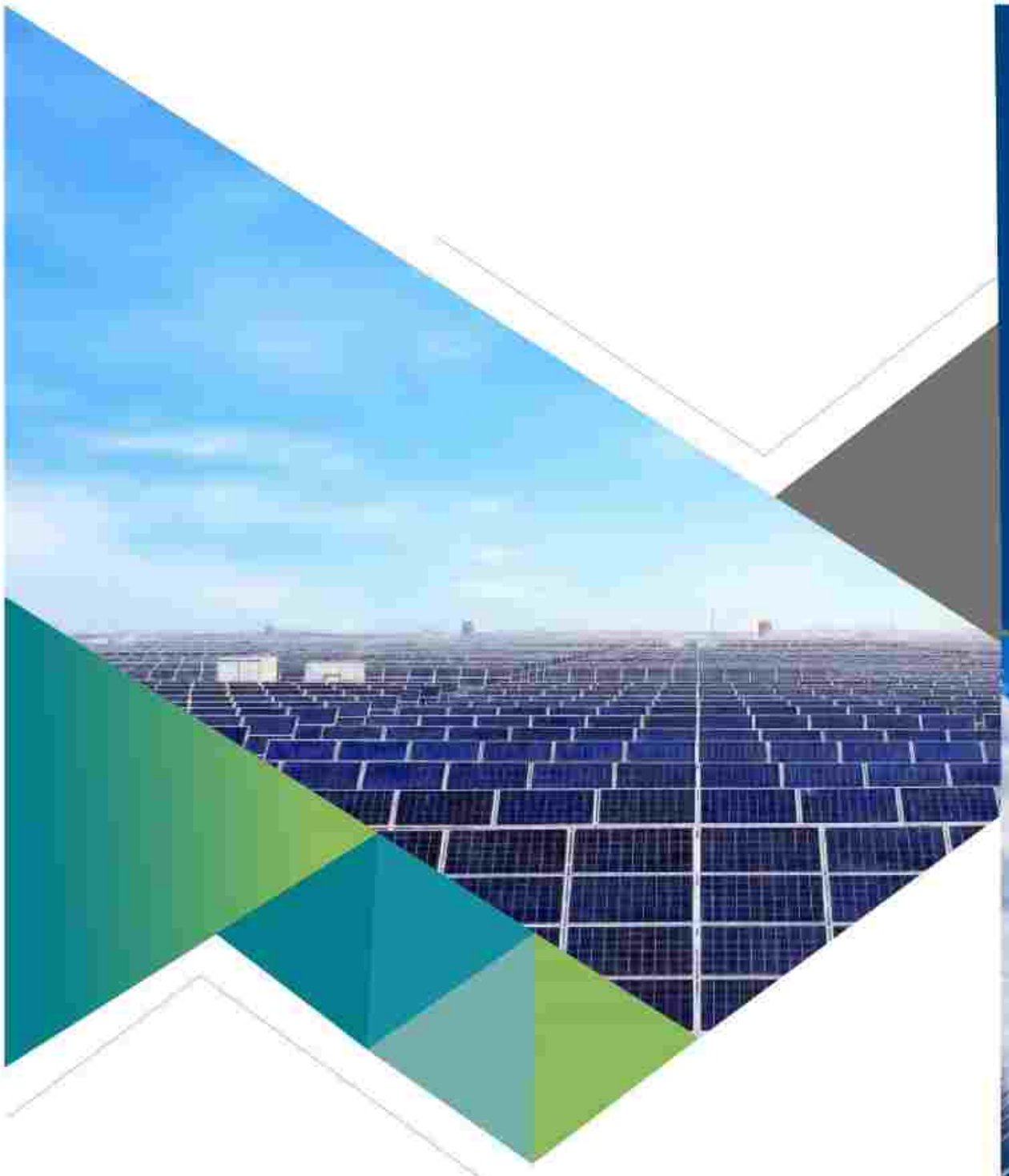
GROUPS ATC

THE BEST INDUSTRIAL EQUIPMENT

SOLAR POWER SYSTEM



CONTENTS

Manufacturer Of Solar Power System

Solar Power System

Diagrammatic Drawing

PORTABLE SOLAR SYSTEM(Solar Generator)

PRODUCT OVERVIEW

It is a portable product for supplying power for small-power loads. It has a built-in battery and a built-in solar controller. The solar controller samples parameters such as the battery's terminal voltage and capacity, the discharge current and the ambient temperature with help of a computer chip and computes through a special control module to realize efficient and accurate control over the discharge rate and the temperature compensation in line with characteristics of the battery. With an efficient PWM charge mode, the battery can operate in the best status and have a long life. The system has a 12VDC output terminal and a 5VDC output terminal, overall protection such as short circuit protection, overload protection, unique reverse connection prevention, automatic shutoff upon full charge or overdischarge, detailed charge indication, battery status indication, load indication and fault indication.

MAIN FEATURES

- SCM intelligent control and optimization SOC algorithm;
- Built-in temperature sensor which can improve charge efficiency of the built-in battery effectively;
- Full-automatic control such as overcharge protection, overdischarge protection, electronic circuit short circuit protection, overload protection and unique reverse connection prevention.
- A serial-connection PWM charge main circuit which makes voltage loss of the charge circuit less than that of the charge circuit of a diode by nearly half and the charge efficiency 3% to 6% higher than a non-PWM charge main circuit and increases the time of power consumption;
- A longer life contributed by automatic control modes including boosting charge for recovery from overdischarge, normal direct charge and floating charge;
- Visualized display of the system status by nixie tube and LEDs.

APPLICATION DIAGRAM

TECHNICAL INDEXES

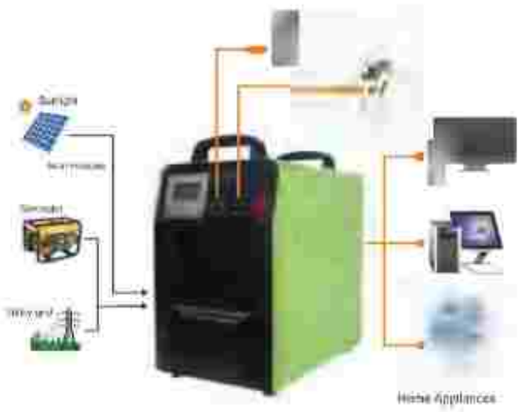
Model	DL-10W	DL-20W	DL-30W	DL-50W	DL-100W
Solar panel					
Type	Monocrystalline silicon or polycrystalline silicon panel of class A				
Power	10W	20W	30W	50W	100W
Dimensions(mm)	96*136*193	126*156*193	163*244*234	176*279*288	213*300*383
Solar controller					
Control mode	Efficient PWM				
Charge current	5A/12V			10A/12V	
Protection functions	Overcharge protection, overdischarge protection, electronic circuit short circuit protection, overload protection				
Voltage of overcharge protection	14.3V				
Voltage of boosting charge	14.0V				
Voltage of floating charge	13.8V				
Voltage of overdischarge protection	10.5V				
Display of nixie tube	Current voltage of the battery				
Indication of LEDS	Charge indication, load indication, and battery indication				
Battery					
Battery type	Deep-cycle maintenance-free lead-acid battery				
Battery capacity	12V/7AH	12V/12AH	12V/24AH	50AH	100AH
DC output					
Maximum output power	60W(12V/5A)			120W(12V/10A)	
DC12V	2 output ports		4 output ports	5 output ports	6 output ports
DC5VUSB	1 USB output port (MAX.2A)		2 USB output ports (MAX.3A)		
Accessories included					
12VDC LED indicator	A 3W LED and a 5W LED (including 2 lamp holders, a 3M lamp wire and a 5W lamp wire)		Two 3W LEDs and two 5W LEDs (including 4 lamp holders, two 3M lamp wires and two 5W lamp wires)		
USB charge line	A universal charge line				
Solar panel bracket	A set (including 2 pieces)				
Electric wire of the solar panel	5M				
AC charger	An optional accessory when there is no solar power supply and charging by mains supply				

AL Solar AC DC Power System

PRODUCT OVERVIEW

1. The product applies to diversified loads because its digital design, pure sine wave output and excellent overcurrent protection can withstand the loads with a large starting current;
2. the product is provided with independent solar three-stage charge management to improve charge effciency of its battey and realize a longer life;
3. the product provides universal 5VDC USB output port and 12VDC output to be widely applied to small solar power generation occasions including families, schools, street monitoring, forest monitoring, industrial and

APPLICATION DIAGRAM



MAIN FEATURES

- Excellent performance because of an MCU intelligent control technology;
- A wide range of applicable loads because of pure sine wave AC output;
- Convenient and practical 5VDC USB output port and 12VDC output port;
- Solar array and battery common-anode system input;
- Charge by mains supply for flexible configuration (optional function);
- Overcharge protection and overdischarge protection for a longer battey life;
- LCD and LEDS for visualization of operation status of the equipment
- Overall automatic protection and alarms including AC output over load protection, short circuit protection ,etc .

PRODUCT INFORMATION

1. AC Output
2. Smart Cooling Fan
3. AC Input
4. Solar PV Input
5. Battery Extension
6. Battery Switch
7. LED Indicator
8. LCD Display
9. Function Buttons
10. ON/OFf Buttons
11. 5VDC Output
12. 12VDC Output
13. DC Output Switch

TECHNICAL INDEXES

Model: AL	0.3KW/12V	0.5KW/12V	1KW/12V	1KW/24V	1.5KW/24V
Inverter					
Battery voltage	12V			24V	
In-built battery specification	1*55AH/12V		100AH/12V	2*55AH/12V 2*100AH/12V	2*100AH/12V
Rated power	300W	500W	1000W	1000W	1500W
Output voltage	110/220VAC				
Output frequency	50/60Hz				
Output waveform	Pure Sine Wave				
Charge by a mains supply					
Input voltage	110/220VAC —* (* means an optional function)				
Charge current	10A(MAX) –* (* means an optional function)		10 A (MAX) –* (* means an optional function)		
Solar input					
Maximum photovoltaic voltage(VDC)	≤25V		≤50V		
Charge voltage(VDC)	10–25V		20–50V		
Rated charge current(A)	30A				
Maximum power(Wp)	360Wp		720Wp		
Voltage of overcharge protection(VDC)	14.2V		28.4V		
Voltage of overcharge recovery(VDC)	14.0V		28.0V		
Voltage of floating charge(VDC)	13.7V		27.4V		
DC output					
Voltage of high-voltage protection(VDC)	16V		32V		
Voltage of high voltage recovery(VDC)	15.2V		30.4V		
Voltage of low voltage recovery(VDC)	12.6V		25.2V		
Voltage of low voltage protection(VDC)	11V		22V		
5VDC USB output port	2 ones/MAX 2A				
12VDC output port	2 DC ports + backboard 12V terminal block (MAX 8A)				
Starting temperature of the exhaust fan	> 45℃				
Ambient temperature for operation	0–40℃				
Ambient temperature for storage	–25 – +55℃				
Operation/storage conditions	0–90% (no condensation)				
External dimensions: DxWxH (mm)	343 × 225 × 443		423 × 260 × 453		513 × 310 × 493
Packing dimension: DxWxH (mm)	420 × 290 × 490		520 × 370 × 526		610 × 420 × 550

FT SERIES Pure Sine Wave Inverter

PRODUCT OVERVIEW

With the double MCUs, the product provides different charge voltage and charge current to realize charge management for batteries of different types. Its mains supply preferred mode, energy-saving mode and battery preferred mode are all settable,thus making it easy to meet the different application needs of users.It has anLCD. It is widely applied to families, schools, streets,frontier defense, pasturing areas, industrial equipment, satellite communication equipment, military vehicle-borne equipment, ambulances, police cars, ships, etc.

FT-B

MAIN FEATURES

FT

Excellent performance because of double MCU Intelligent design

- Pure sine wave output for compatibility with loads of different types
- Visualization of operation status of the equipment through a digital LCD
- A wide range of input voltage, accurate output and all automatic voltage stabilization
- Settable battery type and charge current for the charge management of batteries of different types of FT/FT-B
- Settable mains supply preferred mode, energy-savingmode and battery preferred mode for easy meeting of the needs of different users
- Overall protection functions (battery overvoltage protection, battery under voltage protection, overload protection, short circuit protection and over temperature protection)

TECHNICAL INDEXES

Technical Indexes-1

Model:FT-B	0.3KW	0.5KW	0.7KW	0.7KW	1KW
Rated power	300W	500W	700W	700W	1000W
Battery					
Rated voltage	12VDC/24VDC		24VDC	12VDC	12VDC/24VDC
Input					
Voltage range	73-138VAC/145-275VAC				
Frequency	45-65Hz				
Product size: L*W*H(mm)	302*122*188			316*149*215	
Package size: L*W*H(mm)	375*195*260			410*215*280	

APPLICATION DIAGRAM

Technical Indexes-2

Model:FT	1KW	1.5KW	2KW	3KW	4KW	5KW	6KW	8KW
Rated power	1000W	1500W	2000W	3000W	4000W	5000W	6000W	8000W
Battery								
Rated voltage	12VDC/24VDC/48VDC				24VDC/48VDC		48VDC/96VDC	
Charge current	30A（default）-C0-C6							
Battery type	U0-U7							
Input								
Voltage range	85-138VAC/170-275VAC							
Frequency	45-65Hz							
Product size: L*W*H(mm)	486*247*179				555*307*189			653*332*280
Package size: L*W*H(mm)	550*310*230				640*370*240			715*365*310

Technical Indexes-3

Common technical index	
Output	
Voltage range	110VAC/220VAC； ±5%(Inversion mode)
Frequency	50/60Hz ± 1%(Inversion mode)
Output wave	Pure sine wave
Conversion time	＜10ms(Typical load)
Efficiency	＞85%（80% resistive load）
Overload	110-120%/30S； ＞150%/300ms；
Protection function	Battery overvoltage protection, battery undervoltage protection, overload, protection, short circuit protection, overtemperature protection, etc.
Operation of Ambient Temperature	0-40℃
Ambient temperature for storage	-15 - +50℃
Operation/Storage ambient	0-90% No condensation

P.S.: We keep the right to change without any information.

SN SINGLE-PHASE POWER-FREQUENCY INVERTER

MAIN FEATURES

- High reliability
  Frequency tracking, noise filtering and low distortion in inverter output because of double-conversion design
- High adaptability
  A wide range of input frequency, which realizes stable operation of fuel generators
- High optimal performance of the battery
  An intelligent battery management technology, which guarantees a longer battery life and decreases the times of battery maintenance
  An advanced constant-voltage charge technology, which activates the battery to the most extent, saves the charge time and guarantees a longer battery life
- Overall and reliable protection
  A power-on test function, which can avoid the faults because of hazards of the inverter
- Overall automatic protection and alarms such as output overload protection
- Efficient IGBT (Insulated Gate Bipolar Transistor) inversion technology
  Good high-speed switching feature, large-voltage and large-current operating characteristics, and voltage drive of IGBT (The fifth-generation IGBT has a lower saturation voltage dro

APPLICATION DIAGRAM

PRODUCT OVERVIEW

The product is a highly stable and reliable power supply designed by SNAT to meet the high reliability requirement for power grid and network systems. Its high quality enables it to provide safe, reliable and overall protection for loads such as data centers of users, industrial control equipment, precise medical system equipment and household appliances. It has perfect protection functions and high reliability because of a full digital vector control technology based on real time processing by DSP, MCU and DDC. In both the pure sine wave output mode and the inversion mode, it can output a pure sine wave power supply with low distortion, thus providing the best power supply guarantee for the loading equipment of users.

TECHNICAL INDEXES

Model:SN-	6KW	8KW	10KW	12KW	15KW	20KW
Rated Power	6KW	8KW	10KW	12KW	15KW	20KW
Battery						
Rated Voltage	96VDC/192VDC			192VDC		
Charge Current	10A-20A					
Low Voltage Protection	84VDC/168VDC			168VDC		
Input						
VoltageRange	88-132VAC/176-264VAC					
Frequency	45-65Hz					
Output						
Frequency	50/60Hz ± 1%(Inversion Mode)					
Voltage Range	110VAC/220VAC； ±5%(Inversion Mode)					
Output Waveform	Pure sine Wave					
Conversion Time	<10ms(Typical Load)					
Efficiency	>85%（100% Resistive Load）			>90%（100% Resistive Load）		
Overload	110-120%/30S；>160%/300ms；					
ProtectionFunction	Battery overvoltage protection, battery undervoltage protection, overload protection, short circuit protection, overtemperature protection, etc.					
Operation of Ambient Temperature	0-40℃					
Ambient Temperature for Storage	-15 - +50℃					
Operation/Storage combient	0-90% No condensation					
Product Dimensions:DxHxh(mm)	555*368*695					655*383*795
Gross Weight（KG）	80	90	110	130	150	170

SOLAR POWER SYSTEM

TM THREE-PHASE POWER FREQUENCY INVERTER

PRODUCT OVERVIEW

The product applies to different types of loads because of its full digital design and real pure sine wave output. With power-frequency design and highly stable output voltage and frequency, it can operate continuously for a long time. Thus, it avoids the disadvantages of direct use of the mains supply, such as interruption of power supply, voltage instability, noise, and lightning attacks, and the disadvantage of short power supply time of small UPSs, guaranteeing continuous and reliable operation for electrical equipment. Sine wave inverter supplies are the best guarantee for the safe and reliable operation of systems. The product is now widely used in China Telecom, China Mobile, China Unicom, aerospace, railways, financial management, office automation, industrial automatic control, medical health, military scientific research, etc.

MAIN FEATURES

- Excellent performance because of an MCU intelligent control technology;
- A wide range of applicable loads because of power-frequency transformer design and pure sine wave AC output;
- A wide range, high accuracy, and full automatic voltage stabilization;
- Overall protection functions (overload protection, short circuit protection, overvoltage protection, undervoltage protection and overtemperature protection);
- Simple LEDs and a LCD for visualization of operation status of the equipment

TECHNICAL INDEXES

Model: TM-	1KW	2KW	3KW	4KW	5KW	7KW	8KW	10KW
Rated power	1KW	2KW	3KW	4KW	5KW	7KW	8KW	10KW
DC voltage	48 VDC				48VDC/96VDC			
Input voltage	Three-phase four-wire system + ground wire 380V ± 20%							
Input frequency	45—65 Hz							
Output voltage	380VAC ± 5% (three-phase four-wire system)							
Output frequency	50Hz ± 1%							
Switching time	Switching from the mains supply mode to the battery mode: 50ms; switching from the battery mode to the mains supply mode: 25ms							
Charge current	Max 8A							
Inverter output protection	100-120%, 30s; > 120%, 100ms							
Noise	< 45dB							
Ambient temperature for operation	0-40℃							
Ambient temperature for storage	-15 – +50℃							
Relative humidity for operation/storage	0-90% (no condensation)							
Altitude for operation	0-3,000m							
Altitude for storage	0-15,000m							
Product dimensions D × W × H (mm)	560 × 230 × 570				590 × 470 × 730			
Packing dimensions D × W × H(mm)	640 × 300 × 730				690 × 570 × 850			
Net weight/gross weight (kg)	29/40	38/48	31/51	50/61	104/112	106/120	107/125	117/137

TP THREE-PHASE POWER-FREQUENCY INVERTER

PRODUCT OVERVIEW

The product can provide reliable power supply protection for large data centers, network computer rooms as well as the electric power links of fields such as manufacturing, traffic and energy to meet the high reliability requirement of users for large-power inverters. Based on the DSP accurate control technology and the double built-in MCUs, the product can output stable and pure sine waves and provide safe and reliable power supply protection for users.

MAIN FEATURES

- Advanced operation mode
  Frequency tracking, phase-locking voltage stabilization, noise filtering and prevention of impact by fluctuation of the power grid realized in output of the inverter
  The best power supply guarantee for the loading equipment of users contributed by a full digital vector control technology based on real-time processing by DSP, MCU and DDC
- Efficient IGBT (Insulated Gate Bipolar Transistor) inversion technology
  Good high-speed switching feature, large- voltage and large-current operating characteristics, and voltage drive of IGBT (The fifth-generation IGBT has a lower saturation voltage drop and higher operation efficiency and reliability.)
- High adaptability
  A wide range of input frequency (45Hz - 65Hz), which realizes stable operation of fuel generators
- Great loading capacity
  Suitability for industrial applications such as machine tools and wire cutters
- Reliable performance
  A power-on test function for timely discovery elimination of potential hazards
  High stability and reliability guaranteed by integration of functions including AC input overvoltage protection, AC input undervoltage protection, output overload protection, short circuit protection, overcurrent protection, bus overvoltage protection, overheat protection, fan fault protection, auxiliary power supply fault protection, battery undervoltage warning protection, battery overcharge protection, etc.
- Management function
  Big LCD, visualized display of operation statuses through flow charts, intelligent icon touch buttons, tabular data, event records, etc.
  Visualization of parameters of the inverter by means of communication with a computer via a RS232/RS 485 interface with help of intelligent monitoring software of the inverter
- Intelligent battery management
  Intelligent battery charge: Adjustment of the battery charge parameter according to the battery configuration of the user, and switching between equalizing charge and floating charge, temperature compensating charge, and discharge management according to the power supply conditions, which may make the battery life longer and reduce burden of the administrator
  Intelligent battery fault detection: Measurement of single parameters, display of the measurement results on the LCD, and immediate alarming and notification for the administrator upon any battery fault
- Personalized settings:
  Proper adjustment of the input parameters according to the input power supply conditions

TECHNICAL INDEXES

Model: TP-	TP-10KW	TP-20KW	TP-30KW	TP-50KW	TP-60KW	TP-80KW	TP-100KW	TP-150KW	TP-200KW
Rated capacity	10KW	20KW	30KW	50KW	60KW	80KW	100KW	150KW	200KW
Operation mode and principle	PWM (pulse width modulation) based on DSP accurate control technology and double built-in MCUs. Complete isolation of the output power supply								
AC input									
Phase number	Three-phase +N+G								
Voltage	AC220V/AC380V ± 20%								
Frequency	50Hz/60Hz ± 5%								
DC input									
DC voltage	DC192V/DC220V/DC240V/DC384V			DC384V					
Floating battery	13.6V of each battery × battery quantity 【13.6V × 16 batteries = 217.6V】								
Cut-off voltage	10.8V of each battery × battery quantity 【10.8V × 16 batteries = 172.8V】								
AC output									
Phase number	Three-phase +N+G								
Voltage	AC220V/AC380V ± 1% (steady load)								
Frequency	50Hz/60Hz ± 5% (mains supply) 50Hz ± 0.01% (battery)								
Efficiency	≥90% (load: 100%)								
Output waveform	Sine wave								
THD	Linear load: <3%; non-linear load: <5%								
Dynamic load voltage transient	< ±5% (jump from 0 to 100%)								
Instant recovery time	<100ms								
Time of switching between the battery and the mains supply	3S-5S			<4ms					
Unbalanced voltage	< ±3% < ±1% (balanced load voltage)								
Overload capacity	120%, 20s; >150%, 100ms			125%,20s;>150%,1s					
System indexes									
Operation efficiency	≥90% (load: 100%)								
Computer communication interface	RS 232/RS 485 (SNMP remote monitoring network adapter)								
Operating temperature	-10-40℃								
Relative humidity	0-90% (no condensation)								
Noise	40-50dB			50-60dB				60-70dB	
Structure									
External dimensions D x W x H(mm)	580*750*920			608*728*1475	1138*795*1725			1138*945*1725	
Weight (Kg)	180	220	300	470	620	680	730	954	980

SOLAR CONTROLLER SERIES

CM-MPPT CHARGE CONTROLLER

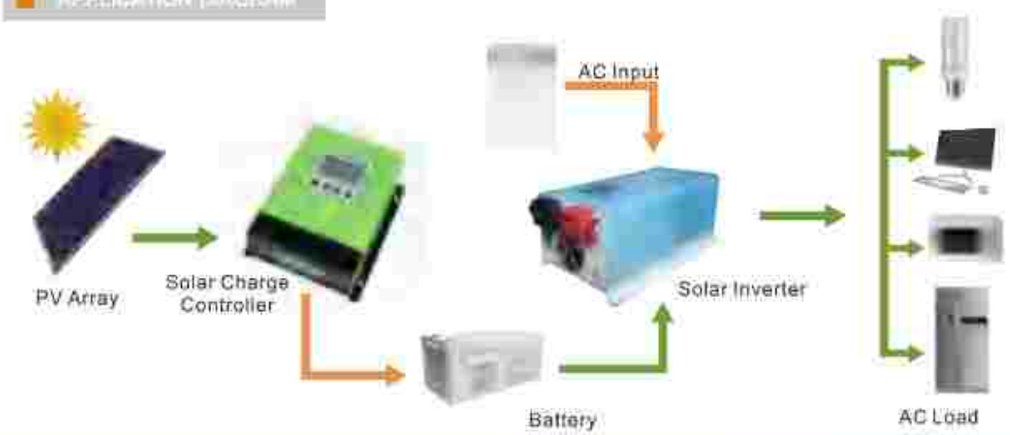
PRODUCT OVERVIEW

CM series MPPT controller is an advanced, efficient and versatile photovoltaic product. It uses innovative maximum power point tracking technology to significantly improve the energy efficiency of solar energy systems with a conversion efficiency of 97%. The controller adopts intelligent battery charging management and has temperature compensation function to effectively manage the battery and extend the battery life. The controller integrates RS485 communication interface, which can provide communication protocol, which is convenient for customers to integrate and manage.

MAIN FEATURES

- Intelligent maximum power tracking technology
- High precision and high effciency with DSP chip control
- The PV wide range voltage input , three s tage charging technology
- The photovoltaic/battery connection reverse protection short-circuit protection /over current protection
- Display technology parameter with 7 inch touch screen
- Rs485 remote communication and data transmission (optional)

APPLICATION DIAGRAM



TECHNICAL INDEXES

Model CM-		30A	40A	50A	60A	80A
Charging Mode	MPPT Automatic Maximum Power Point Tracking					
Charging Method	Three stages: Constant Current (MPPT), Balanced Charging, Floating Charge					
System Type	12V/24V/48V	Automatic Identification/Manual Setting				
System Identification Voltage Range	12V System	DC8V-DC15V				
	24V System	DC16V-DC30V				
	48V System	DC36V-DC60V				
Soft Start Time	12V/24V/48V	≤10s				
Dynamic Response Recovery Time	12V/24V/48V	≤500us				
Static Power	12V/24V/48V	≤2W				
Machine Efficiency	12V/24V/48V	≥96.5%/98%				
PV Module Utilization	12V/24V/48V	≤99%				
Input Characteristics						
MPPT Operating Voltage Range	12V System	DC18V-DC150V				
	24V System	DC34V-DC150V				
	48V System	DC69V-DC150V				
Maximum Solar Panel Input Power	12V System	420W	570W	700W	900W	1100W
	24V System	840W	1130W	1400W	1700W	2200W
	48V System	1650W	2270W	2800W	3400W	4400W
Output Characteristics						
Optional BatteryType (Default is lead-acid maintenance- free battery)	12V/24V/48V	Lead-acid maintenance-free Battery, Gel Battery, Liquid Battery, Lithium Battery (Can also be customized forother types of battery)				
Current Limiting Protection	12V/24V/48V	32A	42A	52A	62A	82A
Temperature Coefficient	12V/24V/48V	± 0.02%/℃				
Temperature Compensation	12V/24V/48V	14.2V-(Maximum Temperature -25℃)*0.3				
Output Regulation Accuracy	12V/24V/48V	≤ ±1.5%				
Protection						
Input Low Voltage Protection		Reference Input Characteristics				
Input High Voltage Protection		Reference Input Characteristics				
Short Circuit Protection		After 5 trial starts will enter the potection state, Restart Recovery				
Temperature Protection		90℃				
Temperature Rise Protection		Reduce Power Output When Exceed 85℃				
Other Parameters						
Noise		≤ 50dB				
Heat Dissipation Method		Forced air cooling, fan speed is adjusted by temperature				
Mechanical Protection Type		IP21				
Humidity		0~90%RH (No condensation)				
PV Module Configuration						
System Battery Voltage		PV module load voltage (Recommended Value)				
12V System		18V~60V (30V module*1 string, 36V module*1 string)				
24V System		36V~72V (30V module*2 string, 36V module*2 string)				
48V System		72V~144V (30V module*3 string, 36V module*3 string)				

SCP SOLAR CONTROLLER

MAIN FEATURES

- Excellent performance because of MCU control and intelligent optimized SOC design;
- Visualization of operation parameters and statuses via the LCD;
- Independent three-stage charge management, which can improve charge efficiency of the batteries and make lives of the batteries longer;
- Full automatic control such as electronic short circuit protection, overdischarge protection, overload protection and unique reserve connection prevention;
- Queries of real-time records and historical records of power generation capacity and power consumption
- Function of clock display;

Product Overview

Based on an MCU intelligent control technology, the product realizes solar charge and discharge management for batteries for longer lives of systems. It is widely applied to the solar power system for families, schools, streets, industrial and mining enterprises,frontier defense, sea islands, pasturing areas, etc.

APPLICATION DIAGRAM

Technical Indexes

Model: SCP-	CP-06650LCD	CP-09650LCD	CP-09660LCD
Rated charge current	30A	50A	60A
System voltage	96V		
Input of the photovoltaicmodule	3KW	5KW	6KW
Max. output voltage of photovoltaic	<200V		
Charge prgram	1P	2P	
Voltage of boosting charge	113.6V	117.6V	
Voltage of direct charge	112V	113.6V	
Voltage of floating charge	110V		
Model	**CP-12030LCD**	**CP-12050LCD**	**CP-12060LCD**
Rated charge current	30A	50A	60A
System voltage	120V		
Input of the photovoltaic module	3.6KW	6KW	7.2KW
Max. output voltage of photovoltaic	<250V		
Charge prgram	1P	2P	
Voltage of boosting	142V	147V	
Voltage of direct charge	140V	142V	
Voltage of floating charge	138V		
Common parameter			
Battery capacity	Default 400AH（100AH to 9000AH settable）		
Standby loss	<30mA		
Charge mode	PWM		
Operating ambient temperature	0–40℃		
Storage ambient temperature	-15 – +50℃		
Operating/Storage ambient	0–90% No. condensation		
External size: L*D*H（mm）	166*184*78		
Package size: L*D*H（mm）	232*190*127		
N.W./G.W.（kg）	1.6/1.8		

P.S.: We keep the right to change our product without information.

SCP SOLAR CONTROLLER

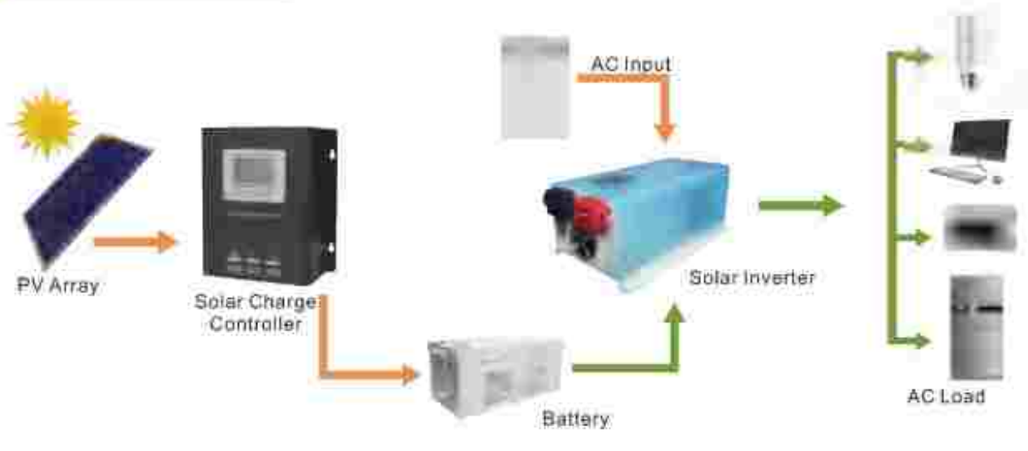
MAIN FEATURES

- Excellent performance because of MCU control and intelligent optimized SOC design;
- Visualization of operation parameters and statuses via the LCD;
- Independent three-stage charge management, which can improve charge efficiency of the batteries and make lives of the batteries longer;
- Automatic identification of the system voltage (12/24V, 24/48V), which is convenient and practical;
- Settable light-operated or time-controlled load output, which is flexible;
- Full automatic control such as electronic short circuit protection, overdischarge protection, overload protection and unique reserve connection prevention;
- Queries of real-time records and historical records of power generation capacity and power consumption;
- Function of clock display

PRODUCT OVERVIEW

Based on an MCU intelligent control technology, the product realizes solar charge and discharge management for batteries for longer lives of systems. It is widely applied to the solar power systems for families, schools, streets, industrial and mining enterprises, frontier defense, sea islands, pasturing areas, etc.

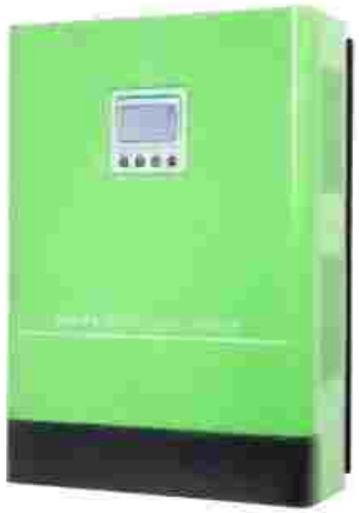
APPLICATION DIAGRAM



TECHNICAL INDEXES

Model: SCP-	012 (24/48)p30LCD	012 (24/48)p40LCD	012 (24/48)p50LCD	012(24/48)60LCD
Rated charge current	30A	40A	50A	60A
Rated load current	20A			
System voltage	12V/24V automatic identification; 24V/48V automatic identification			
Input of the photovoltaic module	≤25V; ×2/24V; ×4/48V;			
	360Wp; ×2/24V; ×4/48V;	480Wp; ×2/24V; ×4/48V;	600Wp; ×2/24V; ×4/48V;	720Wp;×2/24V;×4/48V;
No-load loss	<30mA			
Battery capacity	Default: 400AH (settable between 100AH to 9000AH)			
Voltage drop of the charge circuit	≤0.26V			
Voltage drop of the discharge circuit	≤0.15V			
Overvoltage protection	17V; ×2/24V; ×4/48V;			
Charge program	1P		2P	
Voltage of boosting charge	14.2V; ×2/24V; ×4/48V;		14.7V; ×2/24V; ×4/48V;	
Voltage of direct charge	14V; ×2/24V; ×4/48V;		14.2V; ×2/24V; ×4/48V;	
Voltage of floating charge	13.8V; ×2/24V; ×4/48V;			
Overdischarge recovery voltage	12.7V; ×2/24V; ×4/48V;			
Overdischarge voltage	11.1V; ×2/24V; ×4/48V;			
Charge mode	PWM (pulse width modulation)			
Overload protection and short circuit protection	Overload protection upon 1.25 times of the rated current for 60s or 1.5 times of the rated current for 5s; short circuit protection upon three or more times of the rated current			
Operating temperature	Industrial level: -35℃ – +55℃			
Ambient temperature for operation	0–40℃			
Ambient temperature for storage	-15 – +50℃			
Operation/storage conditions	0–90% (no condensation)			
External dimensions: D x W x H (mm)	155*145*67		171*155*65	
Packing dimensions: D x W x H (mm)	192*180*117		221*201*102	
Net weight/gross weight (kg)	0.9/1.1		1.1/1.4	

CM-MPPT HIGH VOLTAGE CHARGE CONTROLLER



PRODUCT OVERVIEW

CM series MPPT controller is an advanced, efficient and versatile photovoltaic product. It uses innovative maximum power point tracking technology to significantly improve the energy efficiency of solar energy systems with a conversion efficiency of 97%. The controller adopts intelligent battery charging management and has temperature compensation function to effectively manage the battery and extend the battery life.The controller integrates RS485 communication interface, which can provide communication protocol, which is convenient for customers to integrate and manage.

MAIN FEATURES

- Innovative maximum power point tracking technology, the conversion rate of up to 97%.
- Quick scan of the entire I-V curve , Efficient track the maximum power point.
- Three types of lead-acid battery, sealed, colloid, open type battery and lithium battery series charging procedures are optional.
- With the functions of over charge, over discharge, overload and short circuit automatic protection.
- With RS485 communication interface, It can communicate with multiple and the upper computers , which is convenient to check the operating parameters of the controller.

APPLICATION DIAGRAM

TECHNICAL INDEXES

Model/CSA		80A	100A
Charging Mode		MPPT Automatic Maximum Power Point Tracking	
Charging Method		Three stages: Constant Current (MPPT), Balanced Charging, Floating Charge	
System Type	96V/192V	Automatic Identification/Manual Setting	
System Identification Voltage Range	96V System	DC72V-DC120V	
	192V System	DC144V-DC240V	
Soft Start Time	96V/192V	≤10s	
Dynamic Response Recovery Time	96V/192V	≤500us	
Static Power	96V/192V	≤8W	
Machine Efficiency	96V/192V	≥96.5%	
PV Module Utilization	96V/192V	≤99.97%	
Input Characteristics			
MPPT Operating Voltage Range	96V System	DC130V-DC180V	
	192V System	DC260V-DC420V	
Maximum Solar Panel Input Power	96V System	8500W	10600W
	192V System	16000W	20000W
Output Characteristics			
Optional BatteryType (Default is lead-acid maintenance- free battery)	96V/192V	Lead-acid maintenance-free Battary, Gel Battery, Liquid Battery, Lithium Battery (Can also be customized forother types of battery)	
Current Limiting Protection	96V/192V	82A	102A
Temperature Coefficient	96V/192V	± 0.02%/℃	
Temperature Compensation	96V/192V	14.2V-(Maximum Temperature -25℃)*0.3	
Output Regulation Accuracy	96V/192V	≤±1.5%	
Protection			
Input Low Voltage Protection		Reference Input Characteristics	
Input High Voltage Protection		Reference Input Characteristics	
Short Circuit Protection		After 5 trial starts will enter the protection state, Restart Recovery	
Temperature Protection		90℃	
Temperature Rise Protection		Reduce Power Output When Exceed 85℃	
Other Parameters			
Noise		≤ 50dB	
Heat Dissipation Method		Forced air cooling, fan speed is adjusted by temperature	
Mechanical Protection Type		IP21	
Humidity		0~90%RH (No condensation)	
PV Module Configuration			
System Battery Voltage		PV module load voltage (Recommended Value)	
96V System		144V~180V (30V module*6 string, 36V module*5 string)	
192V System		230V~420V (30V module*11 string, 36V module*10 string)	

CP WALL-MOUNTED SOLAR CONTROLLER

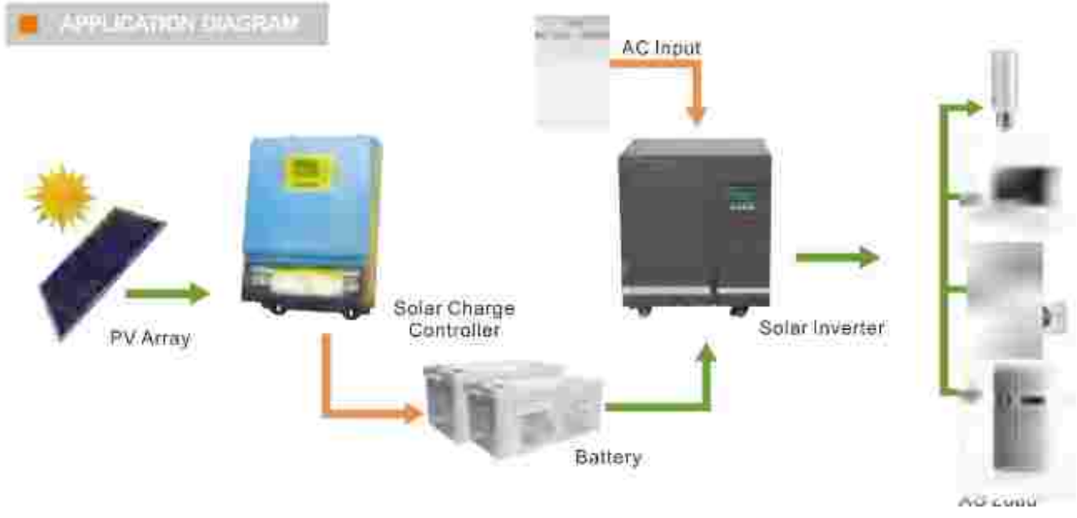
MAIN FEATURES

- Excellent performance because of an MCU intelligent control technology;
- Visualization of operation status of the equipment through Chinese and English menus, LEDs and an LCD;
- Solar array, battery common-anode system input and multiple independent solar array input control;
- Settable battery protection parameters;
- Display of the current battery voltage, battery charge current, internal temperature of the case, total photovoltaic power generation capacity (AH), total power consumption by the load, photovoltaic current when each solar array is separately charged, etc.;
- Overall protection: Protection and alarm for reverse connection of the battery poles, battery overcharge, cooling control for interior of the cabinet (the fan will be started upon 45℃), and back charge of the battery at night;
- Functions of historical records and password protection;
- Function of clock display

PRODUCT OVERVIEW

Based on an MCU intelligent control technology, the product realizes solar charge and discharge management for batteries for longer lives of systems. It is widely applied to the large centralized solar power systems for families, schools, streets, industrial and mining enterprises, frontier defense, sea islands, pasturing areas, etc.

APPLICATION DIAGRAM



TECHNICAL INDEXER

Model: CP-	96/192 / 384 / 50 A	96/192 / 384 / 75 A	96/192 / 384 / 100 A
Rated voltage	96V; 192V ; 384V		
Rated current	50 A	75 A	100 A
Input of the photovoltaic module			
Maximum power	5KWp;10KWp;18KWp	7.5KWp;15KWp;27KWp	10KWp;22KWp;36KWp
Maximum photovoltaic voltage	96V<200VDC ; 192V<400VDC ; 384V<750VDC		
Number of inputs	2	3	4
Maximum current of each input	25A		
Voltage of overcharge protection	111VDC ; 222.4VDC ; 416VDC (settable)		
Voltage of overcharge recovery	110VDC ; 219.2VDC ; 412VDC (settable)		
DC output			
Voltage of load overvoltage protection	120V ; 248V ; 465V (settable)		
Voltage of load overvoltage recovery	120V ; 240V ; 450V		
Voltage of load overdischarge recovery	101.5V ; 203.2V ; 381V (settable)		
Voltage of load overdischarge protection	87.5V ; 175V ; 328V		
Overall efficiency	>98%		
Protection function	Charge overcurrent, overvoltage/DC output undervoltage, overvoltage, overcurrent, etc.		
Starting temperature of the exhaust fan	>45℃		
Ambient temperature for operation	0-40℃		
Ambient temperature for storage	-15 - +50℃		
Operation/storage conditions	0-90% (no condensation)		
Wall-mounted type			
Product dimensions D×W×H (mm)	389*320*98	417*360*118	
Packing dimensions D×W×H(mm)	430*395*180	440*420*200	
Net weight/gross weight (kg)	5.2/6.5	8.4/9.75	

NKM SERIES HYBRID SOLAR INVERTER

MAIN FEATURES

- Double CPU intelligent control technology, performance excellence;
- The power mode / energy saving mode / battery mode can be set up,Flexible application;
- Smart fan control, safe and reliable;
- The pure sine wave output, can adapt to various types of load;
- Wide input voltage range,high-precision output automatic voltage function.
- The LCD real-time display device parameters, running status at a glance;
- The output overload, short circuit protection, automatic protection and alarm;
- The intelligent MPPT solar controller, overcharge, overdischarge protection,current limiting charging, multiple protection;
- Built-in GPRS\WIFI wireless network module, which can control working status remotely through mobile
- APP or computer ; (optional)

PRODUCT OVERVIEW

NKM series hybrid solar inverter series with Double CPU intelligent control technology,MPPT controller and inverter integrated optimization solutions, is high efficiency pure sine wave inverter,to provide users the best performance. Its comprehensive LCD display offers user-configurable and easy-accessible button operation such as battery charging current, AC/solar charger priority, and acceptable input voltage based on different applications .It is widely applied to families , schools , streets , frontier , defense ,pasturing areas , industrial equipment,satellite communication equipment , military ,vehicle-borne equipment , ambulances , police cars , ships and so on .

APPLICATION DIAGRAM

TECHNICAL INDEXES

Model: NKM-	0.3-1KW		1.5-6KW		
power rating(w)	300	700	1500	3000	5000
	500	1000	2000	4000	6000
Battery					
rated voltage(VDC)	12/24		12/24/48	24/48	48
Charge Current	10A MAX		30A MAX		
Battery Type	Can be set				
Input					
Voltage Range	85-138VAC/170-275VAC				
frequency	45-65Hz				
Output					
Voltage Range	110VAC/220VAC; ±5%(Inverter mode)				
frequency	50/60Hz±1%(Inverter mode)				
Output wave	Pure Sine Wave				
Change time	< 10ms(Typical load)				
frequency	> 85% (80% Resistive load)				
overcharge	110-120%/30S; > 160%/300ms;				
Protection function	Battery over-voltage and low-voltage protection, overload protection, short circuit protection, over-temperature protection				
Solar Controller					
MPPT Voltage Range	12VDC:15V~150VDC;24VDC:30V~150VDC;48VDC:60V ~150VDC				
PV Power	12VDC-30A(400W); 24VDC-30A(800W)		12VDC-60A(800W); 24VDC-60A(1600W); 48VDC-60A(3200W)		
Rated charge current	30A(Max)		60A(Max)		
MPPT efficiency	≥99%				
Average charging voltage(lead acid battery)	12V/14.2VDC;24V/28.4VDC;48V/56.8VDC				
Floating charge voltage	12V/13.75VDC;24V/27.5VDC;48V/55VDC				
Operating ambient temperature	-15-+50℃				
Storage ambient temperature	-20 - +50℃				
Operating / storage environment	0-90% No Condensation				
Dimensions:W * D * H (mm)	420*320*122		520*420*222		
Packing size: W * D * H (mm)	535*435*172		635*535*252		

Note: Our company has the right of changing this user manual without any information

NKH High Frequency MPPT Hybrid Solar Inverter

MAIN FEATURES

- Pure Sine Wave Inverter
- Configurable input voltage range for home appliances and personal computers via LCD setting
- Configurable battery charging current based on applications via LCD setting
- Configurable AC/Solar Charger priority via LCD setting
- Compatible to mains voltage or generators power
- Auto restat while AC is recovering
- Overload/ Over temperature/short circuit protection
- Smart battery charger design for optimized battery performance
- Cold start function

PRODUCT OVERVIEW

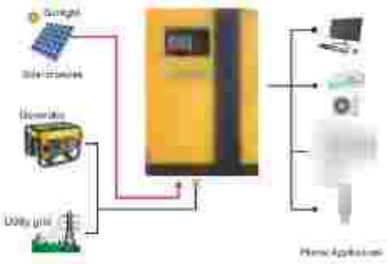
Operation with battery connected

1 Solar Power and AC Power available

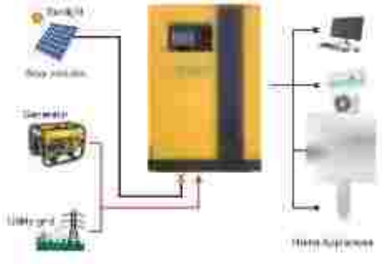
2 Solar Power and AC Power not available

Operation without battery connected

3 Solar Power available



4 AC Power available



TECHNICAL INDEXES

Series: NKH+	SNT		SNT PLUS	
Model	SNT-3.2KW	SNT-5KW	SNT-3.5KW PLUS	SNT-5.5KW PLUS
Rated Power	3200w	5000w	3500w	5500w
Input				
Voltage	230VAC			
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)	230V AC ± 5%			
Surge Power	6400VA	10000VA	7000VA	11000VA
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 Charge				
Battery Voltage	24VDC	48VDC	24VDC	48VDC
Floating Charge Voltage	27VDC	54VDC	27VDC	54VDC
vercharge Protection	33VDC	63VDC	33VDC	63VDC
Maximum Charge Current	80A	60A	100A	100A
Solar Charge				
Maximum PV Array Power	4000w	4000W (5000W Optional)	5000w	6000w
MPPT Range Operating Voltage	120~450VDC			
Maximum PV Array Open Circuit Voltage	500VDC			
Maximum Charging Current	80A		100A	
Maximum Efficiency	98%			
Physical				
Dimension, D x W x H (mm)	100 x 300 x 440			
Net Weight (kgs)	9	10	11	12
Communication interface	USB/RS232/GPRS/WIFI			
Operating Environment				
Humidity	5% to 95% Relative Humidity(Non-condensing)			
Operating Temperature	0°C - 55°C			
Storage Temperature	-15°C - 60°C			

NKW SOLAR INVERTER WITH BUILT -IN CHARGE CONTROLLER

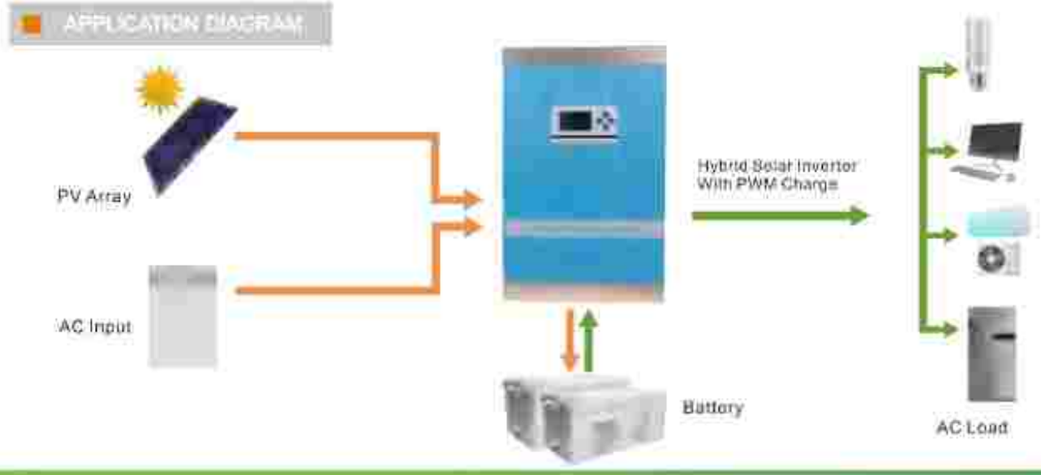
MAIN FEATURES

- Excellent performance for double MCU intelligent control technology.
- Applies to different types of loads because of its pure sine wave output
- Mains supply preferred mode, saving mode and battery preferred mode are all settable, thus making it easy to meet the different application needs of users
- A wide range ,high accuracy,and full automatic voltage stabilization.
  Intelligent optimization SOC control and independent
- three-stage photovoltaic charge management for battery to improve charge efficiency
- Full digital LED display for visualization of operation status of the equipment
- Overall protection functions (battery overcharge protection, battery undervoltage protection,overload protection, short circuit protection and overtemperature protection.

PRODUCT OVERVIEW

NKW series with dual MCU design, PV charge controller and inverter integrated optimization solutions, to provide users with the best experience. Pure sine wave output to meet various types of load; mains supply preferred mode / power saving mode / battery preferred mode for easy meeting of the needs of different users. Using intelligent optimization SOC control, a separate three-stage solar charge management, improve the effectiveness of the charging of the battery. LCD display integrated inverter and photovoltaic panels,equipment operating status intuitive, concise manipulation. It is widely applied to families, schools, streets, border, pastoral, industrial equipment, satellite communications equipment, ships and so on.

APPLICATION DIAGRAM



TECHNICAL INDEXES

Model:NKW-	1KW	1.5KW	2KW	3KW	5KW	6KW
Rated power	1KW	1.5KW	2KW	3KW	5KW	6KW
Battery						
Rated voltage	12/24VDC	24/48VDC	48VDC			
Controller						
Rated current	60A					
Three-stage charging	Boosting,direct,floating					
Voltage of boosting charge	28.4V; ×2/48V; ×4/96V;					
Voltage of direct charge	28V; ×2/48V; ×4/96V;					
Voltage of floating charge	27.6V; ×2/48V; ×4/96V;					
control mode	PWM					
Mains supply input						
Voltage	85-138VAC/170-275VAC					
Frequency	45-65Hz					
Charge Current	30A(Default)-C0-C6					
Battery type	U0-U7					
AC output						
Voltage	110VAC/220VAC; ±5%(inversion mode)					
Output frequency	50/60Hz ± 1%(inversion mode)					
Output waveform	Pure sine wave					
Efficiency	> 85% (80% resistive load)					
Overload	110-120%/30S ; >160%/300ms ;					
Protection function	Battery overvoltage protection,battery undervoltage protection,overload protection,short circuit protection,overtemperature protection,etc.					
Switching time	4-8ms					
Ambient temperature for operation	0-40℃					
Ambient temperature for storage	-15 - +50℃					
Relative humidity for operation/storage	0-90%(no condensation)					
External dimensions:DxWxH(mm)	290*125*430	350*175*550				
Packing dimensions:DxWxH(mm)	365*205*473	445*245*650				

NKD SINGLE-PHASE INVERTER WITH BUILT-IN CHARGE CONTROLLER

MAIN FEATURES

- High reliability
  Frequency tracking, noise filtering and low distortion in inverter output because of double-conversion design
- High adaptability
  A wide range of input frequency, which realizes stable operation of fuel generators
- High optimal performance of the battery
  An intelligent battery management technology, which guarantees a longer battery life and decreases the times of battery maintenance
  An advanced constant-voltage charge technology, which activates the battery to the most extent, saves the charge time and guarantees a longer battery life
- Overall and reliable protection
  A power-on test function, which can avoid the faults because of hazards of the inverter
- Efficient IGBT (Insulated Gate Bipolar Transistor) inversion technology Good high-speed switching feature, large-voltage and large-current operating characteristics, and voltage drive of IGBT (The fifth-generation IGBT has a lower saturation voltage drop and higher operation efficiency and reliability.)

PRODUCT OVERVIEW

The product is an integrated intelligent inverter with built-in charge controller system designed for large photovoltaic power . Its built-in controller can realize charge management for a battery pack by multiple solar arrays to improve charge efficiency and life of the battery pack. Thanks to its full digital vector control technology based on real-time processing by DSP, MCU and DDC, it has perfect protection functions and high reliability. Its mains supply preferred mode, and battery preferred mode are all settable, thus making it easy to meet the different application needs of users. It has an LCD. It is widely applied to large solar power generation occasions including families,schools, public lighting, industrial and mining enterprises, frontier defense, sea islands, pasturing areas, etc.

APPLICATION DIAGRAM

TECHNICAL INDEXES

Model:NKD-	NKD-8KW	NKD-10KW	NKD-15KW	NKD-20KW	NKD-30KW
Rated power	8KW	10KW	15KW	20KW	30KW
Battery					
Rated voltage	96 VDC/192VDC/220VDC/384VDC				
Voltage of overdischarge protection	96VDC/172VDC/194VDC/345VDC				
Controller					
Rated current	100A				
Rated voltage	192VDC/220VDC/384VDC				
Number of charge accesses	4				
Maximum current of each access	25A				
Solar input voltage	<165 VDC/<330VDC/ <378VDC/ <660VDC				
Voltage of overcharge protection	110VDC/222VDC/255VDC/445VDC (programmable)				
Control accuracy	± 0.1				
Display accuracy	± 0.1				
Efficiency	>90%				
Inverter					
Input voltage	88-132VAC/176-264VAC				
Input frequency	45-65Hz				
Output voltage	110VAC/220VAC				
Output frequency	50/60Hz				
Output waveform	Pure sine wave, THD<4% (full load)				
Protection function	Output short circuit protection, overvoltage protection, undervoltage protection, low battery protection, etc.				
Manual power-on/off	Manual power-on/off preferred				
Automatic power on/off	Light-operated power-on + fixed-time power-off (programmable)				
Switching time	<10ms				
Other					
Ambient temperature for operation	0-40℃				
Relative humidity for operation/storage	20-90% (no condensation, maximum)				
External dimensions D x W x H (mm)	536*560*1015				
Packing dimensions: D x W x H (mm)	675*700*1180				

NKG THREE-PHASE INVERTER WITH BUILT-IN CHARGE CONTROLLER

MAIN FEATURES

- Excellent performance because of the DSP intelligent control inversion technology;
- A wide range of applicable loads because of pure sine wave AC output;
- Visualization of operation status of the equipment through simple LEDs and a LCD;
- Overall automatic protection and alarms such as output overload protection;
- Solar array and battery common-anode system input;
- Intelligent charge control based on programming of charge parameters, which is provided to meet the special needs of different occasions;
- Settable battery protection parameters, and a function of password protection;
- A function to accumulate the photovoltaic power generation capacity and the battery capacity;
- Overall protection: Protection and alarm for reverse connecti on of the battery poles, battery overcharge, and back charge of the battery at night;
  Display of the current battery voltage, battery charge current, internal temperature of the case, total photovoltaic
- power generation capacity (AH), total power consumption by the load, total battery level (AH), photovoltaic current when each solar battery is separately conducted, etc.

PRODUCT OVERVIEW

The product is an intelligent inverter with built-in charge controller designed for large photovoltaic power generations. Its built-in controller can realize charge management for a battery pack by multiple solar arrays to improve charge efficiency and life of the battery pack.Thanks to the DSP control basek on SPWM high-frequency carrier technology and IGBT power device, it can control the output operation parameters accurately to provide a high quality and reliable pure sine wave AC power supply for precision equipment. It is widely applied to large solar power generation occasions including families, schools, public lighting, industrial and mining enterprises, frontier defense, sea islands,pasturing areas, etc.

APPLICATION DIAGRAM

TECHNICAL INDEXES

Model:NKG-	NKG-10KW	NKG-15KW	NKG-20KW	NKG-30KW	NKG-40KW
Rated power	10KW	15KW	20KW	30KW	40KW
Battery					
Rated voltage	192VDC/220VDC/384VDC			384VDC	
protection voltage Overdischarge	172VDC/194VDC/345VDC			345VDC	
Controller					
Rated current	100A				
Rated voltage	192VDC/220VDC/384VDC			384VDC	
Number of charge accesses	4				
Maximum current of each access	25A				
Solar input voltage	<330VDC/ <378VDC/ <660VDC			<660VDC	
Voltage of overcharge protection	222VDC/255VDC/445VDC (programmable)			445VDC (programmable)	
Control accuracy	±0.1				
Display accuracy	±0.1				
Efficiency	>90%				
Inverter					
Input voltage	176-264VAC/304-456VAC				
Input frequency	45-55Hz				
Output voltage	220VAC/380VAC (three-phase four-wire)				
Output frequency	50/60Hz				
Output waveform	Pure sine wave, THD<4% (full load)				
Protection function	Output short circuit protection, overvoltage protection, undervoltage protection, low battery protection, etc.				
Manual power-on/off	Manual power-on/off preferred				
Automatic power on/off	Light-operated power-on + fixed-time power-off (programmable)				
Switching time	3s-5s				
Other					
Ambient temperature for operation	0-40℃				
Relative humidity for operation/storage	20-90% (no condensation, maximum)				
External dimensions D x W x H (mm)	635*566*1295				
Packing dimensions D x W x H (mm)	760*690*1540				

SOLAR POWER SYSTEM

PHOTOVOLTAIC ARRAY COMBINER BOX

PRODUCT OVERVIEW

With overall protection such as counterattack prevention, overcurrent protection, overvoltage protection and lightning prevention, PV combiner boxes are used to reduce the connecting wires between a PV module and an inverter or controller, make maintenance easy, reduce the loss and improve product safety and reliability.
The PV combiner box produced by us has all the functions above and provides users with a complete solution for PV power
generation systems.

MAIN FEATURES

- Two groups of independent PV array input and output for flexible application in different connection schemes;
- Multiple PV input arrays each of which has a maximum current of 10A;
- A high voltage fuse provided for the counterattack prevention of each PV input array;
- A special high-voltage lightning protection device for the PV module;
- A special high-voltage circuit breaker for output control of the PV module;
- A degree of protection of IP65 for meeting the need of outdoor installation.

TECHNICAL INDEXES

Model	H4T	H4T2	H6T	H8T	H10T
Input data					
Number of PV input arrays	4	4	6	8	10
Maximum current of each PV input array	16A				
Fuse for each PV input array	16A				
Wire number of each PV input array	PG7, 4mm²				
Output data					
Number of output channel	1	2			
Maximum output current	60 A	30A/each way, total 60A	30A/each way, total 60A	40A/each way, total 80A	50A/each way, total 100A
Wire number of each output channel	PG16, each way 8mm²	Pg16, each way 8mm²	Pg16, each way 10mm²	Pg16, each way 10mm²	Pg16, each way 12mm²
Maximum output voltage	600VDC				
DC output circuit breaker	Yes				
Other data					
Protection	IP65				
Temperature	-30℃ ~ +60℃				
Reference weight (net weight/gross weight)	5.3/9.3	8.4/12.9		9.5/14.3	10.8/15.6
Equipment dimensions (D X W X H)	340*300*140mm	360*340*145mm		400*420*145mm	
Packing dimensions (D X W X H)	450*420*245mm	470*450*255mm		530*510*255mm	
Cooling method	Natural cooling				
Surge protection	Yes				
Ground wire number	≥6mm2				

SOLAR POWER SYSTEM

PHOTOVOLTAIC ARRAY COMNINER BOX

PRODUCT OVERVIEW

Photovoltaic power generation system, in order to reduce the photovoltaic module and inverter between the connecting cables, convenient maintenance, reduce the loss and improve the safety and reliability of the product, generally require in the photovoltaic module and inverter added between confluence device.

Photovoltaic junction box besides having the function of pv bus outside, and at the same time, should also have a current counter-attack, over current protection, over-voltage protection, lightning protection and a series of perfect protection function.

This company produces the photovoltaic junction box with the above various functional requirements, and photovoltaic (PV) grid, from network type inverter supporting the use can form a complete set of photovoltaic power generation system solutions.

MAIN FEATURES

- Single way photovoltaic array output, maximum open circuit voltage 1000V.
- Multiway photovoltaic array input, single way input array maximum current of 10A.
- Single way photovoltaic array to join the high-voltage fuse protection, counter-attackprotection.
- Photovoltaic special high voltage lightning protection device protection.
- Photovoltaic special high voltage circuit breaker control output
- Meet outdoor installation requirements, protection class Ip65.

TECHNICAL INDEXES

Model	HT4	HT6	HT8	HT10	HT16
PV array input numbers	4	6	8	10	16
Max single PV array current	16A				
Single PV array fuse	16A				
Single PV array wire size	4mm²				
Output numbers	1				
Max output current	40A	60A	80A	100A	200A
output wire size mm²	10mm²	16mm²	20mm²	25mm²	35mm²
Max output voltage	1000VDC				
DC output circuit breaker	yes				
Protection	Ip65				
Temperature range	-30℃~60℃				
Reference weight (N.W/G.W.)	7.6 Kg/13Kg			12.2 Kg/18.8 Kg	
Machine size (D X W X H)	458*445*150mm			458*445*150mm	
Packaging size (D X W X H)	510*500*252mm			620*550*262mm	
Cooling way	Natural cooling				
SPD protection	20KA-40KA				
Ground wire size	≥6mm²				

SOLAR POWER SYSTEM

BATTERY SERIES

ACTIVE POLYMER GEL BATTERY

PRODUCT OVERVIEW

Active polymer gel batteries are special supporting products for solar power systems, wind power generation systems, uninterruptible power supplies (UPS), inverters, EPS, street lamps, etc.

MAIN FEATURES

as charge. In normal floating charge, it emits neither electrolyte nor acid mist because it is a completely sealed battery. The battery pack will be safer if used with a patented battery tray.

- Long service life:

The corrosion-resistant multi-element alloy grid including elements such as calcium, lead and tin, and the ABS corrosion-resistant shell, both accurately designed by computer, have extremely high sealed reaction efficiency, thus guaranteeing long service life of battery.

- Low self discharge rate

A multiple-element alloy including special calcium and lead is used, and the battery separator, the electrolyte and the impurities generated in production procedures are strictly controlled. Thus, the battery not be charged within six months can be used normally at 20℃.

- Great conductivity

With copper-core silvered terminals and special design, the product has extremely great electrical performance.

- Great adaptability to environment

- Great charge and discharge bearing capacity

The product has great charge and discharge bearing capacity: It can bear large-current charge (0.8C-1C) and large-current discharge (30C discharge current within eight seconds) without damage. It can realize ultra-deep discharge and will not get damaged after multiple times of complete discharge.

- High safety and reliability

It is provided with a full automatic safety valve to avoid damage as a result of an abnormal internal pressure caused by the gas generated in process such

The product adapts to severe climates and can even be used at an ambient temperature of -25℃ to 50℃.

- Great directionality

The product has high sealed reaction efficiency, so it can be used normally and has no leakage when placed vertically or horizontally.

- Environment friendliness

electronic instruments and the battery room needs no corrosion-proof actions against acids.

It is quiet and generates no pollutants, so it can be put in the same room with articles such as

- A longer life and deep cycle

Made of a multi-element special lead-tin positive alloy, the product has greater corrosion resistance and a longer cycle life than conventional lead-calcium alloy. The product has a larger output power because of the optimized radial design of its grid.

The unique lead paste formula and manufacturing process benefit the formation of 4BS and guarantee a long floating charge life.

Reasonable use of additives makes PCL (premature capacity loss) solved better.

TECHNICAL INDEXES

Model	24AH	38AH	65AH	100AH	120AH	150AH	200AH
External dimensions (L×W×H)	165×126×126	198×166×170	350×166×179	329×172×214	406×173×208	483×170×239	522×239×218
Net weight (KG)	8.5KG	12.5KG	20.5KG	31KG	36KG	49KG	62KG
Package/material	Carton package						
Voltage	12V						
Internal resistance of battery	After the battery is fully charged (25° C)					≤10mΩ	
Battery capacity at different temperatures	60° C					104%	
	25° C					100%	
	0° C					95%	
	-50° C					86%	
Rated capacity (Ah) at different hours	10hr					100%C10	
	30hr					110%C10	
Storage capacity of battery	One month (25° C)					95%	
	Three months (25° C)					90%	
	Six months (25° C)					88%	
Maximum charge current	02.5C10 (A)						
Charge voltage limit	Voltage of equalizing charge					14.4V/12V-25mV/C	
	Voltage of floating charge					13.5V/12V-20mV/C	

LEAD-ACID BATTERY

PRODUCT OVERVIEW

Valve-controlled maintenance-free lead-acid batteries are special supporting products for solar power systems, wind power generation systems, uninterruptible power supplies (UPS), inverters, EPS, etc.

6FM-120

MAIN FEATURES

- No maintenance:

With high sealed reaction efficiency based on a unique technology, the product needs no maintenance by means of water or acid supplementation in its whole life.

- High safety and reliability

It is provided with a full automatic safety valve to avoid damage as a result of an abnormal internal pressure caused by the gas generated in process such as charge. In normal floating charge, it emits neither electrolyte nor acid mist because it is a completely sealed battery. The battery pack will be safer if used with a patented battery tray.

- Longer life

The corrosion-resistant multi-element alloy grid including elements such as calcium, lead and tin, and the ABS corrosion-resistant shell, both accurately designed by computer, have extremely high sealed reaction efficiency, thus guaranteeing a longer battery life.

- Low self discharge rate

A multiple-element alloy including special calcium and lead is used, and the battery separator, the electrolyte and the impurities generated in production procedures are strictly controlled. Thus, the battery not charged within six months can be used normally at 20℃.

- Great conductivity

With copper-core silvered terminals and special design, the product has extremely great electrical performance.

- Great adaptability to environment

The product adapts to severe climates and can even be used at an ambient temperature of -25℃ to 50℃.

- Great directionality

The product has high sealed reaction efficiency, so it can be used normally and has no leakage when placed vertically or horizontally.

- Environment friendliness

It is quiet and generates no pollutants, so it can be put in the same room with articles such as electronic instruments and the battery room needs no corrosion-proof actions against acids.

TECHNICAL INDEXES

Model	24AH	38AH	65AH	100AH	120AH	150AH	200AH
External dimensions (L × W × H)	165 × 126 × 175	195 × 166 × 170	230 × 138 × 210	329 × 172 × 214	406 × 173 × 208	483 × 170 × 239	522 × 240 × 219
Net weight (KG)	8.5KG	12KG	18KG	30.5KG	36KG	43KG	58KG
Package/material	Carton package						
Voltage	12V						
Internal resistance of battery	After the battery is fully charged (25° C)						≤ 10mΩ
Battery capacity at different temperatures	60° C						104%
	25° C						100%
	0° C						95%
	-50° C						86%
Rated capacity (Ah) at different hours	10hr						100%C10
	30hr						110%C10
Storage capacity of battery	One month (25° C)						95%
	Three months (25° C)						90%
	Six months (25° C)						88%
Maximum charge current	02.5C10 (A)						
Charge voltage limit	Voltage of equalizing charge						14.4V/12V-25mV/C
	Voltage of floating charge						13.5V/12V-20mV/C

SOLAR POWER SYSTEM

RECHARGEABLE LITHIUM ION BATTERY

Safety Precautions

- Do not immerse calls into water
- Do not drop cells into fire or expose them to any high temperature environment exceeding operation temperature,otherwise fire hazards may present. At all time ,Cell Temperatures should not exceed 55℃,shut down system by BMS when it occurs.
- Do not short circuit cell terminals , other wise high current and temperature may cause body injury or fire hazards . metallic cell terminals are exposed from plastic packaging and ample safety precautions should be implemented to avoid short circuiting them during system integration or connections.
- Always connect cell terminal according to labe(s) in right polarity. Reverse charging is strictly prohibited.
- It is extremely dangerous to overcharge a cell which may cause overheating and fire hazards.
- Normal charging should finish with in a charging time out limit. When charging continues longer than charging time out limit , it tends to overheat the cells which may cause over heating and fire hazards . A timer should be implemented in the charger circuit and set up properly .In case charging does not terminate normally within charging time out limit, ensure that the timer will intervene and stop the charging .
- Products should be securely fixed to solid platform , and power cables should be securely attached by fastener to avoid intermittent contact which may cause arcing and sparks.
- Do not service cells and electrical connections within plastic package of cell. Improper electrical connection within a cell may cause overheating in service.
- In the event of electrolyte leakage , avoid contacting electrolyte with skin or eyes. In case come into contact , wash affected area with large amount of water and seek medical help. Do not swallow any parts or substances within a cell.
- Product cells from mechanical shock , impact and pressure . Internal electrical circuit may short circuit to generate high temperature and fire hazards.
- Some tests shall only be performed in qualified laboratories by qualified personnel with proper safety precautions taken. Runing these tests in an improper way may result in severe personal body injury or property damages.

TECHNICAL INDEXES

Model	50AH	100AH	206AH
Typical capacity	50AH	100AH	206AH
Minumum capacity	50AH	100AH	206AH
Operating voltage	2.5V~3.65V	2.5~3.65V	2.5~3.65V
Impedance(1kHz)	≤0.40mΩ	≤0.40mΩ	≤0.20mΩ
Shipping capacity	<30%SOC		
Operating temperature(charging)	-15-55℃		
Operating temperature(discharge)	-30~55℃		
Weight	1.16±0.2Kg	2.28±0.2Kg	4.18±0.2Kg
Self-discharge	<3.5%/Month	<3.5%/Month	<3.5%/Month
Cell dimension	148*40*102mm	174*48*132mm	175*54*207mm
Standard charge current	25A	50A	103A
Standard charge voltage	3.65V		
Standard charge temperature	25±2℃		
Absolute charge temperature	-15~55℃		
Absolute ogarge voltage	3.65V max. Stop charging once voltage exceeds this voltage regaedless of the charging mode (including regeneration)adopted		
Standard charge method	25A constant cuttent charge to 3.65V for cell,then switch to constant voltage charge current declines to ≤ 5.0±0.3A	50A constant cuttent charge to 3.65V for cell,then switch to constant voltage charge current declines to ≤ 5.0±0.3A	103A constant cuttent charge to 3.65V for cell,then switch to constant voltage charge current declines to ≤ 10.3±0.3A

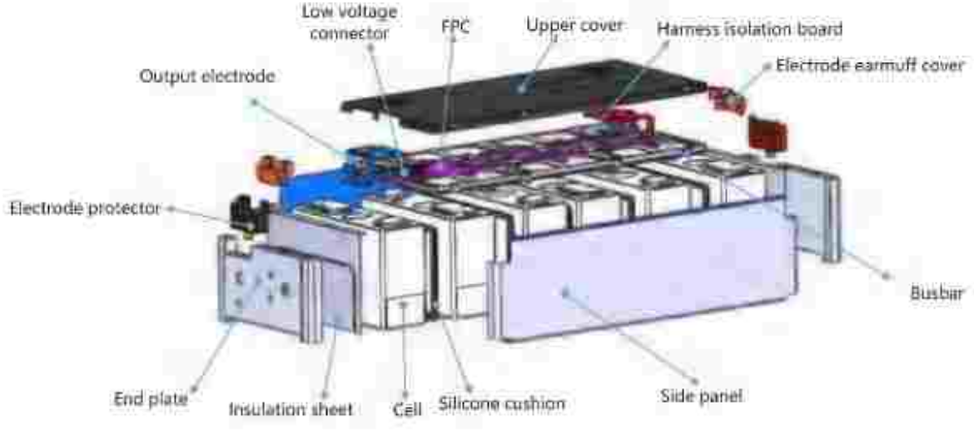
UL LISTED IEC CE MSDS UN38.3

LITHIUM ION BATTERY MODULE

MAIN FEATURES

- 102Ah / 120AH battery module The battery module is an important part of the power battery assembly. It is used to provide electrical energy absorption, storage and application to an on-board high-pressure gas system
- It adopts the standard NCM 100Ah cell that adopts the VDA standard. Its superior charge and discharge performance can effectively improve vehicle dynamic performance and endurance, as well as good environmental adaptability.
- Using FPC components to collect the temperature and voltage information of the mold, omitting the traditional wiring harness, is more concise and convenient, can effectively use the space, and has a higher volume density and system integration rate.
- With power battery high voltage output function
- With energy feedback storage function

APPLICATION DIAGRAM



TECHNICAL INDEXES

Model		Unit	102Ah	120AH
Standard voltage		V	21.96V(25℃,1C)	
			22.2V(25℃,1/3C)	
Minimum battery flux		AH	≥100Ah(25℃,1C))	≥118Ah(25℃,1C))
			≥102Ah(25℃,1/3C))	≥120Ah(25℃,1/3C))
Allowable working voltage	55℃≥T＞0℃	V	16.8V~25.8v	
	-20℃＜T≤0℃	V	15V~25.8v	
	T≤-20℃	V	12.6V~25.8V	
Module total energy(1/3C,2.8V~4.3V,25℃)		WH	≥2264.4Wh	≥2664.4Wh
Module total energy(1C,2.8V~4.3V,25℃)		WH	≥2196Wh	≥2584Wh
Cell voltage difference in the module		mV	＜12mV	
Pressure difference of all cells in the same batch of modules		mV	＜15mV	
Maximum continuous charging current of the module		A	120A	
Maximum continuous discharge current of the module		A	150A	
Energy efficiency (25℃, 1C chargeto 4.3V, 0.05C charge to cell voltage 4.3V, after standing to the target temperature, 1C discharge)	-30℃	%	80%	
	-20℃		85%	
	-10℃		87%	
	0℃		92%	
	10℃		94%	
	25℃		100%	
	50℃		103%	
Module self discharge rate (60% SOC in the field)		%	Month 1: <3%	
			Month 2: <2%	
			Month 3: <2%	
Maximum SOC of battery module		%	95%~97%	
Battery module operating temperature range	Recharge	℃	-20℃~55℃	
	Discharge	℃	-30℃~55℃	
Battery module storage temperature range		℃	-40℃~65℃	
Operating humidity range of battery module		%RH	2%~98%	
Operating altitude range of battery module		m	-150m~5000m	
Battery cycle life		Cycles	≥2000(0.5C/1C,100% DOD,25℃)	
Assembly weight		Kg	(11.200±0.300)Kg	(12.200±0.300)Kg
Dimensions		mm	355*151.5*108.5 mm	

CE MSDS UN38.3

48V / 96V LiFePo4 BATTERY MODULE

PRODUCT OVERVIEW

This product is suitable for 48V / 96V product applications, and can be used with photovoltaics and inverters to supply power to household TVs, air conditioners, lighting, etc. This product has voltage, current, and temperature protection functions.

TECHNICAL INDEXES

Model	200AH
Nominal capacity of battery module	206AH(32S1P)
Rated voltage of battery module	102.4V
BMS discharge cut-off voltage	88V
BMS charging cut-off voltage	116.8V
Float voltage	106.8V
BMS continuous charging maximum current	200A
BMS continuous discharge maximum current	200A
Battery energy	21KWH
Outgoing requirements	Negative plug-in terminal 150cm black main line, tail pressure SC35-8 terminal
Discharge working temperature	-20℃~55℃
Charging working temperature	0℃~45℃
storage temperature	-10℃~45℃
Relative humidity	5~90%
Altitude	≤4000m
Protection level	Ip21
Storage time	Charge at least once every three months
weight	200Kg
Cycle life	2000 times

MSDS UN38.3

384V / 412Ah ENERGY STORAGE BATTERY SYSTEM

PRODUCT OVERVIEW

The battery management system consists of a battery management unit, a control unit, and a current detection unit. The BMS system has the functions of high-precision detection and upload of analog signals, fault alarm, upload and storage, battery protection, parameter setting, equalization function, battery pack SOC calibration and information interaction with other equipment.

TECHNICAL INDEXES

Model	206Ah/277AH
Operating voltage range	324V~438V(120S1P)
Rated Capacity	206Ah/277AH
Cell size	175*54*207mm
Package Size	690*960*1650mm
Shell material	Q235
weight	≤600Kg
Communication	RS485/CANBUS
Discharge working temperature	-20℃~60℃
Charging working temperature	0℃~55℃
storage temperature	0℃~35℃
Group way	8 series and 1 parallel battery module
High voltage output positive and negative connectors	Quick plug-in
BMS wiring harness	Optional
PACK quantity	8*15
Rated total voltage of battery cabinet	384V
Battery cabinet charging cut-off voltage	438V
Battery cabinet discharge cut-off voltage	324V
Maximum current of battery cabinet	300A
Rated current of battery cabinet	250A

ENERGY STORAGE CABINET

TECHNICAL INDEXES

This series of energy-type box-type energy storage products uses lithium iron phosphate special batteries for energy storage, with high energy density, long cycle life, and highly integrated system design. The system integrates energy storage battery, BMS, PCS, temperature control, fire fighting and lighting subsystems. Using standard containers, it can be installed outdoors. The system color modular design, easy to deploy, easy to move and maintain.

MAIN FEATURES

- High energy density, small footprint, short construction period, and strong environmental adaptability; Standardized components, modular architecture, easy expansion, flexible configuration of system capacity, can realize megawatt-level energy storage applications.
- Multiple charge and discharge control strategies, dynamic and static grid support;
- Support grid-connected and off-grid operation modes, which can realize seamless switching;
- Product optimized design, high system conversion efficiency, with black start function;
- Multiple operation modes such as real-time command mode, planned charging and discharging mode, single pure charging mode, backup power mode, battery maintenance mode, etc. meet the needs of different applications.
- The layered stacking design in the battery module has a long design life of more than 10 years; Efficient battery module and system heat dissipation design to meet the heat dissipation requirements of different working conditions;
- Adopt international advanced IGBT and intelligent power module, with high-power fast adjustment capability;
- The key connection parts adopt patented flexible connection technology to minimize the rigid stress on the components;
- The temperature control adopts heat dissipation duct and split air conditioner design to ensure the consistency of the temperature field in the box and ensure that the battery is in the best working environment.
- The self-developed BMS battery management system has the functions of SOC automatic calibration and high-current active balancing, combined with complete operation control and management strategies, to achieve accurate and efficient management.
- Automatic fire alarm and automatic fire extinguishing system, with sound and light alarm and upload function, using safe and environmentally friendly clean fire extinguishing agents;
- High safety, comprehensive and multi-level battery protection strategy, fault isolation measures; It adopts a combination of software and hardware protection, with alarm protection function and automatic diagnosis function, perfect protection strategy to ensure the safe and efficient operation of the system.

500KWH ENERGY STORAGE CABINET

MAIN FEATURES

Energy storage system capacity:582KWH
Rated discharge power:500KW
Maximum charging power:500KW
Rated output voltage:380VAC
Output voltage range:Rated voltage -15%+15%
Rated output frequency:50Hz
Frequency Range:±2.5Hz
Output wiring method:Three-phase four-wire
External communication interface:
Ethernet/RS485/CAN MODBUS(TCP/IP)
Rated Capacity:688AH
Highest voltage:864V
Lowest voltage:576V
Rated voltage of electric box:38.4V
Rated capacity of electric box:172AH
Series and parallel connection of electric box modules:12S2P
Battery tyspe: lithium iron nitrate square
Cell capacity:86AH
Overall series-parallel connection：12S2Px20Sx4P
Inverter power:500KW (On and off the grid)
BMS:Level 3 management
Container size:WxDxH/6058x2438x2591mm
Container weight:13 tons

Description:
Rated capacity, rated voltage of electric box, rated capacity of electric box, series and parallel mode of electric box modules, cell capacity, etc. can be redesigned.

1000KWH ENERGY STORAGE CABINET

Energy storage system capacity:1106KWH
Rated discharge power:1000KW
Maximum charging power:1000KW
Rated output voltage:380VAC
Output voltage range:Rated voltage -15%+15%
Rated output frequency:50Hz
Frequency Range:±2.5Hz
Output wiring method:Three-phase four-wire
External communication interface:
Ethernet/RS485/CAN MODBUS(TCP/IP)
Rated Capacity:1440AH
Highest voltage:864V
Lowest voltage:576V
Rated voltage of electric box:38.4V
Rated capacity of electric box:240AH
Series and parallel connection of electric box modules:12S2P
Battery tyspe: lithium iron nitrate square
Cell capacity:120AH
Overall series-parallel connection：12S2Px20Sx4P
Inverter power:500KW x 2P (On and off the grid)
BMS:Level 3 management
Container size:WxDxH/12192x2438x2591mm
Container weight:25 tons

Description:
Rated capacity, rated voltage of electric box, rated capacity of electric box, series and parallel mode of electric box modules, cell capacity, etc. can be redesigned.

MAIN FEATURES

UL LISTED IEC CE MSDS UN38.3

SOLAR POWER SYSTEM

20KW RESIDENTIAL

10KW RESIDENTIAL

15KW RESIDENTIAL

5KW RESIDENTIAL

SOLAR POWER SYSTEM

40KW COMMERCIAL & INDUSTRIAL

30KW COMMERCIAL & INDUSTRIAL

5KW Solar Energy System Home

150KW COMMERCIAL & INDUSTRIAL

SOLAR POWER SYSTEM

5KW YURT

3KW YURT

5KW BORDER GUARD POST

SOLAR POWER SYSTEM

20KW SMALL POWER STATION

40KW ISLAND

3~5KW COMMUNICATION BASE STATION

SOLAR POWER SYSTEM

30KW DESERT

150KW COMMERCIAL & INDUSTRIAL