

# IIS

## Integrated Energy Storage System

Sicon Chat Union Electric Co., Ltd. (stock code: 833426, hereinafter referred to as "SCU") has always been committed to the application of core technologies in power conversion and automatic control in data centers and new energy fields. It continues to empower green development, thus providing complete solutions for the three major business areas of data center infrastructure, new energy vehicle charging, and green energy storage. SCU specializes in energy, and power electronics and control technology, independently developing and intelligently manufacturing a full series of modular PCSs. A single module capacity covers 10 kW–215 kW (compatible with 900 V and 1,500 V), with the PCS system capacity up to 1,250 kW per unit. Focusing on the demand of the energy storage market, SCU has launched multi-scenario application solutions such as integrated solar storage systems, energy storage containers, and integrated solutions for production, storage, and charging, to provide global customers with sustainable energy and power management systems, and enable Zero-carbon travel, thus promoting the transformation of the world from industrial civilization to ecological civilization with technology.

## CONTACT US

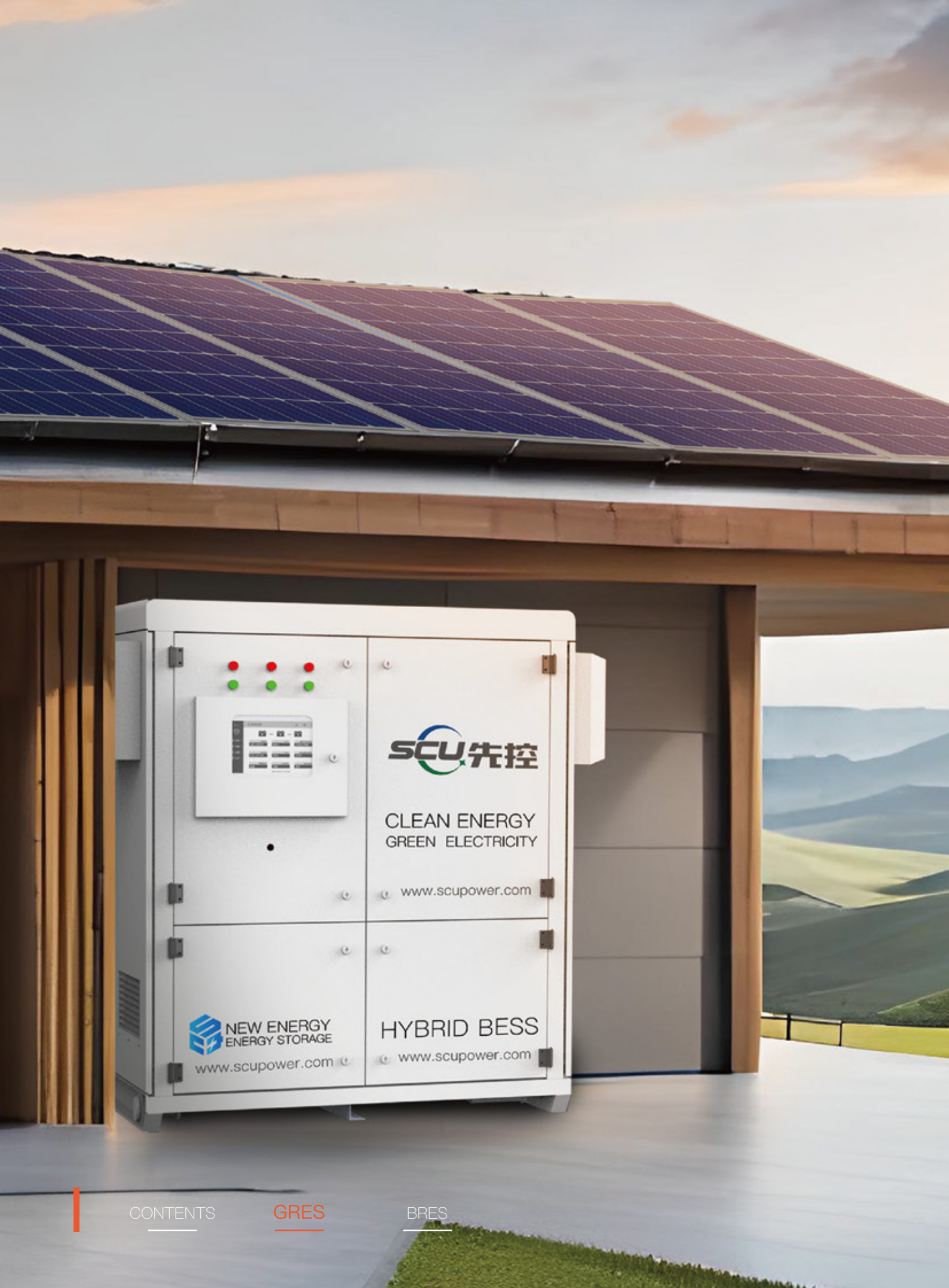
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# IIS

## Integrated Energy Storage System

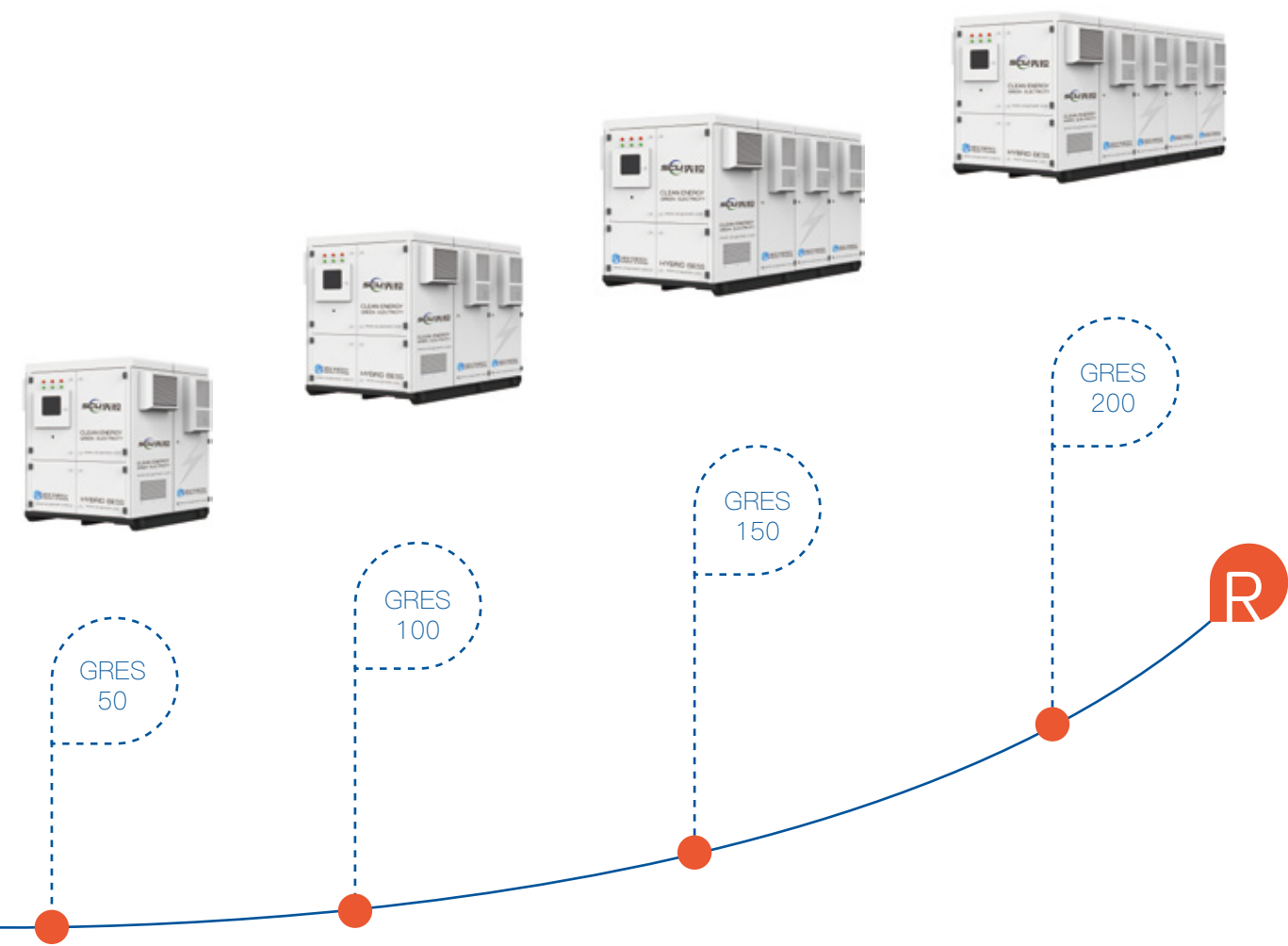




# GRES

## Integrated Optical Storage System—Static Generator

GRES (Grid Renewable Energy Storage Power Supply) static generator is an intelligent and modular power supply equipment that integrates lithium batteries and multifunctional bidirectional PCSs. For different application scenarios, it can combine lithium batteries, bidirectional DC/AC converters, bidirectional DC/DC converters, static transfer switch (STS), power monitoring system (PMS), and other unit modules to achieve on-grid power supply, off grid power supply, on-grid and off grid uninterrupted power supply, static reactive power compensation, and harmonic suppression. It can also combine new energy, grid, lithium batteries, and loads for reasonable configuration and scientific utilization, providing users with green, environmentally friendly, and noise-free electricity services with high reliability and high safety. At the same time, the system also has the characteristics of easy installation, easy operation, and wide application prospects.





# FUNC

## Five functions

It can meet the demand management of industry and commerce and peak load shifting

It improves power quality, which is a user-side backup power supply

It is the microgrid system It can be used for mobile energy storage and electric rescue

Peak shaving and frequency of wind and solar energy storage can be adjusted

## Core Advantage

### Safety and reliability

The battery module adopts a PC bracket and steel structure reinforcement design to ensure the highest safety of the system during transportation, installation, and operation; The damping pad design for battery installation can improve the impact resistance of the system; The PCS and battery pack series design can eliminate circulating currents to improve system reliability and maintainability; The BMS and AC/DC multi-layer protection can make the system safer;

### Efficiency and convenience

Photovoltaics and diesel generators can be directly connected, with intelligent multi-energy management; It is an integrated equipment, which can be fixed on the ground, or mounted on vehicle, and easy to move; It can be switched on and off with one button, more convenient for operation;

### Cost optimization

One machine with multiple functions: It has functions of on-grid and off-grid uninterrupted power supply, dynamic expansion, and peak load shifting, which can optimize power consumption mode, improve three-phase imbalance to realize multi-energy complementarity; It features compact size and light weight, saving floor space and installation costs; It has long life, low fault rate, and low operation and maintenance costs.

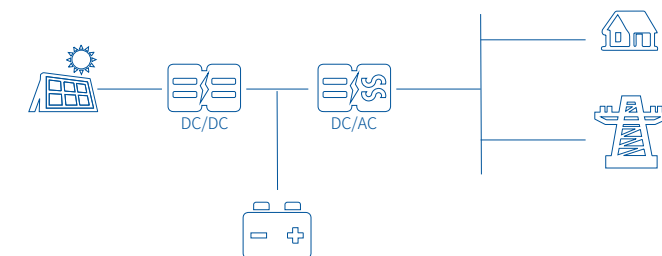


# GRES

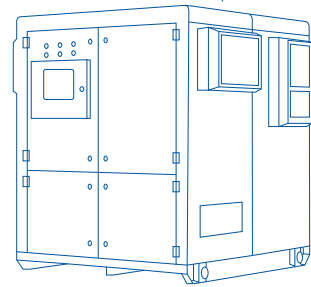
## Composition

- PCS
- Lithium battery module
- Battery management system
- Static transfer switch
- Monitoring system
- IP54 outdoor cabinet
- Air conditioning system
- MPPT Photovoltaic Module

## Topology map



# Optical storage DC bus system



## GRES-75-50

Battery capacity: **75kWh**

PCS capacity: **50kW**

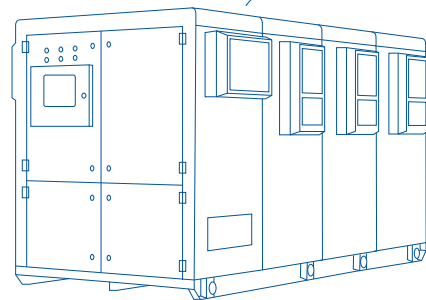
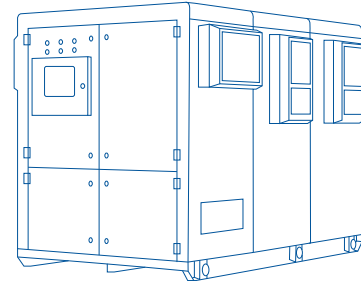
Size: **1680\*1502\*1700** (W\*D\*H)mm

## GRES-150-100

Battery capacity: **150kWh**

PCS capacity: **100kW**

Size: **1680\*2264\*1700** (W\*D\*H)mm



## GRES-225-150

Battery capacity: **225kWh**

PCS capacity: **150kW**

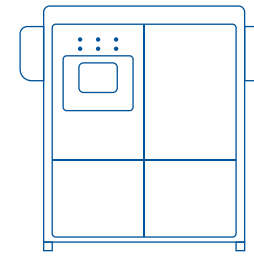
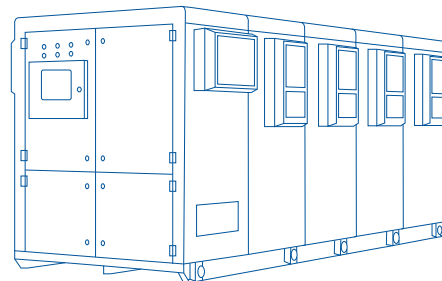
Size: **1680\*3026\*1700**(W\*D\*H)mm

## GRES-300-200

Battery capacity: **300kWh**

PCS capacity: **200kW**

Size: **1680\*3788\*1700**(W\*D\*H) mm



# GRES

## Integrated Optical Storage DC Bus System

Model	GRES-75-50	GRES-150-100	GRES-225-150	GRES-300-200
<b>PV parameter</b>				
MPPT voltage range	DC200V ~ DC700V			
MPPT full power voltage range	DC370V ~ DC700V			
Number of MPPT channels	0-2 (optional)			
Maximum single channel current	135A			
<b>AC parameter (on-grid)</b>				
Rated output power	50kW	100kW	150kW	200kW
Maximum output power	55kW	110kW	165kW	220kW
Rated grid voltage	AC 380V/400V			
Grid	3W+N+PE			
Grid voltage range	-15% ~ +10%			
Rated grid frequency	50Hz/60Hz			
Grid frequency range	±2Hz			
Output current harmonics	≤ 3% (rated power)			
Power factor range	-0.9~+0.9			
<b>AC parameter (off grid)</b>				
Rated output power	50kW	100kW	150kW	200kW
Maximum output power	55kW	110kW	165kW	220kW
Rated output voltage	3W+N+PE, 380V/400V			
Output voltage harmonics	3% (linear full load)			
Rated frequency	50Hz/60Hz			
Overload capacity	105%]: continuous operation; (105%—120%]: 10 min; 120%): 1 min			
<b>Battery parameter</b>				
Cell type	Lithium iron phosphate			
Single battery module electricity	5.12kWh			
Number of battery modules	15	30	45	60
Battery system electricity	76.8kWh	153.6kWh	230.4kWh	307.2kWh
Running time	1.5 h (the duration can be customized by adjusting the number of battery modules)			
Cycle life	4000 times (0.5C@25°C charge and discharge@100%DOD, EOL80%)			
<b>Protection</b>				
DC switch	Equipped			
AC switch	Equipped			
Grid monitoring	Equipped			
Insulation monitoring	Equipped			
DC reverse connection protection	Equipped			
Ground fault protection	Equipped			
Surge protection	DC level 2/AC level 2			
<b>Basic parameter</b>				
Size (W*D*H) (mm)	1680*1502*1700	1680*2264*1700	1680*3026*1700	1680*3788*1700
Weight (kg)	1395kg	2470kg	3545kg	4620kg
Isolation mode	Non-isolated			
Protection grade	IP54 for outdoor type			
Working temperature range	-20°C—55°C (derating above 45°C)			
Relative humidity (without condensing)	0 ~ 95%			
Temperature control method	Electrical compartment: intelligent air cooling; Battery compartment: air conditioning			
Maximum working altitude	4000m(derating above 2,000 m)			
Display	Touch screen			
Communication interface	RS485、CAN、LAN			
Communication protocol	Modbus-RTU、Modbus-TCP、CAN2.0B			



# SCU

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# BRES

## Integrated Energy Storage Power System— Industrial and Commercial Energy Storage

The BRES (Battery Renewable Energy Storage) integrated energy storage power supply system integrates long-life lithium batteries, battery management system (BMS), high-performance bidirectional PCS module, active safety system, thermal management system, and energy management system into a single standardized outdoor cabinet, forming an integrated plug and-play intelligent and modular power supply equipment. Each cabinet is an independent unit with energy storage and AC/DC power variation capabilities, and is equipped with an air conditioning temperature control system and fire protection system, which can operate safely, stably, and reliably for a long time. Through parallel connection on the AC side, the capacity can be flexibly expanded to achieve elastic expansion of the energy storage power station capacity.





# FUNC

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## Core Advantage

### Safety and reliability

It uses industry high-quality lithium iron phosphate material battery cells; The air conditioning has long system life, and smooth operation; It adopts an IP54 protection level design, which can ensure the safe and reliable operation of equipment in harsh environments; Its BMS and AC/DC multi-layer protection settings can ensure the safe operation of the system; The battery cells are equipped with thermal isolation and insulation brackets, and the module is equipped with fire protection to ensure the safety of the battery system

### Efficiency and convenience

PCS and battery systems both adopt modular design for easy installation and maintenance; It can be used in multiple scenarios, such as industrial parks, buildings, and low-voltage areas; It is integrated equipment; It can be configured for remote monitoring, device management, data analysis, fault prediction and identification, and rapid localization.

### Efficiency and convenience

It features compact size and light weight, saving floor space and installation costs; It has long life, low fault rate, and low operation and maintenance costs; It can maximize the utilization of green energy to save electricity expenses.

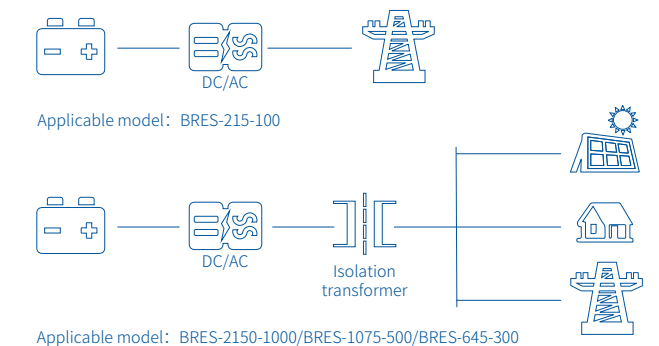


BRES

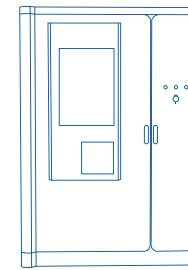
## Composition

- |                   |                        |                           |                          |
|-------------------|------------------------|---------------------------|--------------------------|
| PCS               | Lithium battery module | Battery management system | Static transfer switch   |
| Monitoring system | IP54 outdoor cabinet   | Air conditioning system   | MPPT Photovoltaic Module |

## Topology map

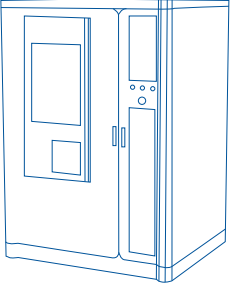


# Integrated Energy Storage Power System—— Industrial and Commercial Energy Storage

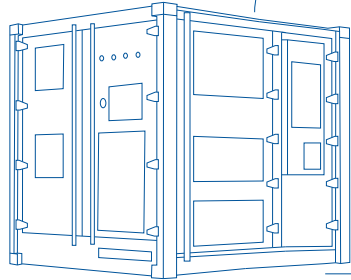


# BRES

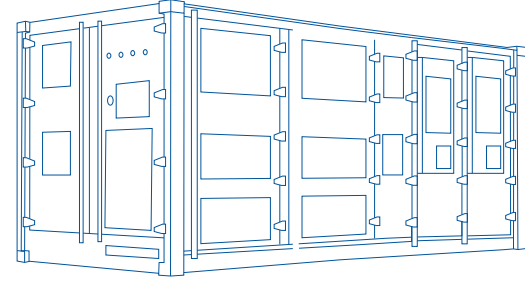
## 储能一体化电源系统



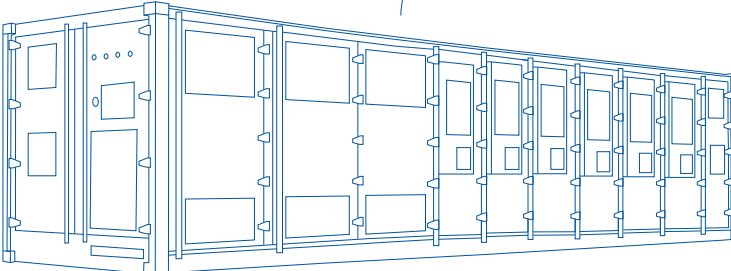
**BRES-215-100**  
 Battery capacity: **215kWh**  
 PCS capacity: **100kW**  
 Size: **1600\*1330\*2250** (W\*D\*H)mm



**BRES-645-300**  
 Battery capacity: **645kWh**  
 PCS capacity: **300kW**  
 Size: **3000\*2438\*2591** (W\*D\*H)mm



**BRES-1075-500**  
 Battery capacity: **1075kWh**  
 PCS capacity: **500kW**  
 Size: **6058\*2438\*2591** (W\*D\*H)mm



**BRES-2150-1000**  
 Battery capacity: **2150kWh**  
 PCS capacity: **1000kW**  
 Size: **12196\*2438\*2591** (W\*D\*H)mm

Model	BRES-215-100	BRES-645-300	BRES-1075-500	BRES-2150-1000
<b>PV parameter</b>				
Maximum photovoltaic access power	-	200KW	400KW	800KW
Rated current	-	303A	606A	1212A
Rated input voltage	-	3W+N+PE, 380/400V		
Rated frequency	-	50Hz/60Hz		
<b>DC side parameter</b>				
Voltage range	DC580V~DC900V			
DC channel	1	3	5	10
Rated single channel current	170A			
<b>AC parameter (on-grid)</b>				
Rated power	100kW	300kW	500kW	1000kW
Rated grid voltage	3W+N+PE, 380V/400V			
Grid voltage range	-15%~+10%			
Rated grid frequency	50Hz/60Hz			
Grid frequency range	±2Hz			
Output current harmonics	≤ 3% (rated power)			
DC component	<0.5%In			
Power factor range	-0.9~+0.9			
<b>AC parameter (off grid)</b>				
AC parameter (off grid)	-	300kW	500kW	1000kW
Maximum output power	-	315kVA	525kVA	1050kVA
Rated output voltage	-	3W+N+PE, 380/400V		
Output voltage harmonics	-	3%		
Rated frequency	-	50Hz/60Hz		
Overload capacity	-	105%]: continuous operation; (105%—120%]: 10 min; 120%]: 1 min		
<b>Battery parameter</b>				
Cell type	Lithium iron phosphate			
Single battery cabinet electricity	215.04kWh			
Number of battery cabinets	1	3	5	10
Battery system electricity	215.04kWh	645.12kWh	1075.2kWh	2150.4kWh
Rated running time	2 h (the duration can be customized by adjusting the number of battery modules)			
Cycle life	6,000 times (0.5C @ 25°C charge and discharge @ 90% DOD, EOL 80%)			
<b>Protection</b>				
AC switch	Equipped			
PV electrically-operated AC switch	Equipped			
Grid monitoring	Equipped			
Surge protection	Equipped			
<b>Basic parameter</b>				
Size (W*D*H) (mm)	1600*1330*2250	3000*2438*2591	6058*2438*2591	12196*2438*2591
Weight	2500Kg	10000Kg	16000Kg	28000Kg
Isolation mode	-	Isolation transformer (built-in)		
On-grid and off grid switching device	STS (optional)	STS (electronic switch)		Electrically-operated
Protection grade	IP54 for outdoor type			
Working temperature range	-20°C—55°C (derating above 45°C)			
Relative humidity (without condensing)	0 % RH — 95 % RH without condensing			
Temperature control method	Battery compartment: air conditioning; Electrical compartment: air cooling			
Maximum working altitude	2,000 m at 45°C; 2,000 m—4,000 m with derating use			
Display	Touch screen			
External communication interface	RS485、LAN			
Communication protocol	Modbus-RTU、Modbus-TCP			



# CASE



## Mobile optical storage container project

**Country :** Czech Republic

### Configuration:

Energy storage battery: 150 kWh  
PCS energy storage bidirectional converter: 100 kW  
MPPT module: 50 kW



## Integrated charging station project for optical storage and charging

**Country :** China

### Configuration:

Carport photovoltaic: about 26.68 kWp  
PCS energy storage bidirectional converter: 250 kW  
Battery energy storage system: 550 kWh  
Charging pile: 300 kW



## Distributed rooftop photovoltaic project

**Country :** China

### Configuration:

Photovoltaic system: 2.85 MWp  
PCS 100kW



## Mobile energy storage project

**Country :** Dubai

### Configuration:

GRES-150-100  
GRES-75-50



## Optical storage and charging project

Charging of hybrid storage electric vehicles

**Country :** Ethiopia

### Configuration:

GRES-150-150  
150kW/150kWh +100kW MPPT

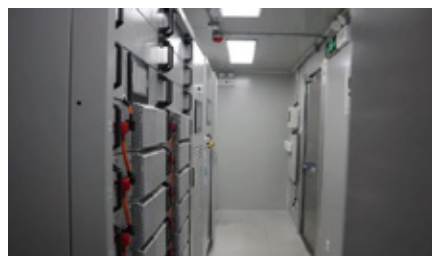


## Optical storage project

**Country :** Bulgaria

### Configuration:

Energy storage container  
Lithium battery system: 1.84MWh  
Power conversion: 600kW



## Multi energy complementary project

**Country :** Oman

### Configuration:

PCS 100kW  
Battery energy storage system 150 kWh



## Peak load shifting

**Country :** Thailand

### Configuration:

PCS 300kW  
Battery energy storage system 460kWh



## Mobile backup power project

**Country :** Bulgaria

### Configuration:

PCS 400kW  
Battery energy storage system 600kWh

# SCU

## GREEN ENERGY STORAGE

