



◎ **SAFE AND RELIABLE**

Lithium Iron Phosphate battery cells from first-tier manufacturers.  
Intelligent air-cooling design, long system life and smooth operation.  
Module, battery cluster secondary BMS design, multiple status monitoring.

◎ **EFFICIENT AND CONVENIENT**

High energy type system has high energy density, stable and reliable performance, long service life  
Modularized design, convenient for maintenance, management and capacity expansion

◎ **ACTIVE EQUILIBRIUM**

3A active equalization, overcoming the impact of single cell capacitance on system capacity.  
Equalization accuracy less than 2%, equalization capacity up to 10% of rated output.

◎ **COST OPTIMIZATION**

Small size and light weight, saving space and installation costs.  
Long cycle life, low failure rate, reduce operation and maintenance investment.



# LITHIUM BATTERY STORAGE CABINET



# BESS100kW-215kWh

## Summarize

Li-ion battery system mainly consists of battery, power conversion system (PCS), energy management system (EMS), battery management system (BMS) and other electrical equipment. The secondary BMS is designed with multiple monitoring of system status and hierarchical linkage. Relays, fuses, circuit breakers, BMS constitute a comprehensive protection system integrating electrical and functional safety.

## System Components



### Lithium Battery Module

The main components of system consist of a battery module formed by safe, high-efficiency, long-life lithium iron phosphate cells connected in series, and a battery cluster formed by multiple modules connected in series.



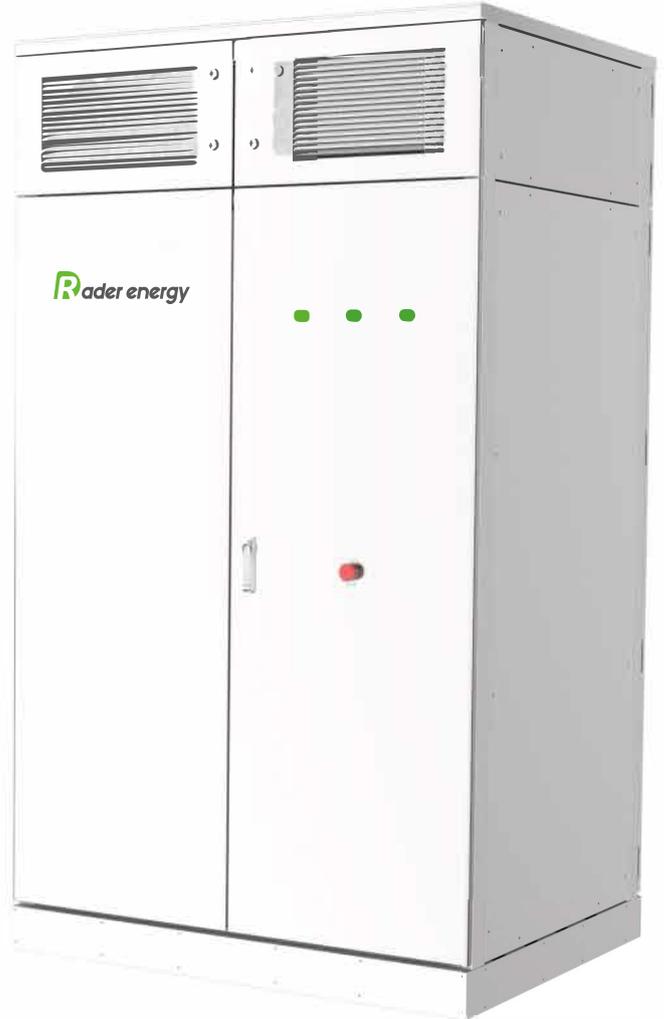
### Battery Management System

The core component of the system effectively protects the battery from over-charging, over-discharging, over-current, etc., and at the same time manages the equalization of the battery cells to guarantee the safe, reliable and efficient operation of the whole system.

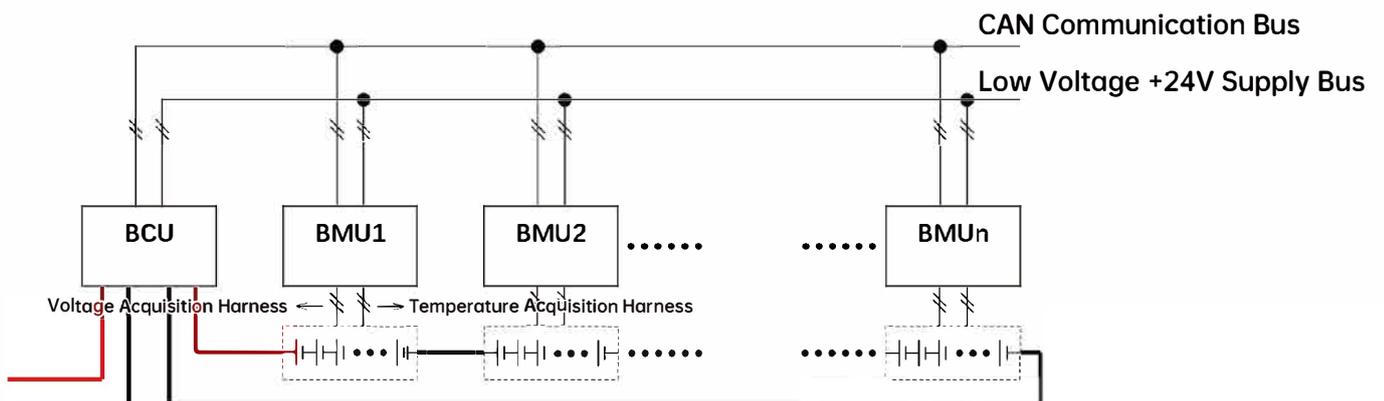


### Monitoring System

System operation data monitoring, operation strategy management, historical data logging, system status logging, etc.



## System Topology



# System Parameters

Model Grade		100KW/215KWh
<b>Energy Storage Parameters</b>		
	Energy Storage Capacity	215KWh
	Energy Storage Configuration	1 unit 768V 280AH Lithium Battery Storage System
	System Voltage	768V
	Operating Voltage Range	DC672V ~ DC876V (2.8V ~ 3.65V)
	Battery Type	LFP
	Number of cycles	> 6000ST(100%DOD, SOH 80%, 0.5C)
	Remaining At End Of Year 10	>150kWh (70%)
<b>PCS Parameters</b>		
DC Side Parameters	Voltage Range	DC650V ~ DC900V
	DC Channel	1
	Single Channel Rated Current	175A
AC Grid Parameters	Output Line System	3W+PE
	Rated Power	100KW
	Rated Voltage	AC 380V
	Rated Current	151A
	Voltage Range	-15% ~ +10%
	Rated Frequency	50Hz/60Hz
	Frequency Range	±2Hz
	Power Factor	1
	Output Harmonics	≤3%
	AC Current Distortion Rate	< 3% At Rated Power
Safeguard	Input Anti-Reverse	Yes
	Output Overcurrent	Yes
	Output Overvoltage	Yes
	Insularization	Yes
	Insulation Resistance Test	Yes
Functionality	Overall Efficiency Of Charging And Discharging	≥87%
	Data Acquisition Frequency	≤30s / time
	Remote Diagnostic Recovery	Yes
<b>Basic Parameters</b>		
Matrix	Operating Temperature	-20°C ~ 55°C (45°C Upper Limit)
	Storage Temperature	-20°C ~ 60°C
	Relative Humidity	0%RH ~ 95%RH, Non-Condensing
	Working Altitude	At 45°C, 2000m; 2000m ~ 4000m Derate
	Noise	< 70dB
Longevity	Total Equipment Life Cycle	10 Years
	Life Cycle Equipment Availability Factor (AF)	> 99%
Else	Communication Method	CAN/RS485
	Isolation Method	No
	Protection Class	IP54
	Cooling Method	Refrigeration
	Fire-Fighting	Perfluorohexanone Fire Extinguishers
	Sizes	1500*1288*2500mm(W*D*H)

## System Features

### safe And Reliable

First-line manufacturer cells, intelligent air-cooling design, long life. Module, battery cluster secondary BMS design, multiple status monitoring, three-level electrical protection system.

### Efficient And Convenient

High-energy type system has high energy density, stable and reliable performance, long service life, and modularized design, which is convenient for maintenance, management, and capacity expansion.

### Active Equilibrium

3A active equalization to overcome the influence of single cell capacitance on system capacity. Equalization accuracy is less than 2%, and equalization capacity reaches 10% of rated output.

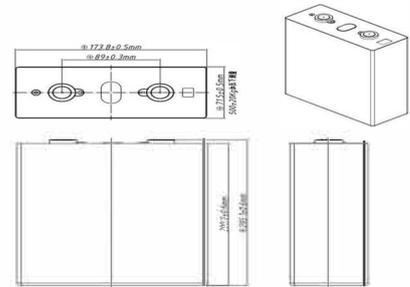
### Cost Optimization

Small size and light weight, saving space and costs. Long cycle life, low failure rate, reduce O&M investment.

# Electric Core

Lithium battery system using 3.2V 280Ah high energy type lithium iron phosphate core, square aluminum shell design, reduces the possibility of damage to the surface of the core due to mechanical damage and of damage to the inside of the core, improves the safety performance of the product. The battery cells are installed with a film-shaped explosion-proof valve to ensure that in any extreme case (such as internal short circuit, battery overcharge and overdischarge, etc.), a large amount of gas quickly gathered inside the battery cell can be discharged through the explosion-proof valve to improve safety.

Parameter Table	
Battery Type	Lithium Ion Battery
Nominal Capacity	280.0Ah <u>0.5C @ 25°C</u>
Nominal Voltage	3.20V
Operating Voltage	2.5 ~ 3.65V
AC Internal Resistance	≤0.18mΩ
Weights	≤5500g
Maximum Charging Current	0.5C Preservation
	1C 50%SOC, 30s
Maximum Discharge Current	1C Preservation
	2C 50%SOC, 30s
Maximum Operating Temperature Range	-20°C / + 60°C
Charging Temperature Range	0°C ~ 45°C
Discharging Temperature Range	-20°C ~ 60°C
Optimum Operating Temperature Range	15°C ~ 35°C
Storage Temperature	-40°C / + 60°C      Within 1 month -40°C~45°C      Within 6 month -20°C~35°C



# Module

The battery module consists of 12 3.2V 280Ah lithium iron phosphate cell, 1 parallel and 12 strings (12S1P) to form a 38.4V 280Ah battery module. The module has a built-in BMU system, which collects the voltage and temperature of each cell and manages the equalization of cells to ensure the normal operation of the whole module safely and efficiently.

Parameter Table	
Capacity	280Ah
Combinatorial Approach	1P12S
Rated Voltage	38.4V
Rated Power	10.752kWh
Maximum Continuous Charging Current	140A (0.5C)
Maximum Continuous Discharge Current	140A (0.5C)
Voltage Range	33.6 ~ 43.8V
Working Environment Temperature	-20°C ~ 55°C
Weights	≤118kg
Sizes (W*D*H)	372mm*688mm*226mm
Communication Method	CAN
Cooling Method	Intelligent Air-Cooled



# System Application



Industrial and Commercial Demand Management, peak-load shifting



User-side backup power



Wind and light storage adjusts peak and frequency



Microgrid System