



2021A
Green Revolution,
Derived From Suoer

Five Star Quality, derived From Suoer Technology!



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MADE IN CHINA



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WeChat



High-Technology Enterprise



Specialized in solar energy photovoltaic product for over 20 years

Solar Pumping Controller(VFD) >>
ON/OFF Grid Solar Hybrid Inverter >>
Hybrid Solar Inverter >>
Battery Charger >>
PWM/MPPT Solar Charger Controller >>

Five Star Quality, derived From Suoer Technology!



In 2016, Suoer Solar Factory officially was identified and certified as High-technology Enterprise



Suoer sticks to the idea of "innovative development and technical refinement", and it has developed series of high-tech product which are popular and approbated by both of domestic and abroad customers. It proves its strength by obtaining several international patents.



Company Introduction

Foshan Suoer Electronic Industry Co., Ltd., founded in 2005, is located in the National High-tech Zone of Shishan Town, Nanhai District, Foshan City, Guangdong Province. The company is based on the new energy industry, focusing on distributed photovoltaic power generation, photovoltaic water pumping, and energy storage photovoltaic power generation. In other fields, it is a high-tech enterprise specializing in the R&D, production, sales and service of photovoltaic inverters for core equipment such as photovoltaic power generation systems, photovoltaic water pumping systems, and energy storage photovoltaic power generation systems. The company's main product is a photovoltaic inverter, the main purpose of which is to connect the electrical energy generated by the solar cell components into stable, AC power that meets the power quality requirements of the power grid and connect it to the grid; it can also supply power to the pump in real time to achieve Photovoltaic water and agricultural irrigation water are indispensable core equipment for solar photovoltaic power generation systems.

Since the company was founded, it now has a high-level technical R&D team, many of whom have more than 10 years of technical R&D experience and engineering design experience in the inverter field; the company's R&D team has many excellent industry experts and technical talents. The company is a national high-tech enterprise, Guangdong Provincial Photovoltaic Power (Suoer Electronics) Engineering Technology Research Center, Foshan New Energy and Energy Conservation Laboratory and Nanhai District New Energy and Energy Conservation Laboratory.

In the process of R&D and product industrialization, the company has owned a number of domestic and foreign authorized patents and pioneering technologies. It is precisely based on the commercial transformation of these patents and technologies that Sol has become a technological pioneer in the industry and has also applied these technologies. Products have become a best-selling product in the international market. At present, the products have been exported to more than 100 countries in the world, and also better serve the countries along the "Belt and Road".

The company is currently accelerating the innovative R&D and production of 5G power supplies and smart city power supplies, and is actively participating in the construction of national 5G projects and global 5G projects.



Colorful Exhibition Hall High quality production line Quintessence R&D Team Apex Sales Team

Certificate

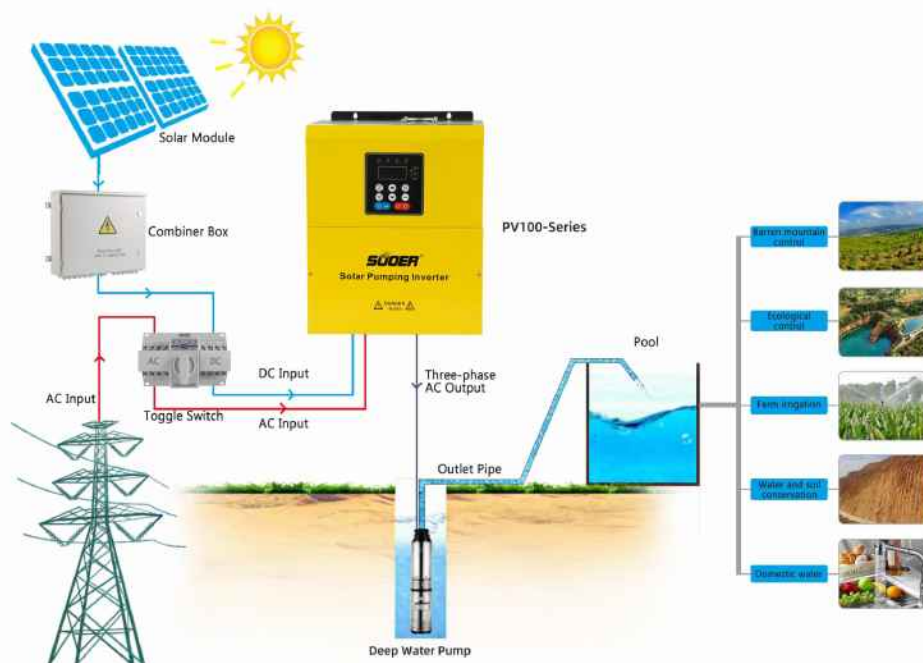
— Products Contents —



- 01~02 Solar Pumping Inverter
- 03~04 ON Grid Solar Inverter
- 05~12 High Frequency Hybrid Solar Inverter
- 13~13 Low Frequency Hybrid Solar Inverter
- 14~14 Hybrid Solar Inverter
- 15~16 Solar PV Charger Inverter
- 17~18 Pure Sine Wave Inverter
- 19~24 Modified Sine Wave Inverter
- 25~25 Solar On Grid Inverter
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- 33~36 PWM Solar Charger Controller
- 37~39 MPPT Solar Charger Controller
- 40~40 Solar Lighting Small System
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Solar Pumping Controller
Solar Variable-frequency Drive,VFD

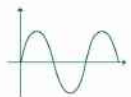

FEATURES

1. Comprehensive voltage level and power range, Support single-phase/three-phase 220V and three-phase 380V water pump, power from 0.4kW to 110KW.
2. Easy to use, Just connect the photovoltaic panel to the inverter, without setting any parameters, the photovoltaic pump can be automatically started after power on.
3. Advanced MPPT algorithm, Ensure that the solar tracking efficiency can reach 99%.
4. Including water level control logic to avoid idling state and adding full water protection.
5. Start smoothly to reduce the voltage spike of the motor.
6. Low starting voltage and wide input voltage range provide more possibilities for accepting multiple PV string configurations and different types of PV modules.
7. Digital intelligent control can flexible adjust and set pump's speed range.

Technical Parameter
PV100-series

Model	Pv100 2R2G 5S	Pv100 2R2G S	Pv100 004G 4T	Pv100 5R5G 4T	Pv100 7R5G 4T	Pv100 011G 4T	Pv100 015G 4T	Pv100 018R5G 4T	Pv100 022G 4T	Pv100 030G 4T	Pv100 037G 4T
Input Data											
PV Source											
Max.Input Voltage(Voc)	440VDC					800VDC					
Start-up Voltage(V)	200VDC					300VDC					
Lowest Working Voltage(V)	150VDC					250VDC					
Recommended DC input Voltage Range	200~400VDC					300~750VDC					
RecommendedMPPTVoltage	330VDC					550VDC					
AC/Generator											
Input Voltage	220(-15%)-240(+10%)VAC Single Phase					380(-15%)-440(+10%)VAC Three Phase					
Rated Input current(A)	24		13.5	19.5	25	32	40	47	51	70	80
Output Data											
Rated Output Power(KW)	2.2		4	5.5	7.5	11	15	18.5	22	30	37
Rated Output Voltage(V)	220(-15%)-240(+10%)VAC Single Phase		220(-15%)-240(+10%)VAC Three Phase		380(-15%)-440(+10%)VAC Three Phase						
Rated Output Current(A)	14	10	9.5	14	18.5	25	32	38	45	60	75
Output Frequency	50HZ/60HZ (optional)										
Protection											
Surge Protection(AC)	Integrated										
Under voltage Protection	Integrated										
Open Circuit Protection	Integrated										
Short Circuit Protection	Integrated										
Over heated Protection	Integrated										
Protection Level	The protection level of standard inverter is IP20, butthis field is not displayed										
General Date											
Ambient Temperature Range	-20℃~45℃										
Cooling Method	Fan Cooling										
Standard Warranty(month)	12										

Note: 1. According to the light conditions, in different regions, the PV array power can be 1.2-1.6 times to the pump power. 2. Use the deep well pump or the output power wire for a long occasion, the controller needs to enlarge one step.



New



>>SOG-5K-DM<<



>>SOG-3K-SM<<



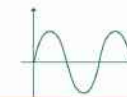
FEATURES

SOG5K-DM

- 1.Super large 4-inch LCD
- 2.I-V curve scanning function
- 3.IP65 ingress protection
- 4.Smart monitoring,RS485,Wifi/Ethernet/GPRS(optional)

Technical Parameter

SOG-series



Specifications	Model	SOG3K-SM	SOG5K-DM
Input Data (DC)			
Recommended max PV input power		3300W	5500W
Max DC power for single MPPT		/	3000W
Number of independent MPPT		/	2
Number of DC inputs		/	1 for each MPPT
Max. Input voltage		600V	600V
Number of MPPT/String per MPPT		1/1	/
Start-up input voltage			120V
Rated input voltage			360V
MPPT voltage range		80-550V	80V-550V
Full load DC voltage range		200-500V	175V-520V
Max. Input current per MPPT		/	15A/15A
Max. Input current		13A	/
Maximum DC input short circuit current per MPPT		19A	18A
Output Data (AC)			
Rated power		3000W	5000W
Max. AC power		3000VA	5000VA
Max. output current		/	/
Max.AC output current		14.3A	22A
Nominal grid voltage		L/N/PE, 220Vac, 230Vac,240Vac	
Grid voltage range		180Vac-276Vac (According to local standard) 150V-280VAC	
Nominal frequency		50Hz/60Hz	
Grid frequency range		45Hz-55Hz/54Hz-66Hz(According to local standard) 50/60Hz(±5%)	
Active power adjustable range		/	/
THDi		<3%	
Power factor		1 default(adjustable +/-0.8)	
Performance			
Max.Efficiency		97.8%	97.8%
European weighted efficiency		/	97.1%/97.3%
Self-consumption at night		/	<1W
MPPT adaptation efficiency		/	/
Protection			
DC reverse polarity protection		No	
DC switch		Optional	Optional
Protection class/overvoltage category		/	/
Anti-islanding protection		/	/
Input/output MOV(11)		/	/
Safety protection		/	/
Over temp protection		Yes	Yes
Leakage current protection		Yes	Yes
Over voltage protection		Yes	Yes
Over current protection		Yes	Yes
Earth fault protection		Yes	Yes
SPD		MOV: Type III standard	
Communication			
Power management unit		/	/
Standard communication mode		Rs485,WiFi/GPRS(optional)	
Operation date storage		25 Years	
I/O		Yes	/
General Data			
Topology		Transformerless	
Allowable relative humidity range		0~100%	
Noise		<25dB	
Cooling		Natural	
Max.Operating altitude		4000m(>3000m)	
Display		LCD /LED	
Degree of protection		IP65	
Warranty		/	
DC Switch		Optional	/
Ambient temperature range		-25℃~+60℃	-25℃~+60℃
Dimensions (W / H / D)		312.6*274.4*138mm	433.6*323.6*144mm
Self-consumption at night		<1W	/
Weight		12kg	19kg
Standard			
EMC		EN61000-6-2,EN61000-6-3,EN61000-3-2,EN61000-3-3	
Safety standards		IEC62109-1/2,IEC62116,IEC61727,IEC-61683,IEC60068(1,2,14,30)	
Grid standards		AS/NZS 4777,VDE V 0124-100,VDE V0126-1-1,VDE-AR-N4105,CEI0-21,EN50438/EN50549,GB3,C10/11,RD1699,UTE C-15-712-1;	



FEATURES

1. Equipped with PWM solar charge controller to maximize and regulate DC power from the solar array for charging the battery bank.
2. Transformerless design provides reliable power conversion in compact size
3. Besides, it's worry-free to start up motor-type loads such as refrigerators, motors, pumps, compressors and laser printers as well as electronic loads like TVs, Computers, power tool and battery chargers



Technical Parameter

Model	PS-1K-12	PS-3K-24	PS-5K-48
Rated Power	1000VA/800W	3000VA/2400W	5000VA/4000W
INPUT			
Voltage	230 VAC		
Selectable Voltage Range	170-280 VAC (For Personal Computers) 90-280 VAC (For Home Appliances)		
Frequency Range	50 Hz/60 Hz (Auto sensing)		
OUTPUT			
AC Voltage Regulation (Batt. Mode)	230VAC \pm 5 %		
Surge Power	2000VA	6000VA	10000VA
Efficiency(Peak)	90%	90%	90%
Transfer Time	10 ms (For Personal Computers) 20 ms (For Home Appliances)		
Waveform	Pure sine wave		
BATTERY & AC CHARGER			
Battery Voltage	12VDC	24 VDC	48 VDC
Floating Charge Voltage	13.5 VDC	27 VDC	54 VDC
Overcharge Protection	15VDC	30 VDC	60 VDC
Maximum Charge Current	10Aor20A	20Aor30A	10A/20A/30A/40A/50A/60A
SOLAR CHARGER(OPTION)			
Charging Current	50A		
Maximum PV Array Open Circuit Voltage	50 VDC	60 VDC	105VDC
PV Range @ Operating Voltage	15~18VDC	30~32VDC	60~72VDC
Standby Power Consumption	1 W	2W	2W
OPERATING ENVIRONMENT			
Humidity	5% to 95%Relative Humidity(Non-condensing)		
Operating Temperature	0° C-55° C		
Storage Temperature	-15° C-60° C		

* There are charging current selection only available for 230VAC system.
Product specifications are subject to change without further notice.

PS-series



HOME



OFFICE



FARM



INDUSTRIAL



SINE WAVE OUTPUT



SOLAR/AC CHARGER



PWM CONTROLLER INSIDE



FEATURES

1. Pure sine wave inverter
2. Selectable input voltage range for home appliances and personal computers
3. Selectable charging current based on applications
4. Configurable AC/Solar input priority via LCD setting
5. Compatible to mains voltage or generator power
6. Auto restart while AC is recovering
7. Overload and short circuit protection
8. Smart battery charger design for optimized battery performance
9. Built-in MPPT solar charge controller
10. Parallel operation with up to 6 units onits available for MPS 5K



Technical Parameter

MODEL	MPS-1K-24	MPS-3K-24	MPS-5K-48
Rated Power	1000VA/800W	3000VA/2400W	5000VA/4000W
INPUT			
Voltage	230 VAC		
Selectable Voltage Range	170-280 VAC (For Personal Computers) 90-280 VAC (For Home Appliances)		
Frequency Range	50 Hz/60 Hz (Auto sensing)		
OUTPUT			
AC Voltage Regulation (Batt.Mode)	230VAC ±5%		
Surge Power	2000VA	6000VA	10000VA
Efficiency(Peak)	90%~93%	93%	
Transfer Time	10 ms (For Personal Computers) 20 ms (For Home Appliances)		
Waveform	Pure sine wave		
BATTERY & AC CHARGER			
Battery Voltage	24 VDC	24 VDC	48 VDC
Floating Charge Voltage	27VDC	27 VDC	54 VDC
Overcharge Protection	31 VDC	31 VDC	60 VDC
Maximum Charge Current	10A/20A	20Aor30A	10A/20A/30A/40A/50A/60A
SOLARCHARGER			
Maximum PV Array Power	600 W	1500W	4000 W
MPPT Range @ Operating Voltage	30VDC~ 66VDC	30VDC~115VDC	60VDC~ 115VDC
Maximum PV Array Open Circuit Voltage	75 VDC	145 VDC	145VDC
Maximum Charging Current	25A	60A	60A/80A
Maximum Efficiency	98%		
Standby Power Consumption	2W		
OPERATING ENVIRONMENT			
Humidity	5% to 95%Relative Humidity(Non-condensing)		
Operating Temperature	0° C-55° C		
Storage Temperature	-15° C-60° C		
Product specifications are subject to change without further notice.			
MODEL	MPS-1K-24	MPS-3K-24	MPS-5K-48
In verter Power	800W	2400W	4000W
Pmax. generated from solar charger	25Amp 600W	60Amp 1500W	60A/80Amp 3000W/4000W
Best Panel Configuration	500Wp (250Wpx2pcs)	1500Wp(250Wpx6pcs)	3000Wp (250Wpx16pcs)

* There are charging current selection only available for 230VAC system.
Product specifications are subject to change without further notice.

MPS-series



FEATURES

1. Pure sine wave inverter
2. Built-in PWM solar charge controller
3. High efficiency pure sine wave inverter(PF=1)
4. Selectable input voltage range and frequency according to city power in your country
5. Charging current is setable according to your battery type
6. Configurable AC/Solar input priority via LCD setting
7. Compatible to mains voltage or generator power
8. Auto restart while AC is recovering
9. Overload and short circuit protection
10. Smart charging system optimizes battery performance



PC



TV



Electric fan



FM Radio



Solar Power

LCD Display Information



1. LCD display
2. Status indicator
3. Charging indicator
4. Fault indicator
5. Function buttons
6. Power on/off switch
7. AC input
8. AC output
9. PV input
10. Battery input
11. Circuit breaker
12. RS232 communication port
13. Dry contact

Introduction:

Equipped with PWM solar charge controller to maximize and regulate DC power from the solar array for the charging the battery bank. Transformer-less design provides reliable power conversion in compact size and with high efficiency. With aluminum housing, Integrated interface system, It's light and handy, making installation easier. It's the ideal inverters for small PV plants, or individ-ually for small house, both indoors and outdoors.

Solar System Connection



Technical Parameter

PS-Plus-series

Model	PS-1K-12-PLUS	PS-3K-24-PLUS	PS-5K-48-PLUS
Rated Power	1000VA/1000W	3000VA/3000W	5000VA/5000W
INPUT			
Voltage	230 VAC		
Selectable Voltage Range	170~280 VAC(For Personal Computers) 90~280 VAC(For Home Appliances)		
Frequency Range	50 Hz/60 Hz(Auto sensing)		
OUTPUT			
AC Voltage Regulation (Batt. Mode)	230VAC±5%		
Surge Power	2000VA	6000VA	10000A
Efficiency (Peak)	90%	90%	90%
Transfer Time	10 ms(For Personal Computers) 20 ms(For Home Appliances)		
Waveform	Pure sine wave		
BATTERY &AC CHARGER			
Battery Voltage	12 VDC	24 VDC	48VDC
Floating Charge Voltage	13.5 VDC	27 VDC	54VDC
Overcharge Protection	15 VDC	30 VDC	60VDC
Maximum Charge Current	10A or 20A	20A or 30A	10A20A/30A/40A/50A/60A
SOLAR CHARGER(OPTION)			
Charging Current	50A		
Maximum PV Array Open CircuitV oltage	50 VDC	60 VDC	105VDC
PV Range Operating Voltage	15 ~18VDC	30~32VDC	60~72VDC
Standby Power Consumption	1 W	2 W	2 W
OPERATING ENVIRONMENT			
Humidity	5% to 95% Relative Humidity(Non-condensing)		
Operating Temperature	0°C~55°C		
Storage Temperature	-15°C~60°C		

*Typical transfer time for parallel operation is 30ms
Product specifications are subject to change without further notice



FEATURES

1. Pure sine wave inverter
2. Built-in MPPT solar charge controller
3. High efficiency pure sine wave inverter (PF=1)
4. Selectable input voltage range for home appliances and personal computers
5. Selectable charging current based on applications
6. Configurable AC/Solar input priority via LCD setting
7. Compatible to mains voltage or generator power
8. Auto restart while AC is recovering
9. Overload and short circuit protection
10. Smart battery charger design for optimized battery performance
11. Parallel operation with up to 6 units available for MPS 5k



PC



TV



Electric fan



FM Radio



Solar Power

Introduction:

Equipped with MPPT solar charge controller to maximize and regulate DC power from the solar array for the charging the battery bank. Transformer-less design provides reliable power conversion in compact size and with high efficiency. With aluminum housing, integrated interface system, it's light and handy, making installation easier. It's the ideal inverters for small PV plants, or individually for small houses, both indoors and outdoors.

Solar System Connection



LCD Display Information



Technical Parameter

MPS-Plus-series

Model	MPS-1K-24-PLUS		MPS-3K-24-PLUS		MPS-5K-48-PLUS
Rated Power	1000VA/1000W		3000VA/3000W		5000VA/5000W
INPUT					
Voltage	230 VAC				
Selectable Voltage Range	170-280 VAC(For Personal Computers) 90-280 VAC(For Home Appliances)				
Frequency Range	50 Hz/60 Hz(Auto sensing)				
OUTPUT					
AC Voltage Regulation (Batt. Mode)	230VAC±5%				
Surge Power	2000VA	6000VA		10000A	
Efficiency (Peak)	90%~93%	93%			
Transfer Time	10 ms(For Personal Computers) 20 ms(For Home Appliances)				
Waveform	Pure sine wave				
BATTERY &AC CHARGER					
Battery Voltage	24 VDC	24 VDC		48VDC	
Floating Charge Voltage	27VDC	27 VDC		54VDC	
Overcharge Protection	31VDC	31 VDC		60VDC	
Maximum Charge Current	10A or 20A	20A or 30A		10A20A/30A/40A/50A/60A	
SOLAR CHARGER					
Maximum PV Array Power	600W	600W	1500W	3000W	
MPPT Range@ Operating Voltage	30 VDC~66VDC	30 VDC~66VDC	30 VDC~115VDC	60VDC~115VDC	
Maximum PV Array Open CircuitV oltage	15 ~18VDC	75VDC	145VDC	145VDC	
Maximum Charging Current	25A	25A	60A	80A	
Maximum Efficiency	98%				
Standby Power Consumption	2W				
OPERATING ENVIRONMENT					
Humidity	5% to 95% Relative Humidity(Non-condensing)				
Operating Temperature	0°C-55°C				
Storage Temperature	-15°C-60°C				
	Product specifications are subject to change without further notice				
MODEL	MPS-1K-24-PLUS		MPS-3K-24-PLUS		MPS-5K-48-PLUS
Inverter Power	1000W		3000W		5000W
Pmax generated from solar charger	25Amp 600W	25Amp 600W	60Amp 1500W	80Amp 4000W	
Best Panel Configuration	500wp (250Wp x 2pcs)	500wp (250Wp x 2pcs)	1500wp (250Wp x 6pcs)	3000wp (250Wp x 16pcs)	



Introduction:

The VMS series all in one solar system is the perfect go-to solution for off-grid, backup power for homes, small business, and it also delivers a value added, easy to install system that provides efficient power globally for every need.

FEATURES

1. High efficiency pure sine wave inverter (PF=1)
2. Wide PV input range (120Vdc~500Vdc) 80A MPPT SCC; Intelligent 3 stage 60A/80A AC charger
3. Surges to 2X continuous power for 5 seconds for motor loads
4. Intelligent functionality enables utility and solar input prioritization
5. Wide utility input range (90Vac~280Vac) for unreliable grid even
6. In the most challenging environments
7. Field serviceable with replacement boards and spare parts
8. Monitor, troubleshoot, or communication with USB/RS232
9. System configures quickly into compact, wall-mounted system
10. Working without batteries in sun day

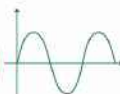
Solar System Connection



Technical Parameter

VMS-series

Model	VMS-3K-24	VMS-5K-48
Rated Power	3200VA/ 3200W	5000VA/5000W
INPUT		
Voltage	230 VAC	
Selectable Voltage Range	170-280 VAC(For Personal Computers) 90-280 VAC(For Home Appliances)	
Frequency Range	50 Hz/60 Hz(Auto sensing)	
OUTPUT		
AC Voltage Regulation (Batt. Mode)	230VAC±5%	
Surge Power	6000VA	6000VA
Efficiency (Peak)PV to INV	97%	
Efficiency (Peak)Battery to INV	94%	
Transfer Time	10 ms(For Personal Computers); 20 ms(For Home Appliances)	
Waveform	Pure sine wave	
BATTERY &AC CHARGER		
Battery Voltage	24VDC	48VDC
Floating Charge Voltage	27VDC	54VDC
Overcharge Protection	33VDC	63VDC
Maximum Charge Current	80A	60A
SOLAR CHARGER		
Maximum PV Array Power	4000W	
MPPT Range@ Operating Voltage	120~450 VDC	
Maximum PV Array Open Circuit Voltage	500VDC	
Maximum Charging Current	80A	
Maximum Efficiency	98%	
Communication interface	USB/RS232	
Monitoring	WIFI/GPRS(optional)	
OPERATING ENVIRONMENT		
Humidity	5% to 95% Relative Humidity(Non-condensing)	
Operating Temperature	0°C-55°C	
Storage Temperature	-15°C-60°C	


PWM
MPPT

FEATURES

1. LED and LCD display with multi-function, Real-time display of dynamic values.
2. Built-in PWM / MPPT solar charging controller, maximize the solar energy.(3K,5K)
3. Built-in automatic AC charger and automatic AC mains switcher. Switch time $\leq 5\text{ms}$.
4. MPPT High Transfer efficiency is above 90%.
5. Continuous stable pure sine wave output.
6. 3 times surge power, excellent loading capability.

Technical Parameter
PL-series

Model	PL-1KA (1000VA) 700W	PL-1.5KA (1500VA) (1000W)	PLP-1000	PL-3KVA (3000VA) (1800W)	PL-5KVA (5000VA) (3000W)
Rated capacity			1000W		
Mains Input	220VAC(+5%)				
Frequency range	50Hz/60Hz $\pm 2.5\text{Hz}$				
Waveform	Pure sine wave				
Battery efficiency	81%	81%	83%	83%	85%
The utility efficiency	93%				
Output Voltage	AC220V $\pm 5\%$				
Output Frequency	50/60Hz $\pm 1\%$ (battery mode)				
Transfer time	8ms				
Battery	12V	12V	12V	24V	48V
Charge current	0-20A	0-20A	0-30A	0-30A	0-30A
Charging Current	/	/	30A(PWM)	60A(MPPT)	60A(MPPT)
Max PV Array open circuit voltage	/	/	40VDC	105VDC	105VDC
Display	LCD+LED				
Method	input/output voltage, Battery capacity,load capacity,machine mode,frequency				
Content	Breakdown insurance of power status,Inverse shutdown				
Output short circuit	When the load exceeds 105 %, the buzzer gives out an alarm sound and does not shut down.Load over 110%,120%,60 seconds protection shutdown;Load more than 130%, 10 seconds protection shutdown;Load overload 150% 0.5 second protection shutdown;				
Overload	Turn off power supply and inverter automatically				
High main voltage	The machine will automatically shut off the output,and the machine will automatically resume charging when the mains power is restored				
Low battery voltage	To turn it off				
Over-term perature	-10 - 50°C				
Temperature	$\leq 3000\text{m}$				
Altitude					

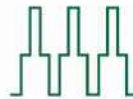
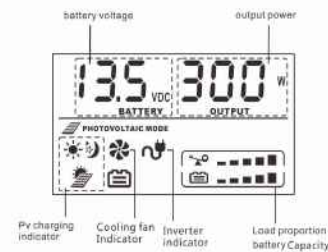

PWM

FEATURES

1. Automatic line-to-battery switchover
2. High efficient DC-to-AC conversion, minimized energy loss.
3. Rack Tower design for flexible placement.
4. Built-in enhanced charger.
5. Intelligent-stage charger control for efficient charging and preventing overcharge.
6. Overload protection.
7. Auto restart once AC recovery.
8. Multi-function LED/LCD indications and buzzer alarms.


Technical Parameter
SON-series

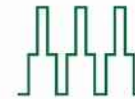
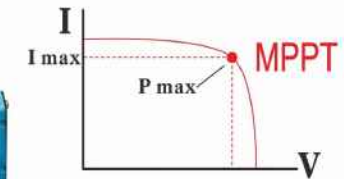
Model	SON-1500VA	SON-2400VA
Input Nominal Voltage	220~240VAC	
Input Voltage Range	90~280VAC	
Input Nominal Frequency	50Hz or 60Hz(Auto Detection)	
Solar Nominal Voltage	18Vdc	36Vdc
Solar Charging Current	50A $\pm 1\text{Amax}$	
Output Voltage	$\pm 10\%$	
Output Frequency	50/60Hz0.1Hz	
Output Waveform	Modified Sine-wave	
Output Efficiency(AC to AC)	$>95\%$	
Output Efficiency(DC to DC)	$>80\%$	
Battery Norminal Voltage	12Vdc	24Vdc
Charger Charging Voltage	14.4DC	28.8DC
Charger Charging Current	15A20A $\pm 2\text{Amax}$	10A15A $\pm 1\text{Amax}$
Charger Overcharging Protection	16.0V	32.0V
Transfer Time	15-20ms typical(narrow range40ms max(wide range)	
Audible Alarm Low Battery Voltage inbattery mode	Buzzing every 2 seconds	
Audible Alarm Overload	Buzzing every 0.5 seconds	
Audibl Alarm Fault	Buzzing continuously	
Environment Temperature	0~40°C	


FEATURES

1. Built-in PWM solar charge controller 10A.
2. Adopt auto PV-charging control system.
3. 3.0" LCD screen displays real-time information.
4. Battery reverse connecting protection, etc.
5. Universal socket, suitable for all kinds of plugs.
6. Modified sine wave form output
7. Applicable for resistive AC loads.


Technical Parameter
SUS-series

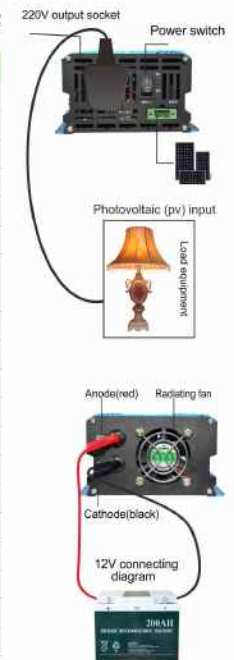
Model	SUS-500A	SUS-1000A
The built-in	12V/10A PWM	12V/20A PWM
Featured solar	100~150W/18V	100~200W/18V
External battery	12V	12V
USB output	5A 1A	5A 1A
Output voltage	5.0+/-0.3V	5.0+/-0.3V
Output voltage	AC 220V+/-5%	AC 220V+/-5%
Maximum	350W	600W
Peak power	500W	1000W
No load current	<0.5A	<0.5A
DC input voltage	DC9.7V~15.5V	DC9.7V~15.5V
Output	50+/-3Hz	50+/-3Hz
Conversion	70%~80%	70%~80%
High Voltage cut	15V+/-0.5V	15V+/-0.5V
Low voltage	11.2V+/-0.3V	11.2V+/-0.3V
Low voltage	10V+/-0.3V	10V+/-0.3V
Overload, short	Yes	Yes
Output	Modified sine wave	Modified sine wave
Cooling mode	Fan cooler	Fan cooler
Working	-20°C~+70°C	-20°C~+70°C
Relative	<90%RH	<90%RH

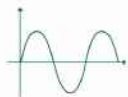

New

FEATURES

1. Built-in MPPT solar charge controller 600W (Solar input voltage: 18V-45V).
2. LCD screen displays real-time information.
3. Universal socket, suitable for all kinds of plugs.
4. Modified sine waveform output.
5. Applicable for resistive AC loads.
6. Battery reverse connecting protection, etc.

Technical Parameter
SUS-series

Model	SUS-1500A
The built-in controller	600W MPPT(18V-45V)
Solar panel specifications	100~150W/18V
External battery	12V 100Ah~200Ah
Solar input range.	18V ~ 45V
Solar power output.	5A 1A
Solar charging voltage.	14.3V
Output voltage of the inverter	AC 220V±5%
Maximum continuous power	800W
Peak power	<0.8A
DC input voltage	DC9.7V~15.5V
Output frequency	50Hz ±3Hz
Conversion efficiency	> 88%
High pressure cut off	15V±0.5V
Low voltage alarm	10.2V±0.3V
Low cut	10V±0.3V
Overload, short circuit protection	Yes
Output waveform	Modified Sine Wave
cooling mode	Fan cooler
working environment temperature	-20°C~40°C @ 100% load / 60°C @ 60% load
Relative humidity	<90%RH





<<Special applicable for inductive loads.



>>My family:
FPC-500BL
FPC-1000BL



FEATURES

1. 5V 1A USB charging interface.
2. Pure sine wave form output.
3. Applicable for inductive loads (Such as Air conditioner).
4. Peak power 6000W (2s).
5. Multiple safe protections.
6. Input and output are completely independent.
7. Universal socket , suitable for all kinds of plugs.
8. High-precision voltage stability technology.
9. Gained ISO certificates guaranteed.

Technical Parameter

FPC-series

Model	FPC-300AL	FPC-500AL	FPC-1000AL	FPC-1500A	FPC-2000A	FPC-2000B	FPC-3000A	FPC-3000B
Rated Battery Voltage	12VDC	12VDC	12VDC	12VDC	12VDC	24VDC	12VDC	24VDC
Rated current	32A	50A	100A	110A	190A	95A	280A	140A
No-load current	<600mA	<800mA	<1000mA	<1300mA	<1500mA	<1200mA	<2000mA	<1600mA
Efficiency	>91%	>91%	>85%	>85%	>85%	>85%	>85%	>85%
Battery Type	Lead-acid battery	Lead-acid battery	Lead-acid battery	Lead-acid battery	Lead-acid battery	Lead-acid battery	Lead-acid battery	Lead-acid battery
Rated power	300W	500W	1000W	1100W	1800W	2000W	2600W	3000W
AC Voltage	220VAC	220VAC	220VAC	220VAC	220VAC	220VAC	220VAC	220VAC
Frequency	50Hz	50Hz	50Hz	50Hz	50Hz	50Hz	50Hz	50Hz
Waveform	Pure sine wave	Pure sine wave	Pure sine wave	Pure sine wave	Pure sine wave	Pure sine wave	Pure sine wave	Pure sine wave
Low Voltage Alarm	10~10.5V	10~10.5V	10~10.5V	10~10.5V	10~10.5V	20~21V	10~10.5V	20~21V
Battery under voltage shutdown	9.5-10V	9.5-10V	9.5-10V	9.4-10V	9.4-10V	18-20V	9.4-10V	18-20V
Battery Low Voltage Recovery	11.5-12V	11.5-12V	11-12V	11-12V	11-12V	22-24V	11-12V	22-24V
Battery Overvoltage Protection	15-15.5V	15-15.5V	15-15.5V	15-16V	15-16V	30-33V	15-16V	30-33V
Battery Overvoltage Recovery	14-14.5V	14-14.5V	14-14.5V	14.5-15V	14.5-15V	29-30V	14.5-15V	29-30V
Reverse connection Protection	yes	yes	yes	no	no	no	no	no
Output short	Turn off output and resume after restart			After eliminating the short-circuit fault, it will automatically output normally				
Overload protection	Turn off output and resume after restart			Reduce the load until there is no alert				
Overtemperature	Turn off the output when the internal temperature is higher than 65℃, and automatically resume the output when it is lower than 70℃							
Working environment temperature	-40~70℃							
Working humidity	20%~95%RH							
Storage temperature /humidity	-40~85℃,10~90%RH							



>>PSA-1000A/B
PSA-2000A/B
PSA-3000A/B<<

>>PSA-3000D<<

FEATURES

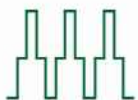
1. Pure sine waveform output, input and output are completely independent.
2. Adopt new safe connecting terminal.
3. LCD screen display shows full working condition.
4. Suitable for inductive loads, such as air conditioner.
5. Overload protection with buzzer.
6. 2 USB charging Ports 5V 2.1A.
7. Conversion efficiency is up to 88%.
8. Multiple safe protection.
9. Charging function(only PSA-3000D)



Technical Parameter

PSA-series

Model	PSA-1000A	PSA-1000B	PSA-2000A	PSA-2000B	PSA-3000B	PSA-3000D
Rated Power	1000W	1000W	2000W	2000W	3000W	2400W
Output Waveform	Pure Sine Wave					
Output Voltage	220V/230V±5V					
Harmonic distortion	<3%(Impedance load)					
Standby current	<1.5A	<1.3A	<2A	<2A	<2A	<1A
Conversion efficiency	Maximum 94%					
Rated Voltage	12V	24V	12V	24V	24V	24V
Maximum input current	200A	100A	300A	150A	200A	150A
Input Voltage Range	10-15V	20-32V	10V-15V	20V-32V	20V-32V	20V-32V
Under voltage protection	10V	20V	10V	20V	20V	20V
Under voltage tip	10.5V	21V	10.5V	21V	21V	21V
Under pressure recovery	12.3V	24.6V	12.3V	24.6V	24.6V	24.6V
Over voltage protection	15.5V	31V	15.5V	31V	31V	31V
Over voltage recovery	15V	30V	15V	30V	30V	30V
High temperature protection	95℃					
Output short circuit protection	Yes					
Output overload	Intelligent Protection					
Load power factor	0.98					
USB Output	5V 2.1Amax(PSA-3000D-24V does not include this function)					
Battery reverse protection	Fuse protection					
Cooling way	Intelligent fan					
Working temperature	-20-50℃					
Storage temperature	-20-80℃					


FEATURES

1. DC 12V/24V to AC 220V 500W to 4000W
2. LED screen display
3. Applicable for refrigerator
4. Built-in 5V 1A USB charging interface
5. Advanced modified sine waveform output, can run some inductive loads smoothly
6. Accessories: Cigarette lighter or connecting lips is optional

Range of application

Technical Parameter
STA-series

Model		STA-500A	STA-1000A	STA-1500A	STA-2000A	STA-2000B	STA-3000A	STA-3000B	STA-4000A	STA-4000B
Output	Output voltage	AC230V(110V)								
	Rated power	400W	650W	1000W	1500W	1500W	2000W	2000W	2500W	2500W
	Peak power	500W	1000W	1500W	2000W	2000W	3000W	3000W	4000W	4000W
	Frequency	50Hz	50Hz	50Hz	50Hz	50Hz	50Hz	50Hz	50Hz	50Hz
	USB	DC 5V 1A	DC 5V 1A	DC 5V 1A	DC 5V 1A	DC 5V 1A	DC 5V 1A	DC 5V 1A	DC 5V 1A	DC 5V 1A
Input	No-load current	<0.3A	<0.5A	<0.5A	<0.5A	<0.3A	<1	<1	<2.5	<2.5
	working voltage	DC 12V	DC 12V	DC 12V	DC 12V	DC 24V	DC 12V	DC 24V	DC 12V	DC 24V
	Voltage range	10.5-15V	10.5-15V	10.5-15V	10.5-15V	21-30V	10.5-15V	21-30V	10.5-15V	21-30V
	Alarm voltage	10.5V	10.5V	10.5V	10.5V	21V	10V	20.5V	10V	20.5V
	Low-voltage protection	10V	10V	10V	10V	20.5V	10V	20.5V	10V	20.5V
Overvoltage protection		16V	16V	16V	16V	31V	16V	31V	16V	31V
Efficiency		70%~80%								



>>STB-1000A<<

FEATURES

1. DC 12V to AC 110V 500W to 1000W
2. LED screen display
3. Applicable for refrigerator
4. Built-in 5V 1A USB charging interface
5. Advanced modified sine waveform output, can run some inductive loads smoothly
6. Accessories: Cigarette lighter or connecting lips is optional


Technical Parameter
STB-series

Model	STB-500A	STB-1000A
Output voltage	110VAC	110VAC
Output power	400W	650W
Output frequency	60Hz	60Hz
Output waveform	modified sine wave	modified sine wave
USB	DC 5V 1A	DC 5V 1A
No-load current	<0.3A	<0.5A
working voltage	DC 12V	DC 12V
Input voltage range	10.0-15.0 VDC	10.0-15.0 VDC
alarm voltage	10. 5V	10. 5V
Low -voltage protection	10V	10V
over -voltage protection	16V	16V
efficiency	>85%	>85%



FEATURES

1. Built-in 10A charger (C series)
2. Battery Reverse connecting protection (AF & C series)
3. 5V 1A USB charging interface (AF & C series)
4. Inverter and charger can work independent noninterference (SAA-500C/1000C)
5. Modified sine wave form output

Technical Parameter

SAA-series

Model	SAA-500A	SAA-1000A	SAA-500C	SAA-1000C	SAA-200AF	SAA-500AF	SAA-1000AF	SAA-1500A
Input voltage	12V							
Output voltage	220V~235V AC							
Rated power	300W	550W	300W	550W	120W	300W	550W	550W
Peak power	700W	1200W	700W	1200W	170W	700W	1200W	1200W
Efficiency	85%							90%
Protections	Overload protection, Input over-voltageprotection, Input low-voltage protection, Overtemperature protection		Overload protection, Input over-voltage protection, Input low-voltage protection, Overtemperature protection, Battery Reverse protection					
Packed QTY(PCS)	20							
Certifications	ISO,CTA,CE							



Smart fan



USB Interface



Multiple protections



Low power consumption during no-load

FEATURES

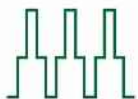
1. 5V 1A USB Interface (SUA-2000C&3000A)
2. Modified Sine Wave form Output
3. New connecting terminal screws
4. Built-in 20A charger (C-series)
5. Most Competitive price ever



Technical Parameter

SUA-series

Model	Output Voltage	Output Power	Peak Power	Frequency	No-load Current	Working Volt	Voltage Range	Efficiency
SUA-2000A	AC220V(AC110V)	700w	2000w	50Hz	<0.3A	DC12V	10.5-15V	85%~90%
SUA-2000C	220V-230V	700w	2000w	50Hz	<0.3A	DC12V	10.5-15V	85%~90%
SUA-2000AF	AC230V	700w	2000w	50Hz	<0.3A	DC12V	10.5-15V	85%~90%
SUA-3000A	AC220V(AC110V)	900w	3000w	50Hz	<0.3A	DC12V	10.5-15V	85%~90%
SUA-3000BF	AC220V	850w	1700w	50Hz	<0.3A	DC24V	21-30V	>90
SUB-1500AF	AC230V	1500w	3000w	50Hz	<0.3A	DC12V	10.5-15V	>90
SUB-1500BF	AC230V	1500w	3000w	50Hz	<0.3A	DC24V	21-30V	>90
SUB-2000BF	AC230V	2000w	4000w	50Hz	<0.3A	DC24V	21-30V	>90



>>My family:
SDA-300A/SDA-350A
SDA-500A/SDA-600AF
SDA-1000A/SDA-1000B

Technical Parameter

SDA-series

Model	SDA-300A	SDA-350A	SDA-500A	SDA-600AF	SDA-1000A
Waveform	Modified sine wave				
Output	Output voltage	AC220V	AC220V	AC220V	AC220V
	Output power	300W	300W	320W	550W
	Peak power	600W	700W	1000W	2000W
	Frequency	50Hz	50Hz	50Hz	50Hz
	USB output	/	/	/	/
Input	No-load current	<0.5A	<0.5A	<0.5A	<0.6A
	Working voltage	DC 12V	DC 12V	DC 12V	DC 12V
	Voltage range	10.5-15V	10.5-15V	10.5-15V	10.5-15V
	Efficiency	>90%	>90%	>90%	>90%



FEATURES

1. Modified Sine Wave output.
2. Automatic circuit protection: Over temperature protection, Battery low voltage protection, short circuit protection and ground protection.
3. Soft-start circuit can raise the output voltage to avoid start failure.
4. Hanging style design makes it convenient to install.
5. 60HZ output can be preset if need.
6. Low standby power cost, high conversion efficiency.

Technical Parameter

SDA-series

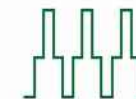
Model	SDA-100TA	SDA-150TA	SDA-200TA	SDA-300TA
Waveform	Modified sine wave			
Output	Output voltage	AC220V	AC220V	AC220V
	Output power	100W	150W	200W
	Peak power	200W	300W	400W
	Frequency	50Hz	50Hz	50Hz
	USB output	DC 5V 500MA	DC 5V 500MA	DC 5V 500MA
Input	No-load current	<0.5A	<0.5A	<0.5A
	Working voltage	DC 12V	DC 12V	DC 12V
	Voltage range	10.5-14.5V	10.5-14.5V	10.5-15V
	Efficiency	>90%	>90%	>90%

>>My family:
SDA-100TA
SDA-150TA
SDA-200TA
SDA-300TA



FEATURES

1. Smart fan and Intelligent power starting function.
2. Microcomputer energy saving control.
3. LCD display shows real-time information: battery voltage and capacity, output voltage, load power.
4. Battery low voltage protection, overload and short circuit protection, over temperature protection.
5. Hanging style design makes it convenient to install.

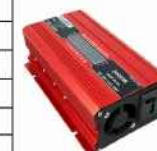


>>My family: SDB-500A/SDB-500A
SDB-1000A/SDB-1000B
SDB-D1500A/SDB-D1500B
SDB-D2000A/SDB-D2000B

Technical Parameter

SDB-series

Model	SDB-500A	SDB-1000A	SDB-D1500A	SDB-D2000A
Waveform	Modified sine wave			
Output	Output voltage	AC230V	AC230V	AC230V
	Output power	300W	600W	1000W
	Peak power	500W	1000W	2000W
	Frequency	50Hz	50Hz	50Hz
	USB output	DC5V 1A	DC5V 1A	DC5V 1A
Input	No-load current	<0.3A	<0.5A	<1A
	Working voltage	DC 12V	DC 12V	DC 12V
	Voltage range	10.5-15V	10.5-5V	10.5-15V
	Alarm voltage	10.5V	10.5V	10.5V
	Low-voltage protection	10V	10V	10V
	Over voltage protection	16V	16V	16V
	Efficiency	>85%	>85%	>90%



Technical Parameter

SFR-series

Model	SFR-600A	SFR-1200A
Output voltage	220VAC	
Output frequency	50Hz \pm 2Hz	
Output waveform	modified sine wave	
Input voltage range	10.0-15.0 VDC	
Fuse	40A/80A	
Low battery alarm(nominal)	10.4-11.0V	
Low battery shutdown point(nominal)	9.7-10.3V	
High battery shutdown point(nominal)	14.5-15.5V	
Battery drain with no load(at 12V input)	<0.3A	
Battery drain with no load(at 24V input)	<0.2A	
Peak efficiency	>90%	
Continues AC output power	350W/600W	
Peak power	700W/1200W	
USB charging	DC 5V/1A	

FEATURES

1. Battery Reverse connecting protection
2. 5V 1A USB charging interface
3. Modified sine wave form output
4. Overload protection, Input over voltage protection, Input low-voltage protection, Overtemperature protection, Battery Reverse protection




FEATURES

1. Compatible with Multi-parallel inverters.
2. Anti-islanding protection, frequency protection.
3. Adopt specialized wiring terminal, greatly improve reliability and safety performance.
4. Small power grid-tie inverter can be paralleled to obtain large power output.
5. Low standby power consumption, high conversion efficiency.
6. Cooling fan is controlled and regulated by load power and temperature.
7. Intelligent MPPT charge technology.
8. Multiple inverters are compatible in the circuit in parallel, small power inverters can provide high power output.

Technical Parameter
GTI-D-series

Model	GTI-D1000B	GTI-D600B	GTI-D300B
Output Power	1000W	600W	300W
Solar Panel	Vmp:35-39V, Voc:42-45V		
MPPT Voltage Range	30-40V		
AC Voltage Range	190-260V		
Voltage Frequency	50HZ±1%		
Power factor	>97.5%		
MPPT Efficiency	>99%		
Total Harmonic	<5%		
Phase Shift	<2%		
Conversion Efficiency	>85%	>86%	>87%
Maximum Efficiency	>89%	>89%	>90%
Operating	-20°C-45°C		
Waterproof Rate	Interior Design		
Cooling Mode	Intelligent design of the electric fan control system		
Standby Power Loss	2-3W		

>>ML-20B<<


FEATURES

1. Output short-circuit protection, battery reverse connecting protection, battery low voltage protection, over temperature protection etc.
2. Three-phase charging mode.
3. LCD display shows real-time information: charging voltage, charging current, battery capacity, charging time, temperature.
4. Adjustable charging current: 4A/8A/12A/20A.
5. Hanging style design makes it convenient to install.
6. Applicable ambient temperature -10°C~40°C.

Technical Parameter
ML-series

Model		ML-20A	ML-20B
Input voltage		220VAC 50Hz	220VAC 50Hz
Input current		2.5A	2.5A
Output current(max)		20A	20A
Constant voltage		12.6A±0.1V	14.6A±0.1V
Current Selection	Automatic Selection	4A	4A
	Maintenance Selection	8A	8A
	Regular Selection	12A	12A
	Fast Selection	20A	20A
Battery type		Ternary polymer lithium Battery(3 series/3.7*3)	Lithium Iron Phosphate Battery(4series/3.2*4) 12V lead-acid battery
Working temperature		-10°C-40°C	-10°C-40°C
Storage temperature		-20°C-70°C	-20°C-70°C



MHFamily :MH-1210A/MH-1220A/MH-1230A

FEATURES

1. Car Engine start function (10s).
2. Battery autofix feature.
3. LCD screen display (Charging time , Temperature , Charging current / voltage , Battery capacity.
4. Adjustable charging current 4A / 8A / 12A / 20A / 30A / 40A.
5. Reverse connecting protection.
6. Three phase charging mode.
7. OEM & ODM are acceptable.



Technical Parameter

MH-series

Model	MH-1210A	MH-1220A	MH-1230A	MH-1240A
Input Voltage	150V/250V	180V/240V	180V/240V	180V/240V
Apply to the battery voltage (DC)	12V	12V	12V	12V
Maximum charge voltage	14.5V	14.5V	14.5V	14.5V
Maximum Charger Current	10A	20A	30A	40A
Display method	Digital	Digital	Digital	Digital
AC Input Frequency	47~63HZ	47~63HZ	47~63HZ	47~63HZ
Charging mode	Three-phase	Three-phase	Three-phase	Three-phase
Full load efficiency	>90%	>90%	>90%	>90%
Packed QTY/CTN	20PCS	20PCS	20PCS	20PCS
Certification	ISO,CTA,CE			



Similar models:MA-1210AS



Similar models:MA-2420



Similar models:MA-1220AS



Similar models:MA-1230A

Technical Parameter

MA-series

Model	MA-1210AS	MA-1220AS	MA-1230A	MA-2420A
Input Voltage	220V/240V	220V/240V	220V/240V	220V/240V
Apply to the battery voltage (DC)	12V	12V	12V	24V
Maximum charge voltage	14.5V	14.5V	14.5V	29V
Maximum Charger Current	10A	20A	30A	20A
AC Input Frequency	47~63HZ	47~63HZ	47~63HZ	47~63HZ
Charging mode	Three-phase	Three-phase	Three-phase	Three-phase
Full load efficiency	>90%	>90%	>90%	>87%
Packed QTY/CTN	20PCS	16PCS	12PCS	12PCS
Certification	ISO,CTA,CE			

FEATURES

- 1.fast charging mode.
- 2.LED display.
- 3.MCU Control management system (MA-1210AS,MA-1220AS).
- 4.Reverse connecting protection
- 5.Hanging style design makes it convenient to install
- 6.The power will be turned off automatically when the battery gets fully charged.
- 7.Three-phase charging mode makes it charger quickly.



>>My family: SON-10A+/SON-20A+

FEATURES

1. Apply to lead-acid battery. Manually select the charging voltage: SON-10A+: 6V/12V, SON-20A+: 12V/24V.
2. Three-phase charging mode and energy saving fan.
3. Automatic and fast charging mode is selectable.
4. Battery reverse connecting protection, short circuit protection.
5. LED displays the charging current.



Technical Parameter

SON-series

Model	SON-10A+	SON-20A+
Input voltage	AC 150V~250V50/60Hz	AC 150V~250V50/60Hz
Charging voltage	6V/12V	12V/24V
Constant current charging current	10A±10%	20A±10%
Float charging voltage	6.8/13.7V±0.3V	7.2/14.4V±0.4V
Constant voltage charging voltage	13.7/27.4V±0.4V	14.4/28.8V±0.4V



FEATURES

- Omni-directional battery protection functions.
1. The power will be turned off automatically when the battery gets fully charged.
 2. Three-phase charging mode makes it charger quickly.
 3. Reverse connect protection and short circuit protection.
 4. It can judge whether there is a battery, and will shut down automatically if there is no one.
 5. No spark appears when connecting, very safe.
 6. Hanging style design makes it easy to install.



Similar models: SON-1203B/SON-1205B



>>SON-1210D+>>

FEATURES

1. Rated input voltage : 100-240V
2. Adopt charging mode, auto stop charging when the battery gets fully charged
3. Charging voltage / Battery capacity / Charging current LCD real-time display
4. Applicable for gel battery, lead-acid battery and maintenance-free battery
5. Prevent battery from losing liquid (Low battery dehydration rate)
6. Battery repair function (only SON-1206Y)



>>SON-1206D+>>

Technical Parameter

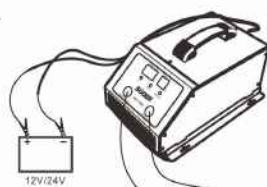
SON-series

Model	SON-1203B	SON-1205B	SON-1206D	SON-1206Y	SON-1210D+
Input Voltage	100V-240V	100V-240V	110V-240V	90V-250V	150V-240V
Apply to the battery voltage(DC)	12V	12V	12V	12V	12V
Maximum charge voltage	14.5V	14.5V	14.5V	SON-1206Y	14.5V
Maximum Charger Current	3A	5A	6A	6A	10A
Display method	indicator light	indicator light	LED digital tube	LED digital tube	LED digital tube
AC Input Frequency	47~63HZ	47~63HZ	47~63HZ	47~63Hz	47~63HZ
Charging mode	Three-phase	Three-phase	Three-phase	Three-phase	Three-phase
Full load efficiency	>90%	>90%	>90%	>87%	>90%
Packed QTY/CTN	60PCS	60PCS	50PCS	50PCS	50PCS
Repair function	×	×	×	✓	×

FEATURES

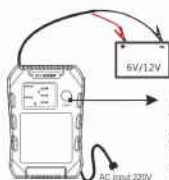
1. Automatic identification of 12V / 24V battery.
2. Max charging current 8A.
3. Three phase charging mode.
4. Reverse connecting protection, overcharger protection, short circuit protection.
5. Adjustable charging current: 2A, 4A, 8A.
6. No sparks when connecting the battery.
7. OEM & ODM are acceptable.

>>A02-1224M>>

>>A01-0612A>>


AC input:220V

- Repair Charge: Press Repair to display RE = ON means open repair; repair indicator light indicates repair start charging, RE = OF means closed repair (Repair time is 30 minutes).
- Manual operation/automatic charging options: by volume selection key: OU = 2A slow charge, OU = 4A conventional charge, OU = 6 SA fast charge, OU = AU automatic charge.



- Capacity selection / repair switch: Short pressing for electric current selection (OU=1A, OU=2A, OU=4A, OU=6 SA, OU=AU fully-automatic charge); press 3 seconds for opening the repair function (display RE = ON); repair indicator light is often said to start repairing charge; press 3 seconds again for closing the repair function (display RE=OF); when the charger is in the mode of repairing, short press can also turn to repair electric current, repair time is 90 minutes.

>> A01-0612A >>

Technical Parameter
A01/A02-series

Model	A02-1224A	A02-1224B	A01-0612A
Input Voltage	170V-250V	170V-250V	170V-250V
Apply to the battery voltage (DC)	12V / 24V (automatic recognition)	12V / 24V (automatic recognition)	6V / 12V Adaptive
Charge Current	2A, 4A, 8A	2A, 4A, 8A	2A, 4A, 8A or Automatic
AC Input Frequency	50HZ	50HZ	50HZ
Charging mode	Three-phase	Three-phase	Three-phase
Full load efficiency	≥87%	≥87%	≥87%
Packed QTY/CTN	20 PCS	20 PCS	20 PCS
Certification		ISO,CTA,CE	

>>A03-1224>>

FEATURES

1. Input voltage: 170V-250V
2. Adjustable charging current: 3-30A
3. Auto identification of 12V / 24V battery
4. Three phase charging mode
5. Battery repaired technology

Technical Parameter
A03-series

Model	A03-1224
Charging current	3-30A
Applicable battery voltage (DC)	12V/24V adaptive
Rated input voltage (AC)	170V-250V
Rated frequency	50Hz
Full load efficiency	>87%
Mechanical shock and quake-proof degree	Agree with the SAEJ1378 requirements.
Temperature range	-40~ + 90°C



Double USB output(5V2.1A)



FEATURES

- 1.Clock timing function
- 2.Built-in two 5V 2.1A USB interfaces
- 3.Extreme Low Power Consumption
- 4.LCD Display with backlight
- 5.Adjustable charging voltage (Low : 14.2V , Default : 14.5V , High : 15.2V)
- 6.Light control mode , Time control mode
- 7.Designed for 12V / 24V solar power system
- 8.Hanging style design makes it convenient to install
- 9.Available in 10A/20A/30A/40A/50A/60A
- 10.Simple options , automatic memory retention of users settings
- 11.High and low voltage protection, overcurrent protection, overload protection, lightning protection

>Same Product Color:ST-C1220/ST-C1230/ST-C1250

>Same Product Color:ST-C1210/ST-C1240/ST-C1260

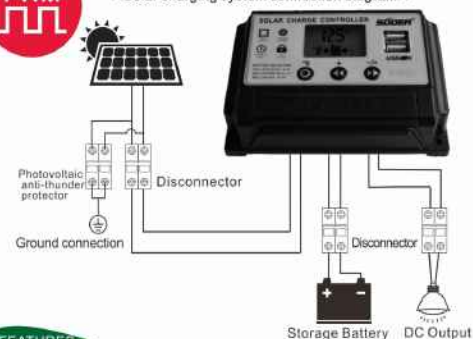
Technical Parameter

ST-C-series

Model	ST-C1210	ST-C1220	ST-C1230	ST-C1240	ST-C1250	ST-C1260
To adapt to the battery	12V/24V ,battery<16V:12V,Battery>18V:24V					
Maximum charging voltage	12V:18-24V Standard specifications solar panels(24V battery*2)					
Maximum charging current	10A	20A	30A	40A	50A	60A
The largest output current	12A	24A	35A	45A	55A	65A
Maximum charging voltage	Convenient switch:(24V Battery *2,Parameters can adjust in the Settings menu) Set 1:Low: 14.2V(28.4V),Gel battery(Default Option) Set 2:Default:14.5V(29V)(Conventional lead-acid batteries) Set 3:High: 15.2V(30.4V)(Liquid lead-acid battery)					
	Low voltage protection voltage					
	Low pressure recovery voltage					
	Load overload automatic recovery					
Double USB output	5V 2.1A				No	
Load relating to open time	0-24 hours can choose					
Infrared remote control distance	>5m					



<<Solar charging system connection diagram>>



FEATURES

- 1.Three battery charging settings have been preset(B01Leadacid battery,B02Lithium ion battery,B03Lithium iron phosphate battery),according to the types of batteries, with power-off memory function, which can remember the settings when users power on next time.
- 2.Large-screen LCD display, charging and discharging parameters can be fully customized.
- 3.Adopt complete three phase PWM charge management (Constant current mode, constant voltage mode, floating charge mode).
- 4.Built-in overcurrent/short circuit/open circuit and battery reverse protection.
- 5.Double MOS tube anti-reverse circuit protection, which prevents battery current from being caused power loss transferring to the solar cell at night.



ST-S Family:ST-S1210/ST-S1220/ST-S1230

Technical Parameter

ST-S-series

Model	ST-S1210	ST-S1220	ST-S1230
System voltage	12V/24V		
Maximum input voltage	<50V		
Rated current	10A	20A	30A
External 12V battery recommended Solar panel specifications	100W/18V	200W/18V	300W/18V
External 24V battery recommended Solar panel specifications	100W/36V	200W/36V	300W/36V
External battery	12V 100-150Ah	12V 100-150Ah	12V 100-150Ah
	24V 100-150Ah	24V 100-150Ah	24V 100-150Ah
Battery Type	B01=Lead Acid Battery 12V B02=Lithium-ion battery 3 series 3.7V=11.1V B03=Lithium iron phosphate battery 4 series 3.2V=12.8V		
Charging voltage	*14.3V(B01)	*12.6V(B02)	*14.6V(B03)
Low-voltage cut-off voltage	*10.7V(B01)	*9V(B02)	*10V(B03)
Low power recovery voltage	*12.6V(B01)	*10.5V(B02)	*12V(B03)
USB output	5V/2A		
Standby current	<10mA		
Working temperature	-35~+60°C		



>> All model products are the same size >>

FEATURES

- 1.MCU control.
- 2.Load turns on work ,mode can be selected.
- 3.Overloading protection.
- 4.Short circuit protection.
- 5.Thunder and Lighting protection.
- 6.Over discharger protection.
- 7.Over charger protection.



Technical Parameter

ST-G-series

Model	ST-G1205	ST-G1210	ST-G1215	ST-G1220	ST-G1230
Rated charging power	60W	120W	180W	240W	360W
Charging current rating	5A	10A	15A	20A	30A
Battery voltage	12V/24V				
Charging voltage	13.6V/27.2V				
Float charging voltage	13.8V/27.6V				
Discharge cut-off voltage	10.5V/21V				
Battery over-voltage protection	17V/34V				
Output protection	>1.25 times rated current 60s protection				
	>1.5 times rated current 5s protection				
	>3 times rated current straightway protection				
	>short circuit immediately protection				
Discharge cut-off current	10mA				
Standby loss	0.2mA				
Charging circuit pressure drop	≤0.26V				
Discharge circuit voltage drop	≤0.15V				
Charging control mode	PWM pulse width modulation				



>>> IP67 waterproof level controller, aging-resistance, corrosion resistance.



FEATURES

- 1.PWM fast charging mode
- 2.LED display
- 3.MCU Control management system
- 4.Auto battery voltage identification
- 5.Light control mode , Time control mode
- 6.Hanging style design makes it convenient to install
- 7.Water-proof , Moisture-proof , Dust-proof (Only available: ST-F1220, ST-F1230)
- 8.Special design for streetlamps

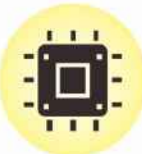
>Same Product Shell: ST-F1205/ST-F1210 >Same Product Shell: ST-F1220/ST-F1230

Technical Parameter

ST-F-series

Model	ST-F1205	ST-F1210	ST-F1220	ST-F1230
voltage range of solar panel	15V-40V		18V-24V	
			36V-48V	
Battery voltage	12V-24V		12V/24V	
Max output current	5A	10A	20A	30A
Max charging current	5A	10A	24A	35A
Recommended solar panel power	12V(40W)	12V(80W)	12V(200W)	12V(300W)
	24V(80W)	24V(160W)	24V(400W)	24V(600W)
Battery capacity	24AH	60AH	120AH	180AH
Overload current protection	30s		30s	
	/		Ip67	
Waterproof Level	/		Ip67	
System standby power consumption	<10MA		<20MA	

MPPT



High performance chip



High speed fans



Multiple protections



DC LOADS

New



ST-MP60

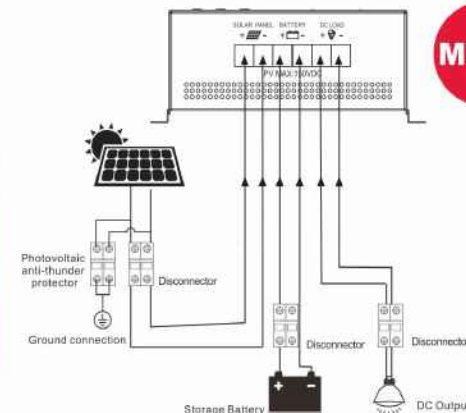
Technical Parameter

ST-MP-series

Model: ST-MP30A/40A/50A/60A/80A/100A		30A	40A	50A	60A	80A	100A
charging mode	MPPT automatic maximum power point tracking						
charging method	Three stages:constant current charging(MPPT),Equalizing charging,float charging						
system type	12V/24V/48V	Automatical recognition/Manual setting					
System identification voltage range	12V system	DC9V-DC15V					
	24V system	DC18V-DC30V					
	48V system	DC36V-DC60V					
Quiescent dissipation	12V/24V/48V	≤2W					
overall unit efficoency	12V/24V/48V	≥96.5%					
Photovoltaic module utilization ratio	12V/24V/48V	≤99%					
Input Characteristics							
mppt working voltage range	12V system	DC18V-DC150V					
	24V system	DC30V-DC150V					
	48V system	DC65V-DC150V					
maximum solar input power	12V system	450W	570W	700W	900W	1200W	1500W
	24V system	750W	1130W	1400W	1700W	2250W	2900W
	48V system	1500W	2270W	2800W	3400W	4500W	5700W
Output Characteristics							
Optional battery type (default lead-acid-free maintenance-free battery)	sealed lead acid,Gel,Nicd battery or Use-Defined						
Floatong charging voltage(lead acid battery)	12V system	13.8V(customizable floating charge voltage)					
	24V system	27.6V(customizable floating charge voltage)					
	48V system	55.2V(customizable floating charge voltage)					
Average charge voltage(lead acid battery)	12V system	14.4V(customizable floating charge voltage)					
	24V system	28.8V(customizable floating charge voltage)					
	48V system	57.6V(customizable floating charge voltage)					
rated current	12V/24V/48V	30A	40A	50A	60A	80A	100A
current-limiting protection	12V/24V/48V	30A	40A	50A	60A	80A	100A
temperature coefficient	12V/24V/48V	±0.02%/℃					
Auto temperature compensation	12V/24V/48V	-4mV℃					

FEATURES

1. Creative maximum power point tracking technology can reach transfer efficiency of 97%.
2. Max. Input voltage of solar panel: 150VDC.
3. With Clock timing function, light control mode, time control mode.
4. Excellent heat dissipation design and cooling fan of intelligent control.
5. Three types of lead-acid batteries and lithium battery charging program can be selected.
6. Can set up information on LCD display with button.
7. Protection function: over charge, over discharge, over-load, short circuit self-protection.

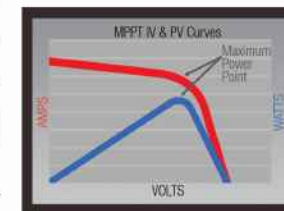


MPPT

Technical Parameter

ST-MP-series

Model: ST-MP30A/40A/50A/60A/80A/100A		30A	40A	50A	60A	80A	100A
Display							
LCD display	LCD panel indicating solar power,load level,battery voltage /capacity,charging current,and fault conditions						
LED display	DC output indication						
Protection							
Input low voltage protection	Reference input attribute						
input high voltage protection	Reference input attribute						
Input polarity reverse protection	yes						
Output polarity reverse protection	yes						
short-circuit protection	could be short-circuited for a long time,could be recovered after the short-circuit fault is eliminated						
High temperature protection	90 degress Celsius						
Audible noise	≤45dB						
Heat dissipation mode	fan cooling						
type of mechanical protection	Ip32						
Environmental requirements							
Humidity	0 ~ 90%RH(No Dew)						
height above sea level	0 ~ 3500M						
Ambient temperature	-20℃ ~ + 60℃						
storage temperature	-40℃ ~ + 70℃						
Photovoltaic module configuration							
System voltage (battery voltage)	Photovoltaic module load voltage(recommended data)						
12V System	18V ~ 144V						
24V System	36V ~ 144V						
48V System	72V ~ 144V						





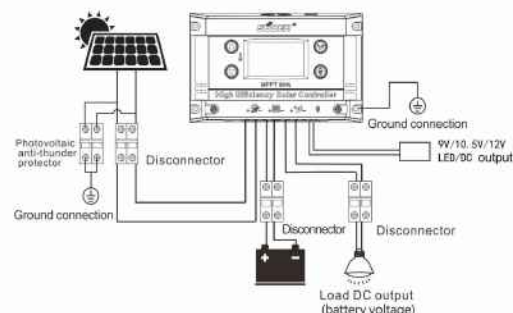
ST-H Family-ST-H1210/ST-H1220/ST-H1230

FEATURES

1. Max output voltage of solar panel : 50V
2. Regulatory mechanism of temperature compensation
Auto regulate the charging voltage according to the temperature sensors
3. Built-in 2 USB 5V 2.1A charging interfaces
4. Auto identify system voltage of 12V / 24V
5. LED luminance can be adjusted

MPPT


<<Solar charging system connection diagram>>


Technical Parameter
ST-H-series

Function	Model	ST-H1210	ST-H1220	ST-H1230
To adapt to the battery voltage		12V/24V Adaptive(Battery<16V:12V System Battery>18V:24V System)		
Rating charger voltage		50V		
Rating charger current		10A	20A	30A
Recommended power of solar panel		12V Open-loop Voltage 18-24V Standard Solar Panel 150W*1 24V Open-loop Voltage 36-48V Standard Solar Panel 300W*1		
Recommended number of solar panels		1 Pieces in parallel	2 Pieces in parallel	3 Pieces in parallel
Charging way		Intelligent Charging MPPT Maximum Power Point tracking		
Constant voltage charging voltage		Default: 14.2V (24V battery *2) parameters can be set in menu /Quick switch available		
Constant current charging current		10A	20A	30A
Under-voltage protection voltage		Default:10.5V(24V Battery*2)parameters can be set and adjusted in menu		
Ove pressure recovery voltage		Default:12.5V(24V Battery*2) parameters can be set and adjusted in menu		
Battery charge voltage summer and winter temperature compensation		16 mV/°C @ 12 V		32 mV/°C @ 24 V
Load overload automatic Recovery time		30S		
DC output		5V2.1A		
Double USB output		9V/10.5V/12V		1A
Stand-by power consumption		< 20mA		
Operating temperature range		-20°C ~ 55°C		



>>My family:SG-1210A/SG-1210B

FEATURES

1. 5 LED indicators show battery capacity precisely
2. build-in controller 12v/7A
3. 3XDC output ports 12V/3A
4. 2XUSB port 5V/1A
5. Multifunction radio(FM, MP3, SD card)
6. Large arc shaped handle, easy to carry
7. Perfect protection function, high reliability
8. Meet power demand: of house lightingtravel, camping etc.


Technical Parameter
SG-series

Model	SG-1210A	SG-1210B
Solar panel	Polycrystalline solar module 18V-10W(with 6 meters wire)	
Lead-acid battery	12V 7AH (built in)	/
lithium iron phosphate battery	/	12V 9AH (built in)
USB socket	5V/2A	5V/2A
Speaker	2W4(built in)	2W4(built in)
LED socket	12V 1A(max)*3	12V 1A(max)*3
FM range	88-108MHZ	88-108MHZ
LED lighting source	12V 3W	12V 3W

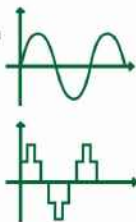
1. Basic concept of inverter

①The inverter is a power converter that converts 12V, 24V, 48V, 60V or 72V safe low-voltage direct current into 110V or 220V high-voltage alternating current, which can be used by most electrical appliances.

2. According to the inverter output waveform, it is divided into two categories: modified sine wave inverter and sine wave inverter. The difference between sine wave inverter and modified wave inverter waveform

①.The voltage waveform output by the pure sine wave inverter is the same as the grid voltage waveform we use daily. Since there is no electromagnetic pollution to the grid by various electrical appliances on the grid, it is more suitable for some inductive load appliances.

②There is a certain time interval between the output waveform of the modified sine wave inverter from the positive maximum value to the negative maximum value. Compared with the pure square wave inverter, the use effect has been greatly improved, coupled with the advantages of high cost performance, it is a lot First choice for less demanding users.



3. Simple instructions for use of the inverter

1. The battery voltage must be consistent with the nominal input voltage of the inverter

The inverter is a converter used to convert the DC power of the battery into 220V or 110V AC power supply. The voltage of the battery must be consistent with the input voltage of the inverter. The battery of the car is 12V, the battery of the truck is 24V, the electric vehicle with 4 batteries in series is 48V, and the electric vehicle with 5 batteries in series is 60V. For example: 12V input inverter can only be equipped with single or multiple parallel 12V car batteries.

2. With high-power electrical appliances, in addition to the inverter's rated output power greater than the electrical power, the battery capacity should also be large enough. As for how much capacity (AH) the battery needs, it depends on how much power the electric appliance needs. The simple estimation formula is as follows:

How much power can the battery carry = Battery capacity * Battery voltage * 0.8

Examples * A 12V car battery with a capacity of 80Ah.

80 Ah * 12V * 0.8 = 768W

(Over-discharge of the battery will shorten the battery life. It is necessary to leave 20% of the battery to maintain the battery. The coefficient 0.8 means that the battery can only be discharged to 80% of the battery capacity.)

3. What happens when the battery capacity is small or the battery capacity is reduced: After the appliance is connected, the inverter will turn on a red light or beep to alarm, and there is no 220V output.

Judgment method □ You can turn off the inverter switch first, if you have a multimeter, connect the battery to measure the battery voltage, then close the switch after connecting the appliance, and immediately watch the voltage change on the multimeter or the digital display change of the input voltage on the inverter. If you enter the battery The voltage drops quickly or very low (for example: the battery voltage after a 12V battery is fully charged is more than 12.7V. If the voltage drops below 11V after turning on the appliance and an alarm occurs), then there are several possibilities:

a. The battery capacity is not large enough or the battery power is not enough..

b. Maybe the battery is seriously aging.

c. The wire lug terminal (or clip) on the battery and inverter connection cable is not firmly connected to the cable; or the surface of the wire lug terminal (or clip) is oxidized.

Solution:

a. If the battery capacity is small, you can replace it with a large-capacity battery or use it with multiple batteries, or use a small-power electrical appliance; if the storage battery is large enough but the power is not enough, you need to fully charge it or replace it with a small-power electrical appliance.

b. If the battery is aging, it needs to be replaced with a new battery. The capacity of the battery will gradually decrease as the use time increases, which means that the time with the same electrical appliance becomes shorter and shorter until it fails.

c. Use pliers to rivet and reinforce the connection point, or use a large soldering iron to add tin to solder firmly; the oxidized black terminal can be scraped with a knife to expose the copper color and then firmly install it.












4. Please use the factory wiring as much as possible for the connection cable between the inverter and the battery. If it needs to be longer, it should not exceed 5 meters.

The cross-sectional area of the core should be increased accordingly. If the distribution is small, it will not only stop the cable from heating, but also seriously affect the reverse The use of transformers.

The specific calculation formula is as follows:

Rated power of inverter ÷ Inverter input rated voltage ÷ 5 (5A/mm) = Square number of cables

For example: 12V 1000W inverter 1000W ÷ 12V ÷ 5 = 16 mm Cored cable

Appliance category	For example: Load electrical appliances	Starting power	Inverter
inductive load For example: electric motors, compressors, electric drills, refrigerators, washing machines, air conditioners, energy-saving lamps, water pumps, motors, (sine wave inverter is recommended))	 Refrigerator 130W	Instantaneous peak power 7 times 130W*7=910W	rated power≥500W Peak power≥950W
	 Blower 240W	The peak power of starting is 5-7 times 240W*7=1680W	rated power≥500W Peak power≥2000W
	 Drill	Starting peak power is about 5 times 350W*5=1750W	rated power≥500W Peak power≥2000W
	 Air conditioning 750W	Peak power is about 3 times 750*3=2250W	rated power≥1000W Peak power≥2500W
	 Energy saving lamp 80W	Instant start power is about 7-10 times 80W*10=800W	rated power≥500W Peak power≥1000W
Resistive load heating type For example: light bulbs, rice cookers, resistors (from the perspective of saving money, a modified sine wave inverter is recommended) Capacitive load For example: LCD TVs, computers, printers, laptops	 Bulb 150W	Instant start power 1 times 1x150W=150W	rated power≥150W Peak power≥150W
	 Rice cooker 750W	Instant start power 1 times 1x750W=750W	rated power≥750W Peak power≥750W
	 Electric ceramic heaters	Instant start power 1 times 2000W*1=2000W	rated power>2500W Peak power≥2500W
	 Television 150W	Instant start power 2 times 150W*2=300W	rated power>150W Peak power>300W
	 Laptop 90W	Instant start power 1.5 times 90W*1.5=135W	rated power>100W Peak power≥150W
Large-scale audio system (power frequency inverter is strongly recommended, the sound quality is pure and interference-free, and there will be "humming" noise at high frequencies)	 Equipment 250W	Instant start power 3 times 250W*3=750W	rated power≥500W Peak power≥800W

Reminder: The starting power is for reference only, and the specific parameters are determined according to the actual electrical characteristics.