



**WELL-GROUNDED
AMBITIOUS**

AND MAKE ALL
EFFORTS TO CREATE
NATIONAL BRAND OF ENERGY

**STORAGE
PRODUCTS**



LANGJI

SUZHOU LANGJI TECHNOLOGY CO.,LTD

Company Introduction

Suzhou Langji Technology Co., Ltd. was founded in 2009, it is a high-tech enterprise with R&D, manufacturing and sales department. It is located at the coast of Taihu Lake Suzhou city, the registered capital is 50 million RMB. The whole factory covers 5000 square meters and employs about 200 people with an annual sale of nearly 100 million RMB.

Langji company provides customers with a full range of temperature control, energy storage products solutions.

Telecommunication

Data Center

Base station

Solar based installations

Wireless cell sides & switches

Industry Automation

Energy Storage

TECHNIQUE FORCE

WELL-GROUNDED
AMBITIOUS AND MAKE ALL EFFORTS TO CREATE NATIONAL BRAND OF



Suzhou Langji Technology Co., Ltd. is always taking the concept of "well-grounded, ambitious and make all efforts to create national brand of precision air conditioner", holding 3 point management strategy that includes technique, force, and service, tracking the market trend and focusing on the development of products. Based on strong technical force, and advanced design ideas, Langji has promoted many models of precision air condition, heat exchanger, and energy-saving products for base station or equipment room, outdoor communication equipment cabinet and thermostatical battery cabinet etc. to meet the diversified needs of the domestic and overseas customers.

Suzhou Langji Technology Co., Ltd. manages the company and production scientifically according to ISO9001 and ISO14001 international management system. The products are certified by CE and CCC, with stable and reliable quality, Langji products are sold in many countries and regions including China, India, Russia, the Middle East, South-east Asia, South America, Africa, Europe and the USA.

SERVICE

PRECISION AIR CONDITIONER



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Market Environment

Choosing the right energy storage solution for your data center, critical building, industrial process, and critical infrastructure is more challenging than ever. Today's backup storage solution must maintain or even increase availability and manageability while reducing the uninterruptible power supply (UPS) footprint. In order to reduce total cost of ownership (TCO), it is important to extend lifetime, decrease footprint, streamline maintenance, and lower cooling costs and other operating expenses, in addition to minimizing the upfront capital cost.

Lithium-ion (li-ion) batteries are poised to revolutionize energy storage for secure power applications. From the data center to the industrial floor, energy storage is transforming from medium-lifetime, sprawling, and heavy batteries to a long life, compact, lightweight solution with predictable performance, simplified maintenance, and robust life cycle management.

Solution overview

Suzhou Langji Technology Co., Ltd. li-ion battery solution is a high-value, innovative energy storage protection solution for data centers, industrial processes, and critical infrastructure.

This solution supported by Langji company brings the following benefits:

Significantly reduced battery footprint and weight to allow for a more effective use of space

Double the life and simplified maintenance vs. traditional batteries

Reduced cooling requirements

Improved backup storage predictability and manageability (BMS included)

Reduced TCO

Improved use of real estate

Maintain or increase your facility's revenue-generating capacity while reducing the size of the technical room with li-ion batteries:

- Reduce the secure power footprint by 50% to 75%, so revenue-generating equipment can take its place
- Reduce the weight by over two-thirds, providing flexibility to install on any floor while minimizing structural modification requirements.
- Reduce the battery room size and increase tolerance to a wider operating temperature range, which allows you to decrease the capacity of the cooling solution

Extended battery life

While the upfront cost of lead-acid batteries has sustained their appeal, they have a limited lifetime, especially when subject to temperature fluctuation. To ensure runtime availability, many customers even replace the highest quality lead-acid batteries every three to six years, driving up maintenance costs.

The li-ion technology doubles the service life of your batteries. Their extended battery service life reduces the burden and cost of battery replacements, as well as the risks of downtime and load interruption during maintenance.

Increased availability of your backup storage system

A reliable and monitored backup solution with easily accessible battery health data is a necessity in today's connected business environment, and the li-ion solution meets this demand with advanced battery management.

Embedded monitoring at the cell, module, and cabinet level provides a clear picture of battery runtime and health, with the added benefits of predictable, consistent runtime performance and stable cell health.

Product Category

Battery Monomer

- Battery cells are structurally stable, with high safety, long cycle life, high energy density, high power density, and high-rate discharge.
- Many kinds of lithium batteries are available for choice.



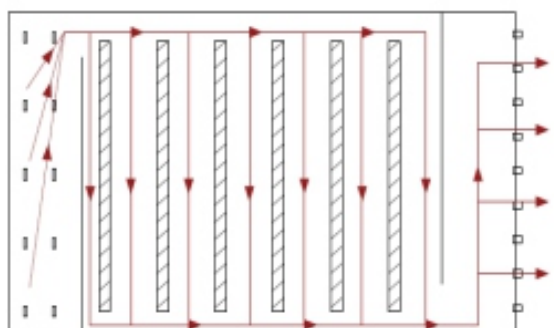
Iron Phosphate Lithium Battery



Titanium Acid Lithium Battery



Ternary Lithium Battery



S Air Duct

Battery Module

- Positive and negative plates and lugs adopt accurate laser welding, electric loop whole-course molecular-level integration to avoid connection heating, and contact internal resistance inconformity.
- Adoption of S air duct and upper/lower air flow design ensure even heat dissipation, and high efficiency.
- Parts of famous brands are higher in reliability.
- It is easy to maintain due to modular design.



Battery Cabinet

- With high energy density and high integration level, battery cabinet can reduce weight and area occupancy, and effectively lower construction costs.
- It has good large current charge and discharge performance, with discharge reaching 1~8C.
- Its super-long cycle life can reduce operation and maintenance costs.
- Perfect thermal design (liquid cooling) can ensure system reliability, safety, efficient energy conservation and emission reduction, and effectively extend battery life. 8C discharge temperature does not exceed 25°C.
- Three-layer built-in BMS system has full protection and control functions.

Iron Phosphate Lithium Battery Series

Product Features

Safety

P-O keys in iron phosphate lithium crystals are stable and hard to resolve. Iron phosphate lithium battery is the safest lithium ion battery.

High temperature resistance

The hot air value of iron phosphate lithium battery can reach 350-500°C.

Environmental protection

Iron phosphate lithium battery is environment-friendly, being non-poisonous and pollution-free. Its raw materials can be obtained widely.

High-rate discharge

Two types of battery cells, dynamical type and energy-type, are available. Dynamical type battery cell has continuous 5C discharge.

Battery Module Parameter Table

Item	LXL-4850		LXL-48100		LXL-48200
1、Performance parameter					
Rated capacity (Ah)	50		100		200
Rated voltage (V)	48				
Voltage range (V)	32~60.8				
Battery energy (kWh)	2.4		4.8		9.6
Max. charge voltage (V)	58.8				
Min. discharge voltage (V)	42				
Max. charge current (A)	1C	4C	1C	4C	1C
Max. Discharge current (A)	1C	5C	1C	5C	3C
Cycle life(time)	≥10000				
2、Functional description					
Communication interface	RS232 / RS485 / CAN				
Status indicator light	ALM / RUN				
Cascade	16				
Warning and protection	Provide protection upon over-voltage, under-voltage, short circuit, overload, over-current, over-temperature, and low temperature etc.				
3、Operating condition					
Heat dissipation mode	Air cooling				
Altitude (m)	≤4000				
Humidity	5%-95%				
Size (W*D*H(mm))	500*800*133.3 (3U)				
Operating temperature	Charge	-5℃~+45℃			
	Discharge	-20℃~+50℃			
Recommended operating temperature	Charge	+15℃~+35℃			
	Discharge	+15℃~+35℃			
	Storage	-10℃~+35℃			
Weight (kg)	30		50		60

Battery Cluster Parameter Table

Item	LXL-24050	LXL-240100	LXL-240200	LXL-48050	LXL-480100	LXL-480200
1、Performance parameter						
Rated capacity (Ah)	50	100	200	50	100	200
Rated voltage (V)	240			480		
Voltage range (V)	160~304			320~608		
Battery energy (kWh)	24	48	96	24	48	96
Max. charge voltage (V)	304			588		
Min. discharge voltage (V)	160			420		
Max. charge current (A)	1C	4C	1C	4C	1C	4C
Max. discharge current (A)	1C	5C	1C	5C	1C	5C
Cycle life (time)	≥4000					
2、Functional description						
Communication interface	RS232 / RS485 / CAN/LAN					
Status indicator light	ALM / RUN					
Cascade	16					
Warning and protection	Provide protection upon over-voltage, under-voltage, short circuit, overload, over-current, over-temperature, and low temperature etc.					
3、Operating condition						
Heat dissipation mode	Air cooling					
Altitude (m)	≤4000					
Humidity	5%-95%					
Size (W*D*H(mm))	600*1000*2000					
Operating temperature	Charge	-5℃~+45℃				
	Discharge	-20℃~+50℃				
Recommended operating temperature	Charge	+15℃~+35℃				
	Discharge	+15℃~+35℃				
	Storage	-10℃~+35℃				
Weight (t)	0.5	0.6	0.7	0.8	1.2	1.4



Titanium Acid Lithium Battery Series

Product Features

High safety

Discharge voltage is stable, furthermore, electrolyte will not resolve.

Good cycle performance

As a zero-strain material, titanium acid lithium battery will not change in structure during charging and discharging, with good cycle performance.

Wide operating temperature range

Being charged under -30°C, titanium acid lithium negative electrode will not form lithium dendrites that can cause short circuit or negative electrode deterioration. Operating temperature is wide, ranging from -30°C to 60°C.

Low self-discharge

88% battery remains after storing for 28 days under 60°C, and capacity recovery rate exceeds 95%.

High-rate discharge

Two types of battery cells, dynamical type and energy-type, are available. Dynamical type battery cell has continuous 6C discharge.

Battery Module Parameter Table

Item	LXT-4850		LXT-48100		LXT-48200	
1、Performance parameter						
Rated capacity (Ah)	50		100		200	
Rated voltage (V)	48					
Voltage range (V)	31.5~56.7					
Battery energy (kWh)	2.4		4.8		9.6	
Max. charge voltage (V)	56.7					
Min. discharge voltage (V)	31.5					
Max. charge current (A)	1C	6C	1C	6C	1C	6C
Max. Discharge current (A)	1C	6C	1C	6C	1C	6C
Cycle life(time)	≥4000					
2、Functional description						
Communication interface	RS232 / RS485 / CAN					
Status indicator light	ALM / RUN					
Cascade	16					
Warning and protection	Provide protection upon over-voltage, under-voltage, short circuit, overload, over-current, over-temperature, and low temperature etc.					
3、Operating condition						
Heat dissipation mode	Air cooling					
Altitude (m)	≤4000					
Humidity	5%-95%					
Size (W*D*H(mm))	500*800*133.3 (3U)					
Operating temperature	Charge	-5℃~+45℃				
	Discharge	-20℃~+50℃				
Recommended operating temperature	Charge	+15℃~+35℃				
	Discharge	+15℃~+35℃				
	Storage	-10℃~+35℃				
Weight (kg)	40		60		80	

Battery Cluster Parameters

Item	LXT-24050		LXT-240100		LXT-240200		LXT-48050		LXT-480100		LXT-480200	
1、Performance parameter												
Rated capacity (Ah)	50		100		200		50		100		200	
Rated voltage (V)	240						480					
Voltage range (V)	157.5~283.5						315~567					
Battery energy (kWh)	24		48		96		24		48		96	
Max. charge voltage (V)	283.5						567					
Min. discharge voltage (V)	157.5						315					
Max. charge current (A)	1C	6C	1C	6C	3C		1C	6C	1C	6C	3C	
Max. discharge current (A)	1C	6C	1C	6C	3C		1C	6C	1C	6C	3C	
Cycle life (time)	≥4000											
2、Functional description												
Communication interface	RS232 / RS485 / CAN/LAN											
Status indicator light	ALM / RUN											
Cascade	16											
Warning and protection	Provide protection upon over-voltage, under-voltage, short circuit, overload, over-current, over-temperature, and low temperature etc.											
3、Operating condition												
Heat dissipation mode	Air cooling											
Altitude (m)	≤4000											
Humidity	5%-95%											
Size (W*D*H(mm))	600*1000*2000											
Operating temperature	Charge		-5℃~+45℃									
	Discharge		-20℃~+50℃									
Recommended operating temperature	Charge		+15℃~+35℃									
	Discharge		+15℃~+35℃									
	Storage		-10℃~+35℃									
Weight (t)	0.5		0.6		0.7		1		1.3		1.5	



Ternary Lithium Battery Series

Product Features

High energy density

Battery energy density denotes the electric energy released by battery of average unit volume or quality. The higher battery energy density is, the more electric quantity will be stored in unit volume. Battery on markets can reach 200Wh/kg so far.

Good cycle performance

In terms of theoretical service life, ternary lithium battery can be charged and discharged for 2000 times. If charging and discharging operation are controlled within the circulation of 0%~50 or 25%~75%, battery capacity can still be kept by 70% even if the battery has been charged and discharged for 3000 times.

High-rate discharge

Two types of battery cells, dynamical type and energy-type, are available. Dynamical type battery cell has continuous 8C discharge.

Battery Module Parameter Table

Item	LXS-4850		LXS-48100		LXS-48200	
1、Performance parameter						
Rated capacity (Ah)	50		100		200	
Rated voltage (V)	48					
Voltage range (V)	42~58.8					
Battery energy (kWh)	2.4		4.8		9.6	
Max. charge voltage (V)	58.8					
Min. discharge voltage (V)	42					
Max. charge current (A)	1C	5C	1C	5C	1C	
Max. Discharge current (A)	1C	8C	1C	8C	3C	
Cycle life(time)	≥2000					
2、Functional description						
Communication interface	RS232 / RS485 / CAN					
Status indicator light	ALM / RUN					
Cascade	16					
Warning and protection	Provide protection upon over-voltage, under-voltage, short circuit, overload, over-current, over-temperature, and low temperature etc.					
3、Operating condition						
Heat dissipation mode	Air cooling					
Altitude (m)	≤4000					
Humidity	5%-95%					
Size (W*D*H(mm))	500*800*133.3 (3U)					
Operating temperature	Charge	-5℃~+45℃				
	Discharge	-20℃~+50℃				
Recommended operating temperature	Charge	+15℃~+35℃				
	Discharge	+15℃~+35℃				
	Storage	-10℃~+35℃				
Weight (kg)	30		50		60	

Battery Cluster Parameters

Item	LXS-24050	LXS-240100	LXS-240200	LXS-48050	LXS-480100	LXS-480200
1、Performance parameter						
Rated capacity (Ah)	50	100	200	50	100	200
Rated voltage (V)	240			480		
Voltage range (V)	210V-294V			420V-588V		
Battery energy (kWh)	12	24	48	12	24	48
Max. charge voltage (V)	294			588		
Min. discharge voltage (V)	210			420		
Max. charge current (A)	1C	5C	1C	5C	1C	5C
Max. discharge current (A)	1C	8C	1C	8C	1C	8C
Cycle life (time)	≥2000					
2、Functional description						
Communication interface	RS232 / RS485 / CAN/LAN					
Status indicator light	ALM / RUN					
Cascade	16					
Warning and protection	Provide protection upon over-voltage, under-voltage, short circuit, overload, over-current, over-temperature, and low temperature etc.					
3、Operating condition						
Heat dissipation mode	Air cooling					
Altitude (m)	≤4000					
Humidity	5%-95%					
Size (W*D*H(mm))	600*1000*2000					
Operating temperature	Charge	-5℃~+45℃				
	Discharge	-20℃~+50℃				
Recommended operating temperature	Charge	+15℃~+35℃				
	Discharge	+15℃~+35℃				
	Storage	-10℃~+35℃				
Weight (t)	0.4	0.5	0.6	0.7	1	1.2

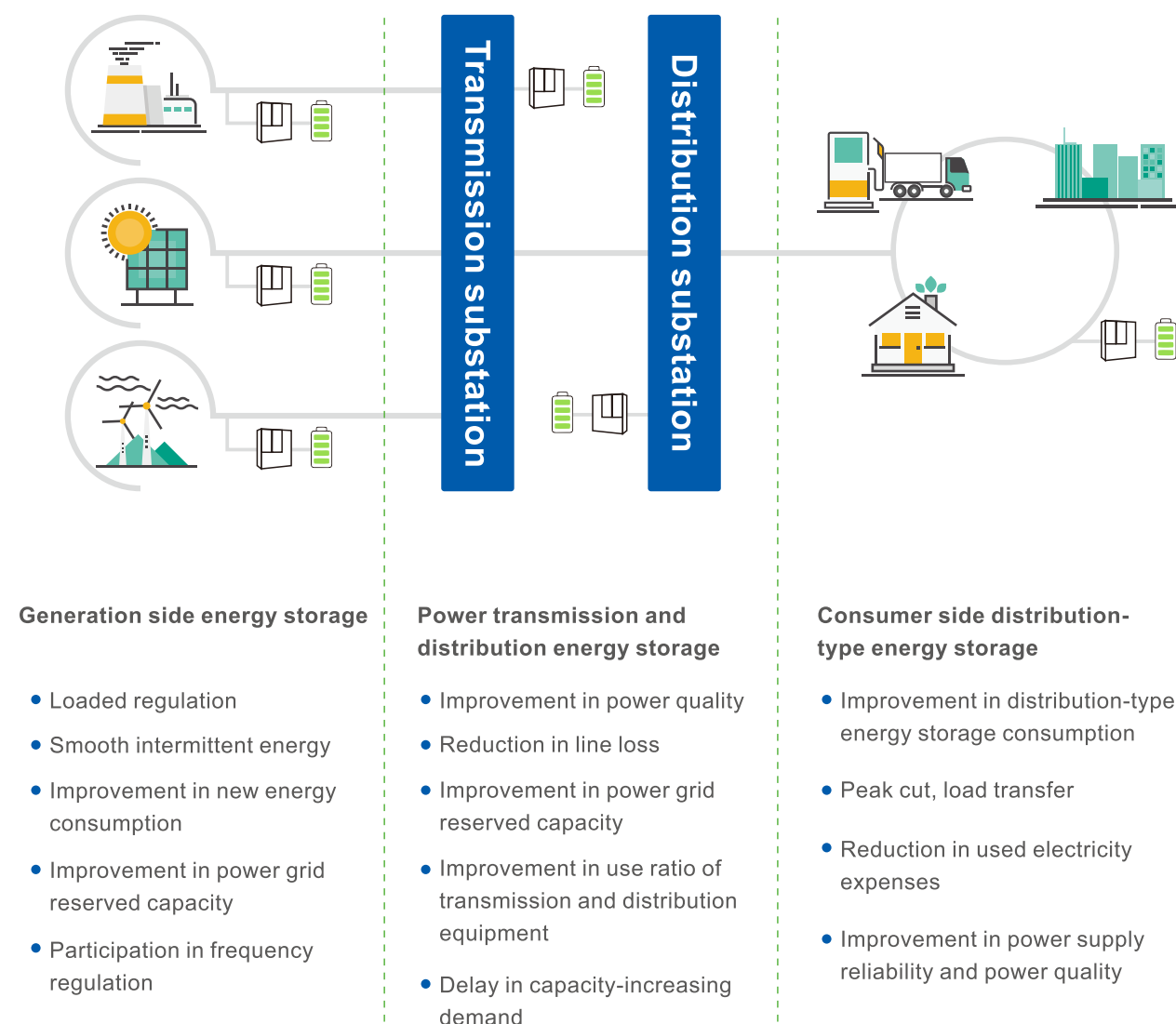


Application Scenario

Application in Energy Storage System

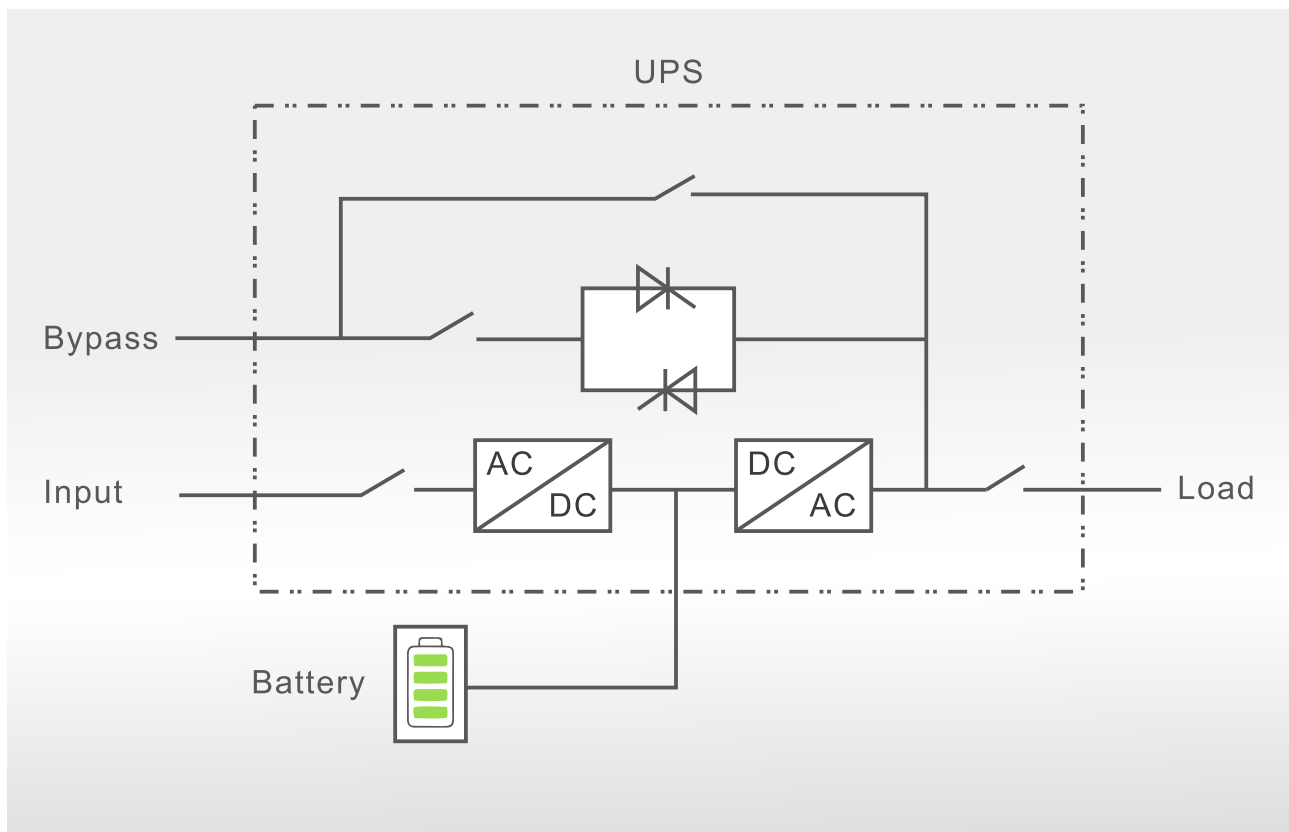
Lithium battery energy storage mainly includes such fields as thermal power, wind power generation, photovoltaic power generation, hydroelectric generation, charging pile, and power system etc.

System function description



Application in UPS Power System

With development of UPS core technology, the performance of complete machine is becoming more and more perfect. Users can choose equipment of reasonable types and capacity according to used load types and actual load power. It is applicable to such application scenarios as industrial control, building construction, and instrument etc.



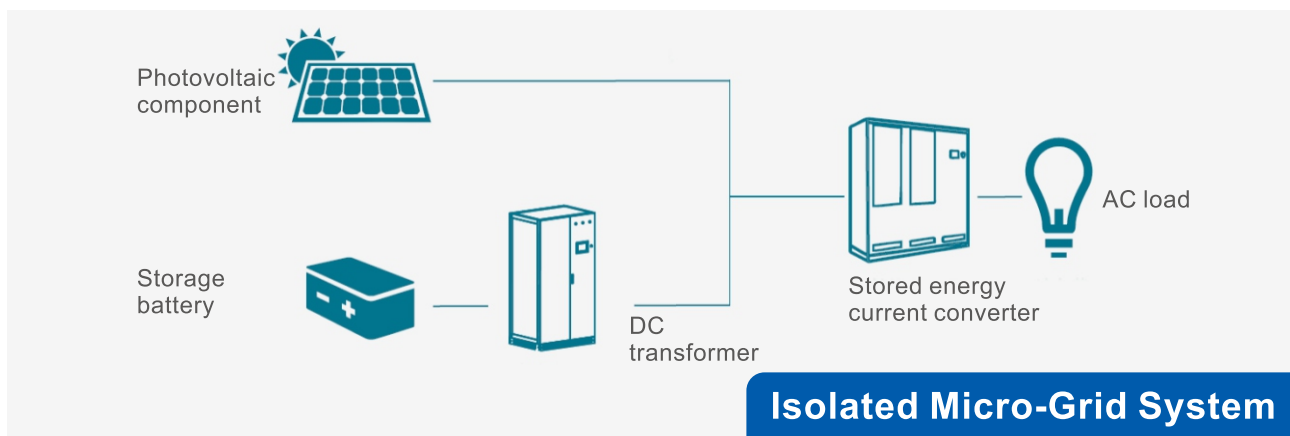
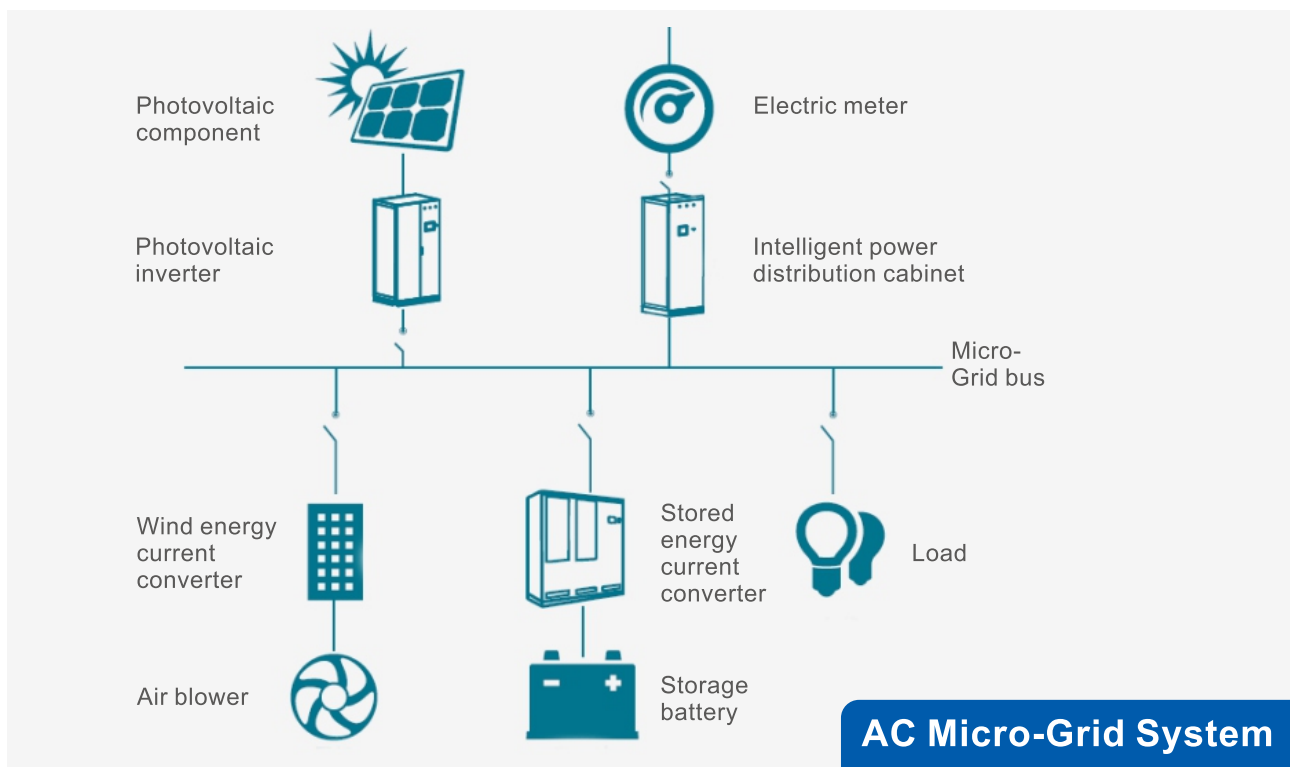
Description

- Storage battery is the important part of UPS power system, with complete technology, fast dynamic response, and high complete machine use ratio.
- As energy storage component, lithium battery unit has multiple protection technologies and perfect battery management system, completely meeting the needs of industry development. In time of normal AC supply, UPS is operating in the state of AC. In time of abnormal AC supply, equipment will be powered with the alternating voltage output by lithium battery system in an inverting way, with seamless switching.

Application in in Micro-Grid System

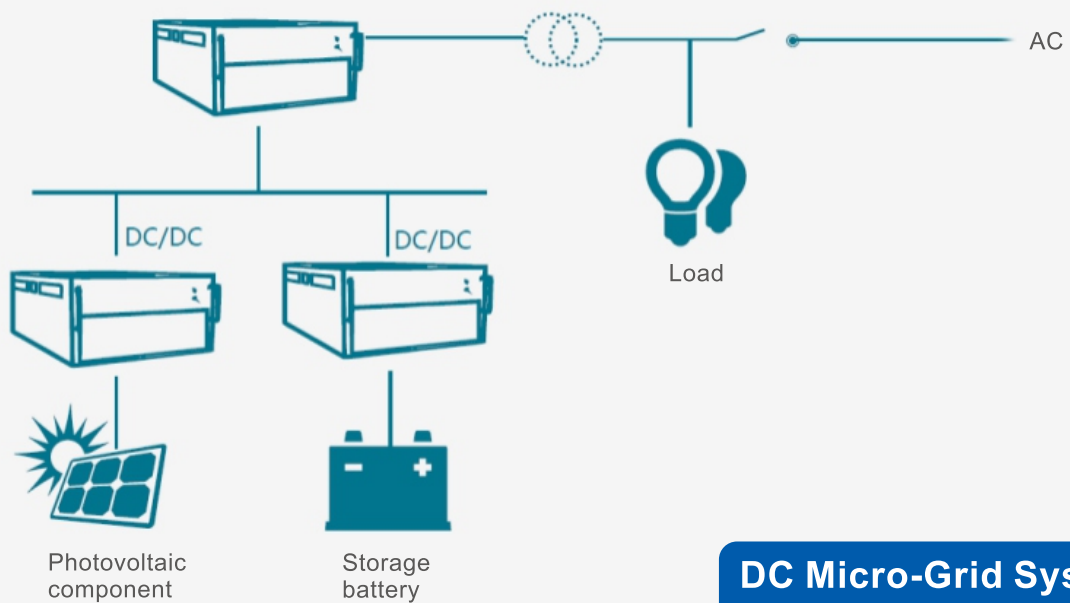
Anagement according to scheduled goals. It can form connected micro-grid through parallel operation with external grid, and also can form independent micro-grid through isolated operation. Energy storage system is an indispensable unit in micro-grid to realize electric power balance in micro-grid, offer stable power for load, improve electrical use reliability, and realize seamless switching between parallel grid operation and isolated grid operation.

It is suitable for independent micro-grid regions like areas, islands without electricity, and applicable to multi-energy complement, self-generation self-consumption micro-grid scenarios, as well as regions with centralized photovoltaic installation.





Stored energy current converter



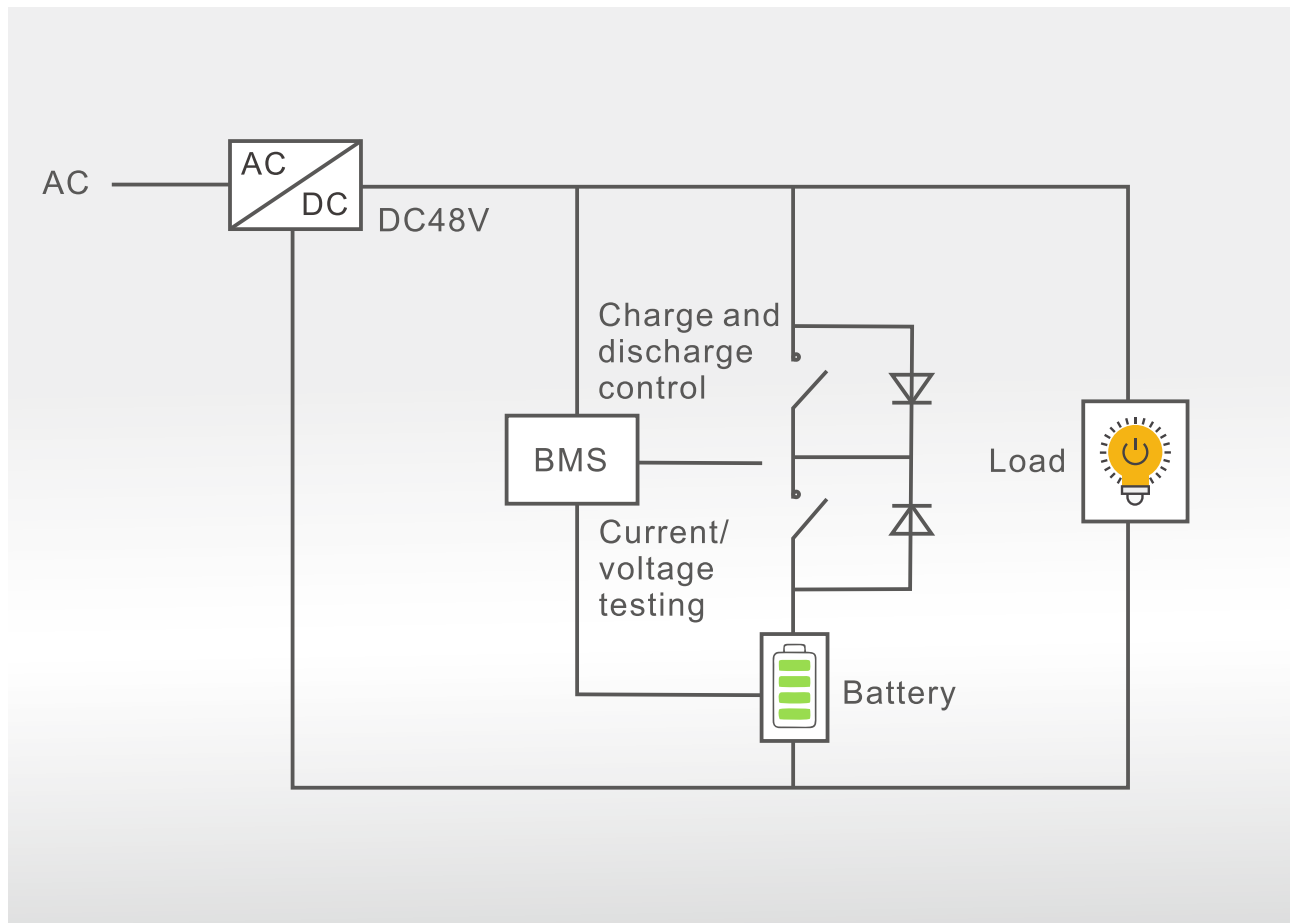
DC Micro-Grid System

Description

- Efficient and flexible, applicable to various renewable energy power generation systems
- AC-bus connection, convenient for centralized management
- Wide power supply radius, easy for capacity expansion, suitable for long-line transmission

Application in Communication

Backup-type communication lithium ion battery pack technology has timely meet the market demand for new type of domestic and overseas lithium battery backup power solutions in China's communication industry, and has effectively integrated China's modern communication backup power technology with international advanced technology.

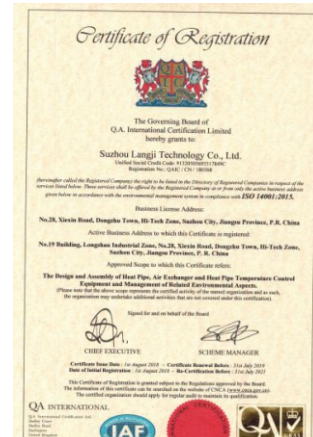


Description

- Backup-type communication lithium ion battery pack system designed, developed, produced and sold by our company is a kind of intelligent unmanned backup power system. As a part inserted into the cabinet of electric equipment, this system is applicable to the power backup of medium-and-small capacity network-accessing equipment, mobile communication equipment, transmission equipment, satellite earth station, and microwave communication equipment, with functions of centralized control, battery maintenance and management, meeting the requirements of unmanned operation or less-operator operation.

■ Honor and Qualification

Being awarded a “High-tech Enterprise”, our company has passed the certification of ISO9001 and IOS14001 system, and owns many invention patents. Products have been certified with CE, TLC, TUV, and IEC62133.



LANGJI

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