

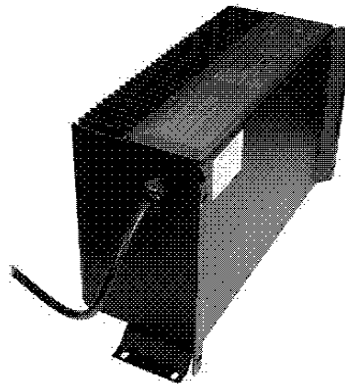


I. introduction

GHR series high frequency charging power supply are charging for 24V~750V Li from 1KW to15KW, the highest single current can be 100A and reach hundreds l circulation charging of Electric car, Electric taxi, Electric bus, Electric forklift, Golf including light weight, small volume, stability, efficiency and safety. They can Aut the protect function including battery polarity reverse and DC output short circuit

As an on-board charger, with its own characteristic like waterproof, dustproof, sh Its uses the micro-computer controlled to control the charge and then auto finish of more charging zone in accordance with charge and discharge characteristic, it in a high level in order to avoid the damage by improper charge. Another advant

and preset the highest charge voltage. This charger has two charge mode: Balance charging mode and Pulse charging mode; you can set charging ways by the buttons of the charger and its Default state is balance charging mode.



II.Characteristic

- Apply to charge lithium battery, lead acid batter.;
- CPU control battery chargers.
- Can do the real-time communication with BMS which bring CAN main line by CAN communication interface.
- expand and Parallel machine function, support N+M Parallel operation.
- Wide range input, can adapt to different voltage in global world.
- Power factor, PF≥0.99 .
- Complete protection function.
- LED working indications and Three color indications for charging status.
- Temperature-compensation circuit.
- The charging curve can be amended in accordance with different batteries.
- Recoverable storage battery.
- Sealed, shockproof, dustproof, waterproof and seft-air cooling.
- 2 years' guarantee.

II. data sheet

Item	Battery voltage	Max output voltage	Output max current	EFF%
CHR-3000B -48	48V	60V	50A	≥93%
CHR -3000B -60	60V	75V	40A	≥93.5%
CHR-3000B-72	72V	90V	33A	≥94%
CHR -3000B -96	96V	120V	25A	≥94.5%
CHR -3000B -144	144V	180V	16A	≥95%
CHR -3000B -192	192V	250V	12A	≥95.5%
CHR -3000B -288	288V	360V	8A	≥95.5%

Note:1.above output efficiency is basing: input 220VAC, full load(Resistive load), room temperature 20℃, after working 5 hours' testing result.

2.we can customize special voltage and other performance curve.



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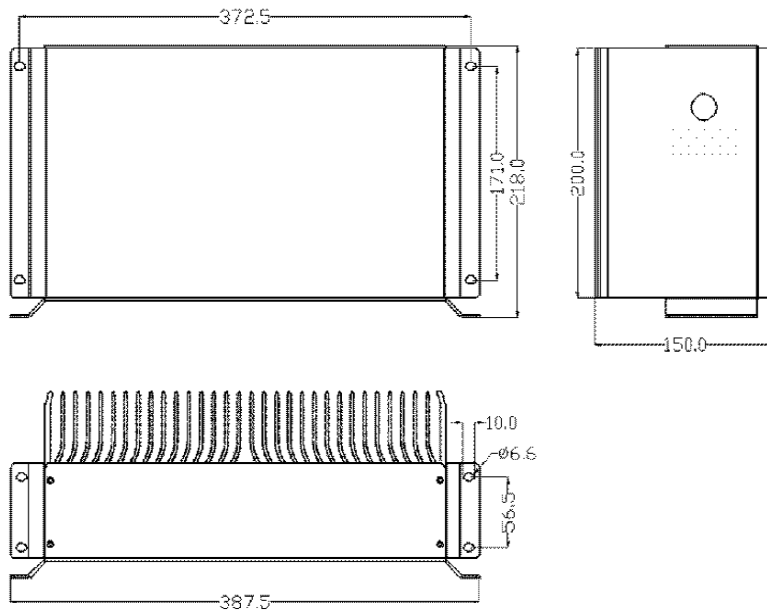
Input voltage.....	100~240VAC (85~169VAC half power output,170~264VC full power output)
Input frequency.....	50/60Hz
Power factor.....	≥0.99
Stable voltage accuracy.....	±0.5%
Stable current accuracy.....	±0.5%
Ripple factor.....	≤0.5%
Parallel machine unevenness degree.....	≤±3%
communication.....	support CAN
Parallel machine function.....	support N+M parallel machine
Protection.....	Input & output (over voltage, low voltage, over current) protection, short circuit & over temperature protection
Charging display.....	LED display
Cooling type.....	self-cooling
IP class.....	IP54
Working temperature.....	-40℃~+55℃
Weight.....	≤10Kg
Dimension.....	387.5*150*218mm

#### IV. Features

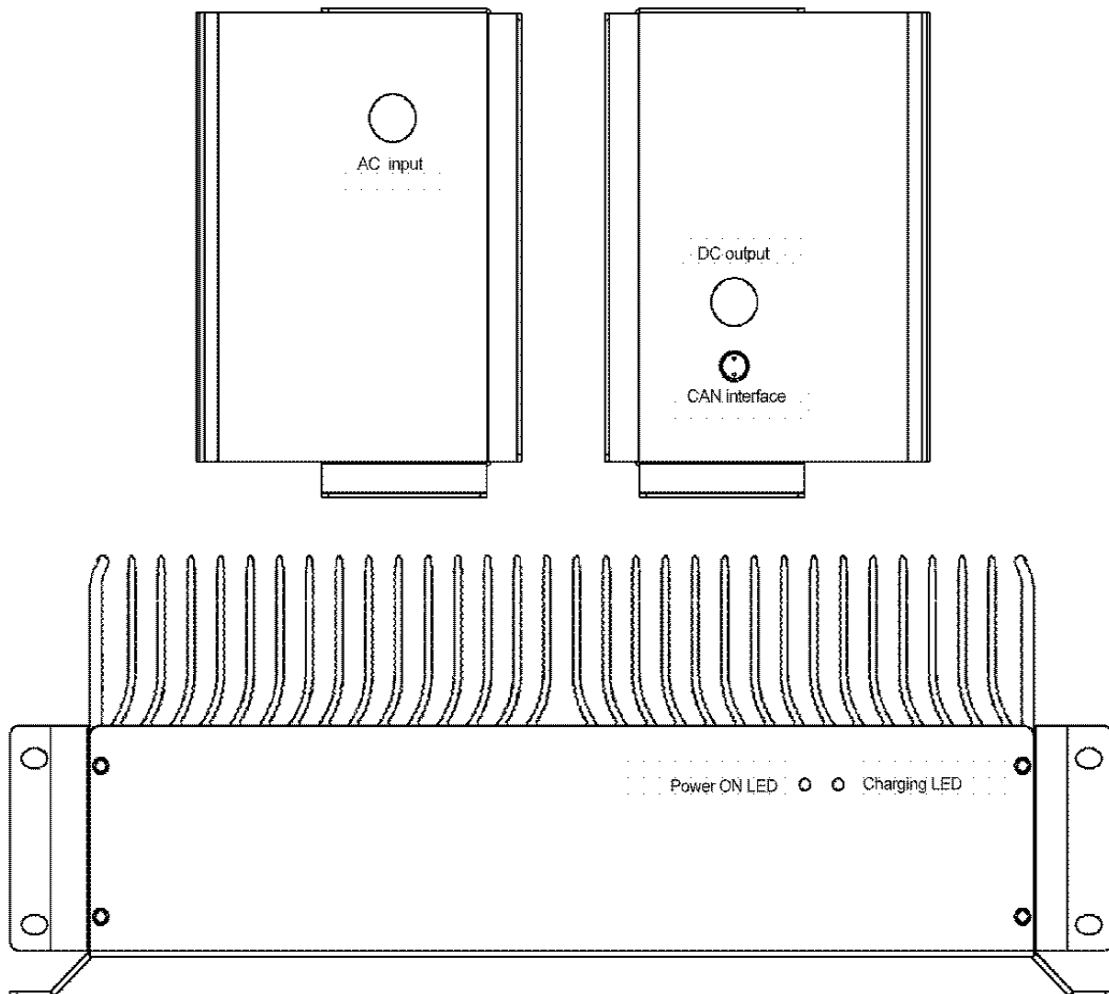
- 1.high power density: this series charger using advanced switching technical, small loss and with high efficiency. It consist of PFC power correction circuit and DC/DC converter. It achieves the widely output 100~240VDC. The power factor get 0.99, and efficiency reach 95%.
- 2.self-air cooling. This series charger using self cooling type. Advanced PCB design, strict select the components, it leads our products radiation so small and decrease the volume, it make the stability much higher.
- 3.Advanced charging mode. This charger using 5 stage charging curve. Max voltage is pre-setting. And automatically identify winter and summer mode. Auto and repairing mode as option.
4. Perfect protection function: over heated protection: when the temperature over 75° C, the output decrease to 50%, when the temperature over 85° C, the charger will be shut down. When the temperature get down in normal range, the charger get recovery.  
Short circuit protection: when charger happen in short circuit condition, the charger will be shut down, after out of faulty condition, charger will be restart. Reverse connection protection: when the battery are wrongly connect to the charger, the charger will not working and will not break.  
Low-voltage protection: when AC voltage >85V, <170V, the charger will working on 50% output condition, when AC voltage power <85V or >265V, the charger will be shut down. When the voltage recover the normal range, the charger will start working. Charger working too long protection: when the charger working time beyond 12 hours, the charger will be shut down.



### V. Outline dimension and mounting hole drawing



### VI. Interface instruction

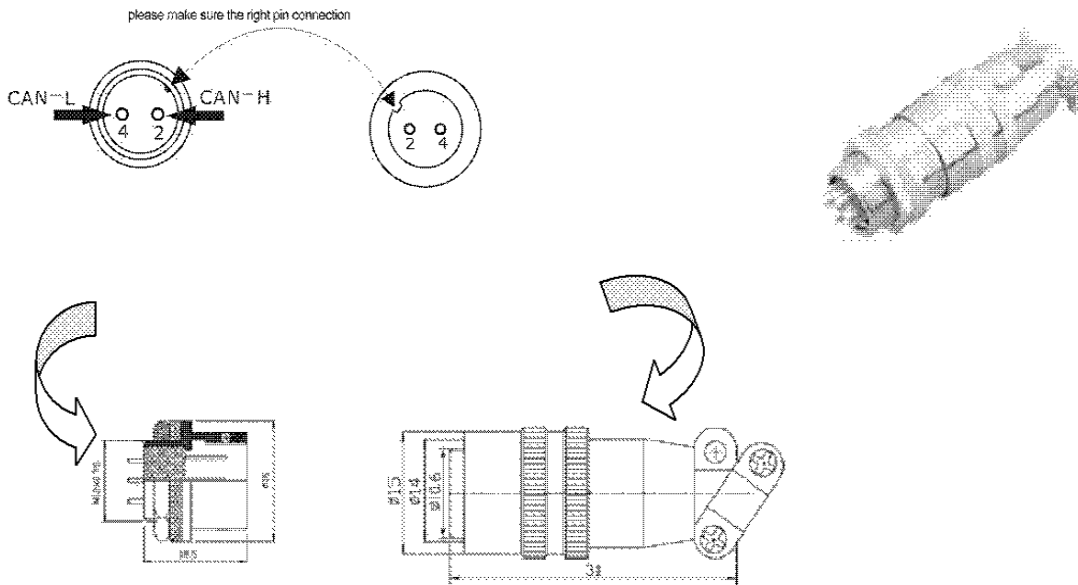




1. AC input standard 3\*2.0mm<sup>2</sup> 1.0~1.2M brown, blue, yellow-green wire.
2. DC output (standard 2\*4.0mm<sup>2</sup> 1.5~1.8M red, black output wire / 2\*6.0mm<sup>2</sup> 1.5~1.8M red, black output wire)
3. CAN communication interface

Socket model: XS12JK-2P/Y




CAN wiring connection diagram



Control mode instruction

BMS type	wiring	instruction
CAN BMS	CAN module	BMS send command via CAN to control
Battery protection PCB	relay	Using relay to switch charger to "ON" and "OFF"
	Enable voltage	Using 2~5V voltage signal to control the charger output vary from 0~100%

1. Charger working normally, the light display green.
2. This charging light has three color to display 3 statement:

Orange Flash	Charging > 30%	 > 30%
Orange light	Charging > 90%	 > 90%
Green light	Battery Full	 100%

malfunction:

Name	Light display		Solution
	Red light	Green light	
Battery faulty	All light	none	Check if battery wiring open circuit, or battery broken
Low-voltage	flash	none	Charger automatically recover
AC input fault	Flash one time	Flash one time	Check input voltage
Charger temperature un-normal	Flash twice time	Flash one time	After cooling, to see if it can be working, if not working, please depot repair

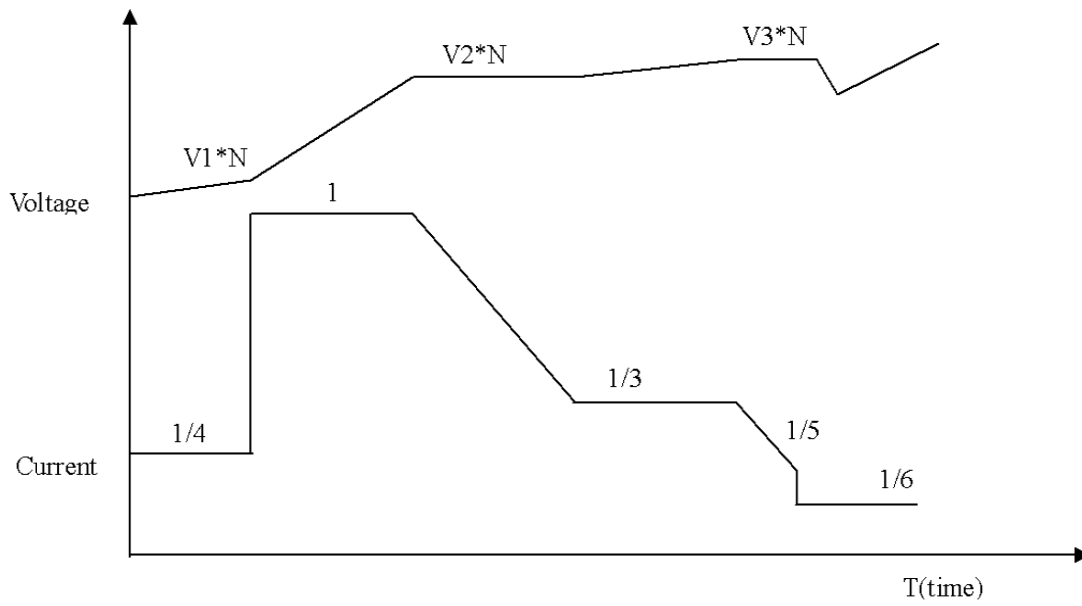


Relay faulty	Flash 3 time	Flash one time	Depot Repair
Charger faulty	Flash 4 time	Flash one time	Depot Repair
Charging overtime	Flash 5 time	Flash one time	Check if battery faulty
Charger communication faulty	Flash 6time	Flash one time	Check CAN port or wiring

### VII. Charging working mode setting

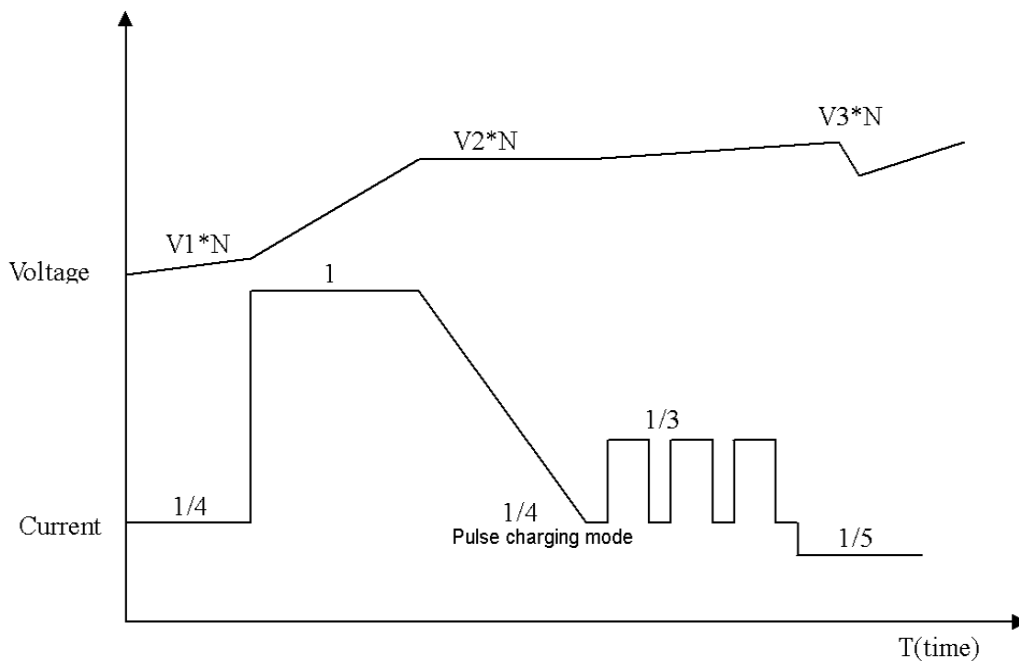
We have two working mode

1. Balance charging mode: there are pre-charging, constant-current charging, constant-voltage charging, constant charging, floating charging.



Balance charging mode

2. Pulse charging mode: there are 5 stage: pre-charging, constant current charging, constant voltage charging, pulse charging, floating charging.

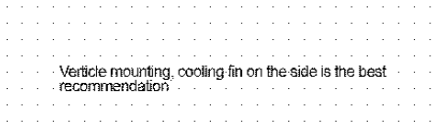




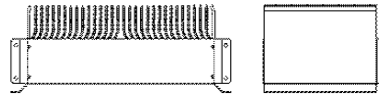
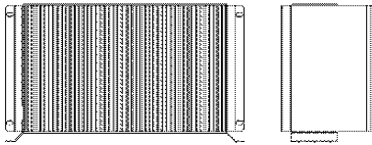
### VII. Notes

Our product is one type on-board mounting charger. Requesting mounted stably. For ensure its performance, it request to satisfy below condition:

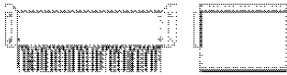
1. Please make sure AC input's GND wire with good earth connection.
2. Make sure if user's voltage is beyond this equipment's normal range. And the AC supply can bear this power equipment. Especially user matching the extended line , you need double check its power capacity is OK.
3. When on charging, please make sure this charger outside air fluency and no other heat source.
4. The recommending mounting mode.



Optional mounting mode:  
horizontal place and the cooling fin upwards



disabled state:  
the cooling fin adown



1. Before start charging, please connection the battery correctly. And then connect the AC supply. After stop charging, please shut down AC input first, cut off the DC plus in socket.
2. Due to environmental conditions different, please check if all the plug and socket are cracking or any unsafe fator.
3. Please don't disassemble this chargers.