

YIY

BLESS

Energy Storage Solutions

May energy and ecology be more harmonious



ZHEJIANG YIYEN HOLDING GROUP

Zhejiang 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



30000m²+
Plant Area



15 years +
Years Experience



100,000+ / year
Delivered Capacity



ENTERPRISE ARCHITECTURE



Headquarters

ZHEJIANG YIYEN HOLDING GROUP



Intelligent
Manufacturing

Lishui Yiyen Technology
CO.,LTD



Factory



Globalization
Channel

Wenzhou Yiyen Supply Chain
Management CO.,LTD



Marketing/Sales/Sourcing
Total Solutions and Technical Services



Investment
Operation

Wenzhou Yiyen Energy
Development CO.,LTD



EPC Service Provider for New Energy and
Energy Storage Plants
Contract Energy Management
(Domestic Only)



R&D

Nanjing Branch
Shenzhen Branch
Hangzhou Branch



R&D Center

50+

R&D Staff



130+

Export Countries



100+

Intellectual Properties



BMS

12V~1500V
Voltage Class



Qualification Certification

ISO9001



QUALITY MANAGEMENT SYSTEM CERTIFICATE
Certificate No. : 2022ZQ2119R05

We hereby certify that the organization:
LISHUI YIYEN TECHNOLOGY COMPANY LIMITED
Unified social credit code: 91331127MA2E079Y8T

is in conformity with Quality Management System Standard:
GB/T19001-2016 idt ISO9001:2015

The certificate is valid to the following products/service:
The assembling of Voltage Stabilizer, Inverter, Photovoltaic Equipment (MPPT Solar Charger, PCS), Uninterruptible Power Supply, Emergency Power Supply, Battery Pack Energy Storage System, Battery Management System (BMS)

Registration Address/Audit Address: No.77,Xiang Long Road,Lian Du Zone,Lishui City,Zhejiang Province, China.

Date of Issue: 26-09-2022
Date of Expiry: 25-09-2025
Date of Initial: 26-09-2022

Issued By: 





The audit of validity of the certificate, the certificate shall be at least once a year. The effectiveness of the Certificate is subject to QR Code in the lower left corner. Meanwhile, you can search the website of certification body: www.gpc.org.cn or search the CNCA website: www.cnca.gov.cn

ZHEJIANG QUANPIN CERTIFICATION CO.,LTD.
Room 601, Floor 6, Building 1, No. 14, Paper Road, Paper Town, Binjiang District, Hangzhou City, Zhejiang Province, China 310007. Web: <http://www.gpc.org.cn>

ISO45001



OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT SYSTEM CERTIFICATE
Certificate No. : 2022ZS20467R05

We hereby certify that the organization:
LISHUI YIYEN TECHNOLOGY COMPANY LIMITED
Unified social credit code: 91331127MA2E079Y8T

is in conformity with Occupational Health Safety Management System Standard:
GB/T45001-2020 idt ISO45001:2018

The certificate is valid to the following products/service:
The assembly and related management activities of Voltage Stabilizer, Inverter, Photovoltaic Equipment (MPPT Solar Charger, PCS), Uninterruptible Power Supply, Emergency Power Supply, Battery Pack Energy Storage System, Battery Management System (BMS)

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ISO14001



ENVIRONMENTAL MANAGEMENT SYSTEM CERTIFICATE
Certificate No. : 2022ZE20495R05

We hereby certify that the organization:
LISHUI YIYEN TECHNOLOGY COMPANY LIMITED
Unified social credit code: 91331127MA2E079Y8T

is in conformity with Environmental Management System Standard:
GB/T24001-2016 idt ISO14001:2015

The certificate is valid to the following products/service:
The assembly and related management activities of Voltage Stabilizer, Inverter, Photovoltaic Equipment (MPPT Solar Charger, PCS), Uninterruptible Power Supply, Emergency Power Supply, Battery Pack Energy Storage System, Battery Management System (BMS)

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CERTIFICATION

CERTIFICATION

STEK

CERTIFICATION

Certificate of compliance

Low Voltage Directive 2014/53/EU

Certificate No. ST0204080594

Certificate holder: LEMSA HYEN TECHNOLOGY COMPANY LIMITED

Address: No. 77, Kang Long Road, Lian Du Zone, Lian Du City, Zhejiang Province, China

Manufacturer: Same Certificate holder

Address: Same Certificate holder

Brand Name: VVI

Product Designation: Key-Operated Combined Inverter & Charger

Model / Series Models: APC 1500E, APC 1500E, APC 2000E, APC 2000E, APC 4000E, APC 4000E, APC 6000E, APC 6000E

Test Report No.: ST0204080594

Test Standards: EN 60364-4-41:2017 A11:2018

Conclusion: The submitted products have been tested by us with the latest standards and found in compliance with the following European Directives.

The Low Voltage Directive 2014/53/EU

May 16, 2023

Date of Issue

Certification Mark

Safety Laboratory Manager

Shenzhen STEK Testing Co., Ltd.
JMAA Building 9/F, No. 41 Jianshe Road, Shuangyuan Community, Shuangyuan Street, Shenzhen, Guangdong Province, P.R. China
Tel: +86-755-2336-6322 E-mail: shenzhen@stek.com.cn www.stek.com.cn

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STEK

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Verification of compliance

Electromagnetic compatibility 2014/53/EU

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Address: No. 77, Kang Long Road, Lian Du Zone, Lian Du City, Zhejiang Province, China

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Address: Same Certificate holder

Brand Name: VVI

Product Designation: High-Power Combined Inverter & Charger

Model / Series Models: HF 1500E, HF 1500E, HF 2000E, HF 2000E, HF 4000E, HF 4000E, HF 6000E, HF 6000E

Test Report No.: ST0204080594

Test Standards: EN 55032:2015+A1:2020, EN 55035:2017+A1:2020, EN 55035-2:2019+A2:2021, EN 61000-3-2:2014+A2:2021, EN 61000-3-3:2010+A2:2021, EN 61000-3-3:2010+A1:2021

Conclusion: This attestation is issued in accordance with the Directive 2014/53/EU of the European Parliament and of the Council of 16 April 2014 on the harmonization of the laws of the Member States relating to the marking available on the market of radio equipment.

June 17, 2023

Date of Issue

Certification Mark

EMC Laboratory Manager

Shenzhen STEK Testing Co., Ltd.
JMAA Building 9/F, No. 41 Jianshe Road, Shuangyuan Community, Shuangyuan Street, Shenzhen, Guangdong Province, P.R. China
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Tel: +86-755-2336-6322 E-mail: shenzhen@stek.com.cn www.stek.com.cn

DEKRA

ATTESTATION OF CONFORMITY

Issued to: LEMSA HYEN TECHNOLOGY CO., LTD
3/333 National Industrial Park, No. 77 Kang Long Road, Nannongmen Street, Lian Du District, Lian Du City, Zhejiang Province, P.R. China

For the product: Power Conversion Module

Trade name: VVI

Type/Model: LP-842-300, LP-841-1000W

Rating: See model list

Manufactured by: LEMSA HYEN TECHNOLOGY CO., LTD
3/333 National Industrial Park, No. 77 Kang Long Road, Nannongmen Street, Lian Du District, Lian Du City, Zhejiang Province, P.R. China

Requirements: EN 60364-4:2017
EN 61000-3-2:2014
EN 61000-3-3:2010

This attestation is granted on account of an examination by DEKRA, the results of which are set down in a confidential file no. 6176214-32.

This attestation implies that the examined type is in accordance with the standards designated under the Electromagnetic compatibility Directive 2014/53/EU.

The examination has been carried out on one single specimen or several specimens of the product, submitted by the manufacturer. This attestation does not include an assessment of the manufacturer's production. Conformity of the production with the specimen tested by DEKRA is not the responsibility of DEKRA.

The CE marking may be affixed on the product if all relevant and effective EC directives are complied with. Antwerp, 1 March 2024

Number: 6176214-32A02

DEKRA Testing and Certification (Shanghai) Co., Ltd.
Kang Li
Safety Lab
Certification Manager

CE

DEKRA Testing and Certification (Shanghai) Co., Ltd.
3/333 National Industrial Park, No. 77 Kang Long Road, Nannongmen Street, Lian Du District, Lian Du City, Zhejiang Province, P.R. China
Tel: +86-21-5042-1888 E-mail: shanghai@dekra.com.cn www.dekra.com.cn

DEKRA

ATTESTATION OF CONFORMITY

Issued to: LEMSA HYEN TECHNOLOGY CO., LTD
No. 77 Kang Long Road, Nannongmen Street, Lian Du District, Lian Du City, Zhejiang Province, P.R. China (3/333 National Industrial Park)

For the product: Power Conversion System

Trade name: VVI

Type/Model: LP-842-300, LP-841-1000W

Rating: LP-842-300 (AC) Voltage range: 85V-265VAC, Max Current: 100A, AC, Rated power: 60 kW, rated voltage: 400VAC, Max Current: 150A, 50/60Hz, 3-phase power factor: 0.95 (lagging - 0.95leading)
LP-841-1000W (AC) Voltage range: 85V-265VAC, Max Current: 150A, AC, Rated power: 100 kW, rated voltage: 400VAC, Max Current: 150A, 50/60Hz, 3-phase power factor: 0.95 (lagging - 0.95leading)

Manufactured by: LEMSA HYEN TECHNOLOGY CO., LTD
No. 77 Kang Long Road, Nannongmen Street, Lian Du District, Lian Du City, Zhejiang Province, P.R. China (3/333 National Industrial Park)

Requirements: EN 60364-4:2017

This attestation is granted on account of an examination by DEKRA, the results of which are set down in a confidential file no. 6176214-32.

This attestation implies that the examined type is in accordance with the standards designated under the Low Voltage Directive 2014/53/EU.

The examination has been carried out on one single specimen or several specimens of the product, submitted by the manufacturer. This attestation does not include an assessment of the manufacturer's production. Conformity of the production with the specimen tested by DEKRA is not the responsibility of DEKRA.

The CE marking may be affixed on the product if all relevant and effective EC directives are complied with. Antwerp, 28 March 2024

Number: 6176214-32A02

DEKRA Testing and Certification (Shanghai) Co., Ltd.
Kang Li
Safety Lab
Certification Manager

CE

DEKRA Testing and Certification (Shanghai) Co., Ltd.
3/333 National Industrial Park, No. 77 Kang Long Road, Nannongmen Street, Lian Du District, Lian Du City, Zhejiang Province, P.R. China
Tel: +86-21-5042-1888 E-mail: shanghai@dekra.com.cn www.dekra.com.cn

DEKRA

CERTIFICATE OF CONFORMITY

Issued to: LEMSA HYEN TECHNOLOGY CO., LTD
No. 77 Kang Long Road, Nannongmen Street, Lian Du District, Lian Du City, Zhejiang Province, P.R. China (3/333 National Industrial Park)

For the product: Power Conversion System

Trade name: VVI

Type/Model: LP-842-300, LP-841-1000W

Rating: Operating temperature range: -25°C to +50°C
Protection class: IP20
Ingress protection rating: IP20
Power factor range (cosφ): 0.95 (lagging) - 0.95 (leading)
LP-842-300
DC Voltage range: 80V-300VAC, Max Current: 100A, AC Rated power: 60 kW, rated voltage: 400VAC, Max Current: 150A, 50/60Hz, 3-phase
LP-841-1000W
DC Voltage range: 80V-300VAC, Max Current: 150A, AC Rated power: 100 kW, rated voltage: 400VAC, Max Current: 150A, 50/60Hz, 3-phase

Manufactured by: LEMSA HYEN TECHNOLOGY CO., LTD
No. 77 Kang Long Road, Nannongmen Street, Lian Du District, Lian Du City, Zhejiang Province, P.R. China (3/333 National Industrial Park)

Requirements: EN 60364-4:2017 (Requirements for Low A Derating) unless COMMISSION REGULATION (EU) 2018/851 (NC-RL)

This Test Certificate is granted on account of an examination by DEKRA, the results of which are set down in a confidential file no. 6176214-32.

The examination has been carried out on one single specimen of the product. This attestation does not include an assessment of the manufacturer's production. Conformity of the production with the specimen tested by DEKRA is not the responsibility of DEKRA.

This Test Certificate expires on the latest on 31 May 2024 or expires upon withdrawal of one of the above mentioned standards.

Shanghai, 31 May 2024

Number: 6176214-32C02

DEKRA Testing and Certification (Shanghai) Co., Ltd.
Chen
Safety Lab
Certification Manager

CE

DEKRA Testing and Certification (Shanghai) Co., Ltd.
3/333 National Industrial Park, No. 77 Kang Long Road, Nannongmen Street, Lian Du District, Lian Du City, Zhejiang Province, P.R. China
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PRODUCT CATALOG

<i>YIY Residential Energy Storage System</i>	01
<i>UP</i> Series On/Off Grid Bi-Directional Inverter	06
<i>TP</i> Series Hybrid Inverter Charger	09
<i>TP-3</i> Series Off Grid Three Phase Hybrid Inverter Charger	11
<i>HP-W</i> Series Low Frequency Pure Sine Wave Inverter Charger	13
<i>SMP</i> Series Hybrid Power Inverter	15

PRODUCT CATALOGUE

UE

<i>LFP-M</i> LiFePO4 Battery Pack	17
<i>LFP-M-R</i> Rack Type LiFePO4 Battery Pack	19
<i>PV Combiner Box</i>	21
<i>Solar Panel</i>	23

YIY Residential Energy Storage System

YIY residential energy storage system is a highly flexible and customizable solution suitable for a variety of home energy application scenarios. The system includes inverter, LiFePO4 battery pack, photovoltaic distribution box with built-in MPPT, and an intelligent energy management system that can be monitor by APP.

Users can freely configurate devices according to their needs, supporting multiple modes such as backup power supply, off-grid power generation, self-generation and AC-coupled photovoltaic energy storage. The system not only provides stable and efficient power, but also improves energy self-sufficiency and reduces electricity costs. Users can monitor energy use in real time through a simple operation interface to ensure the optimal operation of the system in various environments, meeting the needs of modern families for intelligent, safe and environmentally friendly energy storage.



Back-up Power



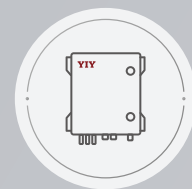
Off Grid



Self-Consumption



AC-Coupled



PV Combiner Box

- Built-in MPPT
- Easy installation
- Easy to expand



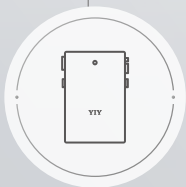


Cloud+APP

- Monitoring system



Solar Panels



Battery

- Modular Design
- Wall-mounted / rack-mounted optional

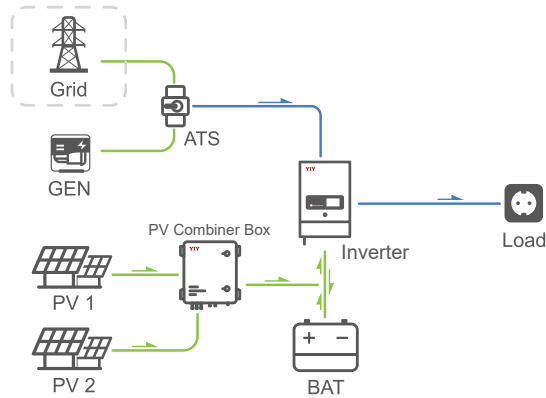


Inverter

- Off Grid/Hybrid Inverter

• Technology Topology

Off-Grid System



Designed for areas without grid access or the grid is unstable, this system provides reliable power through energy storage and smart controls. It stores excess energy when available and switches to off-grid mode during outages, ensuring key devices stay operational. Ideal for remote locations or high-reliability power needs.

Application:

- Emergency Power Supply
- Backup Power
- Mobile Energy Storage System
- Microgrid



TP Series



TP-3 Series

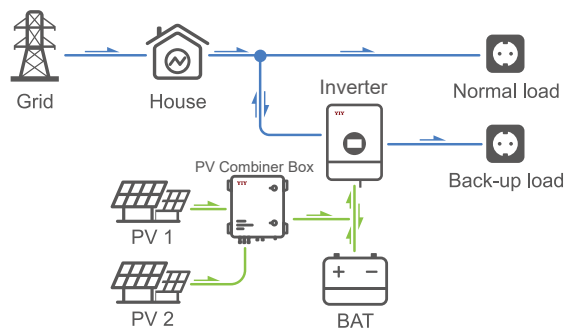


HP-W Series



SMP Series

Hybrid On/Off-Grid System



This system combines on-grid and off-grid modes for flexible energy management. In on-grid mode, it prioritizes solar power to reduce grid dependence and cut costs. During outages, it automatically switches to off-grid mode, using stored energy to ensure continuous power and energy self-sufficiency, especially in extreme conditions.

Application:

- Peak Shaving
- Microgrid
- Backup Power
- Load Shifting
- Self-consumption

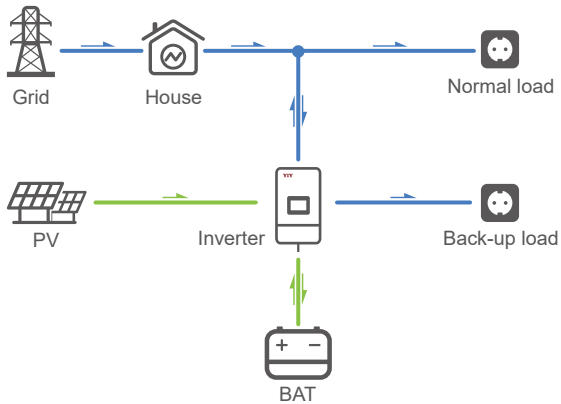


TP Series



TP-3 Series

Hybrid System



This system not only supports off-grid applications and hybrid on-off grid power supply applications, but it can also prioritize the use of solar energy, batteries, and grid power according to the user's actual needs. It meets the needs of improving electricity usage and increases self-consumption rates.

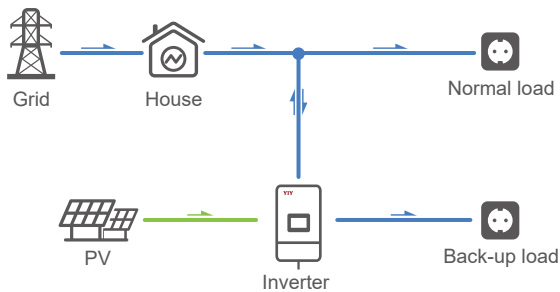
Application:

- Self-consumption
- Energy Management
- Backup Power
- Peak Shaving
- EV Charging Station



SMP Series

Solar-utility Hybrid Off Grid System



This is applicable when the battery is completely discharged or there is no battery at all. The inverter prioritizes supplying power to the connected loads to inverter using energy generated by the photovoltaic system. If the photovoltaic energy is insufficient, power is supplemented by the grid. This approach aims to minimize the system configuration costs while maximizing the utilization of photovoltaic energy.

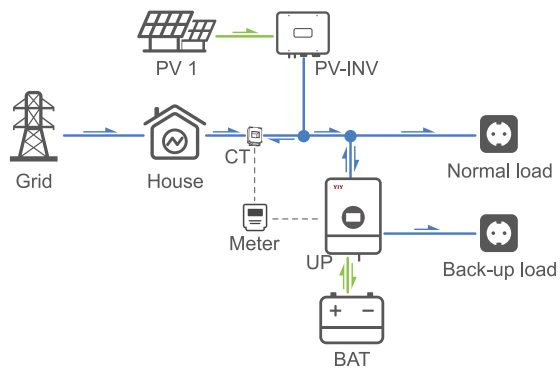
Application:

- Agricultural Irrigation Or Greenhouse Cultivation
- Street Light And Traffic Lights
- Water Heater



SMP Series

AC-Coupled Storage System



Seamlessly integrating with grid-tied solar systems, this AC-coupled solution optimizes energy usage, increases solar self-consumption, lowers costs, and maximizes clean energy efficiency, delivering an effective, eco-friendly energy management solution.



UP Series

General Products



| LiFePO4 Battery Pack

- Page 17 -



| Rack Type LiFePO4 Battery Pack

- Page 19 -



| PV Combiner Box

- Page 21 -



| Solar Panel

- Page 23 -

UP

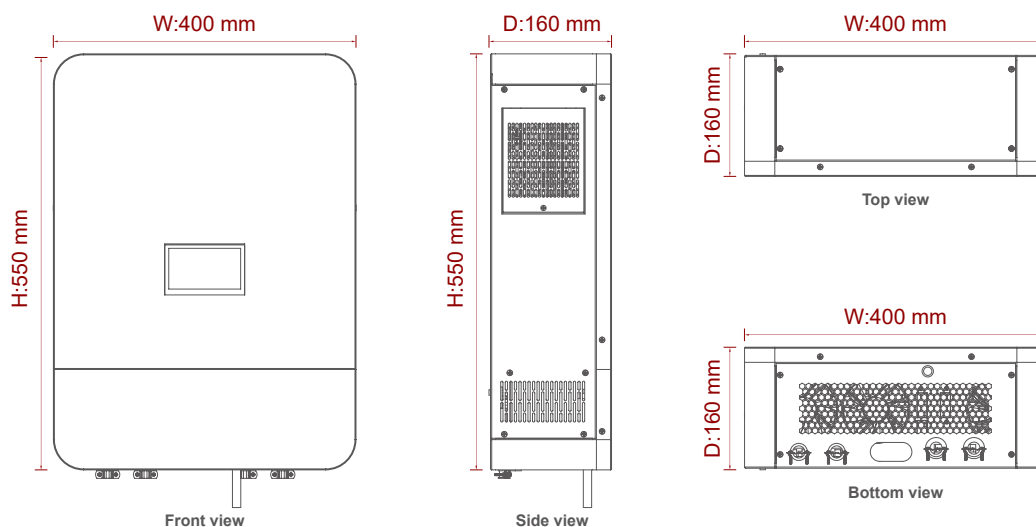
On/Off Grid Bi-Directional Inverter



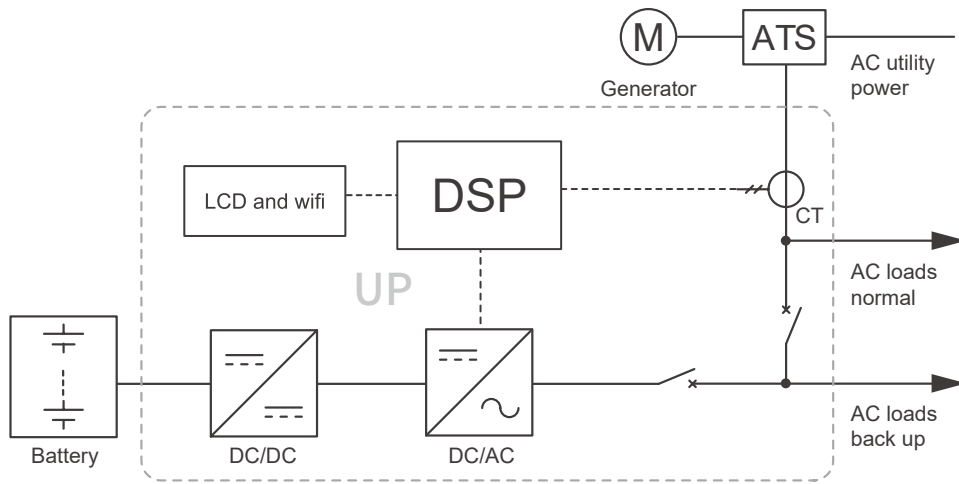
• Features

- 5KW / 6KW 48Vdc 230Vac.
- Grid-battery hybrid power supply.
- Anti-backflow protection.
- 120A charging current.
- MODBUS/RS485/CAN communication.
- Peak shaving function.

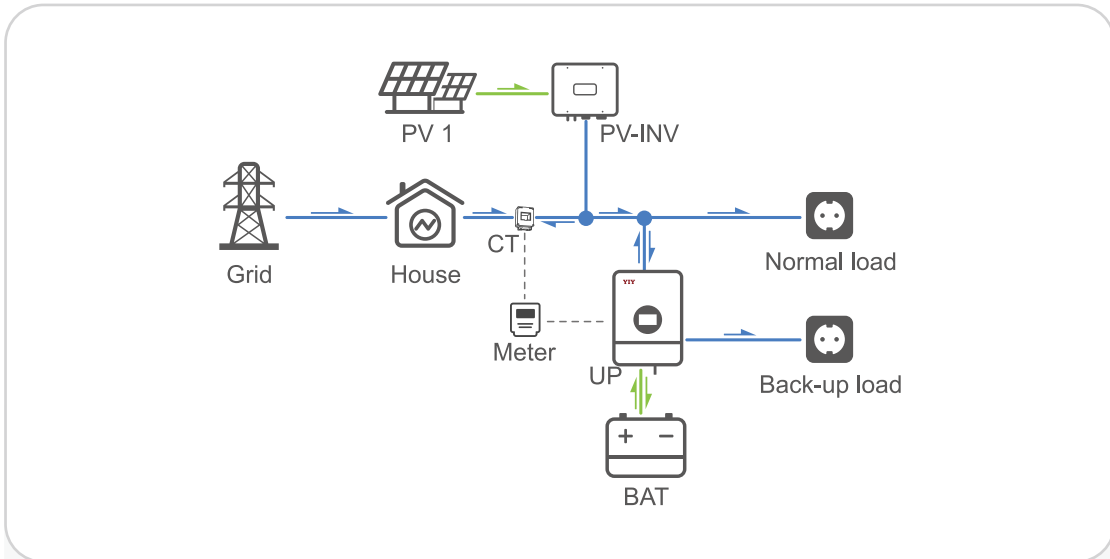
• Product Dimensions



• **Technology Topology**



• **Application**



AC Coupled Energy Storage System :

Suitable for existing solar PV systems, meeting the demand for energy storage configuration, maximizing the utilization of solar energy resources, and continuing to power critical loads in the event of a grid outage.

- Energy Self-Sufficiency
- Peak & Valley Reduction
- Back-up Power
- Load Balancing

• Technical Parameter

UP Series On/Off Grid Bi-Directional Inverter		
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	<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	LCD	
Communication	RS485/CAN	
Dimensions (W*D*H)	400*160*550mm	
Weight	/	
Installation Style	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	1 Year	
*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	

TP

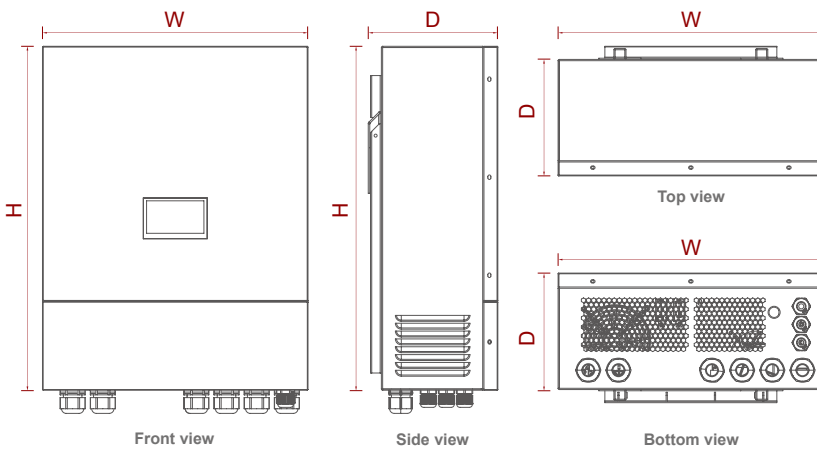
Hybrid Inverter Charger



• Features

- 3K/6K: 120V single phase 60Hz.
- 3K/6K/12K: 230V single phase 50Hz.
- Built-in EMS.
- MODBUS/RS485/CAN communication.
- 60A~240A AC charging current.
- Grid-battery hybrid power supply.
- IP54.
- Max. efficiency: 92%.

• Product Dimensions



Model	Size(W*D*H)
TP 3-6KW	440*195*570mm
TP 12KW	/

• Technical Parameter

TP Series Hybrid Inverter Charger						
Model	3048	3048E	6048	6048E	12048E	
Parameter Configuration						
Inverter Mode	Battery Rated Voltage	48V				
	Battery Voltage Range	40-58V				
	Rated Output Power	3000W	3000W	6000W	6000W	12000W
	Inverter Mode Efficiency	92%(Peak)				
	Rated Output Voltage	120Vac	230Vac	120Vac	230Vac	230Vac
	Rated Output Frequency	50/60Hz				
	Overload Capacity	(110%<load<125%) ±10%: Protection in 15 minutes; (125%<load<150%) ±10%: Post-60s protection; (load>150%) ±10%: Post-20s protection.				
Mains Mode	Charging Voltage Range	52-59Vdc				
	Max. Charging Current	60A	60A	120A	120A	240A
	Utility Input Voltage	120Vac	230Vac	120Vac	230Vac	230Vac
	Input Voltage Range	80/90-140Vac, 140/184-254Vac				
	AC Rated Frequency	50/60Hz				
	Frequency Range	47-55, 57-65/40-70Hz				
System Parameter						
System Parameter	Cooling Method	Forced air cooling				
	Noise Level	≤75dB				
	Temperature Range	-20°C ~ 40°C				
	Protection Level	IP54				
	Humidity Range	0-95%(Non-condensing)				
	Dimensions(W*D*H)	440*195*570(mm)				/
Other						
Other	Max. Efficiency	92%				
	Wiring Method	Single phase				
	Isolation Type	Built-in transformer isolation				
	Protection Functions	AC Over/Under Voltage, Over-Temperature, Frequency Anomaly, Over-Current, Fan Fault, Battery Over/Under Voltage, Battery Over-Temperature				
	Display	LCD+APP				
	Communication Interface	RS485(MPPT), CAN(BAT)				
	Communication Settings	Adjustable parameters can be configured via the LCD screen, PC-based software, or mobile APP				
	Hybrid Power Supply	In utility mode, the battery can supply 95% of the load's energy demand				

TP-3

Off Grid Three Phase Hybrid Inverter Charger



Wall-mounted:9-18KW

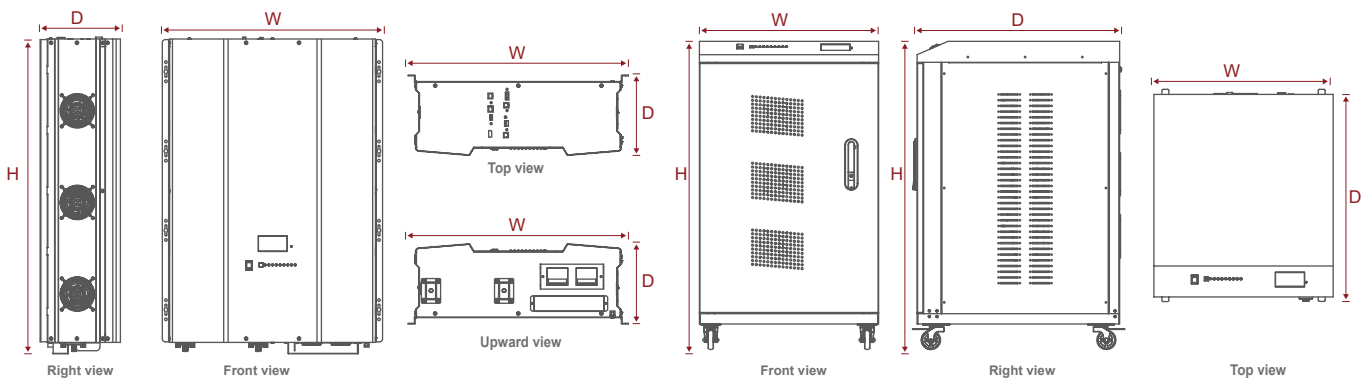


Cabinet type:36KW

• Features

- Unbalance load acceptable idle consumption search Mode,less than 100w when power saver on.
- Remote control optional(LED or LCD remote).
- MODBUS/RS485/CAN communication.
- Built-in EMS.
- Low frequency 48Vdc.
- 9K/18K/36K 400V/207V optional.
- 180A~720A AC charging current.
- 100% three phase unbalance.
- Grid-battery hybrid power supply.

• Product Dimensions



Model	TPP 9KW~18KW (Wall-mounted)	TPP 36KW (Cabinet type)
Size(W*D*H)	583*213*803mm	513*650*835mm

• Technical Parameter

TP-3 Series Off Grid Three Phase Hybrid Inverter Charger				
Inverter Output	Model	9KW	18KW	36KW
	Continuous Output Power	9000W	18000W	36000W
	Surge Rating(20s)	27000W	54000W	108000W
	Capable of Starting Electric Motor	9HP	18HP	36HP
	Unbalance Load Acceptable	100%		
	DC Input Voltage	48Vdc		
	Output Waveform	Pure Sine wave/Same as input (Bypass mode)		
	Nominal Efficiency	89% (Peak)		
	Line Mode Efficiency	>95%		
	Power Factor	0.9-1.0		
	Connection Mode	3-phase 4-wire system+Grid		
	Output Voltage Rating	3AC/N 400V/207V		400V
	Output Phase Voltage	120/230Vac	120/230Vac	230Vac
	Output Voltage Regulation	±10% RMS		
	Output Frequency	50/60Hz ± 0.3Hz		
	Short Circuit Protection	Yes, current limit function (Fault after 60ms)		
	Typical Transfer Time	Typical 6~8ms,10ms (Max)		
THD	<3% linear load			
DC Input	Nominal Input Voltage	48Vdc		
	Min. Start Voltage	42Vdc / 44Vdc		
	Low Battery Alarm	42Vdc / 44Vdc		
	Low Battery Trip	40Vdc / 42Vdc		
	High Voltage Alarm & Fault	64Vdc		
	High DC Input Recovery	62Vdc		
	Low Battery Voltage Recover	52Vdc		
	Idle Consumption-Search Mode	< 100W(When power saver on)		
Charge	Input Voltage Range	Narrow: 96~132Vac/ 184~253Vac ; Wide:70~135Vac / 140~270Vac		
	Input Frequency Range	Narrow: 47-55±0.3Hz for 50Hz,57-65±0.3Hz for 60Hz Wide: 40-70±0.3Hz for 50Hz/60Hz		
	Output Voltage	Same as input		
	Charger Breaker Rating(230Vac)	20A	30A	60A
	Charger Breaker Rating(120Vac)	30A	60A	

HP-W

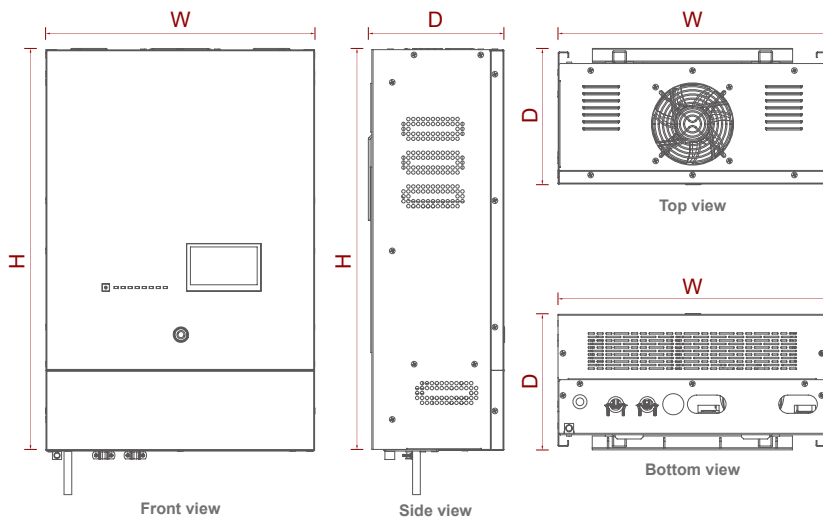
Low Frequency Pure Sine Wave Inverter Charger



• Features

- Built-in EMS, achieves high efficient utilization of power energy between the grid and battery.
- IP20 protection.
- Ultra low THD, typically 7% under full linear load (battery low).
- Battery temperature sensing for increased charging precision.
- Powerful charge rate up to 120 Amp, selectable from 0%-100%.
- Auto Gen Start function for off grid system with generator as backup power.
- PF1.0, high efficiency, lower consumption.

• Product Dimensions



Model	Size(W*D*H)
HP-W 3-6KW	383*188*572mm
HP-W 12KW	/


• Technical Parameter

HP-W Series Low Frequency Pure Sine Wave Inverter Charger						
Model		3048	3048E	6048	6048E	12048E
Inverter mode	Battery Rated Voltage	48Vdc				
	Battery Voltage Range	40-58Vdc				
	Rated Output Power	3000W	3000W	6000W	6000W	12000w
	Inverter Mode Efficiency	88% (Peak)				
	Rated Output Voltage	120Vac	230Vac	120Vac	230Vac	230Vac
	Rated Output Frequency	50/60Hz				
	Overload Capacity	(110%<load<125%) ±10%: protection after 15 minutes; (125%<load<150%) ±10%: protection after 60s; (load>150%) ±10%: protection after 20s				
Line mode	Charging Voltage Range	52-59Vdc (0-9 levels adjustable)				
	Max. Charging Current	30A	30A	60A	60A	120A
	Mains Input Voltage	120Vac	230Vac	120Vac	230Vac	230Vac
	Input Voltage Range	80/90-140Vac, 140/184-254Vac				
	Rated AC Frequency	50/60Hz				
	Frequency Range	47-5, 57-65/40-70Hz				
System specifications	Cooling Method	Forced air cooling				
	Noise	≤75dB				
	Temperature Range	-20°C ~ 40°C				
	Protection Level	IP20				
	Humidity Range	0-95% (No condensation)				
	Dimensions(W*D*H)	383*188*572(mm)				/
Others	Max. Efficiency	88%				
	Wiring Method	Single phase/ Dual phase three-wire				
	Isolation Method	Built-in transformer isolation				
	Protection Function	AC Over/Under Voltage, Over Temperature, Frequency Abnormal, Over Current, Fan Failure, Battery Over/Under Voltage, Battery Over Temperature				
	Display	LED+LCD+APP				
	Communication Interface	RS485(MPPT), CAN(BAT)				

SMP

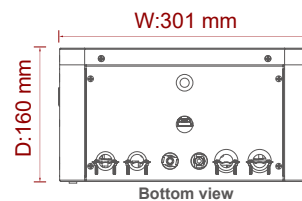
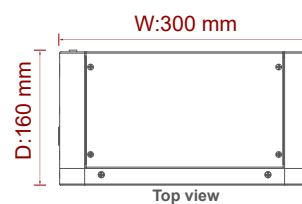
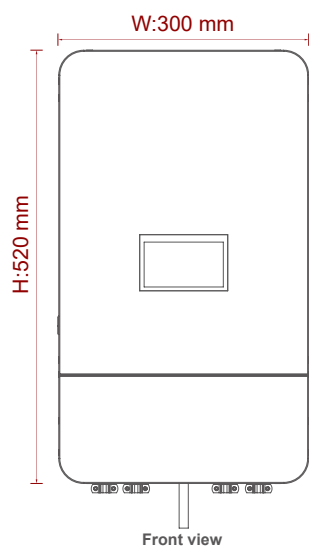
Hybrid Power Inverter



• Features

- 5.5KW 48V 230V 50Hz/60Hz.
- With the ability to work without battery.
- Solar-battery-grid hybrid power supply.
- Charging battery by utility and PV energy even without AC output.
- Solar input voltage: 100-450V 500Voc 30A.
- Max. charging current 140A (PV+Grid).
- RS485 communication.

• Product Dimensions



• Technical Parameter

SMP Series Hybrid Power Inverter	
Inverter Mode	
Model	5548E
Nominal Output Voltage	5500W
Output Waveform	5500W
Nominal Output Voltage	230Vac±5%
Output Frequency	50Hz or 60Hz
Peak Efficiency	94%
Overload Protection	5s@≥150% Overload; 10s@110~150% Overload
Surge Rating	2*Rated Power 5s
Nominal DC Input Voltage	48Vdc
Cold Start Voltage	46Vdc
Low Battery Alarm	44Vdc
Low Battery Voltage Recover	46Vdc
Low Battery Trip	42Vdc
High Battery Voltage Recover	58Vdc
High Battery Trip	62Vdc
No Load Loss	< 50W
Bypass Mode	
Input Waveform	Pure Sine Wave (Grid or Generator)
Nominal Input Voltage	230Vac
Low Voltage Trip	170Vac±7V (UPS) 90Vac±7V (Appliances)
Low Voltage Protection Recover	180Vac±7V (UPS) 100Vac±7V (Appliances)
High Voltage Trip	280Vac±7V
High Voltage Protection Recover	270Vac±7V
Max. Input AC Voltage	300Vac
Nominal Input Frequency	50Hz or 60Hz (Automatic Detection)
Low Frequency Trip	40±1Hz
Low Frequency Protection Trip	42±1Hz
High Frequency Trip	65±1Hz
High Frequency Protection Trip	63±1Hz
Output Short Circuit Protection	Bypass Mode: Circuit Breaker Battery Mode: Electronic Circuits
Efficiency	>95% (Rated load, battery fully charged)
Typical Transfer Time	10ms (UPS) 20ms (Appliances)
Line Mode	
Charging Current (UPS) @Nominal Input Voltage	80A
Large Capacity Charging Voltage	Water Battery: 58.4V
	AGM/Gel Battery: 56.4V
Charge Voltage	54Vdc
Charging Mode	3 Steps
Solar Charging Mode	
PV Max. Input Current	30A
PV Charging Current	100A
Efficiency	98%
Max. PV Array Open Circuit Voltage	500Voc
PV Array MPPT Voltage Range	100-450Vdc
Idle Consumption	2W
Battery Voltage Accuracy	±0.3%
PV Voltage Accuracy	±2V
General Data	
Certification	CE
Operating Temperature Range	0°C ~ 45°C
Storage Temperature	-15°C ~ 60°C

LFP-M

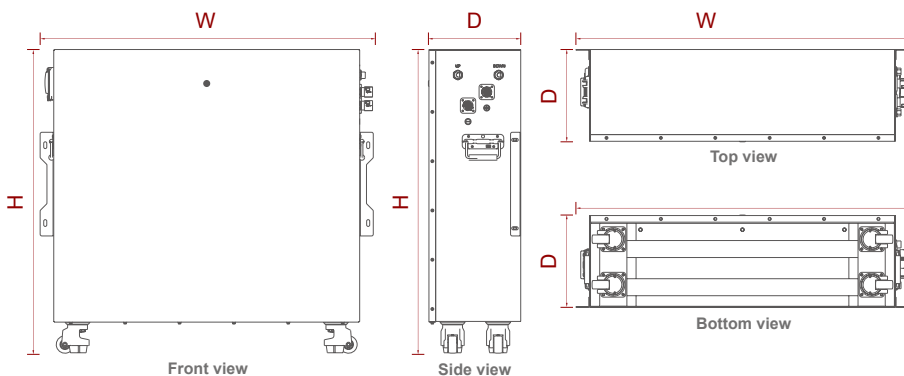
LiFePO4 Battery Pack



• Features

- Grade A LiFePO4 cells.
- IP65 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, Master & Slave relationship.
- Compatible with other brand inverters' communication protocols.
- Parallel connection up to 9 PCS.

• Product Dimensions



Model	Size(W*D*H)
LFP-M48105H2	530*183*557mm
LFP-M48210H	530*183*865mm
LFP-M48280H	980*272*894mm


• Technical Parameter

LFP-M LiFePO4 Battery Pack			
Specifications			
Model	LFP-M48105H2	LFP-M48210H	LFP-M48280H
Rated Voltage	51.2V		
Rated Capacity	105Ah	210Ah	280Ah
Rated Energy	5.37KWH	10.75KWH	14.33KWH
Cell Configuration	16S1P	16S2P	16S1P
Battery Cell	3.2V 105AH		3.2V 280AH
Cycles	6000@70%SOH,90%DOD (25°C)		8000@70%SOH,90%DOD (25°C)
Standard Charge			
Operation temperature range @charging	0~60°C		
Rated charge voltage	56.8V		
Max charge voltage	58.4±0.4V		
Over charge protection	59.2V		
Allowed MAX charge current	100A	100A	140A
Peak charge current	110A 3S	110A 3S	160A 2S
Rated charge current	50A	100A	140A
Recommended charge method	CC-CV		
Standard Discharge			
Operation temperature range @discharging	-20~60°C		
Output Voltage Range	46.4~58.4V		
Discharge Cut-off voltage	42.4V		
Allowed MAX discharge current	100A	100A	140A
Peak discharge current	110A 3S	110A 3S	160A 2S
Rated discharge current	100A	100A	140A
Recommend discharge current	100A	100A	140A
Mechanical Characteristics			
Dimension W*D*H	530*183*557mm	530*183*865mm	980*272*894mm
Weight(N.W)	52KG	94KG	130KG
Communication			
RS485	PC control and monitor		
CAN	Inverter 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-M-R

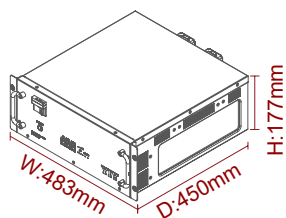
Rack Type LiFePO4 Battery Pack



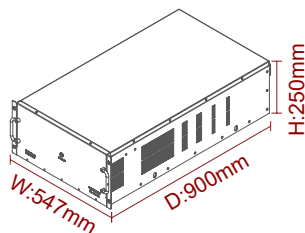
• Features

- Up to 5 layers can be stacked ,unified convergence.
- IP21 Protection.
- 51.2Vdc 14.33KWH /5.12KWH rated capacity.
- Unique automatic calibration active balancing technology BMS system.
- 51.2Vdc voltage output suitable for home energy storage system, small commercial scenarios 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.

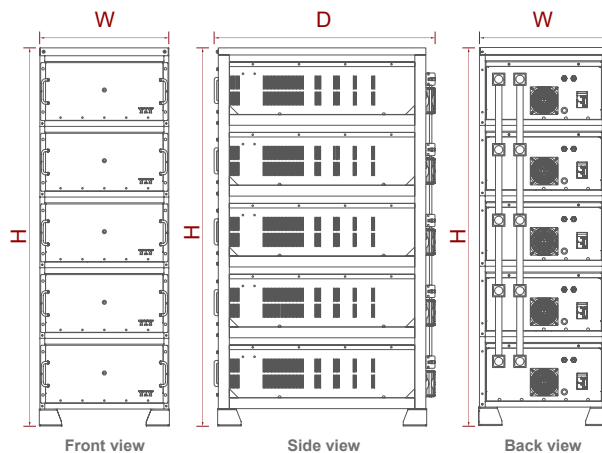
• Product Dimensions



LFP-M48100R1



LFP-M48280R1



Front view

Side view

Back view

5-Layer Rack Size:

Model	Size(W*D*H)
LFP-M48100R1	490*450*1286.5mm
LFP-M48280R1	561*904*1636.5mm


• Technical Parameter

LFP-M Rack type LiFePO4 Battery Pack		
Specifications		
Model	LFP-M48100R1	LFP-M48280R1
Rated Voltage	51.2V	
Rated Capacity	100AH	280Ah
Rated Energy	5.12KWH	14.33KWH
Cell Configuration	16S1P	16S1P
Battery Cell	3.2V 100AH	3.2V 280AH
Cycles	6000@70%SOH,90%DOD (25°C)	8000@70%SOH,90%DOD (25°C)
Standard Charge		
Operation temperature range @charging	0~60°C	
Rated charge voltage	56.8V	
Max charge voltage	58.4±0.4V	
Over charge protection	59.2V	
Allowed MAX charge current	100A	140A
Peak charge current	110A 3S	160A 2S
Rated charge current	50A	140A
Recommended charge method	CC-CV	
Standard Discharge		
Operation temperature range @discharging	-20~60°C	
Output Voltage Range	44.8~57.6V	
Discharge Cut-off voltage	42.4V	
Allowed MAX discharge current	110A	140A
Peak discharge current	110A 3S	160A 2S
Rated discharge current	100A	140A
Recommend discharge current	100A	140A
Mechanical Characteristics		
Dimension W*D*H	483*450*177mm	547*900*250mm
Weight(N.W)	52KG	130KG
Communication		
RS485	PC control and monitor	
CAN	Inverter 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

PV Combiner Box

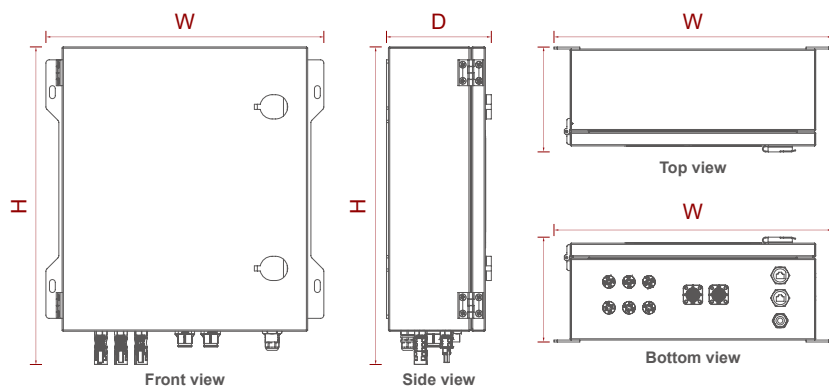
With Built-in MPPT



• Features

- IP65 protection grade, can be installed outdoor.
- Integrated MPPT modular.
- System Voltage 48 VDC.
- Number of PV inputs, 3 Strings & 6 Strings.
- Anti-backflow protection.
- Reverse connection protection.

• Product Dimensions



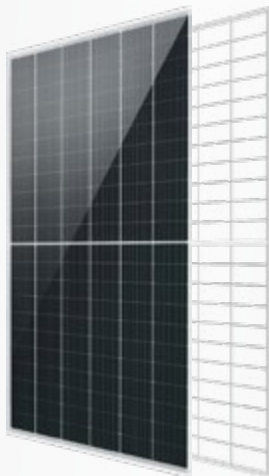
Model	Size(W*D*H)
60A	430*163*492mm
120A	520*163*778mm




• Technical Parameter

PV Combiner Box		
Model	60A	120A
Nominal System Voltage	48 VDC	
Max. Battery Current	60 Amp	120 Amp
Max. Solar Input Voltage	150V	
PV Array MPPT Voltage Range	(Bat. Voltage+5V)-115VDC	
Max.Input Power	3200 Watts	6400 Watts
Protections	Solar high voltage disconnect;Solar high voltage reconnect; Battery high voltage disconnect;Battery high voltage reconnect; High temperature disconnect;High temperature reconnect	
Charging Algorithm	3-Step	
Charging Stages	Bulk, Absorption, Float	
Charging Set Points	Absorption Stage	Float Stage
Flooded Battery	58.4V	54V
AGM/Gel Battery (Default)/Customized	56.4V	54V
Over-charging Voltage	60V	
Over-charging Comeback Voltage	58V	
Battery Defect Voltage	34V	
Battery Defect Comeback Voltage	36V	
Number Of DC Inputs	3 Strings	6 Strings
Number Of DC Outputs	1 (Support customization for output number)	
Protection Level	IP65	
Application	Solar PV System/Energy Storage System	
Communication	CAN / RS485	
DC Fuse	250VDC 50A	
Connection Type DC Input	PV MC4 Connector, IP65	
Over Current Protection	Yes	
Short Circuit Protection	Yes	
Surge Protection	Yes	

630W Solar Panel

210R Cell-16BB | Non-destructive Cut | Bifacial



-  Product Warranty
-  Performance Warranty (Monofacial)
-  Performance Warranty (Bifacial)

• 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

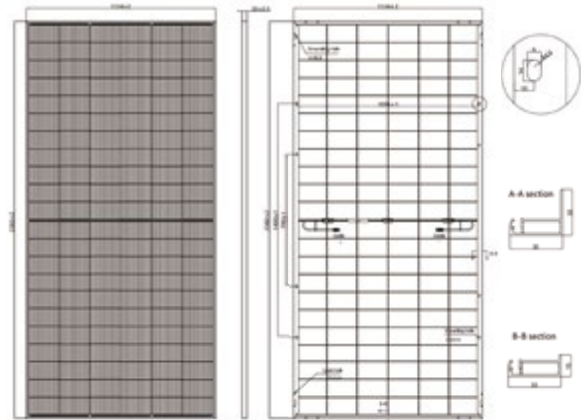
Electrical Specifications

Model Type	630G12RNHB-132	
Dimensions (L*W*H)	2382*1134*30mm	
Weight	31.8 kg(±3%)	
	STC	NOCT
Peak Power(Pmax)±3% (W)	630	473.8
Power Tolerance (W)	0~+5	/
Max.Power Voltage(Vmp) (V)	41.98	39.04
Max.Power Current(Imp) (A)	15.01	12.13
Open-circuit Voltage(Voc) (V)	48.71±3%	45.30
Short-circuit Current(Isc) (A)	16.03+3%	12.96
Operating Temperature (°C)	-40~+85	
Max. Series Fuse Rating (A)	30	
Max. System Voltage(DC) (V)	1500 (IEC)	

STC  Irradiance 1000W/m²  Cell Temperature 25°C AM=1.5
 NOCT  Irradiance 800W/m²  Cell Temperature 20°C AM=1.5
 Wind speed 1m/s

23.3%

Module Efficiency



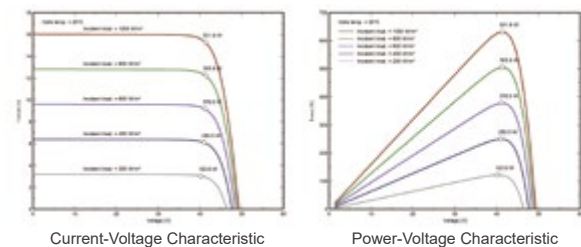
Mechanical Specifications

Solar Cells	N-Mono-182*105mm
Arrangement	Type-6*11*2
Front Glass	2.0mm tempered glass
Back Glass	2.0mm tempered glass
Frame	Composite frame
Junction Box	IP68, 3 diodes
Cables	4.0mm ² photovoltaic cables
Connectors	MC4 compatible/IP68
Maximum Load Capacity	Snow-5400Pa/Wind-2400Pa
Safety Rate	Class II (IEC)
Fire Rate	Class C (TUV)

Temperature Characteristics

Temperature Coefficient (Pmax)	δ[%/°C]	-0.30
Temperature Coefficient (Voc)	β[%/°C]	-0.25
Temperature Coefficient (Isc)	α[%/°C]	+0.05
Nominal Operating Cell Temperature	NMOT	45°C ±2°C

I-V & P-V Curves



Different Backside Power Gain

Power Gain	5%	15%	25%
Maximum Power(Pmax) (W)	661.5	724.5	787.5
Max.Power Voltage(Vmp) (V)	41.98	41.98	41.98
Max.Power Current(Imp) (A)	15.76	17.26	18.76
Open-circuit Voltage(Voc) (V)	48.71	48.71	48.71
Short-circuit Current(Isc) (A)	17.19	18.83	20.46

Packing Configuration

Package Weight & Size	1210Kg/pallet & 2410*1140*1265mm		
20'GP Container	2 pcs/carton	150 cartons/20'GP	300 pcs
40'HQ Container	37 pcs/pallet	20 pallets/40'HQ	740 pcs
13.5m Land Truck	37 pcs/pallet	22 pallets/truck	814 pcs

670W-700W Solar Panel

210M Half Cell , Topcon Technology



• 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

Electrical Performance

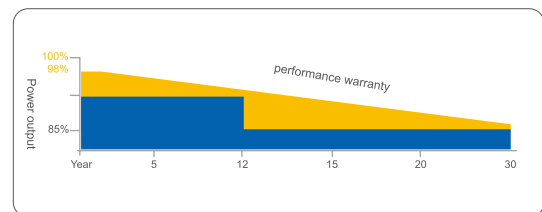
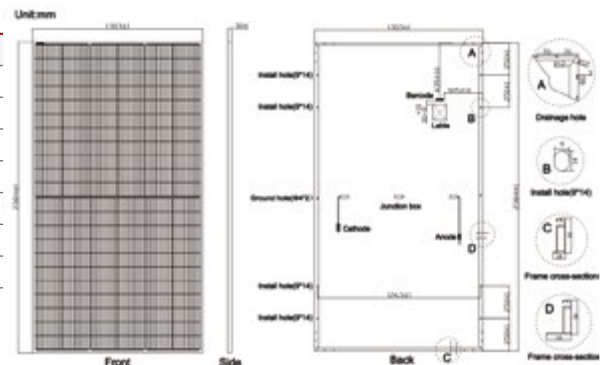
Model Type	670W-33MH		675W-33MH		680W-33MH		685W-33MH		690W-33MH		695W-33MH		700W-33MH	
Dimensions (L/W/H)	2384*1303*30													
	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Peak Power at STC (Pmax)	670	503	675	506	680	510	685	514	690	517.5	695	521	700	525
Maximum Power Voltage (Vmp)	39.52	36.35	39.72	36.54	39.92	36.73	40.12	36.91	40.32	37.09	40.52	37.28	40.72	37.46
Maximum Power Current (Imp)	16.96	13.57	17.00	13.60	17.04	13.63	17.08	13.66	17.12	13.69	17.16	13.73	17.2	13.76
Open Circuit Voltage (Voc)	47.42±3%	43.63±3%	47.66±3%	43.85±3%	47.90±3%	44.06±3%	48.14±3%	44.28±3%	48.38±3%	44.51±3%	48.62±3%	44.73±3%	48.86±3%	44.95±3%
Short Circuit Current (Isc)	17.72±3%	14.18±3%	17.76±3%	14.21±3%	17.80±3%	14.24±3%	17.84±3%	14.27±3%	17.88±3%	14.30±3%	17.93±3%	14.34±3%	17.97±3%	14.38±3%
Module Efficiency(%)	21.57		21.73		21.90		22.06		22.22		22.38		22.54	

Thermal Characteristics & Operating Conditions

Maximum System Voltage(V)	1500/1000V
Maximum Series Fuse Rating(A)	25A
Power Tolerance	0~+3W
Pmax Temperature Coefficients(W/°C)	-0.240%
Voc Temperature Coefficients(V/°C)	-0.220%
Iso Temperature Coefficients(A/°C)	+0.047%
NOCT Nominal Operating Cell Temperature(°C)	45±2°C
Operating and Storage Temperature(°C)	-40°C+85°C

Thermal Characteristics & Operating Conditions

Front Cover(Material /Thickness)	low-iron tempered glass / 3.2mm
Weight	33.90kg
Cell (Quantity/Type/Dimensions)	210*105 N Type Mono
No. of Cells	132(12*11)
Frame (Material)	Anodized Aluminium Alloy
Junction Box (Protection Degree)	IP67/IP68 3diodes
Cable (Length/Cross-Sectional Area)	4mm ² cable 35cm+mc4



Packaging Specifications

- 20FT container 5Packages/185PCS
- 40HQ container 18Packages/666PCS

STC ☀ Irradiance 1000W/m² 🌡 Cell Temperature 25°C AM=1.5
 NOTC ☀ Irradiance 800W/m² 🌡 Cell Temperature 20°C AM=1.5

YIY

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

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