Home & Residential ESS

ENEREX
Home & Residential ESS

Creating, Leading, Evolving a New Energy Paradigm

Gyeonggi-Do Promising Energy Enterprise

A new era, a new paradigm of energy solutions

bipv korea

Company

A leading specialist company in the energy industry, dedicated to providing solutions needed throughout the entire process of **producing, storing, transmitting, and utilizing** green energy.
We contribute to global **carbon emission reduction** and **energy efficiency enhancement**, striving to be the **No.1 solution provider in the energy sector.**

Introduction

Extensive experience in industrial electronics and power electronics fields

- Experience in development, manufacturing, and testing of power electronic devices
- Participation in Frequency Regulation projects

System Design, engineering, manufacturing capabilities

- Emergency power systems for ships, automotive engine testing facilities
- ESS for frequency regulation, LNG compression facilities

Systematic production system

- Intelligent manufacturing system (Smart Cell)
- Power Conversion Module (PEBB) manufacturing line
- BESS/PCS assembly production system

Product highlights

"Where would it be used?"

- Ideal for buildings with small-scale solar panels installed
- Hybrid system featuring solar power input and battery connection terminals

"Will it save costs?"

- Operates with over 88% round trip efficiency, reducing operating costs

"Is it easy to install?"

- Easily installed anywhere inside homes

"How would it be used?"

- Provides household power from batteries during grid power outages

"Safety is important."

- Equipped with built-in HMI and various protective features

"I want to monitor its status."

- Features status monitoring, anomaly detection/recording
- Remote monitoring, control, backup, and maintenance capabilities

Home ESS Lineup

R0510L R0520L R0510F/R0515F R0505P/R0510P

Model	R0510L	R0520L
Rating	5kW	
Energy Capacity	9.2kWh(Li-Ion Battery)	18.4kWh(Li-Ion Battery)
Input Voltage	1phase AC 170-280V-10%/±15%, 50/60Hz±5%	
Input Current	40 Arms	
Output Voltage	1phase AC 220/230/240V±5%, 50/60Hz±0.1%	
Output Current	21Arms	
Protection	IP21/IP33	
Applications	Residential Hybrid ESS / Aux. Power Supply / Emergency Power Source	
Comm. Protocols	Modbus TCP/IP	
PV Input	DC 130V ~ 430V	
BAT Voltage	DC 40V ~ 62V (51V Norminal)	

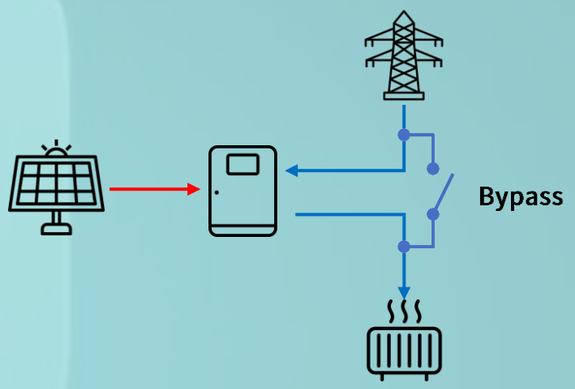
Model	R0510F	R0515F
Rating	5kW	
Energy Capacity	10kWh(Li-FePO4 Battery)	15kWh(Li-FePO4 Battery)
Input Voltage	1phase AC 170-280V-10%/+15%, 50/60Hz±5%	
Input Current	40 Arms	
Output Voltage	1phase AC 220/230/240V±5%, 50/60Hz±0.1%	
Output Current	21Arms	
Protection	IP21/IP33	
Applications	Residential Hybrid ESS/Aux. Power Supply/ Emergency Power Source	
Comm. Protocols	Modbus TCP/IP	
PV Input	DC 130V~430V	
BAT Voltage	DC 40V ~ 62V(51V Norminal)	

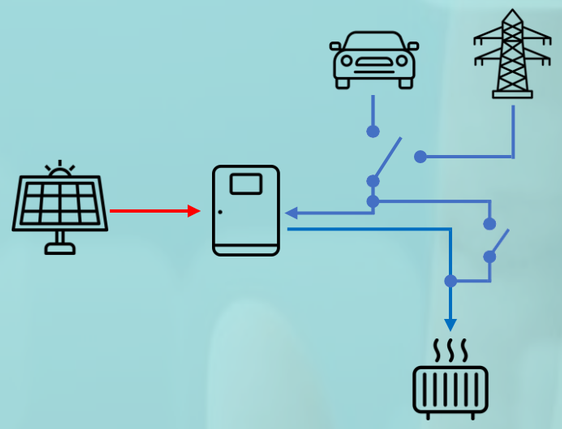
Model	R0505P	R0510P
Rating	5kW	
Energy Capacity	5kWh(Lead-Acid Battery)	13kWh(Lead-Acid-Battery)
Input Voltage	1phase AC 170-280V-10%/+15%, 50/60Hz±5%	
Input Current	40 Arms	
Output Voltage	1phase AC 220/230/240V±5%, 50/60Hz±0.1%	
Output Current	21Arms	
Protection	IP21/IP33	
Applications	Residential Hybrid ESS/Aux. Power Supply/ Emergency Power Source	
Comm. Protocols	Modbus TCP/IP	
PV Input	DC 130V~430V	
BAT Voltage	DC 40V ~ 62V(51V Norminal)	

Application

Utilizing as an ESS (Energy Storage System)

- Integrated with solar power generation
- Grid-connected
- Direct connection from grid to load in case of issues



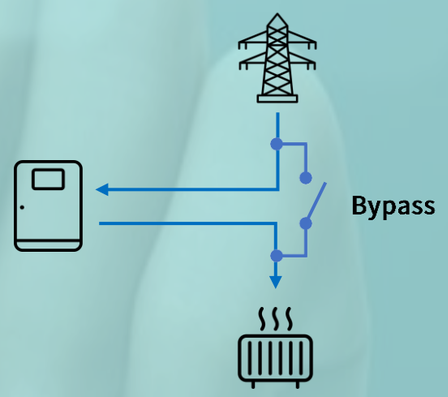


Utilizing V2L/V2H Functionality

- Integrated with solar power generation
- Grid-connected
- Direct connection from grid to load in case of issues
- Providing energy from electric vehicles to both load and home

Utilizing as a UPS

- Connected to the grid
- Provides emergency power supply when the grid is disconnected



Installation cases

Specification

Residential ESSW-10/15kWh (LFP)			5kW-10/15kWh (LIB)
Product Code (Maker)	System (Bumhan Power Systems)		R0510-62HN0DL (5kW-10kWh) / R0515-62HN0DL (5kW-15kWh)
	Battery (Korea Power Cell) HESS 102A(x4 = 10kWh / x6 = 15kWh)		SM14S18P-M50L (x2 = 9.2kWh / x3 = 13.8kWh)
Functionality Applications		Residential/Home Hybrid ESS	
AC input (Grid side)	Rated (continuous) power	5 kW	
	Voltage & Frequency	1ph AC 170~280V -10%/+15%, 50/60Hz ±5%	
	Max. Input Current	40 Arms	
	Power factor	> 0.99 (@ Nominal)	
	THDi	< 10%	
AC output (Load side)	Rated (continuous) power	5 kW	
	Voltage & Frequency	1ph AC 220/ 230/ 240V ±5%, 50/60Hz ±0.1%	
	Rated Output Current	21 Arms	
	Power factor	> 0.99 (@ Nominal)	
	THDv	< 5%	
	DC-AC conversion efficiency	95%	
Battery	Energy Capacity	10kWh/ 15kWh	9.2kWh/ 13.8kWh
	Cell type	Lithium Ferrite Phosphate	Lithium ion
	Input Voltage Range	DC 44.96 ~ 55.4V (DC 51.1V nom)	
	OverCharge Protection	DC 62V	
	Maximum Charge Current	80 Adc	
	DC-AC conversion efficiency	93%	
PV Input (MPPT)	Maximum input power	5 kW	
	MPPT Voltage range	DC 120 ~ 430V	
	Maximum/PV Open-ckt voltage	DC 450V	
	Maximum Input Current	40 Adc	
Common Chrs	Control system philosophy	Full Digital Control by Microcontroller	
	Man-machine interface	7” Full color display panel with touch screen	
	Remote control interface	Modbus/TCP	
	Protective Functions	Overcurrent, Output Short, Overload, Over temperature, Output voltage abnormal	
		Battery voltage high/ low, Battery disconnected	
		PV overcurrent, PV overvoltage	
Mechanic Chrs	Dimension (W xH xD) / Weight (Approx.)	650 x 1185 x 436 mm^3/ 206kg (10kWh)	700 x 1312 x 298 mm^3/ 165kg (10kWh)
	Max. audible noise	< 60dB	
Environment	Enclosure protection rating	IP21 (Indoor installation)	
	Operating ambient temperatures	-10 ~ +50 deg C	
	Humidity	0 ~ 95% RH~(Non-condensing)	
	Max. installation altitude (from sea-level)	1000 m	
Compatible Standards	EMC	IEC/KN 61000-6-2, CISPR/KN 11	
	Safety	IEC/K 62477-1 (2011-12)	

Residential ESS
E N E R E X R-series

Lithium Ion/Lithium Ferrite Phosphate Battery Embedded

PV integrated residential energy storage system capable of automated operation

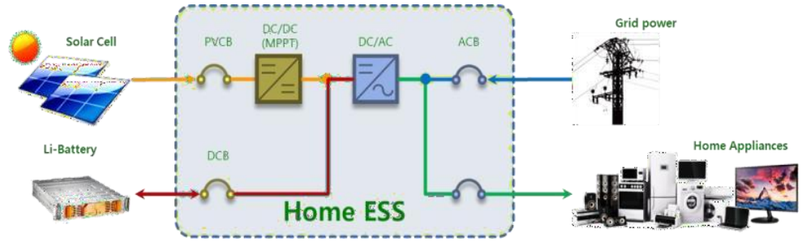
Providing Photo-voltaic generation and energy storage functions, the E N E R E X Residential ESS can be easily installed in any place in house with minimum space.

E N E R E X Residential ESS is optimized to house has small PV panel and provides efficient and reliable auxiliary power system solution.

Features

- *Integrated hybrid system including PV input and battery terminal realize single panel energy storage system solution without PV inverter.*
- *Low operation cost – high round trip efficiency by 88% (including battery).*
- *Easy installation in home – living room, balcony, boiler room and etc.*
- *Can select priority of PV generated energy to energy saving and output to load.*
- *Power being supplied to load during battery has energy in spite of power fail.*
- *Convenient diagnostic functions - by built-in HMI, full protective functions, status monitoring and fault/alram detection and log data.*
- *Easy to monitor, control, data backup and maintenance by Ethernet connection.*

R0510F R0510L



- **Target market & applications**
  - Stand alone residential house or apartment PV panel installed.
- **Product type** — **All-in-one System**
  - PCS — 5kW (1 rack)
  - Battery* — 10 ~15 kWh (1 rack), LFP / Li-Ion Battery None
  - Transformer — None
  - Switch board
- **Key specifications**
  - Capacity — 5kW(PCS) – 5/ 10/ 15kWh(BAT)
  - Output — 1ph AC 220V, 50/60Hz
  - Form factor — Single panel steel cabinet
  - Ambient condition — -10 ~50'C, 95% RH or below (non-condensing) Forced air-cooled
  - Cooling — < 60db
  - Acoustic noise — 96% (DC AC)
  - System efficiency — IP21 (Indoor installation)
  - Protection