







# LITHIUM BATTERY SOLAR ENERGY STORAGE SYSTEM CATALOGUE 2024

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Shanghai Pvsys New Energy Co.,Ltd is the professional manufacturer of solar panel,solar storage system in the market for more than 13 years.

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With our newest technology of Topcon,HJT, our customers can get higher efficiency with best performance through the lifespan of the solar panel.

Our solar storage system is with built in solar hybrid inverter, mppt controller and LifePO4 battery with BMS(Battery Management System), it can be used in Nopower areas and it also helps our cusotmer to save their energy bill.We are offering the customization of our solar system based on different needs from our customers. We blieve that "a suitable one for you!"

We have acquired the certificates of CE,IEC61215-1-1:2021,IEC61730-1:2018,IEC 61730-2:2018 and Fire safety Class.

With high quality solar products and best service, we have customers from Italy, Germany, Sweden, Spain, England, Dub ai, South Africa, New Zeland, Australian, Japan, Indonesia.etc more than 50 countries and areas.

We always seem "Quality is our life", without good quality, we can not go any further. We blieve with our effort, we will make the world better.



700KW in Japan



6KW in Tahiti



300KW in Japan



14.76KW in Sweden



13KW in Japan



39.6KW-15.12kWh in Iraq



## PERC MONOCRYSTALLINE SOLAR PANEL PVS-410W/420W-M10H



### Introduction:

Redefined the high-efficiency module series by integrating 182mm silicon wafers with PERC cell technologies. Our panel combined creative technology effectively and extremely improved the module efficiency and power output.

#### **Key Features:**

- Less mismatch to get more power
- Less power loss by minimizing the shading impact projectsby reduced BoS and improved ROI
- Competitive low light performance
- 3 times EL test to ensure best quality
- Anti-PID

- Ideal choice for utility and commercial scale

Current-Voltage Characteristic (I-V Curve)

• Outstanding reliability proven by PVEL for stringent Environment condition:Sand , acid, salt and hail stones, 2400Pa wind load and 5400Pa snow load

Electrical Characteristics: STC:Irradiance 1000 W/m<sup>2</sup> module temperature 25 C AM=1.5

Module Type	PVS-410W-M10H	PVS-420W-M10H	
Maximum Power (Pmp)	410W	420W	
Open Circuit Voltage (Voc)	37.50V	37.90V	
Short Circuit Current (Isc)	13.84A	13.97A	
Maximum Power Voltage (Vmp)	31.30V	31.70V	
Maximum Power Current (Imp)	13.10A	13.26A	
Module Efficiency at STC(%)	22.37%	22.53%	
Maximum System Voltage	1500	)VDC	
Maximum Series Fuse Rating	25A		
Power Tolerance	0~+3%		

#### **Mechanical Specifications:**

External Dimensions	1722x1134x30mm
Solar Cells	Mono 108cells
Front Glass	3.2mm tempered glass
Frame	Anodized aluminum alloy
Junction Box	IP68, 3 diodes
Output Cables	4.0mm2
Weight	22kg
Mechanical Load	Front side 5400Pa Rear side 2400Pa
Packing	36pcs/pallet, 936pcs/40HQ

#### Product warranty:

15 years guarantee on product material and workmanship 25 years guarantee on Liner power output

Cells temp. = 25°C 420.4 W 12 ent Irrad. = 800 W/m Incident Irrad. = 600 W/m cent [A] 252.4 Incident Irrad. = 400 W/m<sup>1</sup> 167.2 Incident Irrad. = 200 W/m<sup>2</sup> 81.9 W

20 Voltage [V]

PV module: PVSYS Energy, PVS-420W-M10H





#### Temperature ratings (STC):

Temperature Coefficient of Isc	+0.040%/°C
Temperature Coefficient of Voc	-0.270%/°C
Temperature Coefficient of Pmax	-0.350%/°C

## Quality Standard: IEC61215-1-1:2021, IEC61730-1:2018, IEC61730-2:2018, Fire safety Class C





## **N-TYPE MONOCRYSTALLINE SOLAR PANEL** PVS-430W/440W-M10H



### Introduction:

Redefined the high-efficiency module series by integrating 182mm silicon wafers with N-type cell technologies. Our panel combined creative technology effectively and extremely improved the module efficiency and power output.

#### **Key Features:**

- Less mismatch to get more power
- Less power loss by minimizing the shading impact projectsby reduced BoS and improved ROI
- Competitive low light performance
- 3 times EL test to ensure best quality
- Anti-PID

- Ideal choice for utility and commercial scale
- Outstanding reliability proven by PVEL for stringent Environment condition:Sand , acid, salt and hail stones, 2400Pa wind load and 5400Pa snow load

Electrical Characteristics: STC:Irradiance 1000 W/m<sup>2</sup> module temperature 25 C AM=1.5

Module Type	PVS-430W-M10H	PVS-440W-M10H	
Maximum Power (Pmp)	430W	440W	
Open Circuit Voltage (Voc)	38.16V	39.57V	
Short Circuit Current (Isc)	13.65A	13.80A	
Maximum Power Voltage (Vmp)	32.58V	32.99V	
Maximum Power Current (Imp)	13.20A	13.34A	
Module Efficiency at STC(%)	21.52%	22.02%	
Maximum System Voltage	1500	)VDC	
Maximum Series Fuse Rating	25A		
Power Tolerance	0~+3%		

#### **Mechanical Specifications:**

External Dimensions	1762x1134x30mm	
Solar Cells	Mono 108cells	
Front Glass	3.2mm tempered glass	
Frame	Anodized aluminum alloy	
Junction Box	IP68, 3 diodes	
Output Cables	4.0mm2	
Weight	22kg	
Mechanical Load	Front side 5400Pa Rear side 2400Pa	
Packing	36pcs/pallet, 936pcs/40HQ	

#### Product warranty:

15 years guarantee on product material and workmanship 30 years guarantee on Liner power output

Cells temp. = 25°C 42.5 W 12 Incident Irrad. = 800 W/m ent Irrad. = 600 W/n Ξ 260 6

Incident Irrad. = 400 W/m

Incident Irrad. = 200 W/m<sup>3</sup>

Current-Voltage Characteristic (I-V Curve)



20 Voltage [V]

#### Temperature ratings (STC):

Temperature Coefficient of Isc	+0.048%/°C
Temperature Coefficient of Voc	-0.270%/°C
Temperature Coefficient of Pmax	-0.350%/°C

# PV module: PVSYS Energy, PVS-440W-M10H

170.7 V

82.6 W





## PERC MONOCRYSTALLINE SOLAR PANEL PVS-545W/550W-M10H



## Introduction:

Redefined the high-efficiency module series by integrating 182mm silicon wafers with PERC cell technologies. Our panel combined creative technology effectively and extremely improved the module efficiency and power output.

#### **Key Features:**

- Less mismatch to get more power
- Less power loss by minimizing the shading impact projectsby reduced BoS and improved ROI
- Competitive low light performance
- 3 times EL test to ensure best quality
- Anti-PID

- Ideal choice for utility and commercial scale

Current-Voltage Characteristic (I-V Curve)

• Outstanding reliability proven by PVEL for stringent Environment condition:Sand , acid, salt and hail stones, 2400Pa wind load and 5400Pa snow load

Electrical Characteristics: STC:Irradiance 1000 W/m<sup>2</sup> module temperature 25 C AM=1.5

Module Type	PVS-545W-M10H	PVS-550W-M10H	
Maximum Power (Pmp)	545W	550W	
Open Circuit Voltage (Voc)	49.52V	49.62V	
Short Circuit Current (Isc)	13.94A	14.03A	
Maximum Power Voltage (Vmp)	40.80V	40.90V	
Maximum Power Current (Imp)	13.36A	13.45A	
Module Efficiency at STC(%)	21.2% 21.4%		
Maximum System Voltage	1500VDC		
Maximum Series Fuse Rating	30A		
Power Tolerance	0~+3%		

### **Mechanical Specifications:**

External Dimensions	2279x1134x35 mm
Solar Cells	Mono 144cells(6*24)
Front Glass	3.2mm tempered glass
Frame	Anodized aluminum alloy
Junction Box	IP68, 3 diodes
Output Cables	4.0mm2
Weight	29.4kg
Mechanical Load	Front side 5400Pa Rear side 2400Pa
Packing	31pcs/pallet, 620pcs/40HQ

#### Product warranty:

15 years guarantee on product material and workmanship 25 years guarantee on Liner power output



PV module: PVSYS Energy, PVS-550W-M10H



#### Temperature ratings (STC):

Temperature Coefficient of Isc	+0.048%/°C
Temperature Coefficient of Voc	-0.270%/°C
Temperature Coefficient of Pmax	-0.290%/°C



## **HPBC MONOCRYSTALLINE SOLAR PANEL** PVS-590W/600W-M10HDT

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### Introduction:

Redefined the high-efficiency module series by integrating 182mm silicon wafers with HPBC cell technologies. Our panel combined creative technology effectively and extremely improved the module efficiency and power output.

#### **Key Features:**

- Less mismatch to get more power
- Less power loss by minimizing the shading impact projectsby reduced BoS and improved ROI
- Competitive low light performance
- 3 times EL test to ensure best quality
- Anti-PID

- Ideal choice for utility and commercial scale
- Outstanding reliability proven by PVEL for stringent Environment condition:Sand , acid, salt and hail stones, 2400Pa wind load and 5400Pa snow load

Electrical Characteristics: STC:Irradiance 1000 W/m<sup>2</sup> module temperature 25 C AM=1.5

Module Type	PVS-590W-M10HDT	PVS-600W-M10HDT	
Maximum Power (Pmp)	585W	600W	
Open Circuit Voltage (Voc)	52.49V	52.79V	
Short Circuit Current (Isc)	14.34A	14.47A	
Maximum Power Voltage (Vmp)	44.38V	44.68V	
Maximum Power Current (Imp)	13.30A	13.43A	
Module Efficiency at STC(%)	22.8% 23.2%		
Maximum System Voltage	1500VDC		
Maximum Series Fuse Rating	25A		
Power Tolerance	0~+3%		

#### **Mechanical Specifications:**

External Dimensions	2278x1134x35 mm	
Solar Cells	Mono 144cells(6*24)	
Front Glass	3.2mm tempered glass	
Frame	Anodized aluminum alloy	
Junction Box	IP68, 3 diodes	
Output Cables	4.0mm2	
Weight	27.5kg	
Mechanical Load	Front side 5400Pa Rear side 2400Pa	
Packing	31pcs/pallet, 620pcs/40HQ	

#### Product warranty:

15 years guarantee on product material and workmanship 25 years guarantee on Liner power output

Current-Voltage Characteristic (I-V Curve)





#### Temperature ratings (STC):

Temperature Coefficient of Isc	+0.050%/°C
Temperature Coefficient of Voc	-0.230%/°C
Temperature Coefficient of Pmax	-0.290%/°C



## HJT MONOCRYSTALLINE SOLAR PANEL PVS-695W/700W-M12H



### Introduction:

Redefined the high-efficiency module series by integrating 210mm silicon wafers with HJT cell technologies. Our panel combined creative technology effectively and extremely improved the module efficiency and power output.

#### **Key Features:**

- Less mismatch to get more power
- Less power loss by minimizing the shading impact projectsby reduced BoS and improved ROI
- Competitive low light performance
- 3 times EL test to ensure best quality
- Anti-PID

- Ideal choice for utility and commercial scale

Current-Voltage Characteristic (I-V Curve)

• Outstanding reliability proven by PVEL for stringent Environment condition:Sand , acid, salt and hail stones, 2400Pa wind load and 5400Pa snow load

Electrical Characteristics: STC:Irradiance 1000 W/m<sup>2</sup> module temperature 25 C AM=1.5

Module Type	PVS-695W-M12H	PVS-700W-M12H
Maximum Power (Pmp)	695W	700W
Open Circuit Voltage (Voc)	49.98V	50.13V
Short Circuit Current (Isc)	17.37A	17.43A
Maximum Power Voltage (Vmp)	41.95V	42.10V
Maximum Power Current (Imp)	16.57A	16.63A
Module Efficiency at STC(%)	22.37%	22.53%
Maximum System Voltage	1500	)VDC
Maximum Series Fuse Rating	35A	
Power Tolerance	0~+	-3%

#### **Mechanical Specifications:**

External Dimensions	2385x1303x35 mm
Solar Cells	Mono 132cells
Front Glass	3.2mm tempered glass
Frame	Anodized aluminum alloy
Junction Box	IP68, 3 diodes
Output Cables	4.0mm2
Weight	38.7kg
Mechanical Load	Front side 5400Pa Rear side 2400Pa
Packing	31pcs/pallet, 558pcs/40HQ

#### Product warranty:

15 years guarantee on product material and workmanship 30 years guarantee on Liner power output

PV module: PVSYS Energy, PVS-700W-M12H Cells temp. = 25°C 700.2 W Irrad = 800 W/r ncident Irrad. = 600 W/m 416.2 ient Irrad. = 400 W/m<sup>1</sup> 274.1 Incident Irrad. = 200 W/m<sup>2</sup> 133.4 W 30 Voltage [V]



#### Temperature ratings (STC):

Temperature Coefficient of Isc	+0.040%/°C
Temperature Coefficient of Voc	-0.240%/°C
Temperature Coefficient of Pmax	-0.260%/°C





## High frequency PST series



#### Product introduction:

The PST series inverter control integrated is a pure shine wave photovoltaic off-grid power generation equipment that integrates the functions of a photovoltaic controller, a mains charger and a high-frequenc inverter. The battery is charged through the controller or mains charger, and the battery supplies power to the inverter, which them supplies AC power to the AC load.

- Small size and light weight
- High efficiency
- Pure sine wave inverter
- Selectable voltage input range, inverter output voltage can be used for home and PC
- The priority of AC, solar battery charging can be set through LCD settings
- Compatible with mains voltage or generator power supply
- Auto restart function, can be not guarded
- Overload and short circuit protection

Model	PST48-3K	PST48-5K				
Output voltage(kVA)	3	5				
	Battery type(Option)					
Rated voltage(VDC) 48						
Under voltage protection point(VDC)	Lead-acid battery 42, lithium battery 45(default setting)					
Under voltage recovery point(VDC)	Lead-acid battery 51.2, lithium	battery 50(default setting)				
Over voltage protection point(VDC)	lead-acid battery 58, lithium b	attery 53(default setting)				
Over voltage recovery point(VDC)	Lead-acid battery 56, lithium b	attery 51(default setting)				
	PV input					
PV input power(Wp)	3000					
Way of working	MPPT	-				
Starting voltage(VDC)	>66					
Voltage range(VDC)	70-25	6				
Maximum open circuit voltage(VDC)	256					
Float voltage(VDC)	Lithium bat	tery 54				
Equalizing Voltage(VDC)	Lead-acid battery 55/lit	hium battery 52.2				
	Mains bypass (optional)					
Input voltage allowable range(VAC)	220±15	%				
Input frequency(Hz)	50/60±	1%				
	Mains charging (optional)					
Mains charging current(A) 10						
	AC output					
Output waveform	L+N pure sin	e wave				
Output voltage(VAC)	220±3	% 				
Output frequency(Hz)						
Output waveform distorition(THD)	≤5%(linear load)					
Inverter efficiency	≥1%					
Overload capacity	110%1n	nin				
Display method	LCD+LED/	/LED				
Protective function	under voltage, over voltage, over	load, short circuit, overheat				
	Environment					
Protection class	IP20					
Altitude(m)	≤5000 (1% derating for ever	y 100m above 1000m)				
Allowable relative humidity	<95% Non-co	ndensing				
Ambient temperature(°C)	-10/+4	0				
Noise(dB)	≤50					
	Communication					
Communication method	CAN,232,485, W	/i-Fi, GPRS				
Max. Size(D*W*H)mm	130*400*520	130*360*580				
Weight(kg)	8 9					





## **PV INVERTER&CONTROLLER INTEGRATED**

## Single-phase power frequency PSA Series



### Product introduction:

The photovoltaic control and inverter integrated is a new type of photovoltaic power generation device that organically combines a photovoltaic charge controller and an inverter.

It consists of a charge controller, an inverter and a protection circuit, and the output is a pure sine wave voltage. It has the advantages of small total installation space, few connection lines, safety and reliability. Photovoltaic charge controller is a high-performance step-down device that uses MPPT (Maximum Power Point Tracking) algorithm to make full use of solar photovoltaic energy. The PV input voltage range is wide, which can charge a variety of batteries, and the three-stage charging effectively improves the life of the battery.

- MPPT solar charging controller, which can make the most use of solar photovoltaic
- Three-stage charging, effectively prolonging the life of the battery
- It has the functions of power generate record, Event recording, Time switch, Auto sleep function
- Photovoltaic priority or utillty power priority mode can be set by users
- Pure sine wave output&completely protection
- Low frequency circuit design, good system reliability, low breakdown rates and long life time
- Higher ability to anti-attack from the loads
- Supporting city power/ Diesel generator input port(Optional)
- AC charger function(Optional)

Series	PSA96	PSA192/220		
Output power(KVA)	6/8	6/10/15/20/25/30		
	Battery			
Rated voltage(VDC)	96	192/220		
	PV Input			
Maximum input power(KWP)	6	12/24		
Maximum charge current	50/100			
Start voltage(VDC)	120	270		
Mppt voltage range(VDC)	110-280	260-450		
Maximum open circuit voltage(VDC)	300	480		
	AC bypass(Optional)			
Allowable input voltage range(VAC)	220±15%/110±5% (Other inp	ut voltage can be customized		
Input frequency(Hz)	50/60	D±3%		
AC charger	Opti	onal		
AC Output				
Output waveform	Pure Sine Wave			
Output voltage(VAC)	220±1%/110±1% (Other output voltage can be customized)			
Output Frequency(HZ)	50/60±1%			
Output wave form distortion rate(THD)	≤2%(Liner Load)			
Convert Efficiency (80% Resistive load)	≥85°C			
Current Peak Factor	3:1			
Overload Ability	105-110%,600Seconds;110-125%,60Seconds;>125%,1Second			
Display method	LCD+	-LED		
Protection	Input reverse, low voltage, over voltage protection; O	utput overload, short circuit , over hating protection		
Communication Function	Opti	onal		
	Surroundings			
Protective level	IP2	20		
Applied Altitude(m)	≤5000 (above 1000meters,rated po	ower derating 1% every 100meters		
Humidity	<95% Non-ce	ondensation		
Environment temperature(°C)	-10'	~50		
Noise(dB)	Sec. 201	50		
	Appearance			
Dimensions(D*W*H)mm	640*305*770	700*405*980		
Weight(KG)	80-85	55-155		





**PV INVERTER&CONTROLLER INTEGRATED** 

## Three phase power frequency PSA Series



#### Product introduction:

The solar photovoltaic control inverter integrated power supply is a new generation o dedicated power supply for new energy power generation systems. It is mainly designed and manufactured according to the characteristics and requirements of new energy power generation systems, and is suitable for the high quality and high reliability requirements of solar photvoltaic power generation systems for power supply equipment. The system uses photovoltaic cells to convert light energy into electrical energy, and charges the battery through the charging circuit. At the same time, the battery supplies power to the inverter, and the inverter provides AC power to the AC load.

- · Advanced DSP digital control technology can effectively improve product performance and system reliability
- Excellent industrial environment protection pefformance
- Perfect protection function to provide safe and reliable power protection for the load
- Intelligent battery management function can effectively detect whether the battery is good or bad, prolong the battery life
- Economical and safe mode operation can make the whole machine more efficient than 98%
- High-performance large-screen LCD interface, intuitive and convenient operation
- Powerful communication interface and network remote monitoring,etc
- A wealth of optional accessories, which can be flexibly configured according to actual needs

Series	PSA					
Output power(KVA)	10	20	30	40	50	60
			AC Input			
Phase			Three ph	ase+N+G		
Volt range(VAC)			380/400/	415±20%		
Frequency (Hz)			50/60	0±5%		
Soft-start			0~1009	% 5sec		
			PV Input			
MPPT volt range (VDC)			230-	-450		
Max.Open circuit volt(VDC)			48	30		
Input paths			1/	/2		
Max.Input power(kWp)			12/	/24		
Full charge protection volt		The battery	voltage can be set acc	ording to the actual c	onfiguration	
Charging voltage(VDC)			216/243/27	70(Settable)		
	DC					
Nominal volt(VDC)	192/220/240					
Inverter						
Phase	Three phase+N+G					
Nominal volt(VAC)	380/400/415					
Nominal frequency(Hz)		50±0.5 (Powered on by battery)				
Frequency stability(Hz)		<±0.5 (Battery mode)				
Peak factor	3:1					
Output wave		Pure sine wave				
THD		Line load<3%; Non-line load<5%				
Voltage transient		<±3% (steady state load), <± 5% (dynamic load)				
Over-load ability			125% 10mins	s, 150% 1min		
			System			
Communication interface		RS	485(RS232, Network re	mote monitoring Opt	ion)	
Interface and instructions		7-inch color	touch screen, LED statu	is indication, dry contained	acts(optional)	
Operating environment	Temperature	e:0-40°C; Humidity:209	%~90% (non-condensin	g);<1000 meters (pow	ver decreases by 1% pe	r 100 meters
Cooling method			Forced ve	entilation		
Noise(dB)	40-65					
Size(D*W*H)mm		600*600*1600			600*800*2000	





## **OFF GRID INVERTER**

## Single-phase power frequency PSI Series



#### **Product introduction:**

PSI series inverter power supply is the fourth generation power frequency intelligent inverter power supply developed with new digital technology. The system adopts SPWM pulse width modulation technology, IGBT power module and output isolation transformer, so that the output of the inverter power supply is a pure sine wave power supply with stable frequency and voltage regulation, filtering noise and low distortion. It has the characteristics of strong load capacity, good load compatibility, and wide DC input voltage range, which greatly meets the nees of various electrical environments. The perfect protection device improves the stability of the system operation; the user-friendly LCD liquid crystal interface design enables man-machine communication zero-distance.

- Pure sine wave output, sufficient power output
- Protection function: output overload protection; output short circuit protection; input over/under voltage, over temperature protection and a series of alarm and protection
- Power frequency circuit design, good system stability, low failure rate and long life
- Good translent response, low waveform distortion, high inverter efficiency, stable output voltage, and excellent EMI indicators; this series of
  products have strong load resistance and load capacity. In addition to driving various resistive loads, they can also load all kinds of inductive
  devices, such as motors, air conditioners, electric drills, etc; it can drive almost all loads.
- Intelligent empty load automatic sleep function

Series	PSI96 PSI220			
Output power (KVA)	6/8	6/10/15/20/25/30		
Battery				
Rated voltage (VDC)	96	220		
Under voltage protection value (VDC)	86.4	194.4		
Under voltage recovery value (VDC)	104	234		
Over voltage protection value (VDC)	124	279		
Over voltage recovery value (VDC)	120	270		
	Mains bypass (optional)			
Input voltage allowable range (VAC)	220±	-15%		
Input frequency (Hz)	50/6	0±3%		
Mains charging	Opti	onal		
	AC output			
Output waveform	Pure sir	ne wave		
Output voltage (VAC)	220	±1%		
Output frequency (Hz)	50/60±1%			
Output waveform distortion rate (THD)	≤2% (Liner load)			
Inverter efficiency	≥85%			
Current peak factor	3:1			
Overload capacity	105%-110%; 10min;110%-125%,1min>125%,1s			
Display method	LCD+LED			
Protective function	Input reverse connection, input undervoltage, overvo	ltage, overload, short circuit, overheating portection		
Communication function	RS485/GPR	S (Optional)		
	Environment			
Protection level	IP	20		
Operating altitude (m)	≤5000 (1% derating for e	ver 100m above 1000m)		
Humidity	<95% No cc	ondensation		
Environment temperature (°C)	-10^	2+40		
Noise (dB)	Sector 2015	50		
	Volume and weight			
Dimensions(D*W*H) mm	645*305*770	645*305*770/700*405*980		
Weight (KG)	75-85	55-100/135-155		





## **OFF GRID INVERTER**

### PSI Series three phases inverter



#### Product introduction:

This series of three-phases off-grid inverters are high-efficiency and high-performance three-in-three-out inverter products. They are new generation dedicated power supplies for new energy power generation systems. They integrate digitization, informatization and networking. They have powerful information acquisition system, signal processing system, detection system and perfect protection system. They have wide input DC voltage, stable output voltage and frequency, which are mainly used in photovoltaic power stations, wind power stations, wind, light, oil, storage complementary power generation systems, household photovoltaic power supply system and other fields, especially places that require three-phase four-wire AC power.

- Advanced DSP digital control technology effectively improve the product feature and system stability
- Excellent industrial ambient protection performance, applicable to all kinds of working environment
- · High performance big LCD screen, smart boot prompts and operation error alert function, operate visually and easily
- Powerful communication interfaces and network remote monitoring
- Wealth of optionas can be flexibly configured according to the actual needs
- Independent airtight duct, optimized ventilation design, internal modular installation, all devices required maintenance can be maintained from the front side. Machine can be installed three faces against the wall or parallel

Series			PS	61		
Output power(KVA)	10/15/20/30	40/50/60	80/100/120	160/200	250/300	400
Rated DC voltage(VDC)	220/36	50/384	360,	/384	38	<u>.</u> .4
Phase			Three pha	ses+N+G		
Nominal voltage(VAC)			380/	400		
Nominal frequency(Hz)			50/	60		
Current peak factor			3:	1		
Output waveform			Pure sin	e wave		
THD			Liner load<3%; No	n-liner load < 5%		
Dynamic load voltage transients		<±5%				
Load voltage		<±3% (Balanced load); <±5% (unbalanced load)				
Overload capacity	125% 10mins, 150% 1min					
Inverter efficiency, load 100%		>92%				
Computer communication interface		RS232 (485 Network remote monitoring optional)				
Operating temperature(°C)		10~40				
Humidity		20%~90%				
Altitude	≤5000 (above 1000 meters. rated power derating 1% every 100 meters)					
Cooling		Forced cool air				
Noise(dB)	45~65 (1m from the machine)					
Weight(KG)	220-390	490-780	850-1050	1200-1400	1600-1800	2100
Dimension(D*W*H) mm	600*600*1350	600*800*1350	800*805*1800	900*1005*1800	1100*1150*1920	1100*1250*1920





## **ENERGY STORAGE SYSTEM**

## PPCS Energy Storage Converter



#### Product introduction:

PPCS50/100/150/250K energy storage converter is a product developed for industrial and commercial energy storage applications, which can meet the diversifiled needs of users and provide asistance for comprehensive energy services. PPCS500/630K energy storage converter can be applied to various cenario such as power generation side and power grid side, and can quickly realize AC/DC bidirectional energy conversion. The multi branch input technology can reduce the battery parallel numbers, reduce battery circulation, and extend the service life of battery packs.

- Modular design. The product adopts the modlar design concept. Each module can operate independently, providing n+1 redundancy and improving system stability. The capacity can be expanded according to the users' need.
- Intelligent matching. The product is suitable for various types of batteries. The system can realize different charging and discharging strategies according to different battery types, to prolong the battery life span.
- Distributed in demand. The energy dispatching can be regulated, and the user can change the charging and discharging logic according to the power consumption policies in different periods of time in the region.
- Independent regulation of active and reactive power. The product can realize independent regulation of active and reactive power, meet different load requirements, ensure power factor and avoid fines.
- On/Off grid seamless switching. Realize seamless switching between grid and off grid connection, ensure the continuity of power consumption, and avoid economic losses caused by power failure.

Model	PPCS 50KW	PPCS 100KW	PPCS 150KW	PPCS 250KW	PPCS 500KW	PPCS 630KW
DC side parameters						
DC voltage range(V)		500-850			600-900	
Maximum DC current(A)	110	220	330	550	873	958
Battery branches number		:	1		1/2/4/8	1
		AC grid connec	tion parameters			
Rated output power(KW)	50	100	150	250	500	630
Rated grid voltage(V)		400±	±15%		380±	15%
Rated grid frequency(Hz)	50/60±2.5					
AC rated current(A)	72	144	216	360	727	916
	System parameters					
Wiring mode		Three phases four wires				
Isolation		Power frequency isolation				
Cooling			Forced ai	r cooling		
Temperature range (°C)	-20~50					
Protection level			IP	20		
Size(D*W*H) mm	800*800*2160 800*1200*2160 800*1100*2260			00*2260		
		Commu	inication			
Upper computer communication mode	ModBus TCP/IP					
Communication interface	Net port, RS485, CAN					





## **ENERGY STORAGE SYSTEM**

## PPG2 PV&Battery energy storage integrated machine



#### **Product introduction:**

PPG2 optical storage integrated machine products integrate energy storag converters and photovoltaic inverters, which can efficiently utilize photovoltaic power generation, reduce the workload of installation sites, reduce the integration difficulty of integrate for supplier, and meet the storage integration application needs of small and medium-sized microgrids and industrial and commercial buildings.

- Intelligent switching operation strategy. It can be directly connected to the photovoltaic panel for charging, eliminating the loss in the power transmission process and improving the stability of the output current; it can also be applied to the photovoltaic storage integrated machine to convert the photovoltaic output current into the available electricity of the grid, improving economic benefits.
- Flexible configuration. The maximum power that can be connected to twice the equipment capacity, up to 200KW, improves the flexibility of product configuration in areas without electricity.
- MPPT photovoltaic maximum power tracking. It can detect the power generation voltage of the photovoltaic panel in real time, so that the system can charge the battery with the maximum power output and increase the power generation of the system.
- Optional outdoor version. It can effectively reduce the construction cost in remote areas. IP54 protection grade, can perfectly deal with various types of outdoor weather

Model	50KW	100KW		
Battery side parameters				
DC voltage range (V)	250-520 (	Rated 400)		
DC maximum current (A)	150	300		
	PV side parameters			
PV voltage range (V)	520	-900		
Maximum PV current (A)	110	220		
Maximum PV power (KW)	100	200		
AC grid connection parameters				
Rated grid voltage (V)	400±15%			
Grid frequency range (Hz)	50/60±2.5			
System parameters				
Isolation method	Power frequency isolation			
Cooling method	forced air cooling			
Protection class	IP20/IP54			
Dimensions (D*W*H) mm	800*800*2160 / 800*1000*2160 (outdoor version)			
	Communication method			
Host computer communication method	ModBus	C TCP/IP		
Communication interface	Ethemet por	t, RS485, CAN		





## **ENERGY STORAGE SYSTEM**

## PDS DC Converter



#### Product introduction:

The PDS400KW DC-DC converter converts the direct current of the photovoltaic module array into direct current that can charge the battery. Adopt single-stage topology, wide photovoltaic voltage input range with 250-650V; output voltage range to battery with 600-900V with MPPT photovoltaic maximum power tracking function.

#### Performance characteristics

For the DC conversion protection strategy, it meets the relevant standards of the photovoltaic industry, and has but is not limited to the following protection functions:

- PV input overvoltage protection
- PV input under-voltage protection
- Output overload protection
- Output current control
- Output short circuit protection
- DC reverse protection

At the same time, according to the BMS requirements of different batteries, the battery side charging status is protected according to its control strategy, including overcharge, overdischarge, capacity protection, etc.

Model	PDS
Rated power (KW)	400
Low voltage side co	nnected to PV input
HVDC bus voltage (V)	750 (Low side voltage+40~850)
HVDC bus current (A)	67*8 (maximum 100*8)
DC bus power (KW)	50*8
Low voltage charge and discharge voltage (V)	500 (250-840)
Low voltage charge and discharge current (A)	100*8 (maximum 120*8)
The low voltage side is con	nected to the battery input
HVDC bus voltage (V)	750 (Low side voltage+40~850)
HVDC bus current (A)	67*8 (maximum 100*8)
DC bus power (KW)	50*8
Low voltage charge and discharge voltage (V)	500 (250-840)
Low voltage charge and discharge current (A)	100*8 (maximum 120*8)
System p	arameters
Protection	Protection for over temperature, overload, emergency stop, fan failure
Maximum efficiency (refer to the efficiency curve)	98.6%
Isolation	No isolation
Refrigeration	Forced air cooling
Noise	≤ 70dB
Communication method	RS485/CAN/Ethernet network port
Operating temperature (°C)	-20~50 (Derating above 45)
Humidity	0~95% (No condensation)
Altitude (m)	3000
Protection class	IP20
Size (D*W*H) mm	800*1100*2060
Weight (KG)	600





## **ENERGY STORAGE SYSTEM**

## PSWD on-grid and off grid switch cabinet system



#### **Product introduction:**

The PSWD on-grid and off-grid switch cabinet system consists of AC power distribution cabinet, photovoltaic inverter (optional), local load and energy storage converter to form a set of AC micro-grid system. The microgrid switching cabinet can work in different modes as required.

The PSWD on-grid and off-grid switching cabinet plays a central role in the whole system, with the characteristics of energy dispatch management, fast on-grid and off-grid switching and convenient maintenance. At the same time, it has perfect protection functions, such as over temperature, AC over and under voltage, AC reverse sequence, emergency shutdown, fan failure, output overload, etc., to meet the requirements of off-grid operation. The micro-grid switching cabinet includes on road power grid input.

When the thyristor of the micro-grid switching cabinet breaks down, the bypass switch can be closed for emergency power supply. Note: the bypass switch and the grid switch cannot be closed at the same time. The microgrid switching cabinet includes a PCS switch, which is specially used to connect the energy storage converter. It is equipped with four load switches at most, and can be optionally connected to photovoltaic grid-connected inverters, wind turbines, diesel generators and local loads. The external communication of the switching cabinet includes RS485, and the Ethernet can exchange data with the background PC to form an energy management system, which can dispatch and manage energy and switch between on-grid and off-grid.

Model	PSWD-800KW
Rated power (KW)	800400
Rated voltage (V)	-25%~15%
Input voltage range	-25%~15%
Output voltage range	1155
Rated input current (A)	1270 (1.1 times)
Maximum input current (A)	50/60
Rated frequency (Hz)	47~52/57~62
On and off grid switching time	<20ms
Overall efficiency	99.5% (full load)
Protection class	IP20
Design life	10 years
Cooling method	air cooling
Grid access	1 road
PCS/PV access	1 road (not more than 500KW)
Load access	4 roads
Maximum load switching power (KW)	300 (RCD load, pure capacitive or inductive load is less than 100)
Wiring	Three phases four wires system
Protection	Protection for over temperature, AC over and under voltage, AC reverse sequence emergency shutdown, fan failure, output overload, etc.
Host computer communication method	ModBus TCO/IP protocol
Communication Interface	Ethernet port/ RS485
Cabinet size (D*W*H) mm	800*800*2160
Noise	70dB
Temperature range (°C)	-20~45
Altitude (m)	3000
Humidity	0-95%
Weight (KG)	300

#### Introduction of PSTS Microgrid Controller:

The micro-grid controller (PSTS) consists of four parts: fast switching, high-precision detection, login control, and external communication. It can automatically complete on-off-grid switching and on-grid synchronization. The active switching and off-grid time is 0ms, the passive switching time is 20ms (typical), and the switching can be realized within 5ms through customization (at this time, the system mainly guarantees the power supply waveform).

Project	PSTS-100KW	PSTS-200KW	PSTS-300KW	PSTS-800KW
Input voltage range (VAC)	340-460	340-460	340-460	340-460
Rated output voltage(V)	400	400	400	400
Rated output current (A)	153	306	459	1215
Communication method	CAN			
Size (D*W*H) mm	220*585*482 800*800*2160			800*800*2160





## SOLAR CHARGING CONTROLLER

## **MPPT** Controller



#### **Product introduction:**

MPPT sereis photovoltaic controller is a high-performance step-down solar power generation equipment, which adopts MPPT algorithm to make full use of solar photovoltaic energy. The PV input voltage rangeis wide, which can charge a variety of batteries, and the three-stage charging effectively improves the life of the battery. The modular design of the controller allows multiple units to be used in parallel, allowing customers to configure freely and flexibly.

#### **Performance characteristics**

Memory function, save the settings, date and time, power generation etc function

Charging mode: three-stage charging (constant current, constant voltage, float), effectively extending the battery life

LCD and LED display various parameters, such as model, PV input voltage, the battery type, charging voltage, charging current, charging power, working condition etc

Photovoltaic input adopts MPPT tracking technology

Can be operated in parallel, expanding the range of use and meeting the charging requirements under high power Available for communication power supply field

Model	PSM48	PSM96	
Rated voltage (VDC)	48	96	
Over voltage protection point (VDC)	62	124	
Over voltage resumption point (VDC)	60	120	
Float voltage (VDC)	54	108	
Bulk voltage (VDC)	56.8	113.6	
Maximum charging current (A)	60/120	(50/100)/(150/200)	
Charging mode	Three-stage; constant current (	MPPT), constant voltage, float	
Maximum input power (kWp)	3.4/6.8	5.7/11.4/17.1/22.8	
Starting voltage (VDC)	60	120	
MPPT voltage range (VDC)	50-150	110-280	
Maximum open-circuit voltage(VDC)	170 300		
Maximum efficiency	>98%		
MPPT efficiency	>99%		
Noise (dB)	<55		
Display	LCD+LED		
Communication	RS485(optional)		
Working temperature (°C)	-10~+40		
Humidit	0~95% (Non-condensing)		
Altitude(m)	≤5000m, above 1000m derating		
Protection level	IP:	20	
Dimension (D*W*H) mm	225*475*640(Wall-mounted type)	(225*475*640)/(530*530*1150) (vertical)	
Weight (KG)	13-16	13-50	
Protection	PV array reverse polarity protection; reverse bar over-discharge protection; output overload	ttery proterction;battery overcharge protection protection; output short circuit protection	





## **SOLAR CHARGING CONTROLLER**

## **MPPT** Controller



### **Product introduction:**

MPPT sereis photovoltaic controller is a high-performance step-down solar power generation equipment, which adopts MPPT algorithm to make full use of solar photovoltaic energy. The PV input voltage rangeis wide, which can charge a variety of batteries, and the three-stage charging effectively improves the life of the battery. The modular design of the controller allows multiple units to be used in parallel, allowing customers to configure freely and flexibly.

#### **Performance characteristics**

In order to increase reliability, multiple protections are used

Input over voltage protection

Input under voltage protection

Output over voltage protection

Output over current protection

Stand-alone two-phase current unbalance protection Single-phase output over current hardware protection

• Display mode can be LED light or LCD screen

- Support multi-module parallel work
- Relevant parameters can be set freely
- A controller cabinet is optional, and control cabinets of different specifications can be selected according to the required charging power. The control cabinet comes standard with photovoltaic input circuit beakers, battery circuit breakers, fuses, etc.

Series	PSM192	PSM220	PSM240	PSM360	PSM384
Rated volt(VDC)	192	220	240	360	384
Float charging volt(VDC)	216	243	270	405	432
Bulk charging volt	227	256	284	426	454
Charging mode		Three stage: C	onstant current, constant	voltage, floating	
Max.Input power(kWp)		12/24		42	45
Start voltage(VDC)	250	280	310	470	490
MPPT volt range(VDC)	230-450	260-450	290-450	450-800	480-800
Max.open circuit voltage (VDC)		480		8	50
Max.efficiency			>98%		
MPPT efficiency		>99%			
Noise(dB)	<65				
Display	LCD+LED				
Communication	RS485 (Optional)				
Working temperature (°C)	-10~+50				
Humidity	≤95% (Non-condensing)				
Altitude(m)	≤5000m, above 1000m derating				
Protection level		IP20			
Protection function	PV array aiti-reverse connection, Night anti-reverse charging, Battery over-charging, Over-temperature protection, etc			ature protection,etc	
	10KW Wall-mount	470*36	50*100	Wall-mount	490*423*203
	10KW Ract-mount	10KW Ract-mount 403*482*87			527*480*219
Dimension(D*W*H) mm	20KW Wall-mount	20KW Wall-mount 517*400*181			
Weight (KG)	10KW:9 ; 20KW: 18 25			25	
Ontional aphinat ci-c	4 Modules	550*55	50*900		
(D*W*H) mm	6 Modules	600*60	0*1600	4 Modules	700*550*1300





## **ENERGY STORAGE SYSTEM**

## EMS-A7 Micro-grid controllers



#### Product introduction:

The EMS-A7 series of micro grid controller is an energy management system for monitoring and controlling other devices such as PCS, batteries and smart meters in the entire micro grid system, which can be used in both on grid and off-grid modes. EMS-A7 can be used to monitor switching devices, which enable the system to switch between on grid and off-grid states, but switching commands maynot be sent by the EMS-A7.

The EMS-A7 series micro grid controllers can also be used in off-grid systems containing diesel generators.

## Performance characteristics

For the DC conversion protection strategy, it meets the relevant standards of the photovoltaic industry, and has but is not limited to the following protection functions:

- PV input overvoltage protection
- PV input under-voltage protection
- Output overload protection
- Output current control
- Output short circuit protection
- DC reverse protection

At the same time, according to the BMS requirements of different batteries, the battery side charging status is protected according to its control strategy, including overcharge, overdischarge, capacity protection, etc.

Model	EMS-A7
Basic con	figuration
Input (AC)	100V~240Vac L/N/PE
RS485	4 path
Ethernet	1 path 100M Network port; Expandable switches
CAN	2 path
USB	1 path
Digital input	5 path
Digital output	5 path
Operation system	Linux
Other pa	rameters
CPU	ARM Cortex-A7, 528MHz
RAM	256MB DDR3
Hard disk	256MB
RTC	Built-in real time clock
Indicator light	Power indicator light: Always on at power up
IP grade	IP20
Size (D*W*H) mm	210*290*42
Weight	3
Installation form	Wall/rack Installation
Operating temperature (°C)	-10~60
Storage temperature (°C)	-40~85
Altitude (m)	4000
Humidity	10~90%





## **PV&BATTERY ENERGY STORAGE INTEGRATED**

## Lithium Iron Phosphate Battery PSL Series



#### Product introduction:

Lithium battery integrated machine, integrated lithium battery and photovoltaic inverter controller integrated machine, canrealize photovoltaic and mains power supply mode, battery or bypass priority can be set, with multiple protections, such as inputbattery over-voltage protection, under-voltage protection, over-current protection, output under-voltage protection, over-currentthree-level protection (peak high current, RMS current, peak over-current soft start).

Built-in lithium battery can store excess power to meet the uninterrupted use of small outdoor equipment

- Modular structure design, easy to assemble and maintain, and the volume is half of that of conventional lead-acid batteries
- Pure sine wave output, perfect pretection function
- Optional fingerprint lock with anti-theft function
- High efficiency, low stadby loss
- Standard 60A MPPT photovoltaic controller, optional 10A charger

Model	PSL-0.5/1KVA-2.5KWh	PSL VII-5KW	
	Input		
Rated mains input voltage(VAC)	230 Single phase		
Mains input voltage range(VAC)	170-280(Computer); 90-28	30(Household appliances)	
Mains input frequency range(Hz)	50/	60	
	Output		
Inverter output voltage(VAC)	230±5% Sir	ngle phase	
Maximum efficiency	90%~93%(Peak)	94%(Peak)	
Output waveform	Pure sin	e wave	
Switching time(ms)	10(Computer);20(Household appliances)	≤10	
Peak	3:	1	
	Battery		
Battery type	Lithium iron	phosphate	
Battery capacity(kWh)	2.5	10/20/30	
Rated voltage(VDC)	48		
Charging voltage(VDC)	52.5		
	Mains charging+photovoltaic charging		
Maximum photovoltaic power(KW)	3	6	
MPPT range(VDC)	70-256	120-450	
Maximum photovoltaic open circuit voltage(VDC)	256	500	
Maximum PV charging current(A)	60	100	
Maximum AC charging current(A)	10(Optional)	60	
	Appearance		
Dimnsions(D*W*H)mm	210*510*695	301*693*(860/1325/1790)	
Net weight(KG)	32	67/115/163	
Communication interface	R\$485	RS485 communication/mobile App(Wifi or GPRS)	
Environment			
Humidity	0~95% No co	ondensation	
Operating temperature(°C)	-10′	~40	
Storage temperature(°C)	-15~60		





## LOW VOLTAGE SERIES LITHIUM BATTERY MODULE

## GBP-L2 Power wall type lithium iron phosphate battery



#### **Product introduction:**

The product adopts modular design, higher integration, aves installation space; adopts high-performance lithium iron phosphate positive electrode material, the battery cell has good consistency, and the designed service life is more than 10 years. One-key switch machine, front operation, front wiring, easy installation convenient maintenance and operation. Various functions, over-temperature alarm protection, over-charge and over-discharge protection, short-circuit protection, over-charge and over-discharge protection, short-circuit protection with UPS.

- Wall-hanging installation, save space
- Multiple in parallel, easy for expand, Automatic addressing, no need to dial a code
- Standard configuration with LCD display, real time knowing battery status, Screen direct selection of inverter communication
- Environmentally friendly non-polluting materials, free of heavy metals, green and environmentally friendly
- Standard cycle life is more than 5000 times
- Remote viesing of errors and online software upgrades

Model	GBP48V-100AH-W (optional 51.2V)	GBP48V-200AH-W(Optional 51.2V)	
Nominal voltage (V)	48		
Nominal capacity (AH)	105	210	
Nominal energy capacity(kWh)	5	10	
Operating voltage range (V)	42-52	.5	
Recommended charging voltage (V)	52.5		
Recommended discharge cut-off voltage (V)	45		
Standard charging current (A)	50	100	
Maximum continuous charging current (A)	100	200	
Standard discharge current (A)	50	100	
Maximum discharge current (A)	100 200		
Applicable temperature (°C)	-30 ~ 60 (Recommended 10~35)		
Humidity range (%rh)	0 ~ 95% No condensation		
Storage temperature (°C)	20 ~ 65 (Recommended 10~35)		
Protection level	IP20		
Cooling method	Natural air cooling		
Life cycles	5000+ times at 80% DOD		
Maximum size (D*W*H) mm	628*410*186	682*465*276	
Weight (KG)	45.7	89.6	





## LOW VOLTAGE SERIES LITHIUM BATTERY MODULE

## GBP-L1 RACK Type Lithium Iron Phosphate Battery



#### **Product introduction:**

This product is composed of high-quality lithium iron phosphate cells (by series and parallel) and advanced BMS management system. It can be used as an independent DC power supply or as a "basic unit" to form a variety of energy storage lithium battery power system. High reliability and longer life. It can be used as backup power supply of communication base station, backup power supply of digital center, household energy storage power supply, industrial energy storage power supply, etc. It can be seamlessly connected with main equipment such as UPS and photovoltaic power generation.



- Small size and light weight
- Screen direct selection of inverter communication
- Standard cycle life is more than 5000 times
- Accurately estimate the state of charge of the battery pack, that is the remaining power of the battery, to ensure that the power
  of the battery pack is maintained within a reasonable range
- Multiple in parllel, easy for expand, Automatic addressing, no need to dial a code
- Easy for installation and maintenance

Model	GBP24V-200AH	GBP48V-100AH-R (optional 51.2V)	GBP48V-200AH-R(Optional 51.2V)	
Nominal voltage (V)	25.6	48		
Nominal capacity (AH)	210	105	210	
Nominal energy capacity(kWh)	5.3	5	10	
Operating voltage range (V)	22.4-29.2	5	2.5	
Recommended charging voltage (V)	28			
Recommended discharge cut-off voltage (V)	24		45	
Standard charging current (A)	100	50	100	
Maximum continuous charging current (A)	200	100	200	
Standard discharge current (A)	100	50	100	
Maximum discharge current (A)	200	100	200	
Applicable temperature (°C)	-30 ~ 60 (Recommended 10 ~ 35)			
Humidity range (%rh)	0~95% no condensation			
Storage temperature (°C)		20 ~ 65 (Recommended 10 ~ 35)		
Protection level	IP20			
Cooling method	Natural air cooling			
Life cycles	5000+ times at 80% DOD			
Maximum size (D*W*H) mm	596*545*155	540*545*155	610*510*246	
Weight (KG)	48	44.5	88.3	





GHV1 SERIES HIGH VOLTAGE LITHIUM BATTERY STACK SYSTEM



#### Product introduction:

The product is mainly composed of high-quality lithium iron phosphate battery and smart energy storage inverter. When the sunlight is sufficient during the day, the excess power generation of the rooftop potovoltaic system is stored in the energy storage system, and the energy of the energy storage system is released at night to supply power for houshold loads, so as to achieve self-sufficiency in household energy management and greatly improve the economical performance of the new energy system. At the same time, in the event of sudden power outage/power failure of the power grid, the energy storage system can take over the electricity demand of the whole house in time. The capacity of a single battery is 5.32kWh, and the total capacity of the largest battery stack is 26.6kWh, providing a stable power supply for the family

#### **Battery pack performance indicators**

Performance	Item Parameter		Remarks	
	Standard capacity (Ah)	52	25±2°C 0.5C, New battery state	
	Rated working volt (V)	102.4		
	Power (kWh)	86.4 ~ 116.8	Temperature T>0°C, Theoretical value	
	Packing size (D*W*H) mm	420*625*175		
вашегу раск	Weight (KG)	45		
	Self-discharging	≤3%/month	25, 50% SOC	
	Battery pack internal resistance (m $\Omega)$	Ω)         19.2-38.4         New battery state		
	Staticvolt difference (mV)	30	25°C, 30% ≤ SOC ≤ 80%	

## GLV1 SERIES LOW-VOLTAGE LITHIUM BATTERY STACK SYSTEM



#### **Product introduction:**

This product is mainly composed of high-quality lithium iron phosphate battery module and intelligent PDU. When there is sufficient sunlight during the day, the excess power generated by the rooftop photovoltaic system will be stored in the energy storage system, and the energy from the battery is released at night to supply power for household loads, so as to achieve self-sufficiency in household energy management, the economy of the new energy system is greatly improved. At the same time, in case of sudden power outage/power failure of the power grid the energy storage system can take over the electricity demand of the whole house in time. With a single battery capacity of 5kWh/10kWh and a maximum stacked capacity of 20kWh/40kWh , the system can be used seamlessly with mains equipment such as photovoltaic power generation, as well as with a UPS to provide a table power supply for home.





## PSO50-80/100-200 Modular outdoor integrated cabinet



#### Product introduction:

The modular energy storage integrated cabinet can achieve efficient and safe design of building blocks from 100KWH small energy storage unit to MWH large-scale energy storage power station, solving the industry common problems such as low system safety, high parallel loss rate, short system life and so on existing in the traditional centralized energy storae solution, and defining a new solution for energy storage system integration.

- Highly integrated. All in one, factory prefabricated design. Flexible deployment, plug and play
- Safe and efficient. High efficient neutral point clamped topological structure. Support EMS and BMS system linkage
- Intelligent and friendly. Programmable working mode, touch screen control. Support photovoltaic AC coupling, DC coupling access
- Grid friendly. Equipped with four-quadrant adjustment function for active and reactive power. Equipped with LVRT and HVRT functions

Model	PSO-50-80	PSO-100-200	
Efficiency			
Maximun efficiency	95%		
	Battery cluster parameters		
String formation method	85	14/165	
Rated voltage (V)	768	672/768	
Working voltage (V)	696-852	609-745.5/696-852	
Rated capacity (kWh)	80	150-240	
Support charging and discharging power	≤1	C	
	AC grid connection parameters		
Grid connection	3 phase 4 wires/	3 phase 3 wires	
Rated output power (KW)	50	100	
Maximum apparent power (KVA)	55	110	
Grid voltage range (V)	400±15%		
Rated grid frequency (Hz)	50/60		
Maximum output current (A)	145		
Adjustable power factor	-0.99 ~ +0.99		
Maximum total current harmonic distortion rate	< 3		
	AC off-grid parameters		
Rated output power (KW)	50	100	
Maximum apparent power (KVA)	55	110	
Rated output voltage (V)	40	00	
Rated grid frequency (Hz)	50/	60	
	Other parameters		
Working temperture range (°C)	-25 ~	+55	
Humidity (% RH)	0 ~ 95, non-	condensing	
Altitude (m)	4000 (De-rating p	ower from 2000)	
Cooling Type	Industrial air conditioning (battery storage	)/Intelligent Air cooling (electrical storage)	
Display	10 inch dis	blay screen	
Communication	CAN/485	5/TCP IP	
Weight (KG)	2000	3600	
Size (D*W*H) mm	900*1500*2300	900*2230*2300	
Protection grade	IP54 (Key device IP65)		





LOW VOLTAGE SERIES LITHIUM BATTERY MODULE

## GBP-L1 RACK Type Lithium Iron Phosphate Battery



#### **Product features:**

- Equipped with a touchable screen to visually display the operating status of the battery pack
- Modular convenient installation
- Cycle life of over 5000 cycles
- With low power consumption mode, one-key restart is guaranteed within 5000 hours duing standby, and data is retained
- Full life cycle fault and data recording, remote viewing of error reports, online software upgrades and GPS positioning.

## Product advantage:

- Modular design, higher integration, saving installation space
- High-performance lithium iron phosphate cathode material, with good consistency of the core and a design life of more than 10 years
- One-touch switching, front operation, front wiring, eae of installation, maintenance and operation
- Various functions, over-temperature alarm protection, over-charge and over-discharge protection, short-circuit protection
- Highly compatible, seamlessly interfacing with mains equipment such as UPS and photovoltaic power generation, various forms of communication interfaces, CAN/RS485 etc. can be customized according to customer.
- Requirements, easy for remote monitoring. Flexible using range, can be used as a stand-alone DC power supply
- Spcification of energy storage power supply systems and container energy storage systems

Model Number	GBP9650	GBP48100	GBP32150	GBP96100	GBP48200	GBP32300
Cell version (Ah)		52			105	
Nominal power(kWh)	5	5	5	10	10	10
Nominal capacity(Ah)	52	104	156	105	210	315
Operating voltage range (VDC)	96	48	32	96	48	32
Operating temperature(°C)	87-106.5	43.5-53.2	29-35.5	87-106.5	43.5-53.2	29-35.5
IP grade	IP21					
Reference weight (KG)	47.1 86.6					
Reference size (D*W*H) mm	630*475*162			640*510*252		
Note: Battery pack is used in a system, cycle life≥5000, under working condition of 25°C 80% DOD						





## **CONTAINER ENERGY STORAGE SYSTEM**

## 20FT AND 40FT CONTAINERS



#### **Product introduction:**

The containerized energy storage system includes :Battery management system (BMS), Power conversion system(PCS), Power distribution system(PDS), Micro-grid switching system(STS), Energy management system(EMS), and Auxiliary power distribution system, air conditioning system, fire protection system. It is widely used in scenarios such as power security, peak shaving and valley filling, new energy consumption and grid load smoothing.

- · Flexible configuration of battery system types and capacities according to customer requirements
- The PCS has a modular architecture, simple maintenance and flexible configuration, allowing for myltiple parallel machines support parallel and off-grid operation mode, seamless switching
- Black start support
- EMS unattended system, locally controlled, cloud-monitored operation, with highly customized features
- Various modes including peak and valley reduction, demand response, backflow prevention, back-up power, command response, etc
- · Complete gas fire extinguishing system and automatic fire monitoring and alarm system with audible and visual alarm and fault uploading
- Complete thermal and temperature control system to ensure that the battery compartment temperature is within the optimum operating range
- Access control system with remote control and local operation



Model	20ft	40ft	
Output volt (V)	380/400 ±15%		
Gird frequency (Hz)	50/60	(±2.5)	
Output power (KW)	50-300	250-630	
Battery capacity (kWh)	200-600	600-2000	
	LiFePO4		
Size (m)	Inside size (D*W*H) : 2.352*5.898*2.385 Outside size (D*W*H): 2.438*6.058*2.591	Inside size (D*W*H) : 2.352*12.032*2.385 Outside size (D*W*H) : 2.438*12.192*2.591	
Protection level	IP54		
Humidity (% rh)	0-95		
Altitude (m)	3000		
Working temperature (°C)	-25 ~ 50		
Battery volt range (V)	500	-850	
Max. DC current (A)	500	1000	
Connect method	3P 4W		
Power factor	-1~1		
Communication method	RS485, CAN, Ethernet		
Isolation method	Low frequency isolation with transformer		





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## PRA 1- RF2 Tile roof mounting system



### **Technical specification**

Installation place:Tile roof Fixed way:Hook Installation angle:0° Standard wind:35m/s Standard snow:200mm Max snow: 1200mm Design standard: JISC 8955:2017 GB50009-2012, GB50797-2012 Main material:AL6005-T5 Fastener material:SUS 304



### Advantages

- High-strength aluminum
- Ultra light-weight design
- Easy to install

**Main Components** 







Rail

Earthing plate

Rail joiner





Hook





Mid clamp

Earthing lug



End clamp





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# PRA 2- TD T Type Tin roof mounting system



### **Technical specification**

Advantages

Easy to install

• High-strength aluminum

• Ultra light-weight design

Installation place:T-type Tin roof Fixed way:L-feet/ T-clamp Installation angle:0° Max wind:88m/s Max snow: 800mm Design standard: JISC 8955:2017 GB50009-2012, GB50797-2012, AS/NZS1170 Main material:AL6005-T5 Fastener material:SUS 304





Mid clamp



Rail joiner



End clamp

Rail

L-feet





Rubber

Earthing lug



Tapping screw



Cable clip





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## PRA 2- CR Cliplok tin roof mounting system



### **Technical specification**

Installation place:Cliplok/Seamlok Tin roof Fixed way:Clamp Installation angle:0° Max wind:88m/s Max snow: 800mm Design standard: JISC 8955:2017 GB50009-2012, GB50797-2012,AS/NZS1170 Main material:AL6005-T5 Fastener material:SUS 304





Rail



End clamp



Rail joiner







Advantages

- High-strength aluminum
- Ultra light-weight design
- Easy to install

Earthing lug

Clamp

Mid clamp





## PGC Steel ground mounting system



### **Technical specification**

Installation place: Cement roof or flat ground Fixed way:Ground screw/Concrete base Installation angle: 0-35° Standard wind:31m/s Max wind: 55m/s Standard snow: 800mm Design standard: JISC 8955:2017 GB50009-2012, GB50797-2012 Main material:Q235B Fastener material:SUS 304







Rail\_beam

Triangle joiner







Advantages

- Strong compatibility
- High cost performance
- Patent design
- High-strength carbon steel
- Easy to install



Diagonal support

Column foundation



Column



Installation step

\*\*\*\*\*

1. Install the pile/concrete base

4. Install the rail



2. Install the column



5. Install the panel



3. Install the beam

6. Complete





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## PGA 4 Aluminum ground mounting system



### **Technical specification**

Installation place: Cement roof or flat ground Fixed way:Ground screw/Concrete base Installation angle: 5-45° Standard wind:35m/s Max wind: 88m/s Standard snow: 1200mm Design standard: JISC 8955:2017 GB50009-2012, GB50797-2012 Main material:AL6005-T5 Fastener material:SUS 304



### Advantages

- Strong compatibility
- High cost performance
- Patent design
- High-strength carbon steelUltra light-weight design
- Easy to install





Beam

• •



Adjustable gasket

Rail 65



Joiner



Rear diagonal tie



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Mid clamp



Clip

Column

Foundation



End clamp





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## PGA S-I Aluminum ground mounting system



### **Technical specification**

Advantages

Patent design

• High-strength aluminum

• Ultra light-weight design • Easy to install

Installation place: Cement roof or flat ground Fixed way:Ground screw/Concrete base Installation angle: 5-45° Standard wind:35m/s Standard snow: 500mm Design standard: JISC 8955:2017 GB50009-2012, GB50797-2012 Main material:AL6005-T5 Fastener material:SUS 304

• Suit for all kinds of scale PV power station









Foundation

Adjustable gasket 1

Mid clamp



Beam

Adjustable gasket 2











Foundation





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## PRA3-A4 Concrete roof mounting system



### **Technical specification**

Installation place:Cement roof Fixed way:Concrete base Installation angle: 5°/10° Standard wind:35m/s Standard snow: 1200mm Design standard: JISC 8955:2017 GB50009-2012, GB50797-2012 Main material:AL6005-T5 Fastener material:SUS 304



### Advantages

- High-strength aluminum
- Ultra light-weight design













End clamp

Clip

Front support



Mid support



Rear support



Installation effect 5°

















Installation effect 10°















CPT Aluminum carport



### **Technical specification**

Advantages

Installation place: Cement roof or flat ground Fixed way:Ground screw/Concrete base Installation angle: 5-45° Standard wind:36m/s Standard snow: 800mm Design standard: JISC 8955:2017 GB50009-2012, GB50797-2012 Main material:AL6005-T5 Fastener material:SUS 304

• Suit for all kinds of scale PV power station

Pre-installed as more as possible
High-strength aluminum
Ultra light-weight design
Easy to install







Beam



Longitudinal beam



Column

Adjustable gasket1



Adjustable gasket 2



Clip

Installation step

Joiner





Foundation







4.Install the rail

1. Install the pile

5.Install the panel

2.Install the column





Japan 700KW



Japan 13KW



Japan 300KW



Japan 224KW



Japan 250KW



Sweden 14.76KW



Iraq 39.6KW-15.12kWh



Japan 76KW



Italy 900KW



Sweden 15.58KW



Indonesia 5KW-10.24kWh



Tahiti 6KW



Sweden 15.99KW



Japan 100KW

New Zealand 10KW



Sweden 85.28KW





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