Version: August 13, 2024, Residential Energy Storage System

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Residential Energy Storage System

Intelligent Technology Coexisting with Nature Powers Your Home

ROYPOW
Your Trusted Partner

Contents

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 ㎡ Headquarters Floor Area

2,500 ㎡ Testing Center

171 Patents

Quality Control Certificates:

- Environmental Management System: **ISO 14001:2015**
- Occupational Health and Safety Management System: **ISO45001:2018**
- 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.

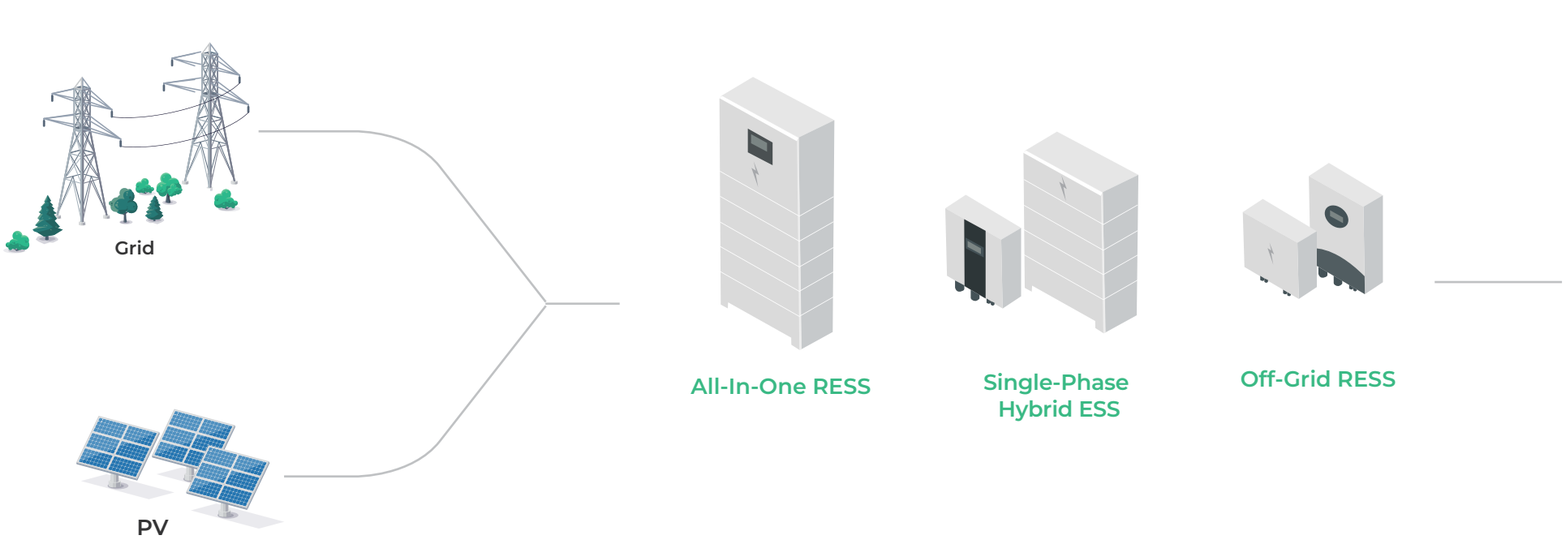
Upgrading to New Technology, with Our Turnkey Solutions.

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
- Chargers

ROYPOW Residential Energy Storage Solutions

Meet the high-performance, safe, and intelligent residential energy storage solutions. ROYPOW RESS combines the most advanced battery management system with super power supply capacity to provide uninterrupted, sustainable energy for your working and family usages all day and help reduce reliance on the grid, save electricity costs, and promote a better life.



The solutions include:

All-In-One RESS

Integrate an efficient, reliable inverter with high-safety, long-life LFP batteries into a compact system for continuous power supply. The all-in-one modular system offers both aesthetic appeal and functionality, enhancing home life and providing whole-home backup support.

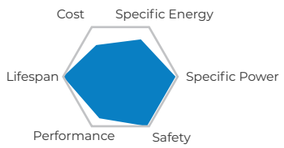
Single-Phase Hybrid ESS

Designed with separate reliable and safe inverters and batteries, this system provides greater flexibility in installation. Whether for daily use or as a backup power solution, this system provides sustainable and green energy, promoting a better quality of life.

Off-Grid RESS

Designed to enhance energy resilience and independence. Perfect for remote locations, forest vacation cottages, and areas with unstable grid connections and frequent outages, offering a consistent power supply without reliance on the utility grid.

Safety



LiFePO₄ batteries ensure premium electrical characteristics without any safety issues.

Enhanced safety with aerosol fire protection.

Integrated Arc Fault Circuit Interrupters (AFCI) & Rapid Shut Down (RSD).

IP65 Rating, safe and reliable while using.

Core Value

Application

- Energy Transformation
- Smart Home
- Energy Conservation
- Capitalization

Platform

- Prediction
- Scheduling
- AI Algorithm
- Big Data

Communication Control

- WI-FI Power Carrier
- Cloud Communication

Hardware

- Power Generation / Transformation / Distribution

ROYPOW Research Institute

30+ BMS R&D veteran researchers with **16**+ years ESS BMS experiences

High SOC Accuracy

Our SOC algorithm accuracy reaches **5**%

Comprehensive Protection

3-level software protection, redundant hardware level protection

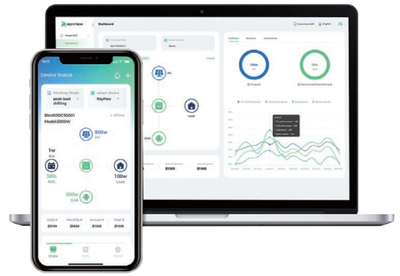
Real-time Monitoring & Comprehensive Visualization

Dynamic Power Flow & Generation Report

Multi-terminal Compatibility & Sharing

App & Web Management

Everything at a glance and under control; the intuitive App / Web allows you to have full visibility into your self-powered home while providing real-time information on solar generation, battery power flow, and household consumption.



Backup Function & Data Encryption

Working Mode Switch & Profit Calculation

Integrated After-sales Service

1 ROYPOW All-In-One RESS | 3 - 5 kW / 5 - 40 kWh

Intelligent Residential Euro-standard
Energy Storage System

2 MPPTs

35 dB Max. Noise

7 kVA Max. AC Input

7 kW Max. PV Input

10 Years Warranty

IP65 Protection

Integrated Multiple Protections

Natural Cooling

Smart Load Function

Modular & Integrated Design

Smart App & Web Management

System Specification

Model	SUN3600S-E/A	SUN4600S-E/A	SUN5000S-E/A
Rated AC Output Power (W)	3600	4600	5000
Nominal Energy (kWh)		5 to 40	
Noise（dB)		<35	
Operating Temperature Range		-20~55℃ (>45℃ derating)	
Dimensions (WxDxH, mm)		650 x 240 x 750+330*N (N=1 to 8)	
Ingress Rating		IP65	
Mounting Options		Indoor/Outdoor, Floor standing or Wall mounted (optional)	

Hybrid Inverter Specification

Model	SUN3600S-E/I	SUN4600S-E/I	SUN5000S-E/I
Input - DC (PV)			
Max. Input Power (W)	4600	6000	7000
Max. Input Voltage (V)		580	
MPPT Voltage Range (V)		120~550	
MPPT Voltage Range (full load)	180~550	200~550	200~550
Start Voltage (V)		150	
Max. Input Current（A)		13.5 / 13.5	
Max. Short Current（A)		16 / 16	
No. of MPPT		2	
No. of String per MPPT		1	
Input - DC (Battery)			
Battery Type		Lithium-ion	
Nominal Voltage (V)		51.2	
Operation Voltage Range (V)		40-60	
Max. Charge / Discharge Power (W)	3600 / 3600	4600 / 4600	5000 / 5000
Max. Charge / Discharge Current (A)	75 / 75	95.8 / 95.8	100 / 100
Battery Charge Method		Self-adaption to BMS	
AC (On grid)			
Rated Input Apparent Power (VA)		7000	
Rated Output Power (W)	3600	4600	5000
Max. Output Apparent Power (VA)	3600	4600	5000
Rated Grid Voltage		230 Vac / L+N+PE	
Rated Grid Frequency (Hz)		50 / 60	
Max. Input Current (A)		30	
Max. Output Current (A)	16	20.9	22
THDI(Rated power)		<3%	
Adjustable Power Factor		0.8 leading to 0.8 lagging	
AC (Back Up)			
Rated Output Power (W)	3600	4600	5000
Rated Output Current (A)	15.6	20	22
Rated Output Voltage (V)		230	
Rated Frequency (Hz)		50 / 60	
THDV (@linear load)		< 3%	
Overload Capacity		105%＜Load≤125%, 10min. 125%＜Load≤150%, 1min. 150%<Load rate,10S	
Back-up Switch time		< 20ms	

Efficency	
Max.Efficiency（BAT to AC）	93.8%
Max.Efficiency (PV to BAT)	95.2%
Max.Efficiency（PV to AC）	97.0%
Euro.Efficiency	96.2%
Max.MPPT Efficency	99.9%
Protection	
	DC Switch / GFCI / Anti-islanding Protection / DC Reverse-polarity Protection / Output Over/Under Voltage Protection / Output Over Current Protection / AC Short Circuit Protection / Insulation Resistor Detection
DC/AC Surge Protection	Type III
General Data	
PV Connection	MC4/H4
DC Switch	Integated
Dimensions (WxDxH, mm)	650 x 240 x 620
Net Weight (kg)	35
Operating Temperature Range	-25~60℃ (>45℃ derating)
Relative Humidity	0~95%
Max. Altitude(m)	3000
Electronics Protection Degree	IP65
Topology type	Transformer(Bat to AC)
Night Self Consumption (W)	<10
Cooling	Natural
Noise（dB)	<35
Display	Wifi+APP / LCD
Communication	RS485 / CAN / WiFi
Standard Compliance	
Safety / EMC	EN IEC 62109-1, EN IEC 62109-2, EN IEC 61000-6-1, EN IEC 61000-6-3
Grid Connection Standard	VDE-AR-N 4105, NRS 097, EN 50549, G98, G99, AS 4777.2

Battery Module Specification

Model	RBmax5.1L	2*RBmax5.1L	3*RBmax5.1L	4*RBmax5.1L	5*RBmax5.1L	6*RBmax5.1L	7*RBmax5.1L	8*RBmax5.1L
Electric Data								
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
Cell type	Lithium iron phosphate (LFP)							
Nominal voltage (V)	51.2							
Operating voltage range (V)	44.8 ~ 56.8							
Max. continuous charge current (A)	50	100	100	100	100	100	100	100
Max. continuous discharge current (A)	100	100	100	100	100	100	100	100
General Data								
Weight (lbs / kg)	47.5	92.1	136.7	181.3	228.8	273.4	318	362.6
Dimensions (W × D × H) (mm)	650 × 240 × 460	650 × 240 × 790	650 × 240 × 1,120	650 × 240 × 1,450	Double tower: 650 × 240 × 790 + 650 × 240 × 1120	Double tower: 650 × 240 × 1120 + 650 × 240 × 1120	Double tower: 650 × 240 × 1120 + 650 × 240 × 1450	Double tower: 650 × 240 × 1450 + 650 × 240 × 1450
Operating temperature[1]	Charge: 32 ~ 131°F (0 ~ 55°C), Discharge: 4 ~ 131°F (-20 ~ 55°C)							
Storage temperature	≤1 month: -20 to 45°C (-4 to 113°F), >1 month: 0 to 35°C (32 to 95°F)							
Relative humidity	0 ~ 95%							
Max. altitude (m)	4,000 (> 2,000 derating)							
Ingress rating	IP65							
Mounting options	Indoor/Outdoor, Floor standing or Wall mounted				Communication	CAN, RS485		
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.

1 ROYPOW All-In-One RESS | 8 - 15 kW / 7.6 - 33 kWh

Three-Phase Euro-standard All-In-One ESS

Three Phase

8 - 15 kW / 7.6 - 33 kWh

Expandable to 90 kW / 132 kWh

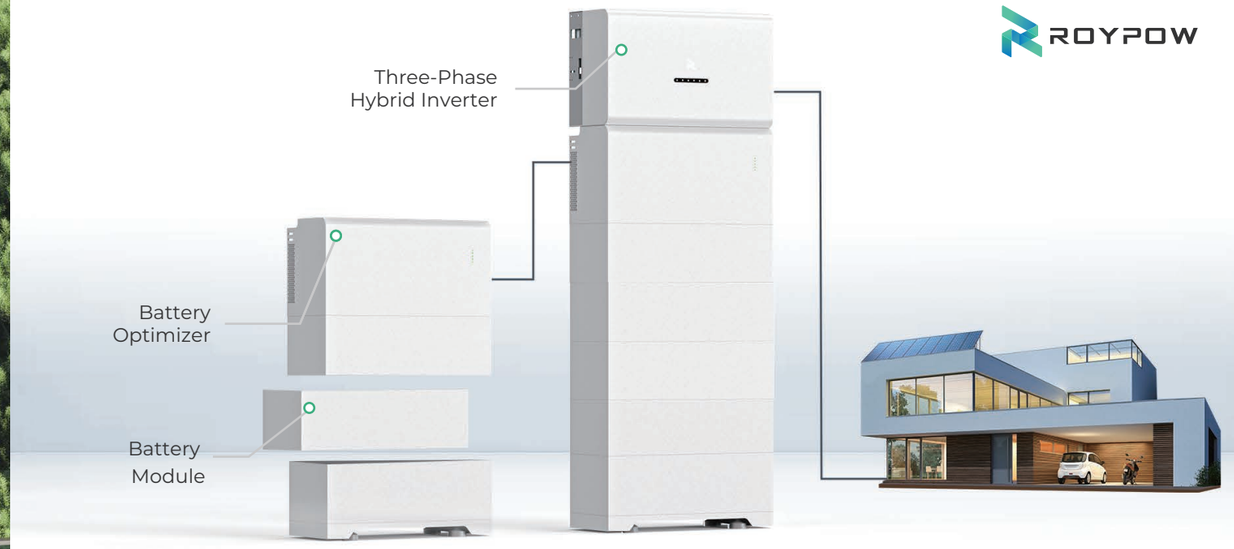
Note: Parallel function is under development and available from Oct. 2024 versions.

Compatible with **AC-coupling**

200% DC Oversizing

98.3% Efficiency

Intelligent Remote Monitoring



ROYPOW

System Specification

Model	SUN8000T-E/A	SUN10000T-E/A	SUN12000T-E/A	SUN15000T-E/A
Rated AC Output Power (W)	8000	10000	12000	15000
Nominal Energy (kWh)	7.6 to 132.7			
Noise（dB)	<30			
Operating Temperature Range	-18~50℃, >45℃ derating			
Dimensions (WxDxH, mm)	650 x 265 x (780+200*N (N=2 to 6)			
Ingress Rating	IP65			
Mounting Options	Indoor/Outdoor, Floor standing or Wall mounted (optional)			

Hybrid Inverter

Lighter, Smaller, Quieter

200% DC Oversizing

200% Overload Capacity

98.3% Max. Efficiency

<10ms Seamless Switch

30A Max. PV Input Current

150% Three-Phase Imbalance Output

Up to **6 Units** Parallel Working

Support **Half Wave** Load

Hybrid Inverter Specification

Model	SUN8000T-E/I	SUN10000T-E/I	SUN12000T-E/I	SUN15000T-E/I
Input - DC (PV)				
Max. Power (Wp)	20000	20000	30000	30000
Max. DC Voltage (V)		1000		
MPPT Voltage Range (V)		160~950		
MPPT Voltage Range (V, full load)	200~850	240~850	240~850	280~850
Start Voltage (V)		180		
Max. Input Current（A)	30 / 20	30 / 20	30 / 30	30 / 30
Max. Short Current（A)	40 / 30	40 / 30	40 / 40	40 / 40
Number of MPPT		2		
Number of String per MPPT	2-1	2-1	2-2	2-2
Input - DC (Battery)				
Compatible Battery		RBmax MH Battery System		
Voltage Range (V)		550-950		
Max. Charge / Discharge Power (W)	11000 / 8800	11000 / 11000	15000 / 13200	15000 / 15000
Max. Charge / Discharge Current (A)	20 / 16	20 / 20	27 / 24	27 / 27
AC (On grid)				
Rated Output Power (W)	8000	10000	12000	15000
Max. Output Apparent Power (VA)	8800	11000	13200	15000
Max. Output Power (W)	8800	11000	13200	15000
Rated Input Apparent Power (VA)		22500		
Max. Input Current (A)		32		
Rated Grid Voltage (V)		380/400, 3W+N		
Rated Grid Frequency (Hz)		50 / 60		
Max. Output Current (A)	3*12.8	3*16	3*19.2	3*21.8
THDI(Rated power)		<3%		
Power Factor		~1 (Adjustable from 0.8 leading to 0.8 lagging)		
AC (Back Up)				
Rated Output Power (W)	8000	10000	12000	15000
Rated Output Current (A)	3*12.8	3*16	3*19.2	3*21.8
Rated Bypass Power (VA)		22500		
Rated Bypass Current (A)		32		
Rated Output Voltage (V)		380/400, 3W+N		
Rated Frequency (Hz)		50 / 60		
THDV (@linear load)		< 2%		
Overload Capacity		120% for 10 min, 200% for 10 S		
THDV		<2 (R load), <5 (RCD load)		
Scalability		Max. 6 in parallel		

Efficiency

Max.Efficiency	98.0%	98.0%	98.3%	98.3%
Euro.Efficiency	97.3%	97.3%	97.6%	97.6%
Max. Charge Efficiency (PV to Bus)		99%		
Max. Charge / Discharge Efficiency (Grid to Bus)		99%		

Protection

DC Switch / GFCI / Anti-islanding Protection / DC Reverse-polarity Protection / AC Over/Under Voltage Protection / AC Over Current Protection / AC Short Circuit Protection / Insulation Resistor Detection / GFCI	
DC/AC Surge protection Device	Type Ⅱ / Type Ⅲ
AFCI / RSD	Optional

General Data

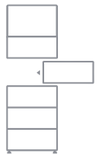
Switch Time	< 10ms	Topology	Transformerless
Generator Interface	Optional	Noise（dB)	<30
PV Switch	Integated	Night Self Consumption (W)	<10
PV Connection	MC4/H4	Cooling	Natural Convection
AC Connection	Connector	Display	LED + APP (Bluetooth)
Operating Temperature Range	-25~60℃ (-13~140°F), >50℃ (122°F) derating	Protection Degree	IP65
Relative Humidity	0~95%	Dimensions (WxDxH, mm)	650 x 265 x 390
Altitude (m)	4000	Net Weight (kg)	28
Communication Interface	RS485 / CAN / USB / (Wi-Fi / GPRS / 4G / Ethernet optional)		

Standard Compliance

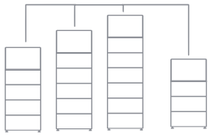
Grid Connection standards	VDE-AR-N 4105, EN 50549, AS4777.2, CEC, RCM	Safety	EN IEC62109-1/-2, EN 61000-6-1/-2/-3/-4, EN IEC 62040

Battery Module

No Additional Wiring Required



Modular & Stackable Design



7.6 ~ 132 kWh Flexible Capacity Expansion

Note: [1] Parallel function is under development and available from Oct. 2024 versions.

LFP
Safe, Cobalt-Free Battery

IP65
Ingress Rating

Battery System Specification

Model	2*RBmax3.8MH	3*RBmax3.8MH	4*RBmax3.8MH	5*RBmax3.8MH	6*RBmax3.8MH
Battery Module	RBmax3.8H (3.84 kWh, 76.8 V, 40kg)				
Number of Battery Modules	2	3	4	5	6
Nominal Energy (kWh)	7.68	11.52	15.36	19.2	23.04
Usable Energy (kWh)[1]	7.06	10.6	14.13	17.66	21.2
Rated Current (A)	45				
Nominal Power (kW)	6.9	10.3	13.8	15	15
Peak Output Power (kW)	8 for 10 sec.	12 for 10 sec.	16 for 10 sec.	17 for 10 sec.	17 for 10 sec.
Weight (kg)	100.4	140.4	180.4	220.4	260.4

Model	2*RBmax5.5MH	3*RBmax5.5MH	4*RBmax5.5MH	5*RBmax5.5MH	6*RBmax5.5MH
Battery Module	RBmax5.5H (5.5 kWh, 76.8 V, 45 kg)				
Number of Battery Modules	2	3	4	5	6
Nominal Energy (kWh)	11.06	16.59	22.12	27.65	33.18
Usable Energy (kWh)[1]	10.18	15.26	20.35	25.44	30.53
Rated Current (A)	50				
Nominal Power (kW)	7.6	11.5	15	15	15
Peak Output Power (kW)	8 for 10 sec.	12 for 10 sec.	16 for 10 sec.	17 for 10 sec.	17 for 10 sec.
Weight (kg)	110.4	155.4	200.4	245.4	290.4

RBmax3.8MH & RBmax5.5MH Series					
Operating Voltage Range (V)	550-950				
Dimensions (W x D x H, mm)	650 x 265 x 780	650 x 265 x 980	650 x 265 x 1180	650 x 265 x 1380	650 x 265 x 1580
Battery Nominal Voltage (V)	153.6	230.4	307.2	384	460.8
Battery Operating Voltage Range (V)	124.8~172.8	187.2~259.2	249.6~345.6	312~432	374.4~518.4
Battery Chemistry	Lithium Iron Phosphate ($LiFePO_4$)				
Scalability	Max. 4 in parallel				
Operating Temperature	Charge: 0~ 50℃ (32~122°F), Discharge: -20~50℃ (-4~122°F) (>45℃(113°F) derating)				
Storage Temperature	≤1 month: -20~45℃ (-4~113°F), >1 month: 0~35℃ (32~95°F)				
Relative Humidity	5~95%				
Max. Altitude (m)	4000 (>2000m derating)				
Protection Degree	IP65				
Cooling Method	Natural Cooling				
Mounting Options	Indoor / Outdoor, Floor standing, Wall mounted				
DC Protection	Circuit Breaker, Fuse, DC-DC converter				
Protection Features	Over Voltage / Over Current / Short Circuit / Reverse Polarity				
Certifications	CE, VDE-AR-E 2510-50, EN IEC 62619, EN IEC 62477, EN IEC62040, RCM, CEC, UN38.3				

Battery Optimizer	RMH95050
Voltage Range(V)	550-950
Max. Charge / Discharge Current(A)	27
Communication	CAN, RS485
Scalability	Max. 4 in parallel
Dimensions (W x D x H, mm)	650 x 265 x 270
Weight (Kg)	15

1 ROYPOW All-In-One RESS | 10 - 15 kW / 10 - 40 kWh

Intelligent Residential US-standard
Energy Storage System

98% Max. Efficiency

4 MPPTs

35 dB Max. Noise

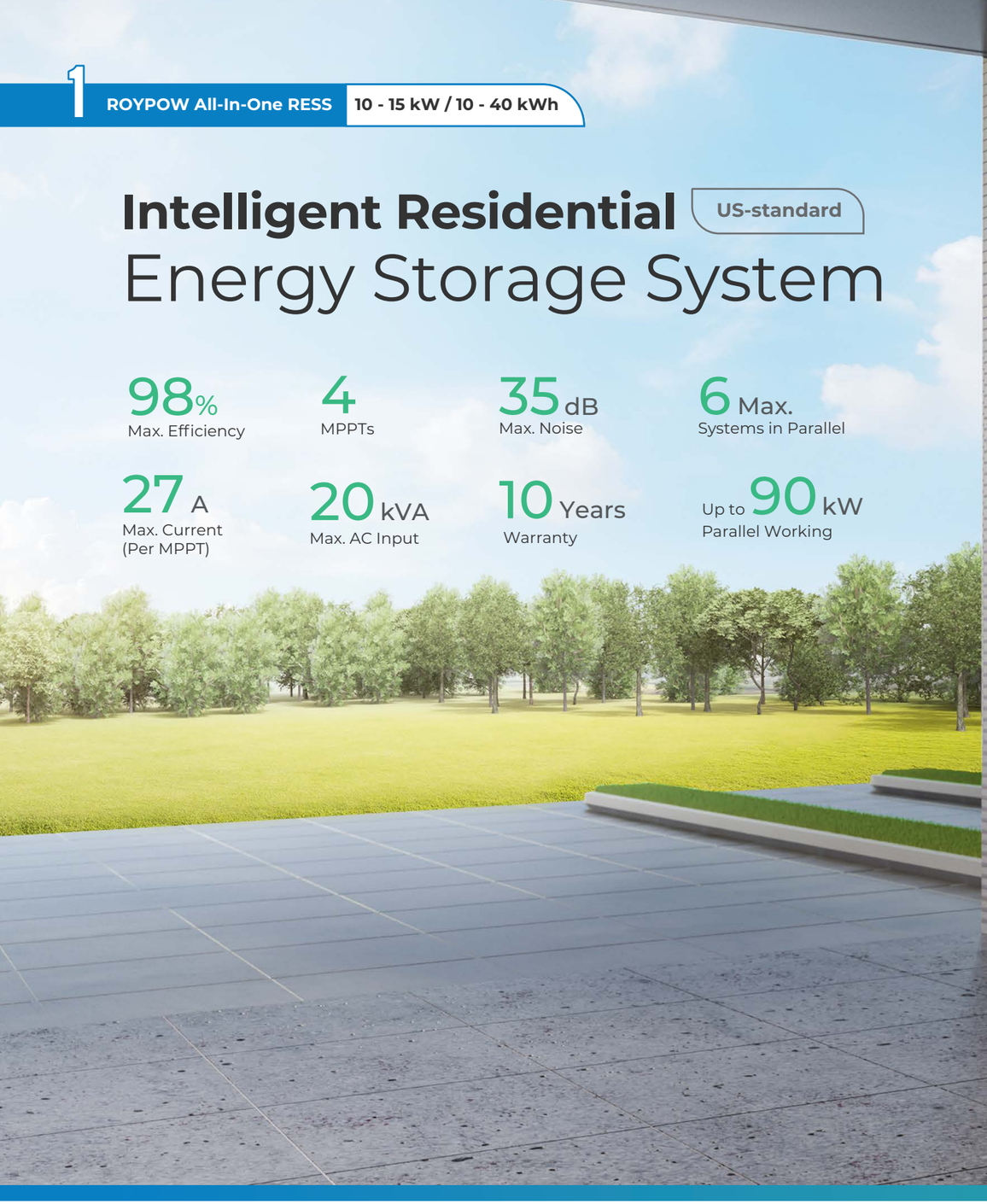
6 Max. Systems in Parallel

27 A Max. Current (Per MPPT)

20 kVA Max. AC Input

10 Years Warranty

Up to **90 kW** Parallel Working



- Split Phase Output
- Type 4X Protection
- PV Systems Compatible
- Integrated RSD & AFCI
- Natural Cooling
- Smart Load Function
- Modular & Integrated Design
- Smart App & Web Management

System Specification

Model	SUN10000S-U/A	SUN12000S-U/A	SUN15000S-U/A
Rated AC Output Power (W)	10000	12000	15000
Nominal Energy (kWh)		5 to 40	
Noise（dB)		<35	
Operating Temperature Range		-20~55℃ (>45℃ derating)	
Dimensions (WxDxH, mm)		845 x 200 x (815+270*N (N=2 to 8))	
Ingress Rating		IP65	
Mounting Options		Indoor/Outdoor, Floor standing or Wall mounted (optional)	
Compliance & Certificates			
UL9540, UL9540A, UL1973, FCC, UN38.3, IEEE 1547, IEEE 1547.1, UL1741, UL1741 CRD, UL1741SB, UL1699B, UL991, IEEE 2030.5, HECO SRD-V2.0, CSA22.2, CEC, FCC Part 15, ICES-003 Issue 7			

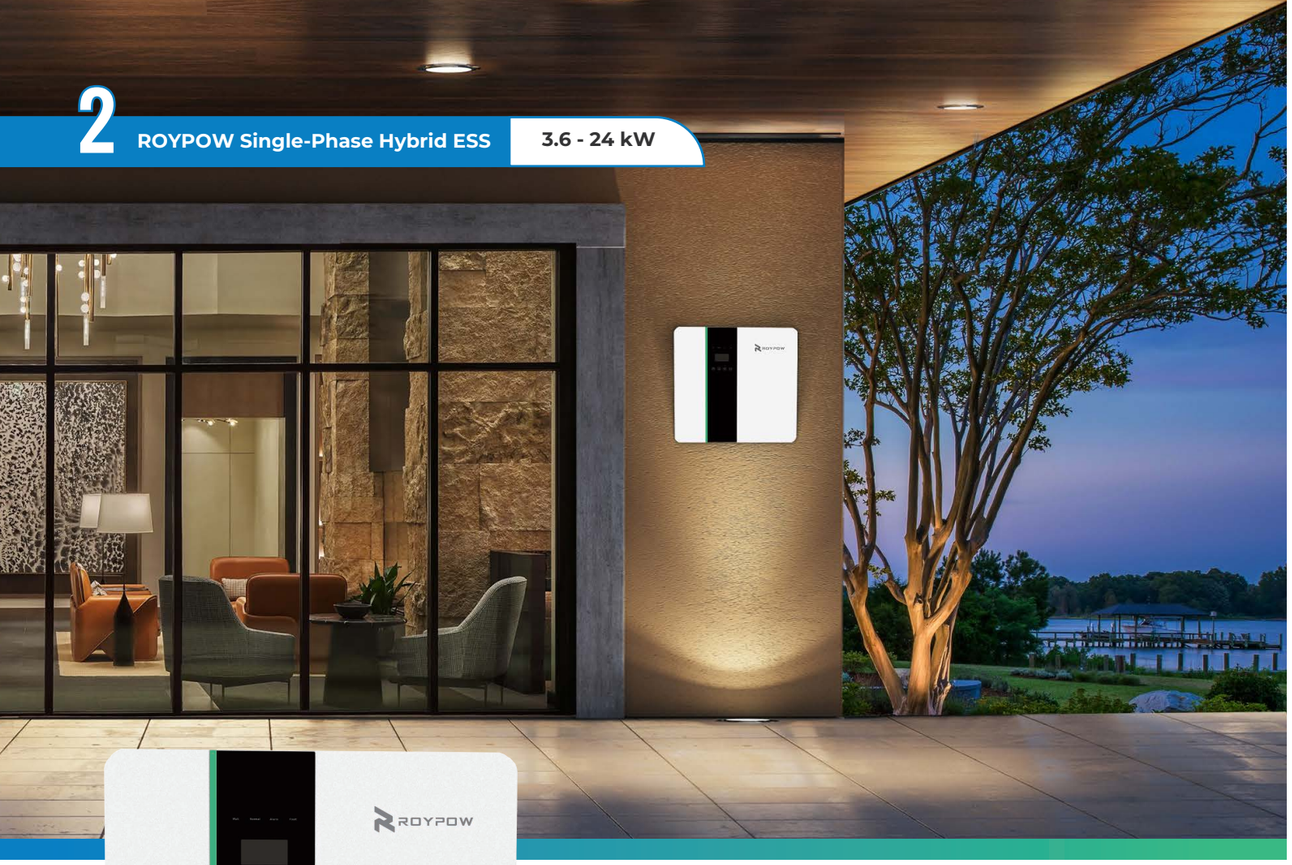
Hybrid Inverter Specification

Model	SUN10000S-U	SUN12000S-U	SUN15000S-U
Input - DC (PV)			
Max. Power (Wp)	14400	20000	24000
Max. DC Voltage (V)		550	
MPPT Voltage Range (V)		120~550	
MPPT Voltage Range (V, full load)	235~550	200~550	225~550
Start Voltage (V)		150	
Max. Input Current per MPPT (Imp, A)	15.5	27	27
Max. Short Circuit Current per MPPT (Isc, A)	20	40	40
Number of MPPT		4	
Number of PV String per MPPT	1	2	2
Input - DC (Battery)			
Compatible Battery		RBmax5.1H Series	
Voltage Range (V)		75-480	
Max. Charge / Discharge Power (W)	10000 / 10000	12000 / 12000	15000 / 15000
Max. Charge / Discharge Current (A)		75 / 75	
Input - AC (GEN)			
Max. AC Power (W)		19000	
Max. AC Current (A)		79.2	
Rated Voltage (V) / Frequency (Hz)		240, (L1/L2) / 60Hz	
AC (On grid)			
Rated Output Power @240V (W)	10000	12000	15000
Max. Output Apparent Power @240V (VA)	10000	12000	15000
Rated Output Current (A)	41.6	50	62.5
Rated Input Power @240V(W)		20000	
Rated Input Apparent Power @240V(VA)		20000	
Max. Input Current (A)		83.3	
Rated Grid Voltage (V)		120/240, (L1/L2/N)	
Rated Grid Frequency (Hz)		60	
THDI		<3%	
Power Factor		0.8 leading to 0.8 lagging	
Efficiency			
Max.Efficiency (PV to Grid)		98.0%	
CEC Efficiency (PV to Grid)		97.2%	

AC (Back Up)			
Rated Output Power (W)	8000	10000	12000
Rated Output Current (A)		79.2	
Rated Output Voltage		120/240V, L1/L2/N	
Rated Frequency (Hz)		60	
Back-up Switch Time		<10ms	
THDV		<3%	
Overload Capacity		105%<Load≤125%, 10 min. 125%<Load≤150%, 1 min. 125%≤Load, 10 sec.	
Protections			
PV Switch / PV Rapid Shutdown / Arc Fault Circuit Interrupter (AFCI) / GFCI/Anti-islanding Protection /DC Reverse-polarity Protection / AC Over / Under Voltage Protection / AC Over Current Protection / AC Short Circuit ProtectionInsulation Resistor Detection			
DC/AC Surge Protection Device		TYPE 4	
Environmental			
Operating Temperature		-30 ~ 60℃(-22 ~ 140℉), derating above 45℃(113℉)	
Operating Humidity		0~95% RH	
Storage Conditions		-30~60℃(-22 ~ 140℉), 0~95% non-condensing	
Enclosure Type		NEMA Type 4X	
Max Elevation		3000m (>2000m derating)	
Noise（dB)		<35	
General Data			
Mounting Option		Wall Mount, indoor or outdoor	
Coupling		DC-Coupling	
Topology		Transformerless	
Cooling		Natural Convection	
Display		LCD + APP (WiFi)	
Communication Interface		RS485 / CAN / WiFi	
Dimensions (WxDxH)		850 x 200 x 550mm (33.46 x 7.9 x 21.7 in)	
Weight		55kg (121.3 lbs)	

Battery Module Specification

Model	2*RBmax5.1H	3*RBmax5.1H	4*RBmax5.1H	5*RBmax5.1H	6*RBmax5.1H	7*RBmax5.1H	8*RBmax5.1H
Electric Data							
Nominal Energy (kWh)	10.24	15.36	20.48	25.6	30.72	35.84	40.96
Usable Energy (kWh)	9.58	14.37	19.16	23.95	28.74	33.53	38.32
Nominal Voltage (V)	102.4	153.6	204.8	256	307.2	358.4	409.6
Operating Voltage Range (V)	89.6~113.6	134.4~170.4	179.2~227.2	224~284	268.8~340.8	313.6~397.6	358.4~454.4
Max. charge/discharge Current (A)			50 / 75				
General Data							
Battery Chemistry			LFP（$LiFePO_4$）				
Weight (Kg)	106	153	200	251	298	345	392
Dimensions (W × D × H) (mm)	845×200×805	845×200×1075	845×200×1345	Double tower			
				845×200×1075, 845×200×685	845×200×1075, 845×200×955	845×200×1345, 845×200×955	845×200×1345, 845×200×1345
Operating Temperature			Charge: 0 to 55℃ (32 to 131°F), -20 to 55℃ (-4 to 131°F)				
Storage temperature			≤1 month: -20 to 45℃ (-4 to 113°F), >1 month: 0 to 35℃ (32 to 95°F)				
Relative Humidity			5~95%				
Max. Altitude			4000 (>2000m derating)				
Protection Degree			IP 65 (NEMA Type 4X)				
Installation Location			Indoor/Outdoor, Floor standing, Wall mounted				
Communication			CAN, RS485				



Single-Phase Hybrid Inverter

3.6 - 24 kW

Efficient and Reliable, Power Your Home with Ease

97.6%
Max. Efficiency (PV to AC)

4 x up to **24 kW**

Fanless Design
Quiet and Comfortable

Seamless Switching
20 ms UPS

Model	SUN3600S-E	SUN4600S-E	SUN5000S-E	SUN6000S-E
DC Input				
Max. input power (W)	4600	6000	7000	7000
Max. input voltage (V)	550			
Nominal DC operating voltage (V)	360			
MPPT voltage range (V)	125 ~ 500			
MPPT voltage range@full load (V)	150 ~ 500			
Max. DC input current (A)	2 x 14			
Max. DC input short current (A)	2 x 17.5			
Start input voltage (V)	125			
MPPT number / number of strings per MPPT	2 / 1			
PV terminal type	MC4			
DC switch	Integrated			
Battery				
Battery type	Lithium-ion battery			
Nominal battery voltage (V)	48			
Battery voltage range (V)	40 ~ 58			
Charging method for li-ion battery	Self-adaption to BMS			
Max. charging / discharging power (W)	3600	4600	5000	6000
Max. charging / discharging current (A)	95 / 76.6	95 / 95.8	95 / 104.2	95 / 110
AC (Grid Side)				
Rated power (W / VA)	3600 / 3600	4600 / 4600	5000 / 5000	6000 / 6000
Max. input power (VA)	3600	4600	5000	6000
Max. output current (A)	16	17.4	21.7	26
Max. input current (A)	16	17.4	21.7	26
Grid connection	Single phase	THDI (rated power)		<3%
Rated voltage (V)	230 (176 ~ 270)	PF		-0.8 ~ +0.8
Rated grid frequency (Hz)	50 / 60	Switch time		<20 ms
AC (Back Up)				
Max. active power (W)	3600	4600	5000	6000
Max. output current (A)	16	17.4	21.7	26
Rated voltage (V)	230	THDV（100%R load）		< 2%
Rated grid frequency (Hz)	50 / 60	Output parellel (Pcs)		4
Over load	105%＜Load≤110%，30 S, 110%＜Load≤120%，10 S, 120%＜Load≤150%，0.02 S			
Efficiency				
Battery charge / discharge efficiency	95.0%	European efficiency		97.0%
Max. efficiency（PV to AC）	97.6%	Max. MPPT efficiency		99.9%
Protection				
GFCI	Yes	Output over current protection		Yes
Anti-islanding protection	Yes	Output short protection		Yes
PV string input reverse polarity protection	Yes	Insulation resistor detection		Yes
Output over voltage protection	Yes	DC/AC surge protection		Type 3
General Data				
Dimensions (W x D x H, mm)	550 x 200 x 520			
Net weight (kg)	25			
Operating temperature range (℃)	-25 ~ 60 (derating at 45)			
Relative humidity	0 ~ 95% (non-condensing)			
Max. altitude (m)	>2,000 Derating			
Ingress rating	IP65			
Topology type	Non-isolated			
Night self consumption (W)	< 3			
Cooling	Natural			
Noise (dB)	< 40			
HMI	APP / LCD			
Communication	RS485 / CAN / WiFi / 4G (Optional)			
Grid connection standard	VDE-AR-N 4105 / G98 / G99 / EN 50549-1 / NRS 097-2-1 / CEI 0-21			
Safety / EMC standard	EN IEC 61000-6-1 / EN IEC 61000-6-3 / IEC 62109-1 / IEC 62109-2			

Advanced $LiFePO_4$ Battery Module

5 kW / Module
Max. Continuous Discharge Power

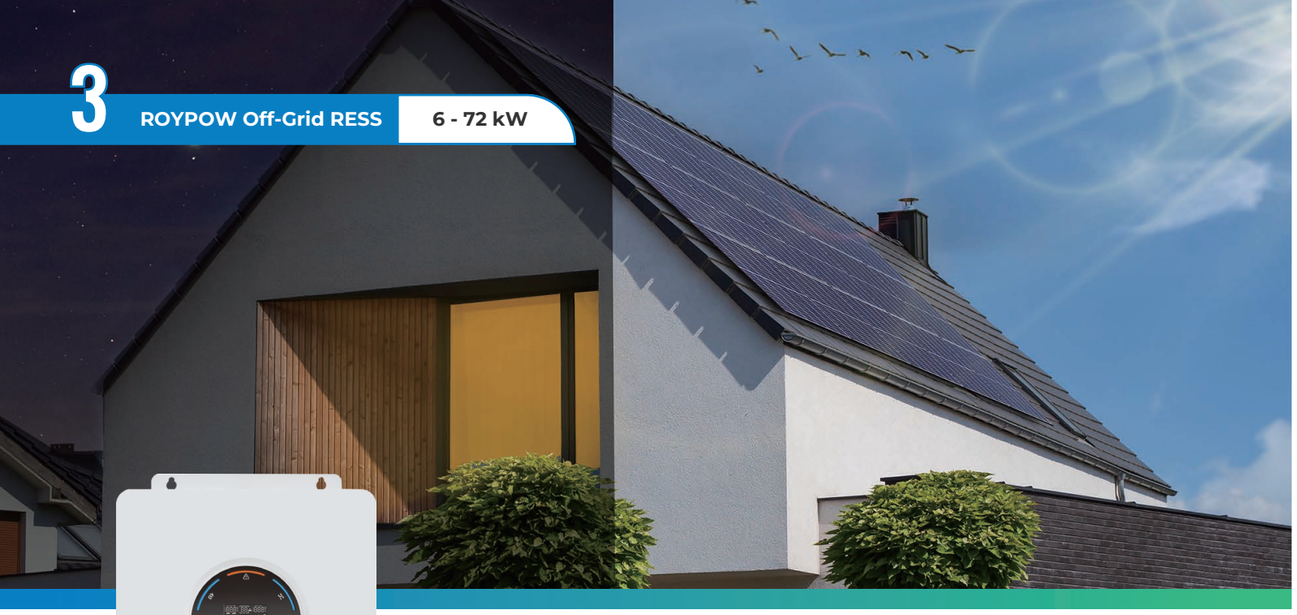
5.12 kWh ~ **40.96** kWh
Flexible Capacity

5/10 Years
Optional Warranty

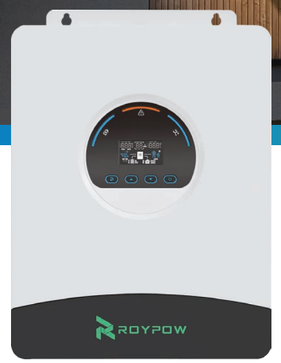
- Easy Installation with Modular and Stacked Design
- Safety Standards Like CE, UL, FCC, IEC62619
- Excellent Safety of Cobalt Free $LiFePO_4$ Battery
- Built-in BMS with Intelligent Monitoring & Multiple Protections

Model	RBmax5.1L	2*RBmax5.1L	3*RBmax5.1L	4*RBmax5.1L	5*RBmax5.1L	6*RBmax5.1L	7*RBmax5.1L	8*RBmax5.1L
Electric Data								
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
Cell type	Lithium iron phosphate (LFP)							
Nominal voltage (V)	51.2							
Operating voltage range (V)	44.8 ~ 56.8							
Max. continuous charge current (A)	50	100	100	100[1]	100[1]	100[1]	100[1]	100[1]
Max. continuous discharge current (A)	100	100[1]	100[1]	100[1]	100[1]	100[1]	100[1]	100[1]
General Data								
Weight (kg)	47.5	92.1	136.7	181.3	228.8	273.4	318	362.6
Dimensions (W × D × H) (mm)	650 × 240 × 460	650 × 240 × 790	650 × 240 × 1,120	650 × 240 × 1,450	Double tower: 650 × 240 × 790 + 650 × 240 × 1120	Double tower: 650 × 240 × 1120 + 650 × 240 × 1120	Double tower: 650 × 240 × 1120 + 650 × 240 × 1450	Double tower: 650 × 240 × 1450 + 650 × 240 × 1450
Operating temperature[2]	Charge: 32 ~ 131°F (0 ~ 55°C), Discharge: 4 ~ 131°F (-20 ~ 55°C)							
Storage temperature	≤1 month: -20 to 45°C (-4 to 113°F), >1 month: 0 to 35°C (32 to 95°F)							
Relative humidity	0 ~ 95%							
Max. altitude (m)	4,000 (> 2,000 derating)							
Ingress rating	IP65							
Mounting options	Indoor/Outdoor, Floor standing or Wall mounted			Communication	CAN, RS485			
Certification	IEC 62619, UL 1973, EN 61000-6-1, EN 61000-6-3, FCC Part 15, UN38.3							

[1] Optional continuous current 200 A version.
[2] When the ambient temperature is too low or too high, the performance of battery may be limited.



3 ROYPOW Off-Grid RESS 6 - 72 kW



Off-Grid Inverter

6 ~ 72 kW

Compact and Light, Designed for Efficient Energy Production

98% Peak Efficiency

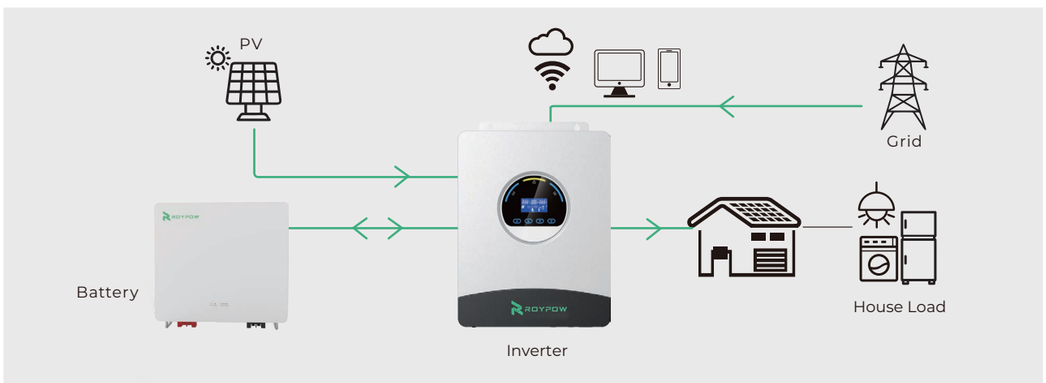
Up to **12** Units Parallel Working

10ms UPS Seamless Switch

IP54 Ingress Rating

3 Years Warranty

- Pure Sine Wave Output
- Wide MPPT Operating Range
- Built-in BMS Communication
- Multiple Safe Protections



System Specification

Model	R6000S-E
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. Output Power (W)	11500
Max. Output 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)	120A / 130
BMS Communication Mode	RS485
Backup Output (AC Output)	
Rated Output Power (VA)	6000W / 6000VA
Rated Output Current (A)	27.3
Rated Output Voltage / Frequency	220 / 230 / 240Vac 50 / 60Hz
Parallel Capacity	Max. 12 Units
Surge Power	12000VA 5s
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	>2000 m Derating
Standby Self-consumption (W)	<10
Installation Type	Wall-mounted
Cooling Mode	Fan Cooling
Communication	RS232/RS485/Dry Contact/Wi-Fi
Display	LCD
Mechnical Specifications	

Inverter Dimension (L x W x H) (mm)	444.7 x 346.6 x 120	Shipping Dimension (mm)	560 x 465 x 240
Net Weight (kg)	12.4	Gross Weight (kg)	14.6
Warranty Period	3 Years		

CE EN 62109-1 EN 62109-2 IEC 61000

LiFePO₄ Battery

5.1 ~ 40.8 kWh

Reliable Power for Off-Grid Living

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

Up to **8** Units
Flexible Capacity Expansion

>**6,000** Times
Cycle Life

5 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

Model	RBmax5.1-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)	50
Max. Continuous Discharge Current (A)	100
General Data	
Weight (KG)	48
Dimensions (W × D × H) (mm)	500 * 167 * 485
Operating Temperature (°C)	0 ~ 55°C (Charge), -20 ~ 55°C (Discharge)
Storage Temperature (°C) Delivery SOC State (20~40%)	>1 Month: 0 ~ 35°C; ≤1 Month: -20 ~ 45°C
Relative Humidity	≤ 95%
Max. Altitude (m)	4000 (>2000 m Derating)
Protection Degree	IP 20
Installation Location	Ground-Mounted; Wall-Mounted
Communication	CAN, RS485
Certification	
EMC	CE
Transportation	UN38.3
Warranty	
Warranty (Years)	5 Years

CE UN38.3