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Version: May 22, 2025, Off-Grid Energy Storage System



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Euro-standard

Residential Energy Storage System

Experience the Freedom of
Energy Independence



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www.roypow.com



Scan It!

ROYPOW

For One-stop New Energy Solutions

- R&D, manufacturing and sales of motive power systems and energy storage systems as one-stop solutions
- Fully automatic production lines, a full range of test equipment and an advanced MES
- Covering Low-Speed Vehicles' Batteries, Industrial Batteries, as well as Residential ESS, Commercial & Industrial ESS, and Mobile ESS
- Self-development of power electronics technologies, including PCS, BMS, and EMS



750+ Employees
200+ R&D People
105,000 m² Headquarters Floor Area
2,500 m² Testing Center
257 Patents

Quality Control Certificates:

- ✓ Environmental Management System: ISO 14001:2015
- ✓ Occupational Health and Safety Management System: ISO 45001:2018
- ✓ Quality Management System: ISO 9001:2015, IATF16949:2016
- ✓ Information Security Management System: ISO/IEC 27001:2022
- ✓ Social Accountability Management System: SA8000:2014
- ✓ Hazardous Substance Process Management: IECQ QC 080000

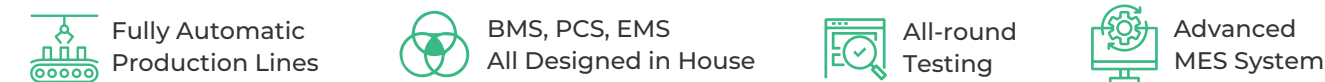


Product Certifications:

UL 1973, UL 9540A, UL 9540, UL 2580, UL 2271, UL 1741			FCC, IEC/EN 61000-6, BS EN IEC 61000-6
IEEE 1547			IEC 60730, ISO 13849-1
IEC 62619			UN 38.3
EN 62477, EN 62040, (EU) 2023/1542, EN 62109-1, EN 62109-2			RoHS Directive 2011/65/EU & (EU) 2015/863

R&D and Manufacturing Highlights

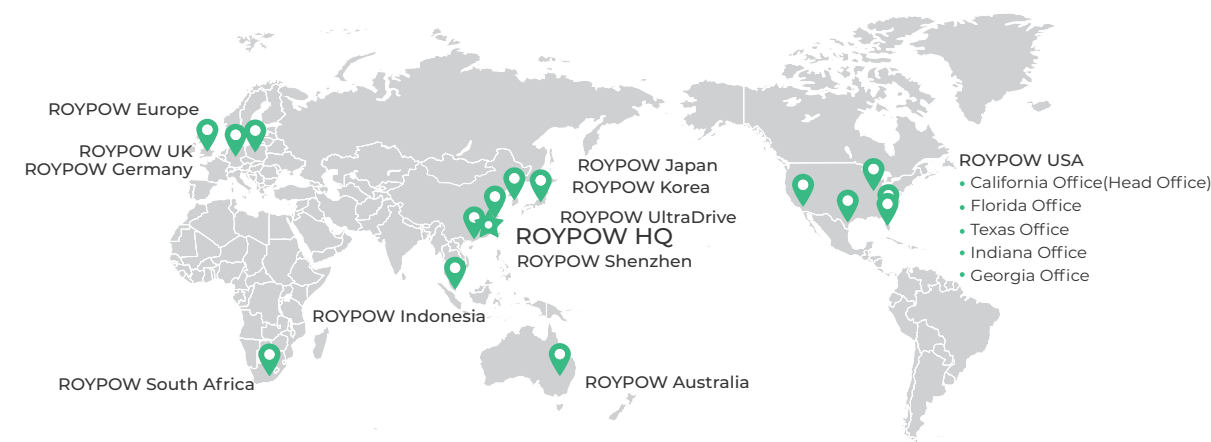
As a result of these investments, ROYPOW is capable of "end-to-end" integrated delivery, making our products out-perform the industry norms.



Global Sales and Service Network



ROYPOW has comprehensively unfolded its overseas market layout to ensure the localization of R&D, manufacturing, marketing and service, becoming one of your most reliable and valuable partners.



Upgrading to New Technology, with Our Turnkey Solutions.

With years of dedication to new energy solutions, we are proud to offer customers professional solutions for:

- Low-speed Vehicle Batteries
- Battery Systems for Off-highway Applications
- Residential Energy Storage Systems
- Mobile Energy Storage Systems
- Industrial Batteries
- Battery Systems for Emerging Applications
- Commercial & Industrial Energy Storage Systems
- Motors, Controllers and Chargers



Versatile Off-Grid System

Ideal for powering homes, remote cabins, resorts, rural areas, and businesses in regions where the grid access is limited or unavailable. Go off the grid with peace of mind.





LIFEPO₄ BATTERY

5.1 kWh

Reliable Power for Off-Grid Living

Up to **5** kW / Module
Maximum Continuous
Discharge Power

Up to **16** Units
Flexible Capacity Expansion

>6,000 Times
Cycle Life

10 Years
Warranty



Safe

✓ Advanced Cobalt-free LiFePO₄
Battery Technology

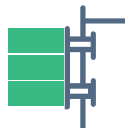
✓ Intelligent BMS with
Multiple Protections



Reliable

✓ Long Design Life

✓ Zero Maintenance and
No Frequent Swapping



Convenient

✓ Modular and Stacked
Design for Easy Installation

✓ Ground-mounted or
Wall-mounted Installation

System Specification

RBmax5.1L-F



Electric Data

Nominal Energy (kWh)	5.12
Usable Energy (kWh)	4.79
Cell Type	LFP (LiFePO ₄)
Nominal Voltage (V)	51.2
Operating Voltage Range (V)	44.8 ~ 56.8
Max. Continuous Charge Current (A)	100
Max. Continuous Discharge Current (A)	100

General Data

Weight (Kg / lbs.)	48 Kg / 105.8 lbs.
Dimensions (W × D × H) (mm)	500 x 150 x 510
Operating Temperature (°C)	0 ~ 55°C (32 ~ 131°F) (Charge), -20 ~ 55°C (4 ~ 131°F) (Discharge)
Storage Temperature (°C)Delivery SOC State (20~40%)	>1 Month: 0 ~ 35°C (32 ~ 95°F); ≤1 Month: -20 ~ 45°C (-4 ~ 113°F)
Relative Humidity	≤ 95%
Max. Altitude (m)	4000 m / 13,123 ft (>2,000 m / >6,561.68 ft derating)
Protection Degree	IP 20
Installation Location	Ground-Mounted; Wall-Mounted
Communication	CAN, RS485

Warranty

Warranty (Years)	10 Years
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Model	1*RBmax5.1L-F/FA	2*RBmax5.1L-F/FA	3*RBmax5.1L-F/FA	4*RBmax5.1L-F/FA	5*RBmax5.1L-F/FA	6*RBmax5.1L-F/FA	7*RBmax5.1L-F/FA	8*RBmax5.1L-F/FA
Nominal Energy (kWh)	5.12	10.24	15.36	20.48	25.6	30.72	35.84	40.96
Usable Energy (kWh)	4.79	9.58	14.37	19.16	23.95	28.74	33.53	38.32
Scalability (kWh)	Max. 16 in parallel, Max. 81kWh							
Nominal Voltage (V)	51.2							
Operating Voltage Range (V)	44.8-56.8							
Nominal Charge/Discharge Current (A)	50 / 50	100 / 100	150 / 150	200 / 200	250 / 250	300 / 300	350 / 350	400 / 400
Max. Charge/Discharge Current(A)	100 / 100	100 / 200	150 / 300	200 / 400	250 / 400	300 / 400	350 / 400	400 / 400



LIFEPO₄ BATTERY

5.1 kWh

Long-Lasting, Reliable Power Storage Solution

Up to **16** Units
Flexible Capacity Expansion

>6,000 Times
Cycle Life

10 Years
Warranty



Advanced LiFePO₄ Technology
Safe Battery Cells from Global Top 3 Brands



Intelligent BMS
Intelligent Monitoring & Multiple Protections



High Compatibility
Compatible with Many Brands of Inverter Protocols



Easy Installation
Stackable with Flexible Brackets



APP Support
Remote Monitoring of Battery Status



Wake-up Function
Reactivate and Recharge Asleep Batteries

System Specification

Model

RBmax5.1L-FX



Electric Data

Nominal Energy (kWh)	5.12
Usable Energy (kWh)	4.79
Cell Type	LFP (LiFePO ₄)
Nominal Voltage (V)	51.2
Operating Voltage Range (V)	44.8~56.8
Max. Continuous Charge Current (A)	100
Max. Continuous Discharge Current (A)	100

General Data

Weight (Kg / lbs.)	45 Kg / 99.2 lbs.
Dimensions (W × D × H) (mm / inch)	442 x 560 x 173 mm / 17.4 x 22.05 x 6.81 inch
Operating Temperature (°C)	0 ~ 55°C (32 ~ 131°F) (Charge), -20 ~ 55°C (4 ~ 131°F) (Discharge)
Storage Temperature (°C) Delivery SOC State (20~40%)	>1 Month: 0 ~ 35°C (32 ~ 95°F); ≤1 Month: -20 ~ 45°C (-4 ~ 113°F)
Relative Humidity	≤ 95%
Max. Altitude (m)	4000 m / 13,123 ft (>2,000 m / >6,561.68 ft derating)
Protection Degree	IP 20
Installation Location	Ground-Mounted or Wall-Mounted
Communication	CAN, RS485

Warranty

Warranty (Years)	10 years
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Model	1*RBmax5.1L-FX	2*RBmax5.1L-FX	3*RBmax5.1L-FX	4*RBmax5.1L-FX	5*RBmax5.1L-FX	6*RBmax5.1L-FX	7*RBmax5.1L-FX	8*RBmax5.1L-FX
Nominal Energy (kWh)	5.12	10.24	15.36	20.48	25.6	30.72	35.84	40.96
Usable Energy (kWh)	4.79	9.58	14.37	19.16	23.95	28.74	33.53	38.32
Scalability (kWh)	Max. 16 in parallel, Max. 81kWh							
Nominal Voltage (V)	51.2							
Operating Voltage Range (V)	44.8-56.8							
Nominal Charge/ Discharge Current (A)	50 / 50	100 / 100	150 / 150	200 / 200	250 / 250	300 / 300	350 / 350	400 / 400
Max. Charge/ Discharge Current(A)	100 / 100	100 / 200	150 / 300	200 / 400	250 / 400	300 / 400	350 / 400	400 / 400



LIFEPO₄ BATTERY

11 kWh

Efficient and Long-Lasting Energy Storage

Up to **16** Units
Flexible Capacity Expansion

> **6,000** Times
Cycle Life

10 Years
Long Lifespan

Intelligent BMS
Intelligent Monitoring & Multiple Protections

Smart Monitoring
Battery Status Displayed in Real Time

Wide Compatibility
Compatible with Leading Brands of Inverters

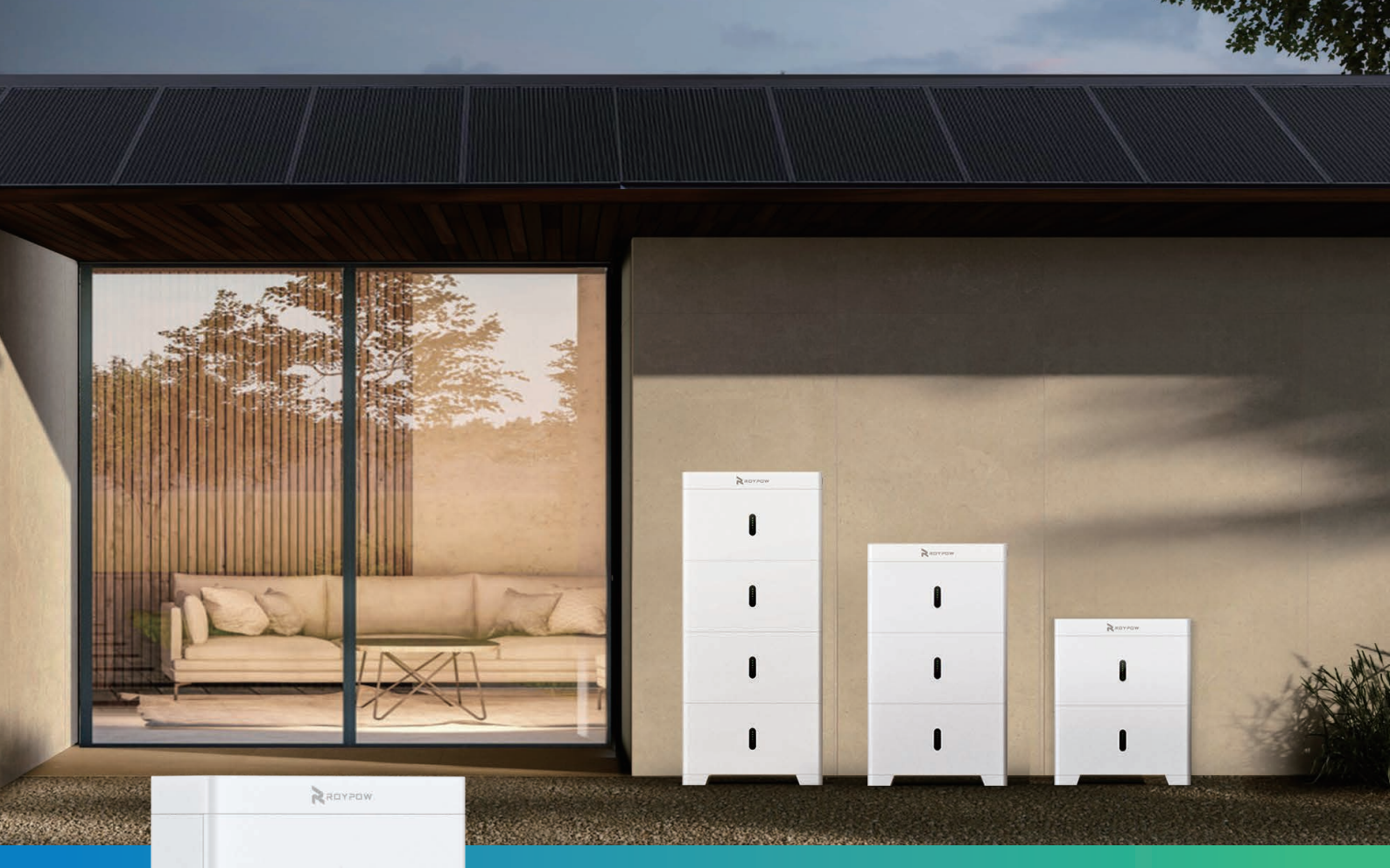
Easy Installation
No Complex Setups. Save Time and Efforts

Technical specifications



Model	RBmax11L-F
Electric Data	
Nominal Energy (kWh)	11.04
Usable Energy (kWh)	10.49
Depth Of Discharge	95%
Cell Type	LFP (LiFePO ₄)
Nominal Voltage (V)	48
Operating Voltage Range (V)	42~54
Max. Continuous Charge Current (A)	200
Max. Continuous Discharge Current (A)	200
General Data	
Weight (kg)	96
Dimensions (W × D × H) (mm)	520 x 205 x 720
Scalability	up to 16 in Parallel
Operating Temperature (°C)	0~ 55°C (Charge) -20~55°C (Discharge)
Storage Temperature (°C)	>1 Month: 0~35°C
Delivery SOC State (20~40%)	≤1 Month: -20~45°C
Relative Humidity	≤ 95%
Max. Altitude (m)	3000
Protection Degree	IP20
Installation Location	Indoor
Communication	CAN, RS485
Display	LCD

Note: Data are based on ROYPOW standard test procedures. Actual performance may vary according to local conditions.



LIFEPO₄ BATTERY

5.1 kWh

Empowering Sustainable Energy Storage for Homes

Up to **16** Batteries
Flexible Capacity Expansion

>**6,000** Times
Cycle Life

IP65
Ingress Rating

10 Years
Warranty



Advanced LiFePO₄ Technology
Safe, Cobalt-free Battery Chemistry



Modular and Stacked Design
Easier Installation



Safe Protection
Intelligent BMS & Built-in Fire Extinguishing System



High Compatibility
Compatible with Inverters of Leading Brands

Technical Specifications



Model	1*RBmax5.1L	2*RBmax5.1L2	3*RBmax5.1L2	4*RBmax5.1L2	5*RBmax5.1L2	6*RBmax5.1L2	7*RBmax5.1L2	8*RBmax5.1L2
Nominal Energy (kWh)	5.12	10.24	15.36	20.48	25.6	30.72	35.84	40.96
Usable Energy (kWh)	4.79	9.58	14.37	19.16	23.95	28.74	33.53	38.32
Scalability (kWh)	Max. 16 in parallel, Max. 81kWh							
Nominal Charge/Discharge Current (A)	50 / 50	100 / 100	150 / 150	200 / 200	250 / 250	300 / 300	350 / 350	400 / 400
Max. Charge/Discharge Current(A)	100 / 100	100 / 200	150 / 300	200 / 400	250 / 400	300 / 400	350 / 400	400 / 400
Cell type	Lithium iron phosphate (LFP)							
Nominal voltage (V)	51.2							
Operating voltage range (V)	44.8 ~ 56.8							

General Data

Weight (Kg / lbs.)	48.5 Kg 106.9 lbs.	94.3 Kg 207.89 lbs.	140 Kg 308.64 lbs.	185.7 Kg 409.39 lbs.	234.3 Kg 516.54 lbs.	280 Kg 617.29 lbs.	325.7 Kg 718.04 lbs.	371.4 Kg 818.79 lbs.
Dimensions (W × D × H mm / inch)	650x240x460 mm 25.6 x 9.5 x 18.1 inch	650x240x790 mm 25.6x9.4x31.1 inch	650x240x1120 mm 25.6x9.4x44.1 inch	650x240x1450 mm 25.6x9.4x57.1 inch	650x240x790+ 650x240x1120 mm 25.6x9.4x31.1 inch+ 25.6x9.4x44.1 inch	650x240x1120+ 650x240x1120 mm 25.6x9.4x44.1 inch+ 25.6x9.4x44.1 inch	650x240x1120+ 650x240x1450 mm 25.6x9.4x44.1 inch+ 25.6x9.4x57.1 inch	650x240x1450+ 650x240x1450 mm 25.6x9.4x57.1 inch+ 25.6x9.4x57.1 inch
Operating temperature (°F/°C) ^[1]	Charge: 32 ~ 131°F (0 ~ 55°C), Discharge: 4 ~ 131°F (-20 ~ 55°C)							
Storage temperature (°F/°C)	≤1 month: -4 ~ 113°F (-20 ~ 45°C), >1 month: 32 ~ 95°F (0 ~ 35°C)							
Installation location	Indoor/Outdoor, Floor standing or Wall mounted							
Communication	CAN, RS485							
Relative humidity	0 ~ 95%							
Max. altitude (m / ft.)	4000 m / 13,123 ft (>2,000 m / >6,561.68 ft derating)							
Ingress rating	IP 65							

Certification

IEC 62619, UL 1973, EN 61000-6-1, EN 61000-6-3, FCC Part 15, UN38.3

[1] When the ambient temperature is too low or too high, the performance of battery may be limited.

[2] All pictures shown are for reference only and data are based on ROYPOW standard test procedures. Actual performance may vary according to local conditions. Only authorized personnel are allowed to operate or make adjustments to the batteries. We reserve the right to make revisions as well as product alterations and improvements at any time without prior notice.



LIFEPO₄ BATTERY

16 kWh

Reliable Backup, Endless Power

Up to **16** Units
Flexible Capacity Expansion

>**6,000** Times
Cycle Life

10 Years
Long Lifespan

Advanced LiFePO₄ Technology
Reliable, Automotive-Grade Battery Cells

Intelligent BMS
Intelligent Monitoring & Multiple Protections

Smart Monitoring
Battery Status Display in Real Time

Wide Compatibility
Compatible with Many Brands of Inverter Protocols

System Specification

Model	RBmax16L-F
Electric Data	
Nominal Energy (kWh)	16.07
Usable Energy (kWh)	15.27
Depth Of Discharge	95%
Cell Type	LFP (LiFePO ₄)
Nominal Voltage (V)	51.2
Operating Voltage Range (V)	44.8~58.4
Max. Continuous Charge Current (A)	150
Max. Continuous Discharge Current (A)	150
General Data	
Weight (kg)	124
Dimensions (W × D × H) (mm)	530 x 240 x 830
Scalability	Up to 16 in parallel
Operating Temperature (°C)	0~ 55°C (Charge) -20~55°C (Discharge)
Storage Temperature (°C)	>1 Month: 0~35°C
Delivery SOC State (20~40%)	≤1 Month: -20~45°C
Relative Humidity	≤ 95%
Max. Altitude (m)	3000
Protection Degree	IP20
Installation Location	Indoor
Communication	CAN, RS485, Bluetooth
Display	LED + APP



SOLAR INVERTER

5kW / 6kW / 6.5kW Single-Phase

Compact and Light, Designed for Efficient Energy Production

Compatible with **48V Batteries** Up to **12** Units Parallel Working **10**ms UPS Seamless Switch



Inverter Running Without Battery



Built-in BMS Communication Port



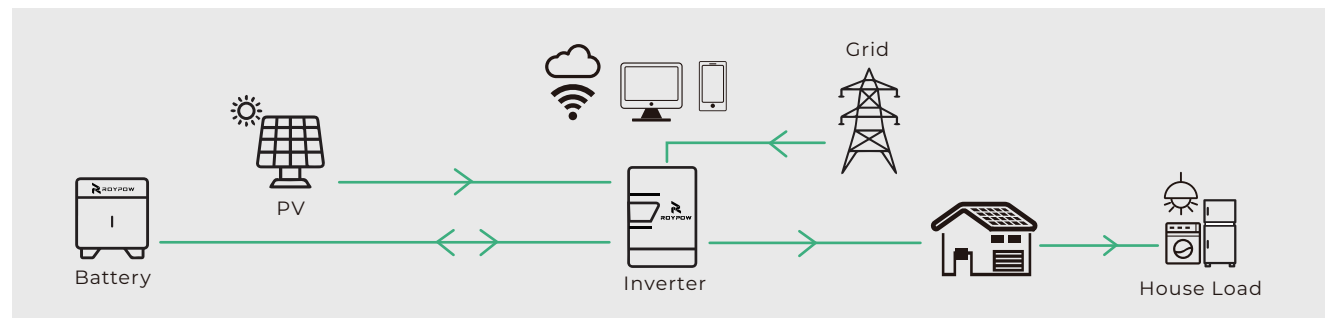
Built-in Feed-in Grid Function



Multiple Safe Protections



Support Single-Phase to Three-Phase Function



System Specification

Model	R5000S-EU	R6000S-EU	R6500S-EU
INVERTER OUTPUT			
Rated Power (W)	5000	6000	6500
Surge Power (VA)	10000	12000	12000
Rated Output Current (A)	22.7	27.3	29.5
Rated Voltage	22/230/240Vac, L/N/PE		
Rated Frequency (Hz)	50/60		
Switch Time	10ms (typical)		
Waveform	Pure sine wave		
Peak Efficiency	95%		
BATTERY			
Battery Type	Li-ion / Lead-acid		
Rated Voltage (Vdc)	48		
Voltage Range	40-60Vdc, adjustable		
Max. Charging/Discharging Power (W)	5000/5000	6000/6000	6000/6000
Max. Charging/Discharging Current (A)	105/112	120/135	120/145
SOLAR CHARGER			
Max. PV Array Power (W)	5000	6000	6000
Max. Open Circuit Voltage (V)	500		
Rated voltage (V)	380		
MPPT Voltage Range (V)	85-450		
Max. Input Current (A)	22.7	27.3	27.3
Max. Short Current (A)	32		
Max. Solar Charging Current (A)	120		
Number of MPPT	1		
Number of String per MPPT	1		
GRID INPUT			
Rated Voltage (Vdc)	230		
Voltage Range (Vdc)	90-280		
Frequency (Hz)	50/60		
Max. Bypass Current (A)	43.5	50	50
GENERAL DATA			
Parallel capability	Up to 12 units		
Operating Temperature Range	-10~50°C, >45°C derating		
Relative Humidity	0~95%		
Altitude (m)	2000		
Protection Degree	IP54		
Cooling	Intelligent fan		
Display	LED + APP		
Communication	RS485 / CAN / Wi-Fi (2.4GHz)		
Dimensions (WxHxD, mm)	347 x 445 x 120		
Net Weight (kg)	12		
Standard Compliance	EN 62109-1/2, EN IEC 61000-6-1/3		



SOLAR INVERTER

12 kW

Efficient, Safe, Reliable for Home Backup



98% Max. MPPT Tracking Efficiency

Up to 6 Units Parallel Working

Three-Phase Connection via Parallel Connection

10 Years Long Lifespan

Up to 72 kW High Power

5 Years Additional Cost for Extended Warranty

- 

Pure Sine Wave AC Power
- 

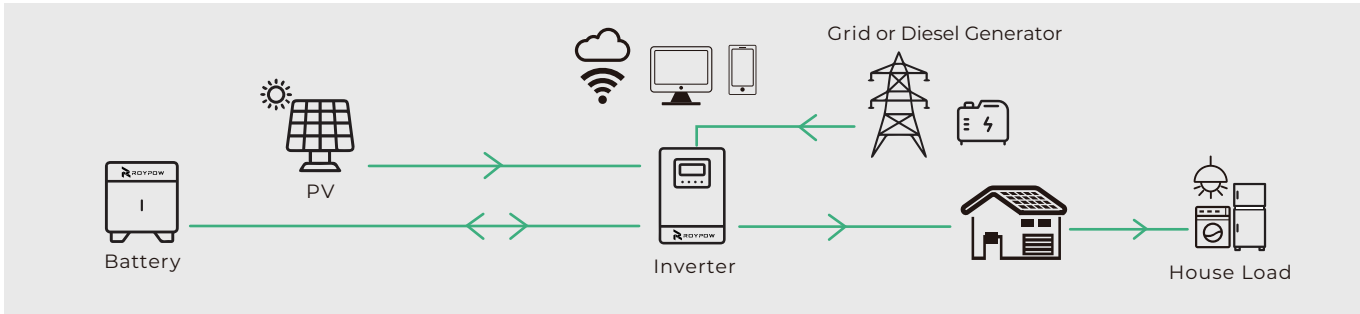
Easy Installation and Setup
- 

Wide MPPT Operating Range
- 

Intelligent Management via LCD Display and Wi-Fi
- 

Comprehensive Safety Protections
- 

Built-in Li-ion Battery BMS Communication



System Specification

Model	R12000S-E
PV Input	
Max. PV Input Power (W)	16000
Max. DC Voltage (V)	500
MPPT Voltage Range (V)	85 - 450
Rated Voltage (V)	300
Startup Voltage (V)	75
Max. DC Current (A)	27 / 27
Number of MPPT	2
Number of String per MPPT	1
DC Terminal Type	TBD
Battery	
Battery Type	Lead-acid / LFP
Rated Voltage (V)	48
Voltage Range (V)	40 - 60
Max. Charge / Discharge Power (W)	12000
Max. Charge Current	210A (MPPT: 210A; Grid: 210A)
Max. Discharge Current (A)	230
Max. Charge Voltage (V)	60
Temperature Compensation	Yes (Lithium Battery)
Current / Voltage Monitoring	Yes
AC Input	
Max. Input Power (W)	20700
Max. Input Current (A)	90
Rated Input Voltage (V)	220 / 230 / 240
Rated Input Frequency (Hz)	50 / 60
THDi	< 3% (Linear Load)
Power Factor	1
AC Output	
Max. Output Power (W)	12000
Rated Frequency (Hz)	50 / 60
Frequency Accuracy	±2%
Voltage Class (V)	220 / 230 / 240
Max. Output Current (A)	52.2
Voltage Stabilization Accuracy	±1%
THDV (Full Load)	< 3% (Linear Load)
Overload Capacity	105% < Load ≤ 150%, Alarm and Shutdown after 10.5 s; Load ≥ 150%, Alarm and Shutdown after 5.5 s
Efficiency	
Max. Efficiency (Grid)	95%
Max. Efficiency (Battery)	93%
Protection	
Protection	Over-/Under-Voltage Protection, Output Over-Current Protection, Output Short-Circuit Protection, Over-Temperature Protection
General Specifications	
Dimension (L x W x H)	125 x 535 x 630 mm / 4.92 x 21.06 x 24.80 inch
Weight	25 kg / 55.11 lbs.
Installation	Wall-Mounted
Environmental Temperature Range	-10~55°C, >40°C Derated (14~131°F, >104°F Derated)
Relative Humidity	5~95%
Max. Altitude	>2,000 m / >6,561.68 ft derating
Ingress Rating	IP54
Standby Self-Consumption	<10 W
Cooling Mode	Forced Air Cooling
Noise	<60 dB
Display Type	LCD Display
Communication	RS232 / Dry Contact / Wi-Fi / RS485
Warranty	3 years / 5 years (optional)
Parallel Units	6

