

HGuard 3A

Balcony Energy Storage Solution

HGuard 3A is a plug-and-play residential energy storage solution designed for existing PV systems. Compatible with microinverters, it stores excess solar energy for use at night, maximizes self-consumption, lowers electricity bills, and provides reliable backup power during outages. Expandable up to 9kWh, HGuard 3A delivers a smarter and more flexible way to achieve energy independence.



Product Function



Reliable Home Backup Power

3kWh battery capacity with 1.5kW output, delivering dependable backup power for everyday household energy needs.



Fast UPS Protection for Essential Appliances

≤10ms seamless switchover keeps refrigerators, freezers, and other critical appliances running during power outages.



Compact Plug-and-Play Design

Lightweight all-in-one design (≤31.5kg) with plug-and-play installation, ideal for balconies, terraces, garages, or under-eave installation.



Intelligent Energy Management

Integrated BMS, EMS, PCS & STS with WiFi/BLE connectivity, OTA updates, smart energy monitoring, Time-of-Use (TOU) optimization, and anti-backflow support.



Durable, Quiet & Built to Last

IP65-rated aluminum enclosure, whisper-quiet operation (<40dB), and backed by a 10-year limited warranty.

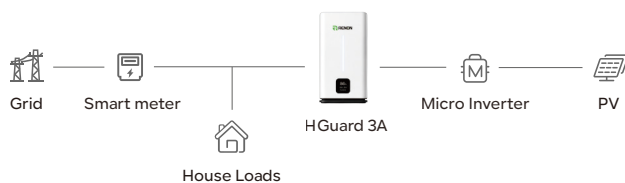


Flexible & Scalable Energy Storage

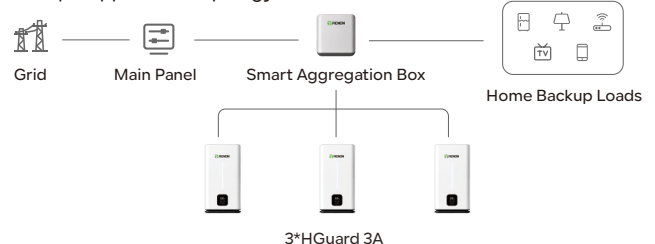
Expand up to 9kWh / 4.5kW with parallel connection of up to three units, adapting easily to growing energy demands.

System Layout

Single application topology



Multiple application topology



Application Scenario



Energy Storage Product Module Parameters

Battery Energy Storage System	
Product Model	R-HG03015A1-US/R-HG03015A1-EU
Cell Capacity(Ah)	LiFePO4 Battery 314
Configuration	1P3S
Battery Capacity(kWh)	3.014
Rated Voltage(V)	9.6
Max Charge/Discharge Current(A)	157
Depth of Discharge	Recommended 90%
Cycle Life	EOL70% ≥ 8000 cycles @25±2°C, 0.5C / 0.5C
AC Input	
Rated Power (kW)	1.5
AC Voltage Level(Vac)	EU: 230 / US: 120
Rated Output Frequency(Hz)	EU: 50 / US: 60
Power Factor	≥ 0.99
Power Factor Range	0.8 lagging ~ 0.8 leading
Max Charging Efficiency	≥ 93.0%
Average Charging Efficiency	≥ 92.0%
Max Discharging Efficiency	≥ 93.0%
Grid Overload Protection	105% × 1500W @ 5S continuous, Grid input disconnects automatically
Charging Derating Mode (°C)	Above 80°C heatsink temp: inverter power(rated) decreases by 10% for every 1°C increase rise; at 90°C,charge/discharge inverting stops
Grid Port Voltage After Power Loss (V)	Within 1s, peak ≤ 60V (per applicablesafety regulations)
Battery Activation from Grid	Supported
Current Harmonics (THDi)	≤ 3% at rated full load
DC Component	≤ 0.5% of rated current, 10-minute average
Standard Accessories	
AC Cable	2m, US Standard (NEMA 5-15P*2) EU Standard (Schuko/Type F Plug*2)
Communication Cable	2m, RJ45 Plug*2

AC Output	
Rated Output Power(kW)	1.5
AC Voltage Level (Vac)	EU: 230 / US: 120
Rated Output Frequency(Hz)	EU: 50 / US: 60
Output Waveform	Sine Wave
Peak Power	2400W for 200ms (resistive load)
Output Voltage Harmonics	≤ 3%, at rated battery voltage, resistive load
Max. Efficiency	≥ 93.5%, at rated battery voltage, resistive load
Average Efficiency	≥ 92.0%, at rated battery voltage, resistive load
Short Circuit Protection	Supported; locks out after 2 occurrences,requires power cycle to reset
Overload Protection	105–120% rated load: trips after 10s; 121–150%rated load: trips after 1.5s; >150% rated load: tripsafter 300ms; based on apparent power, locks out (no auto-recovery), requires power cycle to reset
Grid Port Voltage During Inverter Output(V)	Peak ≤ 60
Micro-Inverter Charging(W)	Supports 1500
Transfer Time(ms)	≤ 10
Battery Short-Circuit Protection	Supported
Simultaneous Grid Charge/Discharge	Supported
System Parameters	
Warranty	10 years
Three-Phase Output Grouping	Supported
Communication	RS485 / CAN / Wi-Fi / LTE
Meter Communication	Supported
OTA	Supported
Cooling Method	Natural cooling, internal fan-assisted airflow
Protection Rating	IP65
Noise Level	<40 dB(A) @ 1 m
Housing Material	Aluminum
Operating Altitude	≤3000 m
Charging Temperature Range(°C)	0~55
Discharging Temperature Range(°C)	-20~55
Humidity Range	0~95%
Storage Temperature Range(°C)	0~35
Dimensions - W*D*H (mm)	410*178*690

■ Mobile Charging Module (Optional)

DC Output Parameters	
Product Model	RN-MC-Pro-EU / RN-MC-Pro-US
USB-Type A	*4, MAX18W (QC Output: 5V/2.4A or 9V/2A or 12V/1.5A)
USB-Type C	*2, MAX100W (PD Output: 5V/3A or 9V/3A or 12V/3A or 15V/3A or 20V/5A)
DC Power Socket	*2, 5525DC, 12V/2A

■ Smart ABOX Parameters (Optional)

Grid Side		
Product Model	RN-Smart-ABOX-S (Single Phase)	RN-Smart-ABOX-T (Three Phase)
Rated Voltage(Vac)	EU: 230 / US: 120	EU: 400 / US: 208
Rated Frequency(Hz)	EU: 50 / US: 60	
Max Current(A)	40	
Load / Backup Output		
Rated Voltage(Vac)	EU: 230 (Single Phase) / US: 120 (Single Phase)	
Rated Frequency(Hz)	EU: 50 / US: 60	
Max Current(A)	40	
Power Supply Type	Single-phase backup output	
Switching Time(S)	< 1	
Bypass Side Parameters		
Rated Voltage(Vac)	EU: 230 / US: 120	EU: 400 / US: 208
Rated Frequency(Hz)	EU: 50 / US: 60	EU: 50 / US: 60
Max Current(A)	40	40
Power Supply Type	Grid pass-through via switch	Grid pass-through via switch
Inverter Side Parameters		
Rated Voltage (Vac)	EU: 230 / US: 120	
Rated Frequency (Hz)	EU: 50 / US: 60	
Max. Parallel Units	Max. 3 units	Max. 9 units