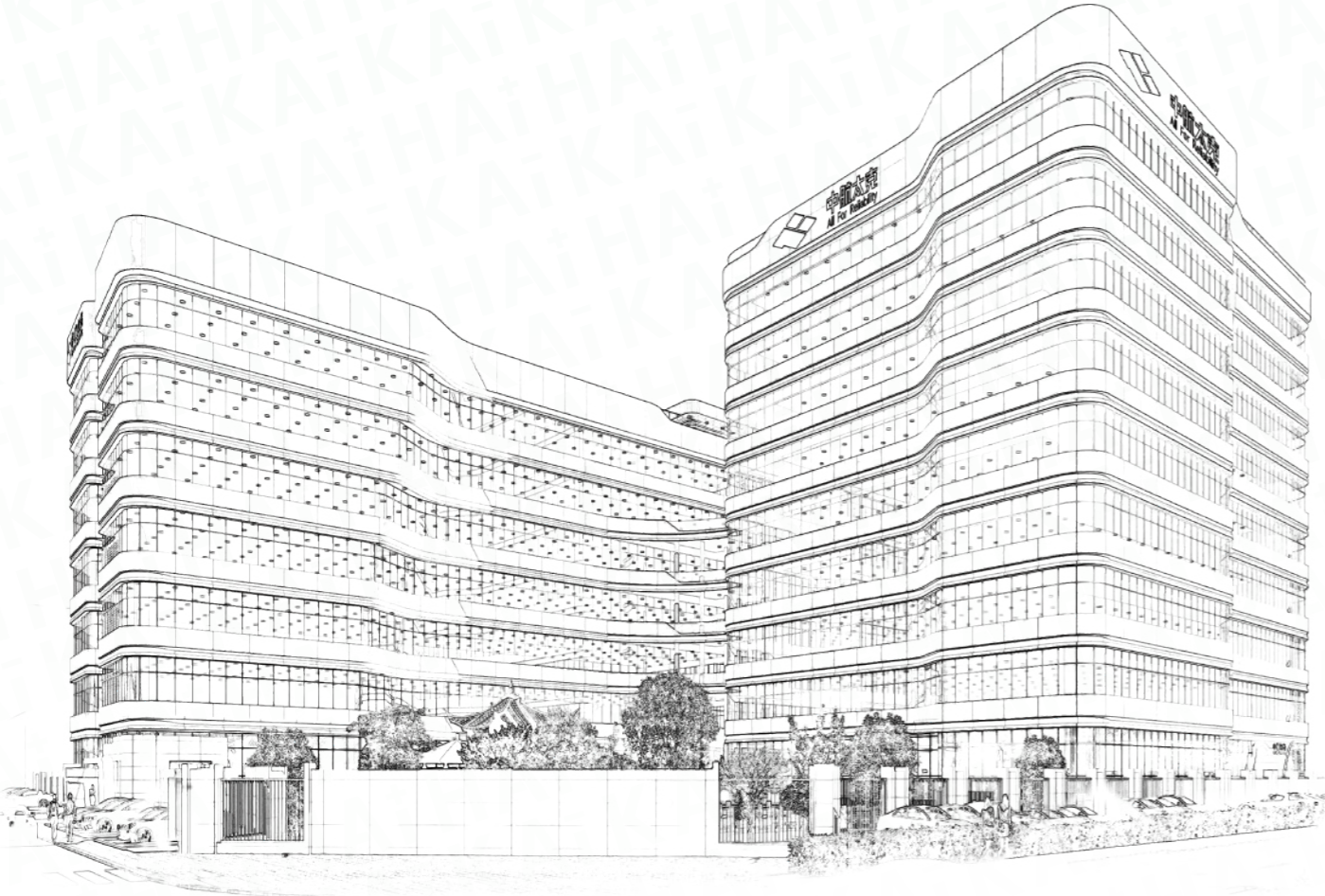


**LEADING EXPERT FOR DIGITAL
POWER & ENERGY SYSTEM
SOLUTIONS**



HAi+ KAi

**Industrial
Commercial
Residential
Energy Storage Systems**

Customized Battery Pack | Lithium Battery Systems



About HAIKAI

HAIKAI is a brand of AVIC-TECH (Xiamen) Electric Power Technology co.,ltd. We are a specialist manufacturer of energy storage systems and backup power solutions for industrial (behind-the-meter), commercial, and residential scenarios. We are capable of design and manufacturing BMS, Pack, integrated energy storage solutions, and customized production.

Based in China, we have more than 20 years of experience in the back-up power industry. With strong R&D, reliable quality, and effective supply chain management, we excel at tackling complex technology challenges and delivering high-quality solutions at scale to help our customers realize greater value.



Our Strengths

HAIKAI has been awarded over 120 patents for our innovation, utility models, software, and more. Our cutting-edge R&D team is led by Ph. D. researchers and globally educated experts from world-class institutions to provide the most professional support for your projects. We have complete equipment such as automatic vision positioning laser welding, programmable temperature & humidity test chamber to support PACK production, cabinet assembly, and comprehensive machine testing. Our manufacturing line follows the standard of ISO 9001 and Six Sigma under fully implemented ERP and MES process control.

We follow rigorous and standardized production management to guarantee the best lead time and product quality, from order generation, production to delivery. We also accept customization to provide flexibility for your projects. Having partnered with multiple well-known companies, we source the most suitable and trusted materials for your projects at the best cost.

HAIKAI's Energy Storage Specialties.



All-in-One Energy Storage System for EV Charging Station



Industrial Energy Storage System
(ESS for UPS, DC cabinet, standalone customized systems)



Residential and Commercial Energy Storage System



Customized Battery Pack

HAi KAI LiHub All-In-One Distributed Energy Storage System



- Energy Storage
- PCS
- EMS Cloud
- Fire Protection
- Outdoor/Indoor

Safe & Efficient

Independent cabinet and modular battery design for increased safety. Higher efficiency and longer life cycle. Double layer fire protection system with intelligent temperature control.

Easy to Operate & Maintain

All-in-one modular solution allows for quick installation time and minimizes maintenance required for local failures. Cloud EMS allows easy remote monitoring and control of all LiHub units.

Versatile Functions

Built-in functionalities such as peak shaving, demand management, demand response, power expansion, emergency backup power, etc.

Easy to Expand

Each independent working cabinet can be connected in parallel to expand the total capacity of the energy storage system.



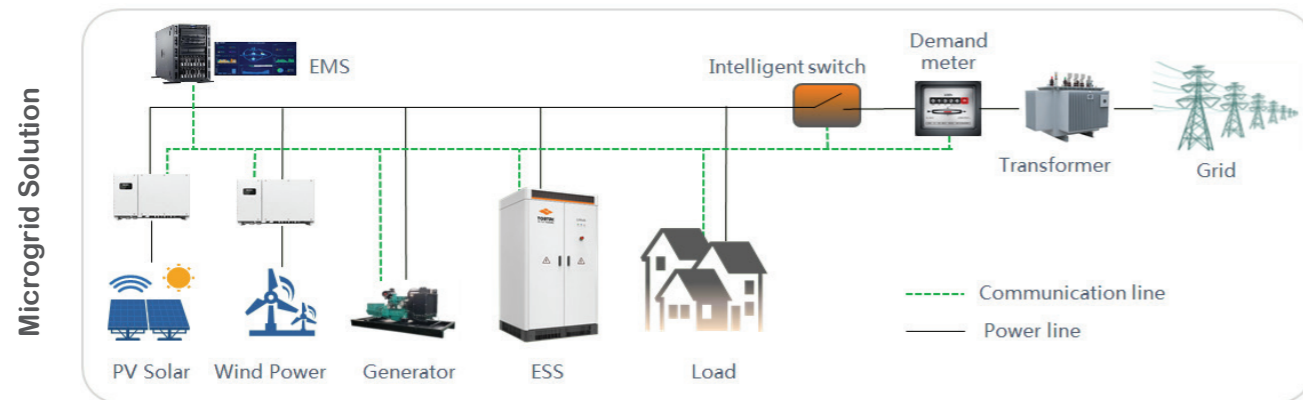
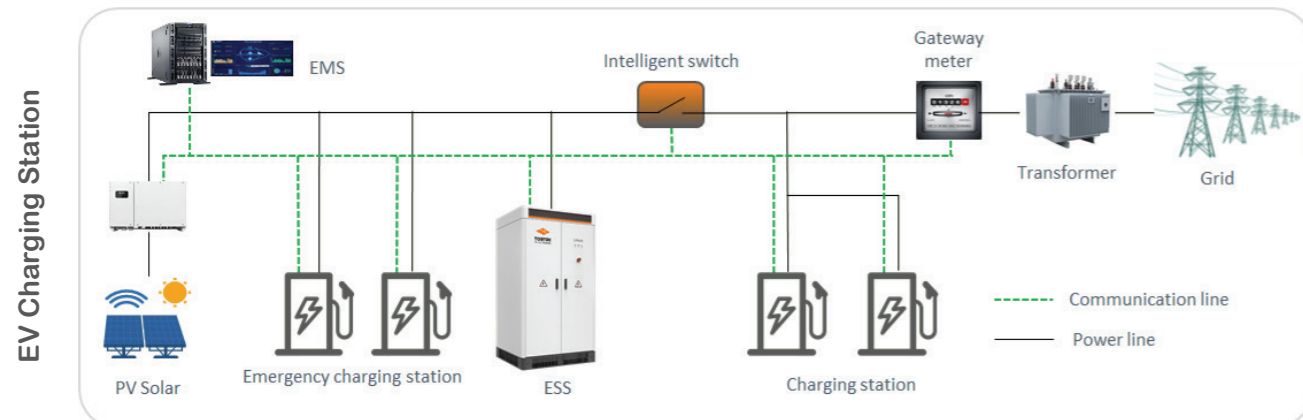
HAi KAI

HAIKAI Energy Storage Solutions
Website: www.haikai-energy.com

LiHub's Specifications

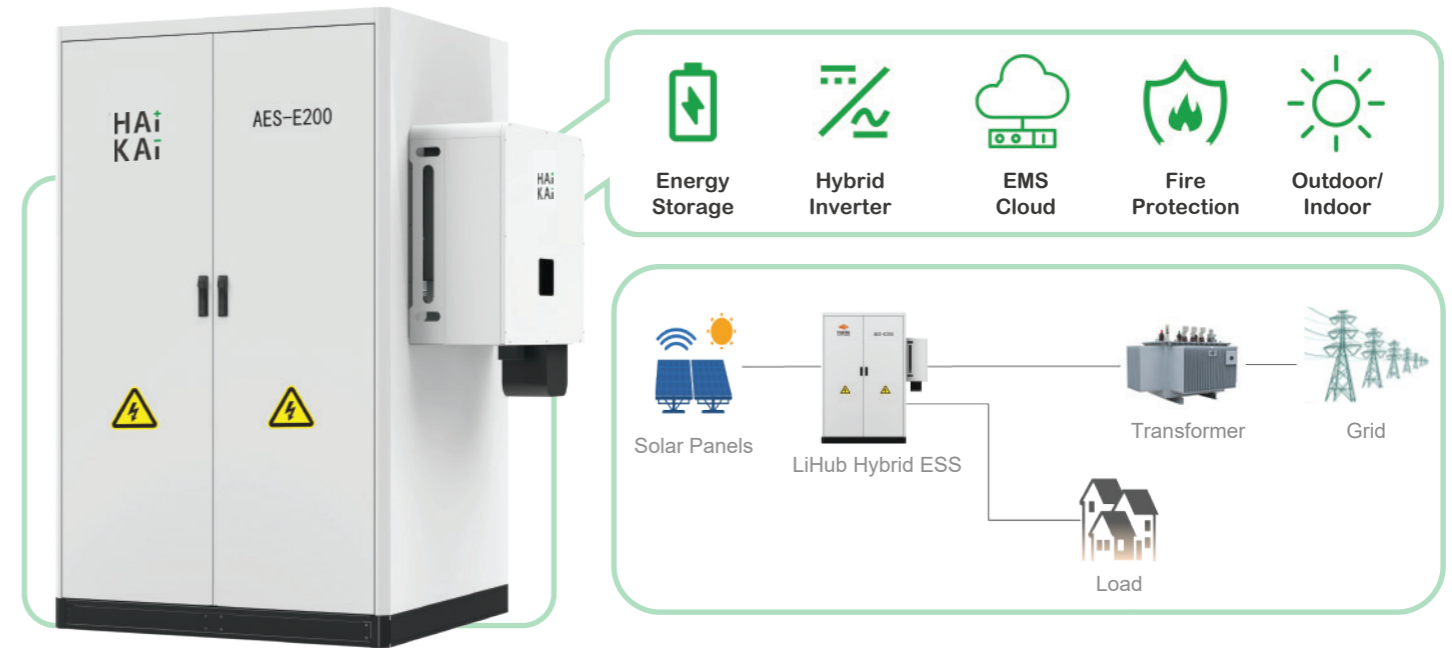
Model		LiHub 120kW/225kWh	LiHub 60kW/225kWh	LiHub 30kW/102kWh
Battery Parameters	Cell Parameters	LFP 3.2V/280Ah	LFP 3.2V/280Ah	LFP 3.2V/100Ah
	Module Configuration	1P18S	1P18S	2P16S
	Module Voltage Rating	57.6Vdc	57.6Vdc	51.2Vdc
	Module Capacity	16.128kWh	16.128kWh	10.24kWh
	Module Size (W*H*D)	440*216*798mm	440*216*798mm	440*131*768mm
	Module Weight	117kg	117kg	80kg
	Cabinet Configuration	14 Modules + HVB Box	15 Modules + HVB Box	10 Modules + HVB Box
	Cabinet Capacity	225kWh	225kWh	102kWh
	Cabinet Voltage Rating	806.4Vdc	806.4Vdc	512Vdc
	Cabinet voltage range	706Vdc ~ 907Vdc	706Vdc ~ 907Vdc	448Vdc ~ 560Vdc
	Max. Charging/Discharging Power	120kW	60kW	30kW
	Max. Charge/Discharge Current	176A	88A	100A
On-Grid Parameters	Power Rating	120kW	60kW	30kW
	Rated Grid Voltage	400V	400V	400V
	Grid Voltage Range	-15% ~ +10%	-15% ~ +10%	-15% ~ +10%
	Rated Grid Frequency	50Hz	50Hz	50Hz
	Power Factor	-0.8 ~ +0.8 (Default 1)	-0.8 ~ +0.8 (Default 1)	-0.8 ~ +0.8 (Default 1)
	Current Distortion Rate	< 3%	< 3%	< 3%
	DC Component	< 0.5%Ipn	< 0.5%Ipn	< 0.5%Ipn
	AC System	3P+N+PE	3P+N+PE	3P+N+PE
	Maximum Efficiency	≥90%	≥90%	≥90%
	Charge/Discharge Rate	0.53C	0.5C	0.3C
General Data	Discharge Depth	95%DOD	95%DOD	95%DOD
	Battery Cycle Life	6000 Cycles	6000 Cycles	6000 Cycles
	Charging and Discharging Switching Time	< 100ms	< 100ms	< 100ms
	Dimensions (mm) (W*D*H)	1250*1150*2360	1250*1150*2360	800*1150*2360
	Weight	2500kg	2450kg	1500kg
	Protection Class	IP54	IP54	IP54
	Fire Protection System	Aerosols + Heptafluoropropane	Aerosols + Heptafluoropropane	Aerosols + Heptafluoropropane
	Cooling Method	Industrial Air Conditioning	Industrial Air Conditioning	Industrial Air Conditioning
	Operating Temperature	-25 ~ 55	-25 ~ 55	-25 ~ 55
	Communication Interface	LAN	LAN	LAN
	Communication Protocol	ModBus-TCP	ModBus-TCP	ModBus-TCP
	Human Machine Interface	10" Touch Screen	10" Touch Screen	10" Touch Screen
Display and Communication	Communication Interface	LAN	LAN	LAN
	Communication Protocol	ModBus-TCP	ModBus-TCP	ModBus-TCP
	Human Machine Interface	10" Touch Screen	10" Touch Screen	10" Touch Screen

Example Applications



	Model	LiHub Hybrid-50kW/102kWh	LiHub Hybrid-50kW/193kWh
PV Parameters	Max. Input Power	60000W	60000W
	Max. Input Voltage	1000V	1000V
	MPPT Voltage Range	180-900V (Rated 630V)	180-900V (Rated 630V)
	Starting Voltage	180V	180V
	Max. Input Current	36A/36A/36A/36A	36A/36A/36A/36A
	Max. Short-Circuit Current	42A/42A/42A/42A	42A/42A/42A/42A
	Number of MPPTs	4	4
Battery Parameters	Cell Parameters	LFP 3.2V/100Ah	LFP 3.2V/280Ah
	Module Configuration	2P16S	1P18S
	Module Voltage Rating	51.2Vdc	57.6Vdc
	Module Capacity	10.24kWh	16.128kWh
	Module Size (W*H*D)	440*131*768mm	440*216*798mm
	Module Weight	80kg	117kg
	Cabinet Configuration	10 modules + HVB	12 modules + HVB
	Cabinet Capacity	102kWh	193kWh
	Cabinet Voltage Rating	512Vdc	806.4Vdc
	Cabinet Voltage Range	448Vdc ~ 560Vdc	706Vdc ~ 907Vdc
	Max. Charging/Discharging Power	50kW	50kW
	Max. Charge/Discharge Current	100A	100A
	On-Grid Parameters	Power rating	50kW
Rated Grid Voltage		230V/400V	230V/400V
Grid Voltage Range		-15% ~ +10%	-15% ~ +10%
Rated Grid Frequency		50Hz	50Hz
Power Factor		-0.8 ~ +0.8 (Default 1)	-0.8 ~ +0.8 (Default 1)
Current Distortion Rate		< 3%	< 3%
AC System		3P+N+PE	3P+N+PE
Off-Grid Parameters	Apparent Power	50kVA	50kVA
	Power Factor	1	1
	Rated Voltage	230V/400V	230V/400V
	Rated Frequency	50Hz	50Hz
	Voltage Distortion Rate	< 1% (Linear Load)	< 1% (Linear Load)
	Unbalanced Load Capacity	100%	100%
	Overload Capacity	60kW/10S	60kW/10S
	Off-Grid Switching Time	<10ms	<10ms
General Parameters	Maximum Efficiency	≥90%	≥90%
	Charge/Discharge Rate	0.5C	0.26C
	Discharge Depth	95%DOD	95%DOD
	Battery Cycle Life	6000 Cycles	6000 Cycles
	Charging and Discharging Switching Time	< 100ms	< 100ms
	Dimensions (mm) (W*D*H)	800*1150*2000+800*600*280mm	1300*1150*2000+800*600*280mm
	Weight	1800kg	2500kg
	Protection Level	IP54	IP54
	Fire Protection System	Aerosols + Heptafluoropropane	Aerosols + Heptafluoropropane
	Cooling Method	Industrial Air Conditioning	Industrial Air Conditioning
	Operating Temperature	-25 ~ 55	-25 ~ 55
Communication Interface	RS485 (WiFi/4G/GPRS Optional)	RS485 (WiFi/4G/GPRS Optional)	

All-In-One Commercial & Industrial Hybrid Inverter + ESS Solution



Harmony

Residential Energy Storage



H: 500mm
W: 660mm
D: 180mm

Weight: 50kg



Simple. Compact. Safe.

- Modular design easily expandable up to 8 modules (41 kWh)
- Automatic fire protection system
- Works at -15°C
- Seamless connection between modules



HAIKAI Harmony Technical Specifications

Models:	100 Ah
Battery Capacity:	5.12 kWh
Usable Capacity:	4.60 kWh
Depth of Discharge:	90%
Rated Voltage:	51.20 V
Operating Voltage Range:	48 V - 57 V (90% DoD)
Internal Resistance:	≤ 30 mΩ (100 Ah)
Cycle Life:	6000 Cycles (80% DoD)
Warranty:	10 Years Product Warranty
Protection Level:	IP65

Operating Mode

Max. Charging:	50 A (0.5 C)
Max. Discharge:	100 A (1 C)
Max. Short Circuit:	200 A
Working Temp.:	- 10 °C - 50 °C
Humidity:	≤ 90 % ROH, No Condensation

Battery Management System

Module Connection:	1 - 8 Parallel
Capacity:	5.12 - 40.96 kWh Increments of 5.12 kWh
Usable Capacity:	4.61 - 36.86 kWh Increments of 4.61 kWh
Energy Consumption:	< 2 W (Work mode) , < 50 mW (Sleep mode)
Monitoring Parameters:	System voltage, Cell voltage and temperature, Current, PCBA temperature
Comm. Interface:	Compatible with CAN and RS-485

Certifications

Battery:	UL1642, IEC62619, IEC62133, UN38.3
System:	CE, UN38.3



Harmony Plus

Residential Energy Storage



All-in-One Hybrid Inverter & Battery Module

All-in-One Design

IP65 design with integrated hybrid inverter, switch box, and battery modules. All wire connections are hidden elegantly and include automatic fire suppression system for higher safety.

Strong Performance

- Includes SiC component, higher efficiency
- 100% three phase unbalance, output voltage difference is kept within 5%
- < 10ms UPS switching time
- Integrate VPP DRED interface (AU)
- APP monitor and support OTA

Modular Setting

Supports 15 system in parallel for expansion. In each system, battery support up to 8 modules (up to 40 kWh in step of 5kWh)

Elegant Design

The elegant and modern design tuned to any home styles. set it up in mounting or standing ways at your choice

HAIKAI Harmony Plus

Inverter Side

Rated output power	6000W
Rated output voltage	220V/230V/240V
Rated output current	27.2A
Rated frequency	50Hz/60Hz

Grid-tie Side

Input maximum current	27.5A
Input voltage range	184V ~ 246V
Frequency range	45Hz ~ 65Hz
Rated output power	6000W
Rated grid voltage	230V
Power grid output current	27.2A

PV Side

Photovoltaic input parameters	9000Wp
Starting voltage	75V
Maximum input voltage	600V
MPPT voltage operating range	80V ~ 550V
Full load MPPT voltage operating range	300V ~ 500V
Number of MPPT	2
Rated voltage	360V
Maximum input current	13A/13A

Battery Side

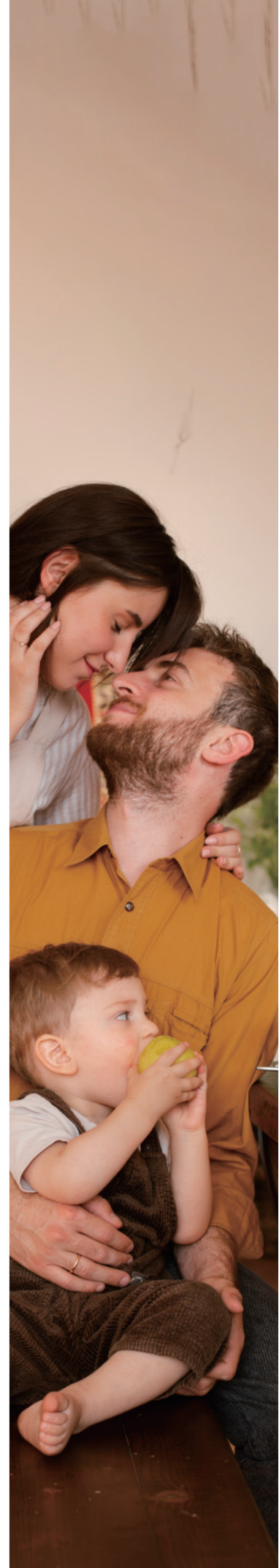
Battery capacity	5120Wh
Available capacity	4600Wh
Discharge depth	90%
Rated voltage	51.20 V
Operating voltage range	48V ~ 57 V (90% DoD)
Battery internal resistance	≤ 30 mΩ (100 Ah)
Cycle life	6000 Cycles (80% DoD)
Maximum charging current	50 A (0.5 C)
Maximum discharge current	100 A (1 C)
Short-circuit current	300 A

Efficiency

Maximum efficiency	98%
Maximum battery charging efficiency	94.60%
Maximum discharge efficiency of the battery	94.60%

General Data

Dimension	1190H*660W*185D
Weight	65KG
Working temperature	-10°C-50°C
Cooling method	Natural Cooling
Fire protection	Aerosol module
IP level	IP65
BMS communication method	RS485、CAN
Electricity meter communication method	RS485
Monitoring communication	WiFi
Human-computer interaction mode	H5/LED/APP





AES - 051100

Commercial Battery Pack System



Module Size:
W: 440 mm
D: 440 mm
H: 131 mm

Module Weight: 44 kg

Available set ups:
Rack, Frame, Cabinet



Modular design, easily expandable. Connect as series or parallel.

Series - 12 modules per tower.
Max. 8 towers per system

Parallel - 4 modules per tower,
Max. 2 towers per system

Automatic Fire Protection System

AES - 051100

Technical Specifications

Model:	HAIKAI AES - 051100
Nominal Voltage:	51.2 V
Nominal Capacity:	100 Ah (25±2 °C, 0.5 C discharge, new cell)
Internal Resistance:	≤45 mΩ (At 1 KHz after standard Charging)
Charging Voltage:	56-57 V
Discharge End Off Voltage:	43.2 V
Standard Continuous Charging Current	20 A (0.2 C)
Max. Continuous Charging Current	50 A (0.5 C)
Standard Continuous Discharge Current:	50 A (0.5 C)
Max. Continuous Discharge Current:	100 A (1 C)
Operating Temperature:	0-60 °C (Discharging), -20-50 °C (Charging)
Cycle Life:	6000 Cycles (80% DoD)
Dimensions (WxDxH):	440 mm, 440 mm, 131 mm
Weight:	44 kg
BMS Monitor:	Pack Voltage, Single Cell Voltage, Charging Current, Discharging Current, Temperature, Working Mode, SOC, Alarm Information
Certificate:	IEC62619, UL1642, CE, UN38.3

Lithium Battery Energy Storage Systems

Industrial Lithium Battery

HAIKAI's Industrial Energy Storage System is specially designed for various industrial applications and UPS. It can be used to directly replace existing lead-acid battery. The application and wiring are no different to conventional lead-acid batteries. The built-in BMS system greatly improves the system reliability. The lithium battery BMS data can be accessed at the UPS terminal according to user's requirements. Multiple pack configurations and cabinet types are available to meet different project requirements.

MAIN FEATURES

- Greatly reduce floor area and weight.
- Supports customization of DC voltage and system capacity.
- Direct replacement of lead-acid battery, seamless implementation to the original system.
- The built-in BMS system effectively improves the predictability and manageability of the system.
- Equipped with excellent quality Lithium iron phosphate battery which has longer service life, higher safety standards and simpler maintenance.



Standard Lithium Battery System

Product Features:

- 51.2V standard battery module.
- 50Ah module supports 4C, 100Ah module supports 2C continuous discharge.
- Suitable for applications with backup time more than 15 min.
- Can directly replace lead-acid batteries with rated voltages of 192V, 240V, 384V (± 192V) and 480V (± 240V)

Standard Lithium Battery							
Module	Cell Type	Lithium Iron Phosphate Battery					
	Cell Composition	27Ah , 2P16S		105Ah , 1P16S			
	Rated Voltage	51.2V					
	Operating Voltage	41.6 ~ 57.6V					
	Rated Capacity	50Ah		100Ah			
	Rated Power	2.56kWh		5.12kWh			
	Discharge Current	200A Continuous Discharge(4C)		200A Continuous Discharge(2C)			
	Output Power	10.24kW		10.24kW			
	Standard Standby Time	15min		30min			
	Charging Current	50A Continuous Charging(1C)		50A Continuous Charging(0.5C)			
	Dimension W × D × H	200×645×175(4U)mm		200×645×241.8(5.5U)mm			
	Weight	32kg		45kg			
	System	Optional Specifications and Capacities	204.8V	50Ah	10.24kWh	204.8V	100Ah
256V			50Ah	12.8kWh	256V	100Ah	25.6kWh
409.6V			50Ah	20.48kWh	409.6V	100Ah	40.96kWh
±204.8V			50Ah	20.48kWh	±204.8V	100Ah	40.96kWh
512V			50Ah	25.6kWh	512V	100Ah	51.2kWh
±256V		50Ah	25.6kWh	±256V	100Ah	51.2kWh	
Discharge Current		200A Continuous Discharge(4C)		200A Continuous Discharge(2C)			
Charging Current		50A Continuous Charging(1C)		50A Continuous Charging(0.5C)			
Cycle Life		4000 Cycles					
Communication Interface		CAN/RS485/Dry Contact					
Protection Function		Overcharge, Over Discharge, Over Temperature, Over Current, Short Circuit, etc					
Cabinet Type		Frame					
Dimension W × D × H		600×800×1800mm					
Weight	Module Weight × N + Cabinet Weight 200kg						
Storage Temperature	0°C ~ 40°C						
Transport Temperature	-20°C ~ 60°C						
Operating Temperature	0°C ~ 40°C (Recommend 20 ~ 25°C)						
Relative Humidity	5% ~ 95% (No Condensation)						
Altitude	≤2000 m						

The above parameters are at 25 °C. The current product specifications are subject to change without further notice.