

YIY

BLESS

**Residential
Energy Storage Solutions**

May energy and ecology be more harmonious

YIYEN HOLDING GROUP

YIYEN HOLDING GROUP is a high-tech company that focuses on researching and manufacturing power electronic technology, integrating design, research and development, manufacturing, sales and service. YIYEN is dedicated to reducing electricity costs, improving electricity efficiency, and providing core power equipment and system solutions for the energy Internet of Things. With electrochemical energy storage and energy efficiency management as its core industry, YIYEN provides energy-saving service for power system, communication system, financial system, education system, medical system, and large industrial and mining enterprises.

Energy storage and energy efficiency management are critical reducing carbon emissions and promoting sustainable development. YIYEN's mission is to help make energy and ecology more harmonious by providing advanced energy storage and power quality solutions which improve efficiency, reduce costs, and promote clean energy. YIYEN will always continue to devote ourselves to the research and development and manufacturing of power electronic technology, and be committed to delivering cutting-edge solutions helping customers meet their energy management goals while contributing to a more sustainable future for all.



300+
Staff



15+
Years Experience



30000m²+
Plant Areas



3GWH+ / year
Delivered Capacity



50+
R&D Staff



BMS Platform
12V~1500V Voltage Class



100+
Intellectual Properties



130+
Export Countries

CONTENTS

APPLICATIONS

On&Off-Grid Solar+ESS(HYBRID)	01
On&Off-Grid ESS	03
Off-Grid Solar+ESS	05
All-in-One ESS	07
Demonstrations	09



Battery
Energy
Storage
Solution

PRODUCTS

UPV Hybrid Energy Storage Inverter	11
UP Bi-directional Battery Inverter	13
HP/HPV Low Frequency Pure Sine Wave Inverter/Charger	15
LFP-M 10.75kWh LiFePO4 Battery Pack	18
LFP 2.56/5.12/10.24kWh LiFePO4 Battery Pack	20
LFP-RV 5.12kWh LiFePO4 Battery Pack	22
LFP-B LiFePO4 Backup Battery (Home/Industrial)	24
ESS Battery Energy Storage All-in-One	25
MPPT Solar Charger Controller	28
Solar Module Photovoltaic Panel	29

NEW

On&Off-Grid Solar+ESS (HYBRID)

Reducing grid energy demand through PV systems



On&off-grid



PV generation



Peak & Valley
Reduction



Back-up power

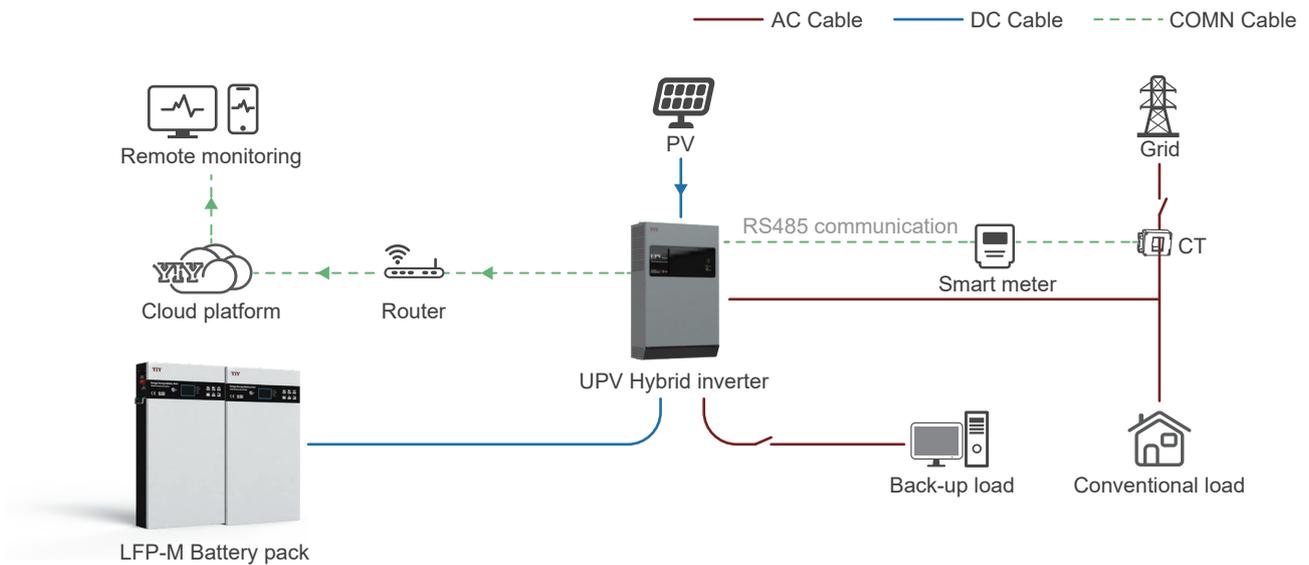




• Overview

YIY UPV Hybrid energy storage inverter + LFP-M Battery pack is a DC-coupled photovoltaic energy storage system solution for a variety of scenarios, featuring hybrid power supply, reservation of energy supply and high overall system efficiency. It helps customers build their own solar self-powered systems, reducing their electricity bills while providing them with a flexible and stable power supply environment.

• System Topology



Hybrid power supply

supporting PV, battery and grid power simultaneously

Reservation enable

can set power consumption strategy according to the local grid tariffs between peak and valley time.

High efficiency

UPV efficiency is up to 95%

Fast response time

switch to battery power within 8ms in case of grid failure

NEW

On&Off-Grid ESS

Battery backup and peak shaving function



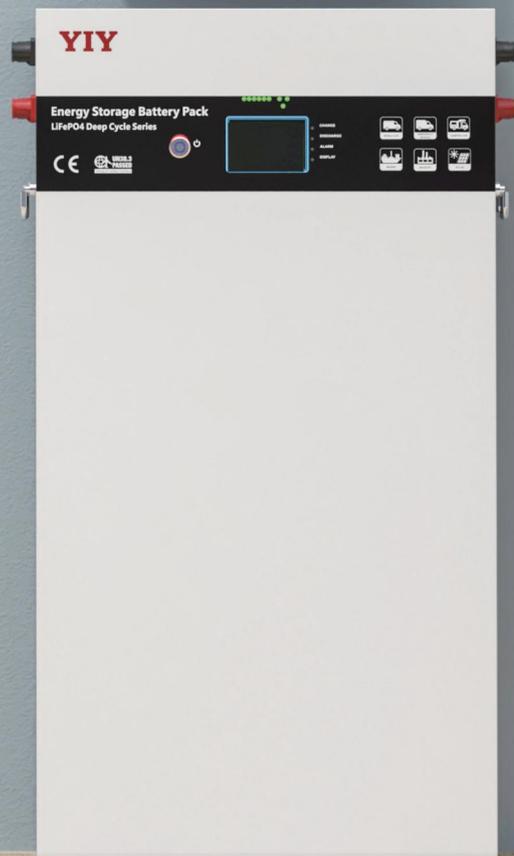
On&off-grid



Peak & Valley
Reduction



Back-up power





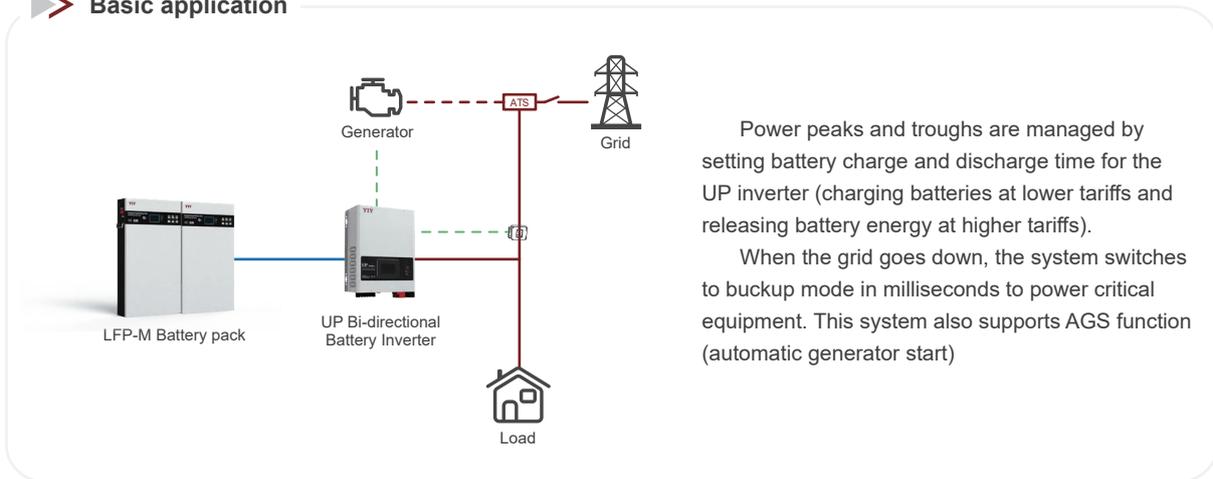
• Overview

UP bi-directional power inverter + LFP-M battery pack is an energy storage solution for areas with unstable electricity grids and large peak-to-valley price difference and for upgrading existing PV system. It helps customers to avoid blackouts and reducing their electricity bills by taking advantage of the difference between peak and valley time.

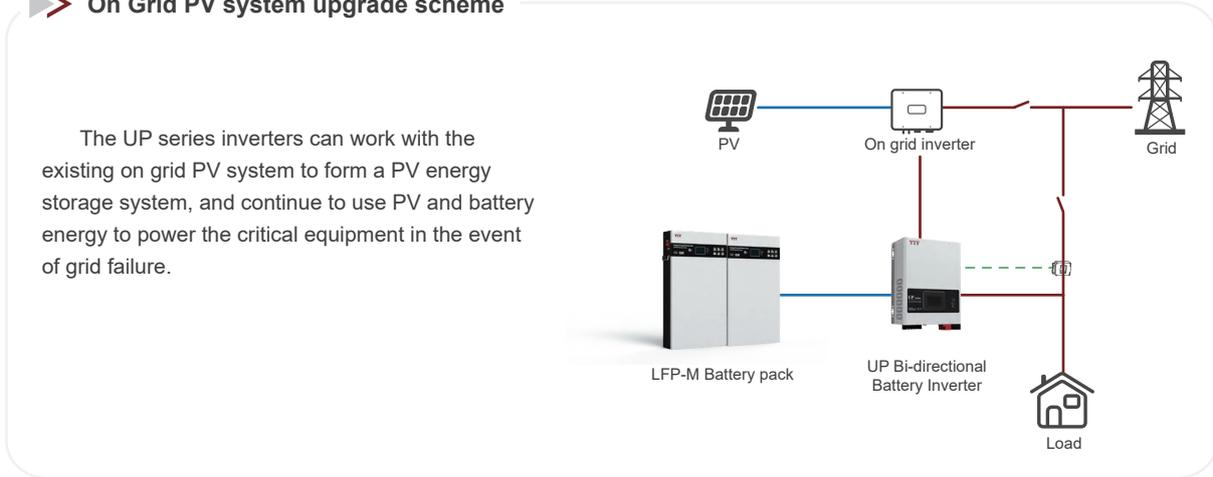
Supporting external MPPT solar controllers to expand solar power generation capabilities.

• System Topology

➤ Basic application



➤ On Grid PV system upgrade scheme



➤ Three-phase power supply

The UP series can be supplied with three-phase power through parallel machines.

➤ Power Extension

The UP series can increase the capacity of the system through parallel operation.

Off-Grid Solar+ESS

Self-generation where there is no grid or where the grid is of poor quality



Off-grid



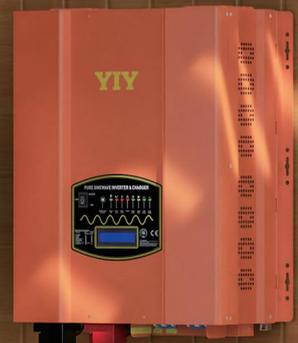
PV generation



RV system



Back-up power

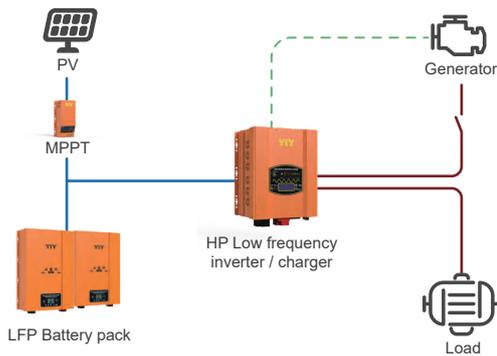


• Overview

HP Low frequency inverter + MPPT + LFP battery pack is an off-grid PV energy storage system solution that can be adapted to harsh operating environments with inductive loads, like water pump, air conditioner, etc.

• System Topology

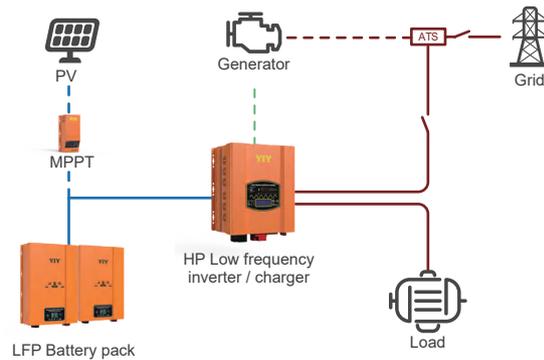
➤ Basic application



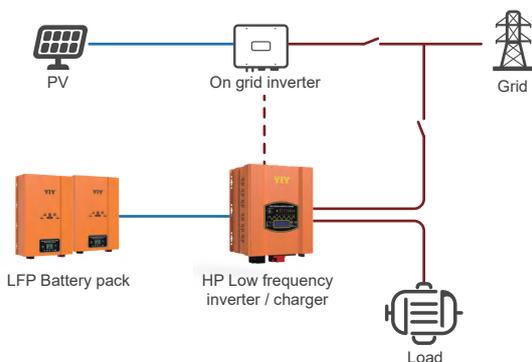
The system can use PV energy to power loads when grid is unavailable, minimizing the use of generator. Excessed PV energy can be stored in batteries and provide backup power during outages. Compensating with a generator to avoid power shortage issue

➤ Backup power scheme

It can be used as a stable and reliable backup power source, using photovoltaic energy to charge the batteries and seamlessly switching to standby mode in milliseconds to power critical equipment in the event of a grid failure. Coupled with a generator, it is possible to increase the amount of time spent off-grid at night.



➤ On Grid PV system upgrade scheme



The HP series inverters can work with the existing on grid PV system to form a PV energy storage system, and continue to use PV and battery energy to power the critical equipment in the event of grid failure.

All-in-One ESS

All-in-one energy storage solutions



PV generation



Peak & Valley
Reduction



Back-up power



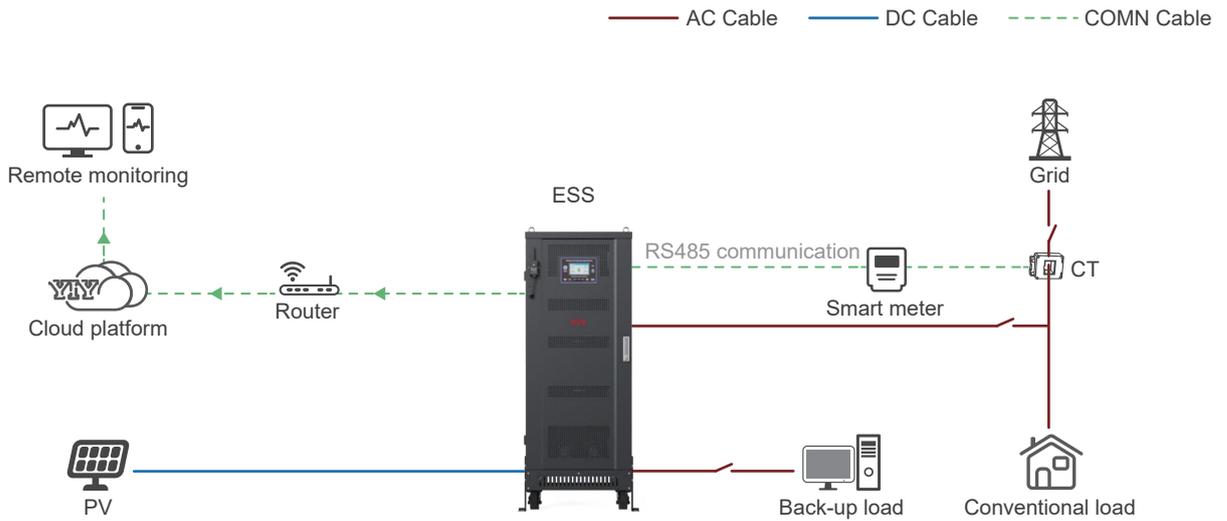


• Structure



- Low frequency inverter/charger module (6~18kW)
- MPPT module
- 5kWh / 10kWh Battery pack
- WIFI Telecommunication module
- Touch screen

• System Topology



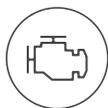
Supports 300% overload (20S)



Wide power range



PV support



Supports generator start/stop function

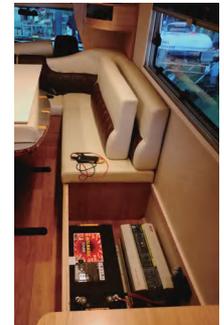


Support remote monitoring



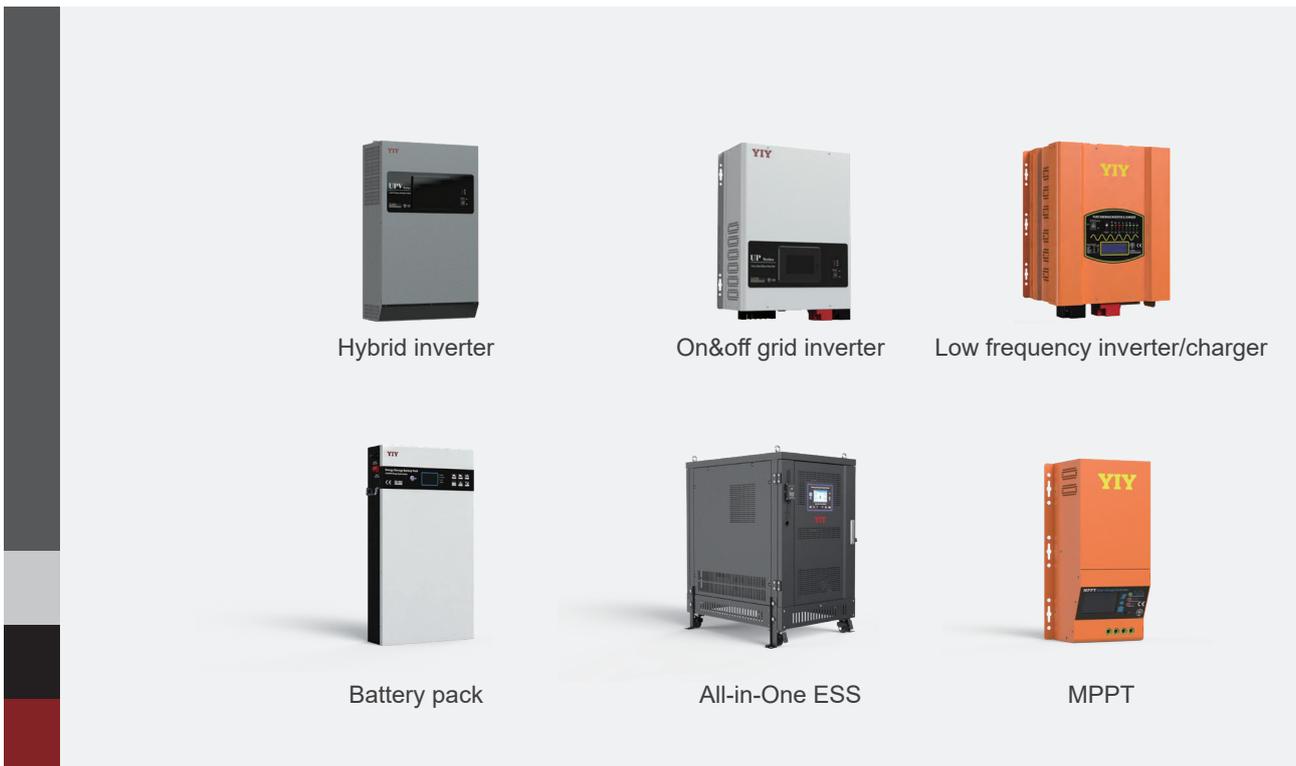
Modular design

DEMONSTRATIONS



OUR PRODUCTS

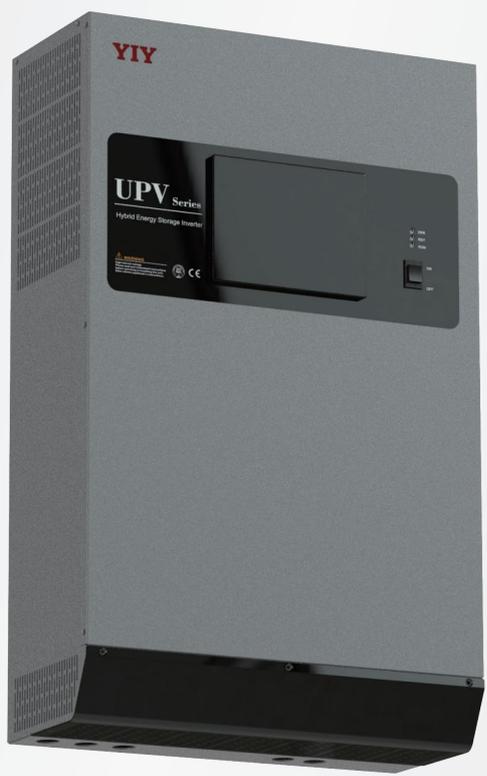
UPV Hybrid Energy Storage Inverter	11
UP Bi-directional Battery Inverter	13
HP/HPV Low Frequency Pure Sine Wave Inverter/Charger	15
LFP-M 10.75kWh LiFePO4 Battery Pack	18
LFP 2.56/5.12/10.24kWh LiFePO4 Battery Pack	20
LFP-RV 5.12kWh LiFePO4 Battery Pack	22
LFP-B LiFePO4 Backup Battery (Home/Industrial)	24
ESS Battery Energy Storage All-in-One	25
MPPT Solar Charger Controller	28
Solar Module Photovoltaic Panel	29



UPV

Hybrid Energy Storage Inverter

NEW



• Features

- Built-in EMS achieves high efficient utilization of power energy among the grid, battery and solar.
- Reservation mode allows users to set up time for charging and discharging(peak shaving function).
- Switch time <8 ms (to off grid mode).
- Can be used in single /dual/ three phase grid structures.
- On-grid mode and off grid mode selectable .
- Max efficiency 95%, THD<5% under full load .
- Battery charging voltage and charging current programmable .
- Friendly HMI allows user configuration.

• Applications



On&off-grid



PV generation



Peak & Valley
Reduction



Back-up power

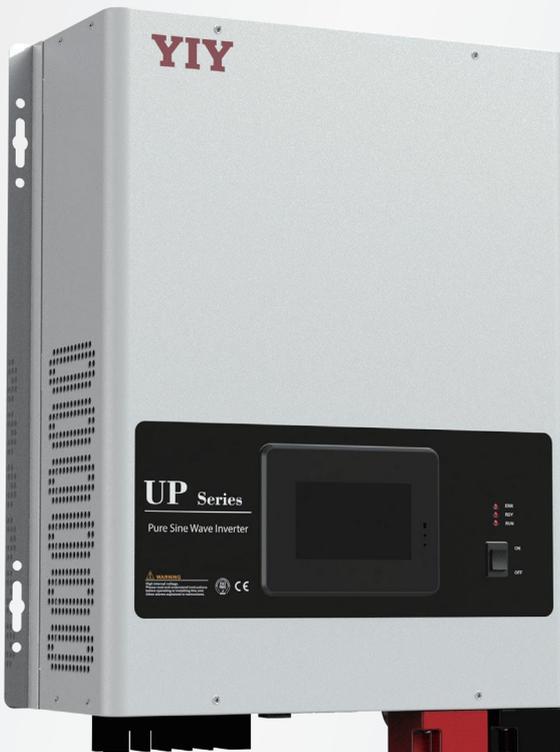
• Technical Parameter

UPV Series Hybrid Energy Storage Inverter		
Model	UPV 5048E	UPV 6048E
Battery		
Battery Type	Lead-acid or Lithium-ion	
Battery Voltage Range	40~60V	
Max. Charge/Discharge Current	100A	
Charging Curve	3 Stages	
Charging Voltage	Depends On Battery Type (Schedule 1)	
Input DC(PV Side)		
Recommended Max.PV Power	3kW	
Rated Voltage Range	60~200V	
Max.Input Voltage	200V	
Start Up Voltage	75V	
MPPT Voltage Range	75~170V	
Max.Input Current	60A	
No.Of MPPT Trackers No.Of Strings Per MPPT Tracker	1	
PV Module Efficiency	≥99.6%	
Output AC(Back Up)		
Rated Output Power	5000W	6000W
Max.AC Output Power	5500W	6600W
Back Up Switch Time	<8ms	
Rated output voltage	230V (Single Phase)	
Rated frequency	50Hz	
Rated output current	22.7A	27.3A
Input Voltage Waveform	Sine Wave	
THDv(@linear load)	2%	
No load loss	<50W	
Output AC(Grid side)		
Rated Output Power	5000W	6000W
Max.AC Output Power	5500W	6600W
Rated grid voltage	230V(177~267V/90~267V) (Single Phase)	
Rated grid frequency	50Hz/60Hz(47Hz~55Hz/ 57Hz ~65Hz)	
Rated output current	22.7A	27.3A
Power Factor	>0.95	
THDi	<5%	
Efficiency		
Max. efficiency	95%	
Protection		
Anti islanding Protection	Integrated	
PV String Input Reverse Polarity Protection	Integrated	
Insulation Resistor Detection	Integrated	
Output Over Current Protection	Integrated	
Output Over Voltage Protection	Integrated	
Overtemperature protection	Integrated	
Surge protection	Integrated	
General Data		
Display	LED+LCD	
Communication	RS485/CAN	
Dimensions (W*H*D)	415*488*200mm	
Weight	16kg	
Installation Style	Rack/Wall Mounted	
Topology	Transformer Isolation	
Operating Temperature Range	-20~60°C (Derating Treatment Is Required If The Radiator Is Above 80°C)	
Humidity	0%~95%Relative Humidity (No Condensation)	
Cooling	Intelligent Air Cooling	
Protection Degree	IP20	
Max.operation altitude	2000m (>2000m Derating)	
Warranty	1Years	
* Schedule 1: Battery type and charging voltage		
Battery Type	Boost/Vdc	Float/Vdc
Gel USA	56Vdc	54.8Vdc
AGM 1	56.4Vdc	53.6Vdc
LiFePO4_LF14	57.6Vdc	54.4Vdc
MnNiCo_N14	54.8Vdc	54.8Vdc
Custom	Set The Information According To The Specification Of The Battery	

UP

Bi-directional Battery Inverter

NEW



• Features

- Built-in EMS achieves high efficient utilization of power energy between the grid and battery.
- Reservation mode allows users to set up time for charging and discharging (peak shaving function).
- Switch time <math>< 8\text{ ms}</math> (to off grid mode) .
- Can be used in single /dual/ three phase grid structures.
- On-grid mode and off grid mode selectable .
- Max efficiency 95%, THD<math>< 5\%</math> under full load.
- Battery charging voltage and charging current programmable.
- Friendly HMI allows user configuration.

• Applications



On&off-grid



Peak & Valley
Reduction



Back-up power

• Technical Parameter

UP Series Bi-directional Battery Inverter/Charger		
Model	UP 5048E	UP 6048E
Battery		
Battery Type	Lead-acid or Lithium-ion	
Battery Voltage Range	40~60V	
Max.Charge/Discharge Current	100A	
Charging Curve	3 Stages	
Charging Voltage	Depends On Battery Type(Schedule 1)	
Output AC (Back Up)		
Rated Output Power	5000W	6000W
Max.AC Output Power	5500W	6600W
Back Up Switch Time	<10ms	
Rated output voltage	230V (Single Phase)	
Rated frequency	50Hz	
Rated output current	22.7A	27.3A
Input Voltage Waveform	Sine Wave	
THDv(@linear load)	2%	
No load loss	<50W	
Output AC(Grid side)		
Rated Output Power	5000W	6000W
Max. AC Output Power	5500W	6600W
Rated grid voltage	230V(177~267V/90~267V) (Single Phase)	
Rated grid frequency	50Hz/60Hz (47Hz~55Hz/57Hz ~65Hz)	
Rated output current	22.7A	27.3A
Power Factor	>0.95	
THDi	<5%	
Efficiency		
Max. efficiency	95%	
Protection		
Anti islanding Protection	Integrated	
Insulation Resistor Detection	Integrated	
Output Over Current Protection	Integrated	
Output Over Voltage Protection	Integrated	
Over temperature protection	Integrated	
Surge protection	Integrated	
General Data		
Display	LED+LCD	
Communication	RS485/CAN	
Dimensions (W*H*D)	415*488*200mm	
Weight	16kg	
Installation Style	Rack/Wall Mounted	
Topology	Transformer Isolation	
Operating Temperature Range	-20~60°C (Derating Treatment Is Required If The Radiator Is Above 80°C)。	
Humidity	0%~95%Relative Humidity (No Condensation)	
Cooling	Intelligent Air Cooling	
Protection Degree	IP20	
Max. operation altitude	2000m(>2000m Derating)	
Warranty	1Years	

* Schedule 1: Battery type and charging voltage

Battery Type	Boost/Vdc	Float/Vdc
Gel USA	56Vdc	54.8Vdc
AGM 1	56.4Vdc	53.6Vdc
LiFePO4_LF14	57.6Vdc	54.4Vdc
MnNiCo_N14	54.8Vdc	54.8Vdc
Custom	Set The Information According To The Specification Of The Battery	

HP/HPV

Low Frequency Pure Sine Wave Inverter/Charger



• Features

- High Output Capacity up to 18 KW, single phase.
- Ultra Low THD, Typically 7% Under Full Linear Load (battery low).
- Battery Temperature Sensing For Increased Charging Precision.
- Charging current up to 120Amp, 0%-100% adjustable.
- Auto Gen Start Function.
- MPPT Solar Charger Controller Available.
- BTS Seletable.
- GFCI Seletable.

• Applications



Off-grid



PV generation



Back-up power


• Technical Parameter

HP/HPV Low Frequency Pure Sine Wave Inverter/Charger													
Inverter Output													
Model	1.0KW	1.5KW	2.0KW	3.0KW	4.0KW	5.0KW	6.0KW	8.0KW	10.0KW	12.0KW	15.0KW	18.0KW	
Continuous Output Power	1.0KW	1.5KW	2.0KW	3.0KW	4.0KW	5.0KW	6.0KW	8.0KW	10.0KW	12.0KW	15.0KW	18.0KW	
Surge Rating (20Secs)	3.0KW	4.5KW	6.0KW	9.0KW	12.0KW	15.0KW	18.0KW	24.0KW	30.0KW	36.0KW	45.0KW	54.0KW	
Output Waveform	Pure Sine vave/Same as input (Bypass Mode)												
Nominal Efficiency	>88%(Peak)												
Line Mode Efficiency	>95%												
Power Factor	0.9-1.0												
Nominal Output Voltage rms	100-110-120Vac/220-230-240Vac												
Output Voltage Regulation	±10%RMS												
Output Frequency	50Hz± 0.3Hz/60Hz± 0.3Hz												
Short Circuit Protection	Yes(1 sec after fault)												
Typical transfer Time	10ms (Max)												
THD	<3%(Rated battery level, rated full linear load)												
DC Input													
Nominal Input Voltage	12.0Vdc 24.0Vdc	12.0Vdc/24.0Vdc/48.0Vdc					24.0Vdc 48.0Vdc	24.0Vdc/48.0Vdc 96.0Vdc	48.0Vdc/96.0Vdc				
Minimum Start Voltage	10.0Vdc/ 10.5Vdc for 12Vdc Mode						*2 for 24Vdc/*4 for 48Vdc/*8 for 96Vdc,						
Low Battery Alarm	10.5Vdc/ 11.0Vdc for 12Vdc Mode												
Low Batteiy Trip	10.0Vdc/ 10.5Vdcfor 12Vdc Mode												
High Voltage Alarm	16.0Vdcfor12Vdc Mode												
Low Battery Voltage Recover	15.5Vdc for 12Vdc Mode												
Idle Consumption-Search Mode	<25W When Power Saver On.(Refer to Table)												
Charge													
Output Voltage	Depends on battery type												
Charger Breaker Rating	20A	20A	20A	25A	32A	40A	40A	50A	80A	80A	100A	125 A	
Max Charge Power Rate	1/3 Rating Power												
Battery Initial Voltage for start	10-15.7Vdc for 12Vdc Mode						*2 for 24Vdc;4 for 48Vdc/8 for 96Vdc,						
Over Charge Protection S.D.	15.7Vdc for 12Vdc Mode												
Selector	Switch Setting		Description				Fast Mode / VDC		Float Mode / VDC				
	0		Charger Off										
	1		Gel USA				14.0		13.7				
	2		AGM 1				14.1		13.4				
	3		Lithium				13.8		13.6				
	4		Sealed Lead Acid				14.4		13.6				
	5		Gel EURO				14.4		13.8				
	6		Open Lead Acid				14.8		13.8				
	7		LifePO4				14.0		13.8				
	8		De-sulphation				15.5(4 Hours then Off)						
9		Classic LFP				13.6		13.5					
For 12Vdc Mode Series(*2 for 24Vdc Mode/4 for 48Vdc Mode/8 for 96Vdc Mode)													

HP/HPV Low Frequency Pure Sine Wave Inverter/Charger												
BTS												
Battery Temperature Sensor (Optional)	Yes (Refer to the table)Variances in Charging Voltage & S.D Voltage Base on the Battery Temperature.											
Bypass & Protection												
Input Voltage Waveform	Sine vave (Grid or Generator)											
Nominal Voltage	100-110-120Vac/ 220-230-240Vac											
Max. Input AC Voltage	150Vac For 120Vac LV Mode; 300Vac For 230Vac HV Mode:											
Nominal Input Frequency	50Hzor60Hz											
Low Freq Trip	47±0.3Hzfor 50Hz 57±0.3Hzfor 60Hz											
High Freq Trip	55±0.3Hz for 50Hz. 65±0.3Hz for 60Hz											
Overload protection (SMPS load)	Circuit Breaker											
Output Short Circuit Protection	Circuit Breaker											
Bypass Breaker Rating	20A	20A	20A	25A	32A	40A	40A	50A	80A	80A	100A	125 A
Transfer SWitch Rating	30Amp for UL&TUV				40Amp for UL			80Amp for UL			100Amp for UL	
Bypass Without Battery Connected	Yes(Optional)											
Max.Bypass Current	30Amp				40 Amp			80Amp			80 Amp	
Mechanical Specifications												
Mounting	Wall Mount											
Inverter Dimensions(L*W*H)	388*415*200mm				488*415*200mm			588*415*200mm			688*415*230mm	
Inverter Weight (Solar Chg) KG	21+2.5	22+2.5	23+2.5	27+2.5	38+2.5	48+2.5	49+2.5	60+2.5	66+2.5	70+2.5	75+2.5	78+2.5
Shipping Dimensions (L*W*H)	550*520*310mm				650*520*310mm			750*520*310mm			850*520*350mm	
Shipping Weight (Solar Chg)KG	23+2.5	24+2.5	25+2.5	29+2.5	40+2.5	50+2.5	51+2.5	62+2.5	68+2.5	72+2.5	78+2.5	81+2.5
Display	Status LEDs / Status LEDs+LCD											
Standard Warranty	1Years											

***Details of the built-in MPPT solar controller parameters on page 28.**

LFP-M 10.75kWh

LiFePO4 Battery Pack

NEW



• Features

- 32PCS 105AH LiFePO4 cells
- 51.2Vdc 10.75KWH rated capacity.
- Long cycle life 4000 times.
- IP56 Protection.
- Unique automatic calibration active balancing technology BMS system.
- 51.2Vdc voltage output suitable for home energy storage system, communication stations and other applications.
- Standard CAN & RS485 communication port, can meet the requirement of several packages to connect in parallel, Master & Slave relationship, Monitor and other functions. Compatible with other brand inverters' communication protocols.

• Technical Parameter
LFP-M 10.75kWh LiFePO4 Battery Pack

Specification		Mechanical Characteristics	
Model	LFPM 48210H	Enclosure	IP56
Rated Voltage	51.2V	Dimension H*W*D	890*490*175mm
Rated Capacity	210Ah	Shipping H*W*D	1000*670*400mm
Rated Energy	10.75KWH	Weight (N.W.)	100KG
Cell Configuration	16S2P	Weight(G.W.)	110KG
Battery Cell	3.2V105AH 32PCS(EVE LF105)	Storage and Transportation Requirements	
Life cycles (80%SOH,25°C)	4000 Cycles	Storage Temperature	Less than 1month -20~35°C
Standard Charge			Less than 6month -10~30°C
Operation temperature range @charging	0~60°C	Storage Humidity	45~75%RH
Rated charge voltage	56V	SOC	Storage 60~75% SOC
Max. charge voltage	56.8±0.4V		Transport 45~55% SOC
Overcharge protection	58.4±0.4V		
Allowed MAX charge current	205A		
Peak charge current	210A		
Rated charge current	200A		
Recommend charge current	<200A		
Standard Discharge			
Operation temperature range @discharging	-35~60°C		
Output Voltage Range	43.2~56.8Vdc		
Recommend Working Range	46.4~56Vdc		
Discharge Cut-off voltage	43.2V		
Allowed MAX discharge current	205A		
Peak discharge current	210A		
Rated discharge current	200A		
Recommend discharge current	<200A		
Communication			
Display	2.8 inch color LCD		
RS485/CAN	Matching with leading inverter brands (Victron/SMA / SolArk/Solis/Deye /Growatt/ Goodwe/Voltronic/Luxpower etc.)		
Expansion	Up to 16units in parallel (RS485 parallel communication)		
RS232	PC monitor		
Dip SW	ADD setting		
Enclosure	IP56		

LFP 2.56/5.12/10.24kWh

LiFePO4 Battery Pack



• Features

- IP31 Protection, Indoor use only.
- Long cycle life 4000 times.
- High reliability intelligent BMS .
- 12.8Vdc/25.6Vdc/51.2Vdc, 2.56KWH/5.12KWH/10.24KWH rated capacity.
- 12.8Vdc/25.6Vdc/51.2Vdc voltage output suitable for home energy storage system, communication stations and other applications.
- Standard CAN & RS485 communication port

• Technical Parameter

LFP 2.56/5.12/10.24kWh LiFePO4 Battery Pack							
Specification							
Model	LFP12200M	LFP24100M	LFP12400H	LFP24200H	LFP48100H	LFP24400H	LFP48200H
Rated Voltage	12.8V	25.6V	12.8V	25.6V	51.2V	25.6V	51.2V
Rated Capacity	200Ah	100Ah	400Ah	200Ah	100Ah	400Ah	200Ah
Rated Energy	2.56KWH		5.12KWH		10.24KWH		
Cell Configuration	4S2P	8S1P	4S4P	8S2P	16S1P	8S4P	16S2P
Battery Cell	3.2V100AH 8PCS		3.2V100AH 16PCS		3.2V100AH 32PCS		
Standard Charge							
Operation temperature range @charging	0~60°C						
Rated charge voltage	13.8±0.1V	27.6±0.2V	13.8±0.1V	27.6±0.2V	55.2±0.4V	27.6±0.2V	55.2±0.4V
Max charge voltage	14.2±0.1V	28.4±0.2V	14.2±0.1V	28.4±0.2V	56.8±0.4V	28.4±0.2V	56.8±0.4V
Overcharge protection	14.6±0.1V	29.2±0.2V	14.6±0.1V	29.2±0.2V	58.4±0.4V	29.2±0.2V	58.4±0.4V
Allowed MAX charge current	220A 30s	110A 30s	440A 30s	220A 30s	110A 30s	440A 30s	220A 30s
Peak charge current	240A 5s	120A 5s	480A 5s	240A 5s	120A 5s	480A 5s	240A 5s
Rated charge current	200A	100A	400A	200A	100A	400A	200A
Recommend charge current	<200A	<100A	<400A	<200A	<100A	<400A	<200A
Standard Discharge							
Operation temperature range @discharging	-35~60°C						
Output Voltage Range	10-14Vdc	20~28Vdc	10-14Vdc	20~28Vdc	40~56Vdc	20~28Vdc	40~56Vdc
Recommend Working Range	11.5~13.5Vdc	23~27Vdc	11.5~13.5Vdc	23~27Vdc	46~54Vdc	23~27Vdc	46~54Vdc
Discharge Cut-off voltage	10V	20V	10V	20V	40V	20V	40V
Allowed MAX discharge current	220A 30s	110A 30s	440A 30s	220A 30s	110A 30s	440A 30s	220A 30s
Peak discharge current	240A 5s	120A 5s	480A 5s	240A 5s	120A 5s	480A 5s	240A 5s
Rated discharge current	200A	100A	400A	200A	100A	400A	200A
Recommend discharge current	<200A	<100A	<400A	<200A	<100A	<400A	<200A
Mechanical Characteristics							
Dimension H*W*D	450*260*185mm		516*550*187mm		850*550* 187mm		
Shipping H*W*D	500*360*315mm		616*614*290mm		1000*670*400mm		
Weight(N.W.)	26KG		48KG		100KG		
Weight(G.W.)	29KG		53KG		110KG		
Communication							
RS485	For LCD remote						
CAN	PC control and monitor						
Storage and Transportation Requirements							
Storage Temperature	Less than 1 month		-20~35°C				
	Less than 6 month		-10-30°C				
Storage Humidity		45~75%RH					
SOC	Storage		60~75% SOC				
	Transport		45~55% SOC				

LFP-RV 5.12kWh

LiFePO4 Battery Pack



• Features

- IP31 Protection, Indoor use only.
- 16PCS 100AH LiFePO4 cells .
- High reliability intelligent BMS .
- 12.8Vdc/25.6Vdc/51.2Vdc, 5.12KWH rated capacity.
- Long cycle life 4000 times.
- 12.8Vdc/25.6Vdc/51.2Vdc voltage output suitable for home energy storage system, communication stations and other applications.
- Standard CAN & RS485 communication port.

• Technical Parameter

LFP-RV 5.12kWh LiFePO4 Battery Pack			
Specifications			
Model	LFP12400RV	LFP24200RV	LFP48100RV
Rated Voltage	12.8V	25.6V	51.2V
Rated Capacity	400Ah	200Ah	100Ah
Rated Energy	5.12KWH		
Cell Configuration	4S4P	8S2P	16S1P
Battery Cell	3.2V100AH 16PCS		
Standard Charge			
Operation temperature range @charging	0~60°C		
Rated charge voltage	13.8±0.1V	27.6±0.2V	55.2±0.4V
Max charge voltage	14.2±0.1V	28.4±0.2V	56.8±0.4V
Overcharge protection	14.6±0.1V	29.2±0.2V	58.4±0.4V
Allowed MAX charge current	220A 30s	110A 30s	55A 30s
Peak charge current	240A 5s	120A 5s	60A 5s
Rated charge current	200A	100A	100A
Recommend charge current	<200A	<100A	<50A
Standard Discharge			
Operation temperature range @discharging	-35~60°C		
Output Voltage Range	10-14Vdc	20~28Vdc	40~56Vdc
Recommend Working Range	11.5~13.5Vdc	23~27Vdc	46~54Vdc
Discharge Cut-off voltage	10V	20V	40V
Allowed MAX discharge current	440A 30s	220A 30s	110A 30s
Peak discharge current	480A 5s	240A 5s	120A 5s
Rated discharge current	400A	200A	100A
Recommend discharge current	<400A	<200A	<100A
Mechanical Characteristics			
Dimension H*W*D	450*320*240mm		
Shipping H*W*D	550*420*360mm		
Weight(N.W.)	47KG		
Weight(G.W.)	50KG		
Communication			
RS485	For LCD remote		
CAN	PC control and monitor		
Storage and Transportation Requirements			
Storage Temperature	Less than 1 month	-20~35°C	
	Less than 6 month	-10-30°C	
Storage Humidity		45~75%RH	
SOC	Storage	60~75% SOC	
	Transport	45~55% SOC	

LFP-B

LiFePO4 Backup Battery (Home/Industrial)



• Features

- IP67 Protection
- 3000 cycles at 0.5C charge & discharge
- 12Vdc/24Vdc/48Vdc, Multiple capacities available.
- 12Vdc/24Vdc/48Vdc voltage output suitable for home energy storage system, communication stations and other applications.
- Support Bluetooth connection (Optional).

• Technical Parameter

LFP-B Solar LiFePO4 Backup Battery (Home/Industrial)

Model	LFP-1212	LFP-3012	LFP-5012	LFP-10012	LFP-13012	LFP-20012	LFP-10024	LFP-10048
Capacity	12V12Ah	12V30Ah	12V50Ah	12V100Ah	12V130Ah	12V200Ah	24V100Ah	48V100Ah
Continuous Discharge Current	8A	15A	25A	50A	65A	100A	50A	50A
Peak Protection Current	16A	30A	50A	100A	130A	200A	100A	100A
Working Voltage	10-14.6V						20-29.2V	37.5-54.75V
Standard Voltage	12.8V						25.6V	48V
Continuous Work Current	8A	15A	25A	50A	65A	100A	50A	50A
Max Charge Voltage	14.6V						29.2V	54.75V
Suggested DoD Model	80%							
Size(mm)	155*99*94	195*133*171	229*138*208	256*165*210	330*172*215	521*238*218	345*190*245	520*267*220
Weight	1.5kg	3.2kg	4.5kg	10kg	13kg	19kg	22kg	33kg
Humidity	≤85%							
Cooling Type	Natural Cooling							
IP	IP67							
Cycles	3000 cycles at 0.5C charge & discharge							

ESS 10.24kWh~102.4kWh

Battery Energy Storage All-in-One



• Features

- Unique integrated inverter, MPPT and battery pack design
- LiFePO4 Battery inside
- Life cycle at least 4000 cycles.
- Optional WIFI module for real-time remote monitoring • High reliability intelligent BMS .
- Unique automatic calibration active balancing technology BMS system.
- 51.2Vdc voltage output suitable for home energy storage system, communication stations and other applications.

• Applications



On&off-grid



PV generation



Peak & Valley Reduction



Back-up power

• Technical Parameter

ESS Battery Energy Storage All-in-One								
Specifications								
Rated Energy	10.24KWH	15.36KWH	20.48KWH	25.6KWH	30.72KWH	40.96KWH	51.2KWH	102.4KWH
Model	ESS6048 E200P2	ESS8048 E300P3	ESS10048 E400P4	ESS1204 8E500P4	ESS12048 E600P4	ESS15048 E800P4	ESS18048 E1000P4	ESS2000P8
Rated Voltage	51.2V							
Rated Capacity	200Ah	300Ah	400Ah	500Ah	600Ah	800Ah	1000Ah	2000Ah
Battery Configuration	5.12KWH (16S1P) *2PCS	5.12KWH (16S1P) *3PCS	10.24KWH (16S2P) *2PCS	5.12KWH (16S1P) *5PCS	10.24KWH (16S2P) *3PCS	10.24KWH (16S2P) *4PCS	10.24KWH (16S2P) *5PCS	10.24KWH (16S2P) *10PCS
Battery Cell (3.2V100AH)	32PCS	48PCS	64PCS	80PCS	96PCS	128PCS	160PCS	320PCS
Standard Charge								
Operation temperature range @charging	0~60°C							
Rated charge voltage	55.2±0.4V							
Max charge voltage	56.8±0.4V							
Overcharge protection	58.4±0.4V							
Allowed MAX charge current(Total)	220A 30s (110A/pack)	330A 30s (110A/pack)	440A 30s (220A/pack)	550A 30s (110A/pack)	660A 30s (220A/pack)	880A 30s (220A/pack)	1100A 30s (220A/pack)	2200A 30s (220A/pack)
Peak charge current(Total)	240A 5s (120A/pack)	360A 5s (120A/pack)	480A 5s (240A/pack)	600A 5s (120A/pack)	720A 5s (240A/pack)	960A 5s (240A/pack)	1200A 5s (240A/pack)	2400A 5s (240A/pack)
Rated charge current(Total)	200A (100A/pack)	300A (100A/pack)	400A (200A/pack)	500A (100A/pack)	600A (200A/pack)	800A (200A/pack)	1000A (200A/pack)	2000A (200A/pack)
Recommend charge current(Total)	<200A	<300A	<400A	<500A	<600A	<800A	<800A	<1600A
Standard discharge								
Operation temperature range @discharging	-35~60°C							
Output Voltage Range	40~56Vdc							
Recommend Working Range	46~54Vdc							
Discharge Cut-off voltage	40V							
Allowed MAX discharge current(Total)	220A 30s (110A/pack)	330A 30s (110A/pack)	440A 30s (220A/pack)	550A 30s (110A/pack)	660A 30s (220A/pack)	880A 30s (220A/pack)	1100A 30s (220A/pack)	2200A 30s (220A/pack)
Peak discharge current (Total)	240A 5s (120A/pack)	360A 5s (120A/pack)	480A 5s (240A/pack)	600A 5s (120A/pack)	720A 5s (240A/pack)	960A 5s (240A/pack)	1200A 5s (240A/pack)	2400A 5s (240A/pack)
Rated discharge current(Total)	200A (100A/pack)	300A (100A/pack)	400A (200A/pack)	500A (100A/pack)	600A (200A/pack)	800A (200A/pack)	1000A (200A/pack)	2000A (200A/pack)
Recommend discharge current(Total)	<200A	<300A	<400A	<500A	<600A	<800A	<800A	<1600A
Communication								
RS485	For LCD remote							
CAN	PC control and monitor							

ESS Battery energy storage all-in-one								
Inverter (built-in)								
Mode	ESS6048 E200P2	ESS8048 E300P3	ESS10048 E400P4	ESS1204 8E500P4	ESS12048 E600P4	ESS15048 E800P4	ESS18048 E1000P4	ESS2000P8
Rated Power	6KW	8KW	10KW	12KW	12KW	15KW	18KW	
Output Waveform	Pure Sine Wave/Same as input (Bypass Mode)							
Output Voltage	240Vac(H-H)/120Vac(H-N) ±10% RMS							
Output Frequency	50 或 60±0.3Hz(Inverter mode by sw4 setting)							
Typical Transfer Time	4-6ms (typical),10ms(Max)							
THD	<3%(Rated voltage full load)							
AC Input Range	184-253Vac (UPSWeight) or 140-270Vac(GEN mode)。							
Customized AC Charger	Battery type selector position 9,special design for LFP, make the battery cycle life Maximization							
MAX AC Charge Current	40A	80A	90A	100A	100A	100A	100A	
Battery priority Function	Setting by SW5 on position 1(inverter mode valid), AC automatic come in when battery voltage low alarm at 48Vdc or 50Vdc							
AC Bypass without charging	Battery type selector position 0							
MPPT(built-in)								
PV POWER	3.0KW*2	3.0KW*3	3.0KW*4	3.0KW*4	3.5KW*4	3.5KW*4	3.5KW*4	3.5KW*8
PV Input Voltage	60-145Vdc							
MPPT Charging Voltage	56.0Vdc (Fast charging)/54Vdc (Float charging)							
MPPT Output Current	50A*2	50A*3	50A*4	60A*4	60A*4	60A*4	60A*4	60A*8
Configuration								
MPPT	100A(50A*2)	150A(50A*3)	200A(50A*4)	240A(60A*4)	240A(60A*4)	240A(60A*4)	240A(60A*4)	480A(60A*8)
INVERTER	6KW	8KW	10KW	12KW	12KW	15KW	18KW	External
BATTERY	200AH (100AH*2)	300AH (100AH*3)	400AH (200AH*2)	500AH (100AH*5)	600AH (200AH*3)	800AH (200AH*4)	1000AH (200AH*5)	2000AH (200AH*10)
Energy	10.24kwh	15.36kwh	20.48kwh	25.6kwh	30.72kwh	40.96kwh	51.2kwh	102.4kwh
Mechanical Characteristics								
Dimension H*W*D (mm)	940*560*785	1360*560*785	1110*560*960	1810*560*785	1360*560*960	1610*560*960	1810*560*960	1650*1120*1000
Shipping H*W*D(mm)	1100*700*870	1540*700*870	1290*700*1050	1960*700*870	1540*700*1050	1790*700*1050	1960*700*1050	1840*1260*1100
Weight(N.W.)	180KG	300KG	350KG	450KG	440KG	560KG	720KG	1300KG
Weight(G.W.)	200KG	330KG	370KG	500KG	480KG	610KG	770KG	1400KG

MPPT

Solar Charger Controller



• Features

- Intelligent Maximum Power Point Tracking technology increases efficiency 25%~30%.
- Compatible for PV systems in 12V,24V or 48V.
- Three-stage charging optimizes battery performance.
- Maximum charging current up to 60A.
- Maximum efficiency up to 98%.
- Battery temperature sensor (BTS) automatically provides temperature compensation.
- Automatic battery voltage detection.
- Support wide range of lead-acid batteries including wet, AGM and gel batteries.

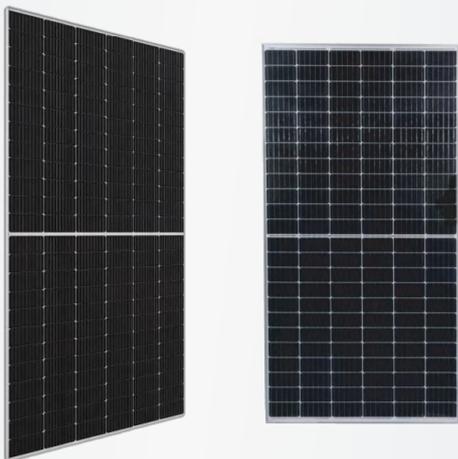
• Technical Parameter

MPPT Solar Charger&Discharge Controller				
MODEL	3KW	Charging Set points	Absorption Stage	Float Stage
Nominal System Voltage	12, 24, or 48 VDC (Auto detection)	Flooded Battery	14.6 / 29.2 / 58.4Vdc	13.5 / 27 / 54Vdc
Maximum Battery Current	60 Amps	AGM/Gel Battery (Default)	14.1 / 28.2 / 56.4Vdc	13.5 / 27 / 54Vdc
Maximum Solar Input Voltage	145Vdc	Over-charging voltage	15Vdc / 30Vdc / 60Vdc	
PV Array MPPT Voltage Range	(Bat. Voltage+5)~115Vdc	Overcharging comeback voltage	14.5Vdc / 29Vdc/ 58Vdc	
Maximum Input Power	12 Volt--800 Watts 24 Volt--1600 Watts 48 Volt--3200 Watts	Battery defect voltage	8.5Vdc/ 17Vdc/ 34Vdc	
Transient Surge Protection	4500 Watts / port	Battery defect comeback voltage	9Vdc / 18Vdc / 36Vdc	
Temperature compensation coefficient	"Volt-5 mV/°C/ cell (25 °C ref.)"	Mechanical and Environment	Product size (W*H*D mm)	322*173*118
Temperature compensation	0°C to +50°C	Product weight(Kg)	4.8	
Charging stages	Bulk,Absorption,Float	Enclosure	IP31 (indoor & vented)	

Solar Module

450Wp Output Power

Max System Voltage 1500V Standard



• Features

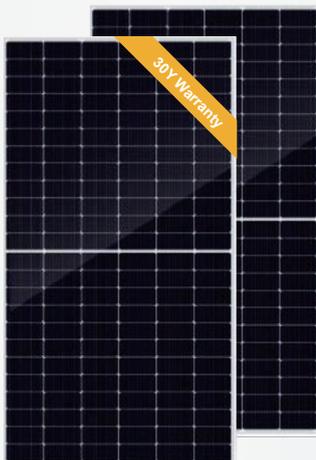
- Outstanding Performance in weak-light conditions.
- Excellent temperature coefficient.
- 0~+5W positive tolerance guarantee reliable power output.
- Shortened current collection, path, low series resistance.
- More uniform stress distribution, higher anti-crack ability.
- Excellent anti-PID module design.
- Certified to withstand high wind loads (2400pa) and snow loads (5400pa) of the latest standard test of module mechanical load.
- Salt mist and ammonia corrosion resistant.

• Technical Parameter

Solar panels				
Module Type			450W	
Working Conditions			STC	NOCT
Electrical Characteristics	Working Conditions STC/NOCT (Pmax)	W	450	338.4
	Optimum Operating Voltage (Vmp)	V	40.65	37.12
	Optimum Operating Current (Imp)	A	11.07	9.12
	Open Circuit Voltage (Voc) +3%	V	49.65	45.34
	Short Circuit Current (Voc)+3%	A	11.49	9.33
	Module Efficiency	%	20.7	
	Maximum System Voltage	V	1500 (DC)	
	Maximum Series Fuse Rating	A	25	
	Operating Module Temperature	°C	-40 ~+85	
	Power Tolerance	W	0/+5	
Mechanical Characteristics	Solar Cell (No. of cells)		Mono 166×83, 144pcs	
	Dimensions		2094*1038*35mm (±2mm)	
	Weight		22.5kg (±3%)	
	Front Glass		low-iron tempered glass / 3.2mm	
	Frame		anodized aluminum alloy	
	Junction Box		≥ IP68 with bypass-diode	
	Output Cables		2×350mm-Section 4.0mm ² /TUV	
	Connectors		MC4 / IP67	
	Maximum Load Capacity		5400Pa / 2400Pa	
	Safty Rate		II / Class II (TUV)	
Temperature Characteristics	Temperature Coefficient of Pmax		δ[%/°C]	-0.370
	Temperature Coefficient of Voc		β[%/°C]	-0.304
	Temperature Coefficient of Isc		α[%/°C]	0.046
	Nominal Module Operating Temperature		44°C ± 2°C	
Packing Configuration	Container		20'GP	40'HQ
	Pieces per container		300pcs	792pcs

Solar Module

535-550Wp Output Power
Max System Voltage 1500V Standard



• Features

- Outstanding mechanical load resistance, 2400 Pa wind load, 5400 Pa snow load.
- Anti-PID (potential induced degradation), passed anti-PID test under 85% damp heat, 85% relative humidity for 96 hours.
- Passed salt mist corrosion test, ammonia corrosion test, dust & sand test, fire test, alcertified by TUV.
- Double electroluminescence (EL) tests.

• Technical Parameter

Solar panels										
Module Type			535W-36M		540W-36M		545W-36M		550W-36M	
Working Conditions			STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Electrical Characteristics	Working Conditions STC/NOCT (Pmax)	W	535	397.7	540	401.4	545	405.1	550	408
	Optimum Operating Voltage (Vmp)	V	41.6	38.62	41.76	38.78	41.93	38.93	42.1	39.09
	Optimum Operating Current (Imp)	A	12.84	10.3	12.93	10.35	13	10.41	13.06	10.46
	Open Circuit Voltage (Voc) +3%	V	49.5	46.36	49.7	46.54	49.9	46.73	50.1	46.92
	Short Circuit Current (Voc)+3%	A	13.61	10.97	13.72	11.05	13.81	11.13	13.9	11.2
	Module Efficiency	%	20.93		21.12		21.32		21.51	
	Maximum System Voltage	V	1500 (DC)							
	Maximum Series Fuse Rating	A	25							
	Operating Module Temperature	°C	-40~+85							
Power Tolerance			0~+3%							
Mechanical Characteristics	Solar Cell (No.of cells)		Mono182*91,144pcs							
	Dimensions		2279*1134*35mm							
	Cable (Length/Cross-Sectional Area)		4mm ² cable 30cm+mc4							
	Frame		anodized aluminum alloy							
	Junction Box(Protection Degree)		IP67/IP68							
Maximum Load Capacity		5400Pa / 2400Pa								
Temperature Characteristics	Temperature Characteristics	W°C	-0.350%							
	Voc Temperature Coefficients	V°C	-0.250%							
	Isc Temperature Coefficients	A°C	+0.04 %							
	NOCT Nominal Operating Cell Temperature	°C	45+2							
	Operating and Storage Temperature	°C	-40~+85							
Packing Configuration	20FT container		10Packages/275PCS							
	40HQ container		22Packages/620PCS							

YIY

**Energy Storage System
&
Power Quality System Provider**

YIYEN HOLDING GROUP CO.,LTD

Tel: +86-577-27772199 27772139

Email: yiyen@yiyen.com

Website: www.yiyen.com

ESS Website: www.yiybess.com

WENZHOU YIYEN SUPPLY CHAIN MANAGEMENT CO.,LTD

Add: Rm.1301.Building 3.Headquarters Economic Park .No.6688
Xuyang Road. Yueqing City. 325600.Zhejiang

LISHUI YIYEN TECHNOLOGY CO.,LTD

Add:No.77,Xiang Long Road,Lian Du Zone,Lishui City,Zhejiang
Province, China

KINMO PW CORPORATION

Contact Nos.: T 8251-0507 T 8251-0508

Mobile No.: +63977-840-7799

Email: kinmopw.ph@gmail.com

Main Office:1732 Jose Abad Santos St., Tondo Manila, Philippines

BGC Office:Unit 3C-1 Seibu Tower, 6th Ave., 24th St., BGC Taguig City

