Potise
A company of PowerLink

RHE SERIES

Residential Hybrid Energy

OUTPUT POWER RANGE	BATTERY (LIFEPO4) CAPACITY	SOLAR INPUT POWER RANGE
12-50KWe	20-78KWh	21-65KWp

www.potise.com

RHE SERIES

The RHE Series is a compact, energy-efficient power supply for residential use. Suitable for households, farms, mines, and isolated islands, it works with on-grid and off-grid applications, including solar energy. Grid and solar energy can be used independently or with batteries, providing an independent power source or eco-friendly solution.

Covers 12-50 KWe power range, accepts 21-65 KWp solar input, and has 20-78 KWh battery capacity.

WORKING PRINCIPLES AND ADVANTAGES

Power Input: The system receives 21-65 KWp of solar power through an MC4 connection terminal.

Battery: Stores excess solar energy for night/ cloudy use, supports tiered pricing for cost-effective charging/discharging.

Inverter: Hybrid inverter converts DC from solar panels to AC for household use, handles solar & battery inputs.

Battery Management System (BMS): The BMS monitors and optimizes charging and discharging to extend battery life

Energy Management (EMS): Managing mains power, solar energy, and battery charging and discharging.

Grid Connection: Hybrid inverter charges/ discharges battery based on grid's high/low energy prices when connected.

CHARACTERISTICS AND ADVANTAGES

OPTIMIZED ELECTRICITY USAGE

Adjust electricity prices using power supply timing for peak shaving and valley filling. This achieves economic benefits and regulates demand.

EFFICIENT INTEGRATION AND EASY INSTALLATION

The integrated energy storage system allows convenient management and operation, enabling quick installation and deployment.

UNINTERRUPTIBLE POWER SUPPLY

RHE energy storage equipment serves as a continuous or backup energy source, ensuring uninterrupted household energy.

ENERGY COST REDUCTION

Solar energy is clean and cost-free. Converting it into electricity reduces energy costs.

INTERGRATED SOLAR ENERGY STORAGE AND CHARGING

Support the integration of solar tracking systems, utilize solar energy during the day and store excess energy in batteries.

ENVIRONMENTAL PROTECTION AND ENERGY CONSERVATION

The system is environmentally friendly and energy-saving, with no emissions or noise.

PEAK VALLEY ARBITRAGE

Charge the battery during periods of lower electricity prices. Use the stored energy during peak hours. This helps stabilize the power grid, especially during peak demand periods.

FREE RENEWABLE ENERGY

Utilize solar energy during the day and store excess energy in batteries. This can reduce electricity bills. Some systems allow you to sell excess stored energy back to the grid, providing an additional income source.

ENERGY INDEPENDENCE

This setup reduces your dependence on the power grid. It provides energy security in the event of a power grid failure.

MODULE INTEGRATION

The modular design allows for outdoor installation, IP54 waterproof & durable, scratch-resistant, movable, plug-and-play for ease & speed.

ENVIRONMENTAL BENEFIT

Using solar energy reduces dependence on fossil fuels. It decreases carbon emissions and contributes to a more environmentally friendly environment.

ENERGY MANAGEMENT SYSTEM (EMS)

The RHE series system integrates inverters, batteries, BMS, and MPPT into a single product. It includes an optional solar tracking system (STS). This setup provides an efficient, environmentally friendly, and energy-saving solution. The EMS software enables digital energy management.

FEATURES OF EMS

SYSTEM MONITORING TO ENHANCE LIFESPAN

EMS monitors battery charging, discharging cycles, and temperature changes. This management extends battery life, ensuring better performance and a higher return on investment.

COST REDUCTION AND EFFICIENCY IMPROVEMENT, TRANSPARENT REVENUE

EMS optimizes battery charging and discharging times. This process, known as peak shaving and valley filling, reduces electricity costs. In some cases, EMS can sell excess energy back to the grid, providing extra income.

Users can access device information and reports online, making investment returns clear. By setting functions, they can track local electricity price changes to maximize energy savings.

IMPROVE RELIABILITY AND MAINTAIN GRID STABILITY

EMS provides reliable power by switching between solar, battery, and grid sources. This is beneficial during outages or high demand. By balancing energy supply and demand, EMS helps stabilize the grid, reducing congestion and regulating frequency.

EQUIPMENT MANAGEMENT, INTELLIGENT OPERATION AND MAINTENANCE

EMS offers real-time system operation data detection. It includes auxiliary equipment management, alarm management, a knowledge base, and software updates.

Help information allows users to understand system usage and maintenance. This improves performance and maximizes investment returns through self-service.

ENERGY OPTIMIZATION, ENERGY CONSERVATION AND EMISSION REDUCTION

EMS ensures efficient use of solar panels and batteries. It maximizes renewable energy use, reduces fossil fuel dependence, and lowers carbon emissions.

RHE IoT CLOUD PLATFORM

This device can connect to Potise's IoT cloud platform via a mobile app or computer browser. It offers the following features:

REAL-TIME MONITORING

- **Performance tracking:** Continuously monitors solar panels, batteries, and grid connections.
- **Environmental monitoring:** Tracks conditions like temperature and humidity that affect performance.
- **Photovoltaic tracking system integration:** Integrates seamlessly with solar cells.

REMOTE OPERATIONS

- **Remote access:** Users can control and manage the system from anywhere.
- **Automated operation:** Executes charging and discharging based on real-time data and set parameters.
- **Predictive maintenance:** Identifies potential issues early, reducing downtime and costs.
- **Maintenance alerts:** Sends notifications for scheduled maintenance and abnormal alerts.

DATA ANALYSIS

- **Usage pattern:** Analyzes energy usage to optimize the system.
- **Performance report:** Generates detailed reports on performance, efficiency, and return on investment.

SECURITY CONTROL

- **Data encryption:** Ensures secure communication and data storage to prevent threats.
- **Access control:** Manages user access and permissions to prevent unauthorized use.

ENERGY DISPATCH

- **Energy optimization:** Allocates energy to balance loads and reduce peak demand costs.
- **Demand response:** Adjusts energy storage and release based on grid demand and prices.
- **Grid interaction:** Manages energy flow between hybrid systems, renewable energy, and the grid.

FRIENDLY INTERFACE

- **User-friendly dashboard:** Provides a comprehensive dashboard for monitoring and control.
- **Customizable settings:** Allows users to customize settings based on their energy needs and preferences.

IoT PLATFORM APPLICATIONS

THE IoT PLATFORM CAN BE APPLIED TO PRODUCT LINES IN THE FOLLOWING FIELDS:

RESIDENCE

RHE

Manage home energy and provide backup power during outages.

COMMERCIAL BUILDINGS

CHE SERIES

Save energy costs through peak shaving and load balancing.

INDUSTRY

IHE SERIES

Ensure a reliable power supply to improve operational efficiency.

TEMPORARY POWER SUPPLY

PES & PHE SERIES

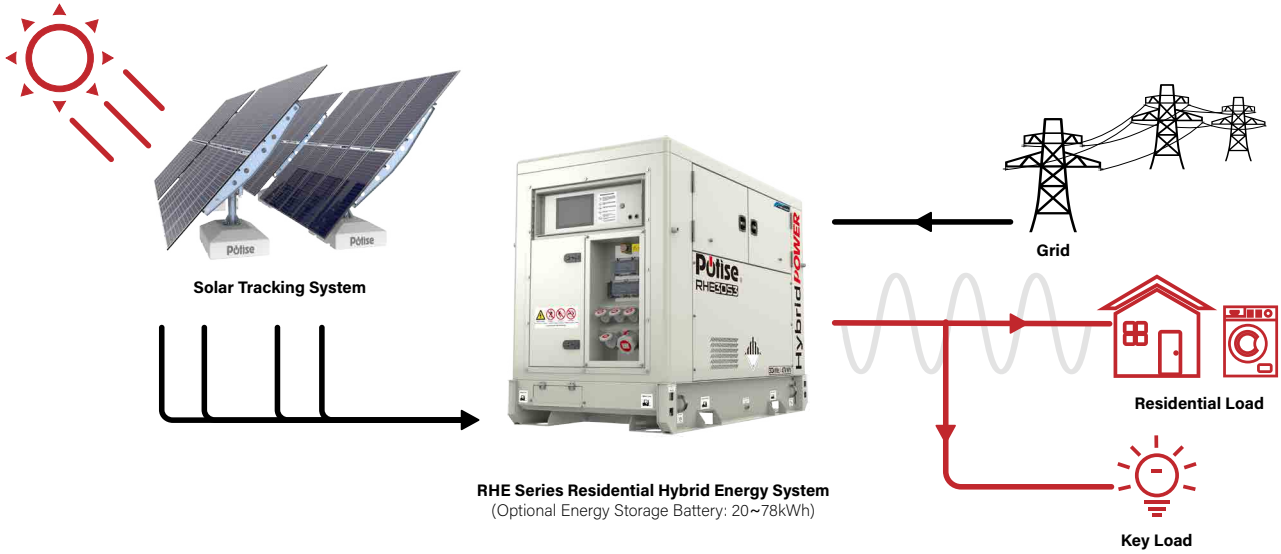
Offer a mobile hybrid power supply.

APPLICATIONS

Our products are widely employed by residential users, small businesses, and on isolated islands. They provide stable and reliable renewable energy.

PRODUCT SPECIFICATIONS

Model	Syterms Output Power		Battery Input Capacity	Grid Power Input Power Rated		Solar Power Capacity	Dimensions LxWxH	Dry weight
	kVA	kW	kWh	kVA	kW	KW	mm	kg
RHE16S	16	16	20.48	16	16	21	1600x800x1200	950
RHE12S3	12	12	20.48	12	12	16	1600x800x1200	950
RHE25S3	25	25	38.88	25	25	32	1950x1030x1500	1135
RHE30S3	30	30	46.66	30	30	39	1950x1030x1500	1235
RHE40S3	40	40	62.21	40	40	52	2100x1100x1700	1535
RHE50S3	50	50	77.76	50	50	65	2100x1100x1700	1635



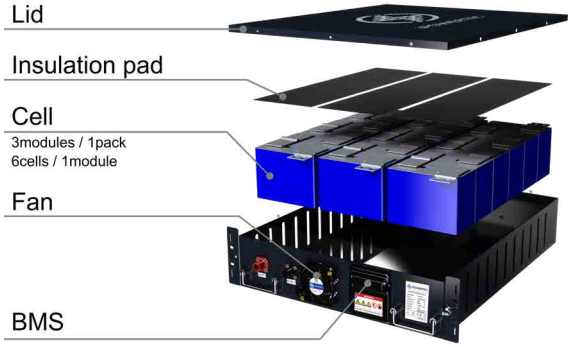
RHE Series Residential Hybrid Energy System
(Optional Energy Storage Battery: 20~78kWh)

RHE is used with STS to quickly deploy to the site. Depending on the battery capacity, one or more STS systems can be selected to connect to the RHE system. For more STS information, please contact our product specialist.

BATTERY SYSTEM

BATTERY PACK

Energy density up to **170Wh/Kg**



POWER DISTRIBUTION UNIT (PDU)

BATTERY RACK

High Energy Density

Safety and Stability

Long Cycle Life

Wide Temperature Tolerance

Eco-Friendly

HV BATTERY PACK DATA	
Cell capacity (Ah)	135
Rated power (kWh)	7.776
Rated voltage (V)	57.6
Max. charge/discharge current (A)	135
Cooling method	Air-cooled
Cycle life (25±2°C, 90% DOD)	6000 cycles, SOC≥70%
Operating temperature range (°C)	Charge: 0~55 Discharge: -20~50
Dimension (mm)	580x713x140

LV BATTERY PACK DATA	
Cell capacity (Ah)	100
Rated power (kWh)	5.12
Rated voltage (V)	51.2
Max. charge/discharge current (A)	100
Cooling method	Air-cooled
Cycle life (25±2°C, 90% DOD)	6000 cycles, SOC≥70%
Operating temperature range (°C)	Charge: 0~55 Discharge: -20~50
Dimension (mm)	483x538x136

TEST STANDARDS

IEC 62619
IEC 62477
IEC/EN 60529
EN 61000-6-1
EN 61000-6-2
EN 61000-6-3
EN 61000-6-4
AS 4777.2

STANDARD CONFIGURATION		
Energy storage battery	HMI control	AC output switch panel
Inverter	MC4 PV port	UPS power supply
EMS system	Multiple power output socket (AC)	Power input and output terminals (Power supply)
Outdoor insulated waterproof cabinet	IoT (internet of things) platform usage license	

OPTIONAL CONFIGURATION		
Solar Tracking System (STS)	PV panel	Fire protection system
Air-conditioning		

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