

LITHIUM BATTERY SOLAR ENERGY STORAGE SYSTEM CATALOGUE 2024

SHANGHAI PVSYS NEW ENERGY CO.,LTD PVSYS ENERGY GROUP LIMITED ADD:3rd floor,No 1559 East Zhuan Xing Road,Shanghai,China. Email: sales@pv-system.net www.pv-system.net





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

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
- 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/m² 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	1500VDC	
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	

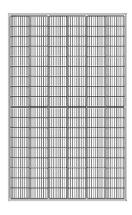
Product warranty:

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/m¹ 167.2 Incident Irrad. = 200 W/m² 81.9 W

20 Voltage [V]

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





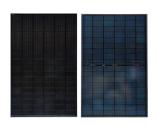
Temperature ratings (STC):

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

3 times EL test to ensure best quality



N-TYPE MONOCRYSTALLINE SOLAR PANEL PVS-430W/440W-M10HDT



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
- Competitive low light performance
- 3 times EL test to ensure best quality
- Ideal choice for utility and commercial scale
- Less power loss by minimizing the shading impact projectsby reduced BoS and improved ROI

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/m² module temperature 25 C AM=1.5

Module Type	PVS-430W-M10HDT	PVS-440W-M10HDT
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(%)	22.02%	22.53%
Maximum System Voltage	1500VDC	
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	

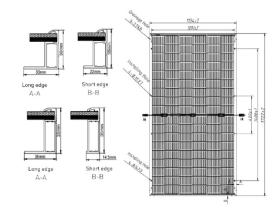
Product warranty:

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

Cells temp. = 25°C nt Irrad. = 1000 W/m 442.0 W ent Irrad. = 800 W/n 351.0 ent Irrad. = 600 W/ Ξ 260.5 Turrent ent Irrad. = 400 W/n 170.7 W ent Irrad. = 200 W 82.6 W

20 Voltage [V]

PV module: PVSYS Energy, PVS-440W-M10HDT



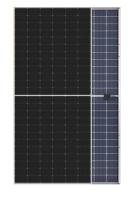
Temperature ratings (STC):

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

Anti-PID



N-TYPE MONOCRYSTALLINE SOLAR PANEL PVS-575W/580W-M10HDT



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/m² module temperature 25 C AM=1.5

Module Type	PVS-575W-M10HDT	PVS-580W-M10HDT
Maximum Power (Pmp)	575W	580W
Open Circuit Voltage (Voc)	51.27V	51.47V
Short Circuit Current (Isc)	14.31A	14.37A
Maximum Power Voltage (Vmp)	42.44V	42.59V
Maximum Power Current (Imp)	13.55A	13.62A
Module Efficiency at STC(%)	22.26%	22.45%
Maximum System Voltage	1500VDC	
Maximum Series Fuse Rating	30A	
Power Tolerance	0~+3%	

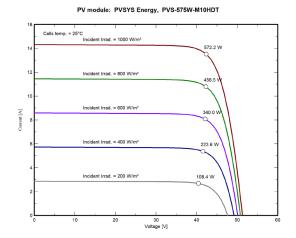
Mechanical Specifications:

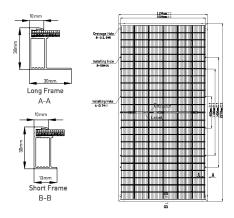
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External Dimensions	2278x1134x30 mm	
Solar Cells	N-Type Mono 144cells(6*24)	
Front Glass	3.2mm tempered glass	
Frame	Anodized aluminum alloy	
Junction Box	IP68, 3 diodes	
Output Cables	4.0mm2 (300mm+/300mm-)	
Weight	32kg	
Mechanical Load	Front side 5400Pa Rear side 2400Pa	
Packing	36pcs/pallet, 720pcs/40HQ	

Product warranty:

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

Current-Voltage Characteristic (I-V Curve)





Temperature Coefficient of Isc	+0.046%/°C
Temperature Coefficient of Voc	-0.250%/°C
Temperature Coefficient of Pmax	-0.290%/°C



N-TYPE MONOCRYSTALLINE SOLAR PANEL PVS-600W/610W-M10HDT



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
- Competitive low light performance
- 3 times EL test to ensure best quality
- Anti-PID

- Ideal choice for utility and commercial scale
- projectsby reduced BoS and improved ROI
- 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/m² module temperature 25 C AM=1.5

Module Type	PVS-600W-M10HDT	PVS-610W-M10HDT
Maximum Power (Pmp)	600W	610W
Open Circuit Voltage (Voc)	51.80V	52.20V
Short Circuit Current (Isc)	14.54A	14.66A
Maximum Power Voltage (Vmp)	44.00V	44.40V
Maximum Power Current (Imp)	13.64A	13.74A
Module Efficiency at STC(%)	22.22%	22.60%
Maximum System Voltage	1500VDC	
Maximum Series Fuse Rating	25A	
Power Tolerance	0~+3%	

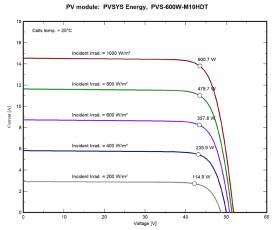
Mechanical Specifications:

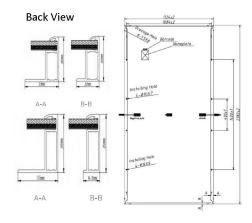
External Dimensions	2382x1134x30 mm	
Solar Cells	N-Type Mono 144cells(6*24)	
Front Glass	3.2mm tempered glass	
Frame	Anodized aluminum alloy	
Junction Box	IP68, 3 diodes	
Output Cables	4.0mm2 (300mm+/300mm-)	
Weight	33.5kg	
Mechanical Load	Front side 5400Pa Rear side 2400Pa	
Packing	36pcs/pallet, 720pcs/40HQ	

Product warranty:

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

Current-Voltage Characteristic (I-V Curve)





Temperature ratings (STC):

Temperature Coefficient of Isc	+0.046%/°C
Temperature Coefficient of Voc	-0.250%/°C
Temperature Coefficient of Pmax	-0.290%/°C





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
- Competitive low light performance
- 3 times EL test to ensure best quality
- Anti-PID

- Ideal choice for utility and commercial scale
- Less power loss by minimizing the shading impact projectsby reduced BoS and improved ROI

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/m² module temperature 25 C AM=1.5

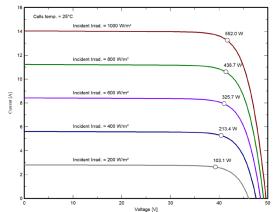
Module Type	PVS-545W-M10H	PVS-550W-M10H
Maximum Power (Pmp)	545W	550W
Open Circuit Voltage (Voc)	49.52V	49.62V
Short Circuit Current (Isc)	13.94A	14.03A
Maximum Power Voltage (Vmp)	40.80V	40.90V
Maximum Power Current (Imp)	13.36A	13.45A
Module Efficiency at STC(%)	21.2%	21.4%
Maximum System Voltage	1500VDC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

Mechanical Specifications:

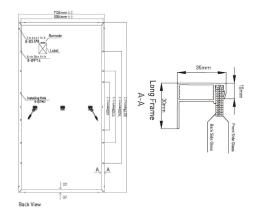
External Dimensions	2279x1134x35 mm
Solar Cells	Mono 144cells(6*24)
Front Glass	3.2mm tempered glass
Frame	Anodized aluminum alloy
Junction Box	IP68, 3 diodes
Output Cables	4.0mm2
Weight	29.4kg
Mechanical Load	Front side 5400Pa Rear side 2400Pa
Packing	31pcs/pallet, 620pcs/40HQ

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 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/m² 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%	

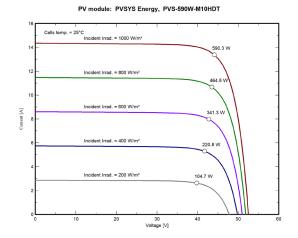
Mechanical Specifications:

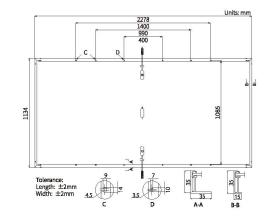
External Dimensions	2278x1134x35 mm
Solar Cells	Mono 144cells(6*24)
Front Glass	3.2mm tempered glass
Frame	Anodized aluminum alloy
Junction Box	IP68, 3 diodes
Output Cables	4.0mm2
Weight	27.5kg
Mechanical Load	Front side 5400Pa Rear side 2400Pa
Packing	31pcs/pallet, 620pcs/40HQ

Product warranty:

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

Current-Voltage Characteristic (I-V Curve)





Temperature 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-M12HDT



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
- 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/m² module temperature 25 C AM=1.5

Module Type	PVS-695W-M12HDT	PVS-700W-M12HDT
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	1500VDC	
Maximum Series Fuse Rating	35A	
Power Tolerance	0~+3%	

Mechanical Specifications:

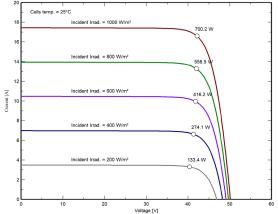
External Dimensions	2385x1303x35 mm
Solar Cells	Mono 132cells
Front Glass	3.2mm tempered glass
Frame	Anodized aluminum alloy
Junction Box	IP68, 3 diodes
Output Cables	4.0mm2
Weight	38.7kg
Mechanical Load	Front side 5400Pa Rear side 2400Pa
Packing	31pcs/pallet, 558pcs/40HQ

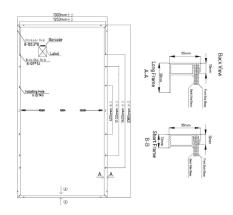
Product warranty:

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

PV module: PVSYS Energy, PVS-700W-M12HDT Cells temp. = 25°C nt Irrad. = 1000 W/m

Current-Voltage Characteristic (I-V Curve)

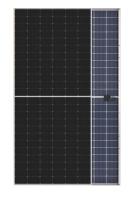




Temperature Coefficient of Isc	+0.040%/°C
Temperature Coefficient of Voc	-0.240%/°C
Temperature Coefficient of Pmax	-0.260%/°C



HJT MONOCRYSTALLINE SOLAR PANEL PVS-710W/720W-M12HDT



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
- 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/m² module temperature 25 C AM=1.5

Module Type	PVS-710W-M12HDT	PVS-720W-M12HDT
Maximum Power (Pmp)	710W	720W
Open Circuit Voltage (Voc)	50.44V	50.95V
Short Circuit Current (Isc)	17.55A	17.66A
Maximum Power Voltage (Vmp)	42.40V	42.70V
Maximum Power Current (Imp)	16.75A	16.86A
Module Efficiency at STC(%)	22.85%	23.17%
Maximum System Voltage	1500VDC	
Maximum Series Fuse Rating	35A	
Power Tolerance	0~+	-3%

Mechanical Specifications:

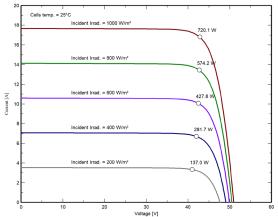
External Dimensions	2385x1303x35 mm
Solar Cells	Mono 132cells
Front Glass	3.2mm tempered glass
Frame	Anodized aluminum alloy
Junction Box	IP68, 3 diodes
Output Cables	4.0mm2
Weight	38.7kg
Mechanical Load	Front side 5400Pa Rear side 2400Pa
Packing	31pcs/pallet, 558pcs/40HQ

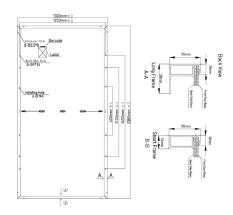
Product warranty:

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

PV module: PVSYS Energy, PVS-720W-M12HDT Cells temp. = 25°C

Current-Voltage Characteristic (I-V Curve)





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





ON/OFF GRID PV INVERTER

Hybrid Inverter PSX series



Product introduction:

PSX series is a new all-in-one solar charge inverter, which integrates solar energy storage & utility charging energy storage and AC sine wave output. Thanks to DSP control and advanced control algorithm, it has high response speed, high reliability and high industrial standard. Four charging modes are optional, i.e. Only Solar, Mains Priority, Solar Priority and Mains & Solar hybrid charging; and two output modes are available, i.e. inverter and Mains, to meet different application requirements

- Three output modes, when the grid-connected function is enabled, grid-connected power generation or anti-reverse-current can be set, and it can also be set to off-grid output mode.
- Four charging modes, mains priority charging, solar priority charging, mains solar hybrid charging and solar only charging.
- Emergency function, support battery-free output and only PV start and load, with battery activation function.
- Parallel function, It can be flexibly combined to achieve up to 9 parallel machines.
- Protection function, perfect hardware and software protection function.
 - The host computer and the APP cloud communication.

Model	PSX-2.5KW	PSX-3.5KW	PSX-5.5KW	PSX-10KW
model		VERTER OUTPUT	137-3.380	137-1000
Rated output power (W)	2500	3500	5500	10000
Rated output power (VA)	2500	3500	5500	10000
Maximum Peak Power (W)	5000	6000	10000	15000
Load Capacity with Motors	2HP	2HP	4HP	6HP
Rated AC Output		230 Vac (200 / 208 / 220		0
Dutput Voltage Waveform		Pure Sine	•••••	
nverter and Bypass Switching Time		10ms (ty		
Parallel Capacity		9		
Maximum Battery Inverter Efficiency		93%)	
Overload Protection	Load>	150% ± 10%: error and outp	out shut down after 2 secc	onds .
		BATTERY		
Battery Type		Lithium / Lead-acid	/ User Defined	
Rated Battery Voltage	24V		48V	
Battery Voltage Range	20-33Vdc		40-60Vdc	
Max.MPPT Charging Current	60A	60A	100A	200A
Max.Mains Charging Current	60A	60A	60A	120A
Max.Hybrid Charging Current	120A	120A	100A	200A
·		PV CHARGING		·
VIPPT Quantity	1	1	1	2
/lax. PV array power	1700W	3400W	5500W	5500W+5500W
Max. PV input current	50A	50A	22A	22A+22A
Max. Open Circuit Voltage	100Vdc	145Vdc	500Vdc	500Vdc+500Vdc
VIPPT Voltage Range	30-85Vdc	60-115Vdc	120-45	0Vdc
MPPT Tracking Efficiency		99.99	%	
		MAINS INPUT		
nput Voltage Range		90-280Vac/17	70-280Vac	
requency Range		50/60Hz±	:0.3Hz	
Output Short Circuit Protection		Circuit br	eaker	
Bypass Overload Current	24A	30A	40A	63A
	S	PECIFICATIONS		
Dimensions (W*D*H-mm)	280*1	.05*360	350*130*455	445*130*630
Veight (kg)	6	7	12	27
Classification of waterproof		IP20		
Operating Temperature Range		-10 °C~5	55 °C	
loise		<60d	В	
leat Dissipation		Forced air cooling (var	iable speed of fan)	
	CC	OMMUNICATION		
mbedded interface	RS485 / CAN / USB / Dry contact			
External module	WIFI/GPRS			





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	РЅТ48-ЗК	PST48-5K				
Output voltage(kVA)	3	5				
Battery type(Option)						
Rated voltage(VDC)	48					
Under voltage protection point(VDC)	Lead-acid battery 42, lithium b	pattery 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	pattery 51(default setting)				
	PV input					
PV input power(Wp)	3000	1				
Way of working	MPP	Г				
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	thium battery 52.2				
	Mains bypass (optional)					
Input voltage allowable range(VAC)	220±15	5%				
Input frequency(Hz)	50/60±	1%				
	Mains charging (optional)					
Mains charging current(A)	10					
	AC output					
Output waveform	L+N pure sine wave					
Output voltage(VAC)	220±3%					
Output frequency(Hz)	50/60±	1%				
Output waveform distorition(THD)	≤5%(linear	load)				
Inverter efficiency	≥1%					
Overload capacity	110%1r	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 even	ry 100m above 1000m)				
Allowable relative humidity	<95% Non-co					
Ambient temperature(°C)	-10/+40					
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	input voltage can be customized	
Input frequency(Hz)	5	0/60±3%	
AC charger		Optional	
	AC Output		
Output waveform	Pur	e Sine Wave	
Output voltage(VAC)	220±1%/110±1% (Other o	output voltage can be customized)	
Output Frequency(HZ)	5	0/60±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	on;Output overload,short circuit ,over hating protectic	
Communication Function		Optional	
	Surroundings		
Protective level		IP20	
Applied Altitude(m)	≤5000 (above 1000meters,rate	d power derating 1% every 100meters	
Humidity	<95% No	on-condensation	
Environment temperature(°C)		-10~50	
Noise(dB)		≤60	
	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	10 20 30 40 50				
	AC Input					
Phase			Three ph	ase+N+G		
Volt range(VAC)			380/400/	415±20%		
Frequency (Hz)			50/60	0±5%		
Soft-start			0~100	% 5sec		
			PV Input			
MPPT volt range (VDC)			230-	-450		
Max.Open circuit volt(VDC)			48	80		
Input paths			1,	/2		
Max.Input power(kWp)			12,	/24		
Full charge protection volt		The battery	voltage can be set acc	cording to the actual co	onfiguration	
Charging voltage(VDC)			216/243/27	70(Settable)		
			DC			
Nominal volt(VDC)			192/22	20/240		
	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%; N	on-line load<5%		
Voltage transient		<	±3% (steady state load	l), <± 5% (dynamic load	(b	
Over-load ability			125% 10mins	s, 150% 1min		
			System			
Communication interface		RS485(RS232, Network remote monitoring Option)				
Interface and instructions			touch screen, LED statu		,	
Operating environment	Temperatur	e:0-40°C; Humidity:209	%~90% (non-condensin	ng);<1000 meters (pow	er decreases by 1% pe	er 100 meters
Cooling method		Forced ventilation				
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)	50/60	D±3%				
Mains charging	Opti	onal				
	AC output					
Output waveform	Pure sir	ne wave				
Output voltage (VAC)	220:	±1%				
Output frequency (Hz)	50/60	D±1%				
Output waveform distortion rate (THD)	≤2% (Lin	er load)				
Inverter efficiency	≥85%					
Current peak factor	3	1				
Overload capacity	105%-110%; 10min;110	0%-125%,1min>125%,1s				
Display method	LCD+LED					
Protective function	Input reverse connection, input undervoltage, overvo	Itage, 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 co	ndensation				
Environment temperature (°C)	-10^	· +40				
Noise (dB)	≤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	il		
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	34
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	5%		
Load voltage		<±:	3% (Balanced load); <	±5% (unbalanced loa	d)	
Overload capacity			125% 10mins	, 150% 1min		
Inverter efficiency, load 100%			>92	2%		
Computer communication interface		RS23	32 (485 Network rem	ote monitoring option	nal)	
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 connect	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 pa	arameters			
Wiring mode			Three phase	s four wires		
Isolation			Power freque	ency 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 80				800*110	00*2260
		Commu	nication			
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 (F	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 freque	ency isolation				
Cooling method	forced ai	r 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 port, 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 connected 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 pa	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





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 currer	it (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, abov	≤5000m, above 1000m derating		
Protection level	IP20			
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 battery proterction; battery overcharge protection over-discharge protection; output overload 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: Constant 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	403*482*87		Rack-mount	527*480*219
Dimension(D*W*H) mm	20KW Wall-mount	517*40	00*181		
Weight (KG)	10KW:9 ; 20KW: 18			:	25
	4 Modules	550*550*900			
Optional cabinet size (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 configuration				
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	parameters			
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); 90-280(Household appliances)				
Mains input frequency range(Hz)	50/	/60			
	Output				
Inverter output voltage(VAC)	230±5% Si	ngle phase			
Maximum efficiency	90%~93%(Peak)	94%(Peak)			
Output waveform	Pure sir	le 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	RS485	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 (Recomm	ended 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	52.5		
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	
Dettory pools	Packing size (D*W*H) mm 420*		25*175	
Battery pack	Weight (KG)	45		
	Self-discharging	≤3%/month	25, 50% SOC	
	Battery pack internal resistance (m Ω)	19.2-38.4	New battery state 25°C±2°C	
	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	14/16S		
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	≤:	1C		
	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)	4	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 power from 2000)			
Cooling Type	Industrial air conditioning (battery storage)/Intelligent Air cooling (electrical storage)			
Display	10 inch display screen			
Communication	CAN/485/TCP IP			
Weight (KG)	2000	3600		
Size (D*W*H) mm	900*1500*2300	900*2230*2300		
Protection grade	IP54 (Key c	levice 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

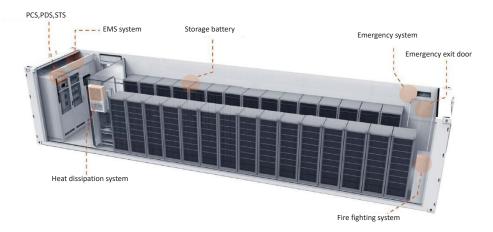
20FT AND 40FT CONTAINERS



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



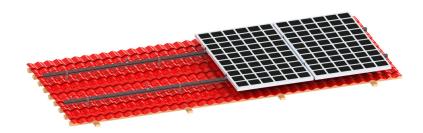
Model	20ft	40ft	
Output volt (V)	380/400 ±15%		
Gird frequency (Hz)	50/60 (±2.5)		
Output power (KW)	50-300	250-630	
Battery capacity (kWh)	200-600	600-2000	
	LiFePO4		
Size (m)	Inside size (D*W*H) : 2.352*5.898*2.385 Outside size (D*W*H): 2.438*6.058*2.591	Inside size (D*W*H) : 2.352*12.032*2.385 Outside 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		





Shang Co..Ltc hai Email: sales@pv-system.ne www.pv-system.net

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



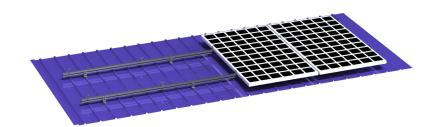
End clamp





Co..Ltc

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





Rail

End clamp

Mid clamp



Rail joiner





Earthing plate



Earthing lug





Rubber

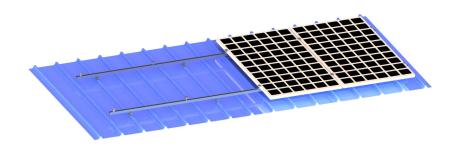
Cable clip





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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

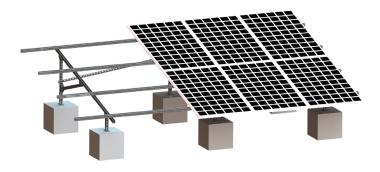
Clamp

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

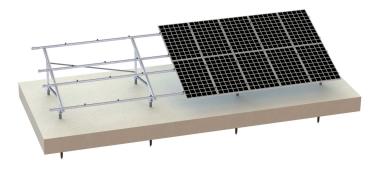
6. Complete





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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



Ŷ

Mid clamp



Clip

Column

Foundation



End clamp





Co..Lto

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

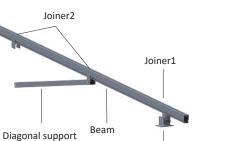
Adjustable gasket 2











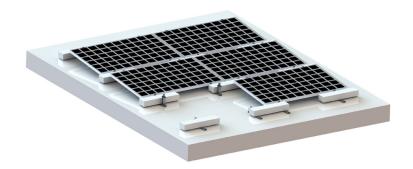
Foundation





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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





Adjustable gasket1

Adjustable gasket 2



Clip

Column

Joiner



Installation step



4.Install the rail







5.Install the panel



3.Install the beam



6.Complete



Foundation





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





Sweden 85.28KW





SHANGAI PVSYS NEW ENERGY CO., LTD Add:3rd floor,No 1559 East Zhuan Xing Road,Shanghai,China. Telephone: +86 17821615616 Email:sales@pv-system.net

PVSYS ENERGY GROUP LIMITED Add: RM22 2/F Fu Tao Building No.98 Argyle Street Kowloon, HONG KONG Telephone: +86 17821615616 Email:sales@pv-system.net





