



- Pure Sine Wave Inverter >>
- Modified Sine Wave Inverter >>
- Battery Charger >>
- PWM/MPPT Solar Charger Controller >>



Foshan Suoer Electronic Industry Co., Ltd.

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FOSHAN SUOER ELECTRONIC INDUSTRY CO.,LTD

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

Quintessence R&D Team

Apex Sales Team

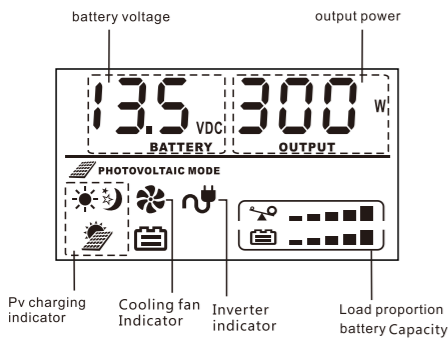
High quality production line

Certificate

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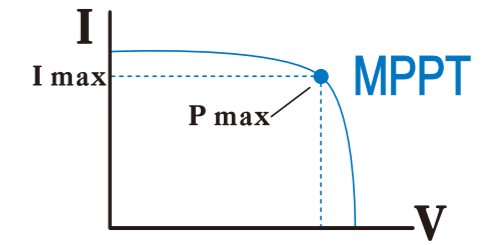


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FEATURES

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.



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

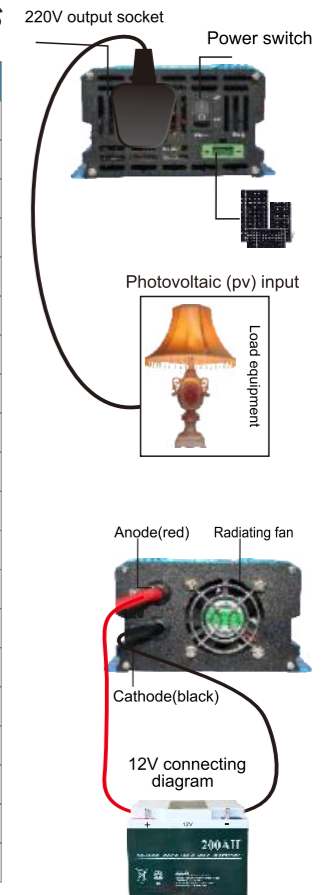
Model	SUS-500A	SUS-1000A
The built-in	12V/10A PWM	12V/20A PWM
Featured solar	100~150W/18V	100~200W/18V
External battery	12V	12V
USB output	5A 1A	5A 1A
Output voltage	5.0+/-0.3V	5.0+/-0.3V
Output voltage	AC 220V+/-5%	AC 220V+/-5%
Maximum	350W	600W
Peak power	500W	1000W
No load current	<0.5A	<0.5A
DC input 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

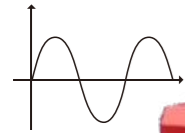


Technical Parameter

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 wavform	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.



>>FPC-300AL/BL, FPC-500AL/BL<<



>>FPC-1500AP<<

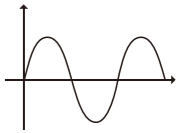
FEATURES

- Efficiency is more than 91%,with digital display.
- Low leakage current, less than 90 microamperes
- Intelligent speed-regulating fan: The fan with output power greater than 60% or temperature in the machine over 50°C rotates fast, otherwise it rotates slowly.
- Multiple protection: Input undervoltage protection/ Input overvoltage protection/Overload protection/Overheat protection/Short circuit protection
- Applications: Vehicles and yachts; Home appliances, office and portable equipment, etc.
- AC charging current (only FPC-1000CL)

Technical Parameter

FPC-series

Model		FPC-300AL	FPC-500AL	FPC-500BL	FPC-1000AP	FPC-1000BP	FPC-1000CL	FPC-1500AP	FPC-1500BP
DC Input	Rated Battery Voltage	12VDC	12VDC	24VDC	12VDC	24VDC	12VDC	12VDC	24VDC
	Rated current	32A	50A	25A	100A	50A	100A	150A	75A
	No-load current	≤600mA	≤600mA	≤300mA	≤1000mA	≤500mA	≤1000mA	≤1000mA	≤500mA
	Efficiency	≥89%	≥89%	≥91%	≥90%	≥90%	≥90%	≥90%	≥90%
	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
AC Output	Rated power	300W	500W	500W	1000W	1000W	1000W	1200W	1200W
	AC Voltage	220V/110V	220V/110V	220V/110V	220V/110V	220V/110V	220V/110V	220V/110V	220V/110V
	Frequency	50HZ/60HZ	50HZ/60HZ	50HZ/60HZ	50HZ/60HZ	50HZ/60HZ	50HZ/60HZ	50HZ/60HZ	50HZ/60HZ
	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
Mains	Power failure switching time	/	/	/	/	/	10ms	/	/
Charging	Current	/	/	/	/	/	10A	/	/
Input protection	Low Voltage Alarm	10-10.5V	10-10.5V	20-21V	10-10.5V	20-21V	10-10.5V	10-10.5V	20-21V
	Battery undervoltage shutdown	9.5-10V	9.5-10V	19-20V	9.5-10V	19-20V	9.5-10V	9.5-10V	19-20V
	Battery Low Voltage Recovery	11.5-12V	11.5-12V	23-24V	11.5-12V	23-24V	11.5-12V	11.5-12V	23-24V
	Battery Overvoltage Protection	15-15.5V	15-15.5V	30-31V	15-15.5V	30-31V	15-15.5V	15-15.5V	30-31V
	Battery Overvoltage Recovery	14-14.5V	14-14.5V	28-29V	14-14.5V	28-29V	14.5-15V	14-14.5V	28-29V
	Reverse connection protection	YES	YES	YES	NO	NO	NO	NO	NO
Output protection	Output Short	Turn off output and resume after restart							
	Overload protection	Automatically recovering after 2S, after 3 times failing recover, the output will be protect and locked , and recover after restart.							
	Overtemperature	Turn off the output when the internal temperature is higher than 85 °C, and automatically resume the output when it is lower than 70 °C							
Environment	Working environment temperature	-40~70°C							
	Working humidity	20%~95%RH							
	Storage temperature /humidity	-40~85°C, 10~90%RH							



>>FPC-1000AP/BP
FPC-2000AP/BP
FPC-3000AP/BP<<

FEATURES

- Efficiency is more than 90%.
- Low leakage current, less than 90 microamperes
- Intelligent speed-regulating fan: The intelligent speed-adjusting fan does not rotate at no-load, the fan rotates slowly when the load reaches more than 5%, and the fan rotates quickly when the load reaches more than 55% or the temperature exceeds 60°C
- Multiple protection: Input undervoltage protection/ Input overvoltage protection/Overload protection/Overheat protection/Short circuit protection
- Applications: Vehicles and yachts; Home appliances, office and portable equipment, etc.
- AC charging current (only FPC-2000CL, 3000CL)

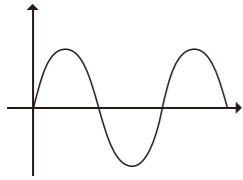


>>FPC-2000CL
FPC-3000CL<<

Technical Parameter

FPC-series

Model		FPC-2000AP	FPC-2000BP	FPC-2000CL	FPC-3000AP	FPC-3000BP	FPC-3000CL
DC Input	Rated Battery Voltage	12VDC	24VDC	12VDC	12VDC	24VDC	12VDC
	Rated current	200A	100A	200A	300A	150A	150A
	No-load current	≤1300mA	≤700mA	≤1500mA	≤1500mA	≤750mA	≤750mA
	Efficiency	≥88%	≥88%	≥88%	≥88%	≥88%	≥88%
	Battery Type	Lead-acid Battery	Lead-acid Battery	Lead-acid Battery	Lead-acid Battery	Lead-acid Battery	Lead-acid Battery
AC Output	Rated power	2000W	2000W	2000W	3000W	3000W	3000W
	AC Voltage	220V/110V	220V/110V	220V/110V	220V/110V	220V/110V	220V/110V
	Frequency	50HZ/60HZ	50HZ/60HZ	50HZ/60HZ	50HZ/60HZ	50HZ/60HZ	50HZ/60HZ
	Waveform	Pure Sine Wave	Pure Sine Wave	Pure Sine Wave	Pure Sine Wave	Pure Sine Wave	Pure Sine Wave
Mains	Power failure switching time	/	/	10ms	/	/	10ms
Charging	Current	/	/	28A	/	/	40A
Input protection	Low Voltage Alarm	10-10.5V	20-21V	10-10.5V	10-10.5V	20-21V	10-10.5V
	Battery undervoltage shutdown	9.5-10V	19-20V	9.5-10V	9.5-10V	19-20V	9.5-10V
	Battery Low Voltage Recovery	11.5-12V	23-24V	11.5-12V	11.5-12V	23-24V	11.5-12V
	Battery Overvoltage Protection	15-15.5V	30-31V	15-15.5V	15-15.5V	30-31V	15-15.5V
	Battery Overvoltage Recovery	14-14.5V	28-29V	14.5-15V	14-14.5V	28-29V	14.5-15V
	Reverse connection protection	NO	NO	NO	NO	NO	NO
Output protection	Output Short	Turn off output and resume after restart					
	Overload protection	Automatically recovering after 2S, after 3 times failing recover, the output will be protect and locked , and recover after restart.					
	Overtemperature	Turn off the output when the internal temperature is higher than 85 °C, and automatically resume the output when it is lower than 70 °C					
Environment	Working environment temperature	-40~70°C					
	Working humidity	20%~95%RH					
	Storage temperature /humidity	-40~85°C, 10~90%RH					



>>PSA-5KG<<



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

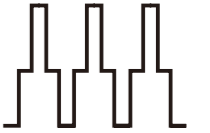
FEATURES

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.

Technical Parameter

PSA-series

Model	PSA-1000A	PSA-1000B	PSA-2000A	PSA-2000B	PSA-5KG
Rated Power	1000W	1000W	2000W	2000W	5000W
Output Waveform	Pure Sine Wave				
Output Voltage	220V/230V±5V				
Harmonic distortion	<3%(Impedance load)				
Standby current	<1.5A	<1.3A	<2A	<2A	/
Conversion efficiency	Maximum 94%				
Rated Voltage	12V	24V	12V	24V	48V
Maximum input current	200A	100A	300A	150A	150A
Input Voltage Range	10-15V	20-32V	10V-15V	20V-32V	40V-58V
Under voltage protection	10V	20V	10V	20V	40V
Under voltage tip	10.5V	21V	10.5V	21V	42V
Under pressure recovery	12.3V	24.6V	12.3V	24.6V	49.2V
Over voltage protection	15.5V	31V	15.5V	31V	61V
Over voltage recovery	15V	30V	15V	30V	59V
USB Output	5V 2.1Amax(PSA-3000D-24V does not include this function)				/
High temperature protection	95°C				
Output short circuit protection	Yes				
Output overload	Intelligent Protection				
Load power factor	0.98				
Battery reverse protection	Fuse protection				
Cooling way	Intelligent fan				
Working temperature	-20-50°C				
Storage temperature	-20-80°C				



FEATURES

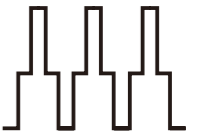
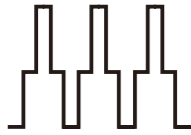
1. DC 12V/24V to AC 220V 500W to 3000W
2. LED screen display
3. Applicable for refrigerator
4. Built-in 5V 1A USB charging interface
5. Advanced modified sine waveform output, can run some inductive loads smoothly
6. Accessories: Cigarette lighter or connecting lips is optional



Technical Parameter

STA-series

Model	STA-500A	STA-1000A	STA-1500A	STA-2000A	STA-2000B	STA-3000A	STA-3000B	
Output	Output voltage	AC230V						
	Rated power	400W	650W	1000W	1500W	1500W	2000W	2000W
	Peak power	500W	1000W	1500W	2000W	2000W	3000W	3000W
	Frequency	50Hz	50Hz	50Hz	50Hz	50Hz	50Hz	50Hz
Input	USB	DC 5V 1A	DC 5V 1A	DC 5V 1A	DC 5V 1A	DC 5V 1A	DC 5V 1A	DC 5V 1A
	No-load current	<0.3A	<0.5A	<0.5A	<0.5A	<0.3A	<1	<1
	working voltage	DC 12V	DC 12V	DC 12V	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
	Alarm voltage	10.5V	10.5V	10.5V	10.5V	21V	10V	20.5V
	Low-voltage protection	10V	10V	10V	10V	20.5V	10V	20.5V
	Overvoltage protection	16V	16V	16V	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	STB-1500A
Output voltage	110VAC	110VAC	110VAC
Output power	400W	650W	1000W
Output frequency	60Hz	60Hz	60Hz
Output waveform	modified sine wave	modified sine wave	modified sine wave
USB	DC 5V 1A	DC 5V 1A	DC 5V 1A
No-load current	<0.3A	<0.5A	<0.5A
working voltage	DC 12V	DC 12V	DC 12V
Input voltage range	10.0-15.0 VDC	10.0-15.0 VDC	
alarm voltage	10. 5V	10. 5V	10. 5V
Low -voltage protection	10V	10V	10V
over -voltage protection	16V	16V	16V
efficiency	>85%	>85%	>85%



FEATURES

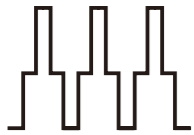
1. Built-in 10A charger (C series)
2. Battery Reverse connecting protection(AF & C series)
3. 5V 1A USB charging interface(AF & C series)
4. Inverter and charger can work independent nonInterference(SAA-500C/1000C)
5. Modified sine wave form output



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	350W	550W	350W	550W	120W	350W	550W	600W
Peak power	500W	1000W	500W	1000W	200W	500W	1000W	1000W
Efficiency	85%							90%
Protections	Overload protection, Input over-voltage protection, 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							



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	700w	2000w	50Hz	<0.3A	DC12V	10.5-15V	85%~90%
SUA-2000C	AC220V	700w	2000w	50Hz	<0.3A	DC12V	10.5-15V	85%~90%
SUA-2000AF	AC220V	700w	2000w	50Hz	<0.3A	DC12V	10.5-15V	85%~90%
SUA-3000A	AC220V	850w	3000w	50Hz	<0.3A	DC12V	10.5-15V	85%~90%
SUA-3000BF	AC220V	850w	3000w	50Hz	<0.3A	DC24V	21-30V	>90

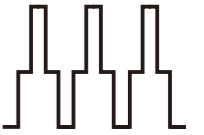
Technical Parameter

SFR-series

Model	SFR-600A	SFR-1200A
Output voltage	220VAC	
Output frequency	50Hz±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



Technical Parameter

SDA-series

Model	SDA-500A	SDA-1000A
Waveform	Modified sine wave	
Output	Output voltage	AC220V
	Output power	320W
	Peak power	500W
	Frequency	50Hz
	USB output	/
Input	No-load current	<0.5A
	Working voltage	DC 12V
	Voltage range	10.5-15V
	Efficiency	>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	120W	150W
	Peak power	200W	250W	300W
	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	10.5-14.5V
	Efficiency	>90%	>90%	>90%



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



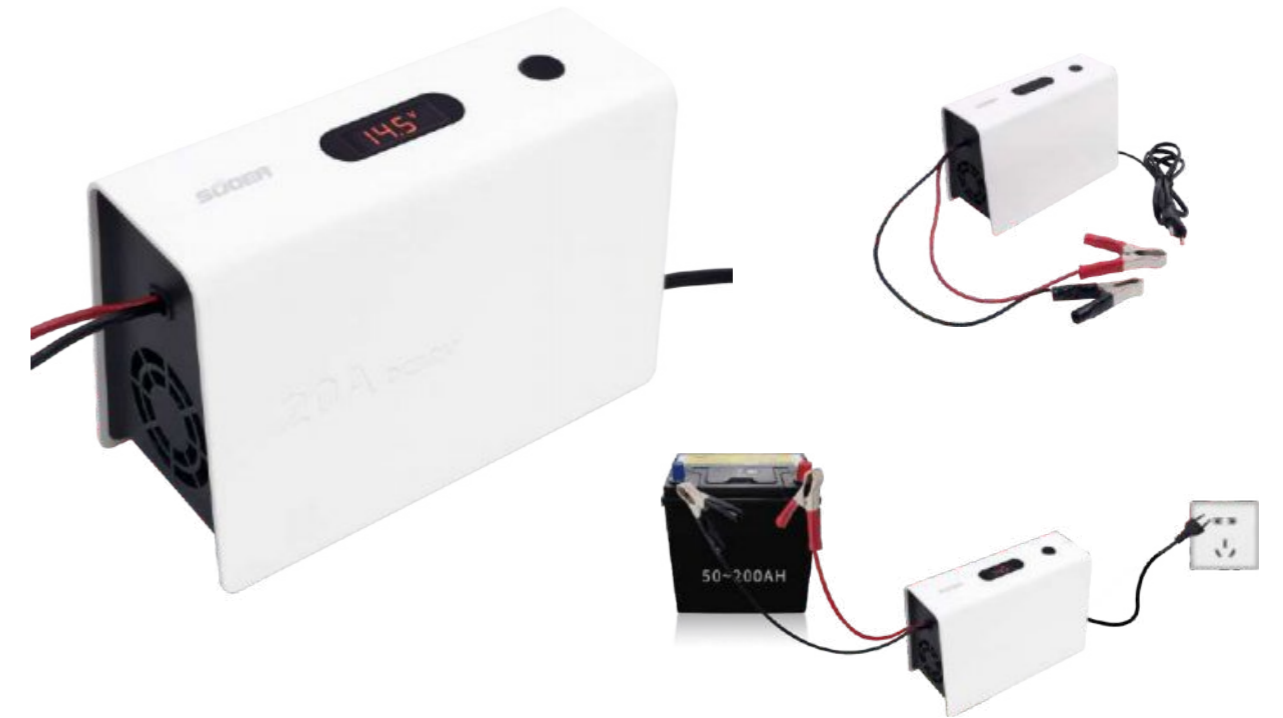
▼FEATURES

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



▼FEATURES

1. The charger uses a micro-control MCU to intelligently control and manage the charging process of the battery.
2. Three-stage(constant current, constant voltage, trickle current) and PWM modulation charging method.
3. It has the functions of battery online detection. With short-circuit, over-current, over-voltage and reverse connection protection.
4. Digital display to show the battery voltage and charging current in a rotating manner, which directly reflects the charging process and facilitates users to quickly understand the current status of the battery.
5. The charging current can be set according to the battery ampere hours.

Technical Parameter

MD-series

Model	MD-1220A
Peak charging current	20A
Applicable battery voltage (DC)	12V
Rated input voltage (AC)	150~240V
Rated frequency	50-60HZ
Full load efficiency	≥80%
Temperature range	-20~+40°C





FEATURES

1. Car Engine start function (10s).
2. LCD screen display (Charging time , Temperature, Charging current / voltage , Battery capacity.
3. Adjustable charging current 4A / 8A / 12A / 20A / 30A / 40A.
4. Reverse connecting protection.
5. Three phase charging mode.
6. 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-1240A

Technical Parameter **MA-series**

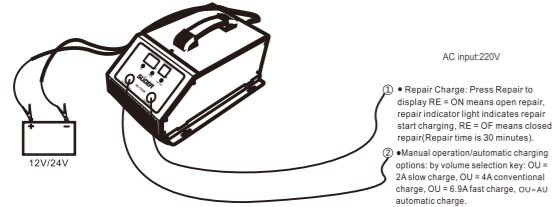
Model	MA-1210AS	MA-1220AS	MA-1240A	MA-1250A	MA-2420A
Input Voltage	AC220V±10% 50Hz				
Apply to the battery voltage (DC)	12V	12V	12V	12V	24V
Maximum charge voltage	14.5V	14.5V	14.5V	14.5V	14.5V
Maximum Charger Current	10A	20A	40A	50A	20A
AC Input Frequency	47~63HZ	47~63HZ	47~63HZ	47~63HZ	47~63HZ
Charging mode	Three-phase	Three-phase	Three-phase	Three-phase	Three-phase
Full load efficiency	>90%	>90%	>90%	>87%	>87%
Packed QTY/CTN	20PCS	16PCS	12PCS	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 charge quickly.

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>>



Technical Parameter

A01/A02-series

Model	A02-1224M
Input Voltage	170V-250V
Apply to the battery voltage (DC)	12V/24V
Charge Current	2A,4A,6.9A
AC Input Frequency	50Hz
Charging mode	Three-phase
Full load efficiency	≥87%
Packed QTY/CTN	4PCS



>>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

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-1210D+
Input Voltage	100V-240V	100V-240V	110V-240V	150V-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	3A	5A	6A	10A
Display method	indicator light	indicator light	LED digital tube	LED digital tube
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	60PCS	60PCS	50PCS	50PCS
Repair function	×	×	×	×



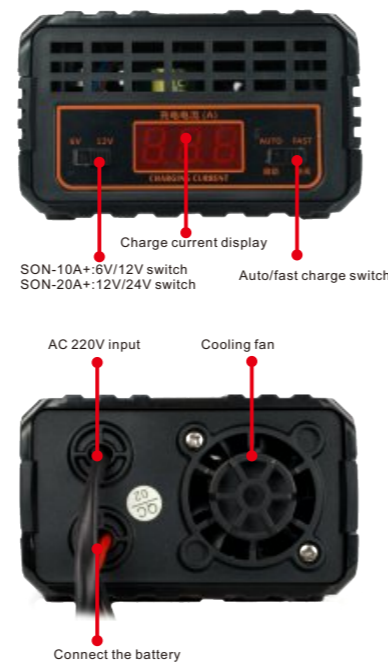
FEATURES

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	13.7/27.4V±0.4V
Constant voltage charging voltage	7.2/14.4V±0.4V	14.4/28.8V±0.4V



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

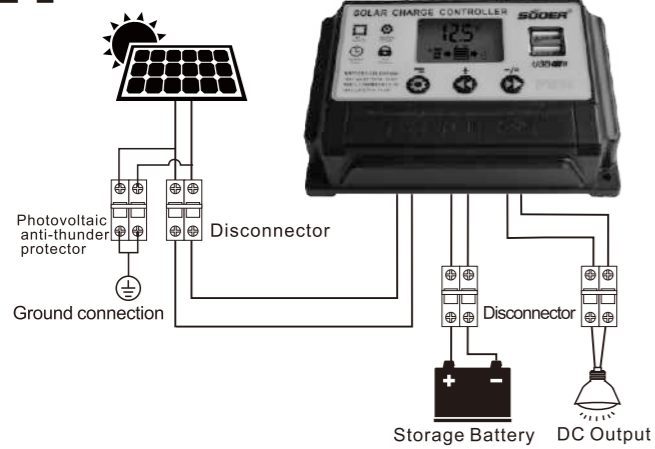
Technical Parameter

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	10.5V(24 battery*2,Parameters can adjust in the Settings menu)					
Low pressure recovery voltage	12.5V(24 battery*2,Parameters can adjust in the Settings menu)					
Load overload automatic recovery	30S					
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>>



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

FEATURES

1. Three battery charging settings have been preset(B01Leadacid battery,B02 Lithium iron 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.

Technical Parameter

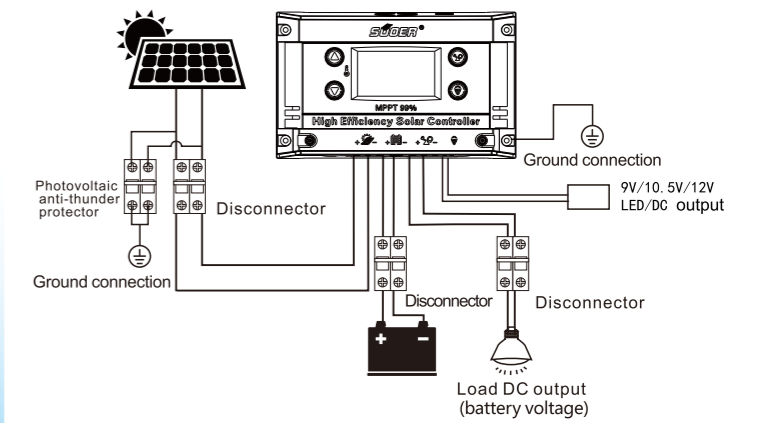
ST-S-series

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		

MPPT



<<Solar charging system connection diagram>>



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

Technical Parameter

ST-H-series

Function	Model	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		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		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		30A
Under-voltage protection voltage		Default:10.5V(24V Battery*2)parameters can be set and adjusted in menu
Owe 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		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

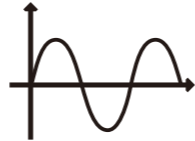
1、Basic concept of inverter

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.