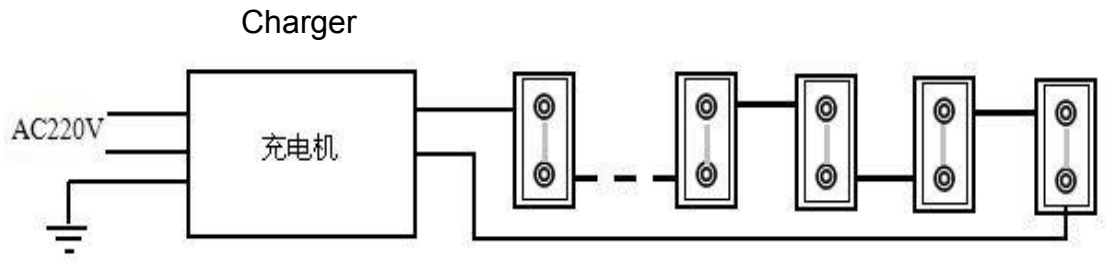
DCNE-Q1 charger series

instruction manual

ADD: Building 2, Section 1 Huafu Avenue, Tianfu New Direct, Chengdu 610000, China
Tel: +86-28-61098280 https://www.longrunobc.com

1. Overview

DCNE-Q1 series Fully enclosed frequency conversion pulse charger is a intelligent charger with small size, high efficiency, high protection level and high seismic level.The high-voltage DC output of the charger is directly connected to the positive and negative poles of the power battery, and the ac input is connected to the charging socket of the car body.The connection between the charger and the battery is shown below.



2. Parts product model

Product model	Rated output voltage	Rated output current
DCNE-Q1-4825	48V	25A
DCNE-Q1-4830	48V	30A
DCNE-Q1-6015	60V	15A
DCNE-Q1-6025	60V	25A
DCNE-Q1-6030	60V	30A
DCNE-Q1-7215	72V	15A
DCNE-Q1-7220	72V	20A
DCNE-Q1-7225	72V	25A
DCNE-Q1-6060	60V	60A
DCNE-Q1-7250	72V	50A

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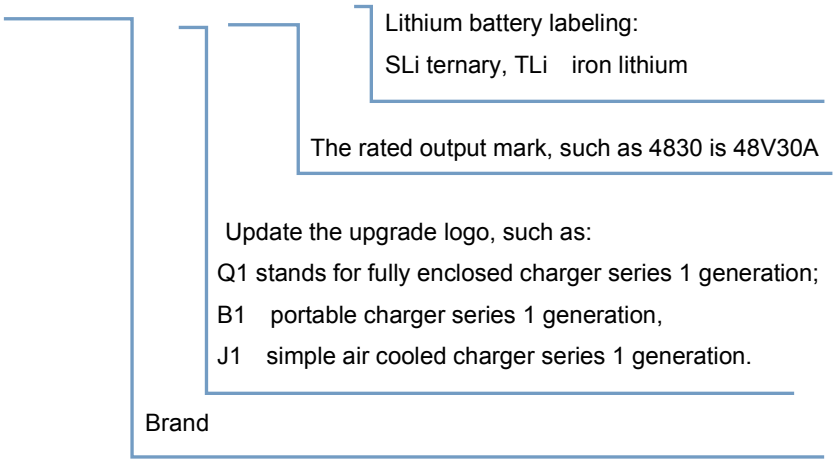
Model naming rules:

DCNE–Q1-4830SLi



3.Product features

a、 Up to 95% efficiency;
b、 Strong protection function;
c、 Wide range of operating temperatures;
d、 100% full load aging test;
e、Up to IP66 high protection level;
f、 The seismic rating of automobile;
g、 In the process of charging the battery for intelligent temperature compensation to maximize the battery life.

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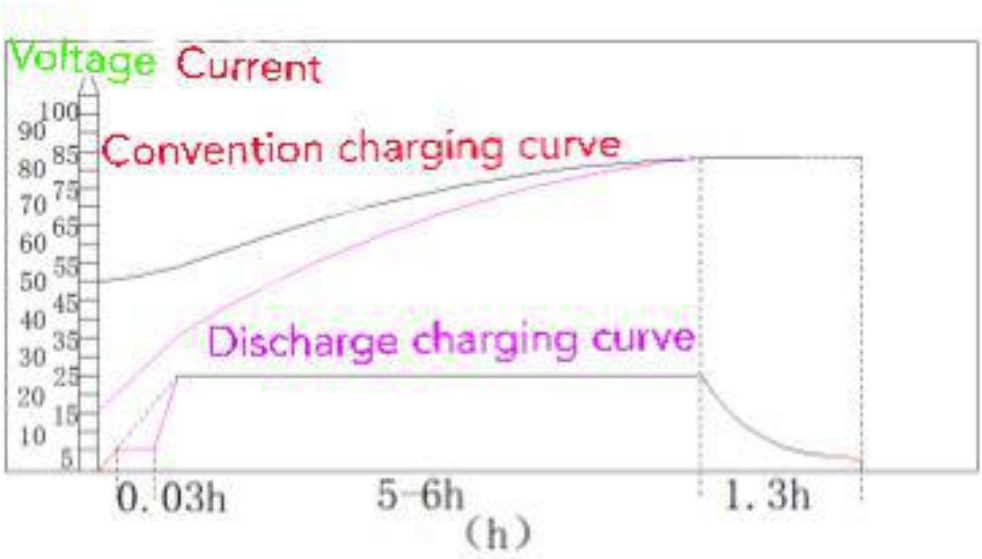
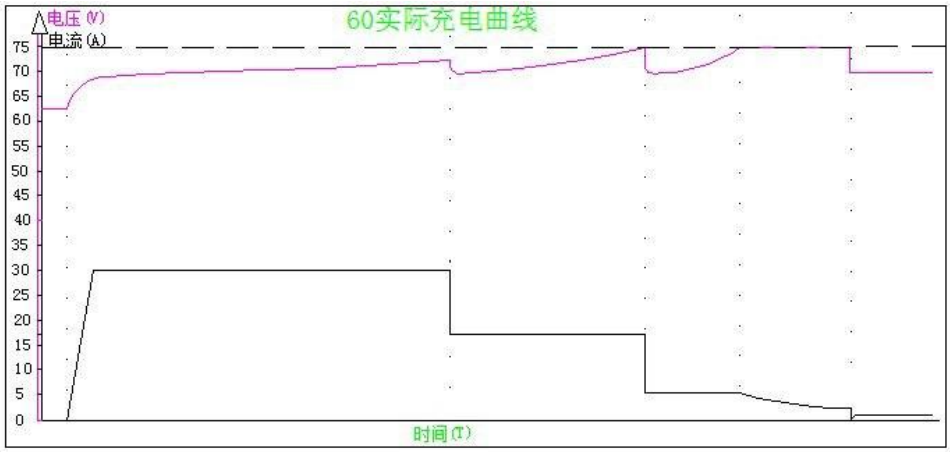
4.Product work curve and performance

The lithium battery charging curves:



The Lead acid batteries have different charging curves according to different battery brands and types.

Typical battery charging curve diagram:



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5. Reliabilit

Indicators	Data definition	Instructions
MTBF	150,000 H	Reliability is derived from device failure rate

6.Work environment

No.	Project	Technical indicators	Unit
1	Working temperature	- 20 — + 85	℃
2	Storage temperature	- 30 — + 95	℃
3	Relative humidity	5% — 95%	
4	cooling way	Air cooling	
5	the altitude	4500	m

7. Electrical characteristics

A, The input features

The allowable voltage range is 220V ± 20%, as shown :

The input voltage	I_N Input current I_N	Maximum output Power
185V	I_N ≤15A	2000W
220V	I_N≤12.5A	2000W

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265V	I_N≤10A	2000W

B, Output characteristic

Project	Rating	Error range
Maximum dc output power	2000W	/
The efficiency	≥ 95%	/

C, Protective properties

a) Output over voltage protection;

b) Output over current protection;

c) Output short circuit protection;

d) Output reverse protection;

e) Over temperature protection of charger;

f) Battery over temperature protection.

D, Wiring harness description (electric vehicle type)

Project	Wire core	Model of the connector On the harness	Model of the plug - in on harness	Instructions
Ac input	2.5mm²	DJ7031-4.8-11	DJ7031-4.8-21	The PE wire must be grounded
Dc output	5.5mm²	OT5.5-8	/	/
Expand functionality	0.3mm²	SP1310/P7	/	/

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E,Standby power consumption

Standby power consumption of charger is less than 5W.

F,Starting impulse current

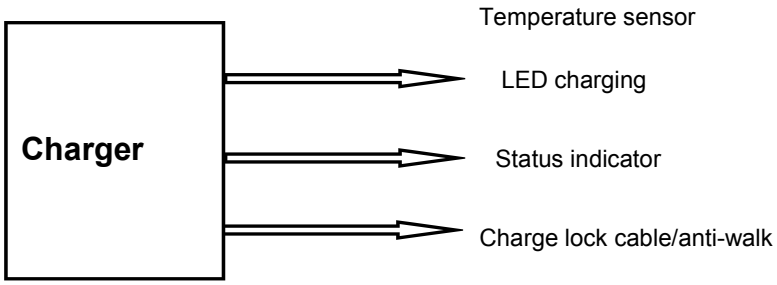
Starting impulse current of the charger is less than 12A.

G,Input frequency

Input voltage frequency fluctuation range.

The minimum	The typical	The highest
40Hz	50Hz/60Hz	70Hz

8.Expand functionality



A,Temperature sensor interface

The temperature sensor configured by the charger can detect the temperature of the battery and compensate the charging voltage. Meanwhile, the overheat protection function of the battery can be realized. It is suggested to fix the temperature sensor on one of the power saving pool with the highest temperature.

B,LED indicator light output interface

The charger provides three colors of red, yellow and green to indicate charging status and charging amount:

a) When the charge amount< 80%, the LED displays red;

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b) When the charge amount >80%,the LED displays yellow;

c) When the charging amount is 100%, the LED will show green color.

LED light label:LED indicator light is an important indicator to judge whether the charger works normally. The following tips will appear after the charger is powered:

a) LED red and green flashing alternately (one second apart) : no battery connection.

b)Red light flashing (every 3 seconds) : repair seriously undervoltage batteries.

c)Red light flashing (one second interval) : normally charged, the battery capacity is less than 80%.

d)Yellow light flashing (one second interval):battery capacity has reached more than 80%.

e)Green light flashing (one second interval) : battery capacity reaches 100%.

C,Charging lock signal

The charger provides a set of relay normally closed contacts as the signal output of charging lock. When the charger is not energized, the contacts are connected. When the charger is connected to ac, the contact is immediately disconnected. The rated parameters of the contact are 2A30VDC/ 0.6a110vDC / 0.6 A125VAC.

9.Safety features

A, Compression performance

The dielectric strength between the terminals to the ground (housing) and the circuits without electrical connection to each other should be

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able to withstand the test voltage, as shown in table 9 below. The test voltage is ac voltage (50 ~ 60) Hz. Corona, ionization, flashover or breakdown should not occur between the test terminals.

Input pair housing	2000V AC	1min	Leakage current ≤10mA
Input to output	2000V AC	1min	Leakage current ≤10mA
Output pair housing	500V AC	1min	Leakage current ≤10mA

B, Insulation resistance

Charger in the electric circuit and ground (shell), the insulation resistance between the environment temperature of (23 ± 2) ℃ and relative humidity is 80% ~ 90%, no less than 20 m Ω.

C, Contact current

When humans or animals touch one or more devices or accessible parts of devices, the current flowing through their bodies should not exceed the contact current sensing threshold required in GB/ T13870.1-2008. See the table for the contact current value of the charger.

Contact current class	Alternating current mA	Dc current mA
Limit	≤ 0.75	≤ 2

Grounding resistance is not greater than 0.1 Ω. Ground conductors shall be of yellow/green double colour lines.

10. Acoustic noise

Noise	Conditions
≤ 65dB	Distance of 1.5 m

11. Electromagnetic compatibility characteristics

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The electromagnetic compatibility of the charger meets the requirement of 11.3 in GB/T 18487.3-2001 Electromagnetic environmental testing requirements.

12. Protection grade

Standard	Level
GB4208-2008	IP65

13.Cooling way

Natural wind cooling, fan cooling

14.Product outline size, weight

Maximum size(2kw): length 280mm* width 152mm* height 115mm

Gross weight: 5 kg

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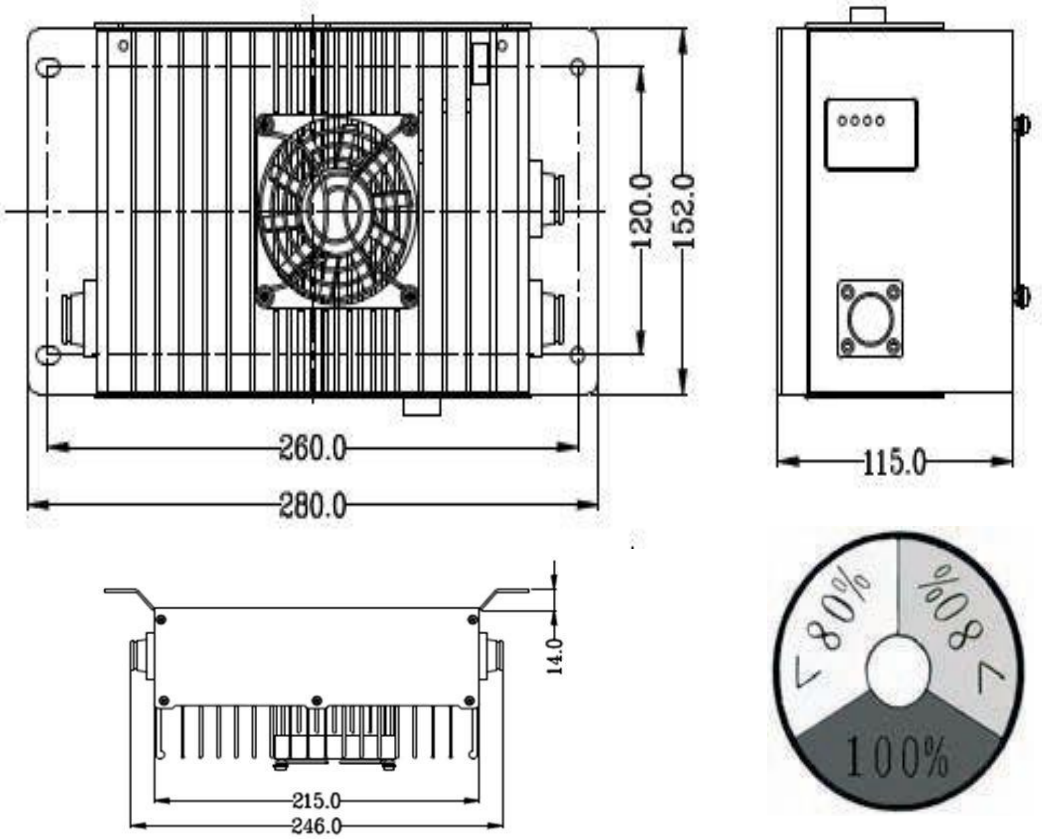

15.The installation

A, The installation plate of the charger should be fixed on the horizontal surface of the vehicle, and the radiator should be kept vertical. More than 10 cm of space should be left around the radiator of the charger to ensure good heat dissipation.

B, Ensure that all air vents are not blocked, and the hot air generated by the charger during work should be discharged out of the car unobstructed. The space should not be sealed or semi-sealed, in case the temperature is too high to affect the normal work of the charger.

C, Do not put the charger near the source of heat. There must be enough space beside the charger to ensure the convenience of ventilation and joint

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insertion, and also consider dust prevention, so as to avoid excessive accumulation of dust on the surface of the charger and affect the cooling effect of the charger.

D, The installation location of the charger should be considered waterproof. Please pay attention to avoid water splashing on the wheel and water dripping from other parts, such as condenser, so as to avoid liquid slowly infiltrating into the charger and affecting the normal operation of the charger.

E, Ensure that the ac supply voltage and current are consistent with the allowed input voltage and current of the charger. If in doubt, contact the supplier or consult your local power supply bureau.

F, For safety and electromagnetic adaptability, the charger is equipped with a three-hole plug, suitable for socket with grounding wire.

G, If the ac power supply needs to use the extension cord, we must ensure that the extension cord can withstand the maximum input current of the charger, and make the extension cord length within a certain limit, so as not to affect the normal work of the charger.

H, The voltage drop of the connecting wire between the charger and the battery can be less than 1% of the battery voltage at the maximum current current, otherwise the charging effect may be affected, and the diameter of the wire should meet the output current value.

I, If the battery voltage is to be compensated, note that the temperature sensor must be placed where the battery temperature is highest, such as in the central area between the two batteries.

J, If the battery is found to be working abnormally or damaged, please unplug the power connector and charger interface immediately and contact the supplier.

K, It is forbidden to disassemble the charger by yourself. Opening the cover

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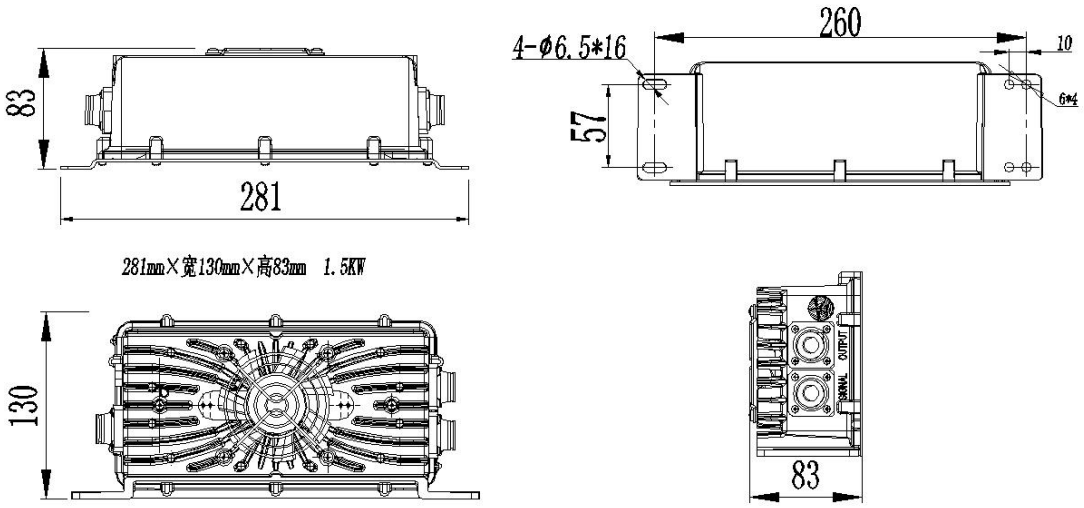
of the charger at will may lead to electric shock or other injuries.

L, In order to prevent damage to the harness of the charger, do not place objects on the harness of the charger or place the harness where it is easy to be stepped on. If the harness is worn or damaged, please replace it immediately.



Horizontal mounting size within Q1-1.5KW

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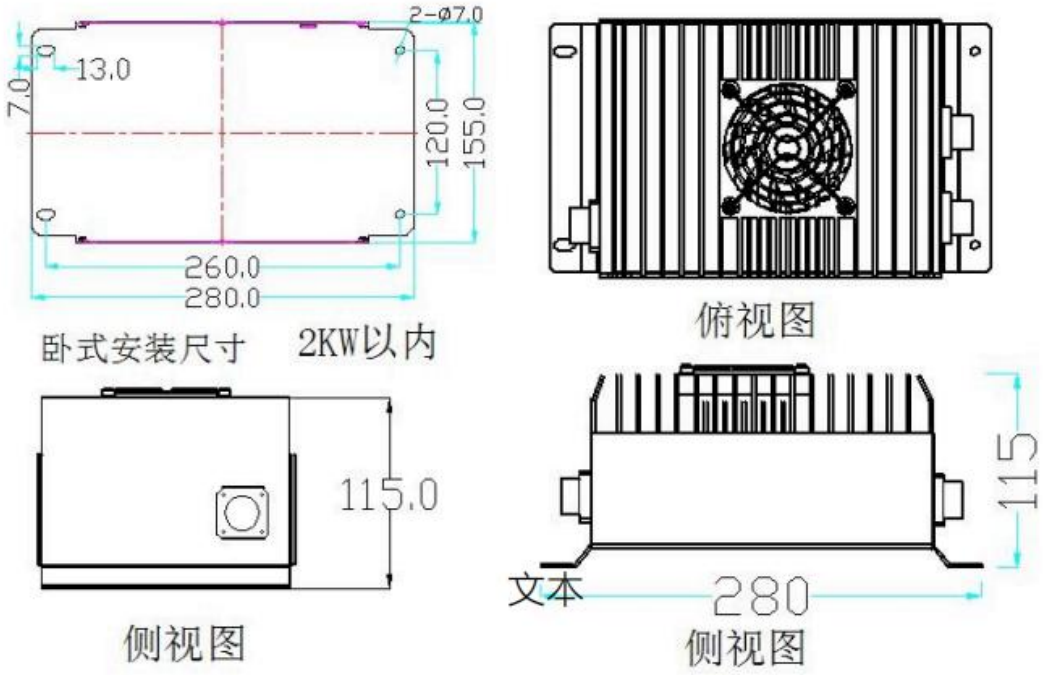
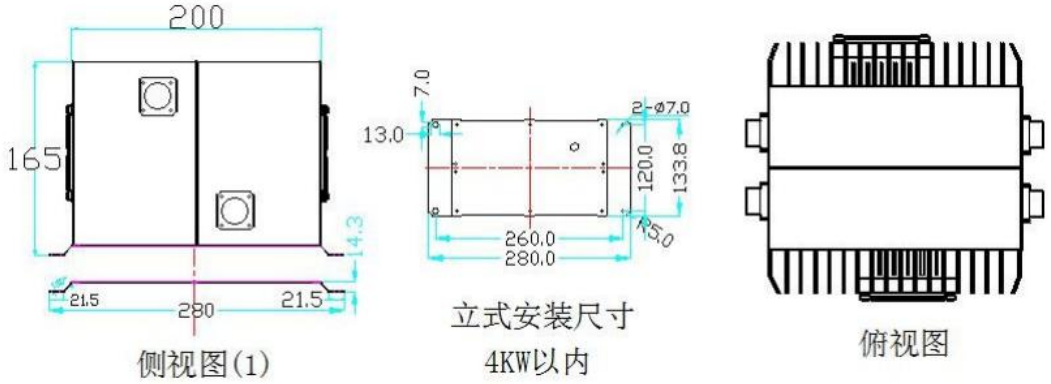


Horizontal mounting size within Q1-2KW



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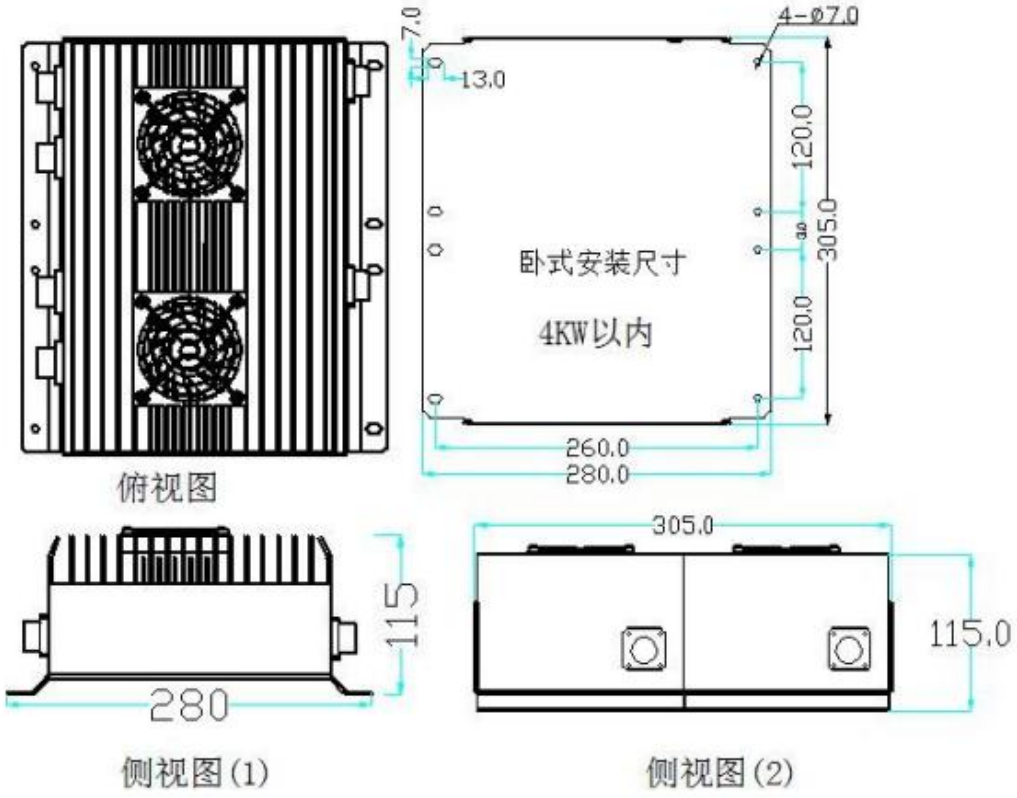
Vertical mounting size within Q1-4KW



Horizontal mounting size within Q1-4KW

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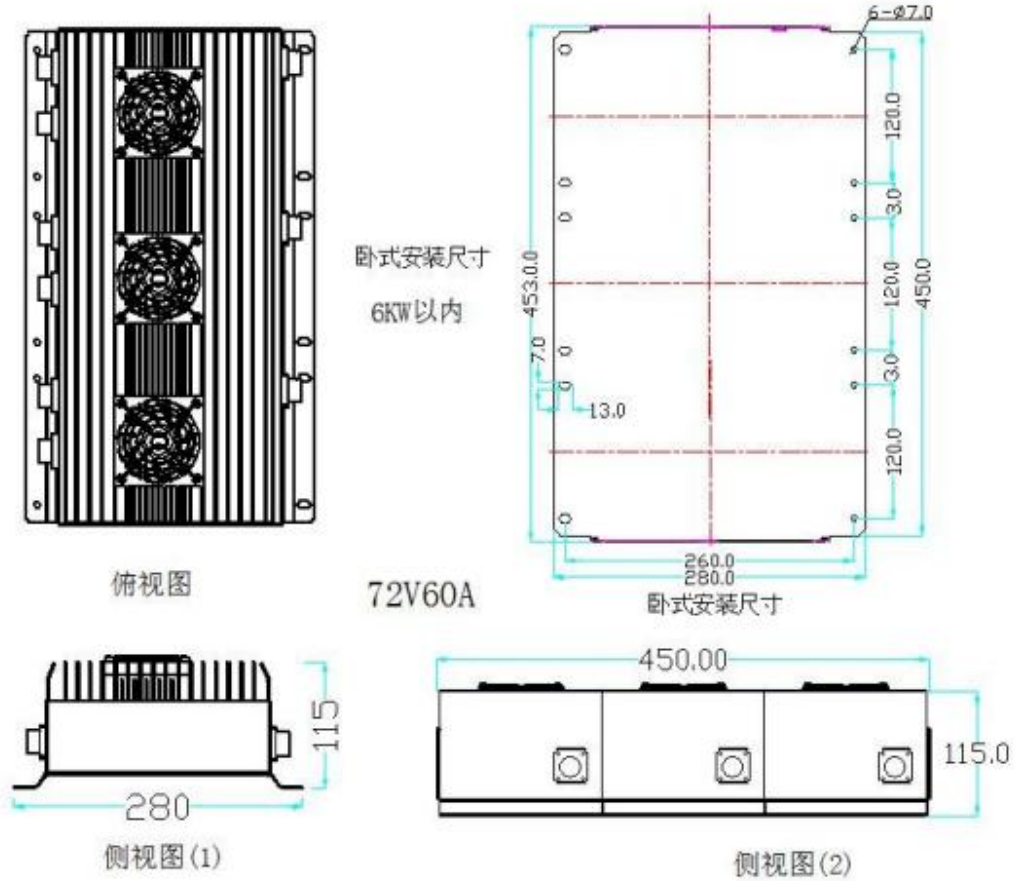

Horizontal mounting size within Q1-6KW

16. Packaging, transportation, storage

A, Packing

Product name, model, specification, name of manufacturer are printed on the label . The box contains the product manual.

B, Transport

This packing is suitable for transportation by car, ship, plane, train, etc

During transportation, the product shall not be subjected to violent mechanical impact, exposure to the sun, rain, or upside down. During loading and unloading, the product shall be moved and put gently, and

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shall be strictly protected from throwing, tumbling and heavy weight.

C,The store

When this product is not used, should put in packing, storage environment temperature and relative humidity shall comply with the requirements of the product, there should be no corrosive gas or products of the warehouse, and there is no strong mechanical shock, impact and strong magnetic field effect, can not put it upside down and lie, and to avoid mechanical impact and pressure, packing should be 20 cm high from the ground, don't let the water immersion, if the storage time is too long (more than one year) should be the professional test after just can use.

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