

PURE SINE WAVE INVERTER

Low Frequency Pure Sine Wave Inverter With 20A AC Charger



 **Operating Manual**

// CONTENT

I.	Operating Instructions	1
II.	Outlook drawing of inverter.....	2
III.	Description of front board	2
IV.	Function settings	3
V.	Input & output connections	5
VI.	Battery wiring diagram	5
VII.	Output wiring diagram	6
VIII.	Troubleshooting	6
IX.	Care & maintenance	7
X.	Specification	8

I. Operating Instructions

1.1. Inspection

Please ensure parts, components and operation manual are included and the inverter is in good condition. If the inverter is broken or components missing, do not turn on the machine, please get in touch with your supplier.

Note

- Please keep all packaging and manuals for future use.
- This product is of great weight, please lift and handle with caution. (reference attached)

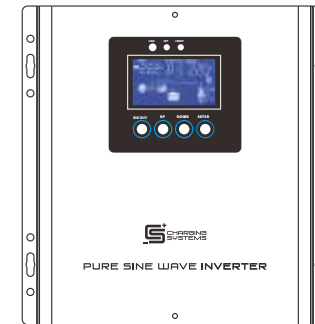
1.2. Installation notice

- This product should be well-ventilated. Please keep away from water, corrosive and combustible gases.
- Do not place this product in a corner. Ensure the bottom of the front panel, the rear panel fan outlet and the side of the product is well-ventilated.
- The environment temperature should remain $-20\sim+75\text{ }^{\circ}\text{C}$
- Operate this product in absolute dry conditions as required. Operating in low temperatures will cause condensation and result in electric shock.
- Install the inverter near the mains/switch to cut off mains supply in case of emergency.

Attention

- Load should be turned off before connecting to inverter and turned on one by one after connecting completed.
- The inverter should be connected to a socket with a corresponding current protection.
- All power sockets should be linked to a ground protection.
- Turning off the inverter does not guarantee there is no current running through the inverter. To cut off the output of the inverter completely, first turn off all switches then turn off the main supply.
- To load inductive appliances such as electromotor, display and laser printer, inverter capacity should be twice as loading machines rated power at least.

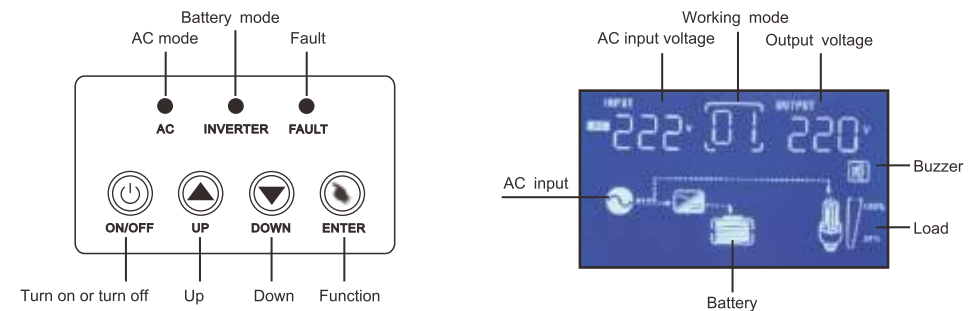
II. Outlook drawing of inverter



PSICH-1-1.5KA

III. Description of front board

Display lamp & buttons



IV. Function settings

ON/OFF Button: 3 sec. → ON 3 sec. → OFF

Press this button to display the data below:

Output voltage Battery capacity

Output frequency Load capacity

Function Button :

5 sec. → setting(P0),

→ (P1 Working mode, P2 Battery type choose, →OK

or press two times can back to the main interface.

Model P1: → (01,02,03) first 01: AC 02:Auto 03: Battery →OK

01 Normal Mode - AC input priority to supply the load and batteries, battery supply the loads without AC input. (only photovoltaic)

02 Saving Mode - AC input advanced to supply the load and the battery, battery supply the loads without AC input. But the load must be 5% of the inverter capacity. otherwise the machine will continue to startup and shutdown. (only photovoltaic)

03 Battery Mode - Battery priority to supply the load, when battery is low of power or voltage, will automatically switch to AC mains supply, when the battery full of charge, automatically transfer to the battery supply. (only photovoltaic)

Model P2: → Type →OK

Battery type	Charging current
GEL U. S. A.	13.7V
A. G . M. 1	13.4V
A. G . M. 2	13.7V
Sealed Lead Acid	13.6V
Gel European	13.8V
Open Lead Acid	13.8V
Calcuim (Open)	13.6V
De sulphation cycle	14.5V

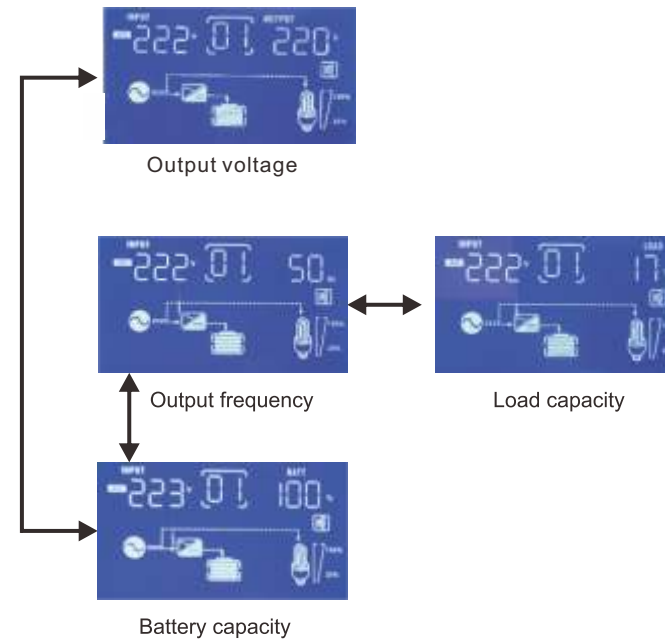
Model P3: → 0-20A →OK

Note: (The Max. charging current is 20A, from 0% to 100%)

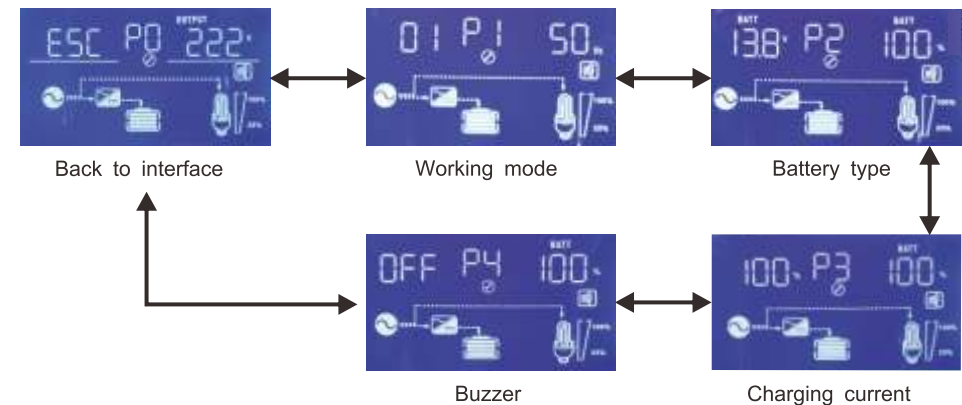
Model P4: → or →OK

Note: Restart the inverter after each setting.

1. Main interface data:



2. Function setting interface:



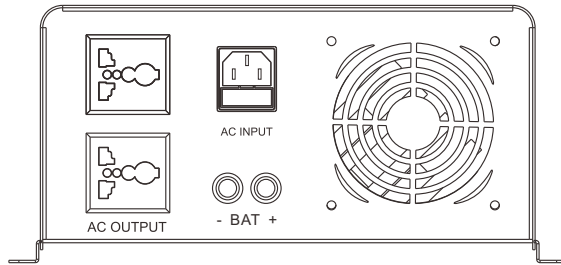
V. Input and output connections

Connect with AC input and load output by connecting terminal, load output can connect both by terminal blocks and output plug.

Note: Output plug only can connect with each load less than 1000W.

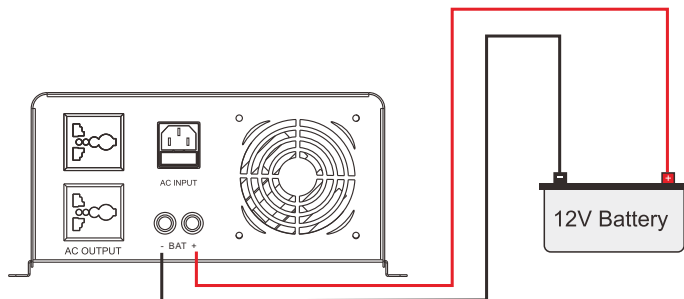
Back panel illustration

DC ⊖	Battery negative polarity connection
DC ⊕	Battery positive polarity connection
AC INPUT	AC input connection
AC OUTPUT	Universal socket output or connection terminal output
USE ONLY WITH 250V FUSE	AC input and output over current protection



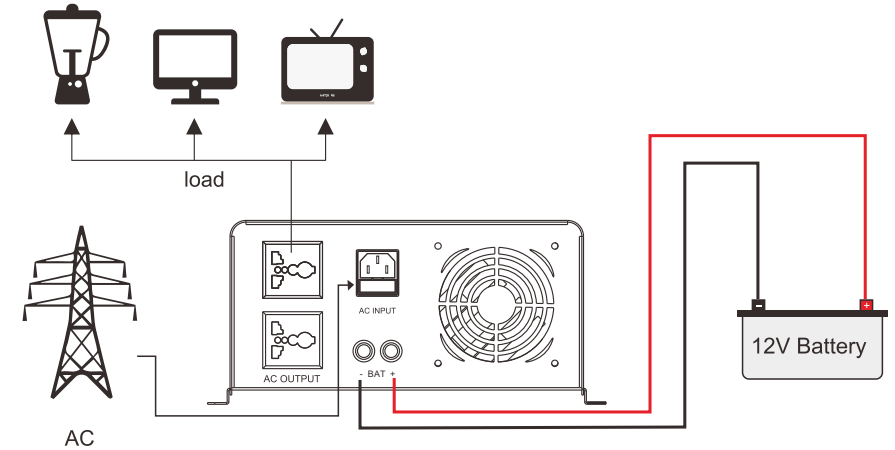
VI. Battery wiring diagram

12V series battery wiring diagram (PSICH-1-1.5KA)



VII. Output wiring diagram

PSICH-1-1.5KA



VIII. Troubleshooting

Fault	Cause	Solution
No city power input	Recoverable fuse popup	Press fuse back
Terminal heating	Fault or loose connection	Fasten again
Switch off with loads	Battery no energy or overload	Charge battery or reduce loads
Switch on failure	Fault connection with city power or battery	Check connection with battery or connect again
Alarm when switch on	Battery no energy or overload	Charge battery or reduce loads
Buzzer scream 2 secs every 1 sec stop	Over temperature alarm (85 alarm-90 shut down)	Check if fan heat dissipation hole jammed
Fan twirls sometimes fast as well as slowly	Fan twirls fast when inside temperature reaches 45 degree, twirls slowly when 42 degree	Normal phenomenon, fan is under intelligent control

XI. Care and maintenance

- 1). This series seldom needs fixing. Low maintenance, ensuring better life by charging often. When connecting to main supply, whether the inverter is on or not, it still keeps charging the battery and provides over charge and over discharge protection.
- 2). If the battery has not been used over a long period, please charge it every four to six months.
- 3). The common lifespan of a battery is 3 - 5 years, if it has deteriorated, please change as early as possible by professionals.
- 4). If more than one battery is connected and a faulty battery is detected, it is suggested to replace all batteries.
- 5). In normal circumstances, the battery should discharge then recharge after working four to six months, start charge and finish discharge. Standard charging time should be more than 12 hours.
- 6). In high temperature areas, the battery should be charged and discharged every 2 months and the standard charging time is more than 12 hours.

Note:

- 1). Before changing the battery please turn off the inverter and disconnect from the main supply.
- 2). Remove metal objects like ring, watch etc.
- 3). Please don't put metal objects on the battery.
- 4). Seeing a small spark is normal when connecting to the inverter, it will harm you or the inverter.
- 5). Do not reverse connect between the positive pole and the negative pole.

If connected to the generator, the following steps should be taken

- 1). Start the generator, once it runs steadily, connect the generator output to the inverter input terminal, turn on the inverter step by step according to the operating instructions. After the inverter starts, connect the load one by one to the inverter.
- 2). Please select the inverter capacity two or three times over than the capacity of the generator.

X. Specifications

Capacity(KW)		1
Mains input	Voltage range	230VAC
	Frequency range	50/60 Hz±2.5Hz
The output	Continuous rating(KW)	1
	Instantaneous power(KW)	2
	Waveform	Pure sine wave
	Battery efficiency	81%
	The utility efficiency	93%
	Output voltage	220V±5%
	Output frequency	50Hz/60Hz±0.5Hz(State grid±2.5Hz)
	Transfer time	8ms
Battery	Voltage	12V
	Charge current	0--20A
Work pattern	Normal mode	Conventional inverter
display	Method	LCD+LED
	Content	input/output voltage,Battery capacity,load capacity,machine mode,frequency
Protect	The battery reverse connect	Options
	Output short circuit	Breakdown insurance of power status,Inverse shutdown
	Overload	When the load exceeds 105%,the buzzer gives out an alarm sound and does not shut down .Load over 110%,120%,60 seconds protection shutdown;Load more than 130%,10 seconds protection shutdown;Load overload 150%,0.5 second protection shutdown;
	High mains voltage	Turn off power supply and inverter automatically
	Low battery voltage	The machine will automatically shut off the output,and the machine will automatically resume charging when the mains power is restored
Over-temperature	To turn it off	
work environment	Humidity	15 ~ 93% (Without condensation)
	Temperature	-10°C -50°C
	Altitude	≤3000m