

Warranty

The charger is warranted for a period of 1 year since delivery, including parts and labor, excluding the following cases:

1. Damage caused by opening the charger without company permission
2. Damage caused by transportation
3. Damage caused by damping
4. Damage caused by supply power over-shooting out of the range of specifications
5. Damage caused by pulling the input or output wires improperly
6. Under-charge of battery due to improper extension of input or output wires.
7. Damage caused by other improper operations.

Note: Specification changed without notice in advance


Water Proof with PFC Charger


144V/16A for Lead acid Battery


Please read this manual carefully before use the charger!


Any questions please contact seller.

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 AC power supply must work with well-connected earth line system. Be sure to install earth wire correctly.


 Prevent the charger suffering from raining.


 The output wires should be connected well with socket. In case of broken or loose, replace them with the same type of wires.


 Switch off the machine if abnormal sound or odor appears. Contact our service person.

 Please do not extend or alternate the output wire improperly.

 Please do not block the venting channel of the charger.

 Switch off and disconnect the charger before shifting

 The battery voltage must conform to the type of charger.

 Do not pull the output wires heavily in order to prevent damage.

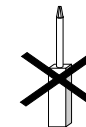
General Warning:



Up Put



No Drenching



No Dismantling



No dust

then use contact to control the relevant charging self-locking circuit to realize vehicles self-locking during charging. Ensure no short-circuit of 2-pin and 3-pin. Otherwise charger will not work correctly or will be damaged.

Attentions

To reduce the risk of electric shock, do not remove cover. Refer servicing to qualified service personnel. Disconnect the mains supply before connecting or disconnecting the links to the battery. Read the instruction manual carefully before use. Verify that the selected charge curve is suitable for the type of battery you have to re-charge.

Routine Maintenance

- 1 The charger should be mounted in place of good air flowing condition, out of the reach of rain. Clean and safe environment is suggested.
- 2 It is prohibited to open the case during charging.
- 3 Three-core AC power supply cable with enough current rating must be applied for input. The grounding wire must be connected well to the earth system.
- 4 It is prohibited for non-professional staff to open the case.
- 5 The charger should be packaged and store well in case of long time off duty.

Security guide



Warning: Alert the users for dangerous operation.



Attention: Remind the users of important operation.



Please don't open the charger to repair by yourself



Please do not change power supply wire yourself

Introduction

◆ Packaging list

Item	Charger	Input Wire	Output Wire	SPP connector	Manual
Amount	1	1	1	1	1

◆ Picture Overview



This is an intelligent battery charger, which adopts advanced high frequency switching mode power supply technology. The charging or recovery process is controlled intelligently by a high performance microprocessor. A 0.98 Power Factor minimizes utility surcharges, maximizes use of AC power, and makes it can operate with worldwide range AC input.

Fully sealed enclosure which provides improved reliability in demanding environments, and the advantages of light weight, compact size and long life design make the charger more competitive than any other battery chargers.

This charger has a memory to store 10 unique algorithms; users can switch between algorithms to choose the right curve for battery.

Specification

Voltage: AC 100V - AC 260V

AC Input Frequency: 50Hz /60Hz

Max AC Input current: 20A@120V, 6A@220V

Output isolated from AC mains

AC Power Factor: 0.98

Maximum Efficiency: 93%

DC Output Voltage: 144V

DC Output current max: 16A

Environmental Enclosure: IP46

Shock & Vibration: SAEJ1378

Operating Temperature: -40C - 55C

Storage Temperature: -40C - 100C

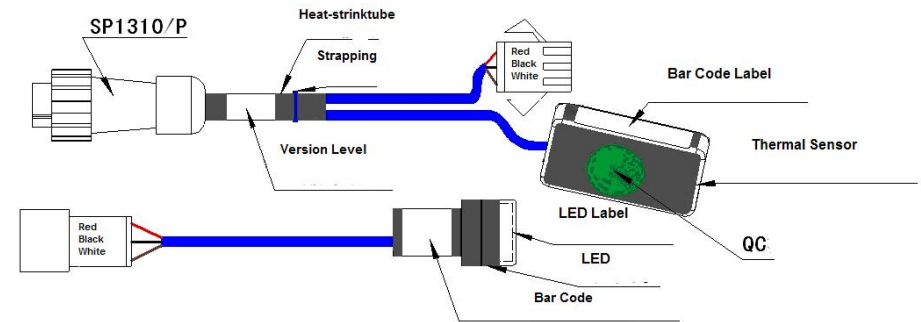
Dimensions 13.9" x 9.9" x6.67"

Net Weight:: 22.56lbs

LED Indicator

Red-Green flash (one second interval)	Battery Disconnected
Red flash (three seconds interval)	Repair Battery
Red flash (one second interval)	<80% Charge Indicator
Yellow flash (one second interval)	>80% Charge Indicator
Green flash (one second interval)	100% Charge Indicator

◆ Wiring Diagram:



Note: Thermal sensor and LED share the connector SP1310/P which pairs up with the charger's communication port (SP1312/S, near the charger's output terminal). Plug in the connectors before charging. Place the LED at the conveniently location. A thermal sensor should be fixed on the battery shell. Recommend to place it in middle position between two cells. Make sure the DC cord is connected to the battery properly.

Utilization of enable control function:

Connecting 1-pin and 3-pin by external relay contact, charger starts to work; Disconnect them, charger steps working, Charger will re-start to charge if reconnect 1-pin and 3-pin.

Opt coupler can also be used to control 1-pin and 3-pin and the maximum current across optocoupler is 1mA

Utilization of charging locking function:

When charger powers on, there is 11V output between 2-pin and 3-pin (maximum current must not exceed 50mA). Users can connect a relay coil G5V-2-12V on 2-pin and 3-pin,

Ten charging curves respectively represent different capacities of the Lead-acid battery. I4 means the equalizing current. Algorithms_200 means the procedure code from the manufacture.

◆ Charging Curves Setup(Curve 1--10)

1. The LED will flash red several times when AC power is connected, and then the LED will flash green once. The number of red flashes denotes the present curve. Eg. If the red flashes three times, it means the present curve is curve 3.
2. To choose another curve, please cut off the power supply first, then uncover the label, pressing the button while connecting the power. If you want to choose curve 3, release the button after the 3rd LED Flash. now the selected curve (e.g. curve 3) will be recorded in memory. If you want the charger to work with the selected curve(e.g. curve 3) cut off the power and reconnected it.
3. The charging curves which represent the charging modes for 10 different capacities for Lead-acid battery are customized at the factory before delivery according to customer demand .Please note the corresponding Lead-acid battery type must be the same

Connection Instruction of Thermal Sensor

Thermal sensor provides the real-time detection of the battery's temperature in the charging process to prevent charge-off or charge due

LED shows the states of the charging such as <80% or >80% or 100% and can be fitted onto the vehicle panels

Protection Features

1. **Thermal Self-Protection:** When the internal temperature of the charger exceeds 75°C, the charging current will reduce automatically. If exceeds 85°C, the charger will shutdown protectively. When the internal temperature drops, it will resume charging automatically.
2. **Short-circuit Protection:** When the charger encounters unexpected short circuit across the output, charging will automatically stop. When fault removes, the charger will re-start in 10 seconds.
3. **Input Low-voltage Protection:** When the input AC Voltage is lower than 85V, the charger will shutdown protectively and charger will automatically resume working after the voltage is normal again.
4. **Reverse Connection Protection:** When the battery is polarity reversed, the charger will disconnect the internal circuit and the battery, the charger will stop and avoid been damaged.

Alarms

	LED Flashing Sequence (One Cycle)	Indication
1	R G _ _ _ _ _	Wrong Battery
2	R G R _ _ _ _	Overcharged
3	R G R G _ _ _	Battery Overheated
4	R G R G R _ _	Incorrect AC Input Voltage
5	R G R G R G _	External Thermal Sensor Fault
6	R G R G R G R _	Communication Interface Fault
7	G R _ _ _ _ _	Charger Overheated
8	G R G _ _ _ _	Charger Relay Fault; Repair
9	G R G R _ _ _	Charger Fault; Repair

Note:

1. R—red G—green
2. “_” denotes one second stop
3. Above LED flashing sequence is one cycle; the LED will flash repeatedly when in fault.

◆ Solutions:

Wrong Battery: Verify the battery voltage range matching with charger or inspect the battery for damage
Overcharged: Confirm the battery capacity and the selected curve are matched or if the battery is defective

Battery Overheated: Check the temperature at external thermal sensor. If overheated, the charger will start the battery protection

Incorrect AC Input Voltage: Check that the AC input voltage is in accordance with the requirement

External Thermal Sensor Fault: Ensure connect the thermal sensor correctly

Communication Interface Fault: make sure the communication have been correctly connected or if it is damaged

Charger Overheated: Check if the ambient temperature is too high or the ventilation is smooth

Charger Relay Fault: Repair

Charger Itself Failure: Repair.

Installation & Safety Instructions

1. Preferably the charger should be installed in the vertical position with radiator fins vertical. A space of 10cm above ground should be open to ensure airflow. Never install in the vertical position with fins facing down.
2. Ensure all heat dissipating parts are not obstructed to avoid overheating. Do not put the battery charger near any heat sources. Make sure that free space around the charger is enough to provide adequate ventilation & easy cable socket access.

3. Ensure the consistency between the alternating supply voltage and the allowable voltage input of the charger. Please approach a retailer or local Power Supply Bureau for enquiry.
4. For safety and electromagnetic compatibility, the battery charger has a 3-prong plug that applies to the socket with grounded outlet.
5. If you are using an extension cord for alternating current power supply, make sure that it is affordable to the maximum input current.
6. The voltage-drop between the charger and connection wire of the battery should be as less than 1% of the battery voltage as it can. Otherwise, it affects charging effect possibly. Meanwhile, the diameter of the wire should satisfy the output current value.
7. The temperature sensor should be placed the area where has highest temperature.
8. Do not try to service the charger yourself. Opening the cover may expose you to shock or other hazards.
9. To avoid damaging the power cord, do not put anything on it or place it where it will be walked on. If the cord becomes damaged or frayed, replace it immediately

Charging Curves

144V Battery - 3KW				Charger			
(Algorithms-200)				Default Curve 6			
Curve	Voltage	Capacity	I4	Curve	Voltage	Capacity	I4
1	144V	74AH	0.5A	6	144V	184AH	1.2A
2	144V	89AH	0.6A	7	144V	221AH	1.4A
3	144V	107AH	0.7A	8	144V	266AH	1.7A
4	144V	128AH	0.8A	9	144V	319AH	2.0A
5	144V	154AH	1.0A	10	144V	382AH	2.4A