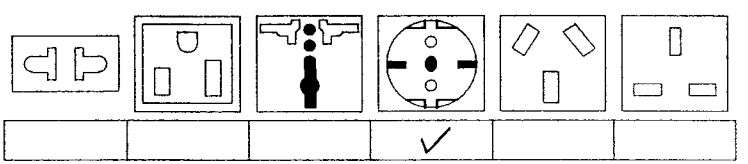
Instruction Manual

4000W
DC to AC POWER
INVERTER

Please read this user manual in detail before use .

Table of contents

Output receptacles :



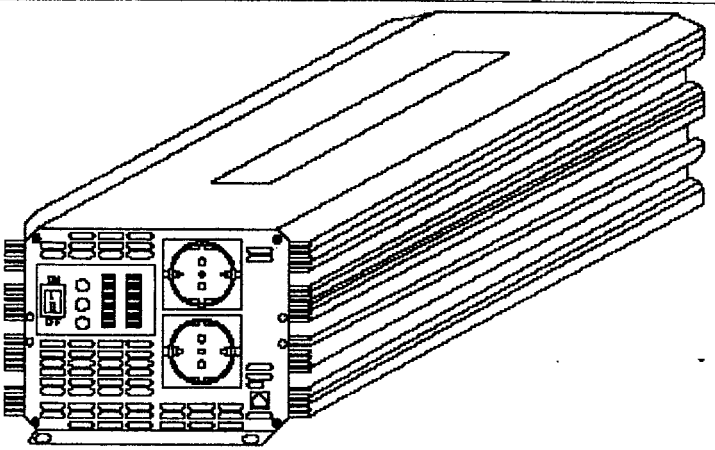
			✓		

AC output voltage : 100V 110V 120V
220V ✓ 230V 240V

Output frequency : ✓ 50HZ 60HZ

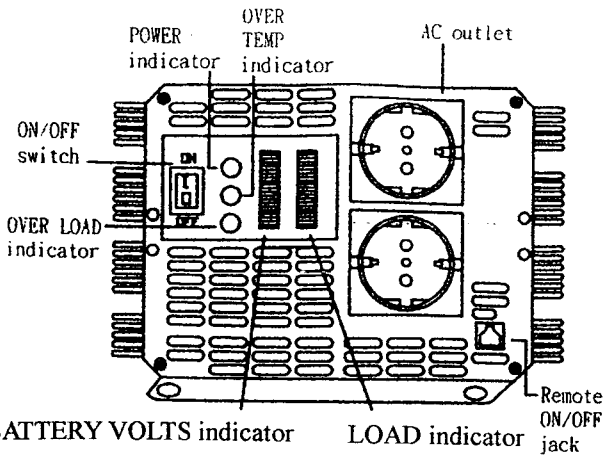
1. Specification

Spec.	DC12V	DC24V
Output power	4000W continue 8000W surge output	4000W continue 8000W surge output
Input voltage	DC10 ~ 16V	DC20 ~ 31V
Input full load current	400A	200A
Output voltage	AC100,110,120,220,230,240V	AC100,110,120,220,230,240V
Output waveform	Modified sine wave	Modified sine wave
Output frequency	50 or 60HZ	50 or 60HZ
Stand by current	< 0.95A	< 0.85A
Efficiency	85% ~ 90%	85% ~ 90%
High voltage input shutdown	DC16V+/-0.5V	DC31V+/-0.8V
Battery low alarm	DC10V+/-0.5V	DC21.5+/-0.8V
Battery low shutdown	DC9.5V+/-0.5V	DC20+/-0.8V
Thermal protect	60+/-5℃	60+/-5℃
Cooling	Fan start when the temperature reach 40℃	Fan start when the temperature teach 40℃
Protections	* output short * high DC input voltage * battery low alarm * over load	* input polarity reverse(by fuse) * battery low shutdown * over temperature
Fuse	30A *18pcs	15A * 18pcs
AC outlet	Two	Two
Size (L*W*H)	550*210*159mm	550*210*159mm
Weight	11.2kgs	11.2kgs



2. Structure :

2.1. Output panel :



2..1.1. ON/OFF switch ..... The ON/OFF switch turns the control circuit in the inverter on , off . It doesn't need to be disconnected power from the inverter when you don't use .

2.1.2. **Remote ON/OFF jack .....** The inverter has a jack which interfaces with the optional remote ON/OFF switch , it allows you to mount the inverter out of sight and turn ON or OFF from a conveniently located panel (remote control panel) . It also has ON/OFF switch and indicator light showing that the inverter is ON or OFF on the remote control panel .

2.1.3. VOLTS (battery voltage) indicator ..... The battery voltage indicator displays the voltage at the input terminal of the inverter . At low currents input , the voltage is very close to the battery voltage . At high current input , the voltage will be lower than the battery voltage because of the voltage drop across the cables and connections .

2.1.4. AMPS (battery current) indicator ..... The battery current indicator displays the current drawn from the battery by the inverter .It won't indicate current drawn by other load also connected to the battery .

Current should be in the green zone for continuous operation . The inverter will operate for several minutes when current is at the yellow zone . If the current is at the red zone , it will result in protective to shut down the inverter .

2.1.5. POWER indicator ..... After you connected the DC cables each with the battery and the inverter and switched on the inverter , the power indicator illuminates w/green color , it indicates ready for use .

2.1.6. OVER TEMP indicator ..... The OVER TEMP indicator illuminates w/yellow color and the alarm sound when the inverter overheated and shutdown . The reason for the inverter overheated that it has been operated with the power levels above its 4000W continuous output

rating , or installed in a location which doesn't allow it to dissipate heat properly . The inverter will restart automatically once it has cooled .

2.1.7. OVER LOAD indicator ..... The OVER LOAD indicator illuminates w/red color when the inverter shutdown because of a severe over load .

For restart the inverter , please switch the ON/OFF switch (or ON/OFF switch on the remote control panel) to OFF , and correct the fault condition (remove or reduce the load) , the switch back to ON .

2.1.8. Alarm indicator ..... An audible alarm will sound when any of the following conditions occurs :

a. Over temperature condition .

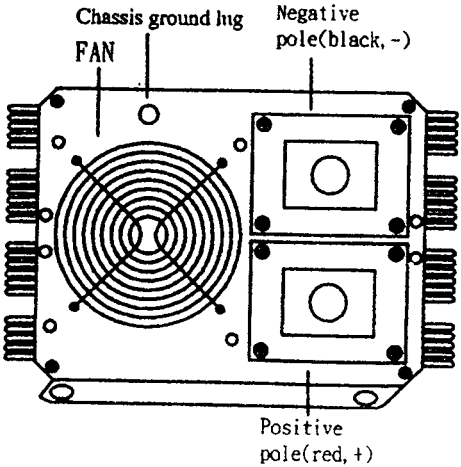
b. Low battery alarm ($<$10V for 4000W/12V inverter , $<$21.5V for 4000W/24V inverter).

c. Low battery shutdown ($<$9.5V for 4000W/12V inverter , $<$20V for 4000W/24V inverter).

2.1.9. AC outlet ..... You can plug your AC loads directly into this outlet .

Caution : If making a permanent AC connection to the inverter , please attend to 110V or 220V AC power is potentially lethal , don't work on AC wiring while the wiring is connected to the inverter (even if it is switched off) unless the DC power source is physically disconnected from the inverter . Also don't work on AC wiring if it is connected to another AC power source such as a generator or the utility line .

2.2. Input panel and instruction :



2.2.1. Fan ..... The fan disperses the inverter internal heat during the inverter operating .

2.2.2. Terminal connector / positive pole (red , +) & negative pole (black , -) ..... The terminal connector allows you to connect the ends of DC cables with the inverter , red wire is connected with positive pole (red , +) and black wire is connected with negative pole (black , -) . And the other ends of DC cables connected with battery , also the red wire with positive

-
- pole (red , +) and the black wire with negative pole (black , -) .

Caution : Please don't reverse the polarity .

2.2.3. Chassis ground lug ..... The inverter has a lug which is to connect the chassis of the inverter , therefore , the inverter's AC output ground to you AC distribution system ground .The ground wire in the AC junction box on the output panel of the inverter is connected to the chassis .

The chassis ground lug must be connected to a grounding point , which will very depending on where the inverter is installed . In a vehicle , connect the chassis ground lug to the chassis of the vehicle . In a boat , connect to the boat's grounding system . In a fixed location , connect to earth ground by a ground rod (a metal rod pounded into the earth) , or other proper service entrance ground . Use a # 12 AWG or larger copper wire (preferably with green/yellow insulation) to connect the chassis ground lug to the grounding point .

The neutral (common) conductor of the inverter's AC output circuit is connected to chassis ground .Therefore , when the chassis is connected to ground , the neutral conductor will also be grounded . This conforms to national electrical code requirements that separately derived AC sources (such as inverters and generators) have their neutral conductors tied to ground in the same way that the neutral conductor from the utility line is tied to ground at the AC breaker panel .

Caution : Don't operate the 4000W inverter without connecting it to ground . Electrical shock hazard may result .

3. Operating instruction :

3.1. Operating ..... Firstly , please connect the inverter tightly to your battery or other DC power source by DC cable with terminals . Please attend to the polarity , connect the positive pole (red , +) on the input panel of the inverter to the positive pole (red , +) of the battery or other DC power source and the negative pole (black , -) on the input panel of the inverter to the negative pole (black , -) of the battery or other DC power source .

Caution : Please don't reverse the polarity . If reverse polarity connection (positive to negative) , it will blow the fuses in the inverter and may permanently damage the inverter . Please don't use " alligator " clips and always ensure the ON/OFF switch on the output panel of the inverter is switched to the OFF position before connected the battery or other DC power source .

Caution : Please don't operate the inverter directly from a charging source such as an alternator or a solar panel . It must be connected to a battery or a well-regulated and high-current DC power supply to work properly .

The inverter is now ready to deliver AC power to your loads . If you are operating several load from the inverter , turn them on separately after the inverter already turned on . This will ensure that the inverter doesn't have to deliver the starting currents for all the loads at once .

It is recommended that you earth the inverter to the chassis of your vehicle , boat , ... etc.or to your earth leakage circuit in a house (or a stake in the ground) . This step will avoid and electrical safety hazard .

3.2. Load ..... Caution : Please don't operate this inverter with load in excess of 4000W or full load for extended period of time to avoid overload or over temperature .

4. Permanent installation :

4.1. Where to install ..... The inverter should be installed in a location that meets the following requirements :

a. Dry : Don't allow water to drip or splash on the inverter .

b. cool : Ambient air temperature should be kept between 0 ~ 25℃ (32 ~ 77°F)

c. Ventilated : ensure that the inverter in a compartment which is ventilated and you need to allow at least 1 inch (2.5 ㎝) of clearance around the inverter for air flow . Ensure that ventilation openings one the output panel and input panel aren't obstructed .

Caution : For reduce the fire hazard and avoid the overheating , please don't cover or obstruct ventilation openings of the inverter . And don't put it in a zero clearance compartment .

d. Safe : Don't install the inverter in the same compartment of storing flammable matters such as gasoline , gas , nitroglycerin , ...etc.

e. Close to battery : install the inverter as close to battery as possible in order to minimize the length of DC cables , but don't put in the same compartment . It is better and cheaper to run loner AC wires than longer DC cables , because of the much lower current is the AC wires .

Caution : Some components of the inverter tend to produce arcs or sparks , for reduce risk of fire and explosion , please don't install the inverter in the compartment containing batteries and flammable matters .

4.2. How to install ..... Mount the inverter horizontally or vertically on a flat surface using the mounting flanges on the output panel and input panel . Mounting hardware should be corrosion resistance and larger . Never drop the inverter as it is a sensitive electrical product and damage will occurs .

4.3. Battery recommended ..... The battery you use strongly affects the performance you can expect from the inverter , it is very important to correct size and type of battery .

4.4. DC cable recommended ..... Proper wire and wiring is very important for the safe and proper operating of the inverter . Because the 4000W inverter has a low voltage , high current input , low resistance wiring between the battery and the inverter is essential to deliver the maximum amount of usable energy to your load . Don't waste the investment you have made in batteries and a highly efficient inverter by using undersized wires .

4000W/12V : #38 x2

4000W/24V : #38 x1

Caution : Don't tin the cable ends with solder owing to it will result in a poor connection .

5. Maintenance ..... For always keep the inverter operating normally , please clean the exterior of the unit periodically with a alcoholic cloth (or damp cloth) to prevent accumulation of dust and dirt . The air intake (fan / ventilation openings) on the input panel and air exhaust slots on the output panel is especially prone to accumulate dust and dirt . A regular maintenance check is recommended , and the screws on the DC input terminals shoud be tightened periodically .

6. Trouble shooting guide :

Problems	Possible causes	Solutions
1. Low voltage output	Using an average reading voltmeter	Use true RMS reading meter
2. Low voltage output and AMPS indicator in red zone	Overload	Reduce load
3. No voltage output and VOLTS indicator in lower red zone	Low voltage input	Recharge battery , check connections and cable
4. No voltage output and POWER indicator no light	a. Inverter switched off	Turn inverter on
	b. No power to inverter	Check wiring to inverter and battery
	c. Internal fuse open	Have qualified electrician to check and replace
	d.Reverse DC polarity	Have qualified electrician to check replace fuse , **please observe correct polarity**
5. No voltage output and VOLTS indicator in upper red zone	High voltage input	Make sure that inverter is connected to 12V battery (24V for 4000W/24V inverter) and check regulation of charging system
6. Low battery alarm on all the time and VOLTS indicator below 10V (21.5V for 4000W/24V inverter)	a. poor DC wiring	Use proper cable and make solid connections
	b.Poor battery condition	Change battery or use new battery
7. No voltage output , OVER TEMP indicator light and load in excess of 4000W/400 amperes current input (or 200A for 4000W / 24V inverter)	Thermal shutdown	Allow inverter cool down and reduce load if continuous operation required
8. No voltage output , OVER TEMP indicator light and load less than 4000W/400 amperes current input (or 200A for 4000W/24V inverter)	Thermal shutdown	Make sure ventilation openings in inverter obstructed and reduce ambient temperature .
9. No voltage output and OVER LOAD indicator light	a. Short circuit or wiring error	Check AC wiring for short circuit or improper polarity

Caution : If after the above easy troubleshooting , this inverter still doesn't work , please return it to us or have a qualified electrician to check and replace . Don't open the case or cut out the cord br youself .

7. Caution :

7.1. Don't use the inverter wiyh the following rechargeable appliance ..... Certain recharges for small nickel cadmium batteries can be damaged if connected to the inverter . Two particular types of rquipment are prone to this problem :

a. Small battery operated appliances such as flashlights , razors and nightlights that can be plugged directly into the AC receptacle to recharge .

b. Certain battery chargers for battery packs used in hand power tools . These chargers will have a warning label starting that dangerous voltages are present at the battery terminals .

This problem doesn't occur with the vast majority of battery operating equipment . Most of these equipments use a separate charger or transformer that is plugged into the AC receptacle and produces the lower voltage output . If the label on the AC adaptor or charger states that produces the low AC or DC voltage output (less than 30 volts) , the inverter will power this adaptor or charger safely without trouble .

7.2. Use the correct size and type of battery ..... The 12V inverter must be connected only to battery with a nominal output voltage of 12V volts . The 24V inverter won't operate from a 6 volts battery , and will be damaged if it connected to a 24 volts battery . The 24V inverter must

be connected only to a 24 volts battery , and won't operate from a 6 or 12 volts battery .

For most applications of 4000W inverter , we recommend that you use on or more deep cycle batteries in parallel . More capacity is better since you will have more reserve capacity and your battery won't be discharged as deeply .

7.3. Always place this inverter in an environment as following :

a. Well ventilated and ambient air temperature should be kept between 0 ~ 25℃ (32 ~ 77°F)

b. Stay away from water , moisture , oil , gasoline , gas and any flammable matters .

c. Don't expose directly to sunlight and place near the heat sources .

d. Keep out of reach of children .