



RLS Series

All-In-One Energy Storage System

Overview

The RLS series residential energy storage system features a modular stacking design, offering flexible configuration, easy installation, and scalability. The system combines one on-grid hybrid inverter (ERS series) with high-performance LiFePO₄ batteries (one to six units LS51100R) to provide reliable and sustainable solar energy storage.

The system supports flexible charging options, including utility power, generators, and solar power. It also offers multiple power supply modes, including grid bypass, off-grid power supply, and grid-connected power generation.

The series features comprehensive and efficient energy management features. It provides power for daily use, stores excess power, and exports surplus power to the grid. These advantages help lower electricity bills, reduce grid dependence, and improve power reliability.

Features

⚡ High Efficiency

- All-In-One Design : Integrated hybrid inverter and LiFePO₄ battery
- 150% PV oversizing capability
- Max. PV conversion efficiency: 97.6%
- Battery charge/discharge efficiency: 94.6%

🔌 Smart Power Management

- Smart Port:
 - Grid-tied inverter (AC coupling)
 - AC loads
 - Generator
- UPS-level switching <10ms
- Parallel operation: Max. 9 units; Up to 54kW, 276.18kWh

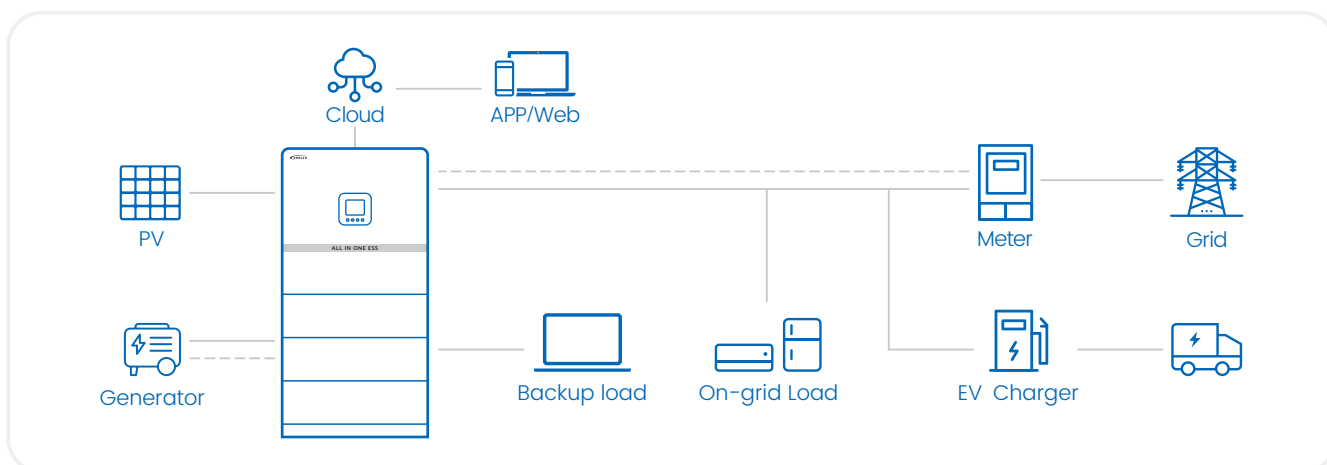
👍 User Experience

- LCD touch screen with local configuration function
- Smart App: User-friendly operation and monitoring
- Easy installation; Saving labor costs
- Natural cooling; Maintenance-free; Ultra-quiet
- Up to 12 kW grid input: 6 kW for loads + 6 kW for battery charging

🛡️ Reliable, Safe & Flexible

- Compact and stackable module
- Easy expansion from 5 kWh to 30 kWh
- LiFePO₄ Battery: 6,000-cycle service life
- IP65 protection for outdoor use (waterproof & dustproof)

Residential Energy Storage System



On-Grid Hybrid inverter

Models	ERS3042	ERS3642	ERS4042	ERS4642	ERS5042	ERS6042
Battery Input Data						
Battery Type	Lithium					
Battery Voltage Range (V)	42-63					
Charging Rule	Self-adaption to BMS					
Max. Continuous Charging/Discharging Current (A)	75	80	85	100	110	120
PV Input (DC)						
Max. Input Power (W)	4500	5400	6000	6900	7500	9000
Max. Input Voltage (V)	580					
MPPT Operating Voltage Range (V)	100-550					
Start-up Voltage (V)	100					
Rated Input Voltage (V)	360					
Max. Input Current per MPPT (A)	16					
Max. Short Circuit Current per MPPT (A)	19.2					
Number of MPPTs	1		2			
Number of Strings per MPPT	1					
AC Output (On-grid)						
Max. Output Apparent Power (VA)	3,300	4,050	4,400	5,060	5,500	6,600
Rated Output Voltage (V)	230					
Rated AC Grid Frequency (Hz)	50/60					
Max. AC Current Output to Utility Grid (A)	14.3	17.6	19.1	22	23.9	28.6
Max. AC Current From Utility Grid (A)	28.6	35.2	38.2	43	47.8	55
THDi	<3%					
Power Factor	0.99 (Adjustable from 0.8 leading to 0.8 lagging)					
AC Output (Off-grid)						
Rated Output Power (W)	3000	3680	4000	4600	5000	6000
Peak Power (VA),Time(s)	1.5 times of rated power, 60s					
Over Power (VA),Time(s)	1.25 times of rated power, 300s					
Switch time (ms)	10					
Rated Output Current (A)	13.1	16	17.4	20	21.7	26.1
Rated Output Voltage (V)	220/230/240 (L / N / PE)					
Rated Output Frequency (Hz)	50/60 (±0.5%)					
THDv (@Linear Load)	<3%					
Efficiency						
Max. Efficiency	97.6%		97.8%		98%	
European Efficiency	97.2%		97.3%		97.5%	
Max. Discharging Efficiency	94.6%					
MPPT Efficiency	99.9%					
Protection						
Basic Protection	• PV reverse polarity • PV insulation resistance • PV string current monitoring		• AC output overvoltage • AC output overcurrent • AC output short circuit		• Anti-islanding • Grid monitoring • Residual current (RCD) detection	
AFCI	Optional					
DC Switch	Standard					
SPD	DC Type II / AC Type III					
Environment parameters						
Operating Temperature	-30°C to +60°C					
Relative Humidity	5% to 95%					
Altitude	4000(> 2000 Derating)					
Ingress Protection	IP65					
Noise Emission (dB)	<30					
Mechanical Parameters						
Dimension (L×W×H) (mm)	620 x 400 x 446					
Weight (Kg)	37.5					
Others						
Generator Auto Start-up	2 Wire Start - integrated					
Self-consumption at Night (W)	<10					
Topology	Battery Isolation					
Cooling Method	Natural					
Mounting Method	Stack-mounted					
Communication With Meter	RS485					
Communication With Portal	WiFi/Bluetooth (External)					
Display	LCD/LED & APP					
Certifications & Standards	EN/IEC62109 、 EN/IEC61000、 CEI 0-21、 RoHS					

Low-voltage Battery Module

Battery Module	LS51100R					
Battery Type	LiFePO ₄ lithium battery					
Module Energy (kWh)	5.12					
Rated Voltage (V)	51.2					
Rated Charging/Discharging Current (A)	50/100					
Charging Temperature	0°C to +50°C					
Discharging Temperature	-20°C to +50°C					
Dimension(L×W×H) (mm)	620 x 400 x 219					
Weight (kg)	49					
Number of Modules	1	2	3	4	5	6
Capacity (kWh)	5.12	10.24	15.36	20.48	25.6	30.72
Certifications	UN38.3、MSDS、IEC62619、IEC61000、RoHS、REACH					