



### ◎ SAFE

- ★ Top quality lithium iron phosphate battery cells.
- ★ Voltage and temperature are collected for each battery cell for more detailed management.
- ★ Perfluorohexanone PACK level fire protection for modular level suppression.
- ★ 2-stage BMS design for modules and battery clusters, with multiple status monitoring and hierarchical linkage.

### ◎ INTELLIGENT

- ★ Intelligent door lock, support multiple unlocking methods, such as fingerprints, passwords, etc.
- ★ Integrated energy billing components, anti-reverse flow components, dynamic real-time monitoring, data summarization.
- ★ The equipment has a load tracking function, can realize the demand control, the system is more economically advantageous.
- ★ Cloud platform online operation and maintenance, convenient function parameter settings, remote monitoring and maintenance, intelligent and worry-free.

### ◎ CONVENIENCE

- ★ Modular design for easy maintenance and installation.
- ★ All-in-one design for rapid deployment and on-the-go use.

### ◎ EFFICIENT

- ★ 100kW PCS + 241kWh battery, efficient charging and discharging.
- ★ Battery PACK liquid cooling refrigeration, high cell consistency, high efficiency of the whole system.
- ★ The main circuit breaker adopts the system electric control, effectively controlling the standby power consumption
- ★ Covering an area of 1.35 square meters, small size, more space-saving installation.



100kW - 241kWh  
OUTDOOR LIQUID-COOLED LITHIUM  
BATTERY ENERGY STORAGE SYSTEM



# 100kW-241kWh

## SUMMARIZE

The energy storage system adopts integrated box design, integrating lithium battery storage system, PCS system, EMS, liquid cooling system and fire protection system. Professional temperature control design ensures safe, stable and long-term operation.

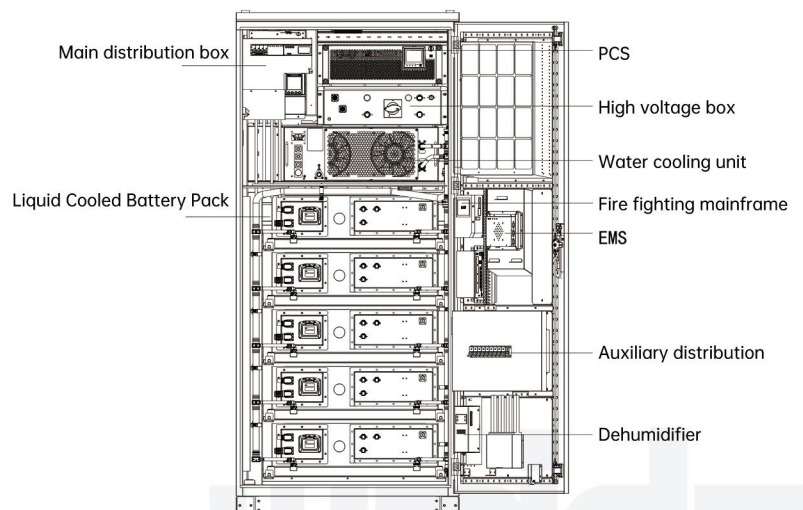
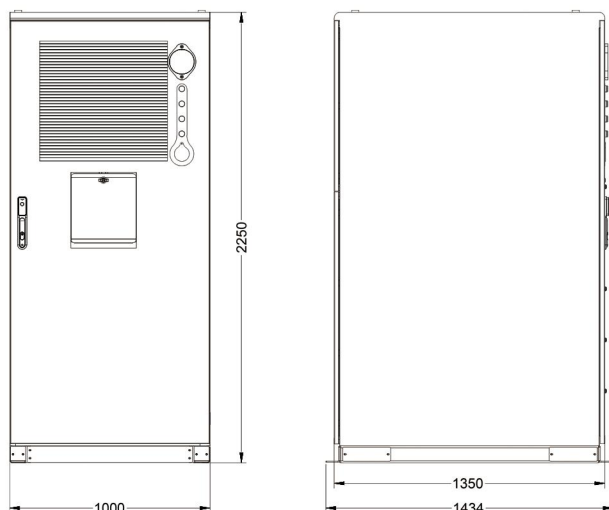
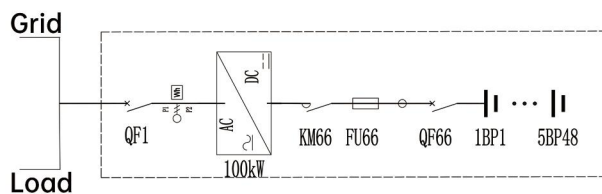
The product has IP54 protection level, mobility, easy lifting and transportation, shorter disassembly cycle, applied to industrial and commercial energy storage, integrated design, intelligent control, whole system monitoring, historical status record and other functions.

## CONFIGURATION LIST

Item	Specification	Quantity
Cabinet	1000*1350*2250mm(W*D*H)	1
Lithium battery storage system	241kWh (768V314Ah)	1
Battery management system	BMS	1
Energy management system	EMS	1
Bidirectional variable flow control system	PCM100	1
Liquid cooling system	3kW	1
Fire-fighting	Perfluorohexanone	1
Dehumidifier	60W	1
Billing components	Billing meters + current transformers	1
Anti-backflow components	Anti-reverse current meter + current transformer	1
Auxiliary distribution system		1



## SYSTEM TOPOLOGY



\*For reference only, subject to actual deliverables.

## PCS Parameters

### PCS Parameters

Battery interface parameters	Voltage range	DC650V ~ DC900V (3P+N+PE) DC580V ~ DC900V (3P+PE)
	DC Maximum current	170A
AC grid parameters	Output line system	3W+PE 3W+N+PE
	Rating	100kW
	Rated voltage	AC 380V/400V
	Rated current	151A
	Voltage range	-15% ~ +10%
	Rated frequency	50Hz/60Hz
	Frequency range	±2Hz
	Power factor	-0.9 ~ +0.9
	Output current harmonics	≤3% (Rated power)
	Charge/Discharge conversion time	< 100ms
	Environment	Operating temperature
Storage temperature		-40°C ~ 70°C (Without battery)
Relative humidity		0%RH ~ 95%RH, Non-condensing
Working altitude		2000m; 2000m ~ 4000m Derated use
Static (in a signal)		< 75dB
Communications and management	Communications interface	CAN / RS485
	Communication protocols	CAN2.0 / ModBus RTU

## Energy storage parameters

### Energy storage parameters

Model grade		100kW/241kWh
Energy storage parameters		
Basic parameters	Energy storage capacity	241kWh
	Energy storage configuration	1 x 768V 314AH Lithium battery storage system
	System voltage	768V
	Operating voltage range	DC672V ~ DC876V (2.8V ~ 3.65V)
	Battery type	LFP
	Number of cycles	> 6000 times (100% DOD, 70% Remaining, 0.5C)
	Remaining power at end of year 10	> 168.7kWh (70%)
	Static (in a signal)	< 70dB
Longevity	Total equipment life cycle	10 years (based on 2 charges and 2 releases per day (300 days per year))
Other than	Communication method	CAN/RS485
	Isolation method	Null
	Protection class	IP54
	Battery cooling method	Liquid cooling
	Fire-fighting	Perfluorohexanone fire extinguishers
	Weight	2500kg
	Size	1000*1350*2250mm (W*D*H)

## Electric Cells

Adopting 3.2V 314Ah single cell, the battery cells are designed with square aluminum shells, which avoids the possibility of the surface of the battery cells being damaged by machinery and resulting in the internal damage of the battery cells, and improves the safety performance of the product. A film-shaped explosion-proof valve is installed on all the battery cells, which also ensures that under any extreme conditions (such as internal short circuit, battery overcharge and overdischarge, etc.), a large amount of gases rapidly gathered inside the battery cell can be discharged through the riot valve, which can ensure that the battery cell will not explode, so the selection and design of the battery cell have fully considered the safety of the battery cell and the system.

Item	Parameters	Prerequisite
Cell type	Lithium iron phosphate cells	N.A.
Cell model	LFP71173207/314Ah	N.A.
Overall dimensions	71.65*174.7*207.11mm	
Cell weight	5.65±0.20kg	Protective film (covering sth. with a blue layer)
Factory internal resistance(1kHz)	0.20±0.05mΩ	27%SOC, Based on in-line test data
Rated (nominal) capacity	314Ah	(25±2)°C, Standard charge/discharge
Nominal voltage	3.2V	(25±2)°C, Standard charge/discharge
Rated energy	1004.8Wh	(25±2)°C, Standard charge/discharge
Operating voltage	2.5-3.65V 2.0-3.65V	Temperature T > 0°C Temperature T ≤ 0°C
Shipment voltage range	3.27 ~ 3.30V	(25±2)°C, 27%SOC Core open circuit voltage
Energy density	≥175Wh/kg	(25±2)°C, Standard charge/discharge
Recommended SOC usage window	10% ~ 90%	N.A.
Monthly self-discharge	≤3.0%	Three months after shipment standard charge to 27% SOC, 25±2°C storage
Charging power	0.5P	
Discharge power	0.5P	
Discharge temperature range	-30 ~ 60°C	N.A.
Charging temperature range	0 ~ 60°C	N.A.
Guaranteed operating conditions for the life of the product	(25±5)°C	N.A.
Number of cycles	6000 times; 25±2°C, Standard charging and discharging test until the capacity decay to 70% of the nominal capacity cutoff	
Energy efficiency	> 90%	



## Battery Module

Adopting 48 3.2V314Ah single lithium iron phosphate cells, 48 series and 1 parallel (48S1P) to form a 768V314Ah battery module. (images are for reference only, subject to in-kind)



Battery module parameters

Cell type	Energy cell
Component	48Cells, BMU
Combinatorial approach	48S1P
Nominal capacity	314Ah
Nominal voltage	153.6V
Weight (kg)	320kg
Working voltage	134.4V ~ 175.2V
Maximum continuous discharge power (kW)	24.1152 (0.5C)
Terminal output	Connectors
Dimension mm (W*D*H)	786.5*1091*247.2mm
Communication method	CAN

## Battery clusters

The battery module in this solution is integrated into the outdoor cabinet rack and is equipped with a specialized BMS battery management system.

Battery cabinet parameters

Cell type	LFP(3.2V314Ah)
Battery pack configuration	1P48S/48.23kWh
Battery system configuration	1P240S (1P48S*5)
Rated battery voltage	768V
Battery voltage range	672V ~ 876V
Nominal energy (BOL)	241kWh
Depth of discharge (maximum/recommended)	100%/90%
Discharge cutoff voltage	672V or 2.8V in any cell of the cluster (T>0°C)
Charge cut-off voltage	876V or 3.65V in either cell of the cluster
Rated charge/discharge current	157A
Charge/Discharge ratio	≤0.5P
Number of cycles	6000
Protection class	IP54
Overpressure protection	YES
Thermal management	Liquid cooling
Operating temperature range	-20 ~ 50°C (Discharge) 0 ~ 50°C (Charge)
Operating humidity range	0 ~ 95% (No condensation)
Storage temperature range	-20 ~ 50°C
Permissible altitude	≤3000m (2000m or more derated)
Static (in a signal)	≤75dB
Communication interface	RS485 / Ethernet / CAN