load Shifting (Hotels and Bed-and-Breakfasts)
1305kWh



Industrial & Commercial Peak Load Shifting (Light Industrial Manufacturing Plant)
1566kWh

Global Clean Energy Leader Committed to Smart and Green Power

