



| New Energy Technology
Supply Chain One-Stop Solution



Huiyao

Intelligent Technology
(Tianjin) Co., Ltd.

New Energy Technology
Supply Chain
One-Stop Solution



Personal

150+



Plant Area

10800m²

Company Profile

Huiyao Intelligence, as a Leading-Tech, has been focusing on the research, development and manufacturing of battery automation production line facility for years, and extend our coverage to energy storage cabinet, battery compartment, battery module and module structural components. We are leading enterprise in the new energy technology industry supply chain, committing to provide the first-class one-stop solutions and services for global new energy technology industries and end-users.

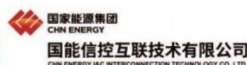
In the field of facility, Huiyao intelligence always takes its industry advantages, continuous innovation, achieved production from battery core to battery module, battery pack and energy storage cabinet/container, has the ability to provide a complete set of mature system, including early-stage facility configuration scheme design, middle-stage production technical personnel training and technical guidance to the final-stage battery product structure design recommendation, which could greatly improve the efficiency of our customers.



Huiyao intelligence works with wind/solar power generation, 5G base station, vehicle battery, data center, charging pile, and other applications, provide advanced integrated technology and one-stop solution for energy storage.

In terms of application, Huiyao intelligence works with wind/solar power generation, 5G base station, vehicle battery, data center, charging pile, and other applications, providing advanced integrated technology and one-stop solution for energy storage, Huiyao owns a comprehensive coverage of product design, manufacturing, sales and after-sales service and so on, providing a full range of support and services for our customers.

National Well-known Strategic Cooperation Agency



COMPANY QUALIFICATION



CORE TECHNOLOGY

INTEGRATED SOLUTION FOR INTELLIGENT EQUIPMENT IN NEW ENERGY INDUSTRY



Laser Welding Technology



Quality Control Technology



Intelligent Control System



Flexible Module Design Capability



Data Management and Traceability Capabilities



System Integration and Collaborative Capabilities



Continuous Innovation and R&D Capabilities

AFTER-SALE SERVICE

Warranty and Guarantee

Your satisfaction is our top priority. All single-station equipment and production lines sold by Yao Laser come with a one-year free warranty and a lifetime quality guarantee, covering any manufacturing defects or malfunctions. If you encounter any issues, rest assured, we will promptly address them, ensuring your peace of mind.

Quality Assurance

At Yao Laser, we place the highest priority on delivering products of the utmost quality. Before any sale, our Battery Modules and PACKs undergo rigorous testing and inspection to ensure they meet the industry's highest standards. We are committed to providing you with reliable and safe products that exceed your expectations.

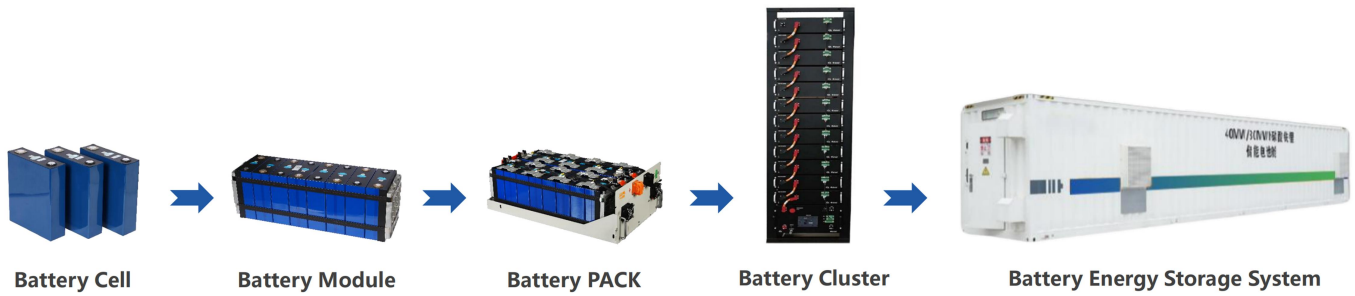
Customer Support

Our team of experts is here to assist you through the whole process. Whether you have questions about product features, compatibility, or any other concerns, we offer personalized consult services to ensure you make the right choice.

PROCESS DISPLAY



Energy Storage System



Integrated Scheme Of Energy Storage System

LFP Module: 100Ah, 220Ah, 280Ah

- Energy Efficiency $\geq 94\%$ @ 0.5P, room tempe
- Compact design, lightweight, OEM/ODM
- Standard modules, flexible system expansion
- Low internal resistance, stable discharge



Battery cell	100Ah		
Cell configuration	1P10S	1P11S	1P12S
Rated voltage	32V	35.2V	38.4V
Rated energy	3.2kWh	3.52kWh	3.84kWh

Battery cell	220Ah		
Cell configuration	1P8S		
Rated voltage	25.6V		
Rated energy	5.632kWh		

Battery cell	280Ah		
Cell configuration	1P8S	1P12S	1P13S
Rated voltage	25.6V	38.4V	41.6V
Rated energy	7.168kWh	10.752kWh	11.648kWh

Energy Storage System

Air-cooling PACK: 280-1P16S、220-1P16S

- Energy Efficiency $\geq 94\%$ @ 0.5P, room temperature
- Compact design, lightweight, OEM/ODM
- Standard modules, flexible system expansion
- Low internal resistance, stable discharge

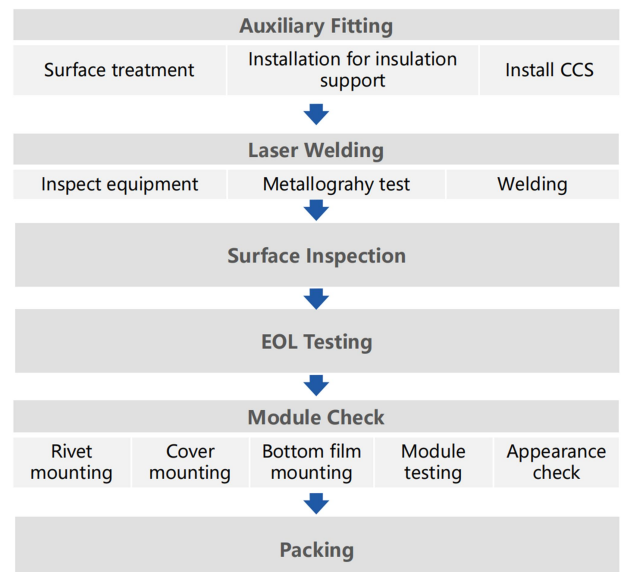
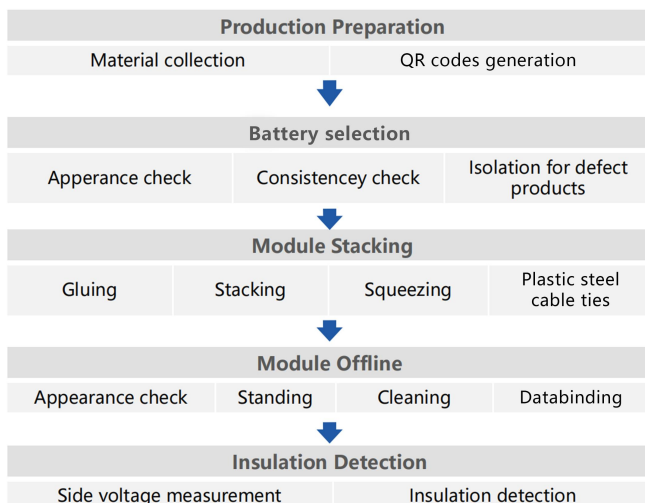


Liquid-coolingPACK: 280-1P48S、280-1P52S

- Energy Efficiency $\geq 94\%$ @ 0.5P, room temperature
- Compact design, lightweight, OEM/ODM
- Standard modules, flexible system expansion
- Low internal resistance, stable discharge



- From the project input to the output, there are strict process control, the annual module fault tolerance rate of 0.05% PACK Processing Advantage.



Energy Storage System

Residential Energy Storage System: 5KW

- Long service life
- Wide temperature operating range
- Easy installation, safe and reliable
- High power
- Parallel-ready for seamless expansion
- Built-in six-fold protection system, high stability for household power



Invert Model	ESS 5KW
Maximum PV input power	5000W
Rated output power	5000W
Maximum charging power	1440W
Normal DC voltage /Maximum DC voltage	360 VDC/500 VDC
Initial voltage /Initial feeding voltage	116 VDC/150 VDC
MMPT voltage range	120 VDC~450 VDC
Number of MPPT trackers /Maximum input current	1/1*18A
Normal output voltage	208/220/230/240 VAC
Output voltage range	184-264.5 VAC
Maximum output current	21.9A
Maximum conversion efficiency (DC/AC)	96%
European efficiency@Normal	95%
AC Initial voltage /Auto restart voltage	120-140 VAC/180 VAC
Acceptable input voltage range	170-280 VAC
Maximum AC input current	40A
Normal Output voltage	208/220/230/240 VAC
Efficiency (DC to AC)	93%
Normal DC voltage	48 VDC
Maximum charging current	30A
Dimensions (LxWxH)	210*620*350mm
Net weight	15kg
Compliance safety	IEC/EN 62109-1/-2, IEC 61000-6-4, EN IEC 61000-6-2

Battery Module	ESS II-4810
Capacity	5000wh
Normal voltage	51.2 VDC
Full charge voltage	56V
Full discharge voltage	42V
Typical capacity	100Ah
Maximum continuous discharge current	100Ah
Maximum discharge current	150A at 2S
Protection	BMS, breaker
Charge voltage	56V
Charge current	20A (0.2C)
Maximum charge current	50A (0.5C)
Standard charging method	0.2C CC (Constant current) charge to FC CV (Constant voltage FC) charge till charge current decline to < 0.05C
Inner resistance	<20mΩ
Dimensions (LxWxH)	210*620*410mm
Net weight	50kg (without base, base weight 3.2kg)
Compliance safety	IEC 62619, EN 61000-6-3, EN 61000-6-1, UN38.3

Energy Storage System

Commercial & Industrial ESS Air Cooling: 215A-200K, 232A-200K

■ Flexible Simplicity

- ①AC-side PCS adopts modular design for easy installation and maintenance.
- ②Supports multiple PCS units in AC parallel operation, enhancing flexibility.
- ③Integrated transportation streamlines on-site construction.
- ④Visualized data interaction.



■ Efficient Conversion

- ①Smart temperature control for better efficiency and battery life.
- ②Bidirectional power conversion with constant current, voltage, and power modes.
- ③Reduced parallel mismatch loss between battery clusters.
- ④Minimized system risks from inter-cluster circulating currents.

■ High-precision Intelligence

- ①Compliant with smart grid design standards.
- ②Electrical isolation, grid adaptability, and off-grid capability.
- ③Cloud-enhanced remote maintenance and monitoring.
- ④Built-in management system, diverse operation modes, supports standalone microgrid for higher returns.



Product Model	215A-100K	215A2-100K
AC Side		
Rated power	100kW	100kW
Maximum output power	120kW, 1min.	120kW, 1min.
Permissible grid voltage	400VAC (-15% ~ +10%)	400VAC (-15% ~ +10%)
Permissible grid frequency	50Hz ± 2.5Hz	50Hz ± 2.5Hz
Rated input current	145A	145A
Wiring configuration	3P4W+PE	3P4W+PE
DC Side		
Cell type	LFP 3.2V/280AH	LFP 3.2V/280AH
Rated energy	215.04kWh	215.04kWh
Maximum output power	100kW	100kW
Rated voltage	768VDC	768VDC
Voltage range	648-876VDC	648-876VDC
Battery pack configuration	1P16S/14.336kWh	1P24S/21.504kWh
Battery system configuration	1P240S (15*1P16S)	1P240S (10*1P24S)
Energy	215kWh	215kWh
Maximum output power	192A	192A
System Data		
Dimensions (DxWxH)	1800*2600*1250mm	1500*2050*1250mm
Weight	2800kg	2650kg
Noise	<75dB	<75dB
IP rating	IP54	IP54
Operating temperature	-20~50°C (>45°C derating)	-20~50°C (>45°C derating)
Cooling	Air-cooling	Air-cooling
Ambient humidity	0-95% (non-condensing)	0-95% (non-condensing)
Operating altitude	2000m (derating if more than 2000m)	2000m (derating if more than 2000m)
Fire protection method	aerosol/heptafluoropropane (optional)	aerosol/heptafluoropropane (optional)
Communication interface	RS485, Ethernet, CAN	RS485, Ethernet, CAN
Communication protocols	Modbus TCP/RTU	

Energy Storage System

Commercial & Industrial ESS Liquid Cooling: 215L-200K, 232L-200K, 373L-200K

Flexible Simplicity

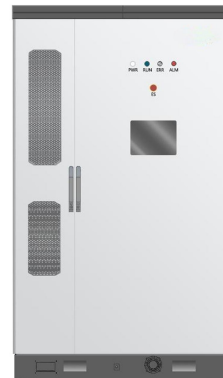
- ① AC-side PCS adopts modular design for easy installation and maintenance.
- ② Supports multiple PCS units in AC parallel operation, enhancing flexibility.
- ③ Integrated transportation streamlines on-site construction.
- ④ Visualized data interaction.

Efficient Conversion

- ① Smart temperature control for better efficiency and battery life.
- ② Bidirectional power conversion with constant current, voltage, and power modes.
- ③ Reduced parallel mismatch loss among battery clusters.
- ④ Minimized system risks from inter-cluster circulating currents.

High-precision Intelligence

- ① Compliant with smart grid design standards.
- ② Electrical isolation, grid adaptability, and off-grid capability.
- ③ Cloud-enhanced remote maintenance and monitoring.
- ④ Built-in management system, diverse operation modes, supports standalone microgrid for higher returns.



Product Model	215L-100K	232L-100K	373L-220K
AC Side			
Rated AC power	100KW	100KW	200KW
Maximum output power	110KW	110KW	220KW
Permissible grid voltage	400V (-15%~10%)	400V (-15%~10%)	690V(-15%~10%)
Permissible grid frequency	50/60Hz±2.5Hz	50/60Hz±2.5Hz	50/60Hz±2.5Hz
Maximum Input Current	158A	158A	168A
Wiring configuration	3P4W+PE	3P4W+PE	3P4W+PE
DC Side			
Cell type	LFP 3.2V/280Ah	LFP 3.2V/280Ah	LFP 3.2V/280Ah
Battery pack configuration	1P48S/43KWh	1P52S/46.6KWh	1P52S/46.6KWh
Battery system configuration	1P240S	1P260S	1P416S
Rated energy	215.04kWh	232.96kWh	372.736KWh
Voltage range	648~864V	702~936V	1123.2~1497.6V
Inverter maximum efficiency	98%	98%	98%
System efficiency	> 88%	> 88%	> 88%
Charge and discharge rate	≤0.5C	≤0.5C	≤0.5C
System Data			
Dimensions (WxDxH)	1000*1350*2391mm (with rings)	1000*1350*2391mm (with rings)	2200*1450*2775mm(with rings)
	1000*1350*2300mm (without rings)	1000*1350*2300mm (without rings)	2200*1450*2775mm(with rings)
Weight	2400kg	2550kg	4000kg
Noise	<75dB	<75dB	<75dB
IP rating	IP54	IP54	IP54
Cooling	liquid-cooling	liquid-cooling	liquid-cooling
Ambient temperature	-20~50°C (>45°C derating)	-20~50°C (>45°C derating)	-20~50°C (>45°C derating)
Ambient humidity	≤95%	≤95%	≤95%
Operating altitude	> 2000m derating	> 2000m derating	>2000m derating
Fire protection method	aerosol/heptafluoropropane (optional)	aerosol/heptafluoropropane (optional)	aerosol/heptafluoropropane (optional)
Communication interface	RS485/Ethernet	RS485/Ethernet	RS485/Ethernet
Communication protocols	IEC61850 / MODBUS-RTU / MODBUS-TCP	IEC61850 / MODBUS-RTU / MODBUS-TCP	IEC61850/MODBUS-RUT/MODBUS-TCP

Energy Storage System

Energy Storage Container: 1000A-BCS、5000A-BCS、3354L-BCS

Efficient Integration

- ①Advanced integration with battery, AC, temperature control, fire protection, and data monitoring systems.
- ②Integrated containerized energy storage system, design for easy transport, simple installation, and cost-effectiveness.

Efficient Conversion

- ①Smart temperature control for enhanced efficiency and battery life.
- ②Bidirectional power conversion, with charging modes: constant current, constant voltage, and constant power.

High-Precision Intelligence

- ①Meets smart grid standards.
- ②Integrated local controller for unified management, enabling standalone peak shaving.
- ③Includes PQ, VF, SVG functions, supports independent microgrid operation.
- ④Outdoor design, IP54 protection.



Product Model	5000A-BCS	3354L-BCS	1000A-BCS
Rated energy	5MWh	3.35MWh	1MWh
Rated voltage	1460V	1497.6V	1000V
Dimension (WxDxH)	14.6x2.8x2.9m	6x2.6x2.9m	6x2.6x2.9m
Weight	56T	39T	20T
Ambient temperature	-20~55°C	-20~55°C	-20~55°C
Communication interface	RS485/CAN/Ethernet	RS485/CAN/Ethernet	RS485/CAN/Ethernet
Cooling method	air cooling	liquid cooling	air cooling

Product certification: Qunwei third-party testing and certification, highly recognized in the industry

Form	Certification Number	Full Name
Battery	GB/T 36276	Lithium-ion batteries for power storage
	IEC62619	Lithium-ion batteries for stationary or mobile applications
	MSDS	Chemical Safety Instructions
	UL1973	North American Battery System Safety Standards
	UL9540A	Test Methods for Evaluating Large Scale Thermal Runaway Fire Spread in Battery Systems
	UN 38.3	Rechargeable Lithium Battery Operating Instructions
Battery Pack	GB/T 36276	Lithium-ion batteries for power storage
Battery Cluster	GB/T 36276	Lithium-ion batteries for power storage
PCS	GB/T 34120	Technical Specification for Energy Storage Converters for Electrochemical Energy Storage Systems
BMS	GB/T 34131	Technical Specification for Lithium-ion Battery Management System for Electrochemical Energy Storage Power Stations
Energy Storage System	GB/T 2423.1/2/4/17	Electrical and Electronic Products Environmental Test



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