

5. Specification

5.1 Electrical Performance

Items		Parameters	
		Inverter mode	UPS mode
Rating	Input voltage	220VAC	
	Input frequency	50Hz	
	Input phase	Single phase	
Input voltage range		120~300VAC	145~285VAC
38~70HZ			

Output

Items	Model Parameter	600VA	1000VA	1500VA
		Output voltage	UPS: 190V~250V / INV: 160V~260V	
Output frequency	Utility mode	220V±10%		
	Battery mode	Same as Utility		
Wave	Utility mode	50HZ±1HZ		
	Battery mode	Tracking Utility		
PF of output		Sine wave		
Output Power		600VA/480W	1000VA/800W	1500VA/1200W
Protection		Overload / short circuit / overheat		
Overload capability		<p>Utility mode:</p> <p>1) INVERTER to normal operation, when 100% load</p> <p>2) over load (100~120%), 3 minute the inverter shut down, after shout down, then restart automatically after 30 seconds. Automatic restart 3times, if the inverter still overload, the inverter will enter the fault mode, next restart by people.</p> <p>3) over load (120~130%), 30 sec the inverter shut down, after shout down, then restart automatically after 30 seconds. Automatic restart 3times, if the inverter still overload, the inverter will enter the fault mode, next restart by people.</p> <p>4) overload (≥130%), the inverter immediate closure of the output. Automatic restart 3times, if the inverter still overload, the inverter will enter the fault mode, next restart by people.</p> <p>Battery mode:</p> <p>1) Load is 100~110%, when 100% load.</p> <p>2) over load (100~110%), 60 sec the inverter shut down, after shout down, then restart automatically after 30 seconds. Automatic restart 3times, if the inverter still overload, the inverter will enter the fault mode, next restart by people.</p> <p>3) over load (≥110%), the inverter immediate closure of the output. Automatic restart 3times, if the inverter still overload, the inverter will enter the fault mode, next restart by people.</p>		

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MAKELSAN®

Machine Chemistry Electronic Industry & Trade Company Limited

600VA~1500VA

USER'S MANUAL

Noise	≤45dB(1m)
Insulation resistance	> 2M (500Vdc)
Insulation strength	(Input GND, output GND) 2820Vdc

Battery

Item	Model Specs	600VA	1000VA	1500VA
		Rating battery voltage	12V	24V
Charge voltage		13.8V±0.3V	27.6V±0.6V	
Charge current		10A/20A optional, Max25A		
External interface		RED with cabinet (Battery Anode), BLACK (Battery cathode cable)		

5.2 Dimension

Item	Model Specs	600VA	1000VA	1500VA
		Machine Size L x W x H(mm)	240x252x163	280x252x163
Packing Size L x W x H(mm)		370x345x255	410x345x255	
N.W (KG)		10.3	13.4	16.8
G.W (KG)		11.3	14.4	17.8

5.3 Operating environment

Operation temperature	0°C~40°C
Storage temperature	-20°C~70°C
Relative humidity	5%-95% (Below 40°C, Non-condensing)
Altitude	<1500m, if over 1500m, refer to GB/T3859.2 Lower Rating
Cooling	Wind

6. Packing list

IPS	1 pc
User manual	1 pc
Spare fuse	1 pc (Except the units Above 1000VA)

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Note:

Please check the notes and follow up carefully, otherwise there is possibly harm to people and equipment. Please keep the user manual for further reference.

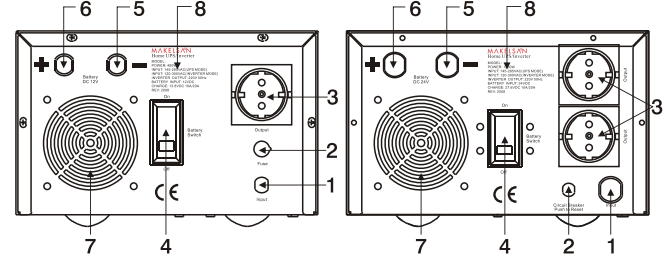
- Please make sure to connect the positive and negative poles of the battery correctly.
- Please do not make the positive and negative poles of the battery short circuited.
- Please use the UPS indoors and keep it away from humidity, direct light, hot objects and electrified objects.
- Please keep the inverter 10cm away form other objects in four directions and keep good ventilation.
- Please do not put any articles on the inverter.
- Please do not pour any liquid or sundries into the unit.
- Please let the inverter work in UPS mode when there is computer load to prevent restart of computer.
- It is not suggested to use the unit in the lift support system as its failure will do harm to the security and effectiveness of such equipment.

ALARM!!!

- The unit must be grounded. Please make the inverter grounded reliably when connect AC mains.
- The internal voltage of the inverter is dangerous potentially. Please do not open the cabinet. The maintenance must be handled by qualified technicians certified by the manufacturers.
- There is high voltage danger between the battery terminals and the ground as the battery circuit and input circuit are not insulated. Please check if there is any voltage before do any maintenance.
- There is circuit connection between UPS internal parts and the battery even if the UPS input power supply is disconnected. So there is potential danger. Please make sure to disconnect the battery before do any maintenance and repair job.

6	Battery low indication LED light	LED is on, which means battery is low.	
7	Trouble/overload/overheat/low battery indication LED light	LED is on, which means inverter does not work normally, telling the states of inverter is Trouble/overload/overheat/low battery according to the audible alarm	Beep 2 times every 1 second means low battery; beep 4 times every 2 seconds means overload, beep 3 times every 1 second means inverter is overheat, keeping beep means ups has trouble ,for example, output short circuit, inverter trouble, hardware trouble.
8	switch button for ups and inverter option	Choose to work in UPS or inverter mode	Choose UPS mode for pc load to prevent from pc restart when utility off
9	charging current option switch button	charging current is set according to battery capacity	Charging current setup according to manufacturer parameter

2.2 Back panel



Explanation:

- 1--- utility input power cable
- 2--- utility input fuse
- 3--- output socket
- 4--- battery switch(work statues is switch on)
- 5--- battery negative pole line(black)
- 6--- battery positive pole line(red)
- 7--- fan(work automatically when load is over100~200W)
- 8--- label

3. Installation and operation

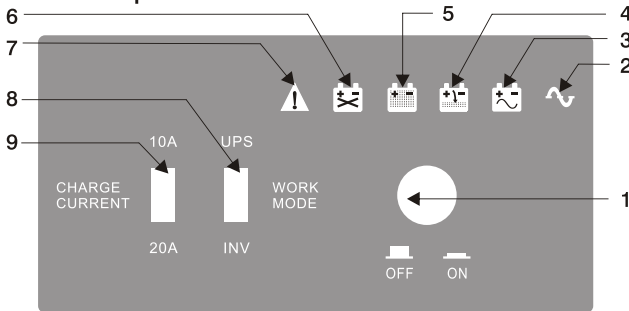
3.1 Unpack

1. Introduction

SOHO series inverters are intelligent one phase in/one phase out sinewave output inverter power supplies. It is specially designed to meet the requirements of those family and office environment with unstable utility, frequent power down. It features CPU intelligent control, wide input voltage range, fast battery charge speed, good appearance and high reliability, etc. It is widely used with appliance and office equipment such as TV set, DVD player, electric drill, refrigerator, recorder, water machine, fan, lighting, computer, switchboard, servers, etc. The capacity range is from 600VA to 1,500VA.

2. Parts names and functions

2.1 Front panel



Description:

No	Function	Description	Remark
1	power on	inverter is power on when switch button is "on", inverter is off when switch button is "off"	Battery mode works when switch button is "on" and battery is in normal condition
2	utility indication LED light	LED is on, which means input is normal, load is powered by utility	
3	inverter indication LED light	LED is on, which means load is powered by battery through inverter	LED light is on, beep once every 10 seconds, beep is stopped after 3 minutes
4	battery charge indication LED light	LED is on, which means system is charging battery	
5	battery charging full indication LED light	LED is on, which means battery charging is finished	

When open the pack, please check the appearances of packing and inverter, If there are damage, please inform reseller immediately and keep packing for future delivery.

3.2 location

The inverter should be put on flat ground where is dry without direct light and corrosive air. Please keep at least 10cm distance from the inverter to other articles in 4 sides to achieve good thermal dissipation. Please do not put anything on the inverter.

3.3 Wiring

(1). Connect battery with inverter input terminals correctly; Positive line(red) should be connected with battery positive pole, battery negative line(black) should be connected with battery negative pole, Please note battery voltage should match with the unit's rate voltage.

(2). Switch off the battery.

(3). Put the inverter input plug into the utility socket.

(4). Put load power cable plug into the inverter output socket.

Please note the total load capacity must be less than unit's rate capacity.

3.4 Switch on

When all cable connections are confirmed correct, please press the power button, unit could work. When utility is normal, utility indication LED light and battery charging indication LED light are ON; When utility is abnormal, utility is off(utility input plug is not in place), then inverter indication LED light is ON.

3.5 Switch off

1). Switch off all loads

2). Power button on front panel is off

3). Plug off utility socket

4). Battery switch is off

4. Audible Alarm Instruction

Sounds	Indication
Once/10sec, auto-eliminated after 3 minutes.	Battery mode
Twice/2sec	Low battery
Continually 4 times/2sec	Output overload
Continually sounds/2sec	UPS On
3 times/1sec	Inverter over temperature
Continually Ringing	Output short circuit//Inverter damaged, abnormal/hardware failure, etc.