



PRODUCT MANUAL

<http://www.rw-relay.com>

RC-SERIES Energy storage Battery system

High energy density

Standard 2U/4U rack size

Real-time electrical safety protection

Class A cells offer a longer service life



Comply with IEC/GBT standards

Provide your house energy storage solution

Whole solutions for design, assembly, test...

Accountable solution for safety and reliability

Wide range offering, easy business and ready to use out of the box



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Zhejiang Rockwill Energy Technology Co., Ltd. is a technology enterprise specializing in providing complete solutions for power automation system and related automation system supporting equipment.

The company has a long-term strategic cooperation with internationally renowned middle and high voltage electrical equipment R & D and manufacturing companies and research institutes, and has jointly developed a series of high-quality automation products,. The company has also married with the provincial intelligent high-voltage switch laboratory to jointly develop a new generation of intelligent synchronous switch measurement and control devices, electronic transformers, voltage sensor processing units, etc., and has achieved some fruitful technical achievements and accumulated a large number of industry professional and technical elites with excellent experience. Solid talent base, advanced production equipment, perfect quality system, strict testing means, is a strong guarantee for the company's product quality alone.

In addition to providing a rich choice of products, we can provide you with technical solution support services, you only need to tell us your needs, our technical staff will be tailored for you to design a complete set of product solutions

The company is renowned at home and abroad for providing high-quality products and services. In addition to the domestic market, the products are currently exported to South America, Central Asia, the Middle East, Central Europe, Southeast Asia, Africa and other places. We always adhere to the belief of growing together with customers, and strive to provide safer, more reliable, more advanced and more humane automation system solutions and equipment.

ROCKWILL®, China. Provide with best support.

If you have any question please consult below:

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Summary

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ROCKWILL® Energy strives to bring our customers the latest technology and competitive pricing and best service for distribution automatic.

The RC series energy storage battery is a battery PACK based on lithium-ion battery technology. Each pack consists of 2.5-10kW LFP cells and a BMS control board, and it is currently the mainstream design solution for energy storage batteries.

The RC series energy storage battery is a power storage system specially designed for Industry and commerce users. It can store electricity from renewable energy sources such as solar and wind power or during off-peak hours of the power grid, and release it during peak electricity consumption or power outages, achieving efficient energy utilization and flexible dispatching. With the acceleration of the global energy transition and the growth of household electricity demand, such systems are becoming important tools for modern families to achieve energy independence, reduce electricity costs, and enhance sustainable lifestyles.

Energy storage batteries are typically composed of battery modules, inverters, intelligent control units, etc. Its core function is to store surplus electricity and release it as needed. For example, the electricity generated by solar panels during the day, after meeting the household usage, the remaining part can be stored in the battery. At night or on rainy days, energy storage batteries can supply power to household appliances, reducing reliance on the power grid. Some systems also support the "peak-valley electricity price" strategy, charging during off-peak hours and discharging during peak hours, further saving electricity bills. In addition, in the event of a sudden power outage, the energy storage battery can automatically switch to an emergency power source to ensure the basic electricity needs of the household.

Service environment

Air temperature: Ambient temperature: -10°C ~ +50°C

Humidity: 0% ~ 95% (Non-congealing cream)

Above sea level: -100~2500m

1. High-efficiency energy storage and flexible charging and discharging

The household energy storage battery adopts high-energy-density LFP battery, with an energy storage efficiency of over 90%, and supports fast charging and discharging. Meanwhile, the system supports priority charging of renewable energy sources such as solar and wind power, and is compatible with energy storage during off-peak hours of the power grid, achieving "low-cost electricity storage and high-price electricity consumption". Some high-end models also support bidirectional charging and discharging, and sell electricity in reverse during peak grid demand periods to generate additional income.

2. Intelligent Energy Management System (EMS)

With built-in AI algorithms and Internet of Things (IOT) technology, energy storage batteries can analyze household electricity usage habits, electricity price fluctuations and weather data in real time, and automatically optimize charging and discharging strategies. For example, in time-of-use electricity pricing areas, the system charges during the low electricity price period in the early morning and supplies power to residents during the evening rush hour, saving electricity bills to the greatest extent. Users can also remotely monitor the battery level through the mobile phone APP, set the priority of electricity usage (such as that of refrigerators and medical equipment), interact with smart home devices, and achieve the full-process automation of "electricity usage - storage - control".

3. High safety and long service life

The LFP blade battery of the same type as BYD vehicles can effectively prevent combustion and explosion even in the case of high temperature or short circuit, and has passed international safety certifications such as UL 9540 and IEC 62619. The battery pack is equipped with multiple protection mechanisms such as temperature monitoring, overcharge and over discharge protection, and self-check for faults, with a service life of up to 10 to 15 years (with over 6,000 charge and discharge cycles). In addition, the modular design enables the system to operate at a low level even when a single battery fails, ensuring that the basic power supply is not interrupted.

4. Environmental Protection and Sustainable Development

Household energy storage batteries significantly reduce reliance on fossil fuels by maximizing the utilization of clean energy sources such as solar power. Take a typical 5kW photovoltaic +10kWh energy storage system as an example. It can reduce carbon dioxide emissions by 3 to 5 tons every year, which is equivalent to the environmental benefit of planting 150 trees. Meanwhile, over 95% of the materials of this battery can be recycled, avoiding the pollution problems of traditional lead-acid batteries and aligning with the global carbon neutrality goal.

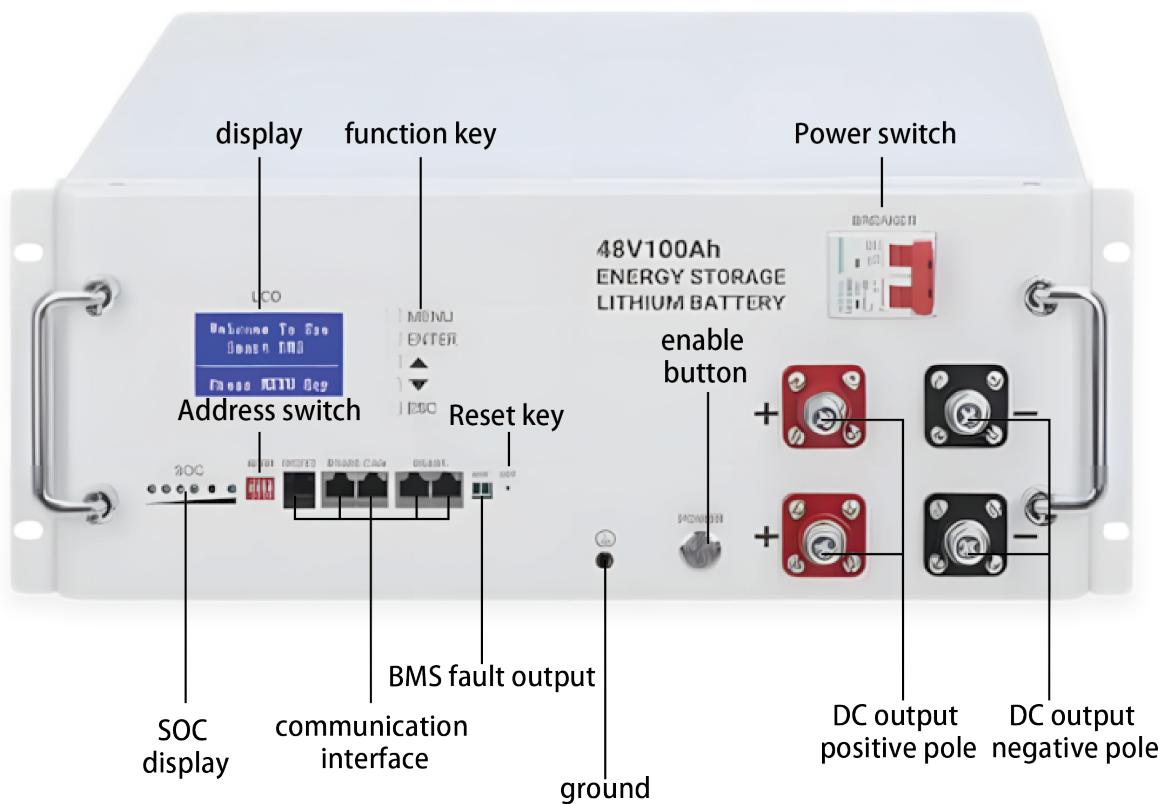
5. Emergency power supply and off-grid capacity

When extreme weather conditions such as typhoons and earthquakes cause the power grid to collapse, energy storage batteries can switch to off-grid mode within 0.02 seconds and continuously supply power to critical loads such as lighting, communication equipment, and medical devices (typically supporting 12 to 24 hours). Some systems can also be expanded to a "whole-house backup power supply" mode to meet the high-power demands of air conditioners, kitchen appliances, etc., achieving energy self-sufficiency for more than 72 hours. This is particularly suitable for areas with unstable power grids.

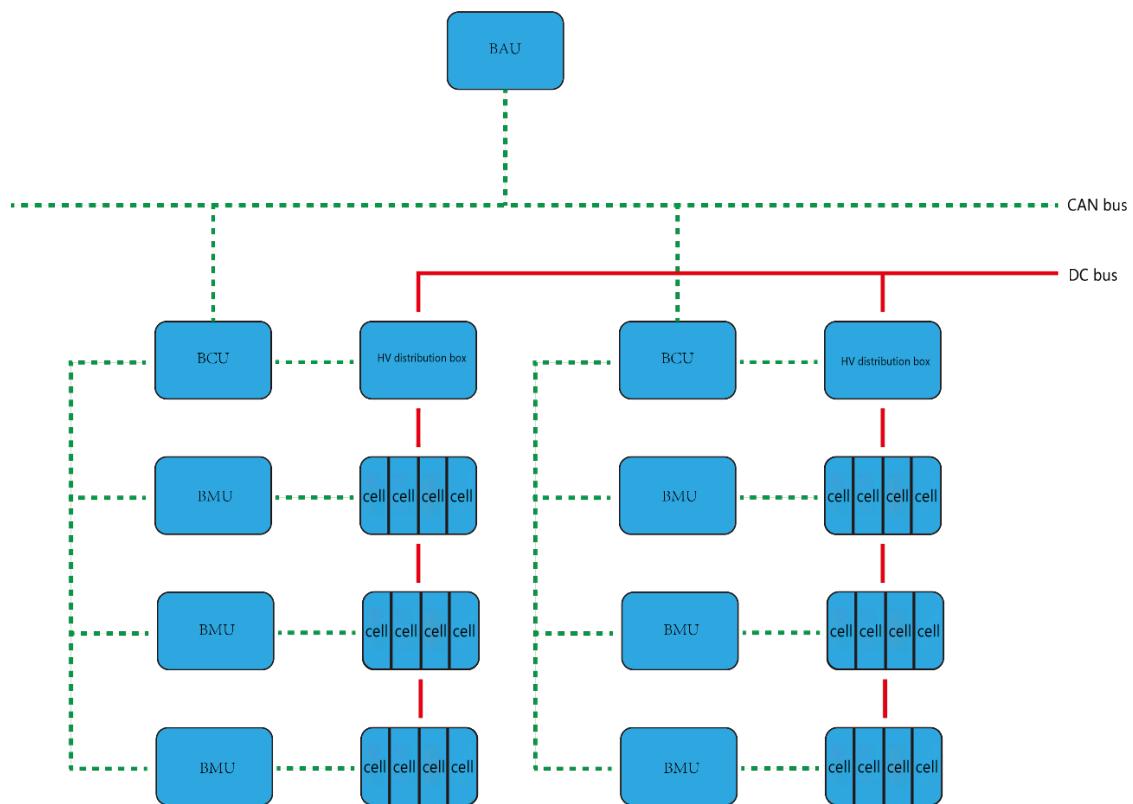
6. Flexible adaptability and scalability

The household energy storage battery adopts a modular design, with a capacity that can be expanded from 5kWh to over 150kWh. The 5·50 kWh battery is suitable for various scenarios such as single-family villas, apartments, and small stores. Energy storage batteries with a capacity of over 50 KWH can be applied in shopping malls, residential areas, factories, and other scenarios. For instance, users can first install the basic capacity to meet their daily needs, and then gradually increase the configuration based on requirements such as electric vehicle charging and home expansion. In addition, this system is compatible with photovoltaic panels and inverters of different brands to build an integrated energy network.

Product display:



system structure:



Product model	RC-C4850		RC-C48100		RC-C48200						
Battery type	LFP 3.2V 50AH		LFP 3.2V 100AH		LFP 3.2V 200AH						
Battery capacity	2.4kWh	2.56kWh	4.8kWh	5.12kWh	9.6kWh	10.24kWh					
Rated discharge current	50A	50A	50A	50A	50A	50A					
Maximum discharge current	100A	100A	100A	100A	100A	100A					
Voltage range	40.5~54 V	43.2~57.6 V	40.5~54 V	43.2~57.6 V	40.5~5 4V	43.2~57.6 V					
Standard battery unit voltage	48V	48V	48V	48V	48V	48V					
Maximum DC charging voltage	54V	57.6V	54V	57.6V	54V	57.6V					
Maximum charging current	50A	50A	100A	100A	100A	100A					
Single Cluster Battery Pack	15S1P	16S1P	15S1P	16S1P	15S1P	16S1P					
Rated output power	5KW	5KW	5KW	5KW	5KW	5KW					
Communication interface	RJ45X1		RS485/232X2		CANX2						
Power battery interface	BAT+ X2			BAT- X2							
Battery life	Loop 3000~6000 times @DOD 80%/25°C/0.5C										
Maximum number of parallel machines	15										
Cooling mode	Forced air cooling										
Protection	Over (under) voltage protection/over current protection/over temperature protection/over discharge protection/short circuit protection										
Operating environment	Temperature: -30~50°C Humidity: 20~95RH%										
Maximum working altitude	2500m(> 2000m load reduction required)										
Fire protection installation	Heptafluoropropane gas fire extinguishing device										
Class of protection	IP20										
Communication mode	Default: RS485/RS232/CAN										
Specification	2U		4U		4U						
size											

RC-RCH series (Rack stack install)

Voltage	Host and slave mode	Battery pack specification	Battery capacity	Size (mm)	Weight (kg)
96V	1 host 2 slave	96V100Ah	9.6kWh	560*630*775	155
144V	1 host 3 slave	144V100Ah	14.4kWh	560*630*975	215
192V	1 host 4 slave	192V100Ah	19.2kWh	560*630*1175	275
240V	1 host 5 slave	240V100Ah	24kWh	560*630*1375	335
288V	1 host 6 slave	288V100Ah	28.8kWh	1200*630*1010	390
384V	1 host 8 slave	384V100Ah	38.4kWh	1200*630*1210	510
432V	1 host 9 slave	432V100Ah	43.2kWh	1200*630*1210	570
512V	1 host 10 slave	512V100Ah	51.2kWh	1200*630*1410	630
768V	1 host 15 slave	768V100Ah	76.8kWh	1200*655*2145	940

Product pictures



RC-RDH series(Cabinet drawer type install)

Voltage	Host and slave mode	Battery pack specification	Battery capacity	Size (mm)	Weight (kg)
96V	1 host 2 slave	96V280Ah	26.88kWh	560*1000*900	270
144V	1 host 3 slave	144V280Ah	40.32kWh	560*1000*1150	395
192V	1 host 4 slave	192V280Ah	53.76kWh	560*1000*1400	520
240V	1 host 5 slave	240V280Ah	67.2kWh	560*1000*1650	645
288V	1 host 6 slave	288V280Ah	80.64kWh	1200*1000*1150	770
384V	1 host 8 slave	384V280Ah	107kWh	1200*1000*1400	1020
432V	1 host 9 slave	432V280Ah	120kWh	1200*1000*1400	1145
512V	1 host 10 slave	512V280Ah	143kWh	1200*1000*1650	1270

Product pictures

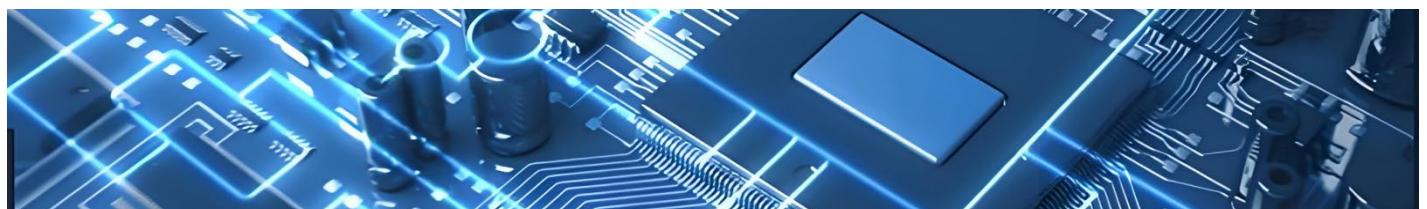


RC-RSH series (gravity-stacked)

Voltage	Host and slave mode	Battery pack specification	Battery capacity	Size (mm)	Weight (kg)
96V	1 host 2 slave	96V100Ah	9.6kWh	Single layer + base + wheels 450*550*295mm , Then each floor height add high 197mm	123
144V	1 host 3 slave	144V100Ah	14.4kWh		170
192V	1 host 4 slave	192V100Ah	19.2kWh		167
240V	1 host 5 slave	240V100Ah	24kWh		265
288V	1 host 6 slave	288V100Ah	28.8kWh		310

Product pictures





Field service operation and warranty issues:

ROCKWILL® can provide competent, well trained field service representatives to provide technical guidance and advisory assistance for the installation, overhaul, repair and maintenance of ROCKWILL® equipment, processes and systems.

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