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Version: February 25, 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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*ROYPOW,
Your Trusted Partner*

Contents

About Us

5.1 kWh Wall-Mounted LiFePO₄ Battery

5.1 kWh Rack-Mounted LiFePO₄ Battery

5.1 kWh Stack-Mounted LiFePO₄ Battery

16kWh LiFePO₄ Battery

6 kW Off-Grid Inverter

12 kW Off-Grid Inverter



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
190+ R&D People
105,000 m² Headquarters Floor Area
2,500 m² Testing Center
231 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.

- Fully Automatic Production Lines
- BMS, PCS, EMS All Designed in House
- All-round Testing
- Advanced MES System

Global Sales and Service Network

- Timely Delivery
- Hassle-free After-sales Service
- Fast Response Technical Support

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

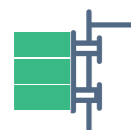
✓ Intelligent BMS with
Multiple Protections



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 / inch)	500 x 167 x 490 mm / 19.69 x 6.57 x 19.29 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; 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



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

5.1 kWh

Empowering Sustainable Energy Storage for Homes



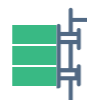
Up to **16** Batteries
Flexible Capacity Expansion


> **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 25.6x9.5x18.1 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

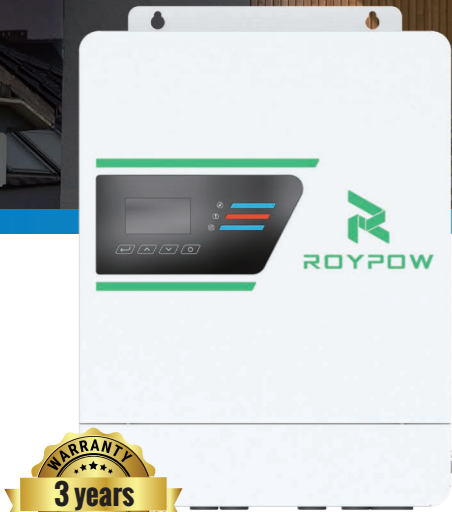
Smart Monitoring
Battery Status Display in Real Time

Wide Compatibility
Compatible with Many Brands of Inverter Protocols

System Specification



Model	RBmax16L-FA
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 Charge Current when Parallel (A)	400 (Parallel when 3 packs or more)
Max. Continuous Discharge Current (A)	150
Max. Continuous Discharge Current when Parallel (A)	400 (Parallel when 3 packs or more)
General Data	
Weight (kg)	124
Dimensions (W × D × H) (mm)	530x240x805
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	LED



SOLAR INVERTER

6 kW

Compact and Light, Designed for Efficient Energy Production

98%
Peak Efficiency

Up to 12 Units
Parallel Working

10ms UPS
Seamless Switch

Three-Phase
Connection via
Parallel Connection

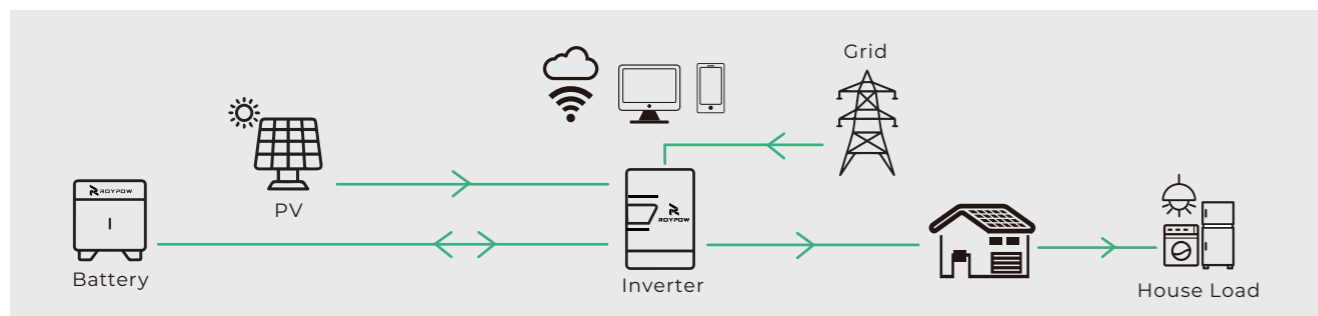
5 Years
Additional Cost
for Extended Warranty

Pure Sine Wave Output

Built-in BMS Communication

Wide MPPT Operating Range

Multiple Safe Protections



System Specification



Model	R6000S-EU
PV (DC Input)	
Recommended Max. PV Input Power (W)	6000
Max. Input Voltage (VOC) (V)	500
MPPT Operating Voltage Range (V)	85 V - 450 V (@75V Start up)
Number of MPPT	1
Max. Number of Input Strings per MPPT	1
Max. Input Current per MPPT (A)	27
Max. Short-circuit Current per MPPT (A)	35
Grid (AC Input)	
Max. Input Power (W)	11500
Max. Input Current (A)	50
Rated Grid Voltage (Vac)	220 / 230 / 240
Rated Grid Frequency (Hz)	50 / 60
Acceptable Range	170 - 280 Vac (For UPS); 90 - 280 Vac (For Home Appliances)
Battery (Bi-direction)	
Battery Type	LiFePO ₄ / Lead-acid
Battery Voltage Range (Vdc)	40-60
Rated Battery Voltage (Vdc)	48
Max. Charge / Discharge Current (A)	120 / 130
BMS Communication Mode	RS485
Backup Output (AC Output)	
Rated Output Power	6000W / 6000VA
Rated Output Current (A)	27.3
Rated Output Voltage / Frequency	220 / 230 / 240Vac 50 / 60Hz
Parallel Capacity	Max. 12 Units
Surge Power	12000 VA 5 s
THDv (@ Linear Load)	<3%
Switch Time	10ms Typical (For UPS), 20ms Typical (For Home Appliances)
Efficiency	
Peak Efficiency	98%
Max. MPPT Efficiency	99.90%
Protection	
Inner Protection	Output Short-circuit Protection, Output Overvoltage Protection
Surge Protection	PV: Type III, AC: Type III
IP Rating	IP54
General Specifications	
Operating Temperature Range	-10°C ~ 55°C
Relative Humidity Range	5% ~ 95%
Max. Operating Altitude	>2,000 m / >6,561.68 ft derating
Standby Self-consumption (W)	<10
Installation Type	Wall-mounted
Cooling Mode	Fan Cooling
Communication	RS232/RS485/Dry Contact/Wi-Fi
Display	LCD
Mechanical Specifications	
Inverter Dimension (L x W x H) (mm / inch)	346.6 x 120 x 444.7 mm / 13.65 x 4.72 x 17.51 inch
Net Weight (kg)	12.4 Kg / 27.33 lbs.
Shipping Dimension (mm)	560 x 465 x 240 mm / 22.05 x 18.31 x 9.45 inch
Gross Weight (kg)	14.6 Kg / 32.19 lbs.
Warranty Period	3 years / 5 years (optional)



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

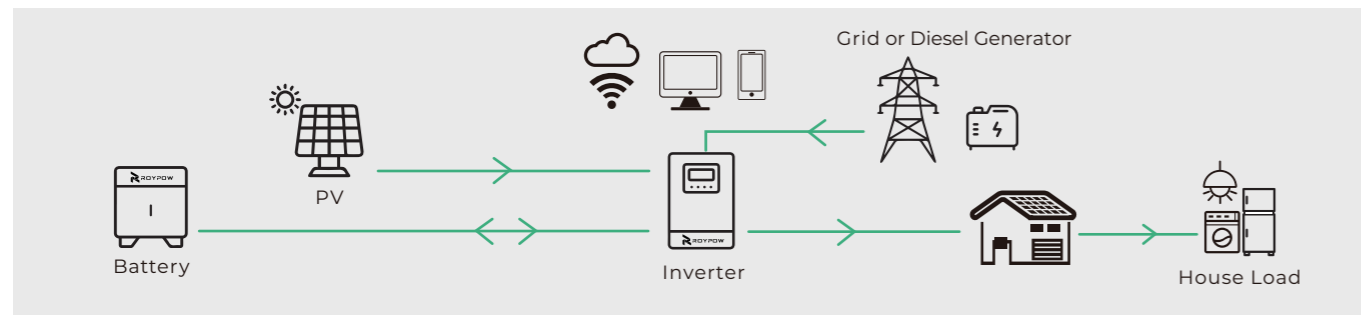
Easy Installation and Setup

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