

ATO UPS Uninterruptible Series User Manual

Promote green energy



Please Read **Manual** Carefully before use



USA



UNIVERSAL



EU+JP+USA



SOUTH AFRICA



UK



AUSTRALIA



FRANCE



EU+GERMANY



FRANCE+GERMANYL



AUSTRALIA



USA



UNIVERSAL



EU



SOUTH AFRICA



UK



ITALY

※ Sockets are available

Preamble

Thank you for purchasing the UPS uninterruptible power inverter equipment produced by our company

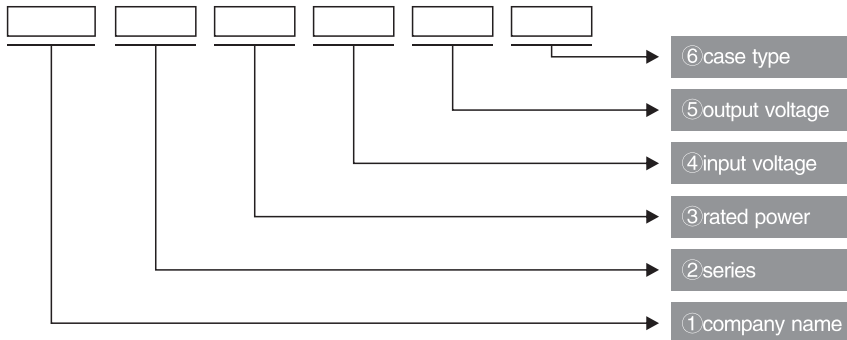
This manual can provide users with related matters such as use and installation methods, fault diagnosis and elimination. In order to ensure the correct installation and operation of the UPS uninterruptible power inverter , please read the manual carefully before using this product. When unpacking, please confirm: whether the product is damaged; whether the rated value of the label of the machine is consistent with your ordering requirements.

Schedule of packing list: one instruction manual; red and black wiring; power cord; fuse, etc.



Contents

1.Models and meaning	01
2.safety instructions	02
3.How the Charger Works / UPS Conversion Module	04
4.Product features and product applications	07
5.Use environment and operation guide	08
6.UPS series power inverter with charger diagram and connection	10
7.Common faults and troubleshooting methods of UPS series power inverter with charger	14
8.UPS series power inverter with charger specifications	19
9.Warranty	22



Example: REPU: UPS series pure sine wave verter w th battery charger

Example: REMU: UPS series modified sine wave verter with battery charger:

Warning • When installing and using the UPS uninterruptible reverse charging source, please read the safety instructions carefully.

2-1 In order to reduce the risk, please do not expose the UPS uninterruptible reverse charging source to harsh environments such as rainy days, snow and frost, fog, greasy and a lot of dust during installation, and do not install the UPS uninterrupted reverse charging source in a sealed place. , do not cover and block the vents, the UPS uninterruptible reverse charging source will be damaged by their relationship.

2-2 The UPS uninterruptible reverse charging source should avoid fire sources and places prone to electric shock. Wires that do not meet the standard specifications may damage the UPS uninterrupted reverse charging source.

2- 3 Because the UPS uninterruptible reverse charging source equipment itself contains components that are prone to arcing, it cannot be installed in a flammable and explosive environment during installation.

2-4 When the battery is connected, if the acid substance of the battery comes into contact with the skin or clothes, please rinse immediately with clean water and soapy water. If the acid substance gets into the eyes, immediately wash the eyes with



water for at least 20 minutes, and seek medical treatment immediately. .

2-5 Please do not put metal tools on the battery, it is very likely that the battery or the UPS uninterrupted reverse charging source electronic components will be damaged due to sparks caused by short circuit.

2-6 It is strictly forbidden to put small metal objects such as iron needles and iron pins into the product, away from the water source, to prevent the product from entering the water and damaging the UPS uninterrupted reverse charging source.

2-7 It is forbidden for children to operate this product, and do not touch the terminals, output sockets, fan ports, etc. of this product with fingers to prevent injury and electric shock.



3-1 Battery charging will work in 3 automatic stages

3-2 This series of products use the most advanced three-stage mode to charge the battery which are constant current, constant voltage and floating charge. ① In constant current charging stage, the charging current remains constant, charging capacity increased rapidly, battery voltage rises: ② In constant voltage charging stage, the charging voltage remains constant, charging capacity increase, battery voltage rises slowly, and the charging current decreases: ③ The battery is fully charged, the charging current drops below the floating charge current, the charging voltage is reduced to the floating charging voltage; ④ In the floating charging stage, the charging voltage will reduce and keep at the floating charging voltage, which can prevent battery from damage due to over charging. 12V charger: charging voltage 14.4V, floating charging voltage 13.8V. 24V charger: charging voltage 29.2V, floating charging voltage 27.6V. The charging voltage and current can be customized at the factory.

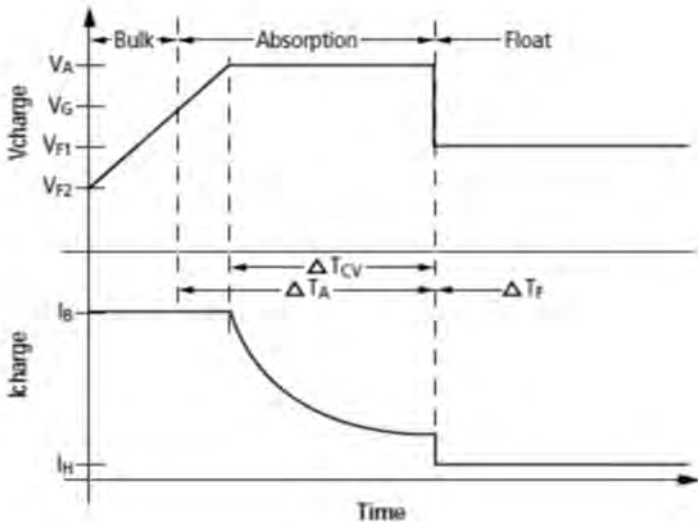


3-3 This product is suitable for dry batteries, aluminum brazing acid batteries, and lithium batteries to be customized.

3-4 In standby mode, AC power can charge battery when connect battery to DC terminal. Whenever the AC power trips or power off, the UPS uninterruptible power source will switch back to inverter mode automatically.

3-5 As long as the UPS uninterrupted power source is on, the disturbance to the equipment is minimal. It takes about 9 milliseconds to transit from standby mode to inverter mode. It also carried out at the same time to transit Inverter mode to the standby mode. UPS uninterrupted power source adopts the single-chip program technology design.





4-1 Pure sine wave or modified sine wave output.

4-2 High Efficiency, light in weight

4-3 LED indicate the status of the load.

4-4 cooling fan (control by temp.)

4-5 Microprocessor design

4-6 Load soft start, effectively maintain battery life

4-7 Under voltage/overload/short circuit/over voltage/over temperature alarm

4-8 Application

Power tools: chainsaws, drilling machines, grinders, electric sanders, punches, weeders, air compressors etc.

Office equipment: computers, printers, monitors, copiers, scanners etc.

Household appliances: vacuum cleaners, fans, fluorescent and incandescent lamps, electric cutters, sewing machines, etc.

Kitchen appliance: microwave oven, refrigerator, freezer, coffee machine, blender, ice maker, oven etc.

Industrial equipment: metal halide lamps, high pressure lamps, boat loading, solar energy, wind power generation etc.

Electronic field: TV, VCR, game console, radio, power amplifier, music equipment, monitoring equipment, terminal equipment, server, intelligent platform, satellite communication equipment etc.



Operation guide: • Warning • Here is high pressure inside, please pay attention to safety. Don't disassemble or modify it without permission. Please operate according to following guidelines, the company will not be responsible for the loss caused by failure to follow this guide.

5-1 Battery selection: Use lead-acid battery with input voltage 12V/24V/48V accordingly to fit product. For 12V/300W UPS uninterruptible power source, please select battery capacity above 30AH. for 12V/1000W UPS uninterrupted power source, please select battery capacity above 100AH, and so on.

5-2 When UPS uninterruptible power source connected to loads, please ensure that the loads power is within the rated power range, and cannot exceed the maximum power of the UPS uninterrupted power source when the switch is on.

5-3 Under-voltage protection: When the battery voltage is very low, the indicator will alarm, indicating that the DC supply voltage has dropped and the battery needs to be recharged. Example: For 12V inverter, input voltage is lower than $10V \pm 0.5V$; for 24V inverter, input voltage is lower than $20V \pm 1.0V$; for 48V inverter, input voltage is lower than $40V \pm 2.0V$. The AC output will turn off, the indicator turn red and alarm at the same time.

5-4 Over voltage protection: When the battery voltage is too high, the indicator will give an alarm, indicating that the DC supply voltage is too high, and the battery needs to be discharged as soon as possible. Example: For 12V inverter, input voltage reaches $15V \pm 0.5V$; for 24V inverter, input voltage reaches $30V \pm 1.0V$; for 48V inverter, input voltage reaches $60V \pm 2.0V$.



The AC output will turn off, the indicator turn red and alarm at the same time.

5-5 Short-circuit protection: When inverter power supply is short-circuited, the output will turn off.

5-6 Reversely connected protection: When the battery is reversely connected, the fuse will blow to protect inverter.

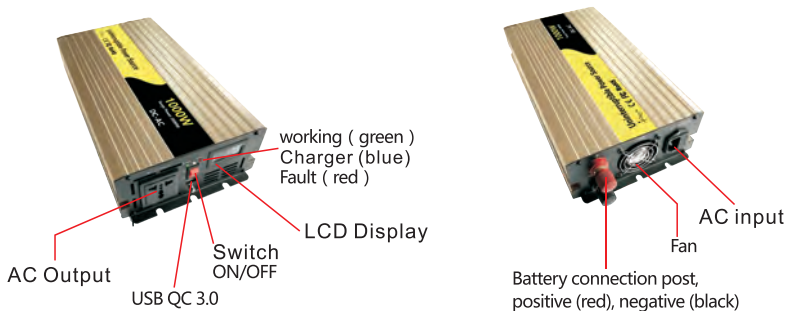
5-7 Over temperature protection: When internal temperature exceeds about 75 degrees Celsius, the AC output will turn off, the indicator turn red and alarm at the same time. It won't work until 15 minutes later.



Inverter icon and connection

ATO

- Modified sine wave 1000W-2000W ,Pure sine wave 300W-1500W



Battery cable

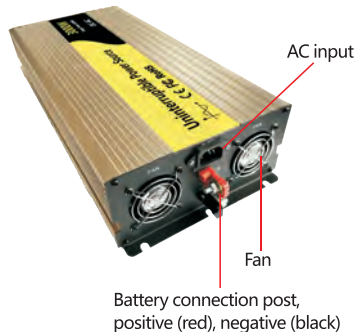
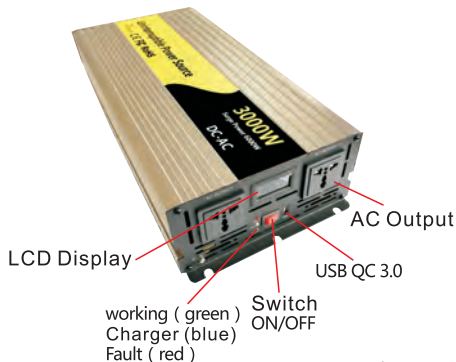


power plug

Inverter icon and connection

ATO

- Modified sine wave 3000W ,Pure sine wave 2000W- 3000W



Battery cable

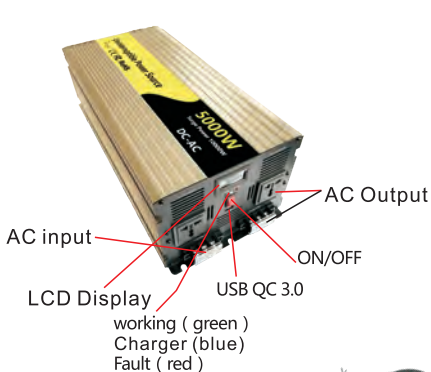


power plug

Inverter icon and connection

ATO

- Modified sine wave 4000W-6000W ,Pure sine wave 4000W- 6000W

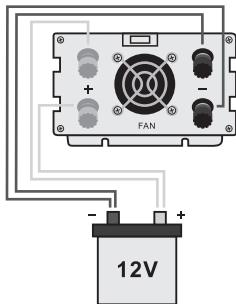


Battery cable

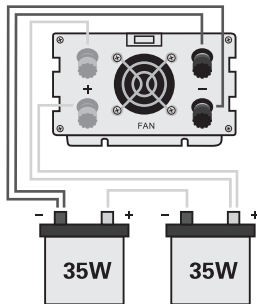


power plug

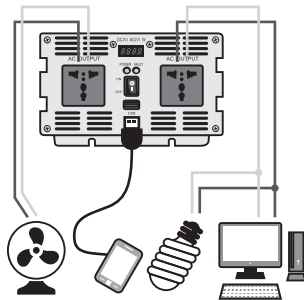
12V inverter connection



24V inverter connection



Output terminal connection method



Tip: 48V inverter and 24V connection are the same, connect the batteries in series.

AC appliances do not work, and the green power indicator does not light.

CAUSES	SOLUTION
Bad battery	Check the battery, replace it if necessary
Revers connection of negative and positive poles	Correct the connection to battery, the inverter may be damaged. Replace the fuse inside inverter (outside warranty cover)
Loose connection of cables	Check the cables and the connection, screw tight the wiring terminal



The electric appliance does not work, and the red FAULT indicator of the inverter is lit.

CAUSES	SOLUTION
Overload shut off due to rated power of appliances exceeding the inverter's rated power	Use appliances having power below the inverter's rated power
Overload shut off due to a too high surge current	Increase inverter power



CAUSES	SOLUTION
The battery is over discharged (inverter sounds an alarm)	Replace the battery or use battery charger to charge your battery
Over temperature shut off due to bad ventilation	Switch off the inverter and let it cool for 15 minutes. Clear objects around the fan and the inverter. Place the inverter in a cool place. Reduce load according to requirements. Restart
Too large input current	Check the working state of the charging system. Make sure the output voltage of the battery is within the proper voltage



The measured output current of the inverter is too low

CAUSES	SOLUTION
Ampage is too small	Measure Modified sine wave with a real effective value multimeter to get the accurate data
Ampage supplied is too low	Charge the battery or change battery

The inverter gives out alarm sound.

CAUSES	SOLUTION
Low voltage alarm (Voltage Drop)	Shorten the wire or use wider cable. Charge the battery.
Over temperature protection (Component Temp /Ambient Temp)	Allow the Inverter to cool. Improve ventilation around the inverter.
AC appliances draw too much power	Use larger capacity inverter.
Poor connection	Check the connection and tighten it.



Model	300	500	600
Rated power	300W	500W	600W
Peak power	600W	1000W	1200W
Output rate	AC110V \pm 10%(customize)		
	AC220V/230V \pm 10%		
DC input	12/24/48V	12/24/48V	12/24/48V

Model	1000	1500	2000	3000
Rated power	1000W	1500W	2000W	3000W
Peak power	2000W	3000W	4000W	6000W
Output rate	AC110V \pm 10%(customize)			
	AC220V/230V \pm 10%			
DC input	12/24/48V	12/24/48V	12/24/48V	12/24/48V

Model	4000	5000	6000
Rated power	4000W	5000W	6000W
Peak power	8000W	10000W	12000W
Output rate	AC110V \pm 10%(customize)		
	AC220V/230V \pm 10%		
DC input	24/48V	24/48V	24/48V

Within one year from the date of purchase, we will unconditionally repair or replace any defective inverter if the product is defective in initial PCB, components and manufacturing. This warranty is only issued at the time of original purchase and it is not transferable. Damage caused by accidental misuse, self-disassembly for repairs, sand, oil, metal powder or water in the product is not covered by this warranty. This is a warranty only, and the company makes no other warranties, express or implied, including warranties of merchantability and fitness for a particular purpose.

Statement: The size of the picture of this product may be different from the actual product. Please refer to the actual product. The products are constantly being updated. If you want to know more, please contact the sales of our company.



Without permission, please do not disassemble the UPS series power inverter with charger without permission!



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