

# RP-SERIES C&I Hybrid type inverter

Free combination

Rich interfaces

Stable sine wave output

Support multiple power inputs



Comply with IEC/GBT standards

Provided customized manufacture

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

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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:

Email: [support@rw-relay.com](mailto:support@rw-relay.com)

Tel: [+86 \(577\) 27819965](tel:+8657727819965)

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

mobile: [+86 13867748881](tel:+8613867748881)



## Summary

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

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

The PR series inverters are the core modules for industrial energy storage systems to achieve efficient conversion and flexible distribution of electrical energy, undertaking key functions such as bidirectional conversion between DC and AC, energy management, and system protection. It is composed of power conversion circuits, control circuits, drive circuits and protection circuits, etc. With the power conversion circuit as the core, efficient conversion of electrical energy is achieved through power devices such as IGBT. The control circuit precisely adjusts the output voltage, frequency and phase according to the system requirements to ensure the stability of power quality.

The inverter has multiple operation modes during operation. The charging method is to convert the alternating current generated by the power grid or renewable energy generation into direct current to safely and efficiently charge the energy storage battery. In discharge mode, the direct current in the battery is rapidly converted into alternating current that meets the requirements of the power grid or load, ensuring stable power supply. In addition, when there are fluctuations or faults in the power grid, the inverter unit can quickly switch to off-grid operation mode as an independent power source to maintain the continuous operation of key equipment.

In addition, the intelligent monitoring and management system integrated into the RP series inverter units can monitor the unit status in real time, issue early warnings of potential faults, and achieve remote operation and maintenance as well as optimized scheduling.

## Service environment

Air temperature: Ambient temperature: -10°C ~ +40°C

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

Above sea level: -100~2000m

## About customization

Support interface styles and power supply standards for AC output

## 1. Efficient power conversion: The cornerstone driving household electricity

The most fundamental and crucial function of an inverter is to efficiently and stably convert the direct current generated by solar panels under sunlight or stored in energy storage batteries into high-quality pure sinusoidal 220V (or regional standards) alternating current that meets the national power grid standards and is suitable for household appliances.

## 2. Intelligent energy storage management: The core of optimizing energy utilization

Modern household wall inverters are usually closely integrated with energy storage battery systems and play the role of the "energy brain" of the home. It can intelligently manage and schedule the charging and discharging process of energy storage batteries. Specifically:

Intelligent charging and discharging strategy: The inverter will automatically optimize the charging and discharging logic based on the real-time monitored photovoltaic power generation capacity, the size of the household electricity load, and the preferences set by the user.

Battery health management and protection: The inverter is built in or works in coordination with an external battery management system (BMS) to provide comprehensive protection for energy storage batteries. This includes preventing abnormal conditions such as overcharging, over-discharging, over-temperature, overcurrent and short circuit of the battery, ensuring that the battery operates within a safe working range, thereby maximizing the battery's service life and guaranteeing system safety.

## 3. Flexible operation mode: Ensure friendly interaction between power supply and the power grid

To adapt to different electricity demands and external power grid conditions, household wall-mounted inverters usually support multiple operation modes and can achieve intelligent switching:

Grid-connected operation mode: In this mode, the electricity generated by the household photovoltaic system is prioritized for self-use. Excess electricity fed into the power grid is beneficial.

Off-grid/standby power (UPS) mode: When the public power grid experiences a failure, power outage or unstable voltage, the inverter can quickly (usually within milliseconds) switch to off-grid mode, using the stored electricity in the energy storage battery to provide uninterrupted power supply for the critical loads in the household, greatly enhancing the reliability of household electricity usage and emergency response capabilities.

Multiple strategy modes such as photovoltaic priority, energy storage priority, and municipal power priority: Users can set different energy utilization priorities according to their own needs to maximize energy efficiency.

## 4. Smart monitoring and convenient control: The energy manager at your fingertips

To enable users to clearly understand and conveniently manage their home energy systems, wall-mounted inverters are usually equipped with advanced human-machine interaction functions:

Real-time data monitoring: Through the built-in LCD screen of the inverter software or the mobile phone APP, key information such as photovoltaic power generation capacity, daily/monthly/annual power generation, household electricity load, energy balance (SOC) of energy storage batteries, health status (SOH), and current operating mode can be viewed in real time

Remote control and parameter setting: Through network connection, users can remotely adjust the parameters of the inverter, switch operation modes, upgrade firmware, start and stop control, etc., which greatly enhances the convenience of use and the flexibility of the system.

Fault Diagnosis and Alarm: The inverter is equipped with a self-diagnosis function. Once it detects abnormal system operation or potential faults, it will cut off the power for protection and promptly send an alarm to the user through APP push or indicator lights, etc., to notify the user to troubleshoot and repair in time.

## 5. System Security and Renewable Energy Optimization

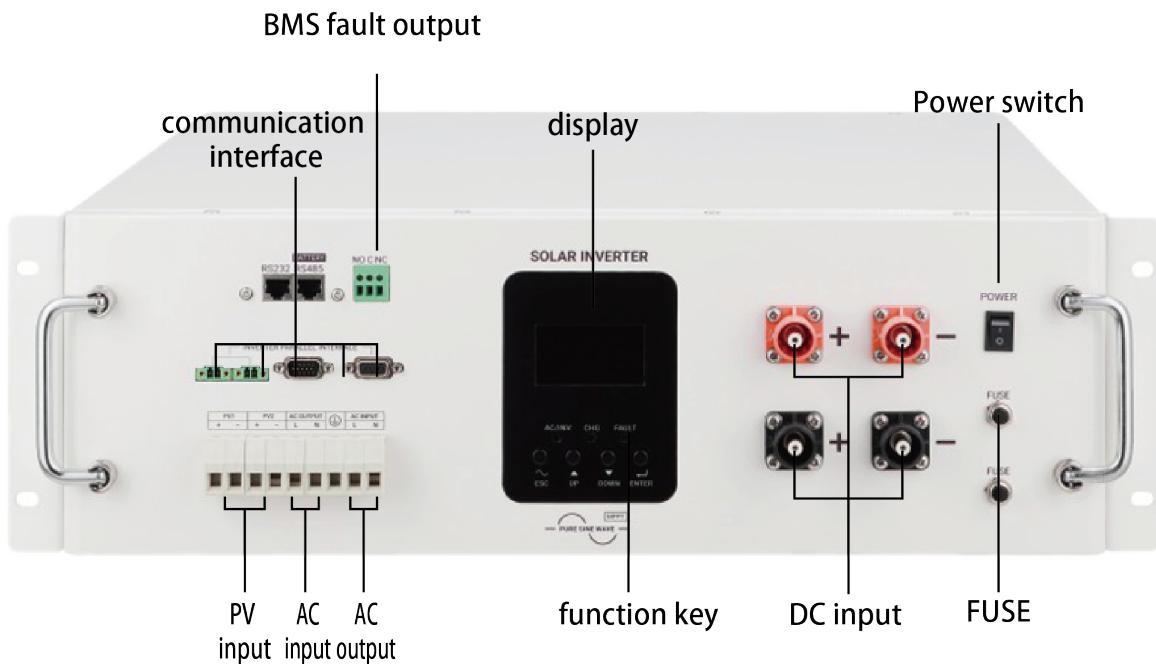
In addition to the above-mentioned core functions, the inverter is also committed to enhancing the safety and energy utilization efficiency of the overall system:

Maximum Power Point Tracking (MPPT): For photovoltaic systems, the efficient MPPT algorithm built into the inverter can track the optimal operating voltage and current of the solar panels in real time, ensuring the best working condition of the solar panels and maximizing the power generation efficiency.

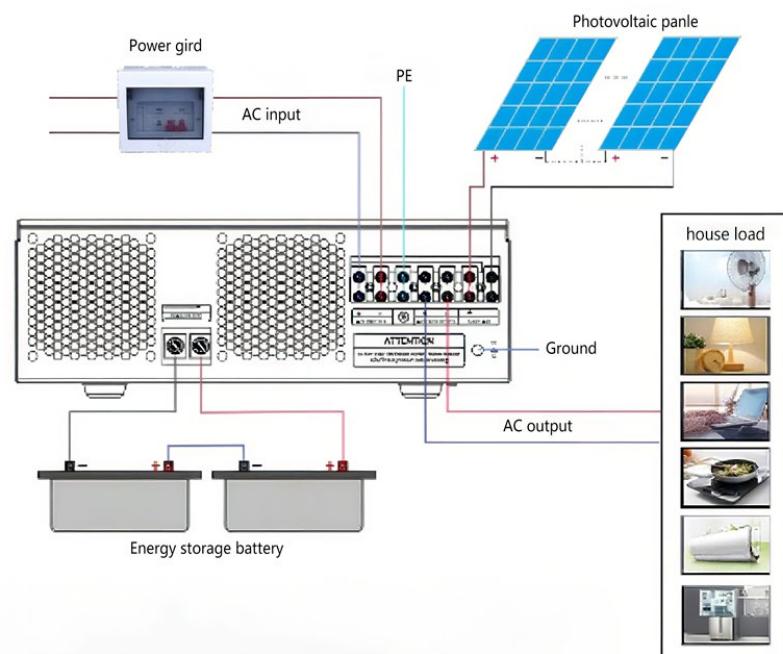
Comprehensive electrical protection: Equipped with multiple electrical protection functions, such as input overvoltage/undervoltage protection, output overload/short circuit protection, lightning protection, islanding effect protection, etc., to ensure the safe and stable operation of the inverter and the entire household power system.

Good compatibility: Compatible with all types of batteries

## Product interface



## system structure:



Product model	RP-PT8000	RP-PT10000	RP-PW12000
Rated power	3.2kW	5.5kW	8kW
Standard battery unit voltage		48VDC	
Standard Voltage range		42-60VDC	
Rated PV charging voltage		360VDC	
MPPT tracking range		120-450V	
MPPT track number		1	
Grid input voltage(phase voltage)		170~280V(UPS)/120~280V(INV)	
Input frequency		45~65Hz	
Maximum grid input current	100A	120A	120A
Maximum PV input current	180A	220A	260A
Maximum PV input Power	6kW+6kW double	7.5kW+7.5kW double	9kW+9kW double
Ac access mode		3*L+N+PE	
Inverter	Rated output voltage	3*230V+N(3-Phase 5-Line)	The output electric energy standard is applicable to most countries or regions such as Chinese mainland, Hong-Kong, Macao, North Korea, Australia, South Asia, the Middle East, Europe, Africa, South America, etc., and customers in non-above regions can customize according to the customer's local electric energy standard.
	Rated output frequency	48~52HZ (58~62HZ)	
	System efficiency		86~94%
AC following	Rated output voltage		Follow the grid
	Rated output frequency		Follow the grid
	System efficiency		99%
Battery no load loss		≤1%	
Power grid no load loss		≤0.5%	
Cooling mode		Forced air cooling	
Operating environment		Temperature: -10~40°C Humidity: 20~95RH%	
Maximum working altitude		2000m(> 2000m load reduction required)	
Protection		Battery under (over) voltage protection/overload protection/over temperature protection/short circuit protection	
Class of protection		IP20	
Operation mode		Mains priority/PV priority/battery priority	
Size(mm)			
		L620*W445*H130	

Product model	RP-PW5500 PLUS					
Rated power	5.5kW					
Standard battery unit voltage	48VDC					
Standard Voltage range	42-60VDC					
Rated PV charging voltage	360VDC					
MPPT tracking range	120-450V					
MPPT track number	1					
Grid input voltage(phase voltage)	170~280V(UPS)/120~280V(INV)					
Input frequency	45~65Hz					
Maximum grid input current	60A single					
Maximum PV input current	80A single					
Maximum PV input Power	5.5kW					
Ac access mode	L+N+PE					
Inverter	Rated output voltage	230V+N	The output electric energy standard is applicable to most countries or regions such as Chinese mainland, Hong-Kong, Macao, North Korea, Australia, South Asia, the Middle East, Europe, Africa, South America, etc., and customers in non-above regions can customize according to the customer's local electric energy standard.			
	Rated output frequency	48~52HZ (58~62HZ)				
	System efficiency	86~90%				
AC following	Rated output voltage	Follow the grid				
	Rated output frequency	Follow the grid				
	System efficiency	99%				
Battery no load loss	≤1%					
Power grid no load loss	≤0.5%					
Cooling mode	Forced air cooling					
Operating environment	Temperature: -10~40°C Humidity: 20~95RH%					
Maximum working altitude	2000m(> 2000m load reduction required)					
Protection	Battery under (over) voltage protection/overload protection/over temperature protection/short circuit protection					
Class of protection	IP20					
Operation mode	Mains priority/PV priority/battery priority					
Size(mm)						
	L460*W304*H110					

Product model	RP-PW5500 PLUS					
Rated power	5.5kW					
Standard battery unit voltage	48VDC					
Standard Voltage range	42-60VDC					
Rated PV charging voltage	360VDC					
MPPT tracking range	120-450V					
MPPT track number	1					
Grid input voltage(phase voltage)	170~280V(UPS)/120~280V(INV)					
Input frequency	45~65Hz					
Maximum grid input current	60A single					
Maximum PV input current	80A single					
Maximum PV input Power	5.5kW					
Ac access mode	L+N+PE					
Inverter	Rated output voltage	230V+N	The output electric energy standard is applicable to most countries or regions such as Chinese mainland, Hong-Kong, Macao, North Korea, Australia, South Asia, the Middle East, Europe, Africa, South America, etc., and customers in non-above regions can customize according to the customer's local electric energy standard.			
	Rated output frequency	48~52HZ (58~62HZ)				
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	Rated output frequency	Follow the grid				
	System efficiency	99%				
	Battery no load loss	≤1%				
	Power grid no load loss	≤0.5%				
	Cooling mode	Forced air cooling				
	Operating environment	Temperature: -10~40°C Humidity: 20~95RH%				
	Maximum working altitude	2000m(> 2000m load reduction required)				
Protection		Battery under (over) voltage protection/overload protection/over temperature protection/short circuit protection				
Class of protection		IP20				
Operation mode		Mains priority/PV priority/battery priority				
Size(mm)	 H (Height) is indicated by a vertical line on the left side of the unit. L (Length) is indicated by a horizontal line along the bottom front edge. W (Width) is indicated by a horizontal line along the right side.					
	L440*W480*H225 (4U)					



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.

ROCKWILL® service Tel: [+86 \(577\) 27819965](tel:+8627819965)/[+86 13867748881](tel:+8613867748881)

Email: [support@rw-relay.com](mailto:support@rw-relay.com)

Or check the website information: <http://www.rw-relay.com>