

CONTENTS

WARNING!

- ☆ **Due to generator always supply unstable and unclear power, so please don't use Generator as AC source.**
- ☆ **Be sure to operate the INVERTER within the rated power level.**
- ☆ **Prevent direct exposure to direct sunlight, rain or contaminating environment.**
- ☆ **Please don't connect any external solar charge controller with PLC series inverter. If you want to connect solar panel with our inverter, please choose our PSLC series solar inverter.**

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1. INTRODUCTION

1.1 General Description

The Inverter/Charger, a powerful all-in-one solution, delivers unsurpassed clean true sine wave output power and combines this with a selectable multistage battery charging current. Applicable for any kind of loads such as air conditioner, home appliances, consumer electronic and office equipments. This series features a durable & continuous 24 operation. The built-in 5-stage intelligent charger automatically charges any type of batteries without the risk of overcharge. The compact & modular design makes utility interactive installations easier and more cost effective. It is a high quality product that offers the best price/performance ratio in the industry.

1.2 Key features

1. Multiple microprocessor design base.
2. Compatible with both linear & non-linear load.
3. Stronger charger to support batteries of 500AH up.
4. 24 hours operation on the inverter.
5. DC start and automatic self-diagnostic function.
6. THD less than 3%.
7. High efficiency design to save electricity.
8. Low heat dissipation in long time operation
9. Design to operate under harsh environment
10. 3U 19" Rack Mount or WALL Mounted design

1.3 Important Notices

1. Read instructions carefully before operating the Inverter / Charger.
2. Inverter / Charger power connect instruction should be followed.
3. Please don't open the case to prevent danger.
4. Retain the load within the rating of Inverter / Charger to prevent faults.
5. Keep the Inverter / Charger clean and dry.

2. SAFTY INSTRUCTION

2.1 Transporting

1. Disconnect all power cables if necessary.
2. Be careful not to damage the Inverter / Charger while transporting.
3. Don't move the Inverter / Charger upside down.
4. Please transport the Inverter / Charger system only in the original packaging (to protect against shock and impact).

2.2 Positioning

1. Do not put the Inverter / Charger on rugged or declined surface.
2. Do not install the Inverter / Charger system near water or in damp environments.
3. Do not install the Inverter / Charger system where it would be exposed to direct sunlight or near heat.
4. Do not block off ventilation openings in the Inverter / Charger system's housing and don't leave objects on the top of the Inverter / Charger.
5. Keep the Inverter / Charger far away from heat emitting sources.
6. Do not expose it to corrosive gas.
7. Ambient temperature : 0°C - 40°C

2.3 Installation

1. Connect the Inverter / Charger system only to an earthed shockproof socket outlet.
2. Place cables in such a way that no one can step on or trip over them.

2.4 Operation

1. Do not disconnect the mains cable on the Inverter / Charger system or the building wiring socket outlet during operations since this would cancel the protective earthing of the Inverter / Charger system and of all connected loads.
2. Ensure that no fluids or other foreign objects can enter the Inverter / Charger system.

2.5 Maintenance and Service

1. Caution - risk of electric shock.
Even after the unit is disconnected from the mains power supply (building wiring socket outlet), components inside the Inverter / Charger are still connected to the battery and are still electrically live and dangerous. Before carrying out any kind of servicing and/or maintenance, disconnect the batteries and verify that no current is present.
2. Batteries may cause electric shock and have a high short-circuit current. Please take the precautionary measures specified below and any other measures necessary when working with batteries:
 - remove wristwatches, rings and other metal objects
 - use only tools with insulated grips and handles.

3. CABLE CONNECTION

3.1 Inspection

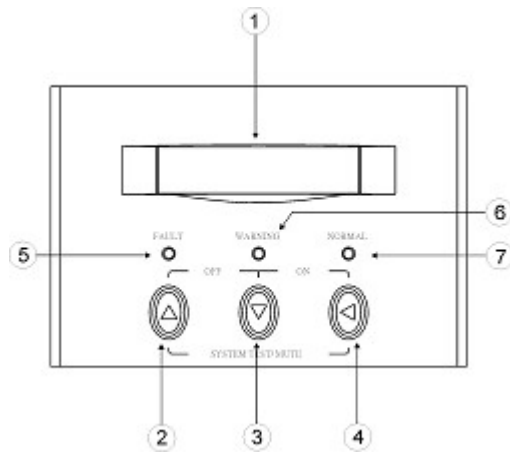
1. The system may be installed and wired only by qualified electricians in accordance with applicable safety regulations.
2. When installing the electrical wiring, please note the nominal amperage of your incoming feeder.
3. Inspect the packaging carton and its contents for damage. Please inform the transport agency immediately should you find signs of damage. Please keep the packaging in a safe place for future use.
4. Please ensure that the incoming feeder is isolated and secured to prevent it from being switched back on again.

3.2 Connection

1. Inverter / Charger Input Connection
If the Inverter / Charger is connected via the power cord, please use a proper socket with protection against electric current, and pay attention to the capacity of the socket.
2. Inverter / Charger Output Connection
The output of this model is with terminal block. Simply wire the load power cord to the output terminal to complete connection.

4. SYSTEM DESCRIPTION

4.1 Front Panel Description for LCD Model

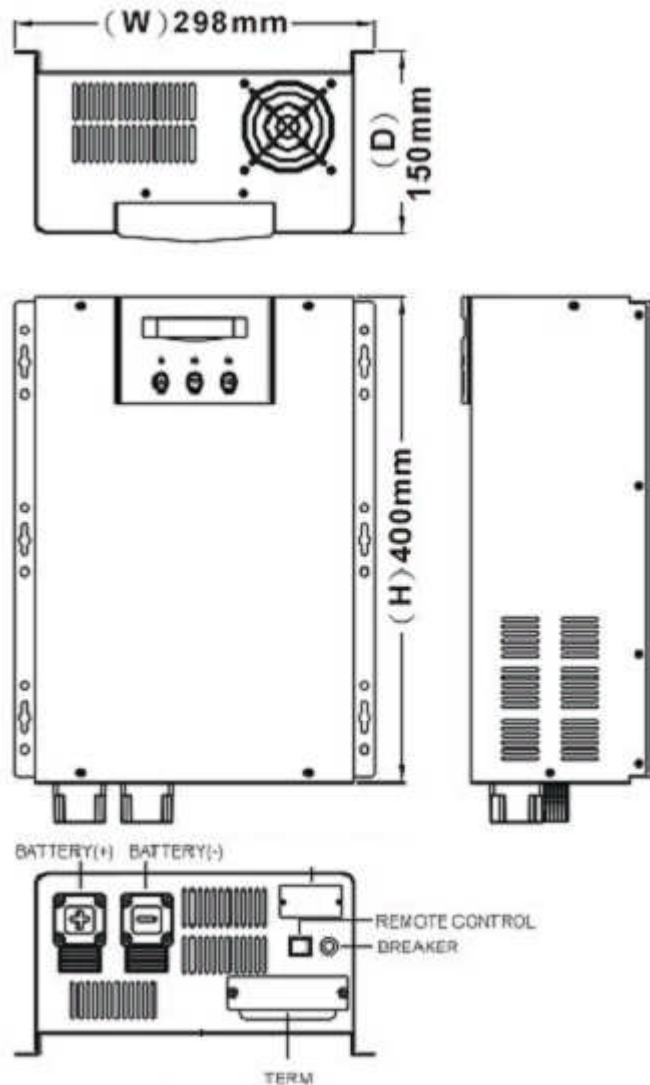


6. Warning LED (yellow): To indicate the Inverter / Charger is in the status of overload, bypass and battery back-up.
7. Normal LED (green): To indicate the Inverter / Charger is operating normally.
8. ON/TEST/MUTE key: It should be pressed with the control key simultaneously to switch on Inverter / Charger, do auto-test in normal AC mode and turn off the buzzer in battery operation.

1. LCD Display: This indicates the Inverter / Charger operation information, including UPS status, input/output voltage, input/output frequency, battery voltage, battery capacity left, output load, inside temperature, and the times of history events.
2. Up-key: Use to select upward the Inverter / Charger status on LCD Display.
3. Down-key: Use to select downward the Inverter / Charger status on LCD Display. Beside, press it simultaneously with the Up-key to switch off the Inverter / Charger.
4. Enter-Key: It is pressed with the Down-key to turn on the Inverter / Charger. In battery operation mode, press it with Up-key at the same time to disable the buzzer. Beside, it is pressed to confirm and enter the item selected.
5. Fault LED (red): To indicate the Inverter / Charger is in fault condition because of inverter shutdown or over-temperature.

4.2 Outline Description

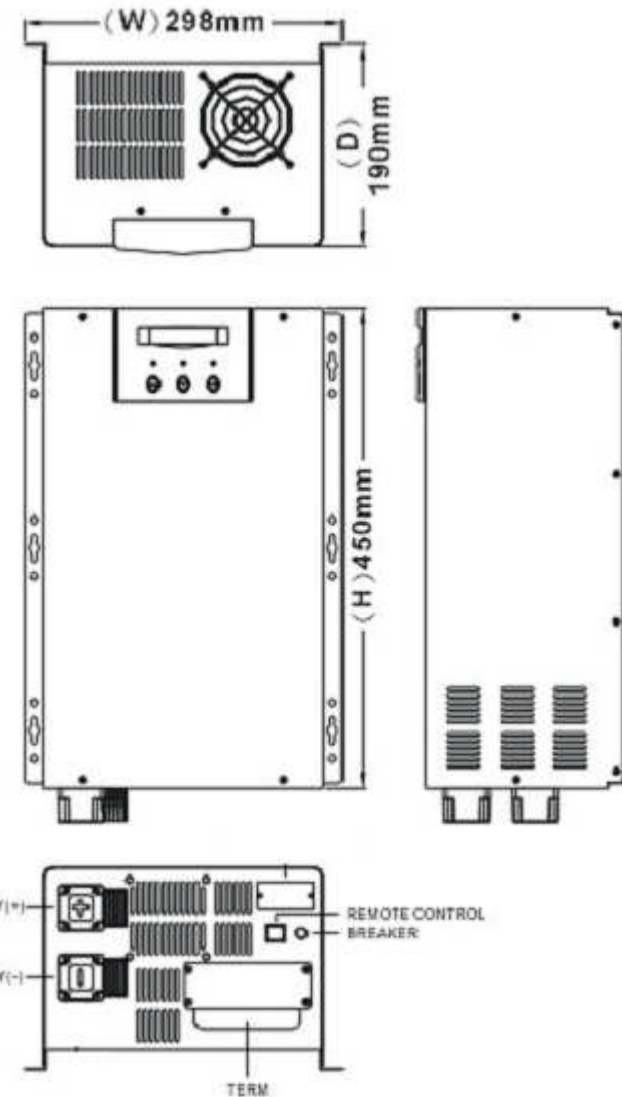
800W Wall Mounted Type



Mark:

1. 'Remote Control' port is for connecting to detachable LCD control panel. (Using a Network cable, can be extended for 200M)
2. TERM: Terminal Block.

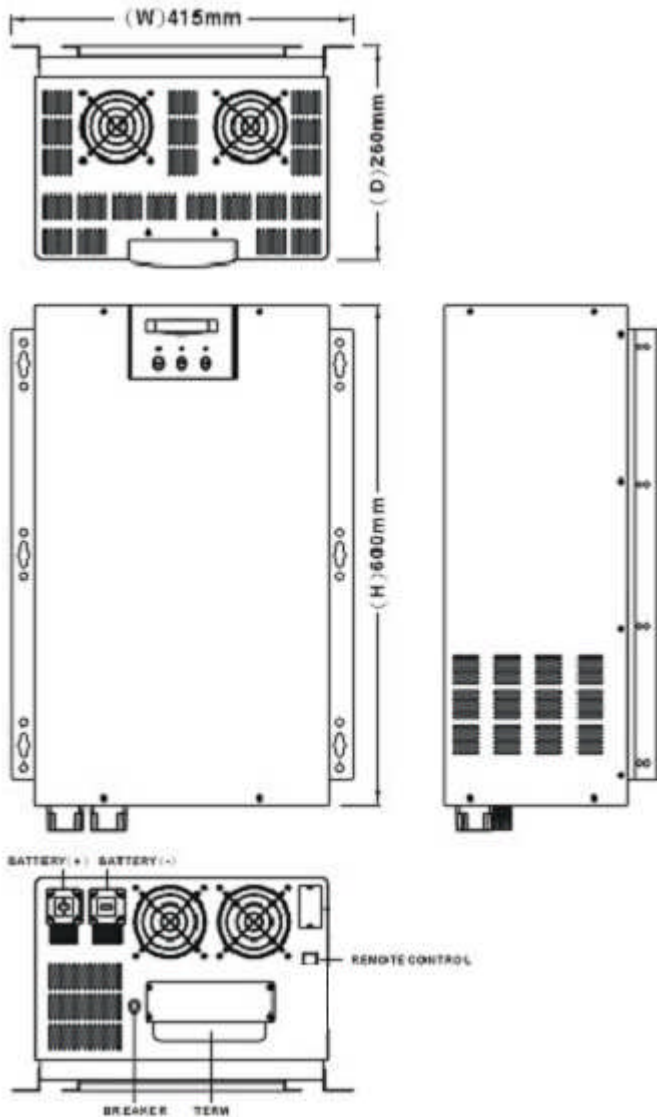
1600W / 2400W Wall Mounted Type



Mark:

1. 'Remote Control' port is for connecting to detachable LCD control panel. (Using a Network cable, can be extended for 200M)
2. TERM: Terminal Block.

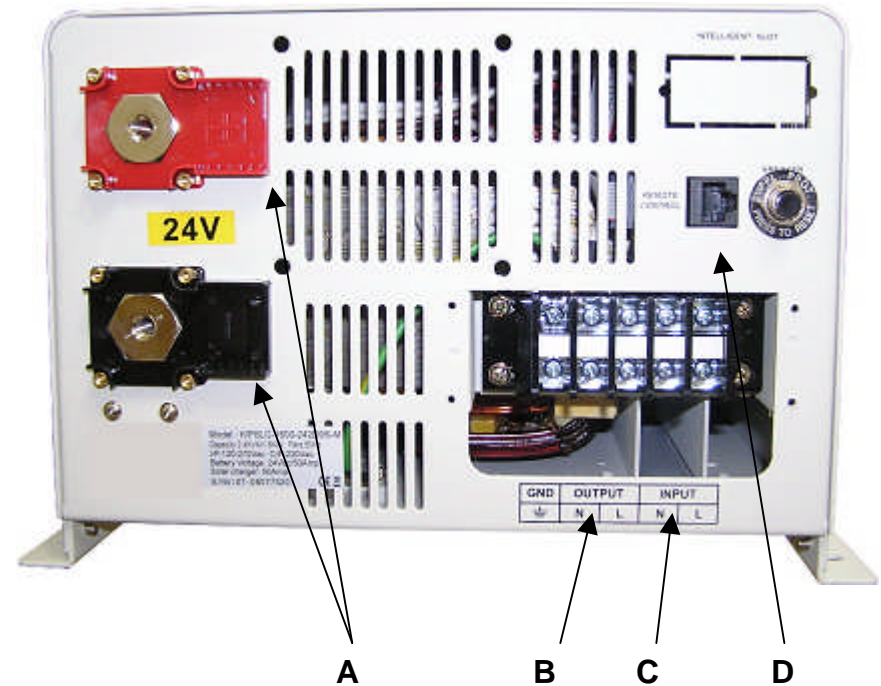
4000W / 6000W / 8000W Wall Mounted Type



Mark:

1. 'Remote Control' port is for connecting to detachable LCD control panel. (Using a Network cable, can be extended for 200M)
2. TERM: Terminal Block.

Rear Panel



Connections / Front side

- | | | |
|---|----------------|-----------------------------------|
| A | Battery +/- | Connections for Battery Cables |
| B | Output N / L | Connecting terminal for AC output |
| C | Input N / L | Connecting terminal for AC input |
| D | Remote Control | Connections for remote cable |

- Front LCD display box can be taken out as a remote control. Connecting enclosed 3M remote cables into remote box and above D socket to control the inverter abt. 3 meter away. If you need longer remote cable, please send inquiry for price, thanks.

5. OPERATION

5.1 Check Prior to Start Up


1. Ensure the Inverter / Charger is in a suitable positioning.
2. Check input cord is secured.
3. Make sure the load is disconnected or in the "OFF" position.
4. Check if input voltage meets the Inverter / Charger rating required.

5.2 Storage Instruction

Disconnect input power in rear panel if you will not use it for long period. If the Inverter / Charger is stored over 3 months, please keep supplying power to the Inverter / Charger for at least 24 hours to ensure battery fully recharged.

5.3 Operation Procedure for LCD Model

Please follow the instructions below for Inverter / Charger operation.

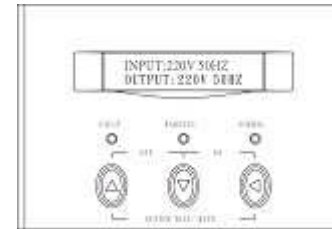
1. Once the AC source is connected, the LCD Display shall light up immediately to display first the main menu of greeting context and the Normal LED is blinking to indicate ready to switch on the inverter.

2. By pressing the Enter-key and the Down-key simultaneously for 3 seconds, the Inverter / Charger will start up after two beeps and Normal LED lights up to indicate the power is from its inverter to the load.
3. When the Down-key and the Up-key are pressed simultaneously for 3 seconds, the inverter will be turned off after two beeps and the Inverter / Charger is on the standby status (LCD display illuminates and Normal LED is blinking) until AC source is disconnected.

4. LCD Display Menu

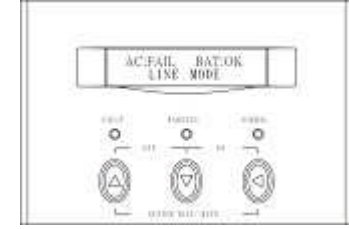
Use Up/Down key to select menu-displays of the LCD described below.

This screen will refresh once the system power is enabled.

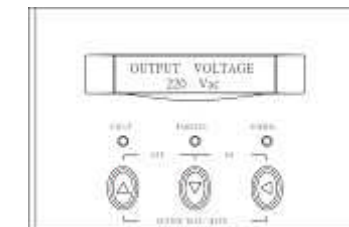
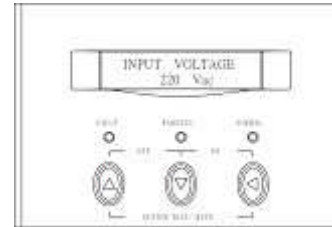
Rated Spec



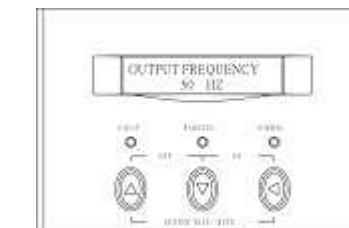
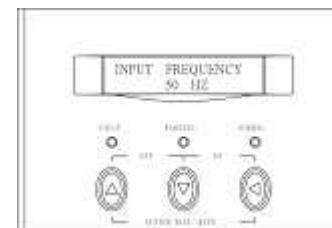
Status



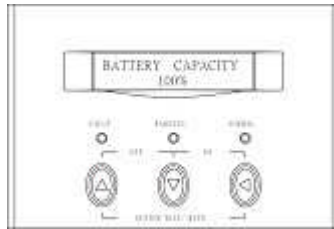
Voltage



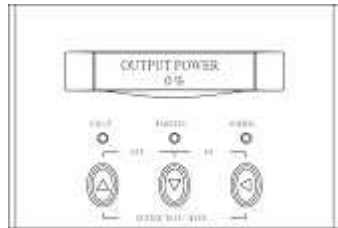
Frequency



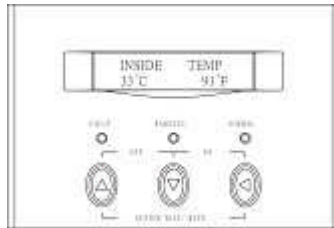
Battery Status



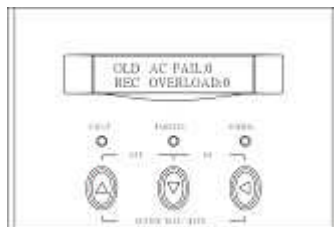
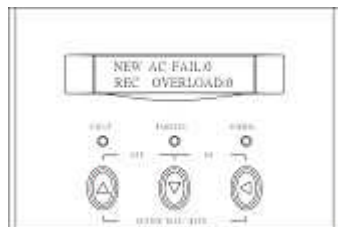
Output Power



Temperature

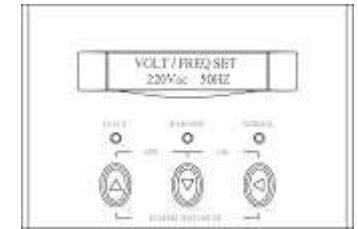


History Record

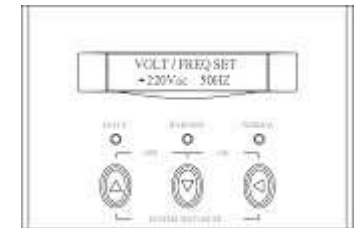


Output Voltage & Frequency Adjust

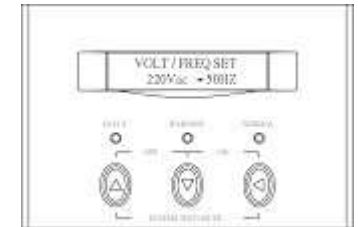
A. In this screen, press Enter-key to enter the following steps for output voltage and frequency adjustment.



B. The cursor (→) will pop up to indicate the output voltage and frequency newly selected.



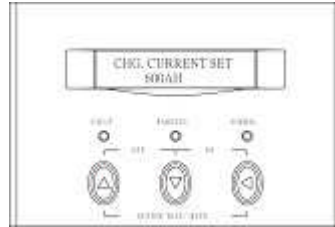
C. Use Up or Down-key to adjust the output voltage (if 220V configure, 220V, 230V, and 240V is selectable; if 110V configure, 110V, 115V, and 120V is selectable). Press Enter-key to confirm voltage and then the cursor will move to frequency selection. The output frequency (50Hz or 60Hz) can be adjusted by the same key operation.



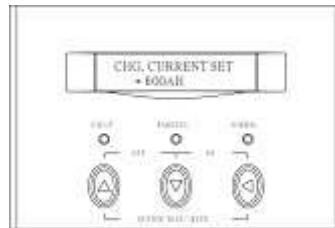
D. Once the correct voltage is selected, press Enter-key again to save the selection.

Charging Current Adjust

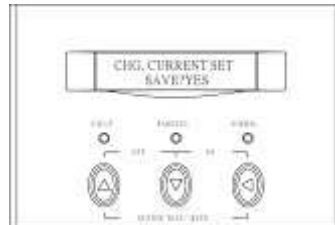
A. In this screen, press Enter-key to enter the following steps for general battery AH adjustment.



B. The cursor (→) will pop up to indicate the battery AH newly selected.



C. Use Up or Down-key to select the battery AH (100AH, 200AH, 300AH, 400AH, and 600AH selectable). Press Enter-key to confirm your battery AH.



D. Once the correct battery AH is selected, press Enter-key again to save the selection.

NOTE: No need to re-start the inverter to enable the settings.

6. TROUBLE SHOOTING GUIDE

6.1 For LCD Model

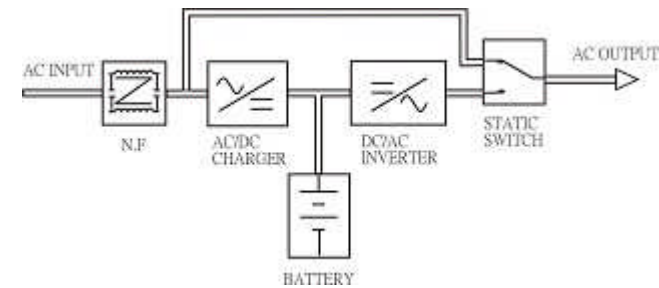
The following guideline may be helpful for basic problem solving.

No.	INVERTER STATUS	POSSIBLE CAUSE	ACTION
1	AC utility power is normal. Inverter / Charger is running normally, but fault LED lits up. Buzzer beeps continuously.	1. Charger PCB is damaged. 2. Fan is damaged. 3. Unknown	1. Replace the charger PCB. 2. Replace the fan. 3. Restart
3	AC utility power is normal but Inverter / Charger is overloaded. Warning LED lits up and buzzer beeps per second.	Overload 100%< load< 125%	Please reduce the critical load to <100%.
4	AC utility power is normal. Warning LED does not fade out and buzzer beeps per 0.5 second.	Overload 125%< load<150%	Please reduce the critical load to <100%.
5	AC utility power is normal. Warning LED lits up and buzzer beeps continuously.	Overload 150%< load	Please reduce the critical load to <100%.

No.	INVERTER STATUS	POSSIBLE CAUSE	ACTION
6	AC utility power fails .The load is supplied by battery power. Buzzer alarm sounds every 4 seconds.	<ol style="list-style-type: none"> 1. AC utility power failure. 2. AC input connection may be not correct. 	<ol style="list-style-type: none"> 1. Reduce the less critical load in order to extend backup time. 2. Please check the rated input or connected line.
7	AC utility fails. Inverter / Charger is in battery backup mode. Buzzer alarm beeps every second.	Battery power is approaching low level.	<p>Inverter / Charger will shut down automatically.</p> <p>Please save data or turn off the loads soon.</p>
8	AC utility power fails. Inverter / Charger has shut down automatically.	Battery runs out	Inverter / Charger will restart up when AC utility power is restored.

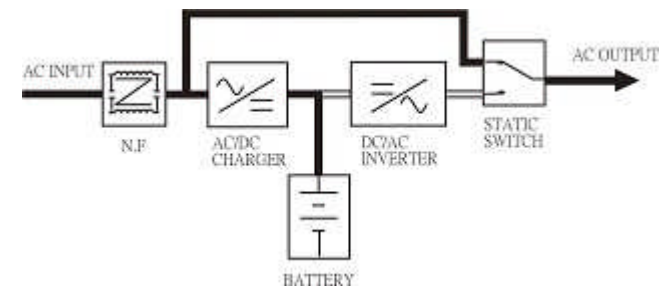
7. OPERATION MODES OF THE INVERTER / CHARGER

7.1 Inverter / Charger System Block Diagram



7.2 Normal Operation

There are two main loops when AC utility is normal: the AC loop and the battery charging loop. The AC output power comes from AC utility input and passes through static switch to support power to load. The battery charging voltage comes from AC utility input and converted by AC/DC charger to support battery-charging power.

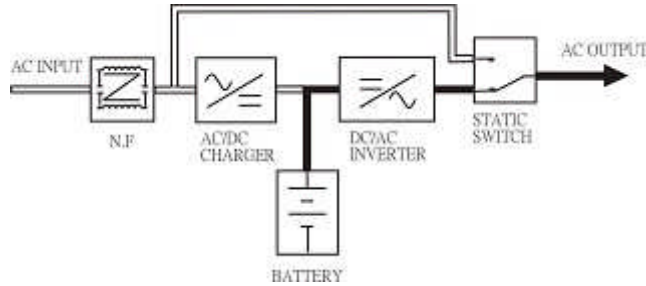


When city power is OK, KIPLC inverter is on **AC Mode**. KIPLC inverter gets power from city power to :

- 1) Provide pure sine wave power to the loads.
- 2) Charge batteries from **City Power**.

7.3 AC Utility Failure (Battery Mode)

The AC output comes from battery, passing through DC/AC inverter and static switch within the battery backup time.



When City power fails, KIPLC inverter will change to **DC Mode** and provide loads from the batteries to the loads

8. SPECIFICATION

Model		KIPLC-800	KIPLC-1600	KIPLC-2400	
Continuous Output Power Wattage		800W	1600W	2400W	
Input	Nominal Voltage		220/230/240Vac or 110/115/120Vac		
	Voltage Range	Acceptable Voltage Range	120-270Vac ; 60-135Vac		
		Frequency	45Hz - 70Hz Auto-sensing		
		Low Voltage Transfer	120VAC ± 2% ; 60VAC ± 2%		
		Low Voltage Return	130VAC ± 2% ; 65VAC ± 2%		
		High Voltage Transfer	270VAC ± 2% ; 135VAC ± 2%		
		High Voltage Return	260VAC ± 2% ; 130VAC ± 2%		
Output	Voltage		220Vac (230V or 240VAC re-settable via LCD panel); 110Vac (115V or 120VAC re-settable via LCD panel)		
	Voltage Regulation (Batt. Mode)		< 3% RMS for entire battery voltage range		
	Frequency Regulation (Line Mode)		Synchronized to AC Main		
	Frequency Regulation (Batt. Mode)		50Hz or 60Hz ±0.1Hz		
	Power Factor		0.67		
	Waveform		Pure Sinewave		
	Efficiency		> 75%	> 80%	
	Overload Protection	Line Mode	> 110%, then Buzzer Alarm and Amber LED Blink Continuously		
		Battery Mode	110% ~ 150% for 30 sec. , >150% for 200ms, then Inverter Shuts Down		
	Short Circuit Protection	Line Mode	Circuit Breaker		
Battery Mode		Electronic Circuit			

Model		KIPLC-800	KIPLC-1600	KIPLC-2400
Continuous Output Power Wattage		800W	1600W	2400W
Surge Power Wattage		1600W	3200W	4800W
DC Start	Cold Start	Yes		
Transfer Time	Typical	< 8 ms.		
Battery	Battery Voltage	12Vdc	24Vdc	24Vdc
	Backup Time	Base on the batteries connected		
	Max. Charging Current (5 steps selectable)	> 40A	> 50A	
	Stand By Current Draw from Battery (for Reference only)	3.8A	2.8A	3.3A
Display LCD	LCD	Inverter status, I/P&O/P Voltage Frequency, Load%, Battery Voltage & Level, Temperature, Model		
	LED	Normal (Green), Warning (Yellow), Fault (Red)		
Audible Alarm	Battery Mode	Beeping every 4 seconds		
	Low Battery	Beeping every second		
	Inverter Fault	Beeping Continuously		
	Overload	Beeping twice per second		
Environment	Operation Temperature	0-40 degree C; 32-104 degree F		
	Relative Humidity	0-95% non-condensing		
	Audible Noise	Less than 55dBA (at 1M)		
Physical	Net Weigh (Kgs)	14.8	23	24.2
	(WxHxD)mm Wall Mounted	298*400*150	298*450*190	298*450*190

● Specifications are subjected to change without prior notice.

Model		KIPLC-4000	KIPLC-6000	KIPLC-8000	
Continuous Output Power Wattage		4000W	6000W	8000W	
Input	Nominal Voltage	220/230/240Vac or 110/115/120Vac		220/230/240 Vac	
	Voltage Range	Acceptable Voltage Range	120-270Vac ; 60-135Vac		120-270Vac
		Frequency	45Hz - 70Hz Auto-sensing		
		Line Low Transfer	120VAC ± 2% ; 60VAC ± 2%	120VAC ± 2%	
		Line Low Return	130VAC ± 2% ; 65VAC ± 2%	130VAC ± 2%	
		Line High Transfer	270VAC ± 2% ; 135VAC ± 2%	270VAC ± 2%	
		Line High Return	260VAC ± 2% ; 130VAC ± 2%	260VAC ± 2%	
Output	Voltage	220Vac (230V or 240VAC re-settable via LCD panel); 110Vac (115V or 120VAC re-settable via LCD panel)			
	Voltage Regulation (Batt. Mode)	< 3% RMS for entire battery voltage range			
	Frequency Regulation (Line Mode)	Synchronized to AC Main			
	Frequency Regulation (Batt. Mode)	50Hz or 60Hz ±0.1Hz			
	Power Factor	0.8	1.0		
	Waveform	Pure Sinewave			
	Efficiency	> 80%			
	Overload Protection	Line Mode	> 110%, then Buzzer Alarm and Amber LED Blink Continuously		
		Battery Mode	110% ~ 150% for 30 sec. , >150% for 200ms, then Inverter Shuts Down		
Short Circuit Protection	Line Mode	Circuit Breaker			
	Battery Mode	Electronic Circuit			

Model		KIPLC-4000	KIPLC-6000	KIPLC-8000
Continuous Output Power Wattage		4000W	6000W	8000W
Surge Power Wattage		8000W	12000W	16000W
DC Start	Cold Start	Yes		
Transfer Time	Typical	< 8 ms.		
Battery	Battery Voltage	24Vdc	48Vdc	
	Backup Time (at full load)	long time available		
	Max. Charging Current (5 steps selectable)	> 40A	> 60A	
	Stand By Current Draw from Battery (for Reference only)	4.0A	2.8A	4.3A
Display LCD	LCD	Inverter status, I/P&O/P Voltage Frequency, Load%, Battery Voltage & Level, Temperature, Model		
	LED	Normal (Green), Warning (Yellow), Fault (Red)		
Audible Alarm	Battery Mode	Beeping every 4 seconds		
	Low Battery	Beeping every second		
	Inverter Fault	Beeping Continuously		
	Overload	Beeping twice per second		
Environment	Operation Temperature	0-40 degree C; 32-104 degree F		
	Relative Humidity	0-95% non-condensing		
	Audible Noise	Less than 55dBA (at 1M)		
Physical	Net Weigh (Kgs)	49.2Kg	51.4Kg	53.6Kg
	(WxHxD)mm Wall Mounted	415*600*260	415*600*260	415*600*260

● Specifications are subjected to change without prior notice.

9. PLC SERIES --- CHARGING VOLTAGE CHART:

