

Specification

Customer Name:

Product Name: waterproof Smart Charger

Model No : ZCH1-4820A

Date: 2022-1-17

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1. General

This series of chargers adopts a sealed structure design; it is suitable for lithium batteries, rich liquid lead-acid batteries, sealed (gel) lead-acid batteries, etc.; it can be used for battery packs such as electric motorcycles, cars, sightseeing cars, patrol cars, forklifts, etc. Float charging.

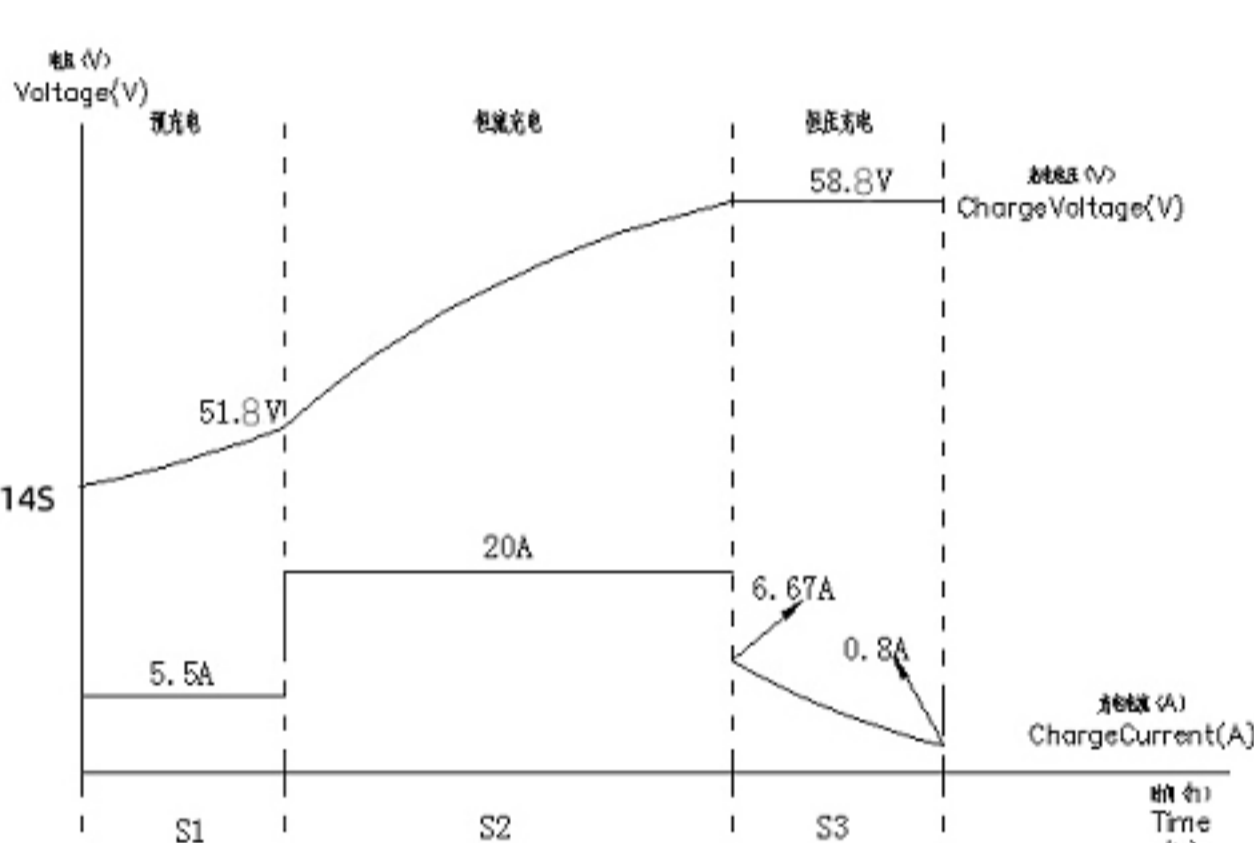
2. Basic Data

Model	Battery Nominal Voltage	Max. Output Voltage	Max. Output Current
ZCH1-4820A	48VDC	58.4VDC	20A

3. Features and Specifications

- ◆Input voltage: The design range of input voltage is AC110V.
- ◆High power factor (=0.98): AC input adopts active power factor correction (APFC), which has low heat generation and can achieve zero pollution to the power grid.
- ◆Fully enclosed potting process: The charger adopts a fully enclosed potting heat-conducting silica gel process, and the protection level can reach IP67, with good shock resistance, good heat dissipation performance and long service life.
- ◆High reliability: wide temperature range of working temperature: -40°C—+50°C, 100% full load aging test, soft switching technology; low power device switching loss, high efficiency of the whole machine (=87%), energy saving and power saving.
- ◆High safety: Waterproof, shockproof, acid mist, dustproof and reinforced isolation design make it safe to operate in harsh environments.

4. Charging Curve



1) The first stage of pre-charge charging: charge with a constant current of 5.5A and a limit voltage of 51.8V. When the voltage reaches 51.2V, it enters the second stage of charging. If the voltage does not reach 51.2V, it will switch to the second stage of charging for 10 minutes.

2) The second stage of constant current charging: charge with a constant current of 20A and a limited voltage of 58.4V. When the voltage reaches 58.4V, it enters the third stage of charging. If the voltage does not reach 58.4V, it will switch to the second stage of charging for 10 hours.

3) The third stage of constant voltage charging: charge at 58.4V with the highest constant voltage, and charge with a current limit of 6.67A. When the current drops to 0.8A, the charging ends. If the current drops below 0.8A, the battery will be turned off for 5 hours.

5. Protection Function

Protection Function	Description
Reverse connection protection	The charger can start at 0V to activate the battery. When the battery is connected reversely, the charger has no output and will not damage the charger
Short circuit protection	When the output is short-circuited, the charger will automatically turn off the output. When the fault is removed, reconnect the battery to resume charging
Overcurrent protection	The output current of the charger is stable, and there will be no over-current charging due to changes in the mains or environment
Temperature protection	When the internal temperature of the charger exceeds the internal set value, the charging current is automatically reduced
LED indicator	Provide LED indicator for charging process and fault display, which is more convenient for customers to use

6. Reliability Test

6.1 Insulation resistance

Test with a 1000V megohmmeter for 60 seconds, and the insulation resistance between the sample input terminal and the output terminal is not less than 50MΩ.

6.2 Withstand Voltage test

(1) Apply an AC 1500V (effective value) voltage between the sample input terminal and the shell for 60 seconds, and there is no abnormal phenomenon.

(2) Apply an AC 1500V (effective value) voltage between the sample output terminal and the shell for 60 seconds, and there is no abnormal phenomenon.

(3) Apply an AC 1500V (effective value) voltage between the sample input terminal and the output terminal for 60 seconds, and there is no abnormal phenomenon.

6.3 High Temperature Aging Experiment

The sample is placed in a constant temperature aging room at 40°C±3°C under the rated input voltage and full load. After working for 8 hours, it should work normally without mechanical damage and electrical performance failure.

6.4 Low Voltage Aging Yest

The sample is input at a low voltage of 180VAC. After 8 hours of full-load operation at room temperature the sample machine works normally, and its non-electrical performance is invalid.

6.5 High Voltage Aging Test

The sample is input at a high voltage of 260VAC. After 8 hours of full load operation at room temperature the sample machine works normally, and its non-electric performance is invalid.

6.6 Vibration Experiment

According to GB/T 2423.10-1995 test. The sample to be tested must undergo initial inspection and be fixed on the vibration table according to its working position. Under the condition of no power-on, the test shall be carried out according to the requirements of the sweep frequency vibration test.

Frequency Range (Hz)	Displacement Amplitude (mm)	Number of scan cycles on each axis	Demand
10~35~10	0.75	10	Fix the sample on the vibrating table according to the actual working installation method, and vibrate sequentially on three mutually perpendicular axes
35~55~35	0.35	10	

Inspection after the test:

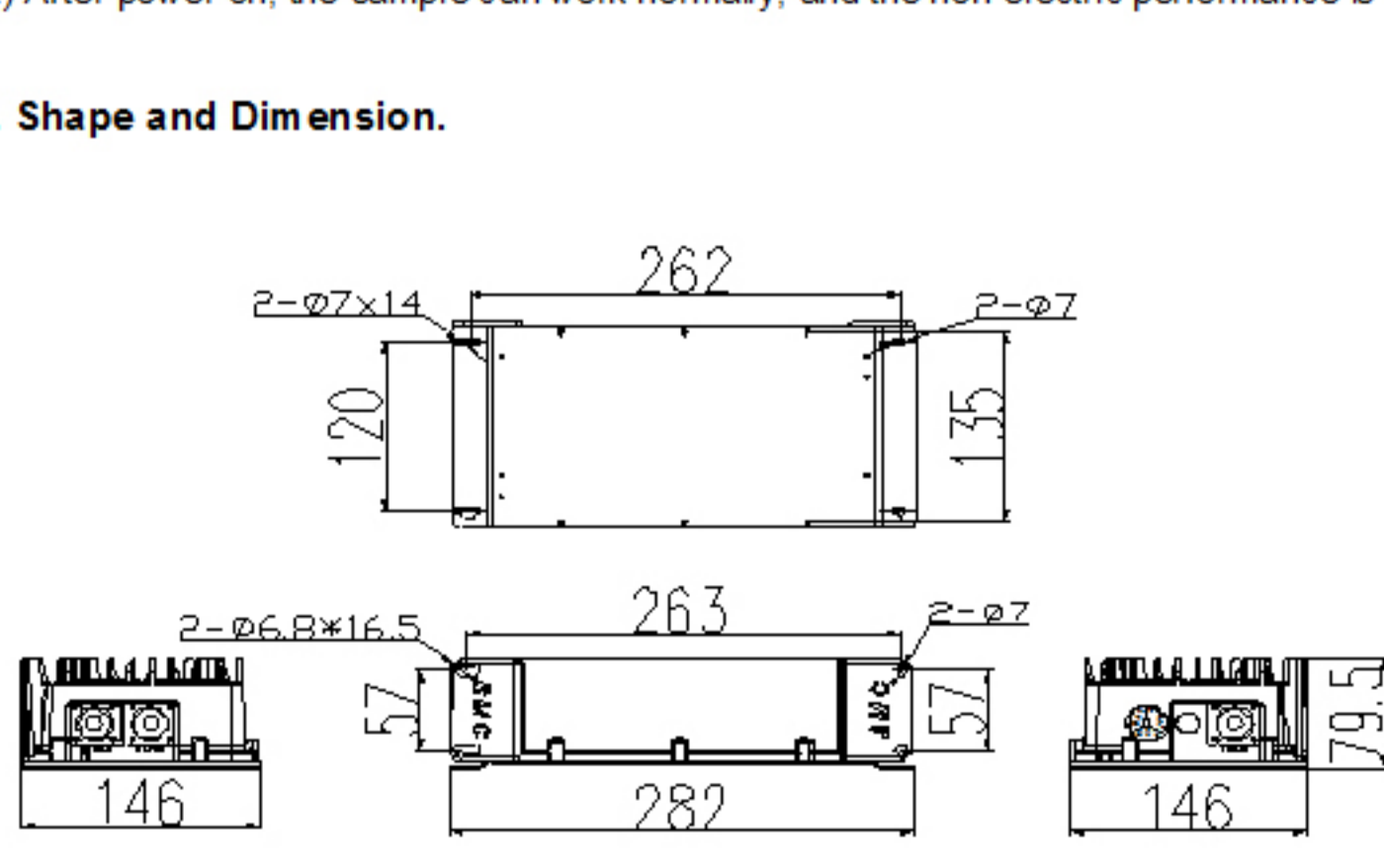
- The tested sample should have no appearance and mechanical structure damage.
- The sample can work normally after power-on, and the non-electric performance is invalid.

6.7 Drop Test

According to GB/T 2423.8-1995 drop test. Inspection after test:

- The tested sample should have no appearance and mechanical structure damage.
- After power-on, the sample can work normally, and the non-electric performance is invalid

7. Shape and Dimension.



8. LED Indicator Display

(1) No Alarm:

- Charging status : Red light flashes in 1s cycle
- SOC 80%-100% : Yellow light flashes in 1s cycle
- Charging finished : Green light always on

(2) There is an alarm:

- AC voltage low or high protection: the yellow light flashes in a period of 3s
- The battery is not connected fault: the red light flashes in a period of 3s, and the green light is off
- CPU temperature or transformer temperature protection: the green light flashes in a period of 3s, and the red light is off