HAIKAI

Industrial

Energy Storage Systems

Customized Battery Pack | Lithium Battery Systems

AVIC-TECH (Xiamen) Electric Power Technology Co.,Ltd.
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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.

HAIKAI's OEM and ODM Specialties

- Battery Management System (BMS)
- Customized Battery Pack
- Industrial Energy Storage System (ESS for UPS, DC cabinet, standalone customized systems)
- Energy Storage System for EV Charging Station
- Residential and Commercial Energy Storage System

Our Strengths

HAIKAI has been awarded over 20 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.

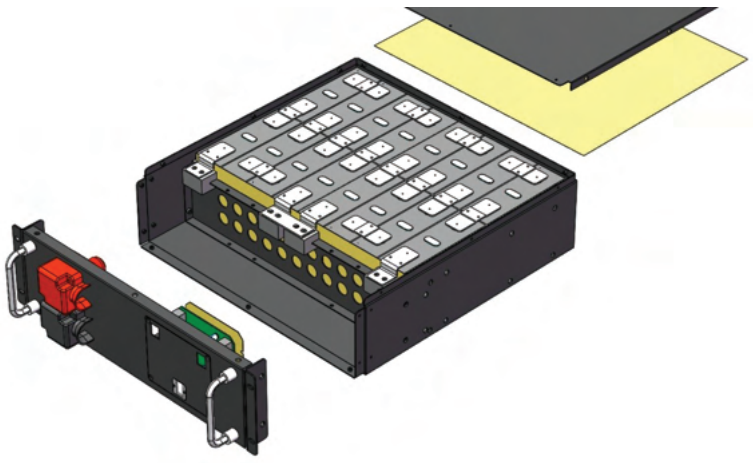
Lithium Battery Energy Storage System

Customized Battery Pack

HAIKAI customized Pack Battery System is manufactured with high quality lithium battery cells. Our own patented BMS enables real-time monitoring and autonomous equalizing of voltage and temperature for each string to ensure optimal operation of the module.

HAIKAI is capable of complete pack production and testing line, as well as accepting customizations on dimension, capacity, and IP level according to your needs.

Pack	Discharge Rate	Nominal Voltage	Operating Voltage	Typical Capacity	Operating Temperature	Cycle Life
Regular	1C~4C	48V/51.2V	41.6～57.6V	50Ah	0°C～40°C (Recommend 20～25°C)	4000 Cycles
	1C~2C	48V/51.2V	41.6～57.6V	100Ah	0°C～40°C (Recommend 20～25°C)	4000 Cycles
High Capacity	1C	48V/51.2V	41.6～57.6V	100Ah	0°C～40°C (Recommend 20～25°C)	4000 Cycles
	1C	48V/51.2V	41.6～57.6V	200Ah	0°C～40°C (Recommend 20～25°C)	4000 Cycles
High Power	6C~12C	48V/51.2V	41.6～57.6V	50Ah	0°C～40°C (Recommend 20～25°C)	4000 Cycles



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Lithium Battery Energy Storage Systems

Standard, High Energy Density, High Power

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.

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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	20.48kWh
		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.

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High Energy Density Lithium Battery System

Product Features:

- 51.2V standard battery module.
- 3U battery module with capacity up to 200Ah.
- It is suitable for applications with backup time of 60 min. and above.
- Can directly replace lead-acid batteries with rated voltages of 192V, 240V, 384V (± 192V) and 480V (± 240V)

High Energy Density Lithium Battery							
Module	Cell type	Lithium Iron Phosphate Battery					
	Cell Composition	100Ah，1P16S			100Ah，2P16S		
	Rated Voltage	51.2V					
	Operating Voltage	41.6～57.6V					
	Rated Capacity	100Ah			200Ah		
	Rated Power	5.12kWh			10.24kWh		
	Discharge Current	100A Continuous Discharge (1C)			200A Continuous Discharge (1C)		
	Output Power	5.12kW			10.24kW		
	Standard Standby Time	60min			60min		
	Charging Current	50A Continuous Charging (0.5C)			100A Continuous Charging (0.5C)		
	Dimension W × D × H	440×441×131(3U) mm			440×770.5×131(3U) mm		
	Weight	43 kg			80 kg		
System	Optional Specifications and Capacities	204.8V	100Ah	20.48kWh	204.8V	200Ah	40.96kWh
		256V	100Ah	25.6kWh	256V	200Ah	51.2kWh
		409.6V	100Ah	40.96kWh	409.6V	200Ah	81.92kWh
		±204.8V	100Ah	40.96kWh	±204.8V	200Ah	81.92kWh
		512V	100Ah	51.2kWh	512V	200Ah	102.4kWh
		±256V	100Ah	51.2kWh	±256V	200Ah	102.4kWh
	Discharge Current	100A Continuous Discharge (1C)			200A Continuous Discharge (1C)		
	Charging Current	50A Continuous Charging (0.5C)			100A 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			600×1000×1800mm		
	Weight	Module Weight × N + Cabinet Weight 200 kg			Module Weight × N + Cabinet Weight 250 kg		
	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					

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High Power Lithium Battery System

Product Features:

- 51.2V standard battery module.
- Special 50Ah high power cell, supporting 6 ~ 12C continuous discharge.
- Suitable for applications with backup time less than 10 min.
- Can directly replace lead-acid batteries with rated voltages of 192V, 240V, 384V (± 192V) and 480V (± 240V)

High Power Lithium Battery				
Module	Cell Type	High Discharge Rate Lithium Iron Phosphate Battery		
	Cell Composition	50Ah，1P16S		
	Rated Voltage	51.2V		
	Operating Voltage	41.6～57.6V		
	Rated Capacity	50Ah		
	Rated Power	2.56kWh		
	Discharge Current	300～600A Continuous Discharge (6～12C)		
	Output Power	30.72kW		
	Standard Standby Time	5 min		
	Charging Current	50A Continuous Charging (1C)		
	Dimension W × D × H	200×645×175(4U) mm		
	Weight	32kg		
System	Optional Specifications and Capacities	204.8V	50Ah	10.24kWh
		256V	50Ah	12.8kWh
		409.6V	50Ah	20.48kWh
		±204.8V	50Ah	20.48kWh
		512V	50Ah	25.6kWh
		±256V	50Ah	25.6kWh
	Discharge Current	300～600A Continuous Discharge (6～12C)		
	Charging Current	50A Continuous Charging(1C)		
	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 250 kg		
	Storage Temperature	0℃～40℃		
	Transport Temperature	-20℃～60℃		
	Operating Temperature	0℃～40℃ (Recommend 20～25℃)		
	Relative Humidity	5%～95% (No Condensation)		
	Altitude	≤2000 m		

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LiHub

LiHub All-In-One Distributed Energy Storage System

LiHub's Features

Safe & Efficient

Local failure isolation design, zero battery parallel capacity loss, multi-level early warning protection; double fire warning protection; intelligent temperature control system; long-life lithium iron phosphate battery, cycle life ≥ 6000 cycles; highly efficient management, system efficiency reaches up to 91%.

Easy to Operate & Maintain

All-in-one solution, shortening the installation and commissioning period. Modular design minimizes impact from local failures to allow quick and easy replacement of modules.
Allows remote monitoring of operating status with EMS system for early fault warning, and performs benefit analysis.

Versatile functions

Peak shaving and valley filling, demand management, demand response, power capacity expansion, power curtailment mode, emergency backup power, and other modes that can meet multi-scenario applications.

Easy to Expand

Standard one-cabinet-one-system design, each system is completely independently controlled. Multiple cabinets can be connected in parallel to expand the size of the energy storage system, enabling flexible configurations.

Applications

The LiHub is an all-in-one industrial/commercian ESS system with IP54 protection level. The cabinet integrates energy storage battery, battery management system BMS, intelligent power distribution system, high-performance PCS, energy management system EMS, thermal management system and fire protection system. It has the advantages of high performance, small footprint, and flexible configuration. It is widely used in indoor and outdoor application scenarios such as industrial and commercial energy storage, EV charging stations, data centers, residential buildings, and hospitals etc.

HAIKAI Energy Storage Solutions

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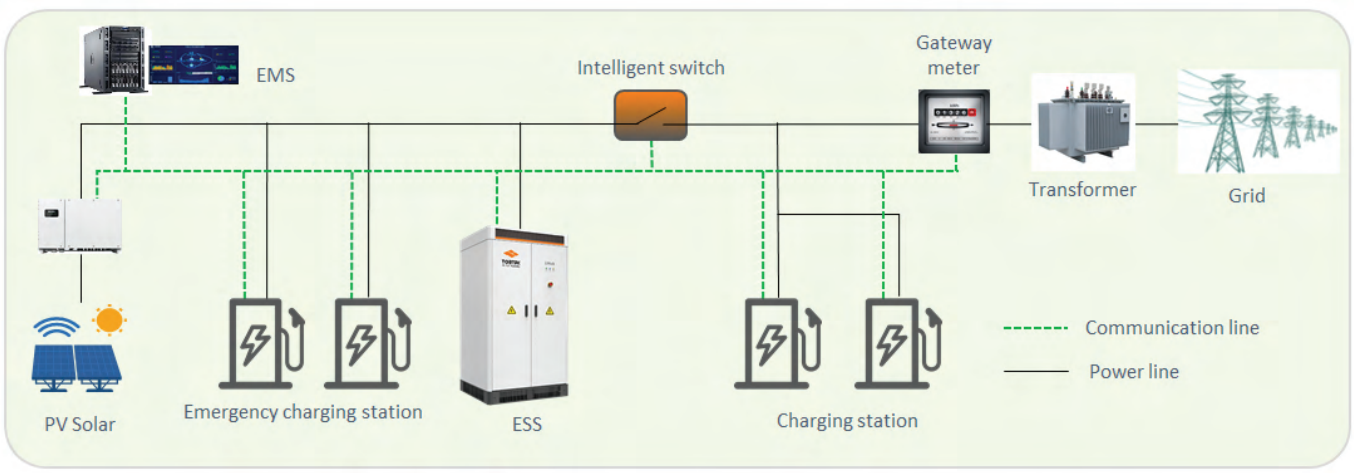
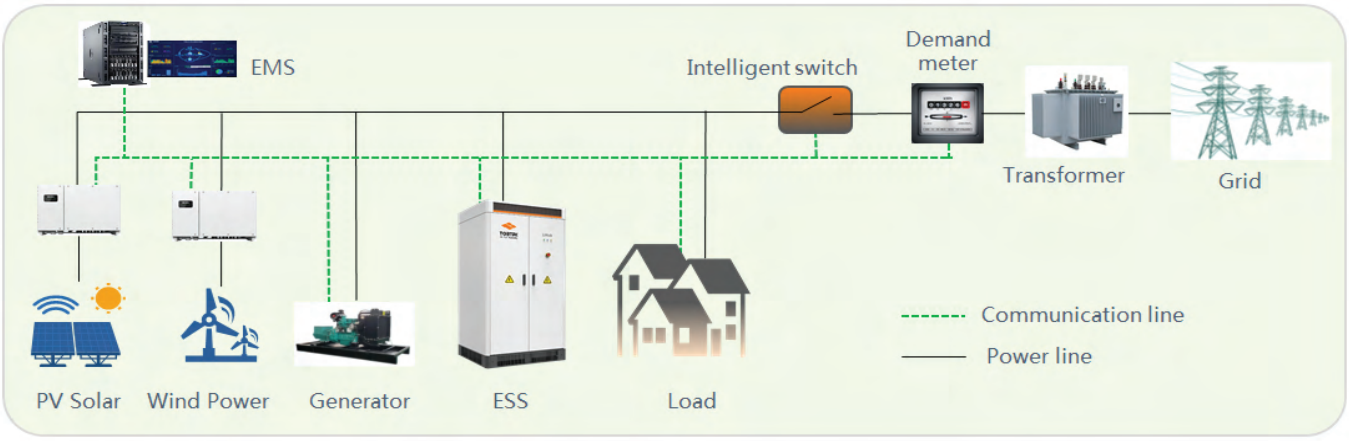
LiHub

LiHub All-In-One Distributed Energy Storage System

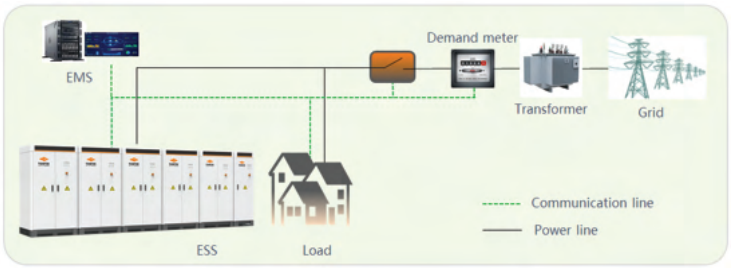
Applications and Solutions



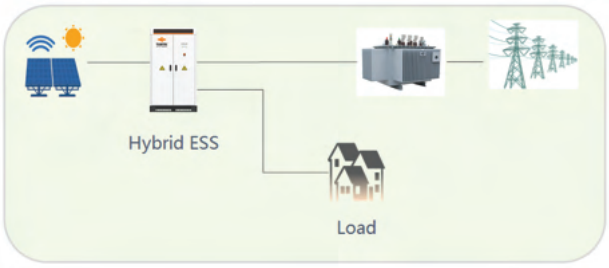
EV Solar Charging Solution



Microgrid Energy Storage System



Industrial and Commercial ESS Solution



ESS with Hybrid Inverter

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LiHub

LiHub DISTRIBUTED ENERGY STORAGE SYSTEM

Specifications		LiHub-100/30kW	LiHub-100S	LiHub-200S	LiHub-200T	LiHub-225S	LiHub-225T
Battery	Cell parameters	LFP 3.2V/280Ah		LFP 3.2V/280Ah			
	Module configuration	2P16S		1P16S		1P18S	
	Module rated voltage	51.2Vdc		51.2Vdc		57.6Vdc	
	Module capacity	14.336kWh		14.336kWh		16.128kWh	
	Module size (W*H*D)	440*219*798mm		440*219*798mm			
	Module weight	≤106kg		≤106kg		≤117kg	
	System configuration	7 modules + 150 HVB	7 modules +250 HVB	14 modules +250 HVB			
	System capacity	100kWh		200kWh		225kWh	
	System rated voltage	358.4Vdc		716.8Vdc		806.4Vdc	
	System voltage range	280Vdc～403Vdc		628Vdc～806Vdc		706Vdc～907Vdc	
On-Grid	Rated power	30kW	60kW	60kW	120kW	60kW	120kW
	Rated grid voltage	400V					
	Rated grid frequency	50Hz					
	Power factor	-1～+1（Can be set, default is 1）					
	Current Distortion Rate	＜3%					
	DC component	＜0.5%Ipn					
	Communication system	3P+N+PE					
Off-Grid	Inspecting power	30kVA	60kVA	60kVA	/	60kVA	/
	Power factor	1			/	1	/
	Rated voltage	400V			/	400V	/
	Rated frequency	50Hz			/	50Hz	/
	Voltage distortion rate	＜1%（Linear load）			/	＜1%（Linear load）	/
	Unbalanced load capacity	100%			/	100%	/
	overload capacity	110%-10 mins 120%-1 mins			/	110%-10 mins 120%-1 mins	/
General Data	Maximum efficiency	≥91%	≥91%	≥91%	≥90%	≥91%	≥90%
	Charge and discharge rate	0.3C	0.6C	0.3C	0.6C	0.267C	0.53C
	Depth of discharge	95%DOD					
	Battery cycle life	3000	3000	6000			
	Charge and discharge	＜100ms					
	On and off grid switching time	<10ms	<10ms	<10ms	/	<10ms	/
	Communication Interface	LAN/RS485					
	Dimensions (W*H*D)	800*2000*1150mm		1300*2000*1150mm			
	Weight	1500kg	1500kg	2300kg	2350kg	2450kg	2500kg
	Protection class	IP54					
	Fire Fighting System	Aerosol + Heptafluoropropane					
	Cooling method	Industrial air conditioner(1.5kW)		Industrial air conditioner(3kW)			
	Operating temperature	-25℃～55℃					

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