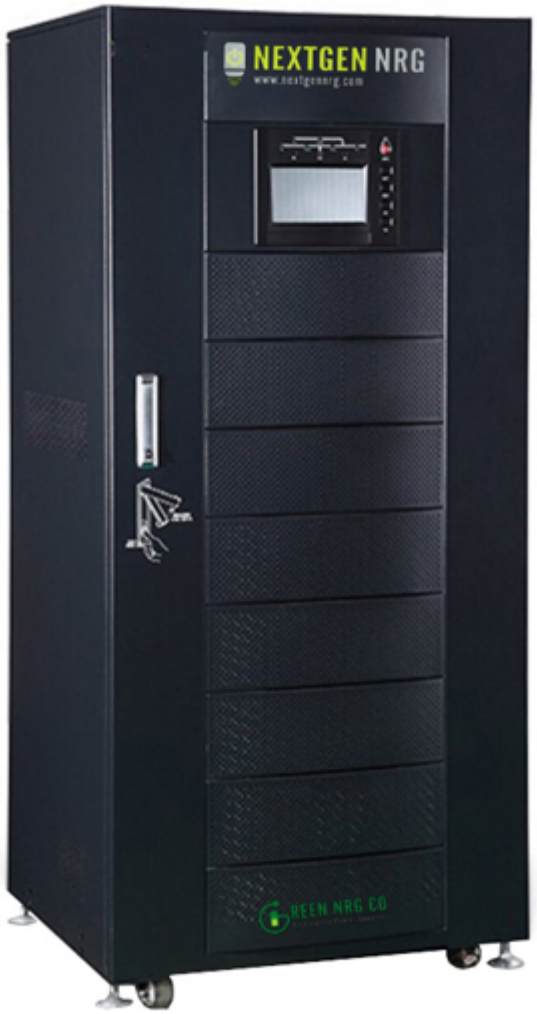
NEXTGEN NRG

USER MANUAL MPS 1 - 5KW SERIES



Low Series Frequency Solar and Wind Power Charging Inverter

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1. INTRODUCTION

- This manual contains the installation, operation and application instructions of the inverter.
- Please read this user's manual in detail before installation.

- In order to ensure the right operation of the equipment, the inverter should be operated by a professional.
- Please refer to the manual as a reference when needed.

Symbol and Logo

Danger

It indicates that if the operation violates the normal rules, it would not only endanger personal safety, but will also reduce of the equipment and affect the performance.

Attention

It indicates additional data and information.

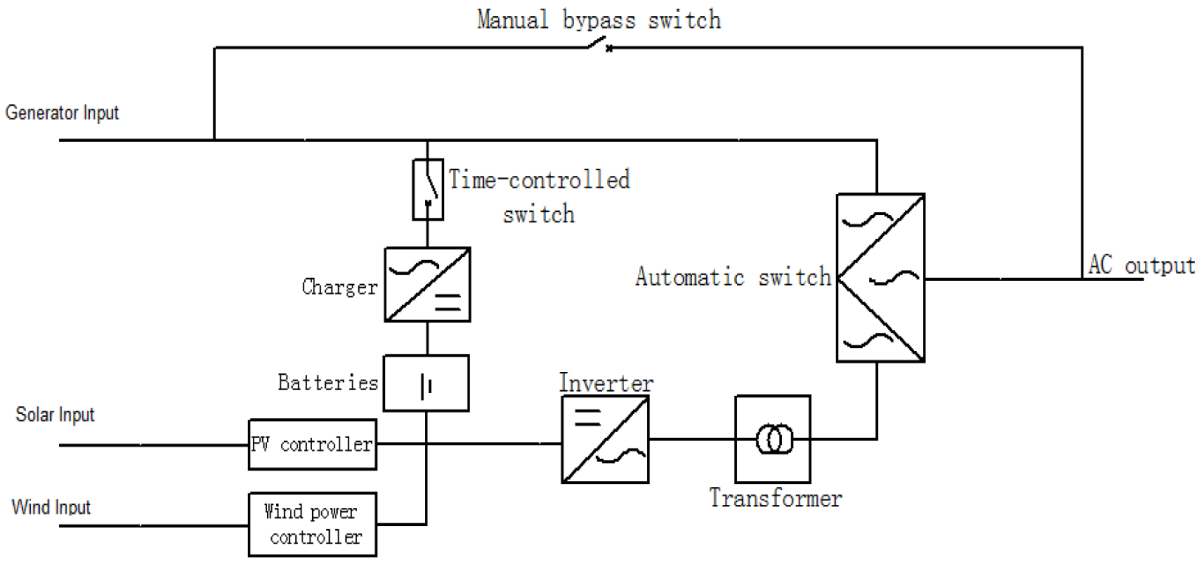
Schedule

The power of this inverter is 5000W/3000W/1000W, the detailed installation and connection refers to the following table:

Rated Capacity	Input Wiring Diagram	Output Wiring Diagram	Wiring Connector
5000W	Input wiring diagram – 1	Output wiring diagram	Wiring Connector
	Input wiring diagram – 2		
	Input wiring diagram – 3		
3000W	Input wiring diagram – 1	Output wiring diagram	Wiring Connector
	Input wiring diagram – 2		
	Input wiring diagram – 3		
1000W	Input wiring diagram – 1	Output wiring diagram	Wiring Connector
	Input wiring diagram – 2		
	Input wiring diagram – 3		

2. PROFILE STRUCTURE

2.1. Working Principle



The working principle of the low frequency solar and wind power charging inverter is: when the solar energy and the wind power are normal, photovoltaic controller and wind power controller charge the inverter and the batteries at the same time; then the inverter will transform input DC into the pure sinusoidal alternating current (AC) output.

You can set the time that the generator can charge the battery every day by setting the generator charging time (set parameter 4 and 5).

When the solar and wind power input are abnormal, the battery will provide the power to the inverter.

When battery boxes discharge to get the setting voltage point (set parameter 6), the system will give out the signal of the low voltage of the battery and the working mode will be changed to mains.

When the DC voltages of the solar and wind power or the battery recover the setting voltage point, the system will give out the signal of the normal DC output and the working mode will be changed to inverter.

When the inverter system is off or has a failure, it can be changed to the generator if attached by the “bypass maintenance switch”.

2.2. Product Features

- Industrial-grade intelligent design
- Pure sine wave output， suitable for TV, refrigerator, induction cooker, electric fan, microwave oven, air conditioning etc.
- LCD liquid crystal display， easy to query various technical parameters.
- Has power generation computing function, and can view real-time power generation.
- Has overcharge, over-discharge, overload, short-circuit, low voltage and high temperature protective functions.

3. SECURITY

Correct way of use:

This equipment adopts an uninterrupted way to supply the load.

This equipment can meet the demands and the all the safety requirements; and it is applicable for office, home, and emergency response, etc.

Warning:

Our company takes personal safety **very seriously**, thus the user or the operator must read the manual carefully and should **strictly** abide by the instructions. When the switch is disconnected, the high voltage risk still exists inside the device. Any movement or operation or opening the protection board **must only be done** by authorized technical people.

3.1. Security Notice:

In order to ensure safe use, please observe the following items:

- Please read the manual in detail before use, please do not use the system over the rated load.
- When the MPS Unit has any failure, quickly cut off the power supply, and contact the seller.
- If the building around the equipment catches fire, use a dry powder fire extinguisher. Liquid fire extinguisher will potentially lead the danger of an electric shock.
- The MPS Unit will need to have a suitable isolating switch selected, and installed before starting – so it is possible to shut down the power in any emergency. The MPS can also be wired with a socket outlet to the generator to enable easy disconnection in case of an emergency.
- Never place any liquid containers on the equipment.

- The equipment should be installed by a qualified electrical contractor or an authorized MPS installer to assure that earthing complies with AS/NZS.

Emergency

Danger
Before connecting the equipment, all load switches should be shut down.

Current Leakage
Before switching on, please ensure the ground wiring is connected.

Radio Interference

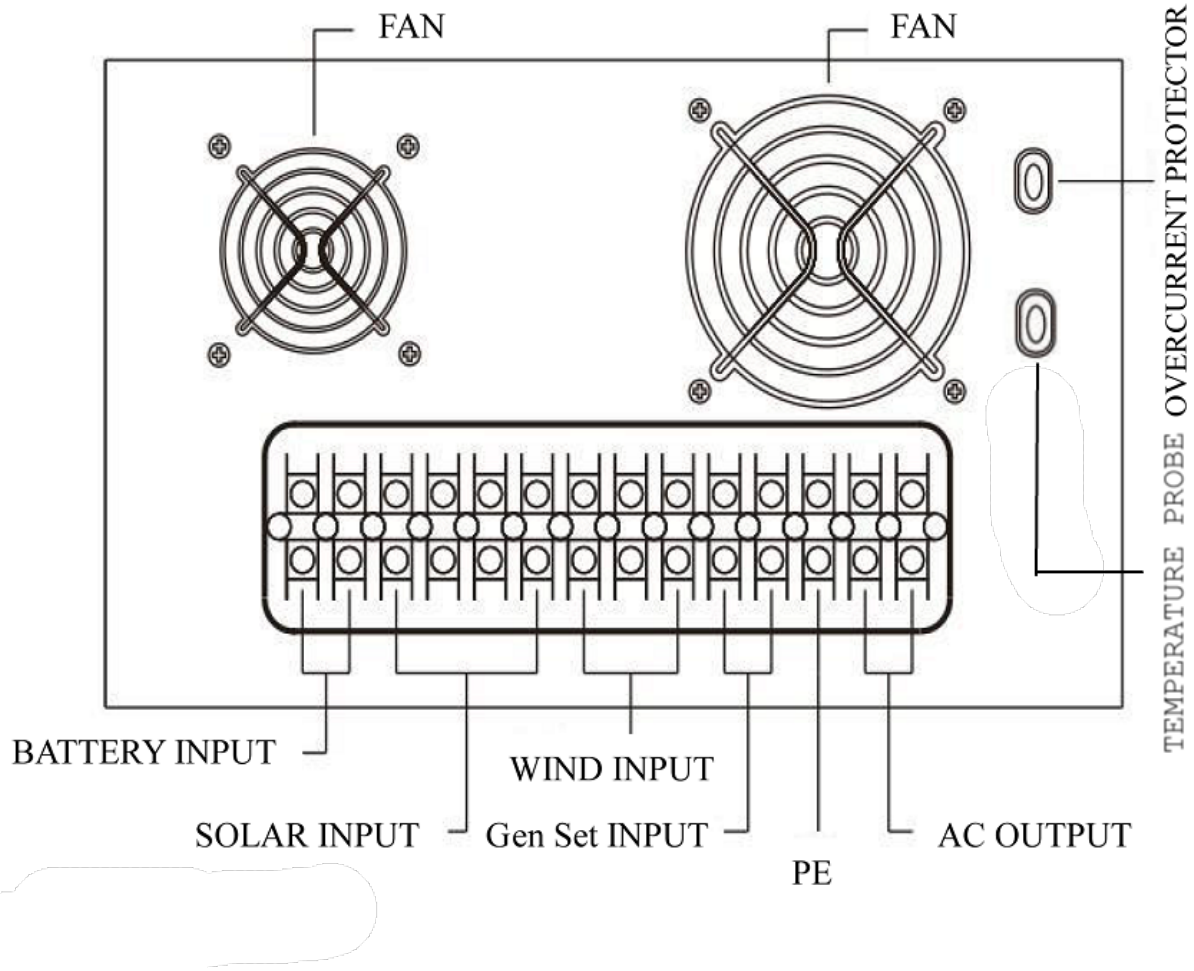
This MPS series has a Low level of radio interference, and it is best to be as far away from any sensitive electromagnetic equipment (such as transmitters, receivers, radars, and metal detectors etc.)

3.2. Battery

Battery maintenance must be carried out by authorized professionals.

- The battery contains electrolytes, whether they are installed inside or outside – the batteries must be kept dry. If the battery is damaged , the electrolyte may leak out, and the electrolyte can cause injuries to eyes and skin. In the event of any body contact, wash with plenty of water and then seek medical advice.
- The voltage existing in the monomer battery terminal is not dangerous, but it will form a dangerous voltage after a certain amount of batteries are installed in series.
- When battery terminals short circuit or over-discharge, it is easy to damage cells and may cause a fire.
- The battery type used is a sealed battery. If the battery is stored or not used for more than 6 months, it will need to be recharged (even if the batteries are fully charged before). Otherwise the batteries may fail. If you do not, the batteries cannot be guaranteed to operate normally. We recommend that you should recharge the batteries every four months.
- After the first charge, the capacity of a new battery usually will not get to 100%. To be fully charged, the batteries must undergo several charging and discharging cycles.
- To avoid environmental pollution, you must observe the rules and regulations on how to dispose of the used batteries.
- Battery temperature Sensor is not included.
- For battery temperature sensor, we recommend THERMOCOUPLE TYPE.

4. BACK VIEW



5. INSTALLATION

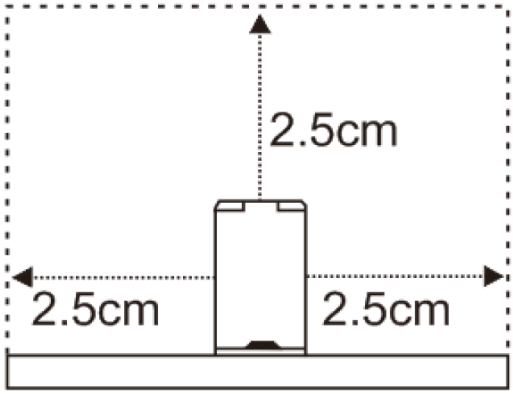
Warning
The installation **must** be done by a qualified technical person referencing local safety standards.

5.1. Environment

The MPS Unit must be installed in horizontal vertical racks or on the ground and the temperature and humidity must be suitable.
Do not place any objects on the device.

5.2. Space Size

The placement of the MPS Unit:
To keep the air intake and exhaust open, a space of about 2.5cm above and around it must be allowed.



- Avoid direct sunlight
- Avoid overheating
- Avoid damp and contact with liquids
- Avoid dust

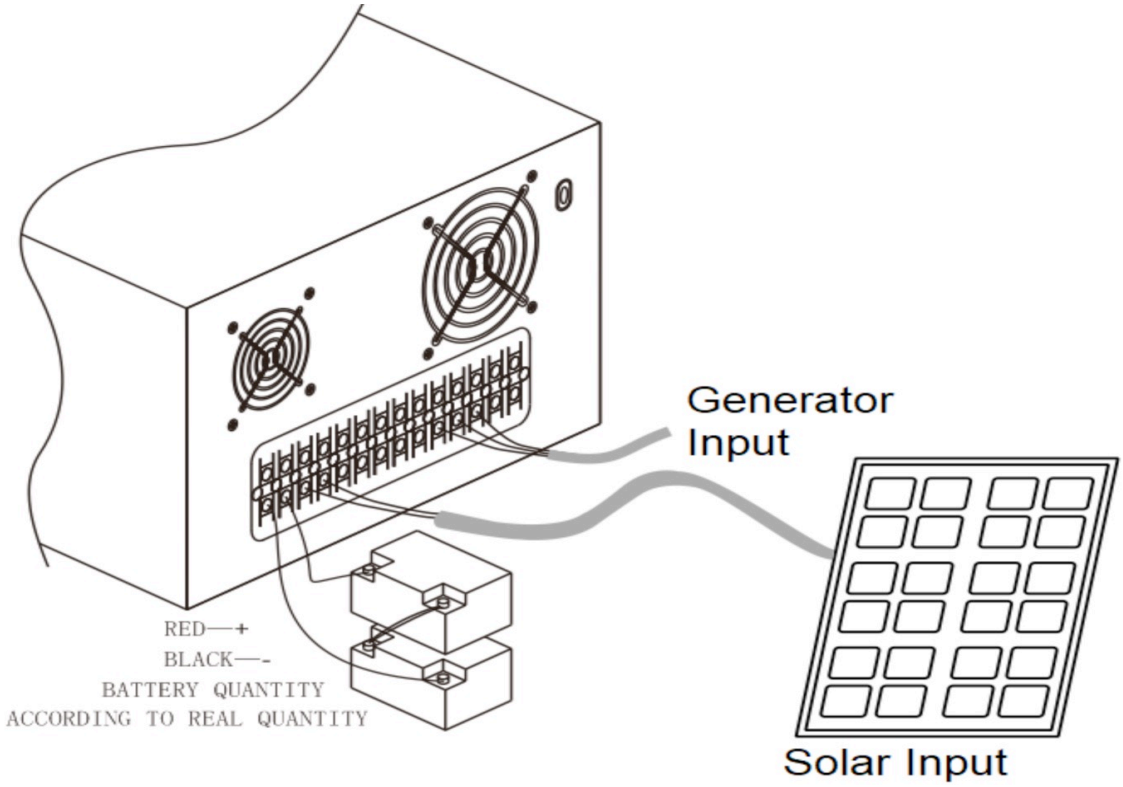
5.3. External Protection Device

The external devices must use the appropriate circuit breaker or fuse products.

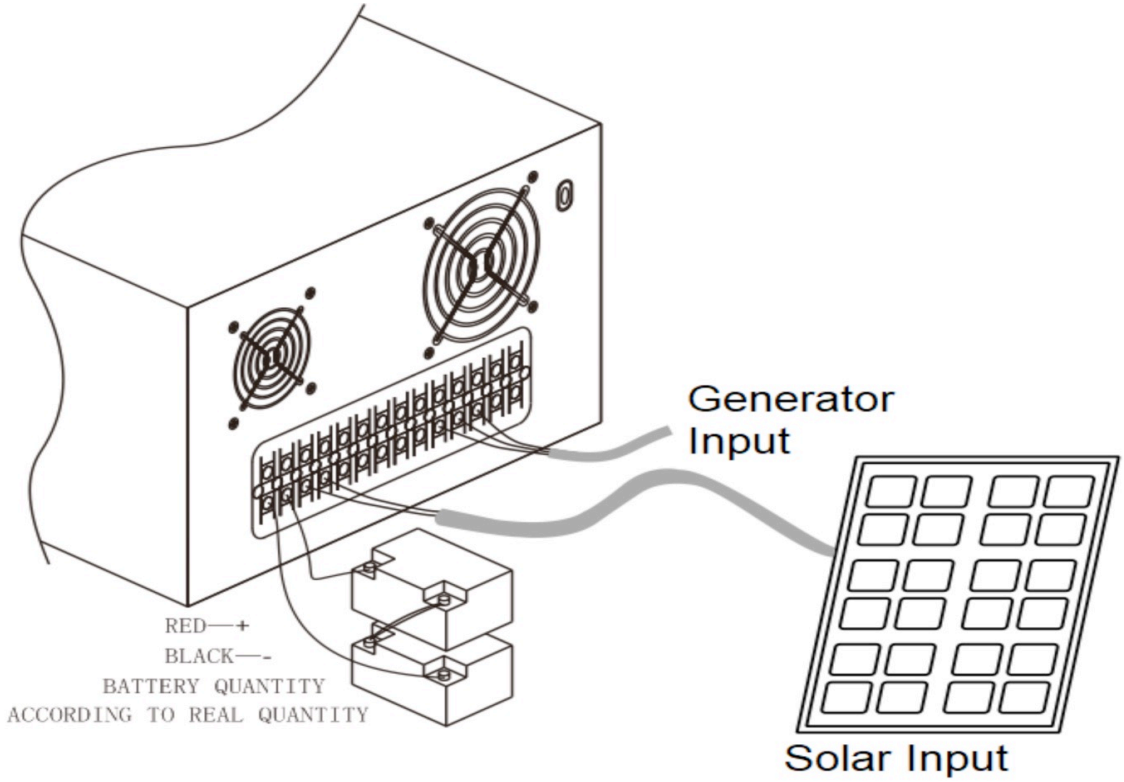
Notice

When connecting to an external battery box, it must make an external battery box near the equipment, and configure the appropriate circuit breaker or fuse.

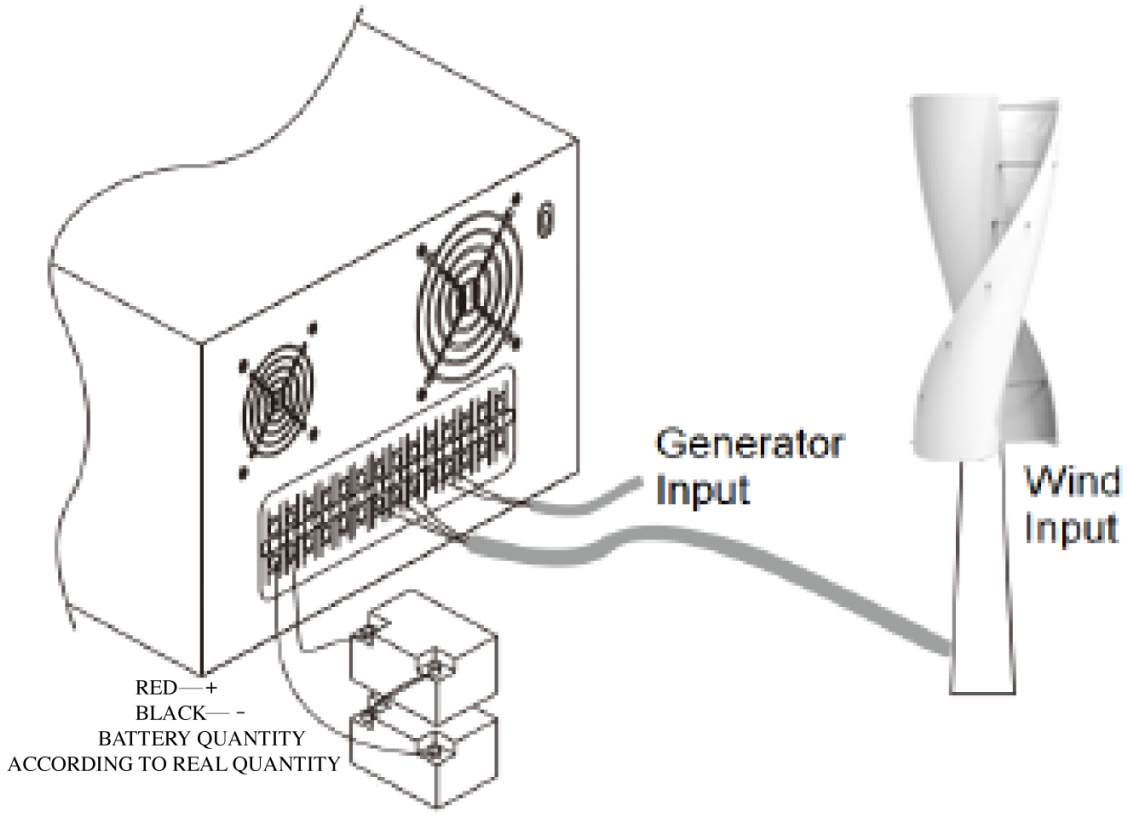
Input Wiring Diagram 1



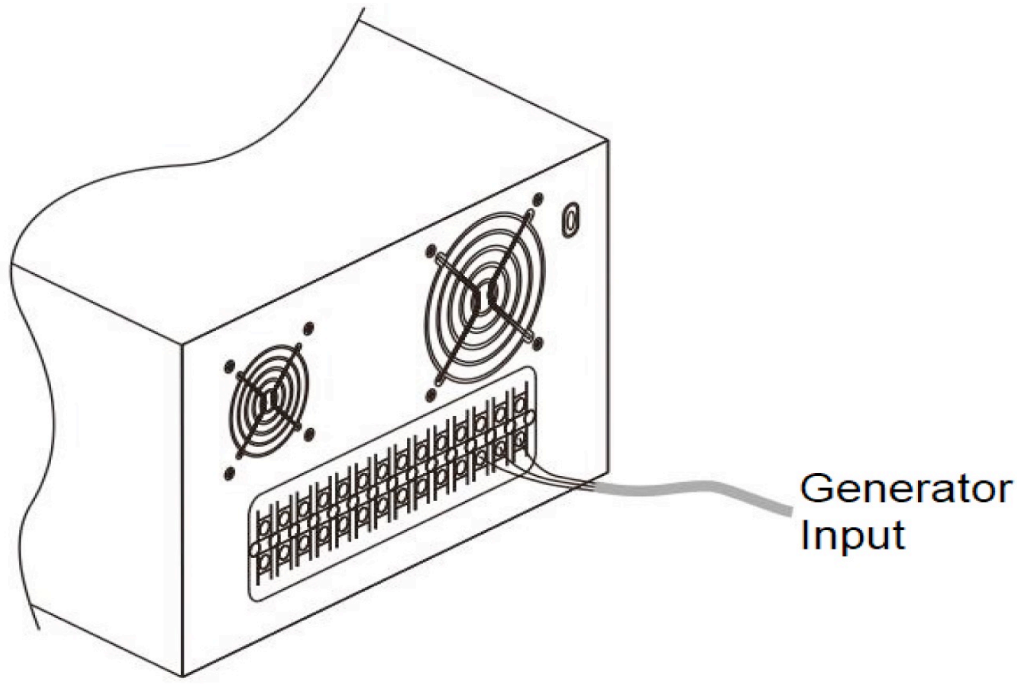
Input Wiring Diagram 2



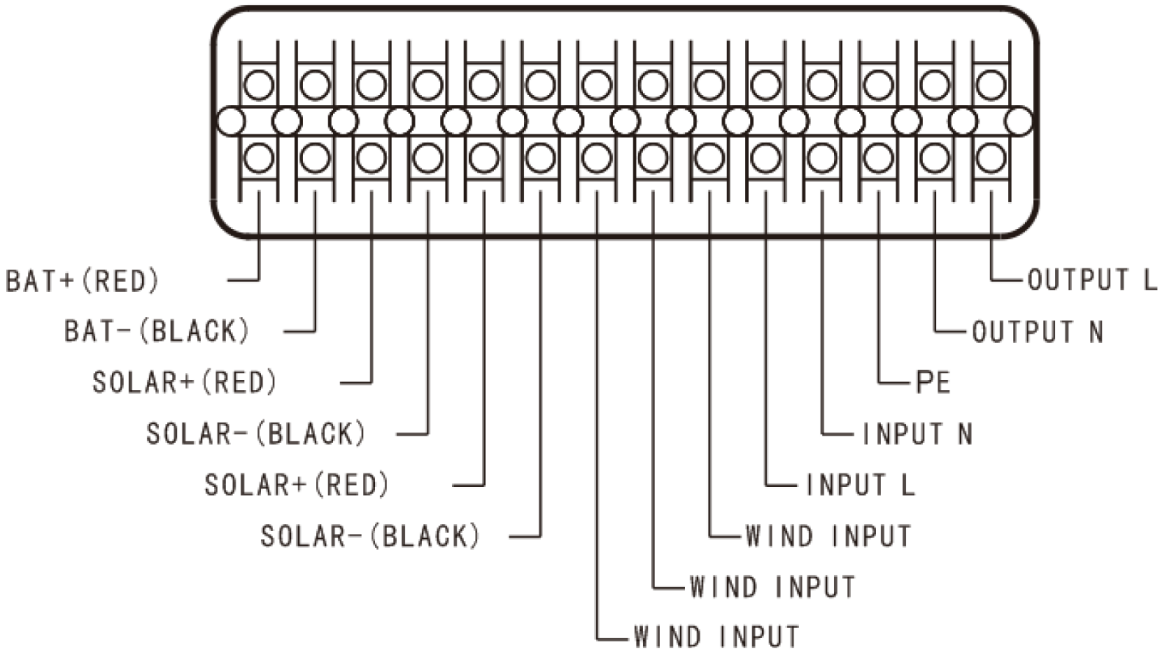
Input Wiring Diagram 3



Output Wiring Diagram



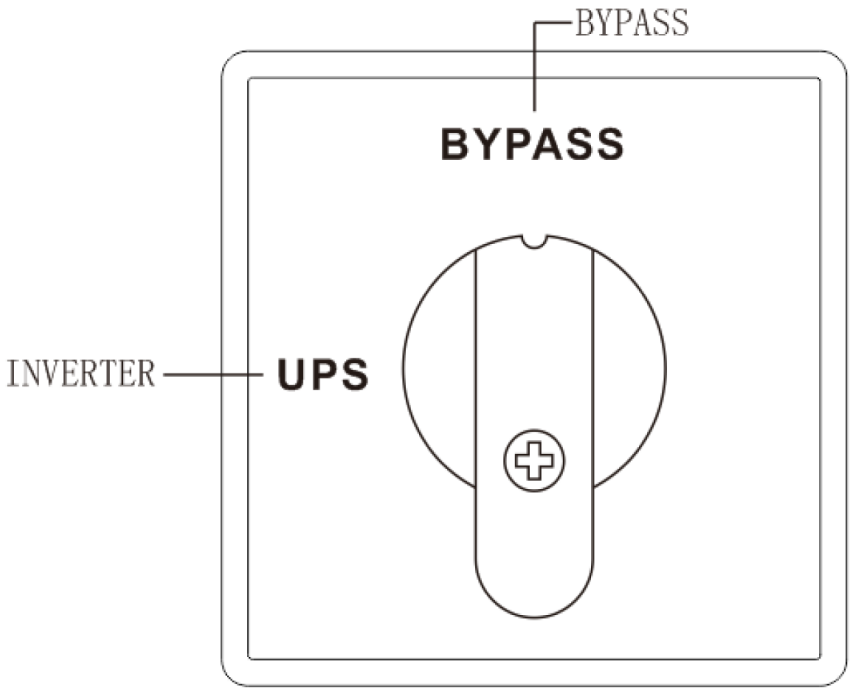
Wiring Connector



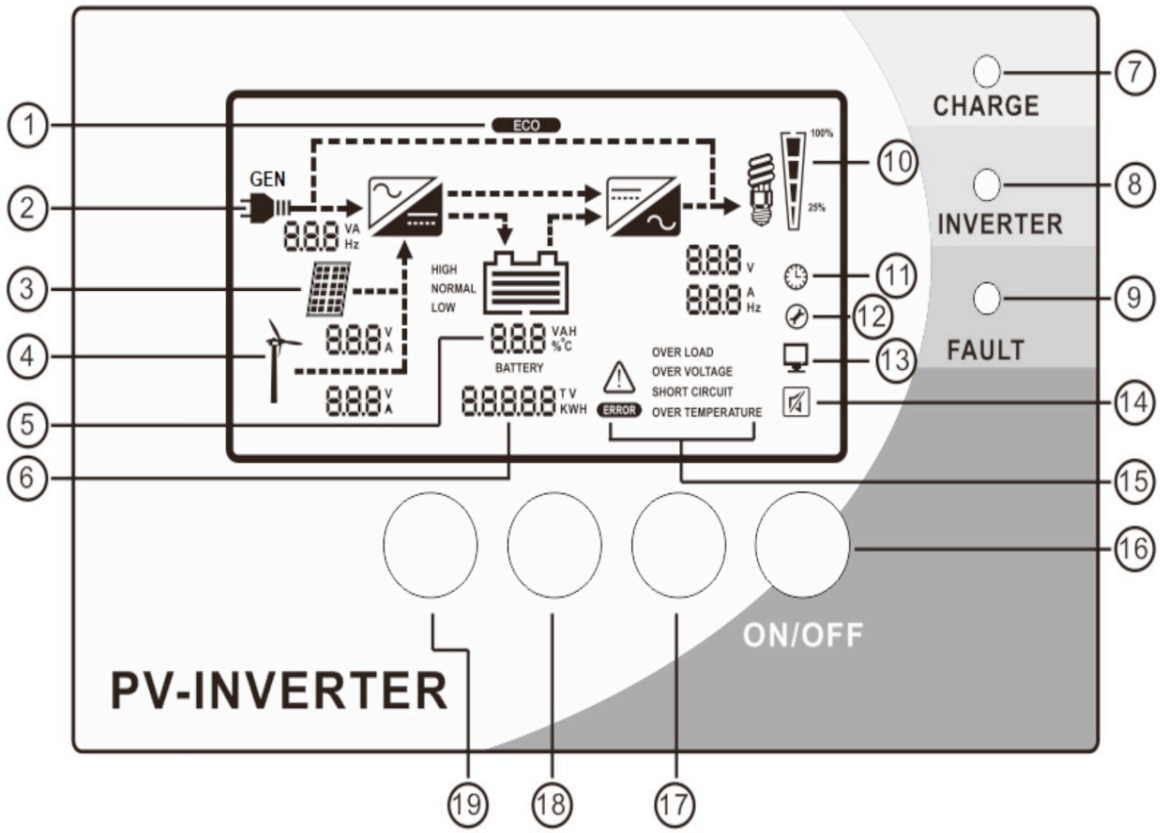
Notice

Please connect batteries, solar input, wind input, genset input, make sure if battery **positive** and battery **negative**, solar **positive** and solar **negative** are correct.

5.4. Bypass Switch



5.5. Display Panel Appearance



1. Energy Saving Mode
2. Generator Input
3. Solar Panel
4. Wind Turbine
5. Battery Capacity
6. Power Generation/Parameter Display
7. Charging LED
8. Inverter LED
9. Fault LED
10. Load Indication
11. Date/Time Setting Indication
12. Setting Indication
13. PC Connection Indication
14. Mute Indication
15. Warning Indication
16. K1
17. K2
18. K3
19. K4

6. EQUIPMENT OPERATION

6.1. Keyboard Functions

K1 ON/OFF/MOVE/ENTER

Press K1 for seconds to start the inverter, when it does not enter the setting mode, press K1 for seconds to shut down the machine.

K2 DOWN (parameters positive)

K3 UP (parameters negative)

K4 Settings/NEXT/ESC

After start-up: long press K4 button to enter setting mode, long press again to exit setting mode (if 30 seconds without pressing, it will exit the settings automatically).

After entering the setting mode, a short press K4 can switch to another parameter setting mode (see table). Short press K1 can move the flashing position, press K2 / K3 which can change the flashing number and long press K1 can save the current settings.

This inverter is already set to Australian Standard Configuration.

NO.	PARAMETERS	FUNCTION DESCRIPTION
1	2015	Year Setting
2	0112	Month/Date Setting
3	0706	Hour/Minute Setting
4	0709	Generator Charging Time Setting Starting Time for Mains Charging (Hour/Minute)
5	0710	Mains Charging Time Setting Ending time for Mains Charging (Hour/Minute)
6	0444	Switch to Mains Low Voltage Point of the Battery
7	0548	Battery Voltage to Recover to Inverter Status (charging another an hour)

6.2. Preliminary Operation Control

Before starting the equipment and loading any power supply, the following rules must be complied with:

- Ensure that the ventilation is good
- Ensure that the ground wire is good
- Ensure that all the connections on back of the panel are correct

Danger
After the equipment is connected to the mains, the output port is in a **charged** state; even if the front switch of the equipment is not turned on.

Do not connect any equipment that may overload the devices or DC load (such as hair dryer, vacuum cleaner, etc.).

Notice
The MPS Unit must be installed by a qualified electrical contractor or an authorized MPS installer to assure that the installation complies with AS/NZS. If the instructions are not fully complied with, the process of powering up with the MPS Unit may be a problem.

6.3. Launch Steps

- Put external battery box switch at “ON” position;
- Long press equipment front panel “ON/OFF” key to boot (longer than 2 seconds), turn off the device
- Put the mains input switch “ON” position
- Wait for at least 30 seconds until the output voltage is stable
- In turn to connect the external load

Danger
If overloaded, the device will sound an alarm. Please drop some load, and restart.

6.4. Shutdown Steps

Notice

Carrying out the program should shut off the load.

- Disconnect all load switch
- After a long press “ON/OFF” button (longer than 2 seconds), turn off the device
- Set the user input switch to “OFF” position
- Set the external battery box switch to “OFF” position
- Make sure all the switches and the circuit breaker of the device are disconnected

7. TRANSPORTATION AND STORAGE

Transport

When receiving the goods; please check whether the packing is good condition or damaged. If there is any damage or items missing, you must be within 7 days to give notice to the sellers with a complete report and photographs of the condition & damage.

Unpacking

To avoid damage to the equipment, you should be very careful while moving the device, check whether all the packaging material is good condition.

Storage

After receiving the equipment, if it will not be used within 7 days, be sure to store in a clean and dry environment.

Carrying

Equipment must be kept upright and carefully carried; otherwise damage may be caused to the equipment.

8. MAINTENANCE

Cleaning Process

- Long press “ON/OFF” switch to shut down the device and disconnect the mains input.
- Use dry or slightly damp cloth to wipe the surface of the equipment.

Danger

- Do not use detergents or corrosive solvents to clean the equipment.
- Do not let any liquids flow onto or into the machine.
- Ensure the vents of the equipment are not blocked.

9. TROUBLESHOOTING

If the equipment is not functioning normally, please check the following items prior to contact the customer service representative:

- Whether the external battery connection of the equipment is normal, whether the battery is damaged or not
- The device whether has a genset input, and whether the mains voltage frequency is consistent with requirements
- Whether the input fuse is damaged or circuit breaker is damaged

If you contact the customer service representative please provide the following situations:

- Equipment information: type, order number, serial number (marked on the back board);
- A detailed description of the problem (load type, the occasional problem, often occurs or panel lights and alarm, etc.).

10. SERVICE

Notice

If the equipment needs to be repaired, please complete the following steps:

- For general questions, please refer to the **Troubleshooting** (above) section for maintenance issues.
- If the problem still exists, please call the seller.
- Recording the equipment model, serial number, and the date of purchase, and the troubleshooting methods that you get by telephone when consulting a technical person.
- During the warranty period, faults will be repaired free of charge, except for any man-made problems. Otherwise, the charge is not free.
- When sending back equipment to the seller, please ensure the equipment is properly packed, to avoid any damage in transit.

Notice

Do not use polystyrene foam pad beads as packaging material. Any damage in transport will not be covered under the warranty (we advise to insure for the shipping of all goods being returned).

11. TECHNICAL SPECIFICATION TABLE

Model	MPS5KW-NRG	MPS3KW-NRG	MPS1KW-NRG
Power	5000A	3000A	1000A
System voltage (VDC)	48VDC	48VDC	48VDC
Solar energy input range (VDC)	60-84VDC	60-84VDC	60-84VDC
Maximum input current of solar energy (A)	60A	40A	20A
Wind turbine voltage grade	48V	48V	48V
Maximum output current of Wind turbine	25A (1000W)	25A (1000W)	12A (1000W)
Maximum allowed voltage connecting to PV	150V	150V	84VDC
Maximum allowed charging current to PV	60A	60A	30A
Maximum allowed power to Wind turbine	1000W	1000W	500W
Maximum allowed charging to current Wind turbine	20A	20A	10A
Generator pure sine wave input range	240VAC±20%	240VAC±20%	240VAC±20%
Input frequency range	50Hz±5%	50Hz±5%	50Hz±5%
Generator charging current	35A (MAX)	35A (MAX)	15A (MAX)
Inverter output voltage	240VAC±3%	240VAC±3%	240VAC±3%
Inverter output frequency	50Hz±5%	50Hz±5%	50Hz±5%
Inverter output wave form	Pure sine wave	Pure sine wave	Pure sine wave
Generator voltage stabilizing function	No	No	No
Transfer time	≤10ms	≤10ms	≤5ms
Inverter output Waveform distortion /THD	5%	5%	5%
Transfer efficiency (Linear load)	≥83% (100%load)	≥83% (100%load)	≥83% (100%load)
Crest factor	3: 1 (Max)	3: 1 (Max)	3: 1 (Max)
Low voltage protective point	44VDC	44VDC	44VDC
Recovering voltage point	50.4VDC	50.4VDC	30.2VDC
Overload capacity	120% 30s ; 150% 2s ; 200% protect immediately.		
Protective functions	Input overvoltage, low voltage protection, overload protection, over temperature protection, short circuit protection, output over voltage, low voltage protection, wind turbine protection.		
Noise (>1m)	≤55db		
Working temperature	0°C~ 40°C		
Storage temperature	-20°C-55°C		
Relative humidity	0~90% No condensation		
Altitude	≤1500m, Higher than 1500m, de-rating usage		
Dimension (L*W*H) mm	499mmx483mmx271mm (net height 266mm)		
Battery compatible type	Lead-acid Gel Battery		
Battery voltage	192V (2V battery 96pcs in series or 12 battery 16pcs in series)		
Battery capacity	According to requirements		
Battery low voltage protection	>168V		

Please consult with our company if the manual could not be understood or detailed explanations are needed during application. We would be more than happy to serve you.

This manual is subject to any changes without prior notice.

CONTACT

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