

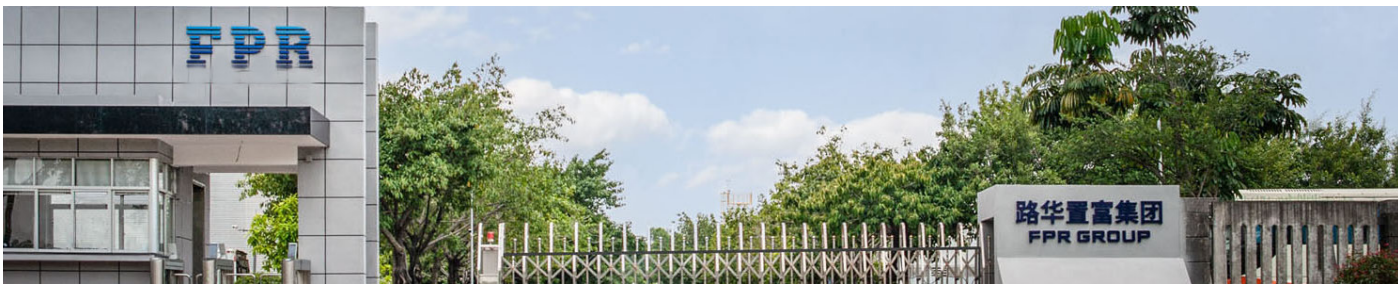


Safe & Reliable

Energy Storage Solutions



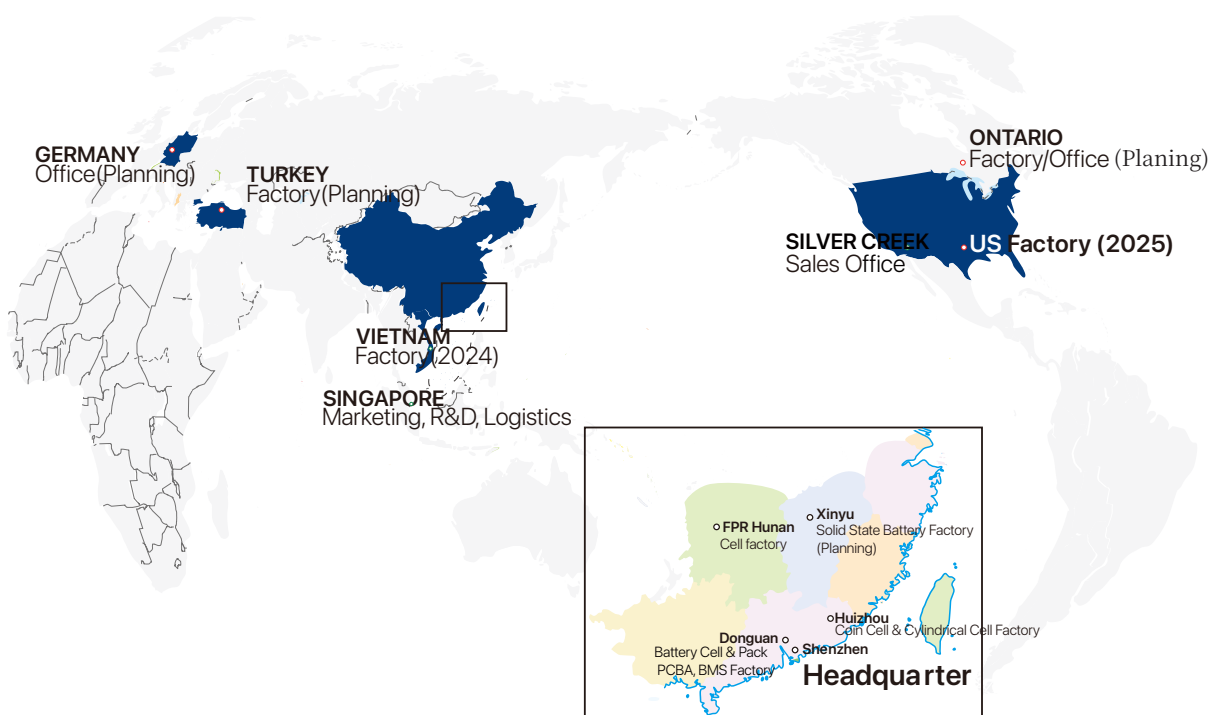
About FPR New Energy



FPR New Energy is a global leading energy storage solutions provider. Founded in 2016, FPR New Energy provides scalable and customized high-performance Li-Ion energy storage solutions for a wide range of applications—from residential, commercial to industrial and utility grid use. Our energy storage systems offer an ideal combination of safety, durability and performance.

To date, we have over 1GWh of capacity in operation, under construction, and in development worldwide, along with a full project pipeline. We have existing applications and installations across North America.

Headquarter Shenzhen, China	4 Factories China Dongguan/ Huizhou/ Hunan Vietnam Vietnam factory	2 Offices United States Silver Creek Singapore Collyer Quay
---------------------------------------	---	--



Top Safety

UL standards based

FPR's Utility, Industrial & Commercial ESS products are built to strict UL standards, ensuring reliability and safety in all operating conditions.

In compliance with UL1973 and UL9540A, engineered for safe performance in diverse environments.

Safety-first mindset

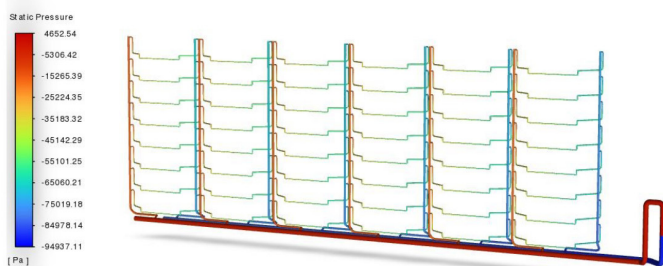
We firmly hold the principle that our product design always put safety first at cell/module/rack level to satisfy ESS requirements on all of our ESS products.



Superior Temperature Control

Advanced liquid cooling design

- Low temperature difference technology ensures system maximum temperature difference within 3°C.
- Multiphysics Coupled Simulation: A comprehensive simulation integrating fluid dynamics, heat transfer, and other interacting physical phenomena.



BESS system liquid cooling simulation



Battery pack bottom plate liquid cooling simulation

Solid-State Cell Technology



Semi-Solid-State Electrolyte

- Utilizes solid electrolyte materials with high ionic conductivity to significantly enhance battery safety, eliminating risks of leakage and combustion associated with liquid electrolytes.

In-situ Solidification Process

- Seamless interface bonding between the electrolyte and electrode materials, reducing interfacial resistance and improving charge/discharge efficiency and cycle life.

Optimized Low-Temperature Performance

- Specially formulated solid electrolytes ensure stable capacity output, maintaining over 96.09% performance even in low-temperature environments of -20°C.

Pack Design

Modular Architecture

- A flexible and scalable pack design supporting system configurations, adaptable to a wide range of application scenarios.

Active Balancing Management

- Intelligent precise voltage balancing, effectively extending the overall lifespan of the pack.

Intelligent Thermal Propagation Prevention

- Multi-level thermal isolation system combining liquid cooling technology and advanced thermal management to prevent thermal runaway.



Innovative Portable Power Station



Advanced GaN power technology for higher efficiency and lower heat dissipation, while ensuring reliable performance and stable output. The lightweight and compact design delivers high energy density in a portable form—ideal for outdoor adventures and emergency use.



Utility

01



C & I

02



Residential

03

Utility & Commercial ESS

FPR-ESS-5015kWh-L-1500V



Multi-level Safety Protection

- Multi-level short circuit protection at the pack, rack, and container levels
- Robust BMS and data algorithms ensure thermal stability at the pack, and rack levels
- Compliance with UL9540A, UL9540, UL1973, NFPA855, NFPA68, NFPA69 (optional) UN38.3, FCC part15 B

Highly Integrated Design

- 314Ah battery cells integrated into an IP67 battery pack design
- Multi-level BMS monitoring and control at cell, pack, rack and container level
- Container front single-door-open design, supporting back to back layout

Advanced Liquid Cooling System

- Advanced thermal design ensures a $\leq 4^{\circ}\text{C}$ temperature difference at container level
- PID (Proportional-Integral-Derivative) control enables the system to adapt to varying conditions and reduces auxiliary power consumption

Product	FPR-ESS-5015kWh-L-1500V
Battery Cell Type	LFP/314Ah
Battery Configuration	12P416S
Battery Capacity at DC Side (BOL)	5,015kWh
Maximum C Rate / Discharge Duration	0.5C / 2 Hours - 4 Hours
Voltage Range	1,164.8~1,497.6V
*Container Size (W×D×H)	6,058×2,438×2,896mm (20×8×9.5ft)
*Container Weight	40 tons
Compliance Standards	UL9540A, UL9540, UL1973, NFPA855, NFPA68, NFPA69 (optional), UN38.3, FCC part15 B

* Subject to actual delivery

Utility & Commercial ESS

FPR-ESS-1000kW/2315kWh-L-1500V



Grid



Factory



Safe and Reliable

- No parallel design, cluster-level isolation, multi-level linked protection
- Active ventilation, explosion-proof pressure relief



High Integration

- AC/DC integrated design & cabin design to save space
- Standard design, easy to disassemble, transport, and install



Simple Maintenance

- Modular design and plug-and-play solutions
- Cluster level active balance. SOC automatic correction



High Balance

- Precise control of temperature difference
- One-to-one control, eliminating inter-cluster circulation

Product	FPR-ESS-1000kW/2315kWh-L-1500V
Battery Cell Type	LFP/314Ah
Battery Configuration	6P384S
Battery Capacity at DC Side (BOL)	2,315kWh
Maximum C Rate / Discharge Duration	0.5C / 2 Hours
Voltage Range	1,075~1,382V
*Container Size (W*D*H)	6,058×2,438×2,896mm (20×8×9.5ft)
*Container Weight	28 tons
Compliance Standards	UL1741-SB, UL9540A, UL1973, IEEE1547:2018, UN38.3, FCC part15 B

* Subject to actual delivery

Commercial & Industrial ESS

FPR-ESS-60kW/200kWh



PV



Factory



Data center



Smart

- Health status detection
- Intelligent thermal management
- Multi-mode operation

Safe

- LFP battery : highest safety certified
- Multi-level battery protection
- System IP54 protection

Scalable & Customized

- Modular design
- Parallel connection & easy capacity expansion
- Customized solutions

Simple & Fast

- All-in-one design
- Fast installation
- Flexible transportation
- Easy maintenance

Parameter		60kW/200kWh
DC side	Rated power	90kW
	Voltage range	700V-830V
AC on/off grid side	Rated outputpower	60kW
	Rated grid voltage(V)	480V(-15%~15%) 3P4W+PE
Battery	Battery type	LFP
	Rated energy	207kWh
	Nominal voltage	691.2V
System	Size	1850mm*1100mm*2150mm
	Weight	3000KG
	Ingress rating	IP54
	Heat dissipation system	Intelligent air cooling
	HMI	8 inches LCD touch screen
Certification		UL1973, UL9540A, IEC62619, UL1741, FCC

Commercial & Industrial ESS

FPR-ESS-125kW/261kWh



PV



Factory



Data center



Smart

- Health status detection
- Intelligent thermal management
- Multi-mode operation

Safe

- LFP battery : highest safety certified
- Multi-level battery protection
- System IP54 protection

Scalable & Customized

- Modular design
- Parallel connection & easy capacity expansion
- Customized solutions

Simple & Fast

- All-in-one design
- Fast installation
- Flexible transportation
- Easy maintenance

Parameter		125kW/261kWh
DC side	Rated power	150kW
	Voltage range	650V-950V
AC on/off grid side	Max.Apparent Output	138kVA
	Rated grid voltage(V)	400Vac, 3P3W+PE/3P4W+PE
Battery	Battery type	LFP
	Rated energy	261kWh
	Nominal voltage	832V/314Ah
System	Size	1700mm*1350mm*2200mm
	Weight	3500KG
	Ingress rating	IP54
	Heat dissipation system	Intelligent liquid cooling
	HMI	7 inches LCD touch screen

HYBRID INVERTER GPEX Series US Split Phase

8KH2/10KH2/12KH2/15KH2



8-15kW



550V



120/240V



75-480V



TYPE 4X



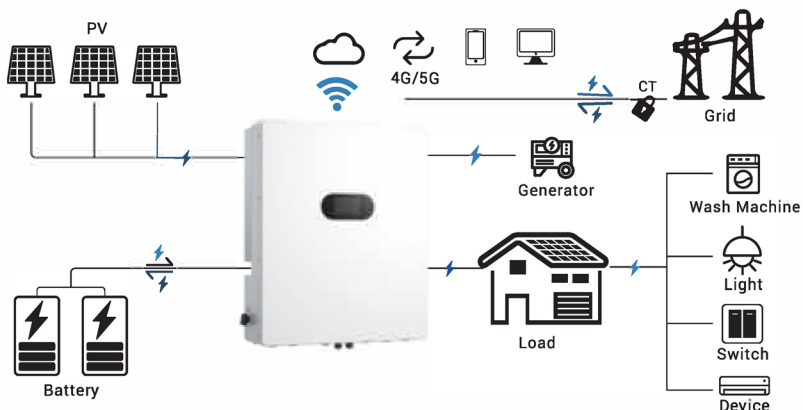
TYPE 4X Design
Natural Cooling
Support Stackable Battery
Generator Port
10 Years Warranty



Grid Code

UL1741, UL1699B, IEEE1547.1-2020,
FCC (part15 class B), AFCI TYPE1

HYBRID HOUSE ENERGY SYSTEM (ON/OFF GRID)



CONNECTOR



T1: PV1/PV2 T4: GENERATOR
T2: BAT+/BAT- T5: AC LOAD
T3: AC GRID

		GPEX-8KH2	GPEX-10KH2	GPEX-12KH2	GPEX-15KH2
PV (DC Input)	Recommended max. PV input power	14.4kW	14.4kW	20kW	24kW
	Max. input voltage(Voc)	550V	550V	550V	550V
	MPPT operating voltage range	120-550V	120-550V	120-550V	120-550V
	No. of MPPT/Strings per MPPT	4/1	4/1	4/2	4/2
	Max input power per MPPT	3.6KW	3.6KW	5KW	6KW
	Max. input current per MPPT	15.5A	15.5A	27A	27A
	Max. short-circuit current per MPPT	20A	20A	40A	40A
On-grid (Bidirection)	Rated input power (Bidirection)	8kW	10kW	12kW	15kW
	Rated input current (Bidirection)	33.3A	41.6A	50A	62.5A
	Max. Continuous AC input power	20kW	20kW	20kW	20kW
	Max. Continuous AC input current	83.3A	83.3A	83.3A	83.3A
	THDi	<3%	<3%	<3%	<3%
	Rated grid voltage	120/240V,208V (L1, L2, N) 50/60Hz			
	Power factor	0.8leading...0.8lagging			
Battery Parameters (Bidirection)	Battery type	LiFePO ₄			
	Battery voltage range	75-480Vdc			
	Rated Battery Voltage	153.6Vdc	153.6Vdc	204.8Vdc	204.8Vdc
	Max. charge/discharge current	75A			
	BMS communication mode	CAN/485			
Back-up Output (AC Output)	Rated Output voltage(L-L)	120/240V,208V (L1, L2, N) 50/60Hz			
	Output power/current (L-L)	Rated: 8kW / 33.3A ; Max.: 19kW/79.2A (On Grid)	Rated: 10kW / 41.6A ; Max.: 19kW/79.2A (On Grid)	Rated: 12kW / 50A ; Max.: 19kW/79.2A (On Grid)	Rated: 15kW / 62.5A ; Max.: 19kW/79.2A (On Grid)
	Rated output voltage(L-N)	120 V (L, N) 60Hz			
Generator Parameters (AC Input)	Rated AC input voltage	120/240 V (L1, L2,N) 60Hz			
	Max. AC input current	79.2A			
	Max. AC input power	19kW			
Efficiency	Peak efficiency	97.00%	97.00%	97.00%	97.00%
	Max. MPPT efficiency	99.90%	99.90%	99.90%	99.90%
	Battery charging/discharging efficiency	96.00%	96.00%	96.00%	96.00%
Protection	Inner protection	✓ DC switch ✓PV reverse connection protection ✓ Battery reverse connection protection ✓ Output short-circuit protection ✓ Output overvoltage protection ✓ ARC protection ✓ Insulation impedance detection ✓ Residual current detection ✓ Anti-island protection			
	Surge protection	PV: Type III, AC: Type III			
	Enclosure Type	Type 4X			
General Parameters	Operating temperature range	-22°F~+140°F (No derating below 113° F)			
	Switching time	<20MS			
	Relative humidity range	>3000m derating			
	Cooling mode	Natural cooling			
	Communication	WIFI / GPRS	WIFI / GPRS	WIFI / GPRS	WIFI / GPRS
Mechanical Specifications	Inverter dimensions (L*W*H) (mm)	840*680*200	840*680*200	840*680*200	840*680*200
	Net weight (kg)	55	55	55	55
	Shipping dimensions (L*W*H) (mm)	1075*895*365	1075*895*365	1075*895*365	1075*895*365
	Gross weight (kg)	65	65	65	65
	Warranty Period	5 Years Standard (10/15 Years Optional)			

LiFePO₄ STACKED BATTERY

51.2V Series Boosting MAX. to 400Vdc



200-400V



IP65

Support 2-8 Unit Stack
IP65 Design
1.0-1.6m Stack Height
100-400Vdc Output



UN38.3

MSDS

IEC62619

Single Module		GPHB-48100S
GPSB-48100H (16S)	Battery type	LiFePO ₄
	Nominal Energy (kWh)	5.12
	Nominal Capacity [Ah]	100
	Nominal Voltage [V]	51.2
	Voltage Range [V]	43.2~58.4
	Operation Temperature	-20°C~45°C@DisCharge 0°C~45°C@charge
	Designed Life	10+ Years
	Cycle Life	More than 6000 Cycles @25°C 80%DOD
	Dimension(L*W*H) (mm)	600*390*158.5
	Weight (kg)	44

HIGH VOLTAGE STACKABLE BATTERY





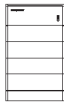
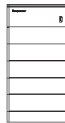
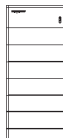

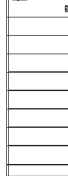
GP HB-48100S

Stacked 100-400V 10-40kWh

» Key Features

- Suitable for both off-grid and hybrid inverters, and protocol match well
- The fault diagnosis and isolating function for battery module protects the system
- Programmable charge and discharge control
- Elegant design, IP Rate: IP65, Plug and Play
- Design Life >10 years @25°C
- Flexible and easy installation
- Multi-level software and hardware protection
- Cycles: More than 6000 cycle life with 80% DOD
- Certificates: CE, TUV, ROHS, UN38.3, IEC62619, MSDS

» Stacked Solution

Parameters							
	GP HB-48100S-2	GP HB-48100S-3	GP HB-48100S-4	GP HB-48100S-5	GP HB-48100S-6	GP HB-48100S-7	GP HB-48100S-8
Battery module quantity							
Battery module energy (kWh)	10.24	15.36	20.48	25.60	30.72	35.84	40.96
Module Number	2	3	4	5	6	7	8
Rated Voltage (V)	102.4	153.6	204.8	256.0	307.2	358.4	409.6
Voltage Range (V)	86.4-116.8	129.6-175.2	172.8-233.6	216.0-292.0	259.2-350.4	302.4-408.8	345.6-467.2
Rated Charge Current(A)	20	20	20	20	20	20	20
Rated Discharge Current(A)	50	50	50	50	50	50	50
Max. Discharge Current (A)	75	75	75	75	75	75	75
Dimension:(W*D*H)	600*390*652	600*390*816	600*390*979	600*390*1143	600*390*1306	600*390*1470	600*390*1633
Weight (kg)	119	165	212	258	304	350	397
Environment Parameter							
Enclosure Protection Rating	IP65						
Charge Temperature Range (°C)	0°C~50°C						
Discharge Temperature Range (°C)	-20°C~55°C						
Installation Method	Floor-mount						
Service Life							
Cycle Life	> 6000 (@25 °C , 80% DOD)						
Design Life (Year)	10						
Certification							
Safety & Certification	CE, IEC62619						
Transportation	UN38.3						

Commercial & Industrial ESS

FPR-ESS-LFP-2P52S



General Parameters

Application Altitude	≤4000m
Maximum Charging Current	400A
Maximum Discharging Current	400A
MSD	450A
Communication Protocol	CAN
Temp. Difference per Pack	3°C
Thermal Management	Liquid Cooling
Storage HR	≤85% ((non-condensing)
Storage Temp.	-30°C ~ +45°C
Self-discharge Rate/ Month (Cell)	3.5%, 40%SOC, 25±2°C Storage
Restriction Using Requirements	RoHS
Number of Sampling Points	Temperature Sampling: no less than 50% Voltage Sampling: 100%

Mechanical Parameters

Product Weight	700kg±5kg	To be optimized
Dimension (W*D*H)	792mm*2190mm*248mm	
IP Level	IP67	

Electrical Parameters

Chemistry	LFP
Cell Configuration	2P52S
Battery Capacity	628Ah
Rated Energy	104.49kWh
Standard Charge / Discharge Power (Cp)	0.5P / 0.5P
Rated Charging and Discharging Current	314A
Nominal Voltage	166.4V
Min. Voltage	130V
Max. Voltage	189.8V
Operating Temp	Charging: 0°C ~ 60°C (Cell) Discharging: -30°C ~ 60°C (Cell)

Product Certifications

Certification and Reports	UL1973, UL 9540A, IEC 62619 (Cell level)	Planning
Safe Transportation	UN 38.3	Planning

Lithium-ion Battery

Telecommunications and Data Center Applications



PV



Factory



Data center



Compatible

- Modular design makes easy and flexible configurations
- Height of 3U and 19 inch cabinet
- Support max. 4.8 kW application

Wide Range of Applications

- Telecommunications & data center
- Modular and standard size
- Friendly for product integrators

Maintenance

- Modular pluggable BMS design for easy maintenance

Long Service Life

- LFP technology for a long lifespan
- 10 years warranty

Product	FPR-ESS-48100S
Voltage	48V
Capacity	100Ah
Energy	4.8kWh
Cycle life@80% DoD 25°C &0.2/ 0.5c charge/ discharge	>4,000 cycles
Cooling type	Natural cooling
Compliance Standards	Designed according to IEC62619, IEC62368, EN300386, UN38.3/ MSDS, UL1973, UL1642

FPR M2000

Semi-solid Battery Portable Power Station



Lightweight design

- 60% smaller, 30% lighter (2008Wh/17kg)



Adapt to extreme environments

- Charge and discharge at -30°C



GaN bidirectional inverter

- 50% less heat dissipation
- Up to 96% efficiency



Quiet operation

- Almost 0dB noise within 1000w



Semi-solid Li-ion battery

- Long lifespan
- 2,000+ life cycles



Safe and reliable

- UN38.3/UL2743 certified
- BMS, EMS

Basic Parameter

Nominal capacity	2,008Wh
Total AC output power	2,000W(surge 4,000W)
Cell type	Semi-solid cell
Dimensions (LxWxH)	475*234*251mm
Net weight	17kg
Output	
5521 DC (x2)	12V/6Ah
AC	3
USB-A(x2)	12W per port, total 24W
USB-C(x2)	22.5W per port
USB-C (x1)-Quick Charge	100W
Input	
AC	90V-125V, 2 hours
Solar	800W(Max.)
Other features	
Charging temperature range	-30°C~45°C(-22°F - 113°F)
Discharging temperature range	-30°C~45°C(-22°F - 113°F)
Storage ambient temperature range	-20°C~60°C(-4°F - 140°F)
Storage Relative Humidity	5% - 85%

FPR Connectivity Pte. Ltd.

Address: #19-02, 20 Collyer Quay, Singapore

Email: sales01@fprconn.com

Tel: +1(613) 2619849

FPR New Energy Technology Co., Ltd.

Address: Building 9, Shenzhen Software Park II, Nanshan, Shenzhen, China

Tel: +86-755-26914599

Website: www.fpr-newenergy.com



*Scan to visit
our official website*