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Version: May 29, 2024, Residential Energy Storage System



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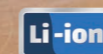
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Residential Energy Storage System



ALL-IN-ONE

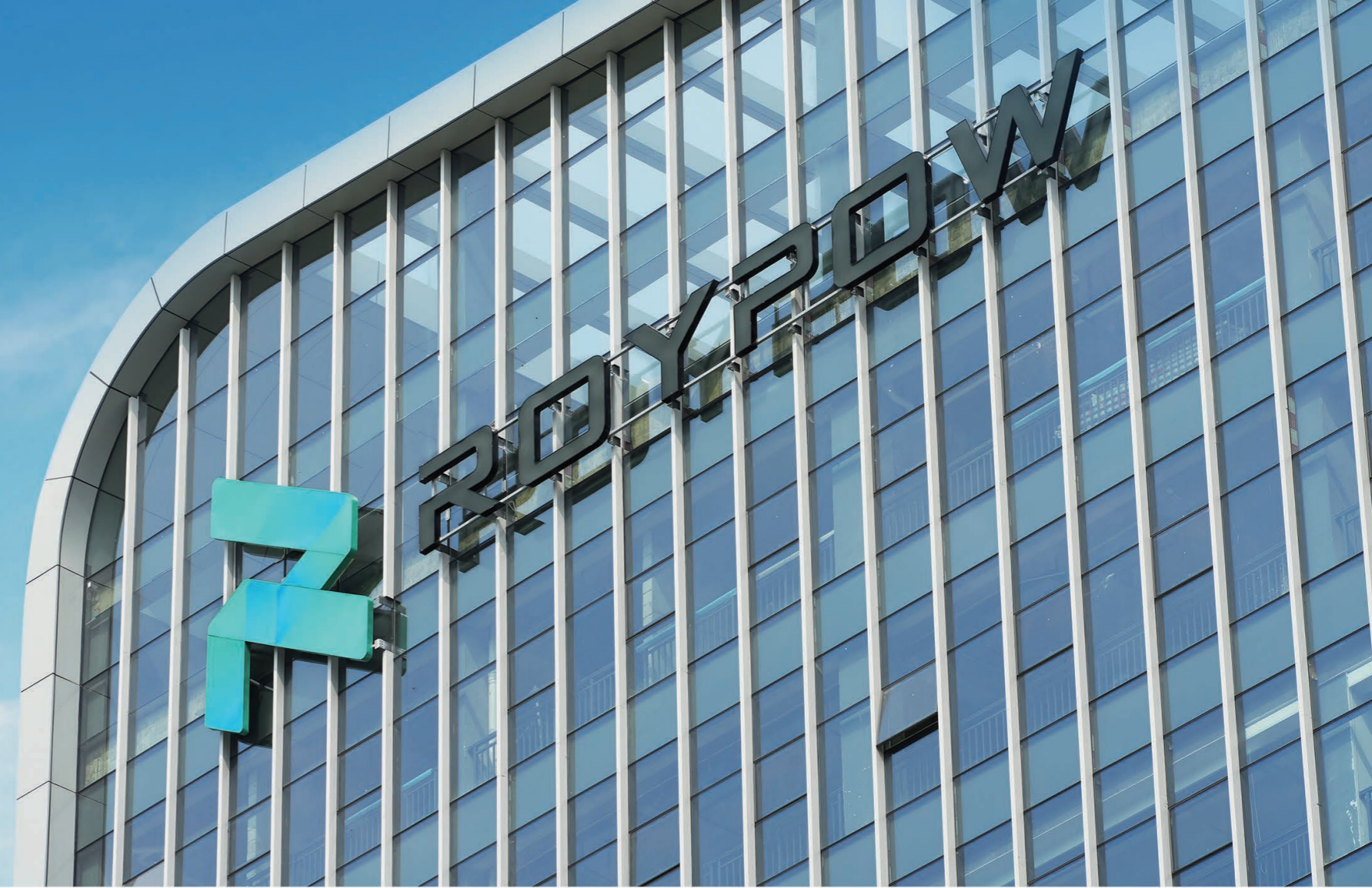
Intelligent Technology
Coexisting With Nature Powers Your Home



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ROYPOW
Your Trusted Partner



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Energy Storage System

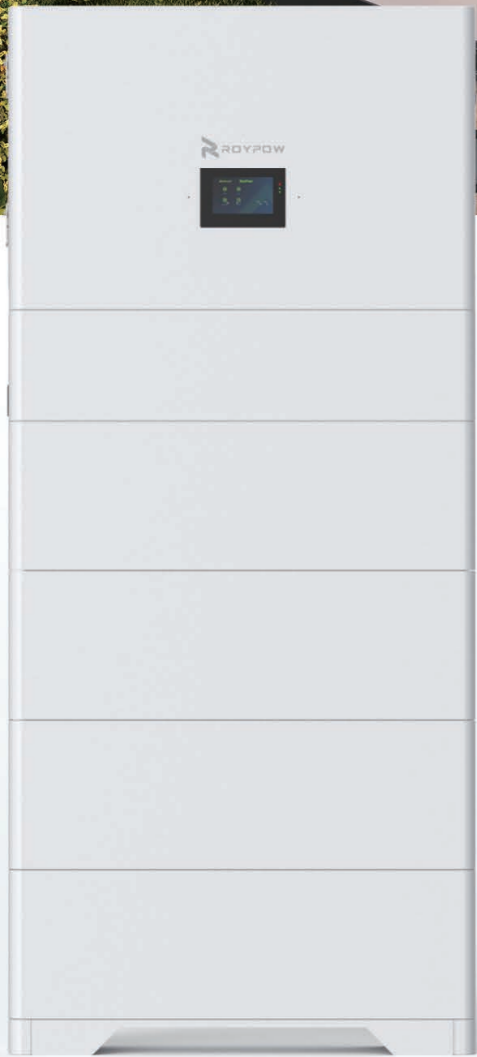
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ALL-IN-ONE

Integrated Inverter and LFP Battery Module



Meet ROYPOW RESS - Compact, Intelligent, and Safe.

ROYPOW RESS combines the most advanced battery management system with super power supply capacity to provide sustainable & green energy for your working and family usages all day.

The all-in-one, modular system saves space and simplifies the installation and operation processes. Adopting a modern and minimalist style design, it fits any home environment, achieving the best of both worlds for practicality and aesthetics.



ROYPOW RESS is a fully-integrated LiFePO4 battery system for residential usages. The rechargeable lithium-ion battery with long design life improves solar self-consumption.



Bi-directional energy storage system supports backup mode.



The electrical interface provides a simple connection to any houses or buildings. Simple installation and user-friendly APP monitoring facilitate your usage of clean energy.

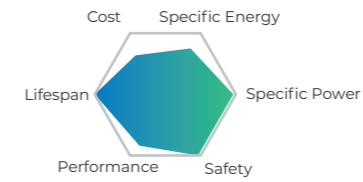




Why ROYPOW RESS?



Safety



LiFePO₄ batteries ensure premium electrical characteristics without any safety issues.



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



Enhanced safety with aerosol fire protection.



IP65 Rating, safe and reliable while using.

Core Value

Application

- Energy Transformation
- Smart Home

- Energy Conservation
- Capitalization

Platform

- Prediction
- AI Algorithm

- Scheduling
- Big Data

Communication Control

- Wi-Fi Power Carrier

- Cloud Communication

Hardware

- Power Generation / Transformation / Distribution



Lifelong Free
Access to Monitoring
Via Web and APP



New Function and
Latest Version Upgrades
Available Remotely

ROYPOW Cloud Platform

With full-on visual experience, user-friendly data display and all-round monitoring functions, ROYPOW makes smart energy management easier for everyone.

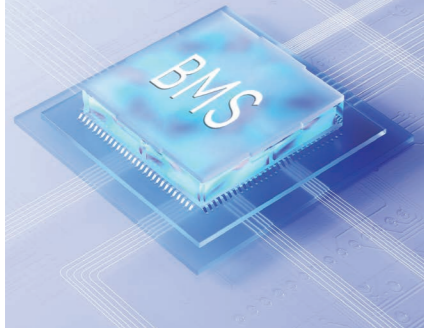





IoT
Compatible



Set Parameters Control
and Build VPP

Battery management system (BMS)



-  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

Euro-standard

3 - 5 kW / 5 - 40 kWh



US-standard

10 - 15 kW / 10 - 40 kWh



Intelligent Residential Energy Storage System

2
MPPTs

35 dB
Max. Noise

7 kVA
Max. AC Input

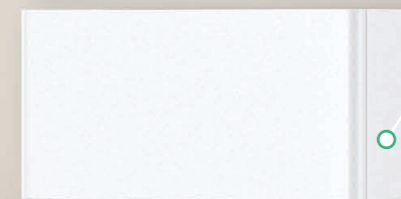
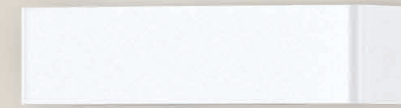
7 kW
Max. PV Input

10 Years
Warranty

Euro-standard



Inverter Module



Battery Modules



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°C (>45°C 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 | |
| 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 | | |

Efficiency

| | |
|----------------------------|-------|
| 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 Efficiency | 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 II / Type II |

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°C (>45°C 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 | 650 × 240 × 1120 + 650 × 240 × 1120 | 650 × 240 × 1120 + 650 × 240 × 1450 | 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

Intelligent Residential Energy Storage System

98%
Max. Efficiency

4
MPPTs

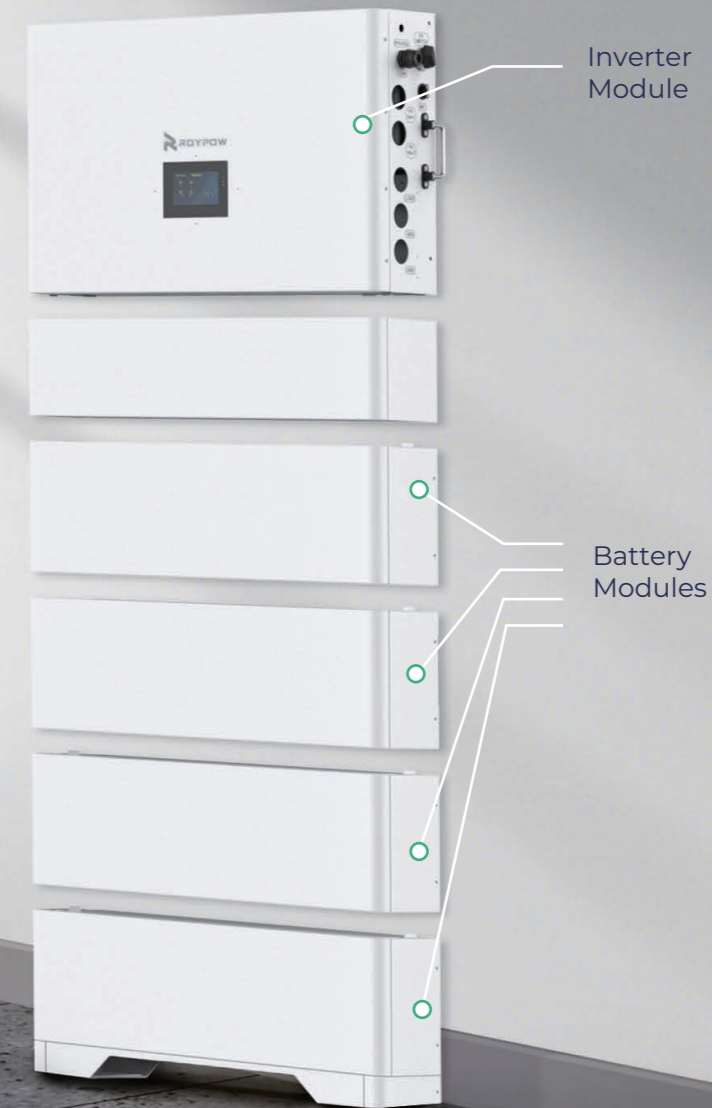
35 dB
Max. Noise

27 A
Max. Current
(Per MPPT)

20 kVA
Max. AC Input

10 Years
Warranty

US-standard



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°C (>45°C 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, IEEC 1547, IEEC 1547.1, UL1741, UL1741 CRD, UL1741SB, UL1699B, UL991, IEEC 2030.5, HECO SRD-V2.0, C22.2, 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 | |
| Rated 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% | |

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 Protection/Insulation Resistor Detection

| | |
|-------------------------------|--------|
| DC/AC Surge Protection Device | TYPE 4 |
|-------------------------------|--------|

Environmental

| | |
|-----------------------|---|
| Operating Temperature | -30 ~ 60°C(-22 ~ 140°F), derating above 45°C(113°F) |
| Operating Humidity | 0~95% RH |
| Storage Conditions | -30~60°C(-22 ~ 140°F), 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 |
| Night Self Consumption (W) | 10 |
| Cooling | Natural Convection |
| Display | LCD + APP (WiFi) |
| Communication Interface | RS485 / CAN / WiFi |
| Dimensions (WxDxH) | 850 x 200 x 550mm (33.5 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 x D x H) (mm) | 845×200×805 | 845×200×1075 | 845×200×1345 | Double tower | | | |
| | | | | 845×200×1075, 845×200×685 | 845×200×1075, 45×200×955 | 845×200×1345, 845×200×955 | 845×200×1345, 845×200×1345 |
| Operating Temperature | Charge: 0 to 55°C (32 to 131°F), -20 to 55°C (-4 to 131°F) | | | | | | |
| Storage temperature | ≤1 month: -20 to 45°C (-4 to 113°F), >1 month: 0 to 35°C (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 | | | | | | |



Advanced LiFePO₄ 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, UN38.3, EN 62619, UL1973

Excellent Safety of Cobalt Free LiFePO₄ 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 | 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 | 650 × 240 × 1120 + 650 × 240 × 1120 | 650 × 240 × 1120 + 650 × 240 × 1450 | 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 | | | | | | | |

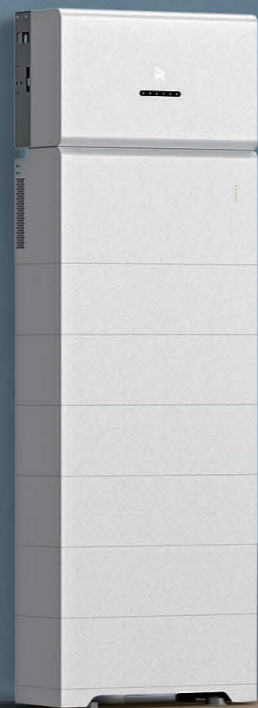
[1] When the ambient temperature is too low or too high, the performance of battery may be limited.

All-In-One Series Energy Storage System

Three Phase

8 - 15 kW / 7.6 - 33 kWh

Expandable to 90 kW / 132 kWh



Compatible with
AC-coupling

200% DC
Oversizing

98.3%
Efficiency



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 | | -20~50°C (-4~122°F), >45°C(113°F) derating | | |
| Dimensions (WxDxH, mm) | | 650 x 270 x (770+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

100%
Three-Phase
Imbalance Output



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) | 200~800 | 240~800 | 240~800 | 280~800 |
| 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) | 600-950 | | | |
| Max. Charge / Discharge Power (W) | 8000 | 10000 | 12000 | 15000 |
| Max. Charge / Discharge Current (A) | 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) | 13 | 15.6 | 17.4 | 20 |
| 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 10min, 200% for 10S | | | |
| 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 | 99% | | | |
| Max. Charge/Discharge Efficiency | 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 | | | |

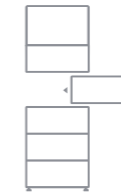
| General Data | | | | |
|-----------------------------|---|----------------------------|-----------------------|--|
| Switch Time | < 10ms | Topology | Transformerless | |
| Generator Interface | Optional | Noise (dB) | <30 | |
| PV Switch | Integrated | Night Self Consumption (W) | <10 | |
| PV Connection | MC4/H4 | Cooling | Natural Convection | |
| AC Connection | Connector | Display | LED + APP (Bluetooth) | |
| Operating Temperature Range | -25~60°C (-13~140°F), >45°C(113°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, EN IEC 62477 | |

Battery Module



No Additional Wiring Required



Modular & Stackable Design



7.6 ~ 132 kWh Flexible Capacity Expansion

LFP
Safe, Cobalt-Free Battery

IP65
Ingress Rating

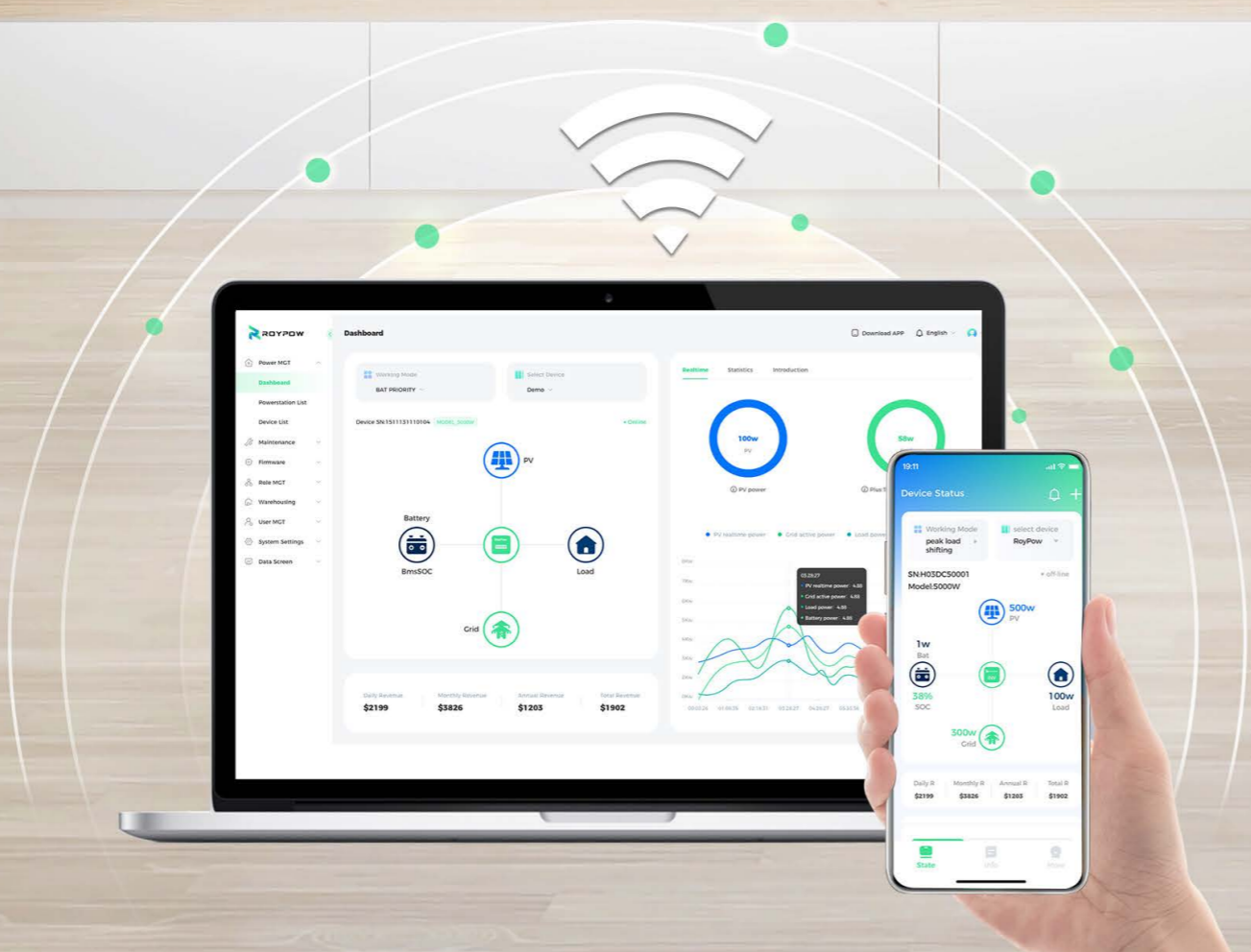
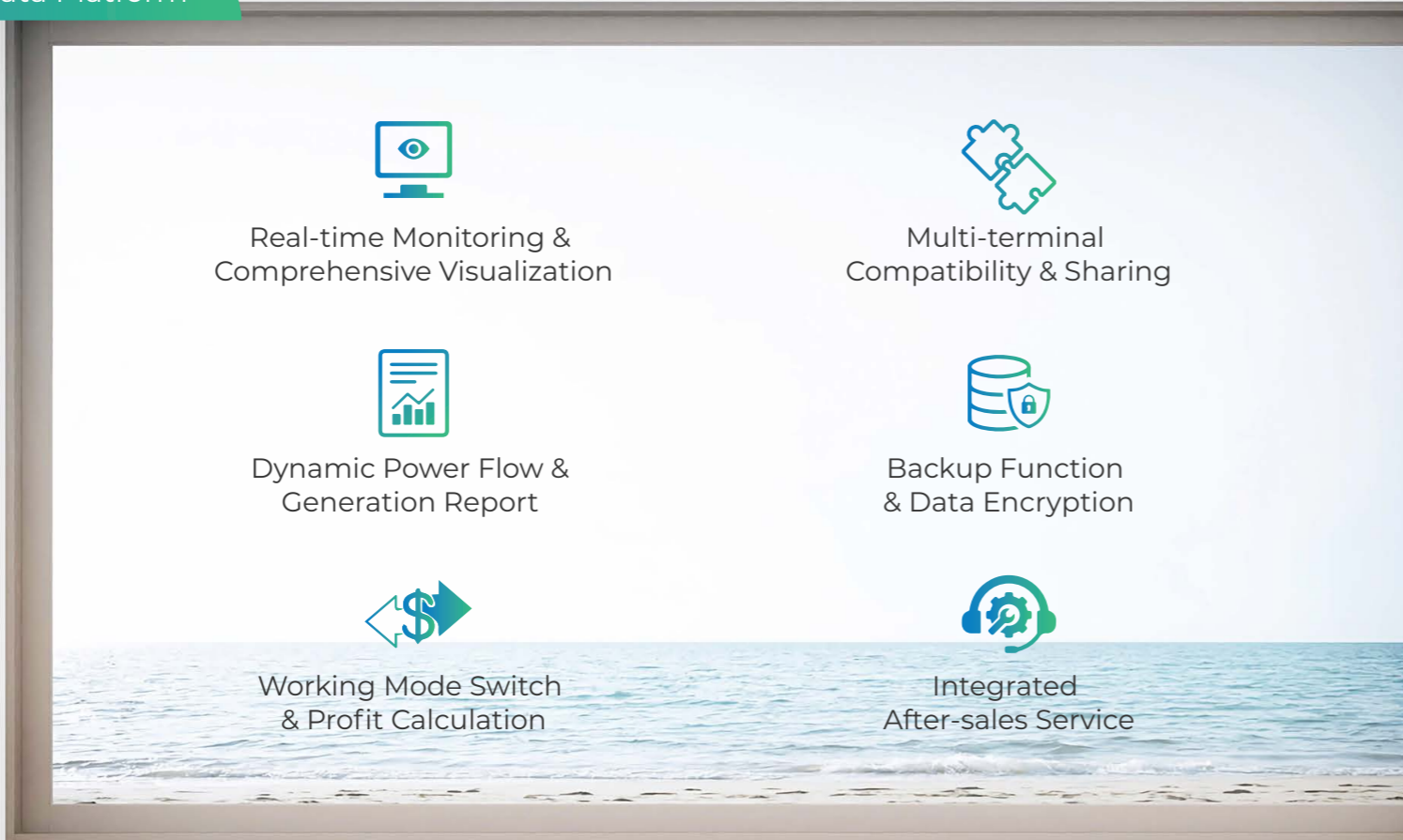
Battery System Specification

| 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, 38 kg) | | | | |
| 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] | 7.18 | 10.77 | 14.36 | 17.95 | 21.54 |
| 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) | 93.7 | 131.7 | 169.7 | 207.7 | 245.7 |

| 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, 43kg) | | | | |
| 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] | 10.34 | 15.5 | 20.67 | 25.84 | 31.01 |
| 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) | 103.7 | 146.7 | 189.7 | 232.7 | 275.7 |

| RBmax3.8MH & RBmax5.5MH Series | | | | | |
|---|--|-----------------|------------------|------------------|------------------|
| 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°C (32~122°F), Discharge: -20~50°C (-4~122°F) (>45°C(113°F) derating) | | | | |
| Storage Temperature | ≤1 month: -20~45°C (-4~113°F), >1 month: 0~35°C (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 |
| Rated Current (A) | 50 |
| Communication | CAN, RS485 |
| Scalability | Max. 4 in parallel |
| Dimensions (W x D x H, mm) | 650 x 265 x 270 |
| Weight (Kg) | 16 |



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.

ROYPOW, For One-stop New Energy Solutions

ROYPOW TECHNOLOGY is dedicated to the R&D, manufacturing and sales of motive power systems and energy storage systems as one-stop solutions.

With more than 20 years of combined experience in manufacturing renewable energy and battery systems, ROYPOW provides Lithium-ion Batteries covering most daily living and working fields: for Low-Speed Vehicles such as golf carts, personnel carriers; Industrial Batteries for use in Material Handling Equipment such as forklifts, aerial work platforms and floor cleaning machines as well as renewable Energy Storage Systems for residential, commercial, industrial, vehicle-mounted and marine applications.

ROYPOW has established a worldwide network to serve customers with a manufacturing center in China and subsidiaries in the USA, the UK, Germany, the Netherlands, South Africa, Australia, Japan and Korea to date. ROYPOW owns and operates fully automatic production lines, a full range of test equipment and an advanced MES that collectively address all aspects of its manufacturing process, from electronics, software design to module assembly, battery assembly as well as initial and final testing. ROYPOW focuses on the self-development of power electronics technologies, including PCS, BMS, and EMS as the core competence.

As a renewable energy innovator, ROYPOW is committed to the mission of achieving energy sustainability while creating a better life for human beings.



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.

- All-round testing.
- Integrated design.
- Advanced MES system.
- IATF 16949 automotive quality management system certification
- QC system.
- Persistent technology innovation.
- Fully automatic production line.
- ISO12405-2 vibration performance and safety testing of automotive lithium batteries

- 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** including golf carts and sightseeing cars;
- ✓ **Vehicle-Mounted Energy Storage Systems & Batteries** Including RV and truck energy storage and air conditioning systems, off-grid solar systems for RV, as well as power batteries for electric motorcycles and airport ground support equipment;
- ✓ **Residential Energy Storage Systems & Portable Power Units** including home storage and portable energy storage products, as well as off-grid energy storage (for forest cabin, island homes without electricity, etc.);
- ✓ **Chargers** for forklifts, aerial work platforms, floor cleaning machines, golf carts and various marine batteries.
- ✓ **Industrial Batteries** including forklifts, aerial work platforms, floor cleaning machines and electric excavators;
- ✓ **Marine Energy Storage Systems & Batteries** including trolling motors, fish finders, other off-grid energy storage systems for marine, and marine power systems;
- ✓ **Commercial & Industrial Energy Storage Systems** including diesel generator power micro-grid energy storage systems (for tower cranes, air compressors, mixers, crushers, etc);
- ✓ **Battery Systems for Port Equipment** including Reach Stackers, Empty Container Handlers, Carriers, Cranes, Terminal Tractors, and other electric equipment.

