## Features

1) Easy to install. Toconfigure a solar system, users just need to connect it with solar panels andbatteries.

2)CPU management,Intelligentcontrol,modular design

3)LEDs LCD display. LCDcan display various parameters(such as the output voltage, frequency, workingmode)

4)Multifunction design,AVR UPS function. Users don't need to buy solar, controller, AC charger or stabilizer.

5)External battery connection, it's convenient for users to expand use time andback-up power time

6)With superload-carrying ability and high load capacity, this series of inverters can not only drive resistance load;but also various kinds of inductive loads such as motor, air conditioner,electric drills, fluorescent lamp, gas lamp. It can drive almost any kinds ofload

7)Low frequency puresine wave circuit design, stable quality, easy to maintenance, low failure rateand long service life (under proper operation,it can last at least 5 years)

8) Perfect protection: lowvoltage protection, high voltage protection, over temperature protection, short-circuitprotection, overload protection

9) CE / EMC / LVD/ RoHS/FCC approvals

10) 2 years warranty, life-long technical support

Function

1. Sole inversion function under inversion mode（only connected to battery）,can be set to normal working mode and sleep mode
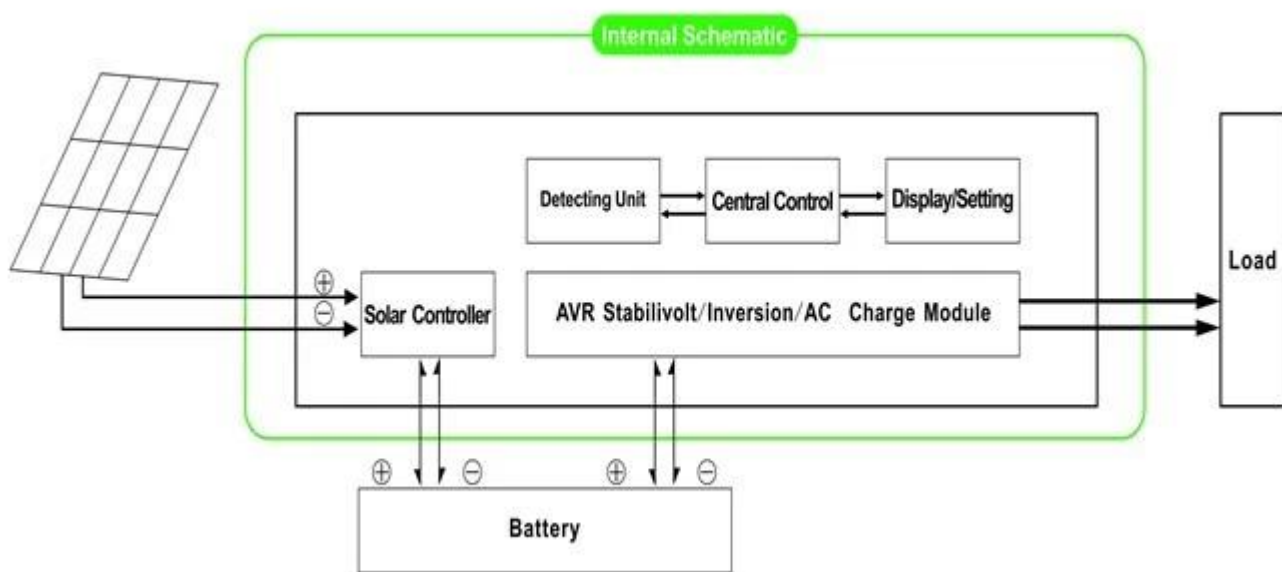
1.1 Normal working mode，FREQUENCY in the LCD display is set as 01. No matter whether there are AC loads connected to the inverter or not, the inverter's output terminal will always have voltage ready to supply power to the loads. Under this mode, the LCD will be displayed as bellow:
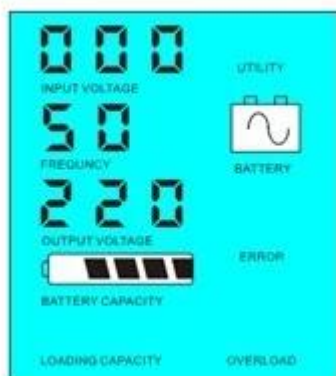
1.2 Sleep mode，FREQUNCY in the LCD display is set as 02.If thepower of the connected AC loads is lower than 5% of the inverter's rated power,there will be no output from the inverter. Only the chip of inverter is working.The power consumption of the inverter is only 1-6W. The LCD shows the outputvoltage 0. If the power of the connected loads is over 5%,then the inverterwill automatically convert DC to AC to supply power for the loads within 5s.The LCD shows the output voltage. As shown below:
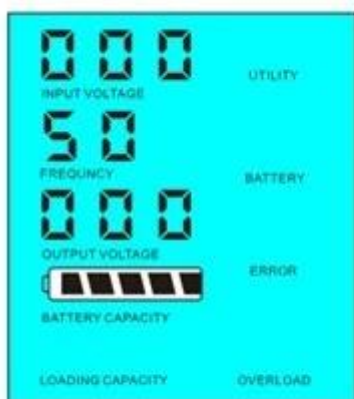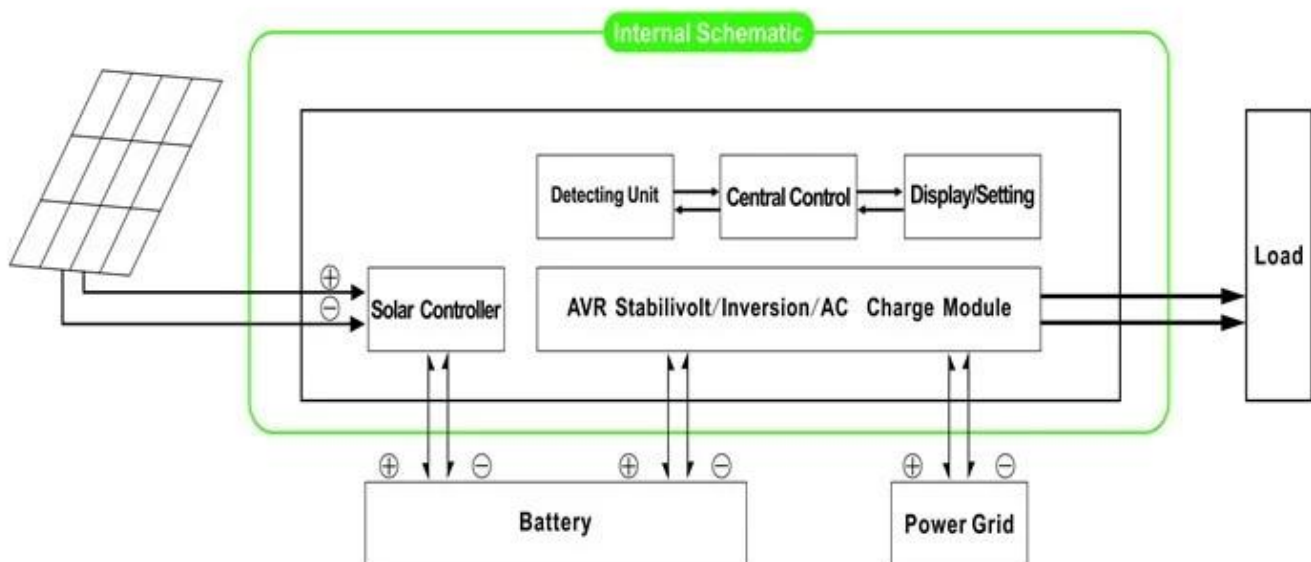

Load's power< 5% of inverter's rated power

Load's power> 5% of inverter's rated power

System introduction under this mode:

1) Only the solar panel charges the battery

2) Independent sole off-grid solar power system; suitable for areas that are   lack of utility or have rich solar energy

Internal Schematic

Detecting Unit → Central Control ← Display/Setting

Solar Controller

AVR Stabilivolt/Inversion/AC Charge Module

Load

Battery

Power Grid

2. UPS function When the inverter is connected to battery andutility, users can set it to utility first (AC first) battery standby mode orbattery first (DC first)utility standby mode.

2.1.Utilityfirst (AC first) battery standby mode : FREQUENCY in the LCD display is set to 01.When utility and battery are connected to the inverter, utility will supplypower to the loads prior. When utility is cut off, the battery willautomatically continue to supply power via power inverter.

   Steps are as follows:

   Step 1: When utility is available, it will drivethe loads directly after voltage being stabilized and at the same time chargebatteries via power inverter .

   Step 2: When utility is cut off, theinverter will convert DC to AC automatically to ensure uninterrupted powersupply within 5ms.

   Step 3: When utility is available again,inverter will automatically transfer to utility supplying power to loads andcharge batteries via power inverter at the same time.

See Workflow as below:
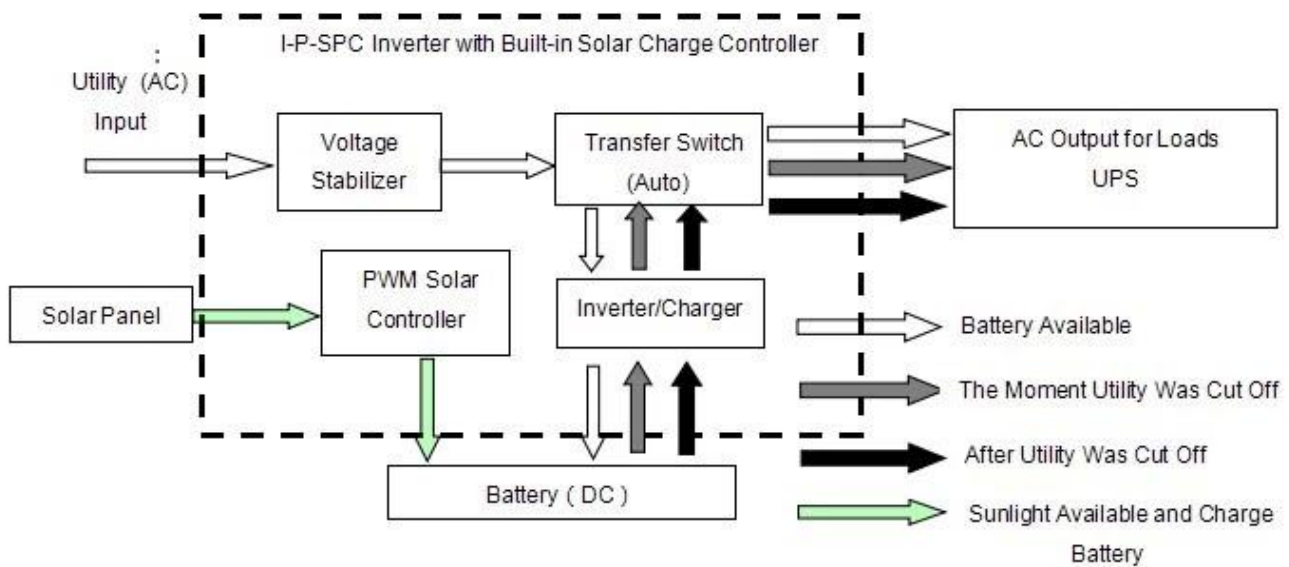
LCD displayed as bellow:

Utility supply power and charge battery   Without utility and battery supply power

Kindly note:

1) There are 2 ways to charge thebattery, utility and solar panel

2) This system is suitable for powersystems built in areas that are lack of utility. Or people can use solar andutility at the same time.

2.2. Battery first(DC first)utility standy mode: FREQUENCY in the LCD display is set as 03. When utility andbattery are connected to the inverter, battery will supply power to the loadsprior to utility. When battery capacity is not enough, utility will continue tosupply power automatically.
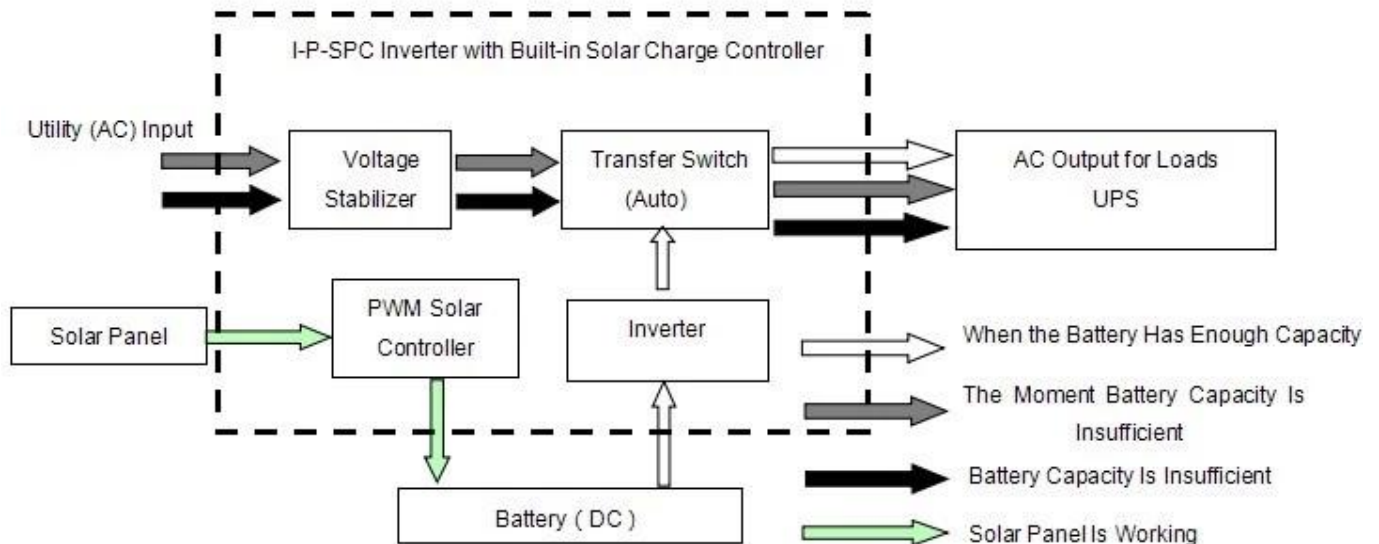
Steps are as follows:

Step 1: When battery is available, it will drive the AC loadsvia power inverter.

Step 2: When battery does not have enough power, it willautomatically transfer to utility supplying power to the loads

Step 3: After the battery is fully charged (e.g. by solar orwind charge controller), it will automatically transfer to battery supplyingpower to the loads via power inverter.

See Workflow as below:

I-P-SPC Inverter with Built-in Solar Charge Controller

Utility (AC) Input	Voltage Stabilizer	Transfer Switch (Auto)
Solar Panel	PWM Solar Controller	Inverter
	Battery (DC)	

AC Output for Loads
UPS

When the Battery Has Enough Capacity

The Moment Battery Capacity Is Insufficient

Battery Capacity Is Insufficient

Solar Panel Is Working

LCD displayed as bellow:

Battery has power and supply power

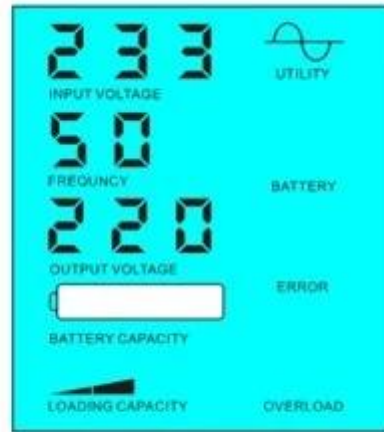Battery dead, utility supply power

System introduction under this mode:

1) There is only way to charge the battery: solar panel

2) This system is suitable for areas where electricity is expensive and environmental areas where solar power can be fully used to save utiliypower, such as family solar&wind system and streetlight solar&wind system

Parameter

Model Parameter		500VA	700VA	1000VA	1500VA	2000VA	3000VA	4000VA
Rated Output Power		350W	500W	700W	1000W	1500W	2000W	3000W
Peak Power		700W	1000W	1500W	2000W	3000W	4000W	6000W
Battery Voltage(DC)		12V or 24V		24V		24V or 48V		
PWM Solar Controller	Voltage	12V or 24V		24V		24V or 48V		
	Current	10A	20A	20A		30A		40A
	PV Max Input Voltage	12V System≤25V 24V System≤50V		24V System≤50V		24V System≤50V 48V System≤100V		
Size W×D×H(mm)		335*165*375				350*220*460		
Packing Size W×D×H(mm)		355*185*395				370*240*480		
Net Weight (kg)		7	8	12	14	20	23	29
Gross Weight (kg)		8	9	13	16	22	25	31

Model Parameter		5000VA	6000VA	7000VA	10kVA	15kVA	20kVA	30kVA
Rated Output Power		3500W	4000W	5000W	7000W	10000W	15000W	20000W
Peak Power		7000W	8000W	10000W	14000W	20000W	30000W	40000W
Battery Voltage(DC)		48V			96V		192V	
PWM Solar Controller	Voltage	48V			96V		192V	
	Current	50A	60A		50A		50A	
	PV Max Input Voltage	100V			200V		400V	
Size W×D×H(mm)		420*260*605					420*280*625	
Packing Size W×D×H(mm)		440*280*625					440*300*645	
Net Weight (kg)		31	50	50	55	85	105	125
Gross Weight (kg)		33	55	60	65	95	115	135

General Parameter		
Working Mode (Setting）	01	Utility first (AC first) battery standby mode
	02	Sleep Mode,no utility,load's power is over 5% of rated output power, Inverter start to work automatically
	03	Battery first (DC first)utility standby mode
AC Input	Voltage	220V±35% or 110V+35%(Optional)
	Frequency	50Hz±3% or 60Hz±3% (Optional)
AC Output	Voltage	220V±3% or 230V±3 or240V±3% or 100V±3% or 110V±3% (Optional)
	Frequency	50Hz±0.5 or 60Hz±0.5 (Optional)

Utility charge	AC Charge Current	0~15A
	Charge Time	Depend on battery capacity and quantity
	Battery Protection	Automatic detection, Charge and discharge protection,Intelligent Management
PV Charge		Total Current of PV Input Should Be Less Than Rated Current of PWM solar controller
Display	Display Mode	LCD+LED
	Display Information	Input voltage,output voltage,output frequency,battery capacity,load condition,status Information
Output Wave Type		Pure sine wave output,Total Harmonic Distortion THD≤3
Overload Ability		120% 1 min,130% 10s
Power Consumption	Sleep Mode	1~6W
	Normal Mode	1~3A
Conversion Efficiency		80%~90%
Transfer Time		5ms （AC to DC / DC to AC）
Protection		Overload ,Short-circuit,High input voltage,Low input voltage,Overheat
Environment	Temperature	-10℃50℃
	Humidity	10%90%
	Altitude	≤4000m

- The above parameters with "or" means that the parameter needs to do factory settings as per customer's preference.
- We have our own professional inverter controller and UPS R&D team and we provide technical support and OEM service.
- The controller information above is our company's standard parameter can be changed according to customer's requirement.

Connection Diagram

I-P-SPC-Series System

Solar Panel

DC Output

Battery Box

AC Input（not essential）

AC Output

I-P-HPC-Series Inverter+Solar Controller

Others

Please refer to the outline design, technical documents, product brochures, etc.

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