YIY

SMART iCOOL BESS

May energy and ecology be more harmonious



ZHEJIANG YIYEN HOLDING GROUP

Zhejiang Yiyuan Holding Group Co., Ltd. is committed to the research and development and intelligent manufacturing of power electronics technology. With the aim of reducing electricity costs and improving electricity efficiency; A high-tech enterprise that provides core power equipment and system solutions for the energy Internet of Things. The company takes electrochemical energy storage and energy efficiency management as its core industries, providing energy-saving and consumption-reducing services for industries such as power, communication, finance, education, healthcare, and large industrial and mining enterprises.

The company has established R&D centers in Shenzhen, Nanjing and Hangzhou, and has set up joint laboratories with Hohai University, Tsinghua University, Nanjing University of Aeronautics and Astronautics and the Hong Kong Polytechnic University. With its strong technological strength, it was the first to pass international certifications such as CE, UL, TUV and CQC. Its products are sold in over 130 countries and regions, and it has gained an international market position. As a core industry, it provides energy-saving and consumption-reducing services for industries such as power, communication, finance, education, healthcare, and large industrial and mining enterprises.

300+
Staff

30000m²+
Plant Area

15 years +
Years Experience

3GWH+/year
Delivered Capacity

ENTERPRISE ARCHITECTURE

Headquarters — **ZHEJIANG YIYEN HOLDING GROUP**

Intelligent Manufacturing	Lishui Yiyen Technology CO.,LTD	Factory
Globalization Channel	Wenzhou Yiyen Supply Chain Management CO.,LTD	Marketing/Sales/Sourcing Total Solutions and Technical Services
Investment Operation	Wenzhou Yiyen Energy Development CO.,LTD	EPC Service Provider for New Energy and Energy Storage Plants Contract Energy Management (Domestic Only)
R&D	Nanjing Branch Shenzhen Branch Hangzhou Branch	R&D Center

50+
R&D Staff

130+
Export Countries

100+
Intellectual Properties

BMS
12V~1500V
Voltage Class

Qualification Certification


ISO9001

QUALITY MANAGEMENT SYSTEM CERTIFICATE

Certificate No.: 20220921199R0S

We hereby certify that the organization:

LISHUI YIYEN TECHNOLOGY COMPANY LIMITED

Unified social credit code: 91331127MA2E079Y8T

is in conformity with Quality Management System Standard:

GB/T19001-2016 idt ISO9001:2015

The certificate is valid for the following products/services:

The assembling of Voltage Stabilizer、Inverter、Photovoltaic Equipment（MPPT Solar Charger、PCS）、Uninterruptible Power Supply、Emergency Power Supply、Battery Pack Energy Storage System、Battery Management System（BMS）

Registration Address/Audit Address: No.77 Xiang Long Road Liuxi Du Zone,Lishui City,Zhejiang Province, China

Date of Issue: 26-09-2022

Date of Expiry: 25-09-2025

Date of Initial: 26-09-2022

Issued By:

IAF CNAS MANAGEMENT SYSTEM CNAS C197-M

Zhejiang Quanpin Certification Co.,Ltd. Certificate Appropriate

ZHEJIANG QUANPIN CERTIFICATION CO.,LTD.


ISO45001

OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT SYSTEM CERTIFICATE

Certificate No.: 20220920467R0S

We hereby certify that the organization:

LISHUI YIYEN TECHNOLOGY COMPANY LIMITED

Unified social credit code: 91331127MA2E079Y8T

is in conformity with Occupational Health Safety Management System Standard:

GB/T45001-2020 idt ISO45001:2018

The certificate is valid in the following products/services:

The assembly and related management activities of Voltage Stabilizer、Inverter、Photovoltaic Equipment（MPPT Solar Charger、PCS）、Uninterruptible Power Supply、Emergency Power Supply、Battery Pack Energy Storage System、Battery Management System（BMS）

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Zhejiang Quanpin Certification Co.,Ltd. Certificate Appropriate

ZHEJIANG QUANPIN CERTIFICATION CO.,LTD.


ISO14001

ENVIRONMENTAL MANAGEMENT SYSTEM CERTIFICATE

Certificate No.: 20220920499R0S

We hereby certify that the organization:

LISHUI YIYEN TECHNOLOGY COMPANY LIMITED

Unified social credit code: 91331127MA2E079Y8T

is in conformity with Environmental Management System Standard:

GB/T24001-2016 idt ISO14001:2015

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ZHEJIANG QUANPIN CERTIFICATION CO.,LTD.








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CERTIFICATE OF CONFORMITY
DEKRA
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CONTENTS

C&I On Grid BESS 1

BESS-T 125-271 3

Solar C&I On Grid BESS 5

Solar EV Charging On Grid BESS 7

BESS-T 125-271-120W 9

MPPT-12 11

Generation-Side 13

Transmission & Distribution Side 20

iCOOL BESS 832kWh 23

iCOOL BESS 416kWh 25

PCS 27

MPPT-24 29

SMART iCOOL BESS

CONTENTS

On Line BESS 31

BESS-L 100D-217-120 33

BESS-L 125D-271-120 35

Hybrid AIO BESS 37

Microgrid BESS 39

BESS 30-72-75 41

BESS 60-126-75 43

BESS 100-217-120 45

BESS 125-271-240 47

UPV-S 49

iCOOL BESS 215kWh/271kWh 51

iCOOL BESS 488kWh 53

Demonstrations 55

C&I ON GRID BESS

* Grid-connection * Islanding protection only * No PV

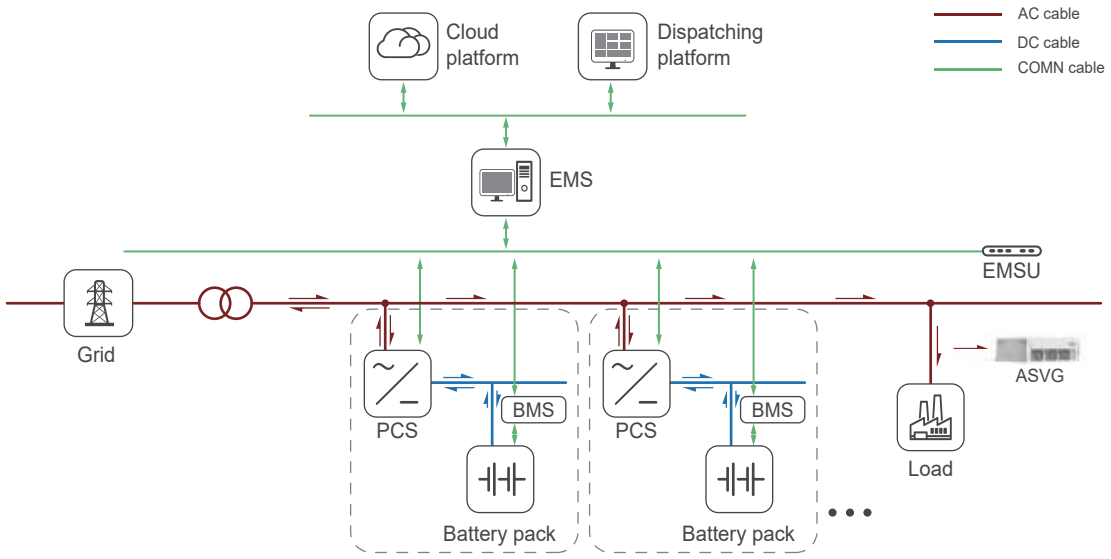


• Overview

C&I ON GRID BESS is the core platform enabling users to transition from "energy consumers" to "energy prosumers." Their core value lies in generating threefold benefits: economic benefits, achieved by significantly reducing electricity costs through "peak shaving, valley filling" and demand management; market benefits, realized by participating in electricity trading and demand response through intelligent dispatch, converting flexible regulation capabilities into additional revenue; and system benefits, particularly through flexible adaptation to existing and new distributed photovoltaic systems via AC coupling, enabling efficient photovoltaic-storage synergy and intelligent management, thereby comprehensively enhancing energy reliability and autonomy.

This system transforms users from passive electricity consumers into active energy managers, truly achieving controllable electricity costs, reliable power supply security, and predictable energy revenue.

• System Topology

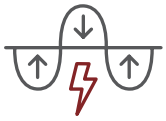


Applicable Equipment:

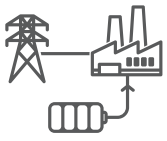


BESS-T 125-271

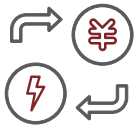
• Applications



Peak Shaving



Power Scheduling



Electricity Trading

iCOOL BESS

C&I On Grid BESS

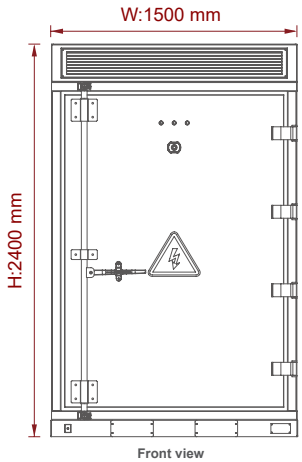
BESS-T 125-271



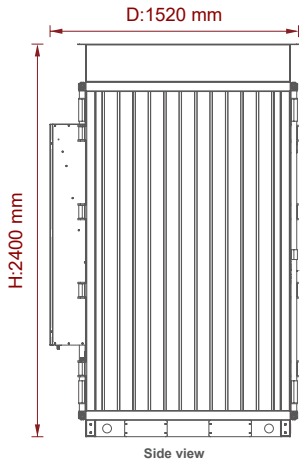
• Features

- Two level BMS built-in.
- Intelligent thermal management system
- IP55 fire and explosion proof cabinet.
- Fire proof devices in each modular and in the cabinet.
- Easy for on site installation

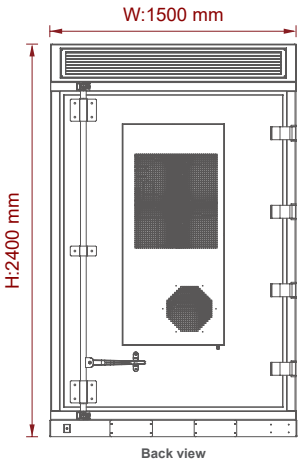
• Product Dimensions



Front view



Side view



Back view

• Technical Parameter

BESS-T 125-271	
Battery	
Battery Type	LFP(LiFePO4)
Rated Capacity	314 Ah
Configuration	1P 270S
Rated Voltage	864V
Voltage Range	756V~950V
Nominal Capacity	271kWh
Max. Continuous Charge/Discharge Current	157 A
Depth of Discharge	100% DOD (90% Recommended)
AC Side	
Rated Power	125kW
Max. Output Power	137.5kW
AC Rated Voltage	3P3W+PE/3P4W+PE, 400 V
Rated Current	181A
Frequency	50Hz/60Hz
PF	-1~1
THDi	<3%
System	
Dimension(W*D*H)	1500*1520*2400mm
Weight(kg)	2920kg
Noise	≤75dB
Max. System Efficiency	≥92.5%
Ingress Protection Rating	IP55
Storage Temperature	-20~55°C (1 Month); 0~35°C (6 Months)
Operating Temperature	-30~60°C
Operating Humidity	5%RH~95%RH(No Condensation)
Max. Operating Altitude	4000m(>2000m Derating)
Thermal Management Method	Dry Self-Cooling
Fire Protection	Aerosol
Communication Port	CAN/RS485/Ethernet/4G
Certifications	IEC 61000-2/-4; IEC 62109; IEC 62619; UN38.3; EN 50549-1

SOLAR C&I ON GRID BESS

* VPP * Self-consumption * Off-grid operation (black start)



• Overview

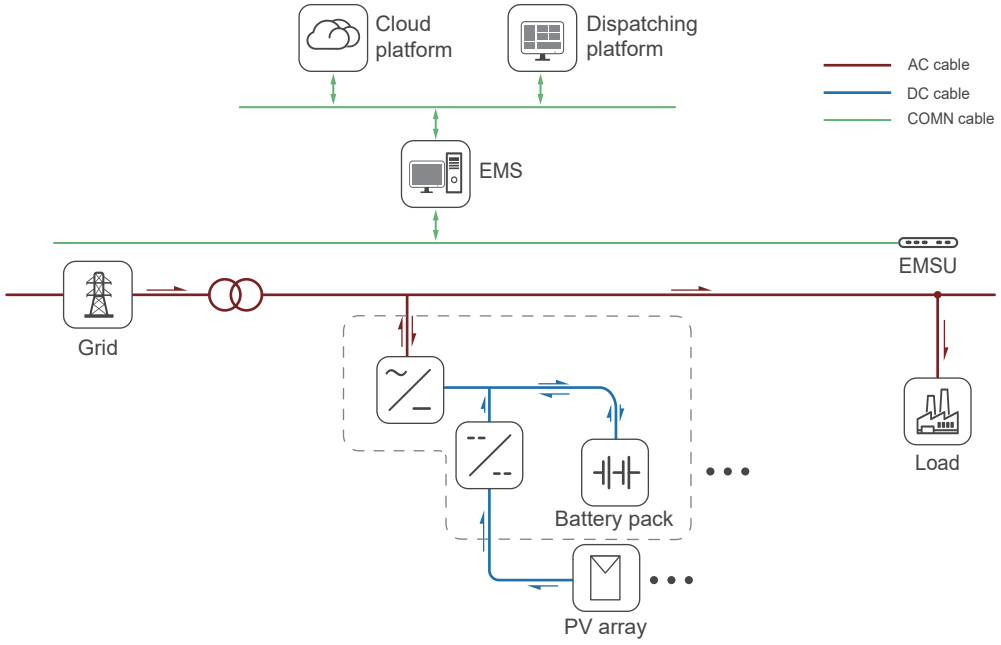
This system adopts a DC-coupling architecture and anti-backflow design, integrating energy management system (EMS), bidirectional inversion, MPPT PV control, and a high-precision Battery Management System (BMS). It is equipped with long-cycle LFP batteries to form an integrated energy storage unit.

The system executes the intelligent energy scheduling strategy on a 24-hour cycle: solar power is prioritized for on-site consumption, with surplus energy stored. During insufficient sunlight or high electricity prices, the battery discharges to support the load, achieving "self-generation and self-consumption, surplus storage."

Additionally, the system features virtual power plant (VPP) node functionality, enabling remote response to grid dispatch and participation in services such as peak shaving demand response. In the event of grid anomalies, it can switch to off-grid mode to ensure local power supply.

Through the coordinated operation of generation, storage, consumption, and grid interaction, the system ultimately delivers 3 core values: improved energy economics, enhanced power reliability, and support for grid stability—providing users with an efficient, flexible, and resilient green energy solution.

• System Topology



Applicable Equipment:



BESS-T 125-271-120W

• Applications

Peak Shaving

Black Start Capability

Demand Control

Electricity Trading

SOLAR EV CHARGING ON GRID BESS

* VPP * Modular Integration * Renewable energy consumption

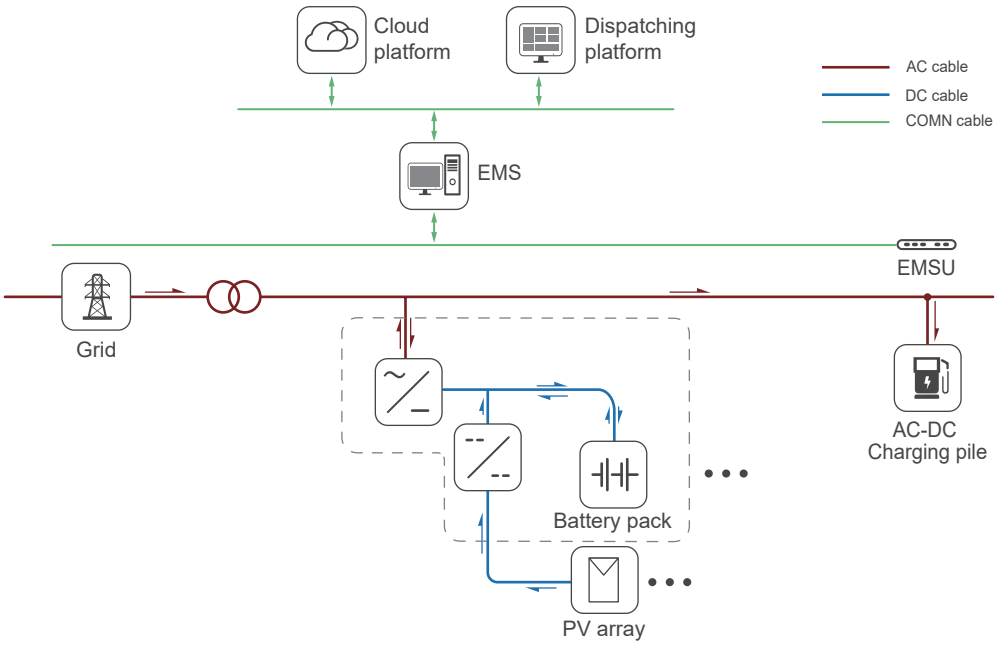


• Overview

This system is an integrated " PV-ESS-Charging " smart energy station that deeply integrates PV power generation, energy storage, and intelligent charging. Its core lies in the dynamic coordination and optimized dispatch of these 3 components through a smart Energy Management System (EMS). It utilizes PV generation for local consumption of green electricity, relies on the energy storage system for "peak shaving" as well as grid interaction, effectively mitigates charging load fluctuations, and enhances grid regulation capabilities and energy utilization efficiency.

The system not only reduces charging costs and carbon emissions but also functions as a grid-friendly node with the potential to participate in demand response and Virtual Power Plant (VPP) operations. It serves as a key infrastructure solution supporting the large-scale development of electric vehicles in scenarios with a high penetration of renewable energy.

• System Topology



Applicable Equipment:



Distribution Cabinet

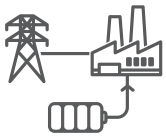


BESS-T 125-271-120W

• Applications



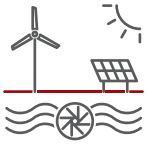
Capacity Stability



Time-of-use Optimisation



Ancillary Services



Self-Consumption

iCOOL BESS

Solar C&I On Grid BESS

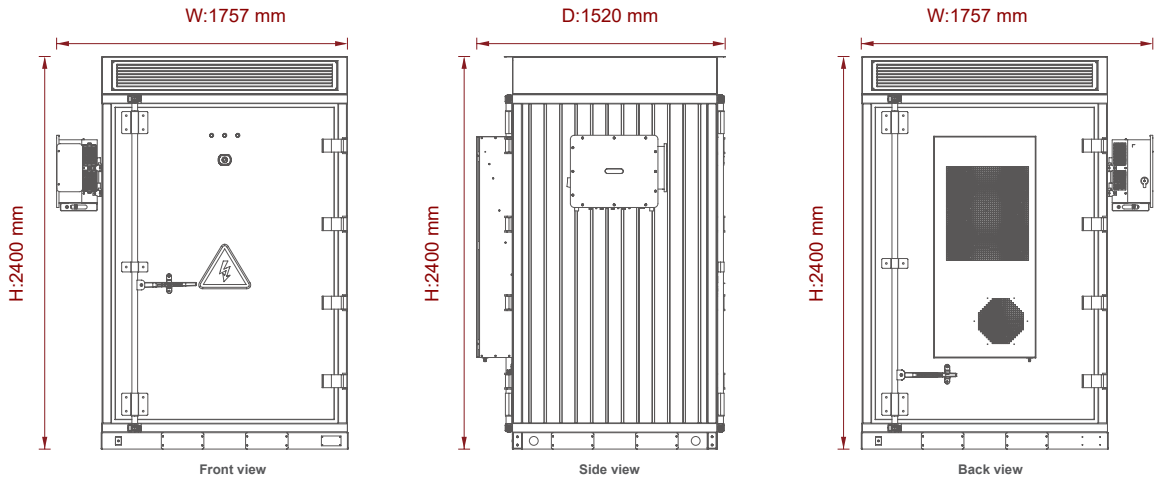
BESS-T 125-271-120W



• Features

- Two level BMS built-in.
- Intelligent thermal management system
- IP55 fire and explosion proof cabinet.
- Fire proof devices in each modular and in the cabinet.
- Easy for on site installation.
- Supports multi-level priority control to ensure reliable power supply from the grid and photovoltaic sources.

• Product Dimensions



• Technical Parameter

BESS-T 125-271-120W	
Battery	
Battery Type	LFP(LiFePO4)
Rated Capacity	314 Ah
Configuration	1P 270S
Rated Voltage	864V
Voltage Range	756V~950V
Nominal Capacity	271kWh
Max. Continuous Charge/Discharge Current	157 A
Depth of Discharge	100% DOD (90% Recommended)
AC Side	
Rated Power	125kW
Max. Output Power	137.5kW
AC Rated Voltage	3P3W+PE/3P4W+PE, 400 V
Rated Current	181A
Frequency	50Hz/60Hz
PF	-1~1
THDi	<3%
PV	
Max. Input Power	120kW
Max. Voltage	No more than 900V and no higher than the maximum tolerance voltage of the rear battery
Input Voltage Range	200V-900V
Max. Input Current	20A*12
System	
Dimension(W*D*H)	1757*1520*2400mm
Weight(kg)	3210kg
Noise	≤75dB
Max. System Efficiency	≥92.5%
Ingress Protection Rating	IP55
Storage Temperature	-20~55°C (1 Month); 0~35°C (6 Months)
Operating Temperature	-30~60°C
Operating Humidity	5%RH~95%RH(No Condensation)
Max. Operating Altitude	4000m(>2000m Derating)
Thermal Management Method	Dry Self-Cooling
Fire Protection	Aerosol
Communication Port	CAN/RS485/Ethernet/4G
Certifications	IEC 61000-2/-4; IEC 62109; IEC 62619; UN38.3; EN 50549-1

MPPT

PV MPPT Controller

MPPT-12/16



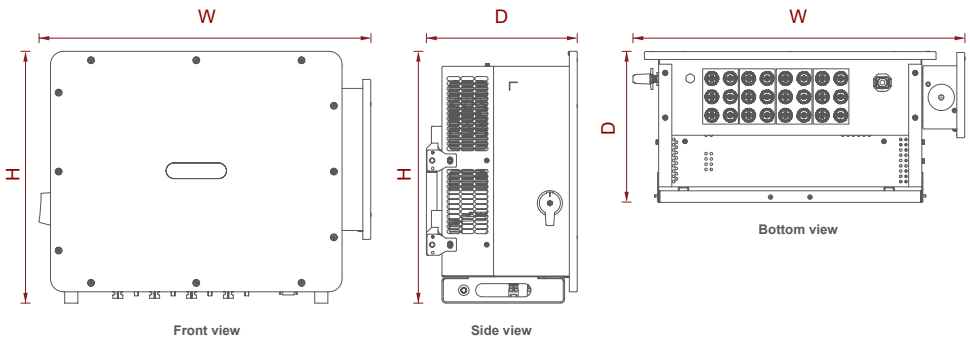
• Features

- Multiple MPPT for flexible PV installation angles.
- Insulation resistance monitoring with optional PID.
- Comprehensive protection: short circuit, reverse polarity & over-temperature.
- Compact design, small size, easy installation.
- Smart fan control for low noise and high efficiency.
- Built-in secondary surge protection for hanced safety.
- IP65 & C5 anti-corrosion, ideal for coastal high-salt environments.

• Product Introduction

The **MPPT controller** is used to build a DC-coupled system that tracks the maximum power point in the solar panel in real time to maximize the performance of the solar panel. The higher the voltage, the more electricity can be output through maximum power tracking, thereby improving the charging efficiency.

• Product Dimensions

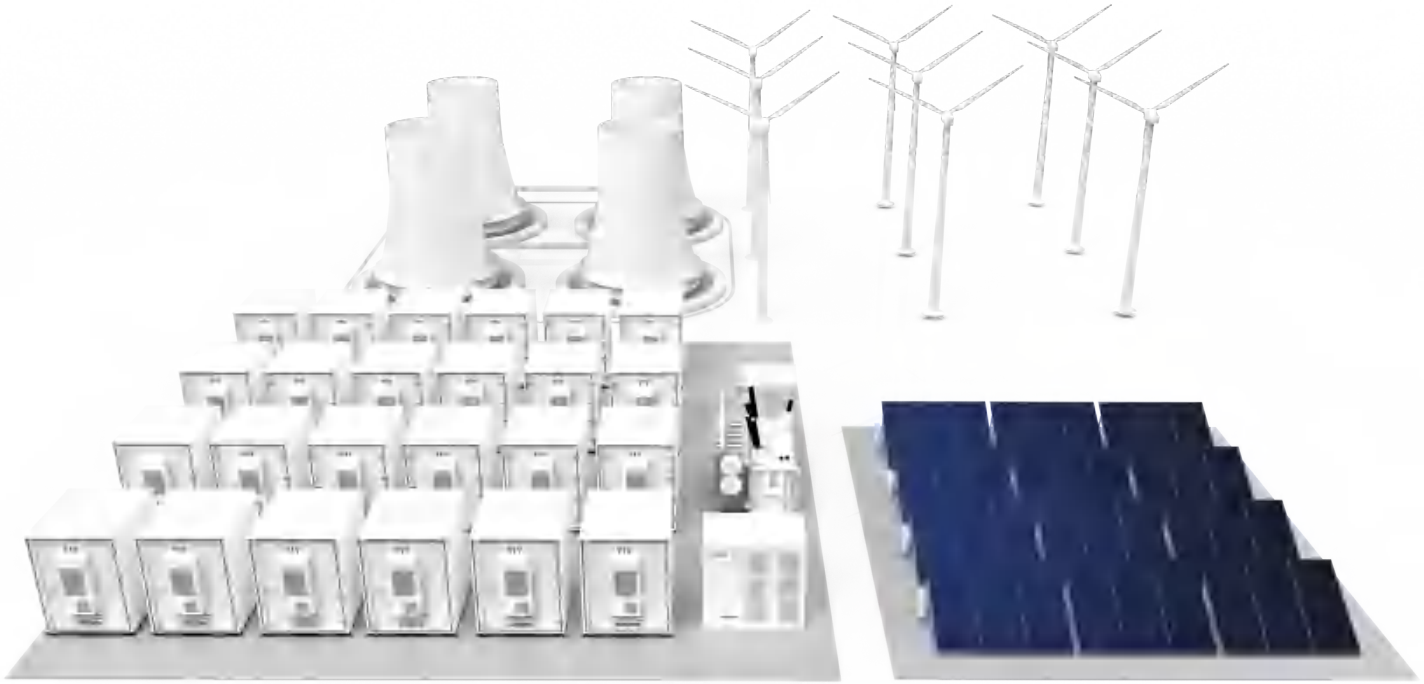


Model	Size(W*D*H)
MPPT-12	610*257*480mm
MPPT-16	765*266*598mm

• Technical Parameter

MPPT-12/16		
Model	MPPT-12	MPPT-16
Input		
MPPT Voltage Range	200V~900V	200V~950V
Rated MPPT Voltage Range	560V~900V	700V~850V
Maximum Branch Current	20A	18A
PV Input Strings Number	12	16
Number of MPPT	4	8
Current Per MPPT	55A	36A
Output		
Voltage Range	600~950V	0V~950V
Rated Voltage	Default 716.8V, adjustable	700V
Rated Output Current	168A	256A
Rated Output Power	120kW	200kW
Maximum Output Current	240A	288A
System		
EU Efficiency	99.4%	99.26%
Ingress Protection Rating	IP65	
Thermal Management Method	Dry Self-Cooling	
Max. Operating Altitude	4000m(>2000m Derating)	
Protection	Overtemperature protection, overcurrent protection, overvoltage protection, short-to-ground protection	
Dimensions (W*D*H)	610*257*480mm	765*266*598mm
Weight	30kg	60kg
Operating Temperature	-30 ~ 55 °C	
Power Supply Modes	Self-powered (without power consumption at night)	
Communication Interface	RS485	EMS:RS485/Battery:CAN or RS485

GENERATION-SIDE



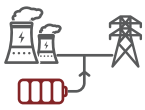
• Overview

Generation-side energy storage is the strategic cornerstone of power system transformation, fundamentally enhancing grid flexibility and reliability.

For thermal power plants, it serves as an "efficiency enhancer," providing millisecond-level frequency regulation that maintains optimal operations. This reduces fuel consumption, minimizes equipment wear, and creates new revenue through ancillary services—transforming thermal generation from a rigid power source into a "flexible market partner."

For renewable energy, storage acts as both a "stabilizer" and "value amplifier." It smoothes output fluctuations to meet grid standards and enables "energy time-shifting" by storing surplus renewable power for high-demand periods. By providing critical grid services such as voltage support and inertia, storage elevates renewables from "uncontrollable sources" into "grid-friendly primary power" that is both dispatchable and security-enhancing.

At the macro level, generation-side storage provides essential flexible capacity that optimizes system-wide investment while strengthening grid resilience under extreme conditions. It bridges the gap between conventional and renewable energy, accelerating the transition toward a cleaner, more reliable, and secure power future.



Load Shifting



Renewable
Energy Integration

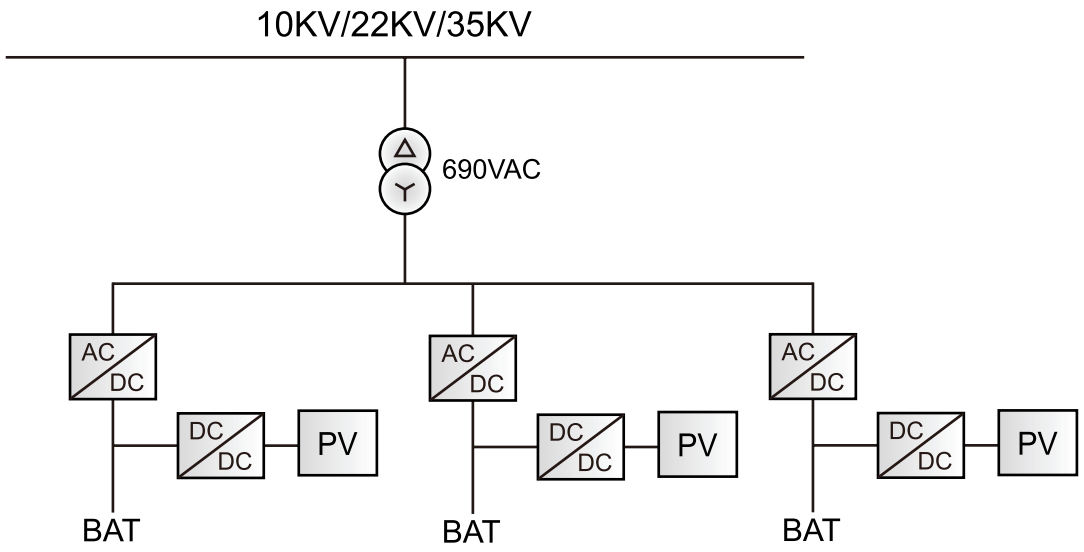


Capacity Stability

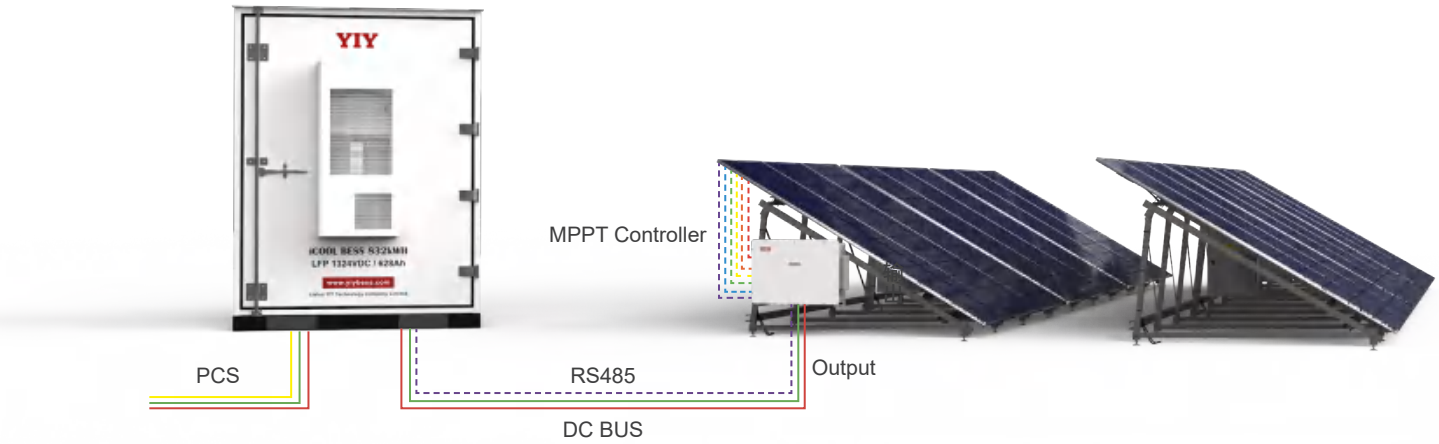
10MW/40MWh SOLUTIONS

iCOOL BESS 832kWh

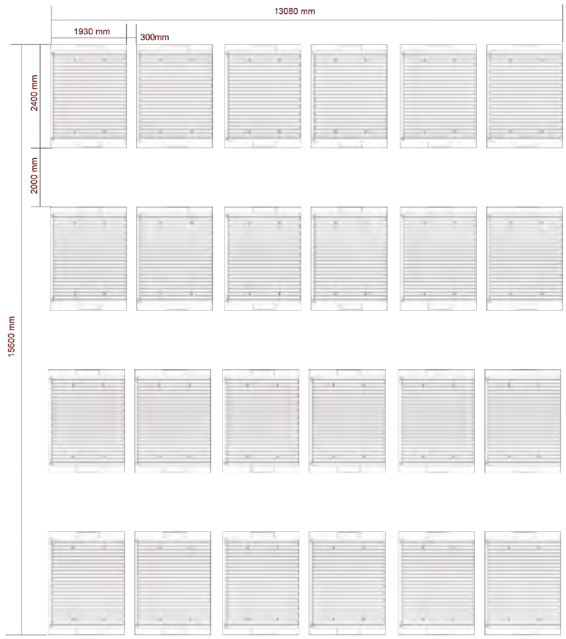
• System Electrical Topology



• Installation Diagram

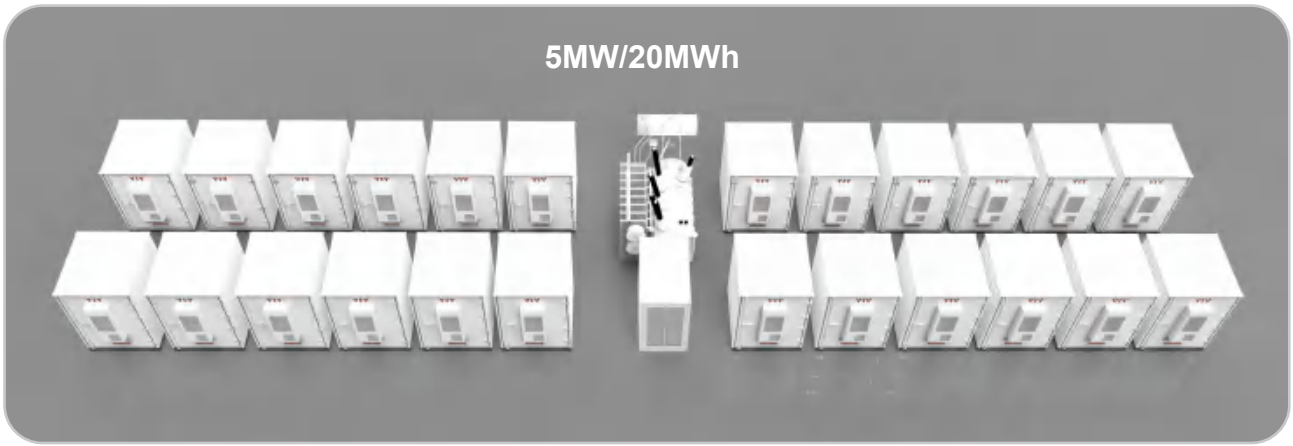


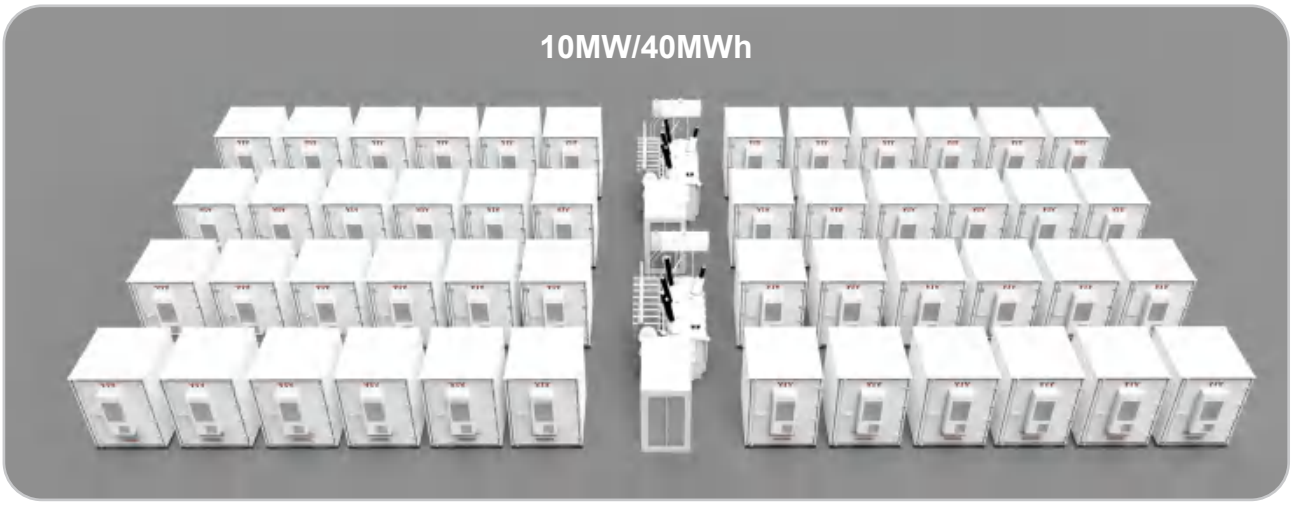
• Dimension Drawing



20MWh Floor area: 204 m²

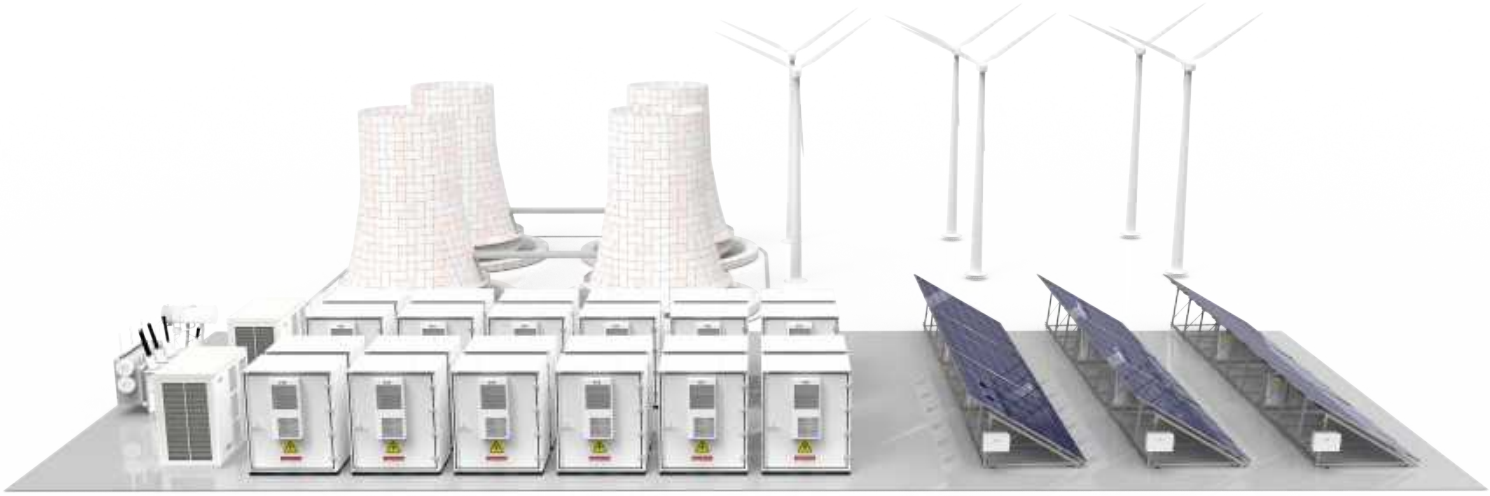
• Applications





10MW/20MWh SOLUTIONS

iCOOL BESS 250kW/416kWh/320kWp

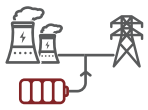


• Overview

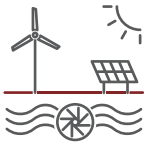
The 250kW/416kWh/320kWp 1500VDC High-Voltage DC-Coupled PV-ESS All-in-One System is designed for utility-scale renewable energy projects and large commercial & industrial (C&I) applications. Integrating a 320kWp MPPT PV input unit and a 250kW bidirectional PCS, the system supports a 1.28 PV oversizing ratio, maximizing solar energy utilization while reducing curtailment. Built on a 1000–1500VDC common DC bus architecture, the system performs single-stage energy conversion, improving overall efficiency by 4%–6% compared to conventional AC-coupled solutions and significantly reducing energy losses.

Equipped with a 416kWh high-voltage battery system featuring high-rate stacked cells, it offers excellent safety, performance, and long cycle life. The system supports applications such as peak shaving, PV self-consumption, load balancing, and grid support. With a 690VAC output and compatibility with 10kV, 22kV, and 35kV grid connections through step-up transformers, it is ideal for solar farms, industrial parks, and renewable energy projects worldwide.

Integrated BMS and EMS enable millisecond-level response, ensuring stable grid operation, PV fluctuation smoothing, and compliance with energy storage requirements. Combining high efficiency, enhanced PV utilization, flexible deployment, and simplified maintenance, the system represents a next-generation solution for utility-scale solar-plus-storage projects and high-voltage C&I energy optimization applications.



Load Shifting

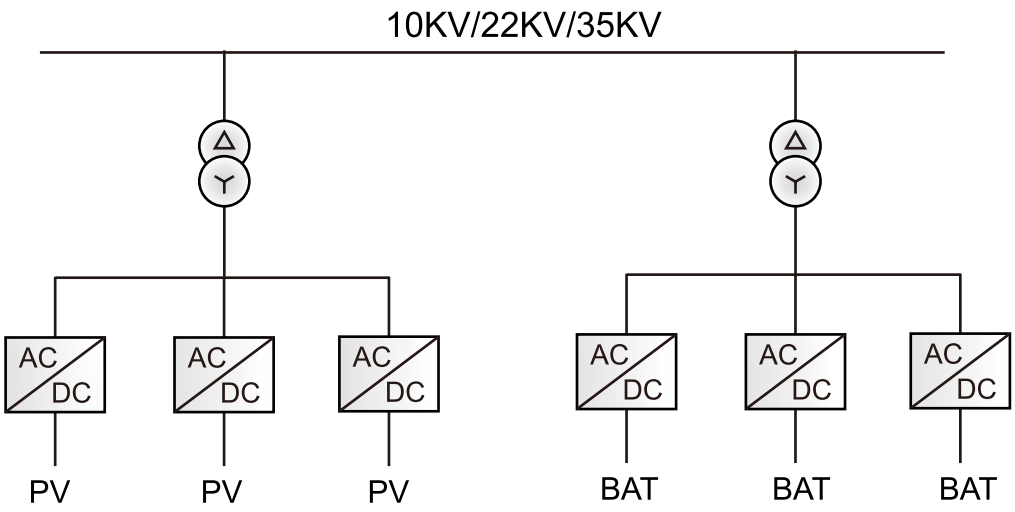


Renewable
Energy Integration

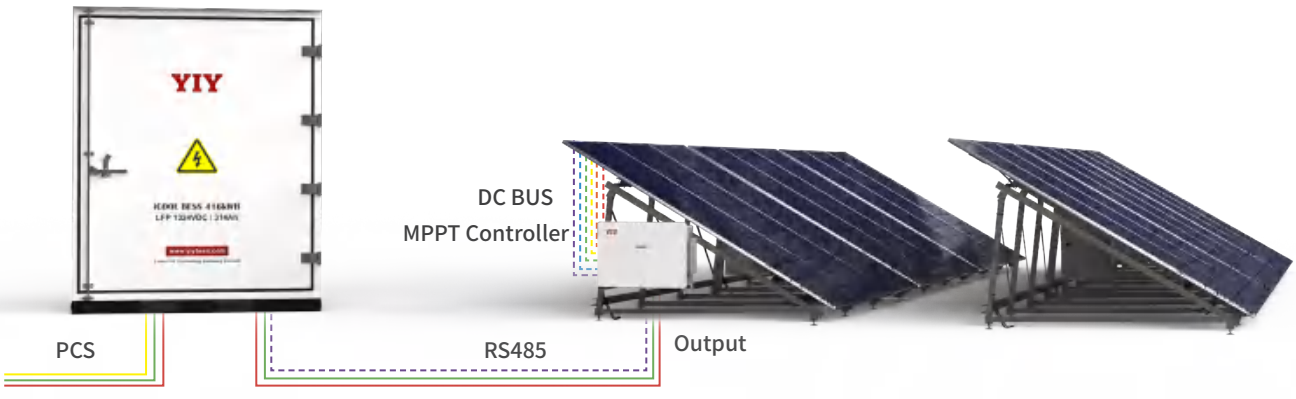


Capacity Stability
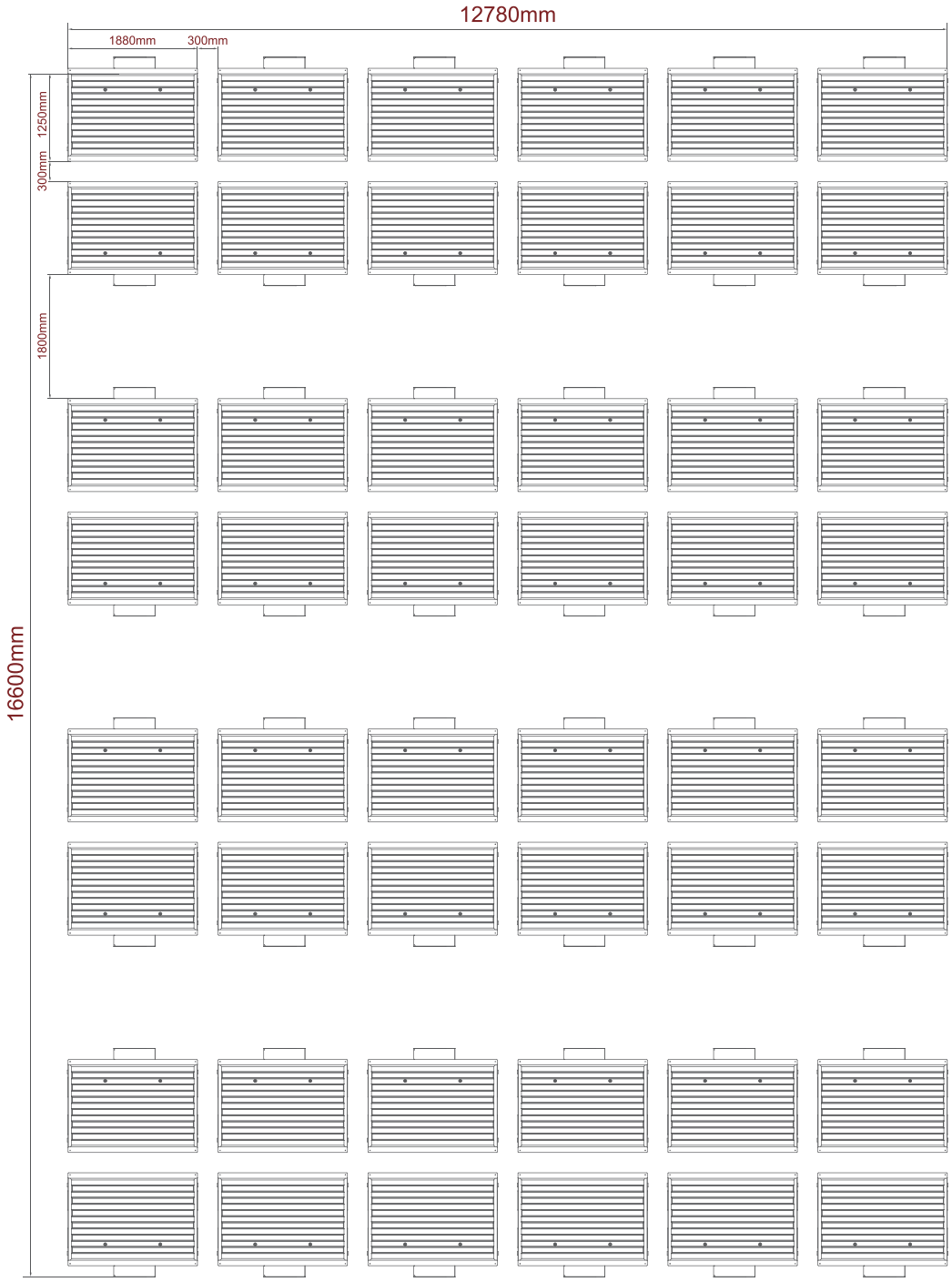
• System Electrical Topology



• Installation Diagram



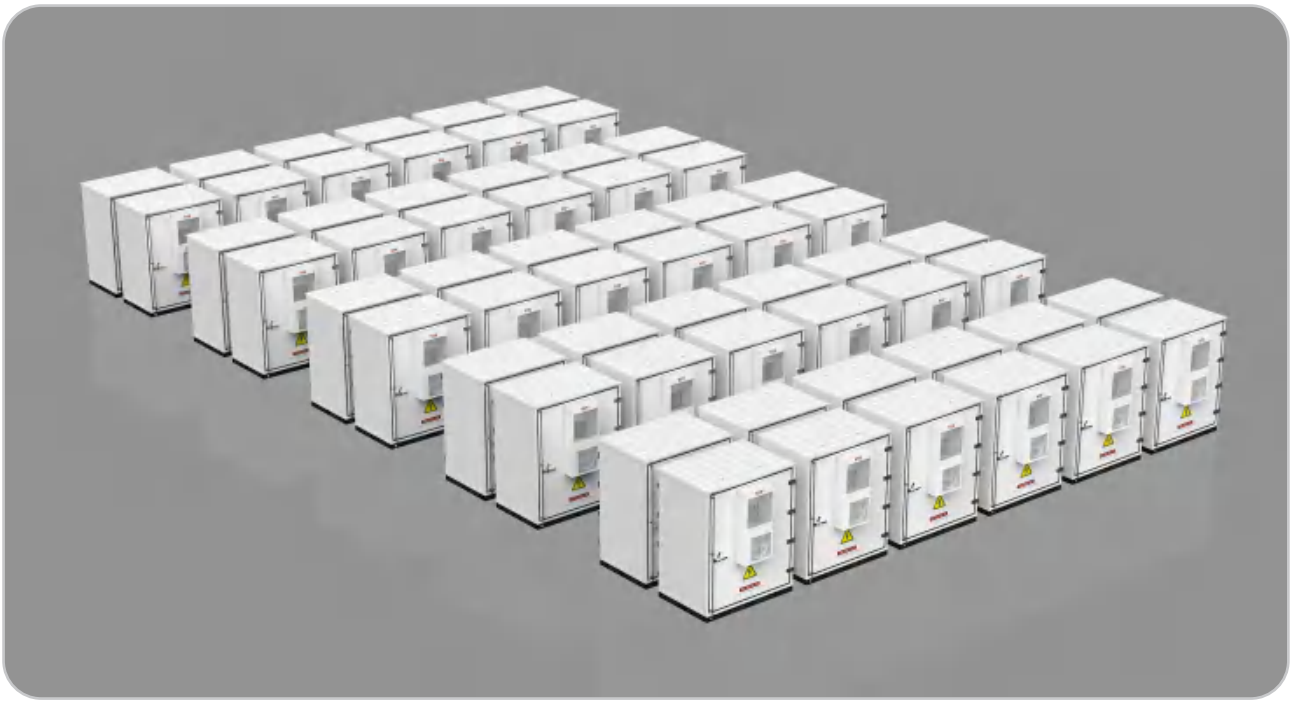
• Dimension Drawing



20MWh Floor area：212m²

• Applications

20MWh





TRANSMISSION & DISTRIBUTION SIDE



• Overview

Transmission & distribution side Energy Storage System is a strategic infrastructure for building a new power system. Its core value lies in reshaping grid capabilities—from planning and operation to emergency response—in a flexible and precise manner.

First and foremost, it serves as an "all-around regulator" for grid operation. It not only achieves efficient peak shaving and valley filling, and provides high-quality frequency regulation with millisecond-level response, directly ensures the real-time balance and power quality of the grid. More importantly, energy storage acts as a "virtual transmission line" for optimizing grid investment. By shifting energy across time and space at critical congestion points, it effectively alleviates transmission and distribution bottlenecks, significantly delaying or replacing costly traditional grid upgrades, thereby enhancing the efficiency of existing assets. Ultimately, it functions as a "safety insurance" for grid resilience, serving as a black-start power source and emergency support for critical loads, greatly strengthening the grid's ability to cope with extreme failures and disasters.

In short, transmission & distribution end Energy Storage System is fundamentally upgrading the operational paradigm of the grid, transforming it from a rigid transmission network into a more flexible, economical, and reliable intelligent system.



Peak Shaving



Black Start Capability

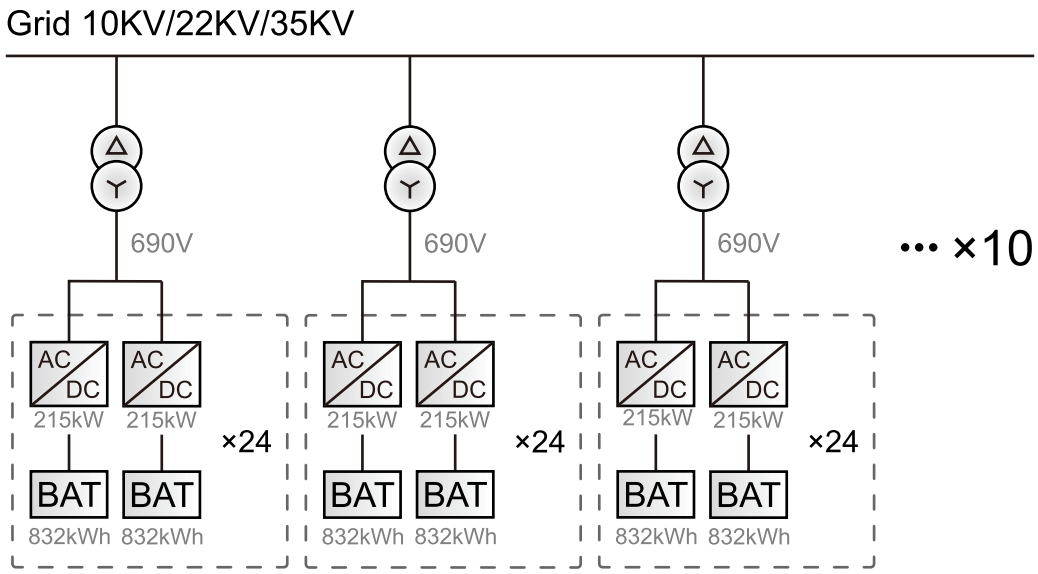


Ancillary Services

50MW/200MWh SOLUTIONS

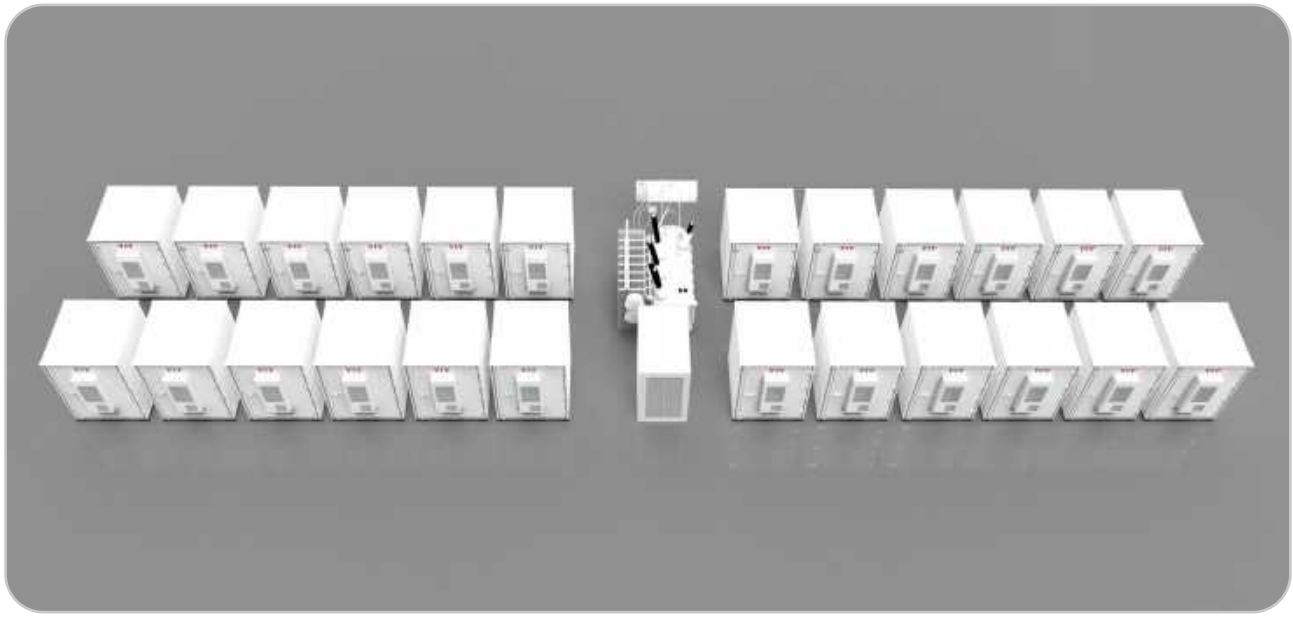
iCOOL BESS 832kWh

• System Electrical Topology

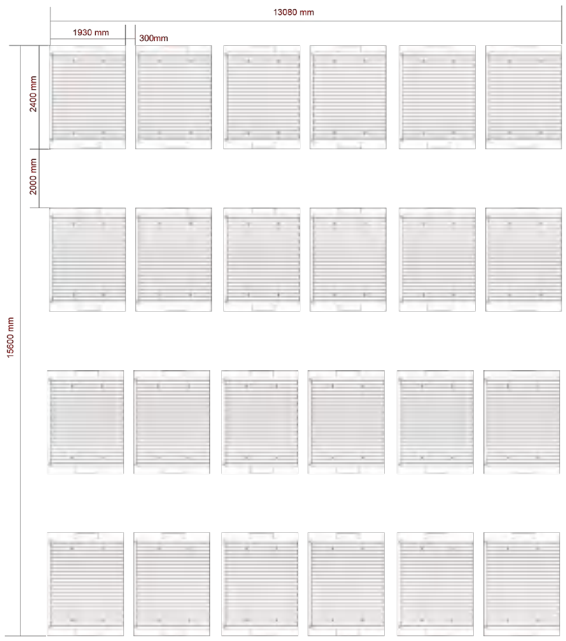


• Applications

5MW/20MWh



• Dimension Drawing



20MWh Floor area: 204 m²

• Applications

10MW/40MWh





iCOOL BESS

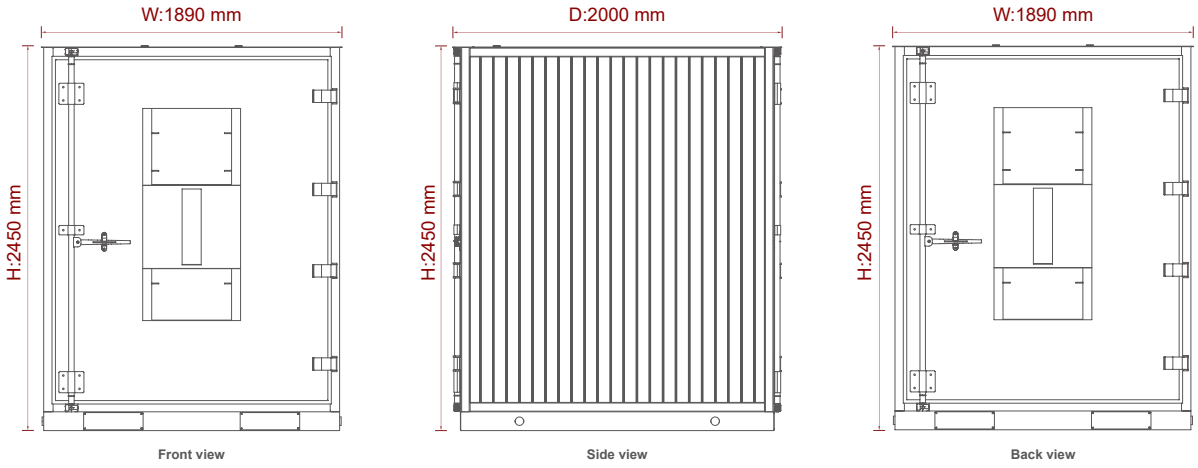
iCOOL BESS 832kWh



• Features

- Multi level BMS built-in.
- IP55 fire and explosion proof cabinet.
- Scalable in power and capacity.
- Easy for on site installation.
- Fire proof devices in each modular and in the cabinet.

• Product Dimensions



• Technical Parameter

iCOOL BESS 832kWh	
Battery	
Battery Type	LFP(LiFePO4)
Battery Capacity	314Ah
Configuration	2P 414S
Rated Voltage	1324.8V
Voltage Range	1159.2V~1490.4V
Nominal Capacity	832kWh
System Charge/Discharge Rate	0.5P
No. of Cycles	8000 cycles(70%SOH)
Depth of Discharge	100% DOD (90% Recommended)
Protection	
DC Input/Output	Disconnect switches+fuses
Electrical Isolation	Inter - module controlled protection breakout
Fire Protection	Two-stage aerosol fire module + Smoke sensors + Enclosure explosion - proof pressure relief device
System	
Dimension(W*D*H)	1890*2000*2450mm
Weight(kg)	7500kg
Noise	≤65dB
Ingress Protection Rating	IP55
Storage Temperature	-20~55°C (1 Month); 0~35°C(6 Months)
Operating Temperature	-30~60°C
Operating Humidity	5%RH~95%RH(No Condensation)
Max. Operating Altitude	4000m(>2000m Derating)
Thermal Management Method	Dry Self-Cooling
Communication Port	CAN/RS485/Ethernet/4G
Certifications	IEC 61000-6-2/-4;IEC 62477-1;IEC 62619;UN38.3

iCOOL BESS

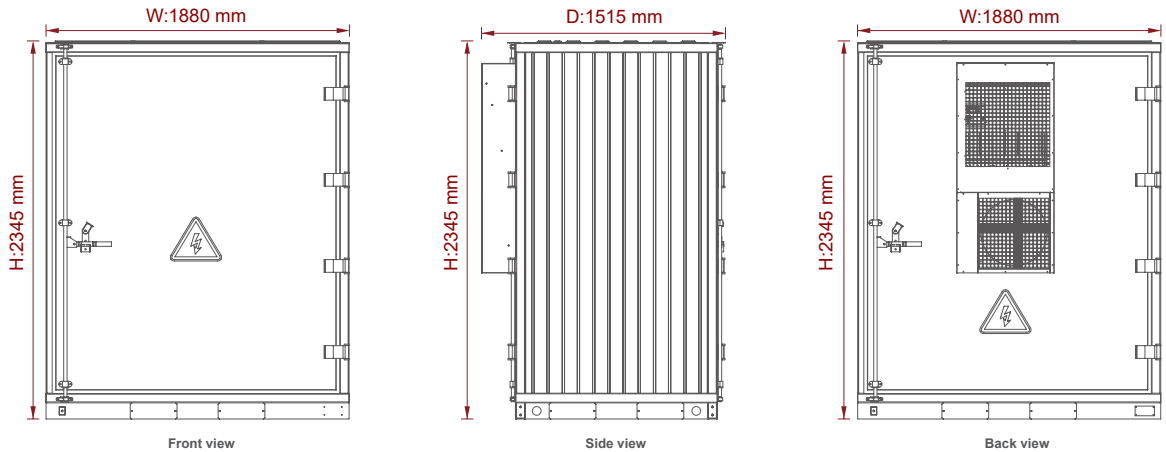
iCOOL BESS 416kWh



• Features

- Multi level BMS built-in.
- IP55 fire and explosion proof cabinet.
- Scalable in power and capacity.
- Easy for on site installation.
- Fire proof devices in each modular and in the cabinet.

• Product Dimensions



• Technical Parameter

iCOOL BESS 416kWh	
Battery	
Battery Type	LFP(LiFePO4)
Battery Capacity	314Ah
Configuration	1P 414S
Rated Voltage	1324.8V
Voltage Range	1159.2V~1490.4V
Nominal Capacity	416kWh
System Charge/Discharge Rate	0.5P
No. of Cycles	8000 cycles(70%SOH)
Depth of Discharge	100% DOD (90% Recommended)
Protection	
DC Input/Output	Disconnect switches+fuses
Electrical Isolation	Inter - module controlled protection breakout
Fire Protection	Two-stage aerosol fire module + Smoke sensors + Enclosure explosion - proof pressure relief device
System	
Dimension(W*D*H)	1880*1515*2345mm
Weight(kg)	4100kg
Noise	≤65dB
Ingress Protection Rating	IP55
Storage Temperature	-20~55°C (1 Month); 0~35°C(6 Months)
Operating Temperature	-30~60°C
Operating Humidity	5%RH~95%RH(No Condensation)
Max. Operating Altitude	4000m(>2000m Derating)
Thermal Management Method	Dry Self-Cooling
Communication Port	CAN/RS485/Ethernet/4G
Certifications	IEC 61000-6-2/-4;IEC 62477-1;IEC 62619;UN38.3

PCS

Energy Storage Converter

PCS 215/235/250KTL-CG



• Features

High Efficiency & Intelligent Control

• Three-level topology with conversion efficiency up to 98.5%

• Charge/discharge switching time < 20 ms

• Off-grid mode with DC voltage component detection and control

Flexible Configuration

• Modular design for easy installation

• Supports parallel operation of multiple units

Safe & Reliable

• IP66 protection for harsh environments

• Independent fan module for easy maintenanc

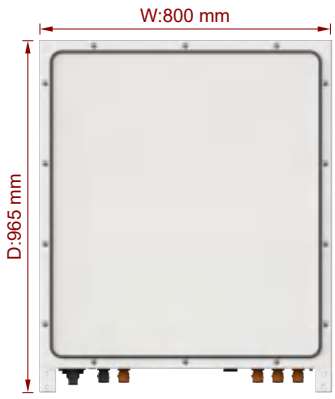
• Supports constant power, constant current, and constant voltage control

• Product Introduction

The PCS is a modular energy storage converter and a core component of the energy storage system. It converts DC power from batteries into grid-compliant AC power, and converts grid AC power into DC power for battery storage.

With advanced power electronics technology and intelligent control algorithms, the PCS provides efficient, reliable, and smart energy management solutions.

• Product Dimensions



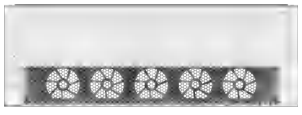
Top view



Side view



Front view



Back view

• Technical Parameter

PCS 215/235/250KTL-CG			
Model	PC215KTL-CG	PC235KTL-CG	PC250KTL-CG
Capacity	215kW	235kW	250kW
DC Input			
Operating Voltage Range	1000~1500VDC（3W+PE）		
Full-load Voltage Range	1000~1400VDC（3W+PE）		
Maximum Current	241A（3W+PE）	264A（3W+PE）	280A（3W+PE）
AC Side (On-grid)			
Rated Power	215kW	235kW	250kW
Maximum Output Power	236.5kW	258.5kW	275kW
Rated Current	181A	198A	210A
Maximum Current	200A	218A	231A
Reactive Power Range	-215kvar~+215kvar	-235kvar~+235kvar	-250kvar~+250kvar
Grid Connection Type	3W+PE		
Voltage Range	690Vac (-15%~+10%)		
Frequency & Range	50/60Hz (-5Hz~+5Hz)		
Output Power Factor	1 Lagging to 1 Leading		
Charge/Discharge Switching Time	<20ms		
Maximum THD	<3%		
AC Side (Off-grid)			
Voltage Range	690Vac (-15%~+10%)		
Maximum THDv	≤3%		
Frequency Range	50/60Hz (-5Hz~+5Hz)		
System			
Maximum Efficiency	99%		
Isolation Method	Non-isolated		
Overload Capacity	1.1× continuous operation, 1.2× for 1 min		
Cable Entry Method	Front Cable Entry		
Thermal Management Method	Intelligent Air Cooling		
Display	LED		
CG Dimensions (W*D*H)	800*965*275mm		
CG Net Weight	108kg		
CG1 Dimensions (W* D*H)	800*1125*275mm		
CG1 Net Weight	120kg		
Operating Temperature	-35°C~+60°C		
Operating Humidity	0~100%(No Condensing)		
Maximum Altitude	5000m(>3000m derating)		
Ingress Protection Rating	IP66		
Communication Method	RS485、 Ethernet、 CAN		
Pollution Degree	III		
Certification	GB/T 34120, GB/T 34133, IEC 62477-1, IEC 61000-6-2, IEC 61000-6-4		

MPPT

PV MPPT Controller

MPPT-24



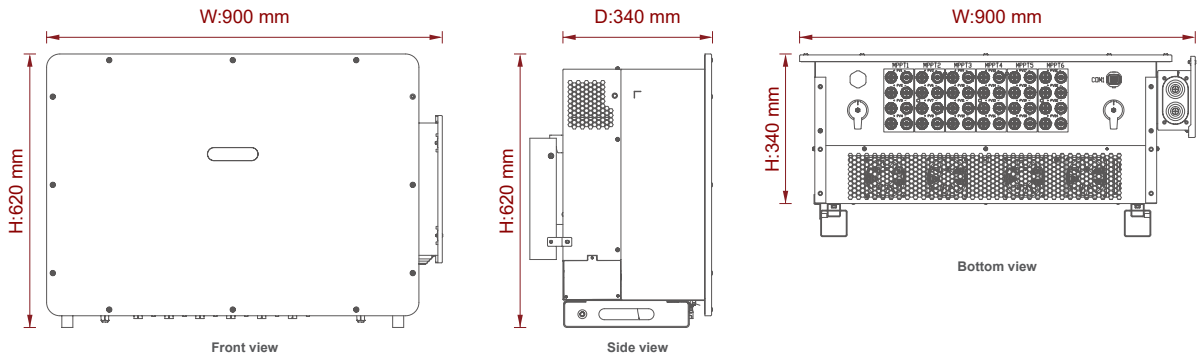
• Features

- Multiple MPPT for flexible PV installation angles.
- Insulation resistance monitoring with optional PID.
- Comprehensive protection: short circuit, reverse polarity & over-temperature.
- Compact design, small size, easy installation.
- Smart fan control for low noise and high efficiency.
- Built-in secondary surge protection for hanced safety.
- IP66 & C5 anti-corrosion, ideal for coastal high-salt environments.

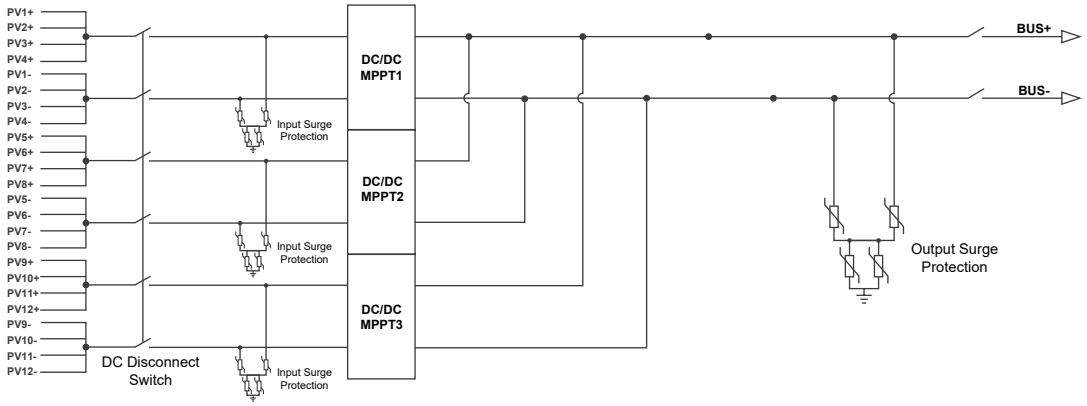
• Product Introduction

The **MPPT controller** is used to build a DC-coupled system that tracks the maximum power point in the solar panel in real time to maximize the performance of the solar panel. The higher the voltage, the more electricity can be output through maximum power tracking, thereby improving the charging efficiency.

• Product Dimensions



• Product Schematic Diagram



• Technical Parameter

MPPT-24	
Input	
Maximum Photovoltaic Array Voltage	1500V[a]
Start-up Voltage	550V
MPPT Voltage Range	500-1460V
Rated MPPT Voltage Range	900-1266V
Number of MPPT	6
Maximum MPPT Current	60A
Number of PV Inputs	4*6
Maximum PV String Current	30A
Output	
Output Voltage Range	950-1500V
Full-Load Output Voltage Range	1152-1498V
Rated Output Power	320kW
Rated Output Current	240A
Maximum Output Current	278A
System	
Output Overvoltage Protection Point	1450V/1344V(Customizable)[b]
EU Efficiency	99.3%
Ingress Protection Rating	IP66
Corrosion Protection Rating	C3
Thermal Management Method	Forced air cooling
Altitude	3000m(>3000m Derating)
Operating Temperature	-30°C ~ 60°C
Noise Level	≤75dB
Dimensions (W*D*H)	900*340*620mm
Weight	60kg
Communication Interface	RS485

Notes:
a. The maximum PV input voltage shall not exceed the battery Level-1 overvoltage protection threshold minus 50V. For example, if the battery Level-1 overvoltage protection point is 1456V, the recommended maximum output voltage of the PV array should not exceed 1406V. Local minimum ambient temperatures over the past 10 years should also be taken into consideration.
b. Our PV combiner box is equipped with an output contactor. By setting an appropriate output overvoltage protection threshold, battery overcharge can be effectively prevented. When the output voltage exceeds the preset threshold, the PV combiner box will automatically shut down for protection.

ON LINE BESS

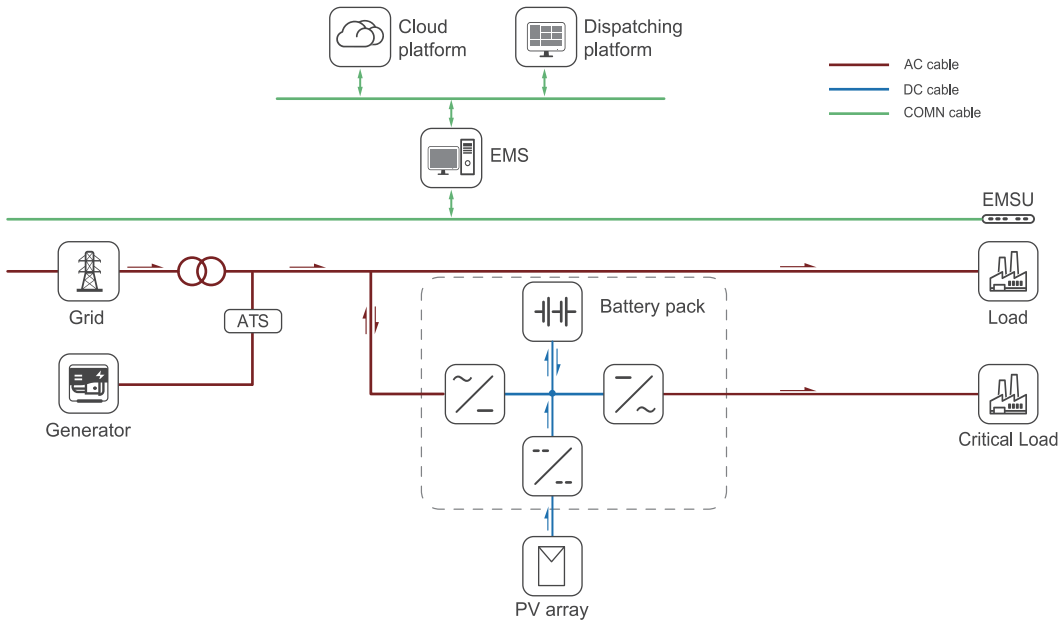
* Online UPS * 0 ms transfer time * Green energy priority



• Overview

The On Line BESS is a zero-interruption smart energy system designed for scenarios with extremely high demands on power supply continuity (such as precision manufacturing, critical medical departments, and core communication center). Its core innovation lies in its "online" structure, where PV and energy storage systems operate continuously as the primary power source, while the grid and diesel generators serve as backup power. Through real-time control of the power electronic conversion system, it achieves true zero-uninterrupted switching during grid fluctuations, momentary outages, or failures, completely eliminating the risk of power interruptions. The "online" design physically eliminates switching time; regardless of any disturbances in the external power grid, the voltage and frequency on the load side remain stable, providing the highest level of protection for critical equipment, like a "power safe box". The system prioritizes solar and energy storage as the primary power sources, maximizing the utilization of green electricity and achieving peak shaving and valley filling. The diesel generator is used only as a backup, significantly reducing its operating time and fuel consumption, thus ensuring reliability while substantially lowering energy costs and carbon emissions. The pv-ess-diesel on-line system redefines the power supply standards for critical loads, upgrading the traditional "backup power" concept to an active energy assurance system that is "permanently online and always stable." It is a high-end energy option that perfectly combines high reliability, high economic efficiency, and high sustainability.

• System Topology



Applicable Equipment:



Distribution Cabinet

+



BESS-L 100D-217-120



BESS-L 125D-271-120

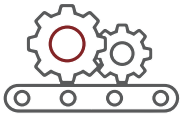
• Applications



Back Up



Diesel-Electric Hybrid System



High-precision Sensitive Load



High-Power Portable Power Station

iCOOL BESS

On Line BESS

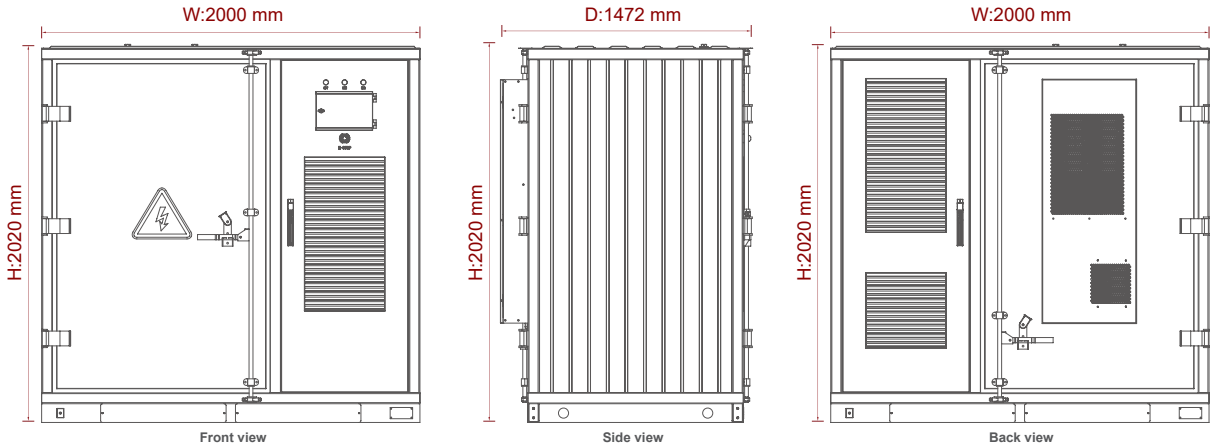
BESS-L 100D-217-120



• Features

- Status Indication: Shows system status, including load, storage capacity, and power.
- Multi-Mode Operation: Supports multi-level priority control for reliable power from PV,energy storage,grid,diesel generators and loads.
- Battery Management: Integrated BMS for battery monitoring and protection.
- Remote Monitoring: Multi-end remote access via self-service platform and device-side protocols.
- Easy Installation: IP54 cabinet with flexible installation options.

• Product Dimensions



• Technical Parameter

BESS-L 100D-217-120			
Battery			
Battery Type	LFP(LiFePO4)		
Battery Capacity	314Ah		
Configuration	1P 216S		
Rated Voltage	691.2V		
Voltage Range	604.8V~766.8V		
Nominal Capacity	217.03kWh		
Max. Continuous Charge/Discharge Current	157A		
Depth of Discharge	100% DOD (90% Recommended)		
AC Side (On-grid)			
Rated Power	35kW	52kW	100kW
AC Rated Voltage	2P /N/PE	3P/N/PE、3P/PE	
	120V/240V	208V/220V/240V	380V/400V/415V
Rated Current	145A		
Grid Frequncy	50Hz/47Hz~52Hz(60Hz/57Hz~62Hz)		
THDi	<3% （>30% load)		
PF	-1~1		
AC Side (Off-grid)			
Rated Power	35kW	52kW	100kW
Max. Output Power	38kW	57kW	110kW
AC Rated Voltage	2P /N/PE	3P/N/PE、3P/PE	
	120V/240V	208V/220V/240V	380V/400V/415V
Rated Current	145A		
AC Maximum Current	160A		
THDu	<3%(Resistive Load)		
Unbalance Load Capacity	100%		
Frequncy	50/60Hz		
PV			
Max. Input Power	120kW		
Max. Voltage	900V		
Input Voltage Range	200V~850V		
Max. Input Current	50A*4		
Start-up Voltage	250V		
System			
Parallel	Max 20 PCS		
Backup Switching Time	0 ms		
Dimension(W*D*H)	2000*1472*2020mm		
Weight(kg)	< 2900kg		
Noise	≤75dB		
Ingress Protection Rating	IP54		
Operating Temperature	-30~60°C		
Operating Humidity	5%RH~95%RH(No Condensation)		
Max. Operating Altitude	4000m(>2000m Derating)		
Thermal Management Method	Dry Self-Cooling		
Fire Protection	Aerosol		
Communication Port	CAN/RS485/Ethernet/4G		
Certifications	IEC 61000-2/-4; IEC 62109; IEC 62619; UN38.3; EN 50549-1		

iCOOL BESS

On Line BESS

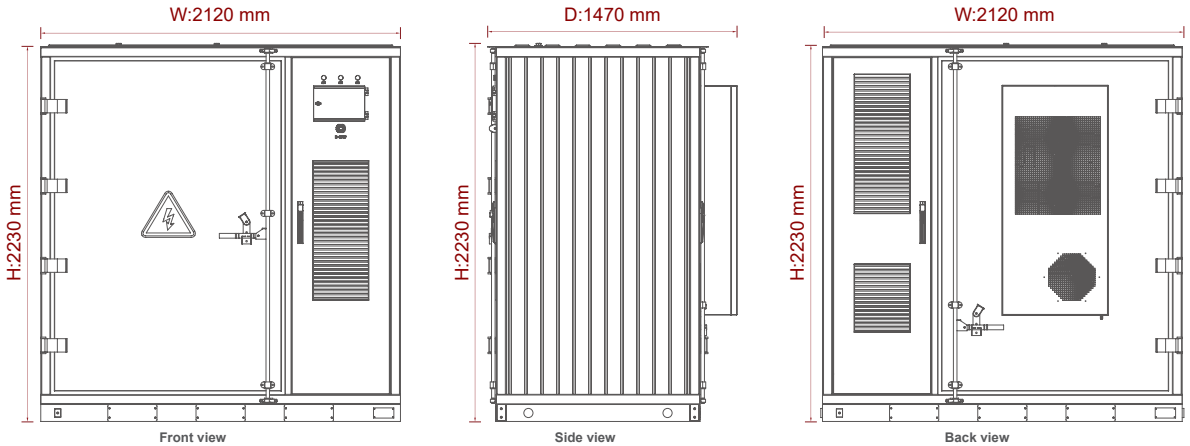
BESS-L 125D-271-120



• Features

- Status Indication: Shows system status, including load, storage capacity, and power.
- Multi-Mode Operation: Supports multi-level priority control for reliable power from PV,energy storage,grid,diesel generators and loads.
- Battery Management: Integrated BMS for battery monitoring and protection.
- Remote Monitoring: Multi-end remote access via self-service platform and device-side protocols.
- Easy Installation: IP54 cabinet with flexible installation options.

• Product Dimensions



• Technical Parameter

BESS-L 125D-271-240(120)			
Battery			
Battery Type	LFP(LiFePO4)		
Battery Capacity	314Ah		
Configuration	1P 270S		
Rated Voltage	864V		
Voltage Range	756V~950V		
Nominal Capacity	271kWh		
Max. Continuous Charge/Discharge Current	157A		
Depth of Discharge	100% DOD (90% Recommended)		
AC Side (On-grid)			
Rated Power	125kW	137.5kW	150kW
AC Rated Voltage	3P/N/PE、3P/PE		
	380V/400V	440V/460V	480V
Rated Current	181A		
Grid Frequncy	50Hz/47Hz~52Hz(60Hz/57Hz~62Hz)		
THDi	<3% (>30% load)		
PF	-1~1		
AC Side (Off-grid)			
Rated Power	125kW	137.5kW	150kW
Max. Output Power	137.5kW	151.1kW	165kW
AC Rated Voltage	3P/N/PE、3P/PE		
	380V/400V	440V/460V	480V
Rated Current	181A		
AC Maximum Current	200A		
THDu	<3%(Resistive Load)		
Unbalance Load Capacity	100%		
Frequncy	50/60Hz		
PV			
Max. Input Power	120kW		
Max. Voltage	900V		
Input Voltage Range	200V~850V		
Max. Input Current	50A*4		
Start-up Voltage	250V		
System			
Parallel	Max 20 PCS		
Backup Switching Time	0 ms		
Dimension(W*D*H)	2120*1470*2230mm		
Weight(kg)	3210kg		
Noise	≤75dB		
Ingress Protection Rating	IP54		
Operating Temperature	-30~60°C		
Operating Humidity	5%RH~95%RH(No Condensation)		
Max. Operating Altitude	4000m(>2000m Derating)		
Thermal Management Method	Dry Self-Cooling		
Fire Protection	Aerosol		
Communication Port	CAN/RS485/Ethernet/4G		
Certifications	IEC 61000-2/-4; IEC 62109; IEC 62619; UN38.3; EN 50549-1		

HYBRID AIO BESS

* Triple-layer protection * Intelligent dispatching * Black start * Off-grid independent Operation (STS)



• Overview

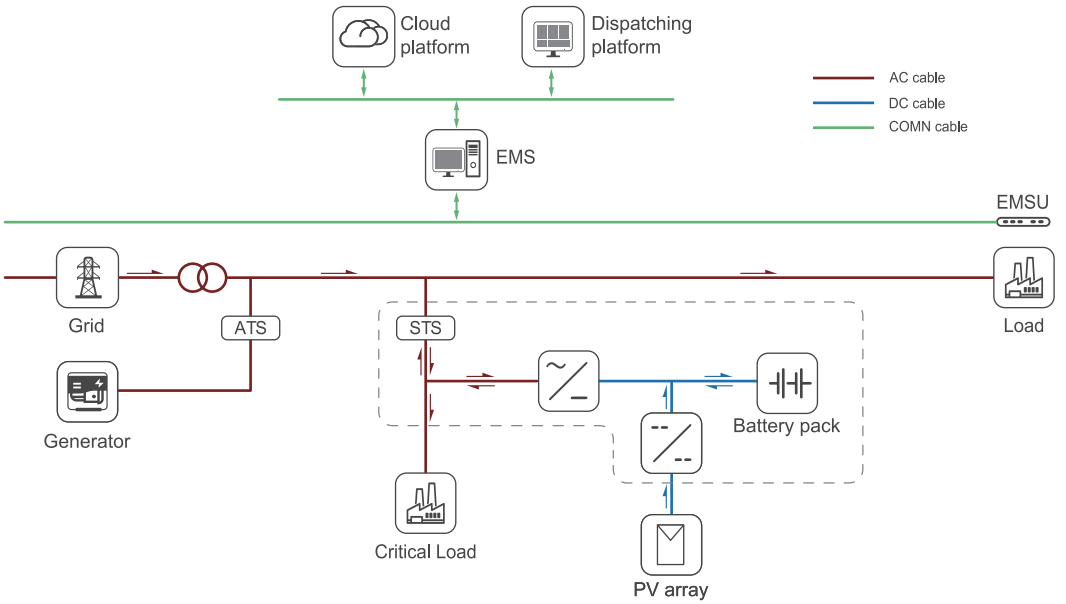
The Hybrid AIO BESS is a highly integrated smart energy solution that deeply combines PV power, energy storage, diesel generator backup, and smart grid interaction capabilities. Through the integration of hardware (including energy storage batteries, PCS, MPPT, and STS) and intelligent energy management software, the system enables dual operational modes: "on-grid for energy savings and off-grid for backup power."

It establishes a 3-tier power supply structure prioritizing solar energy, buffered by storage, and backed up by diesel generation. In the event of grid anomalies, the system achieves seamless transition to off-grid microgrid operation within 10 milliseconds, ensuring zero-interruption power supply for critical loads, making it especially suitable for scenarios with extremely high requirements for power continuity.

When connected to the grid, the system prioritizes solar power, uses stored energy to shave peak loads, and keeps the generator as a last-resort backup, enhancing efficiency and cutting costs. When operating independently off-grid, it intelligently coordinates solar generation, battery storage, and the generator to optimally distribute energy, significantly saving fuel and reducing operational expenses.

The system supports 3 modes: on-grid, off-grid, and seamless switching, enabling participation in grid interactions or operation as an independent microgrid. This significantly enhances energy autonomy and disaster resilience. Its integrated design greatly simplifies installation and commissioning, reduces coordination costs and operational complexity, making it suitable for various scenarios such as remote areas, base stations, factories, and islands.

• System Topology



Applicable Equipment:



BESS
30-72-75



BESS
60-126-75



BESS
100-217-120

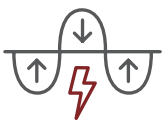


BESS
125-271-240

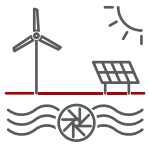
• Applications



Back Up



Peak Shaving



Self-Consumption



Micro-Grid

MICROGRID BESS

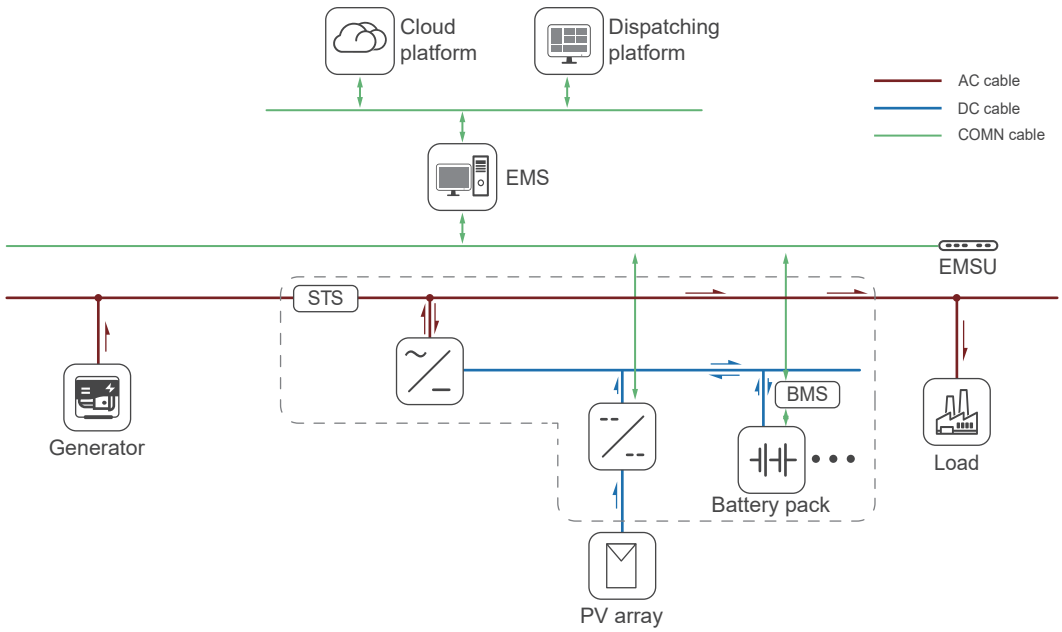
* Self-consumption * Off-grid independent operation



• Overview

In off-grid scenarios without a city power, the PV-ESS-Diesel microgrid System plays a core role as an "autonomous, reliable, and efficient lifeline energy system." Solar power is prioritized for supply, energy storage provides real-time frequency and voltage regulation and power smoothing, and the diesel generator acts as a stable backup, forming a tiered "solar + battery + diesel generator" guarantee system to ensure the long-term stable operation of the microgrid. Through an intelligent energy management system (EMS), solar power generation is prioritized, energy storage implements "daytime storage and nighttime release," minimizing diesel generator startup time, reducing fuel dependence, and lowering transportation and maintenance costs. The energy storage system can handle short-term load fluctuations, allowing the diesel generator to operate in an efficient and stable range for extended periods, improving fuel efficiency, extending equipment lifespan, and reducing maintenance frequency. The energy storage system can instantly balance load fluctuations, suppressing frequency and voltage oscillations caused by equipment startup and shutdown and renewable energy fluctuations, providing grid-like stable power quality. Through multi-energy complementarity and intelligent control, the system can cope with challenges such as extreme weather and sudden load changes, ensuring uninterrupted operation of critical loads. It upgrades the traditional single-diesel power generation model to a "smart, collaborative, and multi-energy complementary" microgrid system, achieving breakthroughs in reliability, economics, and environmental protection. It is the ultimate solution for achieving modern and reliable power supply in off-grid areas, and a key energy infrastructure for promoting development, improving livelihoods, and protecting the ecological environment in remote areas.

• System Topology



Applicable Equipment:



UPV-S Three Phase
Solar+Storage Hybrid Inverters

+



iCOOL BESS

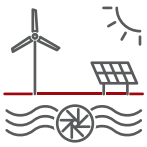


Hybrid AIO BESS

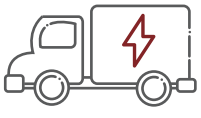
• Applications



Micro-Grid



Self-Consumption



High-Power
Portable Power Station

iCOOL BESS

Hybrid AIO BESS

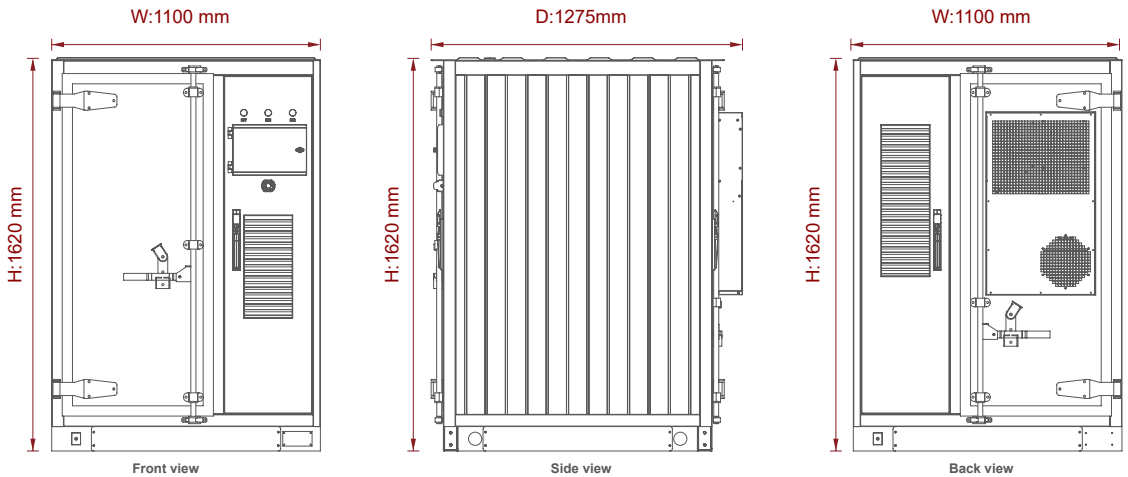
BESS 30-72-75



• Features

- All-in-one design with a high degree of integration.
- Modular design with optional modules of different sizes.
- Support for grid-connected and off-grid operation.
- MPPT Solar controller available as an option.
- IP54 class fire and explosion-proof housing.
- Patented air duct design, Dry Self-Cooling, 3-5°C temperature difference of the battery cell.

• Product Dimensions



• Technical Parameter

BESS 30-72-75			
Battery			
Battery Type	LFP(LiFePO4)		
Battery Capacity	314Ah		
Configuration	1P 72S		
Rated Voltage	230V		
Voltage Range	200V~255V		
Nominal Capacity	72kWh		
Max. Continuous Charge/Discharge Current	157A		
Depth of Discharge	100% DOD (90% Recommended)		
AC Side (On-grid)			
Rated Power	10kW	15kW	30kW
AC Rated Voltage	2P /N/PE	3P/N/PE、3P/PE	
	120V/240V	208V/220V/240V	380V/400V/415V
Rated Current	43.5A		
Grid Frequncy	50Hz/47Hz~52Hz(60Hz/57Hz~62Hz)		
THDi	<3% （>30% load）		
PF	-1~1		
AC Side (Off-grid)			
Rated Power	10kW	15kW	30kW
Max. Output Power	11.5kW	16.5kW	33kW
AC Rated Voltage	2P /N/PE	3P/N/PE、3P/PE	
	120V/240V	208V/220V/240V	380V/400V/415V
Rated Current	43.5A		
AC Maximum Current	47.9A		
THDu	<3%(Resistive Load)		
Unbalance Load Capacity	100%		
Frequncy	50/60Hz		
PV			
Max. Input Power	38.4KW+38.4KW		
Max. Voltage	850V		
Input Voltage Range	200V~800V		
Max. Input Current	64A+64A		
Start-up Voltage	250V		
System			
Parallel	Max 5 PCS		
Backup Switching Time	≤10 ms		
Dimension(W*D*H)	1100*1275*1620mm		
Weight(kg)	1088kg		
Noise	≤75dB		
Ingress Protection Rating	IP54		
Operating Temperature	-30~60°C		
Operating Humidity	5%RH~95%RH(No Condensation)		
Max. Operating Altitude	4000m(>2000m Derating)		
Thermal Management Method	Dry Self-Cooling		
Fire Protection	Aerosol		
Communication Port	CAN/RS485/Ethernet/4G		
Certifications	IEC 61000-2/-4; IEC 62109; IEC 62619; UN38.3; EN 50549-1		

iCOOL BESS

Hybrid AIO BESS

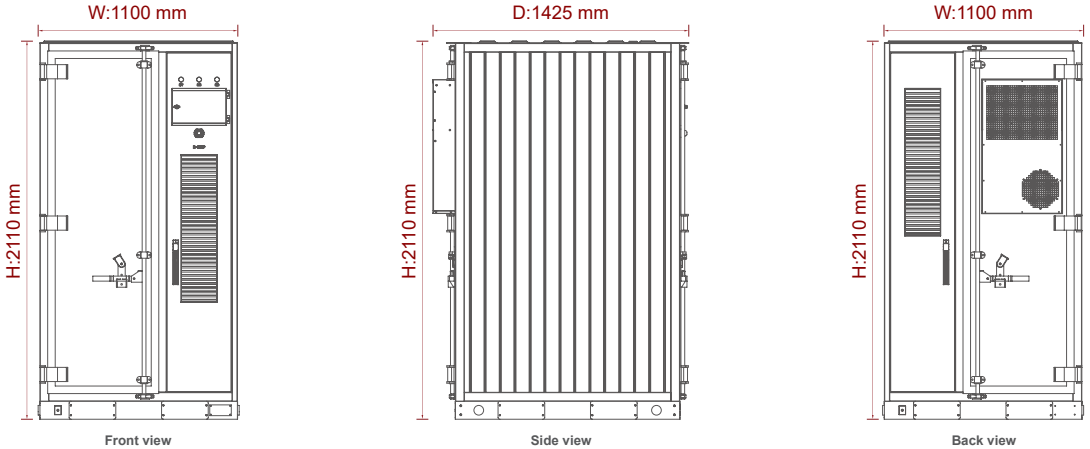
BESS 60-126-75



• Features

- All-in-one design with a high degree of integration.
- Modular design with optional modules of different sizes.
- Support for grid-connected and off-grid operation.
- MPPT Solar controller available as an option.
- IP54 class fire and explosion-proof housing.
- Patented air duct design, Dry Self-Cooling, 3-5°C temperature difference of the battery cell.

• Product Dimensions



• Technical Parameter

BESS 60-126-75			
Battery			
Battery Type	LFP(LiFePO4)		
Battery Capacity	314Ah		
Configuration	1P 126S		
Rated Voltage	403V		
Voltage Range	352.8V~447.3V		
Nominal Capacity	126.6kWh		
Max. Continuous Charge/Discharge Current	157A		
Depth of Discharge	100% DOD (90% Recommended)		
AC Side (On-grid)			
Rated Power	21kW	31kW	60kW
AC Rated Voltage	2P /N/PE	3P/N/PE、3P/PE	
	120V/240V	208V/220V/240V	380V/400V/415V
Rated Current	87A		
Grid Frequncy	50Hz/47Hz~52Hz(60Hz/57Hz~62Hz)		
THDi	<3% （>30% load)		
PF	-1~1		
AC Side (Off-grid)			
Rated Power	21kW	31kW	60kW
Max. Output Power	23kW	34kW	66kW
AC Rated Voltage	2P /N/PE	3P/N/PE、3P/PE	
	120V/240V	208V/220V/240V	380V/400V/415V
Rated Current	87A		
AC Maximum Current	95.7A		
THDu	<3%(Resistive Load)		
Unbalance Load Capacity	100%		
Frequncy	50/60Hz		
PV			
Max. Input Power	38.4KW+38.4KW		
Max. Voltage	850V		
Input Voltage Range	200V~800V		
Max. Input Current	64A+64A		
Start-up Voltage	250V		
System			
Parallel	Max 5 PCS		
Backup Switching Time	≤10 ms		
Dimension(W*D*H)	1100*1425*2110mm		
Weight(kg)	1620kg		
Noise	≤75dB		
Ingress Protection Rating	IP54		
Operating Temperature	-30~60°C		
Operating Humidity	5%RH~95%RH(No Condensation)		
Max. Operating Altitude	4000m(>2000m Derating)		
Thermal Management Method	Dry Self-Cooling		
Fire Protection	Aerosol		
Communication Port	CAN/RS485/Ethernet/4G		
Certifications	IEC 61000-2/-4; IEC 62109; IEC 62619; UN38.3; EN 50549-1		

iCOOL BESS

Hybrid AIO BESS

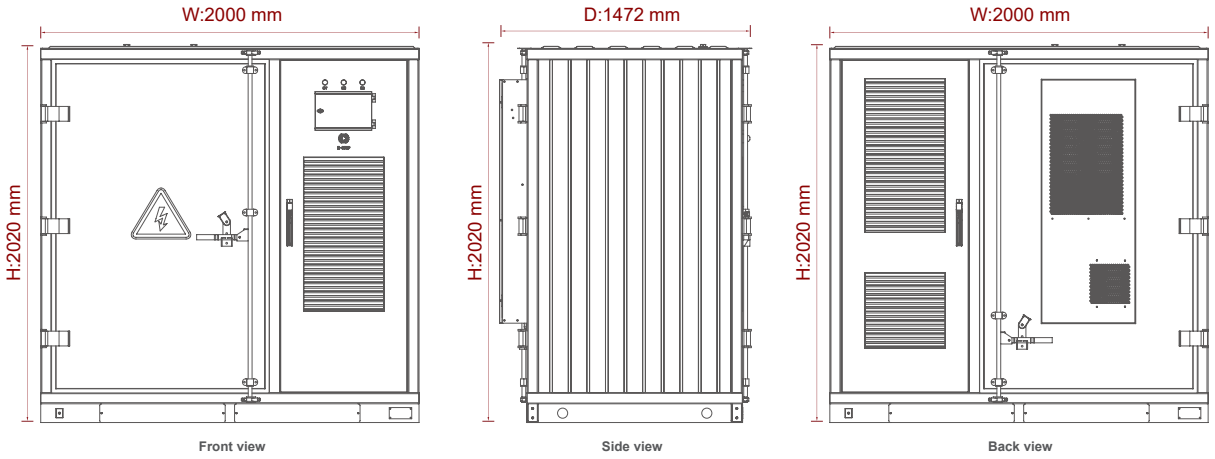
BESS 100-217-120



• Features

- All-in-one design with a high degree of integration.
- Modular design with optional modules of different sizes.
- Support for grid-connected and off-grid operation.
- MPPT Solar controller available as an option.
- IP54 class fire and explosion-proof housing.
- Patented air duct design, Dry Self-Cooling, 3-5°C temperature difference of the battery cell.

• Product Dimensions



• Technical Parameter

BESS 100-217-120			
Battery			
Battery Type	LFP(LiFePO4)		
Battery Capacity	314Ah		
Configuration	1P 216S		
Rated Voltage	691.2V		
Voltage Range	604.8V~766.8V		
Nominal Capacity	217.03kWh		
Max. Continuous Charge/Discharge Current	157A		
Depth of Discharge	100% DOD (90% Recommended)		
AC Side (On-grid)			
Rated Power	35kW	52kW	100kW
AC Rated Voltage	2P /N/PE	3P/N/PE、3P/PE	
	120V/240V	208V/220V/240V	380V/400V/415V
Rated Current	145A		
Grid Frequncy	50Hz/47Hz~52Hz(60Hz/57Hz~62Hz)		
THDi	<3% （>30% load）		
PF	-1~1		
AC Side (Off-grid)			
Rated Power	35kW	52kW	100kW
Max. Output Power	38kW	57kW	110kW
AC Rated Voltage	2P /N/PE	3P/N/PE、3P/PE	
	120V/240V	208V/220V/240V	380V/400V/415V
Rated Current	145A		
AC Maximum Current	160A		
THDu	<3%(Resistive Load)		
Unbalance Load Capacity	100%		
Frequncy	50/60Hz		
PV			
Max. Input Power	120kW		
Max. Voltage	900V		
Input Voltage Range	200V~850V		
Max. Input Current	50A*4		
Start-up Voltage	250V		
System			
Parallel	Max 5 PCS		
Backup Switching Time	≤10 ms		
Dimension(W*D*H)	2000*1472*2020mm		
Weight(kg)	< 2900kg		
Noise	≤75dB		
Ingress Protection Rating	IP54		
Operating Temperature	-30~60°C		
Operating Humidity	5%RH~95%RH(No Condensation)		
Max. Operating Altitude	4000m(>2000m Derating)		
Thermal Management Method	Dry Self-Cooling		
Fire Protection	Aerosol		
Communication Port	CAN/RS485/Ethernet/4G		
Certifications	IEC 61000-2/-4; IEC 62109; IEC 62619; UN38.3; EN 50549-1		

iCOOL BESS

Hybrid AIO BESS

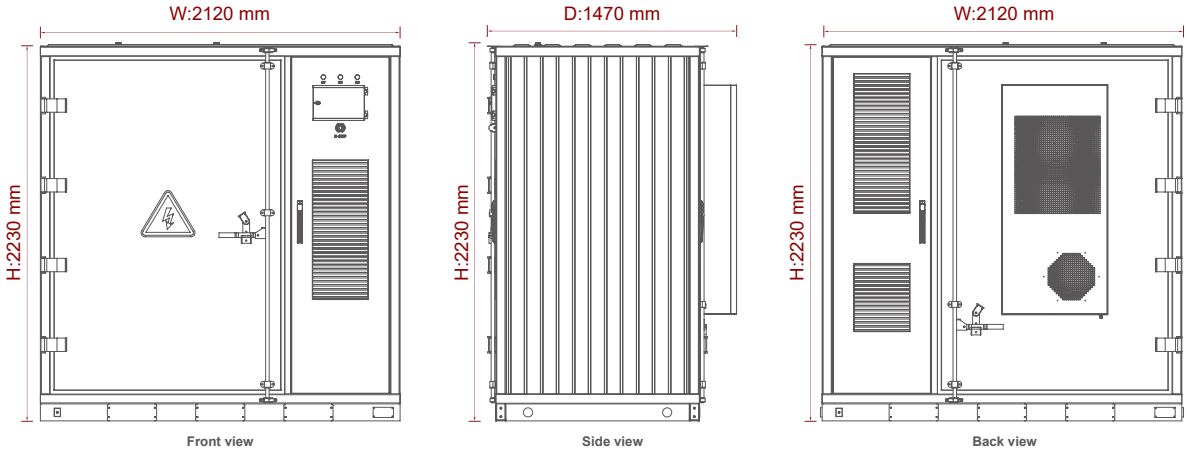
BESS 125-271-240（120）



• Features

- All-in-one design with a high degree of integration.
- Modular design with optional modules of different sizes.
- Support for grid-connected and off-grid operation.
- MPPT Solar controller available as an option.
- IP54 class fire and explosion-proof housing.
- Patented air duct design, Dry Self-Cooling, 3-5°C temperature difference of the battery cell.

• Product Dimensions



• Technical Parameter

BESS 125-271-240(120)			
Battery			
Battery Type	LFP(LiFePO4)		
Battery Capacity	314Ah		
Configuration	1P 270S		
Rated Voltage	864V		
Voltage Range	756V~950V		
Nominal Capacity	271kWh		
Max. Continuous Charge/Discharge Current	157A		
Depth of Discharge	100% DOD (90% Recommended)		
AC Side (On-grid)			
Rated Power	125kW	137.5kW	150kW
AC Rated Voltage	3P/N/PE、3P/PE		
	380V/400V	440V/460V	480V
Rated Current	181A		
Grid Frequncy	50Hz/47Hz~52Hz(60Hz/57Hz~62Hz)		
THDi	<3% (>30% load)		
PF	-1~1		
AC Side (Off-grid)			
Rated Power	125kW	137.5kW	150kW
Max. Output Power	137.5kW	151.1kW	165kW
AC Rated Voltage	3P/N/PE、3P/PE		
	380V/400V	440V/460V	480V
Rated Current	181A		
AC Maximum Current	200A		
THDu	<3%(Resistive Load)		
Unbalance Load Capacity	100%		
Frequncy	50/60Hz		
PV			
Max. Input Power	240kW(120kW*2)		
Max. Voltage	900V		
Input Voltage Range	200V~850V		
Max. Input Current	50A*4*2		
Start-up Voltage	250V		
System			
Parallel	Max 5 PCS		
Backup Switching Time	≤10 ms		
Dimension(W*D*H)	2120*1470*2230mm		
Weight(kg)	3210kg		
Noise	≤75dB		
Ingress Protection Rating	IP54		
Operating Temperature	-30~60°C		
Operating Humidity	5%RH~95%RH(No Condensation)		
Max. Operating Altitude	4000m(>2000m Derating)		
Thermal Management Method	Dry Self-Cooling		
Fire Protection	Aerosol		
Communication Port	CAN/RS485/Ethernet/4G		
Certifications	IEC 61000-2/-4; IEC 62109; IEC 62619; CEI-016/021; UN38.3; EN 50549-1		

UPV-S

Three Phase Solar+Storage Hybrid Inverters



• Features

- **Operating Status Indication**: Integrated energy storage system working status, transformer-area load, energy storage capacity, power metrics.
- **Multi-Modal Operation**: Enables multi-priority management for grid, PV and load power supply, ensuring reliability across all modes.
- **Battery Pack Management**: Incorporates a BMS for comprehensive monitoring of cell and protection.
- **Remote Monitoring & Control**: Supports self-service platform monitoring and protocol integration for multi-terminal remote access.
- **Easy Installation**: IP54-rated cabinet for dust/water resistance; flexible deployment in diverse environments.

• Technical Parameter

UPV-S 1500kW Three Phase Solar+Storage Hybrid Inverters	
DC Side	
Max. Battery Voltage	950V
Min. Battery Voltage	650V
Rated Battery Voltage Range	680V~900V
Max. Battery Current	200A*12
AC Side (On-grid)	
Rated Power	125kW*12
AC Rated Voltage	3P/N/PE, 230 V / 400 V
Rated Current	181A*12
Grid Frequncy	50Hz/47Hz~52Hz (60Hz/57Hz~62Hz)
THDi	<3% (>30% Load)
PF	-1~1
AC Side (Off-grid)	
Rated Power	125kW*12
Max. Output Power	137.5kW*12
AC Rated Voltage	3P/N/PE, 230 V / 400 V
Rated Current	181A*12
AC Maximum Current	200A*12
THDu	<3% (Resistive Load)
Unbalance Load Capacity	100%
Frequncy	50Hz/60Hz
STS	
Rated Power	600kVA*3
AC Rated Voltage	400V/230V (-20%~15%)
Frequency	50Hz/60Hz (±5Hz)
Max. AC Current	870A*3
PV	
Max. Input Power	120kW*6
Max. Voltage	900V
Input Voltage Range	200V-850V
Max. Input Current	50A*4*6
Start-up Voltage	250V
System	
Backup Switching Time	≤10 ms
Dimension(W*D*H)	3000*1267*2400mm
Weight(kg)	2660kg
Noise	≤75dB
Ingress Protection Rating	IP54
Operating Temperature	-30~60°C
Operating Humidity	5%RH~95%RH(No Condensation)
Max. Operating Altitude	4000m(>2000m derating)
Thermal Management Method	Dry Self-Cooling
Communication Port	CAN/RS485/Ethernet/4G
Certifications	IEC 61000-2/-4; IEC 62109; EN 50549-1

iCOOL BESS

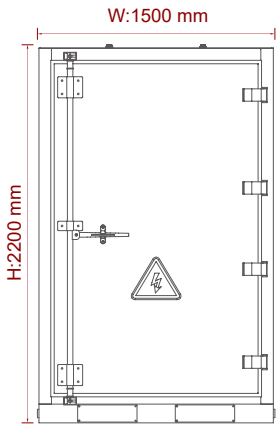
iCOOL BESS 215kWh/271kWh



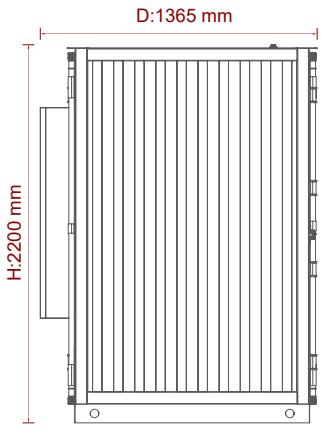
• Features

- Multi-level BMS built-in.
- IP55 fire and explosion proof cabinet.
- Scalable in power and capacity.
- Easy for on site installation.
- Fire proof devices in each modular and in the cabinet.

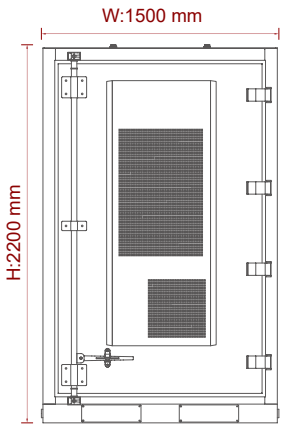
• Product Dimensions



Front view



Side view



Back view

• Technical Parameter

iCOOL BESS 215KWh/271KWh		
Battery		
Battery Type	LFP(LiFePO4)	
Battery Capacity	280Ah	314Ah
Configuration	1P 240S	1P 280S
Rated Voltage	768V	864V
Voltage Range	672V~852V	756V~958.5V
Nominal Capacity	215 kWh	271kWh
System Charge/Discharge Rate	0.6P	0.5P
No. of Cycles	8000 cycles(70%SOH)	
Depth of Discharge	100% DOD (90% Recommended)	
Protection		
DC Input/Output	Disconnect switches+fuses	
Electrical Isolation	Inter - module controlled protection breakout	
Fire Protection	Two-stage aerosol fire module + Smoke sensors + Enclosure explosion - proof pressure relief device	
System		
Communication	RS485/CAN/LAN/4G	
Communication Protocols	ModBusTCP/CAN	
Dimension(W*D*H)	1500*1775*2400mm	
Weight(kg)	3100kg	3200kg
Noise	≤65dB	
Ingress Protection Rating	IP55	
Storage Temperature	-20~55°C (1 Month); 0~35°C(6 Months)	
Operating Temperature	-30~60°C	
Operating Humidity	5%RH~95%RH(No Condensation)	
Max. Operating Altitude	4000m(>2000m Derating)	
Thermal Management Method	Dry Self-Cooling	
Communication Port	CAN/RS485/Ethernet/4G	
Certifications	IEC 61000-6-2/-4;IEC 62477-1;IEC 62619;UN38.3	

iCOOL BESS

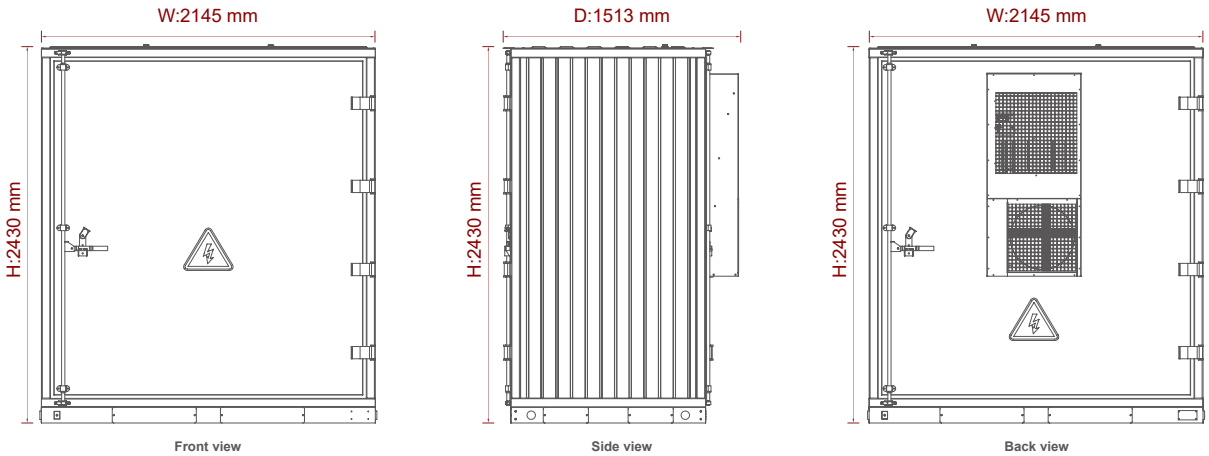
iCOOL BESS 488kWh



• Features

- Multi-level BMS built-in.
- IP55 fire and explosion proof cabinet.
- Scalable in power and capacity.
- Easy for on site installation.
- Fire proof devices in each modular and in the cabinet.

• Product Dimensions



• Technical Parameter

iCOOL BESS 488kWh	
Battery	
Battery Type	LFP(LiFePO4)
Battery Capacity	628Ah
Configuration	2P 243S
Rated Voltage	777V
Voltage Range	680V~870V
Nominal Capacity	488kWh
System Charge/Discharge Rate	0.25P
No. of Cycles	8000 cycles(70%SOH)
Depth of Discharge	100% DOD (90% Recommended)
Protection	
DC Input/Output	Disconnect switches+fuses
Electrical Isolation	Inter - module controlled protection breakout
Fire Protection	Two-stage aerosol fire module + Smoke sensors + Enclosure explosion - proof pressure relief device
System	
Communication	RS485/CAN/LAN/4G
Communication Protocols	ModBusTCP/CAN
Dimension(W*D*H)	2145*1513*2430mm
Weight(kg)	4800kg
Noise	≤65dB
Ingress Protection Rating	IP55
Storage Temperature	-20~55°C (1 Month); 0~35°C(6 Months)
Operating Temperature	-30~60°C
Operating Humidity	5%RH~95%RH(No Condensation)
Max. Operating Altitude	4000m(>2000m Derating)
Thermal Management Method	Dry Self-Cooling
Communication Port	CAN/RS485/Ethernet/4G
Certifications	IEC 61000-6-2/-4;IEC 62477-1;IEC 62619;UN38.3

560W-600W Solar Panel

Bifacial Monocrystalline Module



• Features

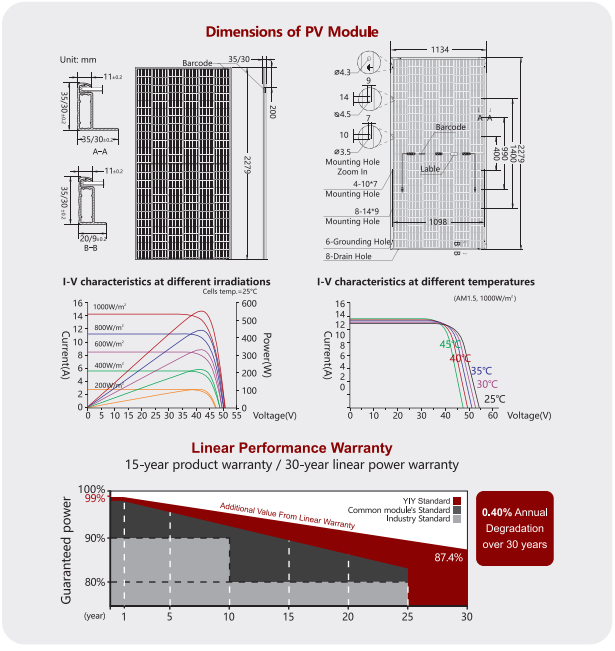
- Higher Power Output
- Multi Busbar Technology
- PID Resistance
- Low-light Performance
- Durability Against Extreme Environmental Conditions
- EL Full Inspection

• Technical Parameter

Specifications(BNPI)

Rated Power in Watts-Pmax(Wp)	619.1	624.9	629.9	635.3	641.1	647.0	652.5	658.8	665.2
Open Circuit Voltage-Voc(V)	52.65	52.81	52.97	53.13	53.29	53.45	53.61	53.77	53.93
Short Circuit Current-Isc(A)	14.81	14.91	14.98	15.05	15.13	15.21	15.28	15.34	15.41
Max. Power Voltage-Vmpp(V)	44.32	44.46	44.59	44.81	45.04	45.26	45.48	45.70	45.92
Max. Power Current-Impp(A)	13.97	14.06	14.13	14.18	14.24	14.30	14.35	14.42	14.49
Power Tolerance	0~+3%								
Operating Temperature	-40°C~85°C								

*BNPI: Irradiance: front 1000W/m², rear 135W/m², Cell Temperature 25°C, AM=1.5



Electrical Characteristics (STC*)

Rated Power in Watts-Pmax(Wp)	560	560	570	575	580	585	590	595	600
Open Circuit Voltage-Voc(V)	52.45	52.45	52.77	52.93	53.09	53.26	53.41	53.57	53.73
Short Circuit Current-Isc(A)	13.47	13.47	13.62	13.69	13.76	13.83	13.89	13.95	14.01
Max. Power Voltage-Vmpp(V)	44.12	44.12	44.39	44.61	44.84	45.06	45.28	45.50	45.72
Max. Power Current-Impp(A)	12.71	12.71	12.85	12.90	12.95	13.00	13.06	13.12	13.18
Module Efficiency(%)	21.67	21.67	22.06	22.25	22.44	22.6	22.8	23.02	23.22
Maximum System Voltage	1500V DC								
Fuse Rating(A)	30								
Temperature Coefficient Pmax	-0.29%/°C								
Temperature Coefficient Isc	0.045%/°C								
Temperature Coefficient Voc	-0.25%/°C								
Refer. Bifacial Factor	ΦIsc=80%±10%,ΦVoc=100%±3%,ΦPmax=80%±10%								

*STC: Irradiance 1000W/m², module temperature 25°C , AM=1.5

Mechanical Characteristics

Number of Cells	144pcs
Type of Cell	N-TOPCon Mono
Thickness of Glass(mm)	2.0
Type of Frame	Anodized Aluminum Alloy
Size of Module(mm)	2279×1134×30
Weight(kg)	32
Junction Box	IP68, 1500V DC, 3 Diodes
Cables/Connectors	4.0mm², MC4 compatible
Length of Cable	+300mm/-200mm Length can be customized(connector included)

Packaging Configuration

Height of Modules (mm)	35	30
Number of Modules Per Pallet	31	36
Packaging Box Dimensions (l×w×h) (mm)	2300×1120×1260	2300×1120×1260
Box Gross Weight (kg)	1020	1180
Number of Modules Per 40ft (HQ) Container	620	720
Number of Pallets Per 40ft (HQ) Container	20	20

600W-630W Solar Panel

Bifacial Monocrystalline Module



• Features

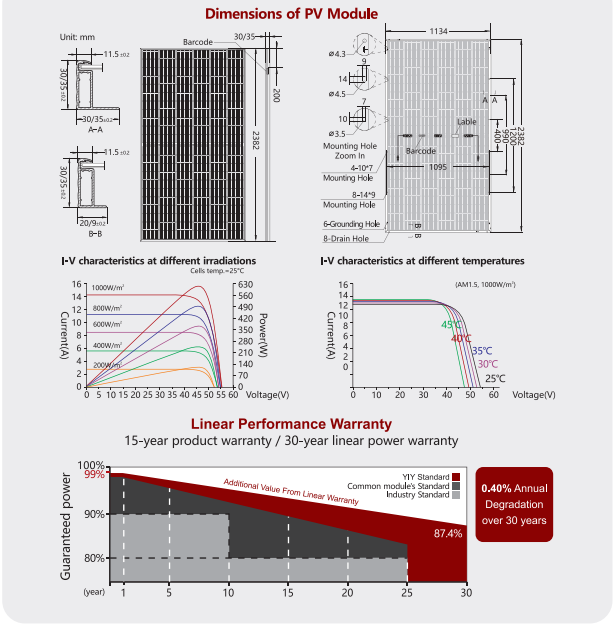
- Higher Power Output
- Multi Busbar Technology
- PID Resistance
- Low-light Performance
- Durability Against Extreme Environmental Conditions
- EL Full Inspection

• Technical Parameter

Electrical Characteristics (STC*)

Rated Power In Watts-Pmax(Wp)	600	605	610	615	620	625	630
Open Circuit Voltage-Voc(V)	48.40	48.70	49.00	49.30	49.60	49.80	50.30
Short Circuit Current-Isc(A)	15.80	15.83	15.86	15.89	15.91	15.93	15.94
Max. Power Voltage-Vmpp(V)	40.30	40.50	40.80	41.10	41.40	41.60	42.00
Max. Power Current-Impp(A)	14.91	14.94	14.96	14.98	14.99	15.00	15.01
Module Efficiency(%)	22.20	22.40	22.60	22.80	23.00	23.10	23.32
Maximum System Voltage	1500V DC						
Fuse Rating(A)	30						
Temperature Coefficient Pmax	-0.30%/°C						
Temperature Coefficient Isc	0.046%/°C						
Temperature Coefficient Voc	-0.25%/°C						
Refer. Bifacial Factor	80±5%						

*STC: Irradiance 1000W/m², module temperature 25°C , AM=1.5



Working Characteristics (NOCT*)

Rated Power In Watts-Pmax(Wp)	457	461	465	469	473
Open Circuit Voltage-Voc(V)	37.75	37.92	38.09	38.26	38.44
Short Circuit Current-Isc(A)	12.11	12.16	12.21	12.26	12.31
Max. Power Voltage-Vmpp(V)	46.03	46.22	46.41	46.60	46.70
Max. Power Current-Impp(A)	12.86	12.92	12.98	13.04	13.10
Power Tolerance	0~+3%				
NOCT	45°C ±2°C				
Operating Temperature	-40°C ~85°C				

*NOCT: Irradiance 800W/m², ambient temperature 20°C , wind speed 1m/s

Electrical characteristics with different rear side power gain

	Pmax/W	Voc/V	Isc/A	Vmpp/V	Impp/A
5%	661	50.30	16.74	42.00	15.76
10%	693	50.30	17.53	42.00	16.51

The additional gain from the rear side compared to the power of the front side at the standard test condition.
It depends on mounting (structure, height, tilt angle etc.) and albedo of the ground.

Mechanical Characteristics

Number of Cells	132pcs
Type of Cell	N-TOPCon Mono
Thickness of Glass(mm)	2.0
Type of Frame	Anodized Aluminum Alloy
Size of Module(mm)	2382×1134×35/30
Weight(kg)	33
Junction Box	IP68, 1500V DC 3 Diodes;Cables/connectors; 4.0mm², MC4 compatible
Length of Cable	+300mm/-200mm Length can be customized(connector included)

Packaging Configuration

Height of Modules (mm)	35	30
Number of Modules Per Pallet	31	36
Packaging Box Dimensions (l×w×h) (mm)	2485×1120×1260	1260×1120×2595
Box Gross Weight (kg)	955	1225
Number of Modules Per 40ft (HQ) Container	496	720
Number of Pallets Per 40ft (HQ) Container	20	20

685W-730W Solar Panel

Bifacial Monocrystalline Module



• Features

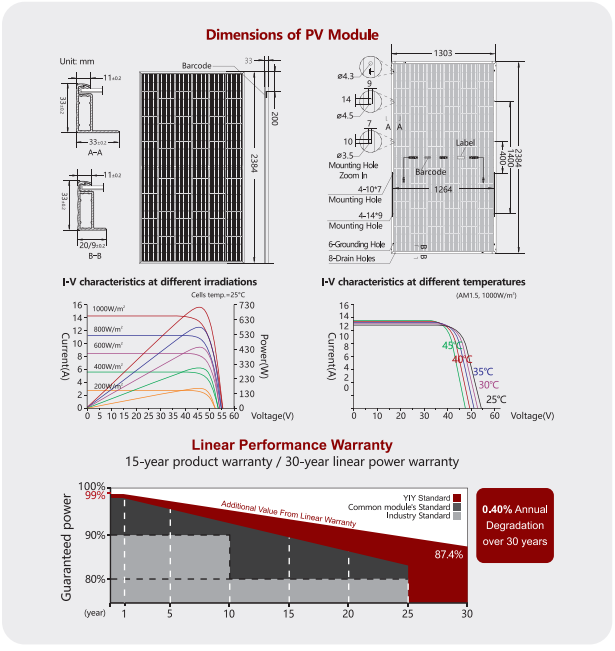
- Higher Power Output
- Multi Busbar Technology
- PID Resistance
- Low-light Performance
- Durability Against Extreme Environmental Conditions
- EL Full Inspection

• Technical Parameter

Specifications(BNPI)

Rated Power in Watts-Pmax(Wp)	758.9	764.7	769.3	774.8	780.6	785.7	791.6	797.1	802.6	808.6
Open Circuit Voltage-Voc(V)	47.90	48.10	48.50	48.80	49.00	49.20	49.40	49.60	49.80	50.00
Short Circuit Current-Isc(A)	20.06	20.11	20.15	20.19	20.24	20.28	20.33	20.37	20.41	20.46
Max. Power Voltage-Vmpp(V)	40.10	40.30	40.50	40.70	40.90	41.10	41.30	41.50	41.70	41.90
Max. Power Current-Impp(A)	18.93	18.98	19.00	19.04	19.09	19.12	19.17	19.21	19.25	19.30
Power Tolerance	0~+3%									
Operating Temperature	-40°C~85°C									

*BNPI: Irradiance: front 1000W/m², rear 135W/m², Cell Temperature 25°C, AM=1.5



Electrical Characteristics (STC*)

Rated Power in Watts-Pmax(Wp)	685	690	695	700	705	710	715	720	725	730
Open Circuit Voltage-Voc(V)	47.70	47.90	48.30	48.60	48.80	49.00	49.20	49.40	49.60	49.80
Short Circuit Current-Isc(A)	18.21	18.25	18.28	18.32	18.36	18.40	18.44	18.48	18.52	18.56
Max. Power Voltage-Vmpp(V)	39.90	40.10	40.30	40.50	40.70	40.90	41.10	41.30	41.50	41.70
Max. Power Current-Impp(A)	17.19	17.23	17.25	17.29	17.33	17.36	17.40	17.44	17.48	17.52
Module Efficiency(%)	22.05	22.21	22.37	22.53	22.70	22.86	23.02	23.18	23.34	23.50
Maximum System Voltage	1500V DC									
Fuse Rating(A)	30									
Temperature Coefficient Pmax	-0.30%/°C									
Temperature Coefficient Isc	0.046%/°C									
Temperature Coefficient Voc	-0.25%/°C									
Refer. Bifacial Factor	ΦIsc=80%±10%,ΦVoc=100%±3%,ΦPmax=80%±10%									

*STC: Irradiance 1000W/m², module temperature 25°C , AM=1.5

Mechanical Characteristics

Number of Cells	132pcs
Type of Cell	N-TOPCon Mono
Thickness of Glass(mm)	2.0
Type of Frame	Anodized Aluminum Alloy
Size of Module(mm)	2384×1303×33
Weight(kg)	37.5
Junction Box	IP68, 1500V DC, 3 Diodes
Cables/Connectors	4.0mm², MC4 compatible
Length of Cable	+350mm/-250mm Length can be customized(connector included)

Packaging Configuration

Height of Modules (mm)	33
Number of Modules Per Pallet	33
Packaging Box Dimensions (l×w×h) (mm)	1326×1140×2515
Box Gross Weight (kg)	1280
Number of Modules Per 40ft (HQ) Container	594
Number of Pallets Per 40ft (HQ) Container	18

Demonstrations

- **Photovoltaic Storage Integrated System**

Load shifting Capacity Stability Self-Consumption

400kW 430kWh PV250kWp







- **Energy Storage Power Station**

Peak shaving Energy Trading Electricity trading

400kW 430kWh





- **Photovoltaic Storage Integrated System**

Backup power Capacity Stability Self-Consumption

150kW 215kWh PV150kWp

Demonstrations

- **Generation-Side Energy Storage**

  Load shifting Capacity Stability

  Frequency regulation

  500kW 1075kWh



- **Energy Storage Power Station**

  Backup power 0ms Switching

  1200kW 1300kWh PV700kWp





- **Solar Energy BESS Charging Station**

  Reducing peak demand Energy Trading

  200kW 430kWh PV580kWp

- **Energy Storage Power Station**

  Peak shaving Load shifting

  2800kW 6.02MWh





- **Energy Storage Power Station**

  Backup power Load shifting

  880kW 1.5MWh



Demonstrations

- **Photovoltaic Storage Integrated System**

  Load shifting Capacity Stability Self-Consumption

  250KW 430KWH PV250KWp



- **Energy Storage Power Station**

  Peak shaving Backup power

  60KW 80KWH



- **Photovoltaic Storage Integrated System**

  Load shifting Capacity Stability Self-Consumption

  60KW 80KWH + PV1000KWp





- **Energy Storage Power Station**

  Load shifting Backup power

  60KW 160KWH

- **Energy Storage Power Station**

  Peak shaving Load balancing

  Backup power

  250KW 430KWH



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