

# specification

**customer name:**

**Product name: Smart battery charger**

**Product model: SMCZ2P-4825C**

**Date: 2022-5-16**

## 一、 summary

SMCZ2P Series 2KW charger is based on the national standard of charger, designed for electric vehicles. The product not only has the advantages of high efficiency, small volume, long life, and so on, the full sealing process has the protection level of IP66 can work safely, high reliability, complete protection function, is the ideal power supply for electric vehicle battery charging. The charger has built-in heat induction device which can work reliably under -40°C - + 50°C; with overheating protection function and can be automatically restored. Can ensure that you work in any complex environment without causing a failure.

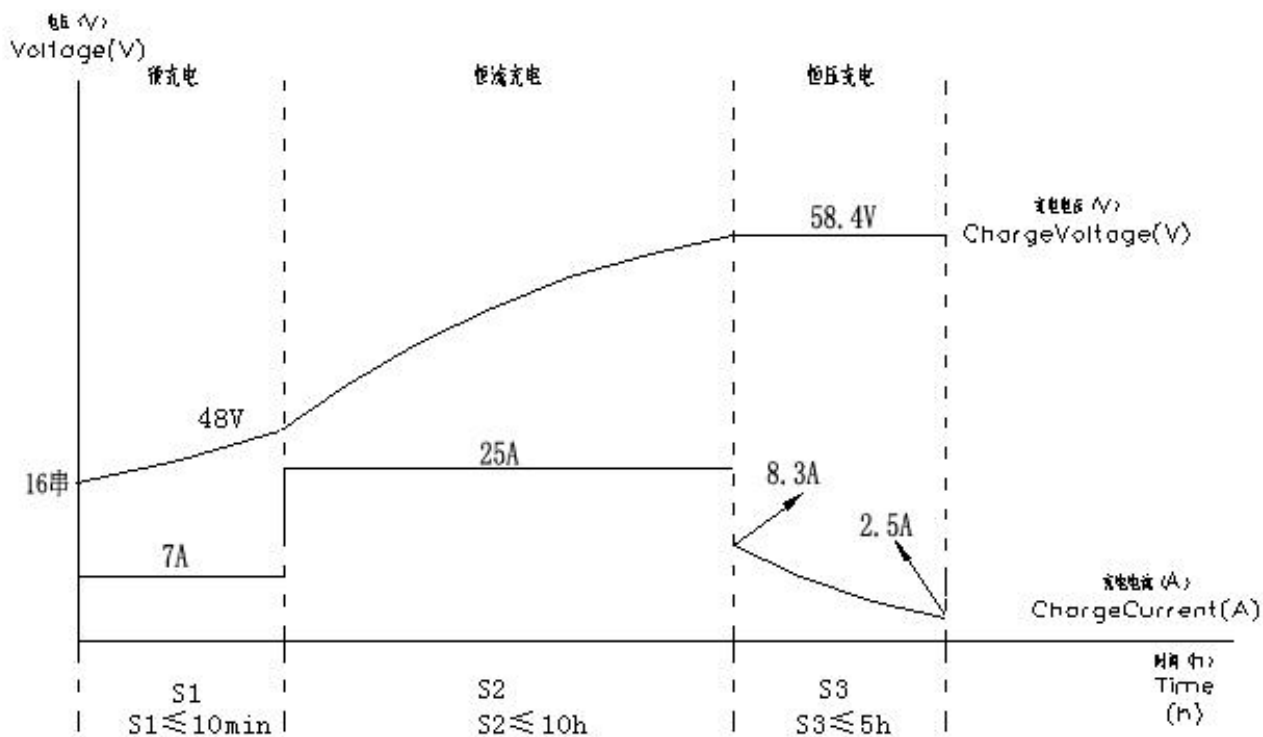
## 2. essential parameter

specifications and models	Battery pack rated voltage	maximum output voltage	maximum output current
SMCZ2P -4825C	48VDC	58.4VDC	25A

## 3. Technical parameters and characteristics

- ◆ Input voltage: the input voltage design range is AC90V~AC260V.
- ◆ High power factor (0.98): AC input adopts active power factor correction (APFC), with small heat generation and less pollution to the power grid.
- ◆ Fully closed glue filling process: the charger adopts fully closed sealing thermal conductive silicone process, the protection level can reach IP66, good earthquake resistance, good heat dissipation performance, long service life.
- ◆ High reliability: working temperature range of wide temperature level: -40°C - - + 50°C, 100% full load aging test, soft switching technology, high efficiency of the whole machine (up to 93%), energy saving and power saving.
- ◆ High safety: waterproof, shockproof, anti-acid fog, dustproof and enhanced isolation design, so that it operates safely in a harsh environment.

## 4. charging curve:



The first constant current charge: detects the battery voltage. When the battery voltage reaches 48V, turn to the second stage mode charge. If the voltage does not reach 48V, the timing 10min is forced to the second stage charge.

The second constant current charging: with the constant current 25A, the limit voltage 58.4V is charged. When the voltage reaches 58.4V, the third stage mode is charged. If the voltage fails to reach 58.4V, the second stage is transferred for 10h.

The third section of constant voltage charging: with the highest constant voltage control in 58.4V charging, limit current 10A current charging, current drops to 2.5A, the charging is over, if the current drops can not reach 2.5A timing for 5 hours.

## 5. defencive function

defencive function	functional description
Anti-connection protection	When the battery is connected to the reverse battery, the charger has no output and will not damage the charger
short-circuit protection	The charger automatically turns off the output when the output is short circuit. When the fault is removed, the charging can be restored only after reconnecting to the battery
overcurrent protection	The output current of the charger is stable, and there will be no overcurrent charging phenomenon due to the mains electricity or environmental changes
Temperature protection	When the internal temperature of the charger exceeds the internal setting value, the charging current automatically decreases, and when the

## High-frequency intelligent charger specifications

	temperature recovers, the charging will automatically resume
LED pilot lamp	Provide LED indicator light for charging process and fault display, better convenient for customers to use

### VI. Reliability test

#### 6-1. Insulation resistance

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

#### 6-2. Pressure withstand test

(1) AC 1500V (effective value) voltage between the sample input end and the shell for 60 seconds, with no abnormal phenomenon.

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

(3) The ac voltage of 1500V (effective value) voltage is added between the input end and the output end of the sample for 60 seconds, with no abnormal phenomenon.

#### 6-3, high-temperature aging experiment

At rated input voltage and full load, the sample is put into a 40°C ± 3°C thermostatic aging room. After 8 hours, it should work normally without mechanical damage and electrical performance failure.

#### 6-4. Low-pressure aging test

The sample was input at 90VAC at room temperature. After 8 hours of half load, the sample machine worked normally and no electrical performance failed.

#### 6-5. High-pressure aging test

The sample was input at 260VAC. After 8 hours at room temperature, the sample machine worked normally and no electrical performance failed.

#### 6-6, and the vibration experiments

Performed according to the GB / T 2423.10-1995 test. The test samples shall be subject to the initial test and fixed on the vibration table according to the working position. The test shall be conducted according to the sweep frequency vibration test requirements without power supply.

#### Sweep frequency vibration test requirements

frequency range (Hz)	displacement amplitude (mm)	Number of scan cycles on each axis	ask
10 ~ 35 ~ 10	0.75	10	The samples are fixed to the vibration table in the actual installation mode and vibrate successively on three axes vertical to each other
35 ~ 55 ~ 35	0.35	10	

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Test after the test: 1. The tested samples should have no appearance and mechanical structure damage.

2. After charging, the sample can work normally and fail without electrical performance.

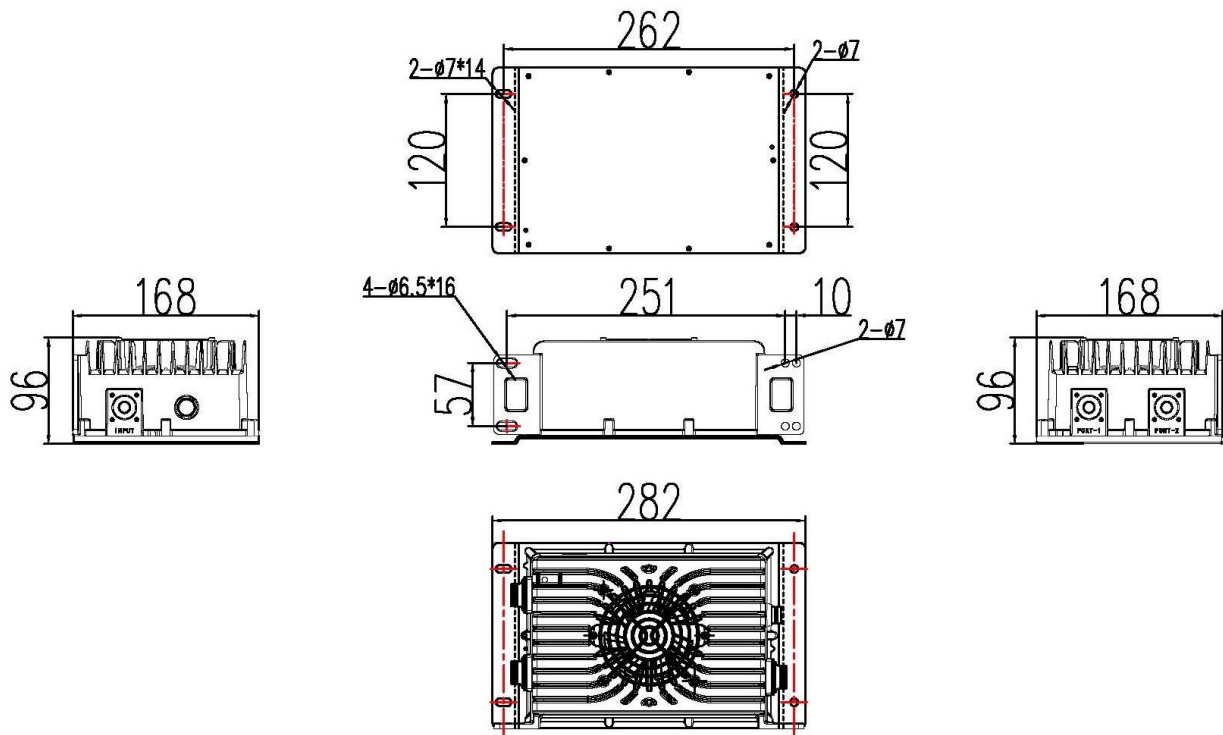
6 – 7, and the drop experiments

Perform as per the GB / T 2423.8-1995 drop test. Post-test inspection:

1. The tested samples shall have no appearance and mechanical structure damage.

2. After charging, the sample can work normally and fail without electrical performance.

## 7. Shape and external dimensions



## VIII. Definition of the indicator light status

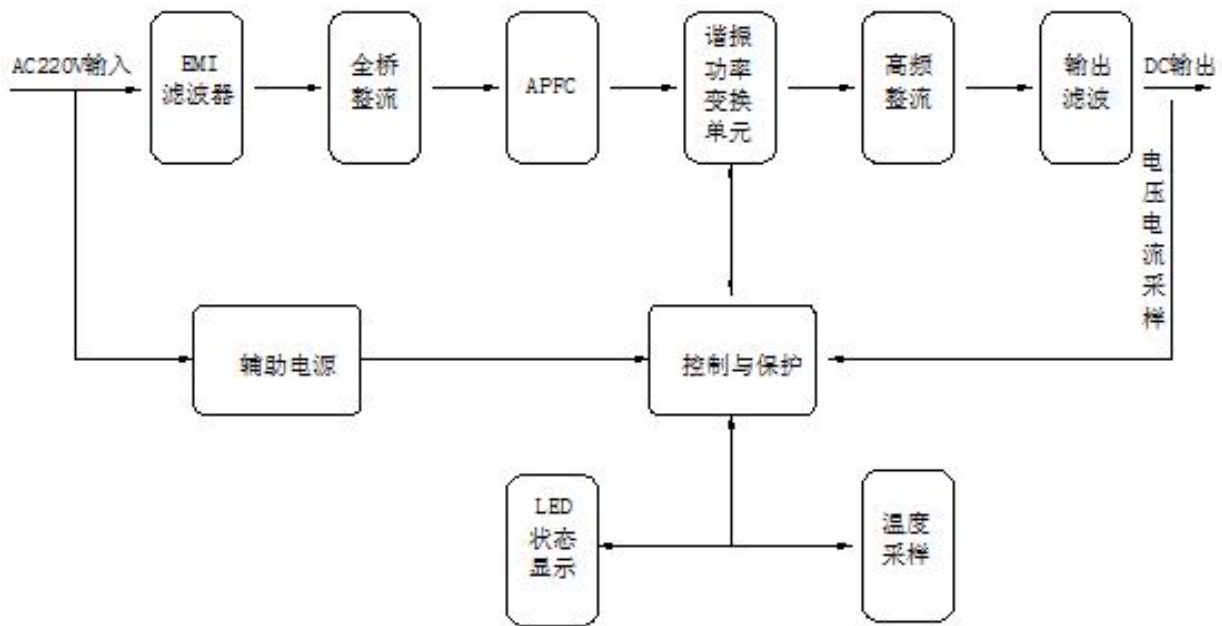
(1) alarm free:

1. charged state: The red light flashes for a 1s period, and the green light goes out
2. Heating status: The red light is always on, and the green light goes out
3. charge complete: The green light is always on, and the red light goes out

(2) There is an alarm:

- |   |                                    |
|---|------------------------------------|
| 1. Hardware failure or DC12V failure:                     | Red and green, _ , _ , _ , _       |
| 2. DC bus bar voltage fault:                              | Red, green, red, green, _ , _      |
| 3. AC low or high protection:                             | Red, green, red, green, red, _     |
| 4. Battery not connected fault:                           | Red, green, red, green, red, green |
| 5. Battery temperature protection:                        | Green and red, _ , _ , _ , _       |
| 6. CPU temperature or transformer temperature protection: | Green, red, and green, _ , _ , _   |
| 7. Output short-circuit protection:                       | Green, red, green, and red, _ , _  |

## IX. Box diagram of principle



## Ten, matters needing attention

10-1, the machine is equipped with grounding, to ensure good grounding during use, to avoid the shell with induction electricity, to ensure personal safety.

10-2. Do not place the charger in the rain position!

10-3, there are high pressure components in the machine, do not dismantle the charger without authorization!

10-4. Do not block the charger air inlet and air outlet!

10-5. The battery voltage must match the nominal voltage of the charger!

10-6. When moving the charger, please disconnect the power cord and the charging plug.

10-7, if you have any questions, you can call the company, our company will serve you wholeheartedly.