

# OFF-GRID SOLAR POWER GENERATION SYSTEM

CONVERT LIGHT INTO ELECTRICITY



RANGE FROM 400W to 1200W

LOW OPERATION COSTS

IDEAL CLEAN ENERGY

## WHAT IS OFF-GRID SOLAR POWER GENERATION SYSTEM

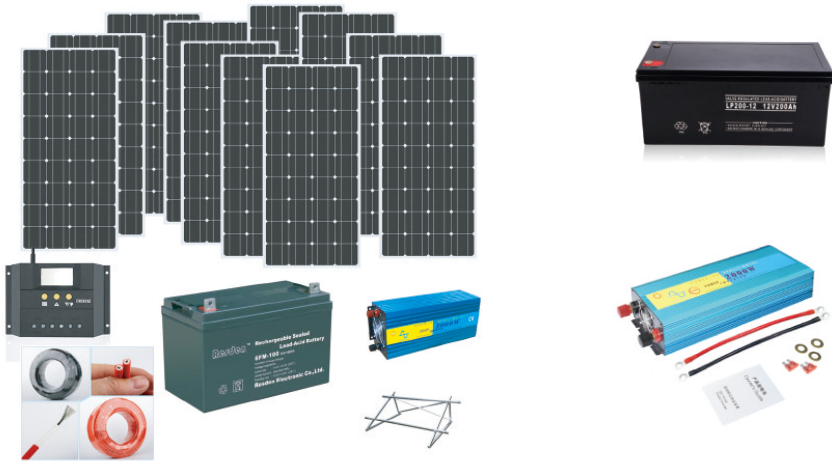
The off-grid solar power generation system converts light energy into electric energy through photovoltaic panels, which is used to effectively solve the problems caused by power shortage and power failure.



The photovoltaic panel converts solar energy into electric energy, and charges the load and the battery pack at the same time through the controller.

When there is no light, the battery pack supplies power to the DC load and the inverter through the controller, and the inverter is converted into AC power to supply the AC power so as to achieve off-grid .

## THE MAIN COMPONENTS



### Solar cell module

Solar cell module is the main part of off-grid solar power generation system. Its function is to convert the solar radiation energy into DC energy;

### Storage Battery

It is used to store the electricity generated by solar panels during the day for use when there is no light.

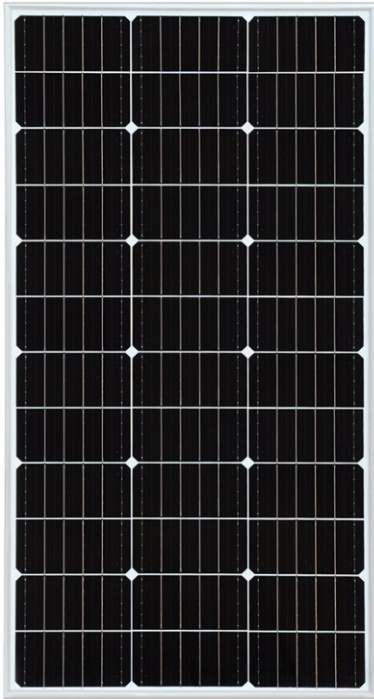
### Inverter control integrated machine

It is used to control the solar panel to supply power to the storage battery and the inverter, but also protect the storage battery from overcharge and overdischarge, and transform the direct current into alternating current.

### Cables and relevant accessories

It is used to connect components like solar panels, inverter and controller integrated machine and storage battery.

## ▶ Xinpuguang@\_Rigid Series



(202010188)

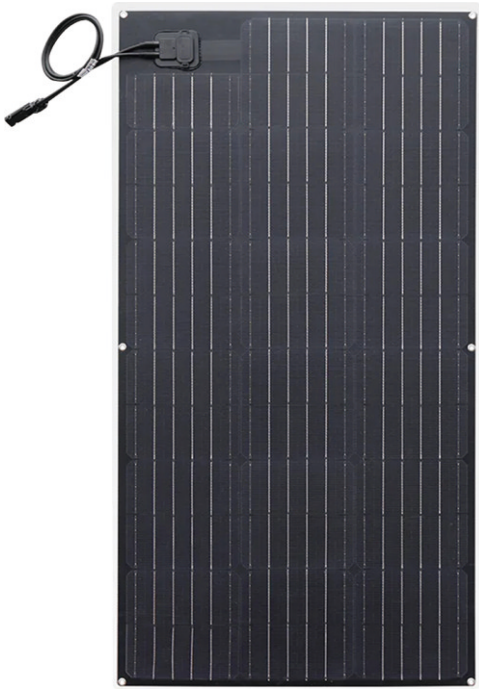


(202010166)

**ELECTRICAL PARAMETER**

SPECIFICATION	DATA	
Model	202010188	202010166
power	100W	150W
Dimension ( MM )	1070x545x40mm	1140x700x25mm
Cells Efficiency	22%	22%
Weight	6.95kg	7.96kg
Solar Cell	Single crystal	Single crystal

► Solarparts@\_Sandwich Flexible Series



(203010141)

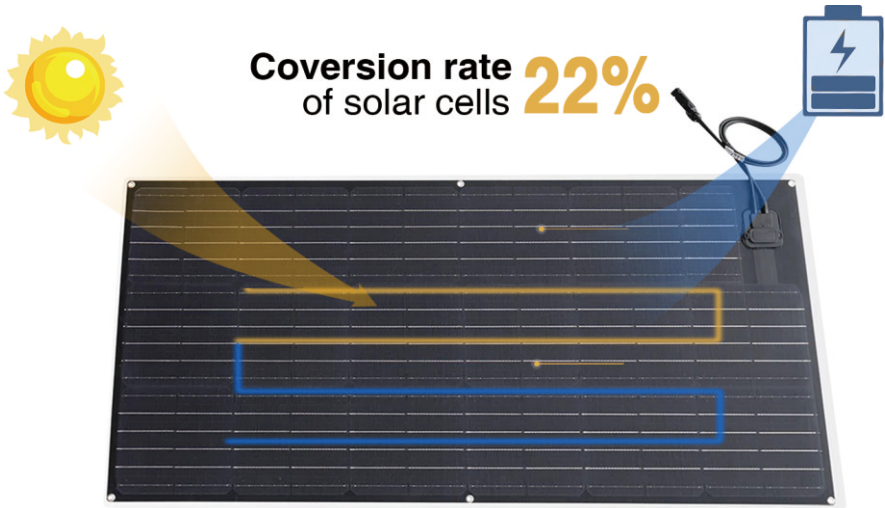


(203010142)

## ELECTRICAL PARAMETER

SPECIFICATION	DATA	
Model	203010141	203010142
power	100W	150W
Dimension ( MM )	1065x545x4mm	1175x710x4mm
Cells Efficiency	22%	22%
Weight	2.5kg	2.5kg
Solar Cell	Single crystal	Single crystal

## ► Features



### Strong light transmittance

ETFE film to guarantee strong light transmittance that can reach 95%.

### Better heat dissipation

The back PCB has better heat dissipation to ensure panel's long durability.

### Ultra-thin & ultra-light

2/1 lighter than the traditional glass panel, convenient to carry. With durable glass fiber board on the back, it is thinner and easier to carry.

### Longer service life

Fluorine atoms bonded to the panel's EVA, ensuring it doesn't delaminate or discolor over time.

### Bad weather resistance

Featured with heat, fire, corrosion and UV resistance etc.

## ► Applications



**Solarparts@Sandwich series** solar panels are the best complement to power shortage sites, Places that urban power cannot reach, such as mountains, navies, deserts, etc.

A good choice for curved surfaces such as RVs, boats, sailboats, yachts, trucks, cars, passenger cars, cabins, etc.

Campers, tents, trailers, golf carts or any other irregular surface.

## ► Applications



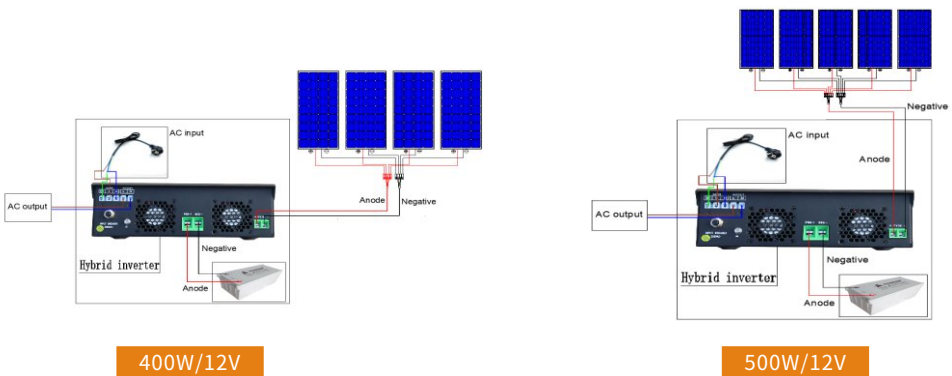
Off grid solar power generation systems are widely used in remote mountainous areas, power-free areas, islands, communication base stations and street lamps.

The wide application scenarios include roofs of villas, residential buildings, schools, hotels, factories, etc; RV, yacht, street lamp and monitoring power generation system, photovoltaic building integration, photovoltaic water pump irrigation system, wind solar complementary power generation, etc.



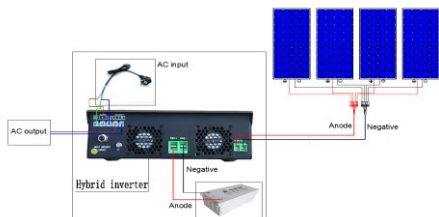
► **400W/500W 12V SYSTEM KIT  
MATERIAL LIST**

Type	Specification	Quantity	Remarks note
Photovoltaic modules	100W/19.8V 1050*530*25mm	4/5	
Storage battery	200AH/12V	1	Lead-acid gel battery; with screw gasket; indoor installation
Inverter control integrated machine	12V/1000W-230V	1	Indoor installation
Photovoltaic bracket	Aluminum alloy Z bracket	16/20	
Cable	Photovoltaic dedicated red and black wires 1x2.5mm <sup>2</sup> ; red and black wires 10 meters each	1	For connecting photovoltaic panels to inverter control integrated machine
	Red and black wires for energy storage 1x16mm <sup>2</sup> ; red and black wires are 3 meters each	1	Used to connect the energy storage battery to the inverter controller ; with 16mm <sup>2</sup> copper terminals
	Power cord: brown/blue/yellow-green tri-color cable, 3x4mm <sup>2</sup> , 3M, with EU plug	1	Used to connect the AC power supply to the input terminal of the inverter
MC4 connector	4 in 1 out MC4 adapter	1	1 Set of positive and negative poles
	1 in 1 out MC4 connector; with tinned copper core	12/16	1 Set of positive and negative poles
Screw	M6*20	32/40	
Nut	M6 Outer Hex Nut	32/40	

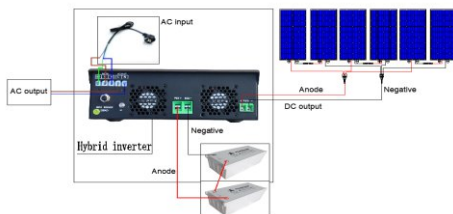


► **400W/600W 24V SYSTEM KIT  
MATERIAL LIST**

Type	Specification	Quantity	Remarks note
Photovoltaic modules	100W/19.8V 1050*530*25mm	4/5	
Storage battery	200AH/12V	2	Lead-acid gel battery; with screw gasket; indoor installation
Inverter control integrated machine	24V/2400W-230V	1	Indoor installation
Photovoltaic bracket	Aluminum alloy Z bracket	16/24	
Cable	Photovoltaic dedicated red and black wires 1x2.5mm <sup>2</sup> ; red and black wires 10 meters each	1	For connecting photovoltaic panels to inverter control integrated machine
	Red and black wires for energy storage 1x16mm <sup>2</sup> ; red and black wires are 3 meters each	2/1	Used to connect the energy storage battery to the inverter controller ; with 16mm <sup>2</sup> copper terminals
	Power cord: brown/blue/yellow-green tri-color cable, 3x4mm <sup>2</sup> , 3M, with EU plug	1	Used to connect the AC power supply to the input terminal of the inverter
MC4 connector	2 in 1 out MC4 adapter 3 in 1 out MC4 adapter	1	1 Set of positive and negative poles
	1 in 1 out MC4 connector; with tinned copper core	8/12	1 Set of positive and negative poles
Screw	M6*20	32/48	
Nut	M6 Outer Hex Nut	32/48	



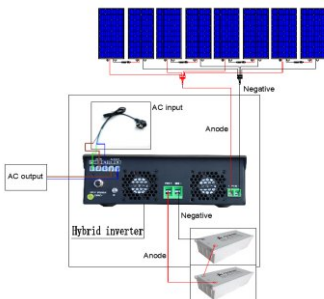
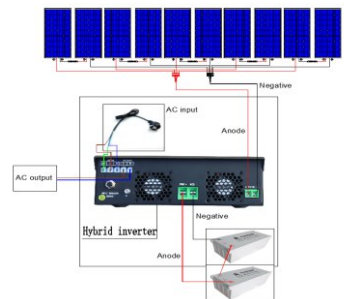
400W/24V



600W/24V

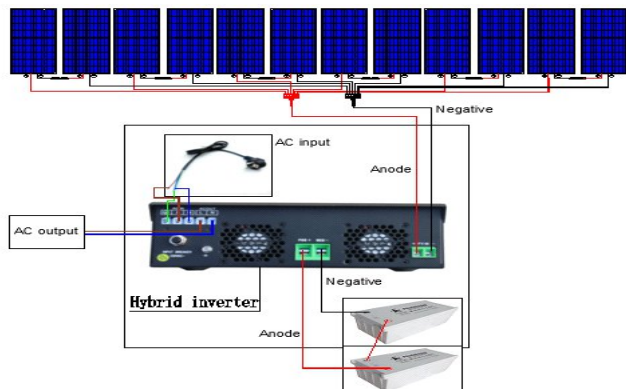
## ► 800W/1000W 24V SYSTEM KIT MATERIAL LIST

Type	Specification	Quantity	Remarks note
Photovoltaic modules	100W/19.8V 1050*530*25mm	8/10	
Storage battery	200AH/12V	2	Lead-acid gel battery; with screw gasket; indoor installation
Inverter control integrated machine	24V/2400W-230V	1	Indoor installation
Photovoltaic bracket	Aluminum alloy Z bracket	32/40	
Cable	Photovoltaic dedicated red and black wires 1x2.5mm <sup>2</sup> ; red and black wires 10 meters each	1	For connecting photovoltaic panels to inverter control integrated machine
	Red and black wires for energy storage 1x16mm <sup>2</sup> ; red and black wires are 3 meters each	2/1	Used to connect the energy storage battery to the inverter controller ; with 16mm <sup>2</sup> copper terminals
	Power cord: brown/blue/yellow-green tri-color cable, 3x4mm <sup>2</sup> , 3M, with EU plug	1	Used to connect the AC power supply to the input terminal of the inverter
MC4 connector	4 in 1 out MC4 adapter 5 in 1 out MC4 adapter	1	1 Set of positive and negative poles
	1 in 1 out MC4 connector; with tinned copper core	16/18	1 Set of positive and negative poles
Screw	M6*20	64/80	
Nut	M6 Outer Hex Nut	64/80	


**800W/24V**

**1000W/24V**

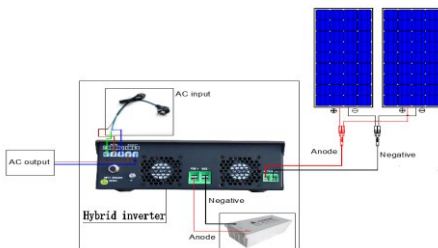
## ► 1200W 24V SYSTEM KIT MATERIAL LIST

Type	Specification	Quantity	Remarks note
Photovoltaic modules	100W/19.8V 1050*530*25mm	12	
Storage battery	200AH/12V	4	Lead-acid gel battery; with screw gasket; indoor installation
Inverter control integrated machine	24V/2400W-230V	1	Indoor installation
Photovoltaic bracket	Aluminum alloy Z bracket	48	
Cable	Photovoltaic dedicated red and black wires 1x2.5mm <sup>2</sup> ; red and black wires 10 meters each	1	For connecting photovoltaic panels to inverter control integrated machine
	Red and black wires for energy storage 1x16mm <sup>2</sup> ; red and black wires are 3 meters each	1	Used to connect the energy storage battery to the inverter controller ; with 16mm <sup>2</sup> copper terminals
	Power cord: brown/blue/yellow-green tri-color cable, 3x4mm <sup>2</sup> , 3M, with EU plug	1	Used to connect the AC power supply to the input terminal of the inverter
MC4 connector	6 in 1 out MC4 adapter	1	1 Set of positive and negative poles
	1 in 1 out MC4 connector; with tinned copper core	22	1 Set of positive and negative poles
Screw	M6*20	96	
Nut	M6 Outer Hex Nut	96	

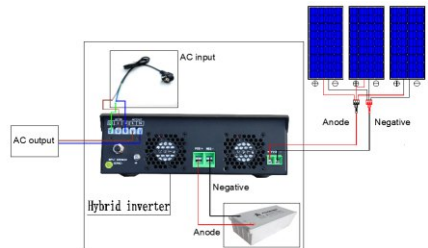

**1200W/24V**

► **300W/450W 12V SYSTEM KIT  
MATERIAL LIST**

Type	Specification	Quantity	Remarks note
Photovoltaic modules	150W/19.8V 1050*530*25mm	2/3	
Storage battery	200AH/12V	1	Lead-acid gel battery; with screw gasket; indoor installation
Inverter control integrated machine	12V/1000W-230V	1	Indoor installation
Photovoltaic bracket	Aluminum alloy Z bracket	8/12	
Cable	Photovoltaic dedicated red and black wires 1x2.5mm <sup>2</sup> ; red and black wires 10 meters each	1	For connecting photovoltaic panels to inverter control integrated machine
	Red and black wires for energy storage 1x16mm <sup>2</sup> ; red and black wires are 3 meters each	1	Used to connect the energy storage battery to the inverter controller ; with 16mm <sup>2</sup> copper terminals
	Power cord: brown/blue/yellow-green tri-color cable, 3x4mm <sup>2</sup> , 3M, with EU plug	1	Used to connect the AC power supply to the input terminal of the inverter
MC4 connector	2 in 1 out MC4 adapter 3 in 1 out MC4 adapter	1	1 Set of positive and negative poles
	1 in 1 out MC4 connector; with tinned copper core	8/10	1 Set of positive and negative poles
Screw	M6*20	16/24	
Nut	M6 Outer Hex Nut	16/24	



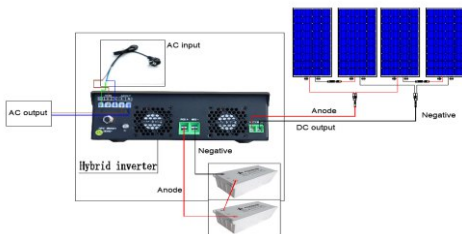
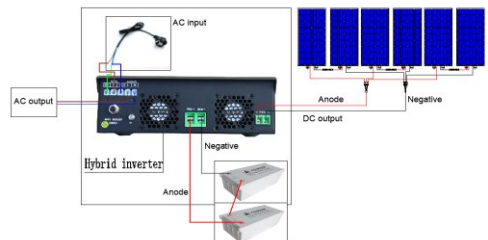
300W/12V



450W/24V

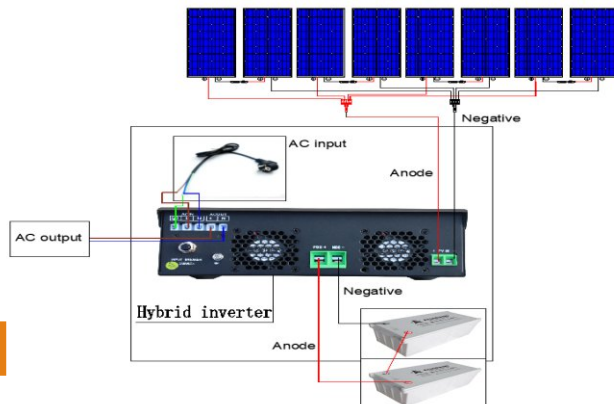
## ► 600W/900W 24V SYSTEM KIT MATERIAL LIST

Type	Specification	Quantity	Remarks note
Photovoltaic modules	150W/19.8V 1050*530*25mm	4/6	
Storage battery	200AH/12V	2	Lead-acid gel battery; with screw gasket; indoor installation
Inverter control integrated machine	24V/2400W-230V	1	Indoor installation
Photovoltaic bracket	Aluminum alloy Z bracket	16/24	
Cable	Photovoltaic dedicated red and black wires 1x2.5mm <sup>2</sup> ; red and black wires 10 meters each	1	For connecting photovoltaic panels to inverter control integrated machine
	Red and black wires for energy storage 1x16mm <sup>2</sup> ; red and black wires are 3 meters each	1	Used to connect the energy storage battery to the inverter controller ; with 16mm <sup>2</sup> copper terminals
	Power cord: brown/blue/yellow-green tri-color cable, 3x4mm <sup>2</sup> , 3M, with EU plug	1	Used to connect the AC power supply to the input terminal of the inverter
MC4 connector	2 in 1 out MC4 adapter 3 in 1 out MC4 adapter	1	1 Set of positive and negative poles
	1 in 1 out MC4 connector; with tinned copper core	8/12	1 Set of positive and negative poles
Screw	M6*20	32/48	
Nut	M6 Outer Hex Nut	32/48	


**600W/24V**

**900W/24V**

## ► 1200W 24V SYSTEM KIT MATERIAL LIST

Type	Specification	Quantity	Remarks note
Photovoltaic modules	100W/19.8V 1050*530*25mm	8	
Storage battery	200AH/12V	4	Lead-acid gel battery; with screw gasket; indoor installation
Inverter control integrated machine	24V/2400W-230V	1	Indoor installation
Photovoltaic bracket	Aluminum alloy Z bracket	32	
Cable	Photovoltaic dedicated red and black wires 1x2.5mm <sup>2</sup> ; red and black wires 10 meters each	1	For connecting photovoltaic panels to inverter control integrated machine
	Red and black wires for energy storage 1x16mm <sup>2</sup> ; red and black wires are 3 meters each	1	Used to connect the energy storage battery to the inverter controller ; with 16mm <sup>2</sup> copper terminals
	Power cord: brown/blue/yellow-green tri-color cable, 3x4mm <sup>2</sup> , 3M, with EU plug	1	Used to connect the AC power supply to the input terminal of the inverter
MC4 connector	6 in 1 out MC4 adapter	1	1 Set of positive and negative poles
	1 in 1 out MC4 connector; with tinned copper core	16	1 Set of positive and negative poles
Screw	M6*20	64	
Nut	M6 Outer Hex Nut	64	


**1200W/24V**

## EQUIPMENT PARAMETERS:

### ▶ 100W solar panel Electric parameters

Rated Power	Pmax(W)	100W
Operating Voltage	Vmp(V)	19.8V
Operating Current	Imp(A)	5.05A
Open Circuit Voltage	Voc(V)	23.76V
Short Circuit Current	Isc(A)	5.55A
Module Efficiency	(%)	18%
Performance Tolerance	(%)	±5%

### ▶ Structural performance:

Solar cell	166×83 Monocrystalline silicon PERC High efficiency solar cells
Connections of cells	36 ( 3x12 )
Weight	7.5Kg
Mechanical Dimension	1050*530*25mm
Number of Mounting holes	4
Waterproofing grade of Junction Box	IP67
Cable	0.9m 2.5mm <sup>2</sup>
Number of diodes	2 ( Bypass diodes )
Connector	MC4



## EQUIPMENT PARAMETERS:

### ▶ 150W solar panel electric parameters

Rated Power	P <sub>max</sub> (W)	150W
Operating Voltage	V <sub>mp</sub> (V)	19.8V
Operating Current	I <sub>mp</sub> (A)	7.58A
Open Circuit Voltage	V <sub>oc</sub> (V)	23.76V
Short Circuit Current	I <sub>sc</sub> (A)	8.33A
Module Efficiency	(%)	18.67%
Performance Tolerance	(%)	±5%

### ▶ Structural performance:

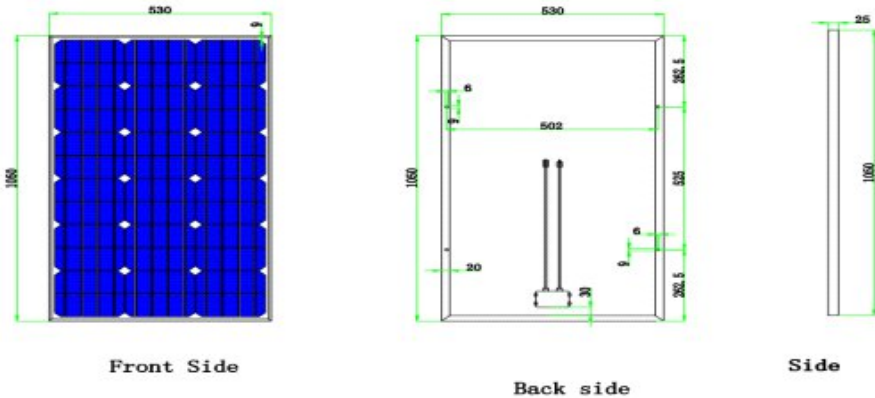
Solar cell	166×83 Monocrystalline silicon PERC High efficiency solar cells
Connections of cells	36 ( 3x12 )
Weight	7.5Kg
Mechanical Dimension	1050*530*25mm
Number of Mounting holes	4
Waterproofing grade of Junction Box	IP67
Cable	0.9m 2.5mm <sup>2</sup>
Number of diodes	2 ( Bypass diodes )
Connector	MC4

► **Temperature characteristics:**

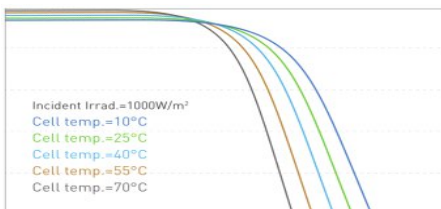
NOTC(Standard Test Conditions )	45±2°C
(Isc( Short Circuit Current Temp.)	+0.050%/°C
Voc( Open Circuit Voltage Temp.)	-0.30%/°C
Pmax ( Max. Power Temp.)	-0.39%/°C

Operating Temperature	-40~+85°C
Max.System Voltage	1000V DC
Maximum diode current	10A

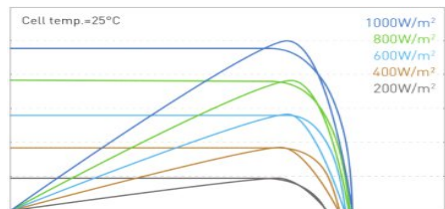
PV panel size diagram:



Output of different illumination intensity:



Output of different temperature:



► **Lead acid colloidal battery:**

Model	6-GFM-200	
Design Life	12 Years	
Nominal Capacity	20HR(10.8A, 1.80V)	216Ah
	10HR(200Af 1.80V)	200Ah
	3HR(54A, 1.80V)	162Ah
Internal Resistance	3.2MQ(Full Charge)	
Self Discharge	3% Per month	
Charge Voltage	Cycle Use	Standby Use
	2.35V/Cell (-4mV/°C/Cell)	2.25V/Cell (-3mV/°C/Cell)

Constant Current Discharge Rate (A, 25°C)

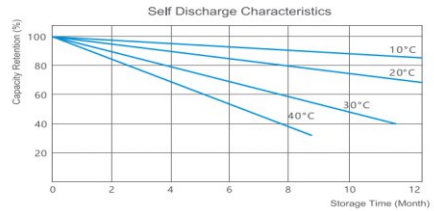
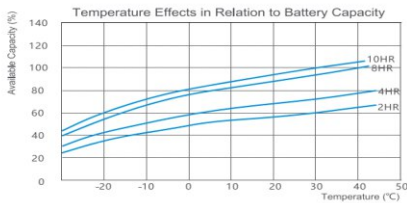
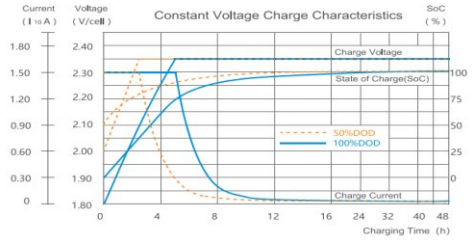
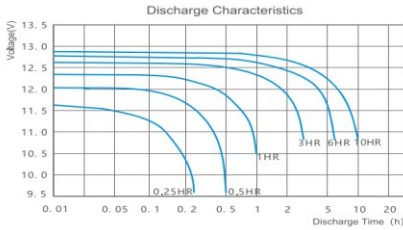
Model	EV. (V/Cell)	Minute						Hour								
		5	10	15	20	30	45	1	2	3	4	5	6	8	10	20
&GFM-200	1.85	372	306	247	205	160	126	109	66.9	49.5	40.1	33.8	29.7	23.9	19.8	10.5
	1.80	426	326	272	234	170	132	112	68.4	50.5	41.0	34.6	30.3	24.4	20.3	10.7
	1.75	449	346	286	244	178	138	116	70.0	51.7	41.7	35.4	30.9	24.7	20.6	10.8
	1.70	433	368	302	260	186	144	120	71.7	52.8	42.5	36.0	31.4	25.1	20.7	10.9
	1.67	508	388	321	273	192	148	123	73.2	53.9	43.5	36.8	32.1	25.5	20.9	11.0
	1.60	546	409	337	285	198	153	125	74.7	55.3	44.3	37.6	32.7	25.8	21.1	11.2

Constant Power Discharge Rate (Watt/Cell, 25°C)

Model	EV. (V/Cell)	Minute						Hour								
		5	10	15	20	30	45	1	2	3	4	5	6	8	10	20
&GFM-200	1.85	642	541	486	434	357	285	236	150	101	80.8	68.3	59.8	47.4	39.7	23.4
	1.80	719	596	526	469	382	305	247	157	107	83.6	70.2	61.6	48.4	41.0	24.4
	1.75	765	651	561	497	401	315	254	160	110	85.1	71.3	62.3	48.8	41.9	24.7
	1.70	801	694	590	518	413	321	259	161	111	85.8	71.7	62.0	49.0	42.2	24.8
	1.67	831	724	613	532	420	324	261	162	112	86.2	72.1	63.0	49.1	42.4	24.9
	1.60	853	746	633	542	425	326	262	163	113	87.2	72.3	63.2	49.3	42.5	25.0

► Lead acid colloidal battery:

# 6-GFM-200



► **HYBRID INVERTER**

Product parameters

Model No.		HY3022P
Rated power		3000VA/2400W
Parallel Capacity		No.
Input	Voltage	230VAC
	selectable voltage range	170-280VAC (for personal computers) 90-280VAC (for home appliances)
	Frequency range	50Hz/60Hz (auto sensing)
	AC voltage regulation	230VAC±5%
	Surge power (5 seconds)	6000VA
Output	Efficiency (peak)	93%
	Transfer time	10ms(for personal computers); 20ms
	Waveform	pure sine wave

► **HYBRID INVERTER**

Product parameters

Battery& AC charger	Battery voltage	24VDC
	Floating charge voltage	27VDC
	Overcharge protection	31VDC/33VDC
	Max. AC charge current	25A
	MAX PV array power	1200W
	Maximum PV array open circuit voltage	80VDC
	Max.Solarcharge current	50A
	Max.Total charge current	70A
	Maximum efficiency	98%
	Standby power consumption	2W
Physical	Dimension, D*W*H(mm)	100*272*385
	Net weight (kgs)	7KG
Operating Environment	Humidity	5%-95% Relative humidity
	operating temperature	0°C-55°C
	Storage temperature	-15°C-60°C

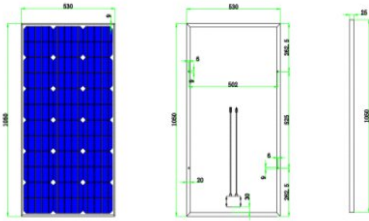
PHOTO:  
HYBRID INVERTER



## ► 400W/500W 12V series

- Before starting the assembly, make sure you have all the necessary materials and tools for the installation, as well as the security measures necessary for this task.
- In the next assemblies, open the packaging of the solar panel without using sharp tools, since which could damage the components inside.

### Accessories:



Front Side

Back side

Side

PV panels



Inverter control machine



Battery



MC4 connector

Series	PV panels	Inverter control machine	Battery	MC4 connector
<b>400W/12V</b>	19.8V/100W PV panels: 4 pieces	(input) DC24V/AC230V; (output) AC230V-2400W (1set)	12V/200Ah 1 unit; with screw gasket	4 in 1 out MC4 adapter 1 set; 1 in 1 out MC4 connector; 12 sets of tinned copper cores
<b>500W/12V</b>	19.8V/100W PV panels: 5 pieces	(input) DC24V/AC230V; (output) AC230V-2400W (1set)	12V/200Ah 1 unit; with screw gasket	5 in 1 out MC4 adapter 1 set; 1 in 1 out MC4 connector; 16 sets of tinned copper cores

► **Accessories:**

- ① Cables: 1x2.5mm<sup>2</sup> for red and black wires for photovoltaics; 10 meters for each of red and black wires .
- ② Power cord: brown/blue/yellow-green tri-color cable, 3x4mm<sup>2</sup>, 3M, with EU plug .
- ③ The red and black wires for energy storage are 1x16mm<sup>2</sup>; the red and black wires are 3 meters each.



① PV panel connection



② Power cable diagram



③ Battery connection

► **PV bracket:**



Aluminum alloy  
Z bracket



Mounting diagram of bracket



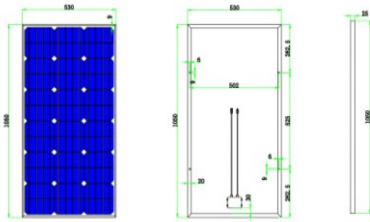
Screw and nut

Series	Aluminum alloy Z bracket	M6*20 Screw	M6 hex nuts
400W/12V	16 pieces	32 pcs	32 pcs
500W/12V	20 pieces	40 pcs	40 pcs

## ► 400W/600W 24V series

- Before starting the assembly, make sure you have all the necessary materials and tools for the installation, as well as the security measures necessary for this task.
- In the next assemblies, open the packaging of the solar panel without using sharp tools, since which could damage the components inside.

### Accessories:



Front Side

Back side

Side

PV panels



Inverter control machine



Battery



MC4 connector

Series	PV panels	Inverter control machine	Battery	MC4 connector
400W/24V	19.8V/100W PV panels: 4 pieces	(input) DC24V/AC230V; (output) AC230V-2400W (1set)	12V/200Ah 2 unit; with screw gasket	2 in 1 out MC4 adapter 1 set; 1 in 1 out MC4 connector; 8 sets of tinned copper cores
600W/24V	19.8V/100W PV panels: 6 pieces	(input) DC24V/AC230V; (output) AC230V-2400W (1set)	12V/200Ah 2 unit; with screw gasket	3 in 1 out MC4 adapter 1 set; 1 in 1 out MC4 connector; 12 sets of tinned copper cores



### ► Accessories:

- ① Cables: 1x2.5mm<sup>2</sup> for red and black wires for photovoltaics; 10 meters for each of red and black wires .
- ② Power cord: brown/blue/yellow-green tri-color cable, 3x4mm<sup>2</sup>, 3M, with EU plug .
- ③ The red and black wires for energy storage are 1x16mm<sup>2</sup>; the red and black wires are 3 meters each.



① PV panel connection



② Power cable diagram



③ Battery connection

### ► PV bracket:


 Aluminum alloy  
 Z bracket


Mounting diagram of bracket



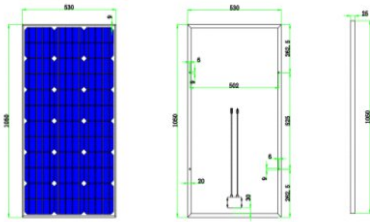
Screw and nut

Series	Aluminum alloy Z bracket	M6*20 Screw	M6 hex nuts
400W/24V	16 pieces	32 pcs	32 pcs
600W/24V	24 pieces	48 pcs	48 pcs

## ► 800W/1000W/1200W 24V series

- Before starting the assembly, make sure you have all the necessary materials and tools for the installation, as well as the security measures necessary for this task.
- In the next assemblies, open the packaging of the solar panel without using sharp tools, since which could damage the components inside.

### Accessories:



Front Side

Back side

Side

PV panels



Inverter control machine



Battery



MC4 connector

Series	PV panels	Inverter control machine	Battery	MC4 connector
<b>800W/24V</b>	19.8V/100W PV panels: 8 pieces	(input) DC24V/AC230V; (output) AC230V-2400W (1set)	12V/200Ah 2 unit; with screw gasket	4 in 1 out MC4 adapter 1 set; 1 in 1 out MC4 connector; 16 sets of tinned copper cores
<b>1000W/24V</b>	19.8V/100W PV panels: 10 pieces	(input) DC24V/AC230V; (output) AC230V-2400W (1set)	12V/200Ah 2 unit; with screw gasket	5 in 1 out MC4 adapter 1 set; 1 in 1 out MC4 connector; 18 sets of tinned copper cores
<b>1000W/24V</b>	19.8V/100W PV panels: 12 pieces	(input) DC24V/AC230V; (output) AC230V-2400W (1set)	12V/200Ah 2 unit; with screw gasket	6 in 1 out MC4 adapter 1 set; 1 in 1 out MC4 connector; 18 sets of tinned copper cores

### ► Accessories:

- ① Cables: 1x2.5mm<sup>2</sup> for red and black wires for photovoltaics; 10 meters for each of red and black wires .
- ② Power cord: brown/blue/yellow-green tri-color cable, 3x4mm<sup>2</sup>, 3M, with EU plug .
- ③ The red and black wires for energy storage are 1x16mm<sup>2</sup>; the red and black wires are 3 meters each.



① PV panel connection



② Power cable diagram



③ Battery connection

### ► PV bracket:


 Aluminum alloy  
 Z bracket


Mounting diagram of bracket



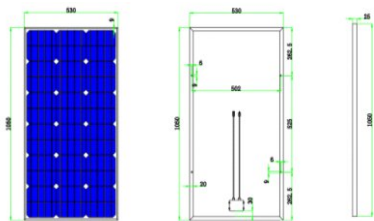
Screw and nut

Series	Aluminum alloy Z bracket	M6*20 Screw	M6 hex nuts
800W/24V	32 pieces	64 pcs	64 pcs
1000W/24V	40 pieces	80 pcs	80 pcs
1200W/24V	48 pieces	96 pcs	96 pcs

## ► 300W/450W 12V series

- Before starting the assembly, make sure you have all the necessary materials and tools for the installation, as well as the security measures necessary for this task.
- In the next assemblies, open the packaging of the solar panel without using sharp tools, since which could damage the components inside.

### Accessories:



Front Side

Back side

Side

PV panels



Inverter control machine



Battery



MC4 connector

Series	PV panels	Inverter control machine	Battery	MC4 connector
<b>300W/12V</b>	19.8V/150W PV panels: 2 pieces	(input) DC24V/AC230V; (output) AC230V-2400W (1set)	12V/200Ah 1 unit; with screw gasket	2 in 1 out MC4 adapter 1 set; 1 in 1 out MC4 connector; 8 sets of tinned copper cores
<b>450W/12V</b>	19.8V/150W PV panels: 3 pieces	(input) DC24V/AC230V; (output) AC230V-2400W (1set)	12V/200Ah 1 unit; with screw gasket	3 in 1 out MC4 adapter 1 set; 1 in 1 out MC4 connector; 10 sets of tinned copper cores

### ► Accessories:

- ① Cables: 1x2.5mm<sup>2</sup> for red and black wires for photovoltaics; 10 meters for each of red and black wires .
- ② Power cord: brown/blue/yellow-green tri-color cable, 3x4mm<sup>2</sup>, 3M, with EU plug .
- ③ The red and black wires for energy storage are 1x16mm<sup>2</sup>; the red and black wires are 3 meters each.



① PV panel connection



② Power cable diagram



③ Battery connection

### ► PV bracket:


 Aluminum alloy  
 Z bracket


Mounting diagram of bracket



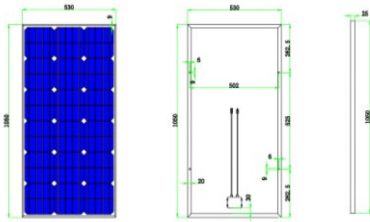
Screw and nut

Series	Aluminum alloy Z bracket	M6*20 Screw	M6 hex nuts
300W/12V	8 pieces	16 pcs	16 pcs
450W/12V	12 pieces	24 pcs	24 pcs

## ► 600W/900W/1200W 24V series

- Before starting the assembly, make sure you have all the necessary materials and tools for the installation, as well as the security measures necessary for this task.
- In the next assemblies, open the packaging of the solar panel without using sharp tools, since which could damage the components inside.

### Accessories:



Front Side

Back side

Side

PV panels



Inverter control machine



Battery



MC4 connector

Series	PV panels	Inverter control machine	Battery	MC4 connector
<b>600W/24V</b>	19.8V/100W PV panels: 4 pieces	(input) DC24V/AC230V; (output) AC230V-2400W (1set)	12V/200Ah 2 unit; with screw gasket	2 in 1 out MC4 adapter 1 set; 1 in 1 out MC4 connector; 8 sets of tinned copper cores
<b>900W/24V</b>	19.8V/100W PV panels: 6 pieces	(input) DC24V/AC230V; (output) AC230V-2400W (1set)	12V/200Ah 2 unit; with screw gasket	3 in 1 out MC4 adapter 1 set; 1 in 1 out MC4 connector; 12 sets of tinned copper cores
<b>1200W/24V</b>	19.8V/100W PV panels: 8 pieces	(input) DC24V/AC230V; (output) AC230V-2400W (1set)	12V/200Ah 2 unit; with screw gasket	4 in 1 out MC4 adapter 1 set; 1 in 1 out MC4 connector; 16 sets of tinned copper cores

► **Accessories:**

- ① Cables: 1x2.5mm<sup>2</sup> for red and black wires for photovoltaics; 10 meters for each of red and black wires .
- ② Power cord: brown/blue/yellow-green tri-color cable, 3x4mm<sup>2</sup>, 3M, with EU plug .
- ③ The red and black wires for energy storage are 1x16mm<sup>2</sup>; the red and black wires are 3 meters each.



① PV panel connection



② Power cable diagram



③ Battery connection

► **PV bracket:**



Aluminum alloy  
Z bracket



Mounting diagram of bracket



Screw and nut

Series	Aluminum alloy Z bracket	M6*20 Screw	M6 hex nuts
<b>600W/24V</b>	16 pieces	32 pcs	32 pcs
<b>900W/24V</b>	24 pieces	48 pcs	48 pcs
<b>1200W/24V</b>	32 pieces	64 pcs	64 pcs

## Installation tool:



1.straight screwdriver



2.cross screwdriver



3.knife



4.wire cutters



5. Impact drill driver

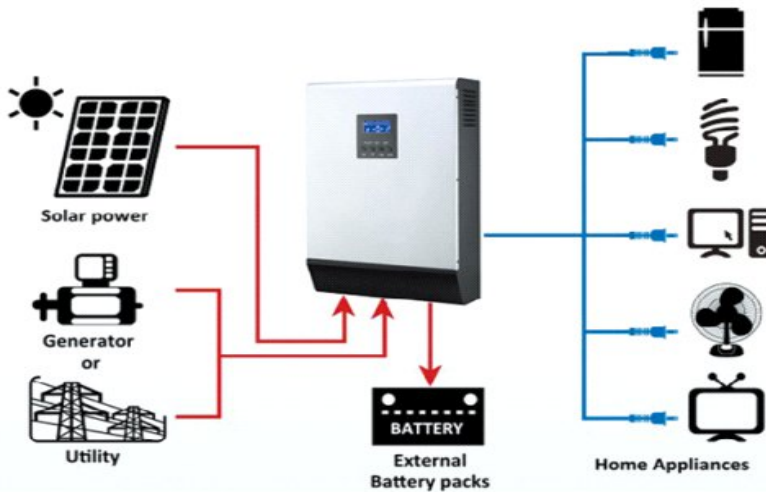


6.Hex socket wrench



7.wrench

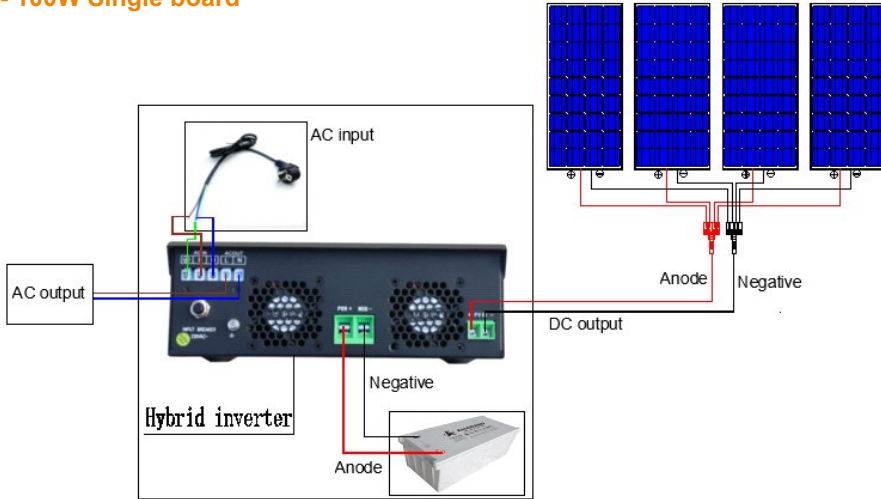
## Schematic diagram of Controller Electrical





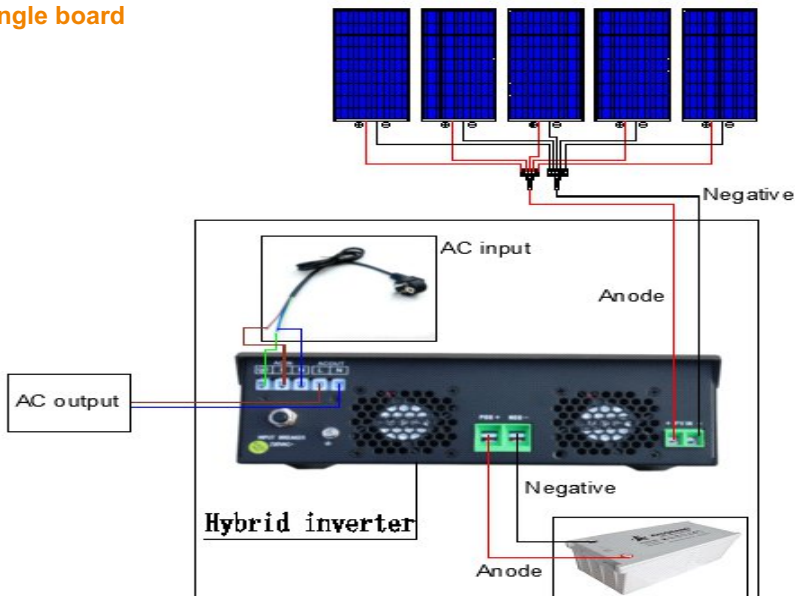
### 400W/12V Wiring Diagram

- 100W Single board



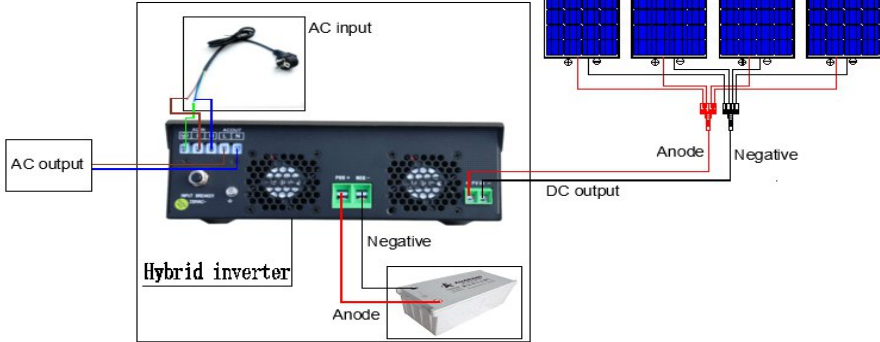
### 500W/12V Wiring Diagram

- 100W Single board



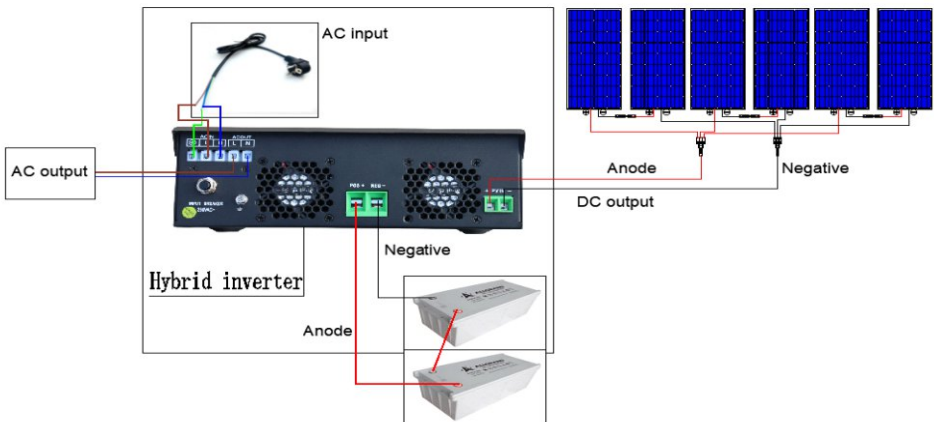
**400W/24V Wiring Diagram**

- 100W Single board



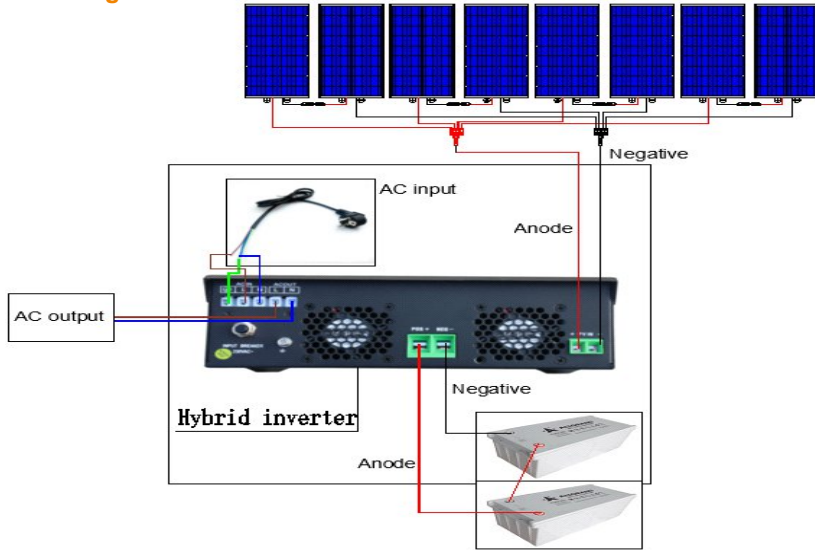
**600W/24V Wiring Diagram :**

- 100W Single board



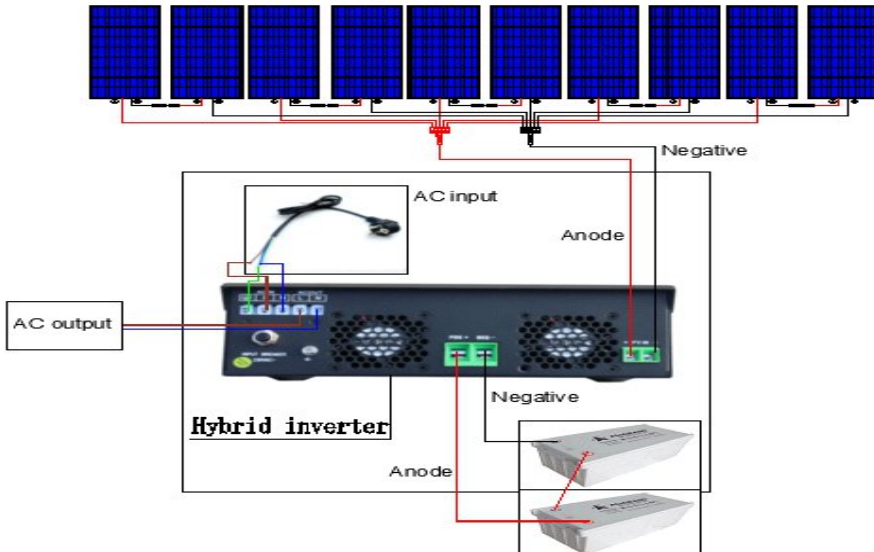
## 800W/24V Wiring Diagram

- 100W Single board



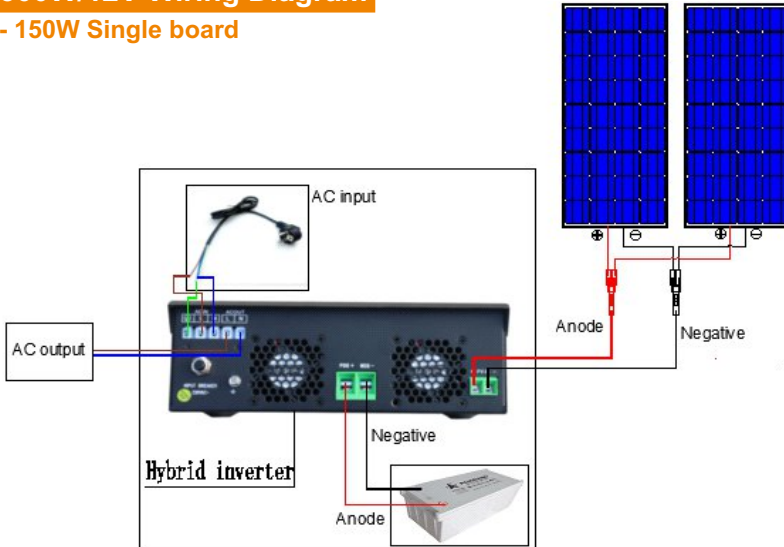
## 1000W/24V Wiring Diagram :

- 100W Single board



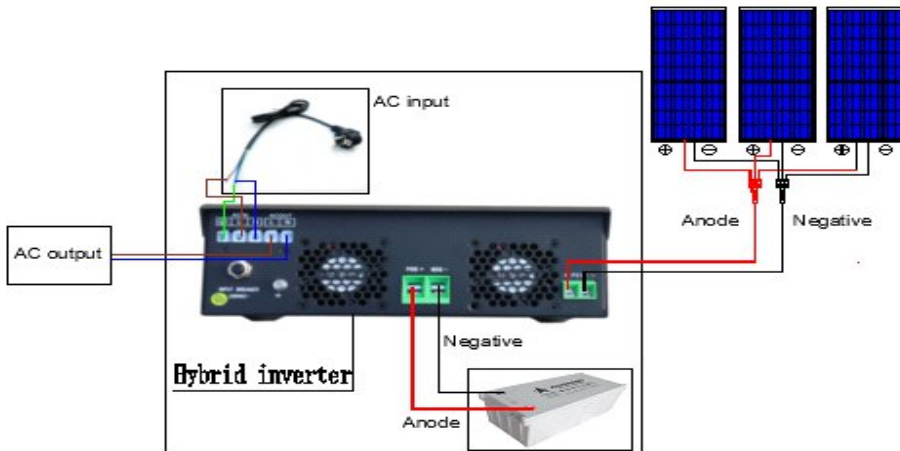
## 300W/12V Wiring Diagram

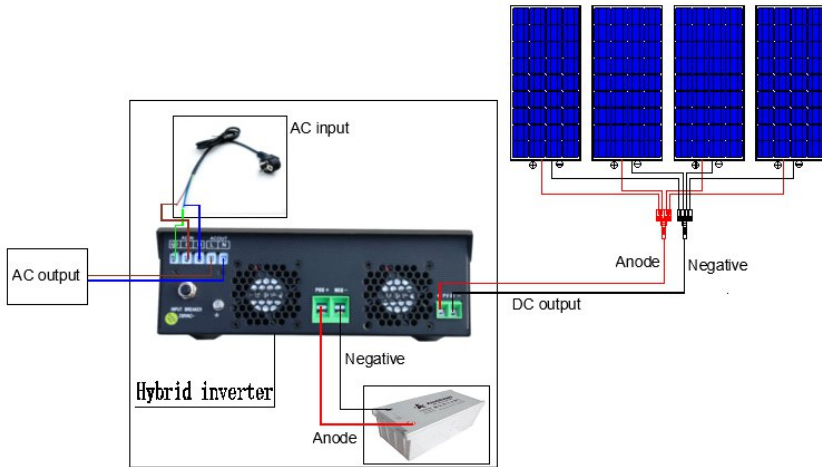
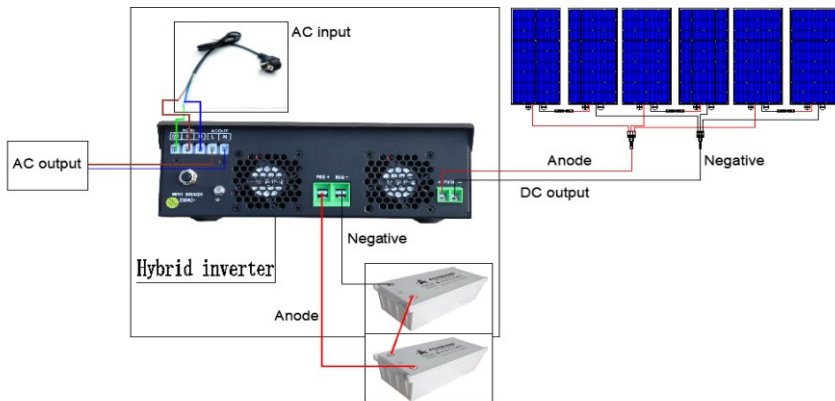
- 150W Single board

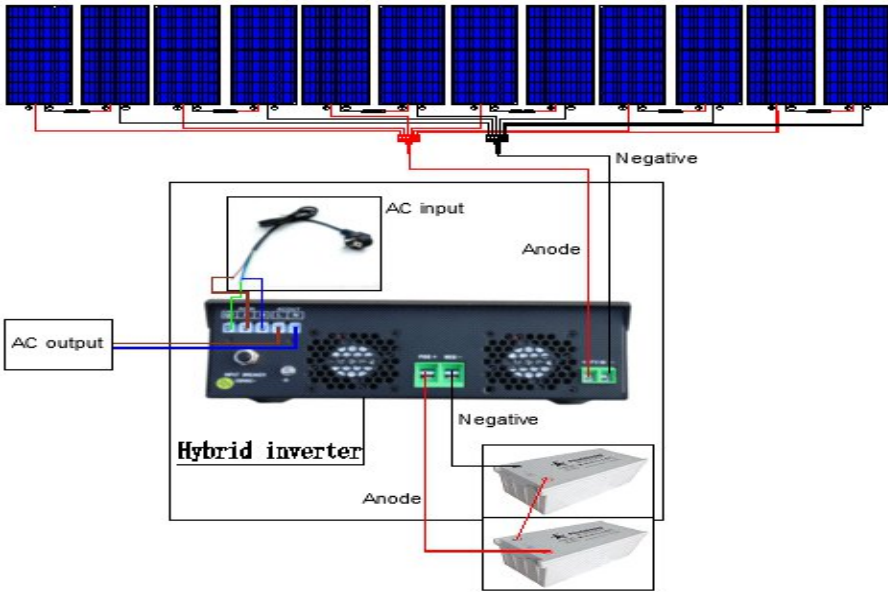
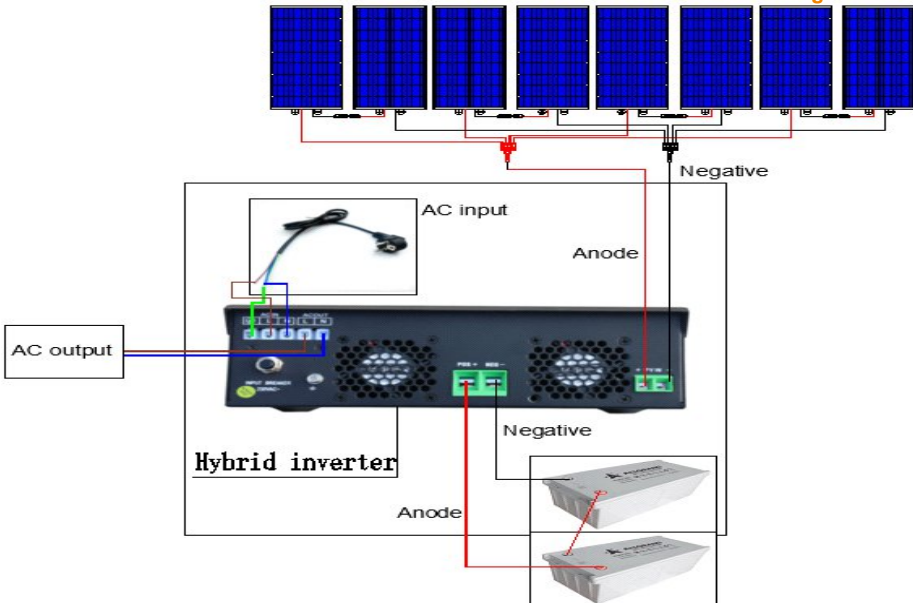


## 4500W/12V Wiring Diagram

- 150W Single board



**600W/24V Wiring Diagram****- 150W Single board****900W/24V Wiring Diagram :****- 150W Single board**

**1200/24V Wiring Diagram :****100W Single board****150W Single board**

## Installation Guide :

**STEP 1:** Install the solar panel and choose a location to fix the inverter control integrated machine.

(1) Install solar panels

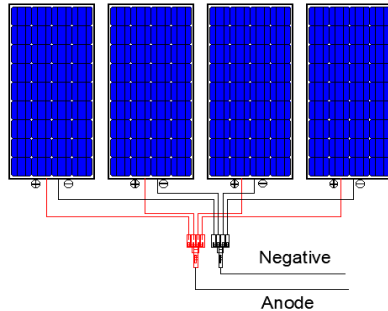
Option A: Use a hammer drill to make holes in the roof or any other flat surface and screw in the aluminum alloy Z brackets and solar panels.

Option B: Use an impact drill to punch holes in the sloping roof, and fix the aluminum alloy Z bracket and solar panel with screws.

(2) The inverter control integrated machine can be fixed indoors.

(3) Note: The solar panel is firmly installed, the installation position is not shielded, and the sun is fully and normally illuminated.

**STEP 2:** Connect the Solar Panels



**STEP 3:** Connect the battery with the inverter

(1) Connect two battery packs with wires (copper terminals) to form a 12V/24V battery pack.

(2) The wire is connected to the battery input port of the inverter, and the other end of the wire (copper terminal) is connected to the positive and negative poles of the battery pack.

(3) When the LED display of the integrated inverter is on, it means that the hybrid inverter is normal. It is also possible to temporarily disconnect the connection. Then we can connect other devices.

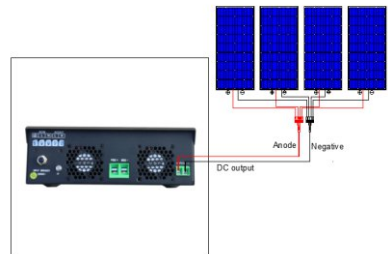


## Installation Guide :

**STEP 4:** The load switch end is connected to the AC output of the inverter, and the other end of the wire is connected to the load switch.



**STEP 5:** Connect the Inverter control integrated machine to the solar panel; Connect the stripped end of the wire to the PV input port of the Inverter and the other end of the wire (MC4 connector) to the solar panel.



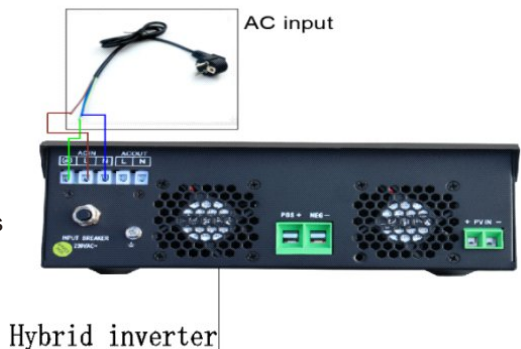
**STEP 6:** Connect inverter control integrated machine through the AC input .

(1) Connect the AC input terminal (including live line, neutral wire and ground wire) to the port of the inverter control integrated machine .

(2) Make sure the positive and negative poles of the wires are connected correctly. There are also no leaks or looseness issues. When everything is done, connect the battery to the inverter with wires (please refer to step 3).

(3) Connect the AC load to the switch.

(4) After completing the above steps, turn on the main switch of the inverter control integrated machine, and the AC load starts to work.





## Installation Guide :

**STEP 7:** Observe the working state of the system; When the system is assembled, pay close attention to its working state. If there is any abnormality, please turn off the power immediately and check.

## Failure analysis:

(1)The LED display of the machine is turned off:

possible reason:

- A. AC input not connected
- B. The capacity of the battery is not enough to stop discharging
- C. The wiring is not connected correctly
- D. There is a leak problem
- E. The protection switch is tripped.
- F. Inverter control integrated machine malfunction

Check the wiring is correct first, then check the battery capacity. If the cause of the above A-F can be ruled out, the inverter control integrated machine may be broken.

(2) Inverter control integrated machine alarm

Possible reasons: overheat protection, overload protection

(3)Solar panel discharge:

possible reason:

- A. The light is too weak.
- B. Loose cable.
- C. Damaged solar panel.

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