Energy storage and charging system user manual

Product Model	65KWH-60KW
client code	
Customer confirmation	
date	2024-1-17

approved	audited	drafted

T-Power Pty Ltd ABN: 65 651 645 948
Address: Factory 1, 7 Technology Circuit, Hallam, VIC 3803, Australia
Direct: (+61) 03 8759 5876 Mobile: (+61) 423 081 808
Email: info@t-power.com.au Web: www.t-power.com.au

Foreword

We have been working hard to plan, in order to be able to make you safer, more confident to use the lowest price, the best products! Because of your attention, our efforts to be verified by you!

This manual introduces information related to the use of energy storage and charging systems, including functions and features, performance specifications, form and structure, and modes of operation. It also provides installation instructions, use and operation, maintenance management, and transport and storage.

Directory

T-Power Pty Ltd ABN: 65 651 645 948
Address: Factory 1, 7 Technology Circuit, Hallam, VIC 3803, Australia
Direct: (+61) 03 8759 5876 Mobile: (+61) 423 081 808
Email: info@t-power.com.au Web: www.t-power.com.au

Chapter I. Safety instructions

Safety Precautions:

This chapter describes safety signs and safety precautions. Read this chapter carefully before performing any operations on this equipment to avoid endangering personal safety or damaging the equipment due to unsafe operation.

1.1 Description of symbols

The safety symbols referenced in this manual are shown in Figure 1.1-1. These symbols are used to prompt the user to observe safety matters when performing equipment installation, operation and maintenance.

Symbols and Meanings	
Symbol	Instructions
	Pay attention to safety
	Danger！ High Voltage
	Alternating current (ac)
	Direct current (dc)
	Protect the earth
	Repeated cycle
	Keep clean and do not place with debris

Figure 1.1-1 Safety Conformity and Meaning

1.2 Precautions

1. During installation, operation and maintenance of the equipment, the relevant safety norms and related operating procedures must be observed, otherwise personal safety and equipment damage may be endangered. The safety precautions mentioned in the manual are only intended as a supplement to the local safety norms.
2. The Company shall not be liable for any violation of the General Safety

Operating Requirements or for any violation of the safety standards for the design, production and use of the equipment.

Precautions for use

1. Please read and keep this manual carefully.
2. Observe all warning labels on the Energy Storage Charging System and do not remove or damage the warning labels.
3. It is strictly prohibited to immerse the energy storage and charging system in seawater or water, and when not in use, it should be placed in a cool and dry environment.
4. It is prohibited to use or leave the energy storage charging system next to sources of heat, such as fires, heaters, etc. Do not expose the energy storage charging system to fire, as the lithium battery may explode.
5. It is forbidden to knock or throw or step on the energy storage and charging system.

Attention:

1. Do not use the energy storage and charging system at high temperatures, otherwise the energy storage and charging system may be damaged.

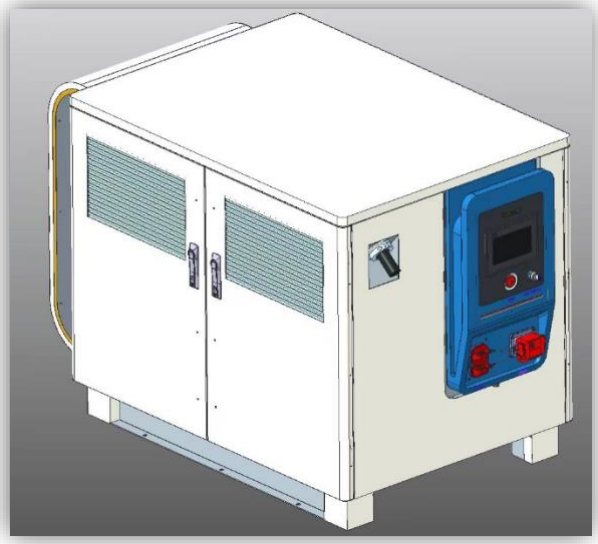
   The system overheats, catches fire or fails to function or has a reduced life span.
2. It is forbidden to use it in the place of strong static electricity and strong magnetic field, otherwise it is easy to destroy the safety protection device of the energy storage and charging system, which will bring unsafe hidden danger.
3. If the energy storage and charging system is dirty, wipe it with a dry cloth before use, otherwise it may lead to poor contact and malfunction.

Chapter II. Products

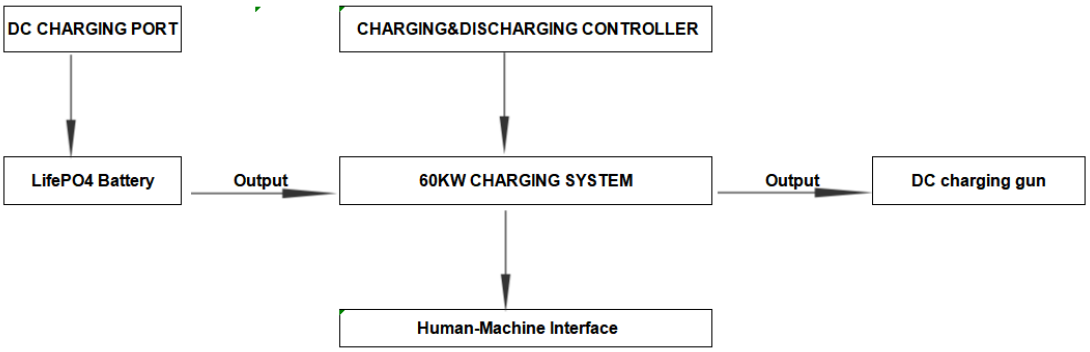
2.1 Product overview

This series of energy storage charging system is an energy storage charging power supply equipment with high charging efficiency and large energy storage capacity, which is mainly used for new energy vehicle emergency power replenishment, road rescue, etc. It has built-in 65KWh lithium iron phosphate battery, 60KW charging module, and output voltage DC200~1000V. It has functions of automatic charging, status display, charging protection, and 4G data wireless transmission.

2.2 Product Appearance



2.3 System topology diagram



Chapter III. Installation and use

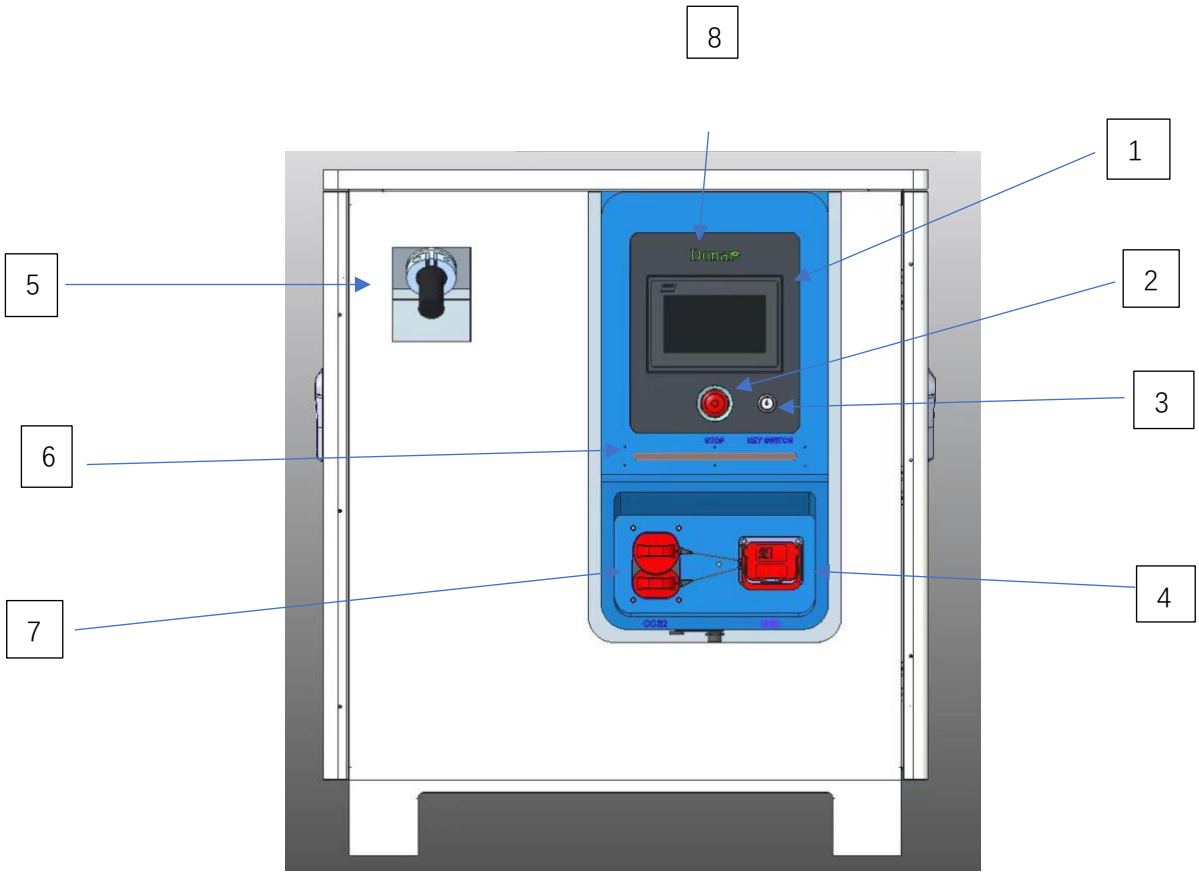
3.1 Unpacking and inspection

1. After unpacking, visually inspect the appearance of the energy storage charging equipment to check that it has not been damaged by collisions during transport.
2. Check the completeness of the random accessories against the list of shipped accessories.
3. Please contact the manufacturer immediately if you find any shipping damage or missing random accessories.

3.2 Installation

1. The area where the energy storage and charging system is placed needs to be well ventilated, away from water, flammable gases, corrosive agents and other hazardous materials, and the installation environment should be in accordance with the requirements of the product specifications.
2. It should not be placed on its side, squeezed or stepped on.
3. The energy storage and charging system can be used in the environment of -30℃ ~ 60℃, low temperature or rainy days may have water droplets condensation or water phenomenon, must pay attention to the waterproof, otherwise there is a risk of battery short circuit.

3.3 Interface and Functional Description



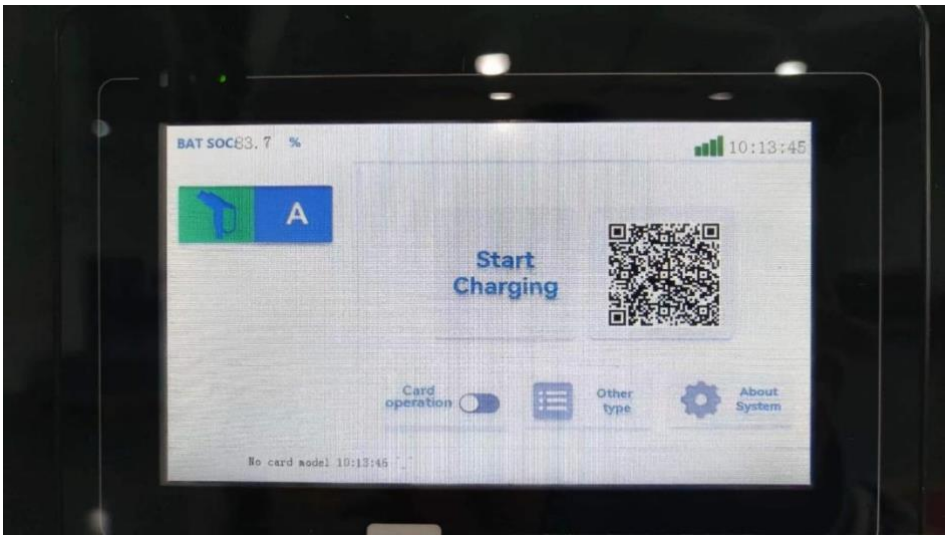
Energy Storage Battery System - Front Panel

SN	printing	Sub-item	Function description
1	/	touchscreen	Human-machine interface with touch operation by the user
2	STOP	Equipment emergency stop switch	Emergency stop button during external charging work of the storage and charging equipment; press for emergency stop state, rotate to the right to restore the
3	KEY SWITCH	key switch	Storage and charging system power-up and key master switch
4	MSD	MSD	Equipment maintenance switch

5	/	charging gun	DC Charging Gun
6	/	Charging Indicator	Yellow light charging, red light fault
7	CCS2	European Standard Charging Cradle	Support the national standard 2011/2015 protocol charging interface
8	/	logo	

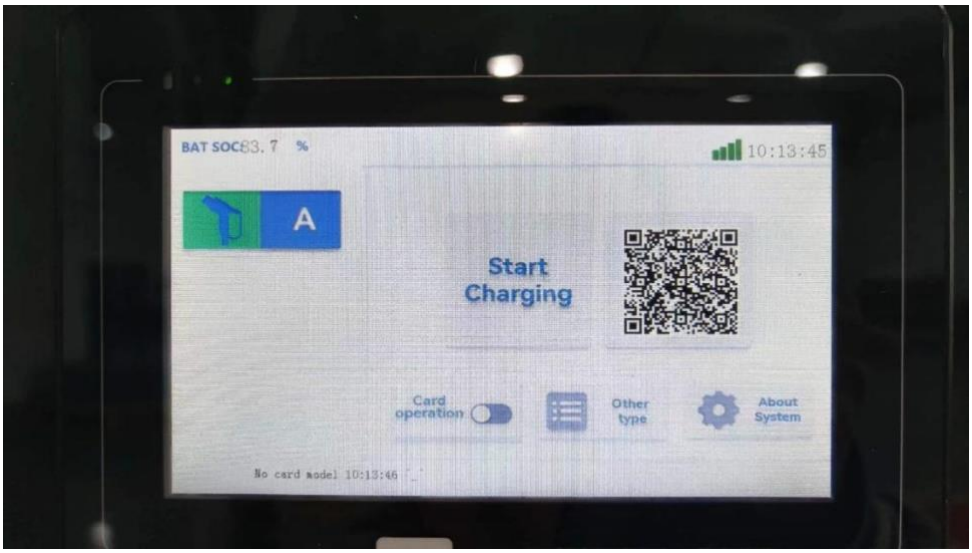
3.4 Human-computer interaction LED touch display interface

1. The charging system is in standby mode, as shown in the following figure.



standby mode

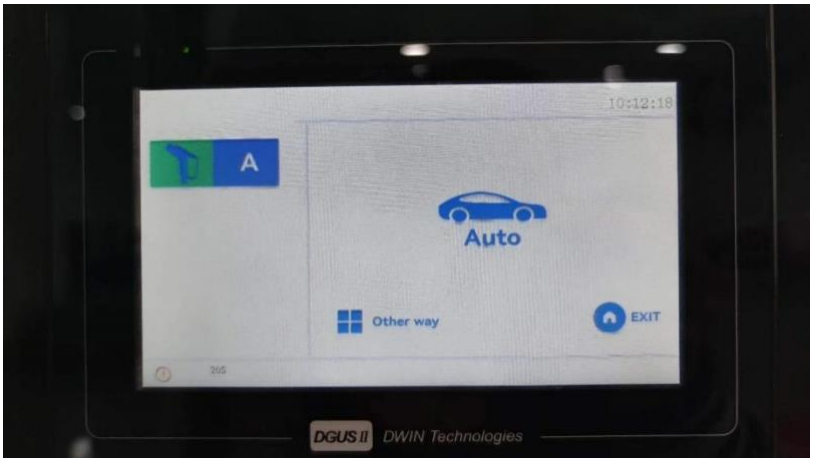
2. After the charging gun is connected to the electric vehicle, the display interface of 'Vehicle Gun Connected: Charging Indicator Yellow Light is always on' is shown in the figure below:



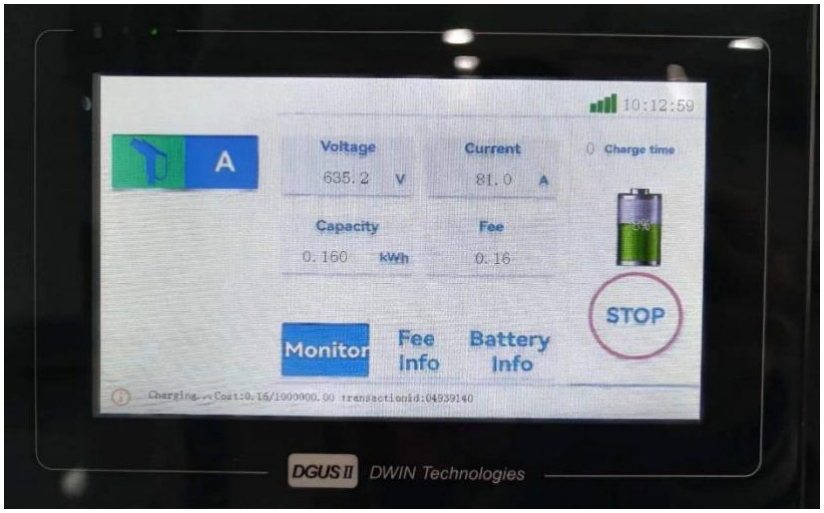
Charging Connection Interface

1. Confirm that the charging gun has been connected (click the mode operation step), the display interface jumps to the information interface of charging, as shown in the following figure:
   a. Click on "Start Charging";
   b. Click Charge Auto;

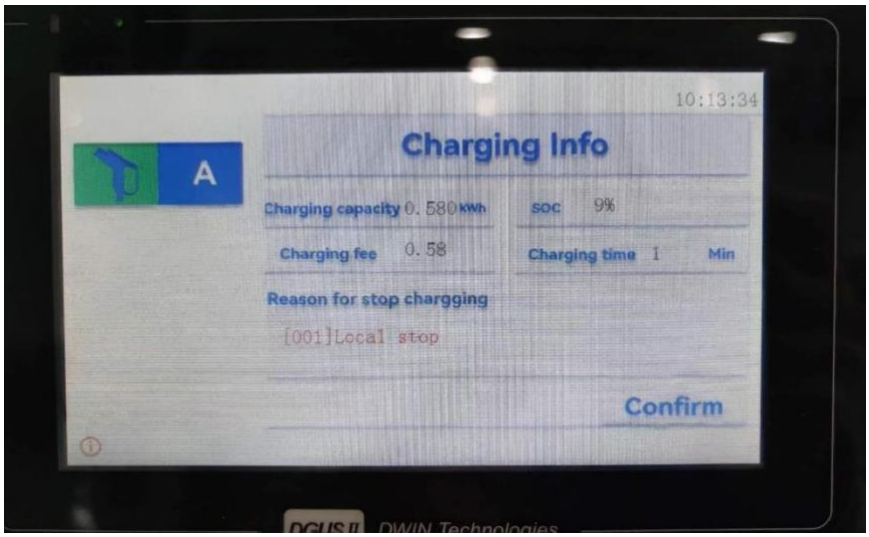
Click on "Auto"



T-Power Pty Ltd ABN: 65 651 645 948
Address: Factory 1, 7 Technology Circuit, Hallam, VIC 3803, Australia
Direct: (+61) 03 8759 5876 Mobile: (+61) 423 081 808
Email: info@t-power.com.au Web: www.t-power.com.au



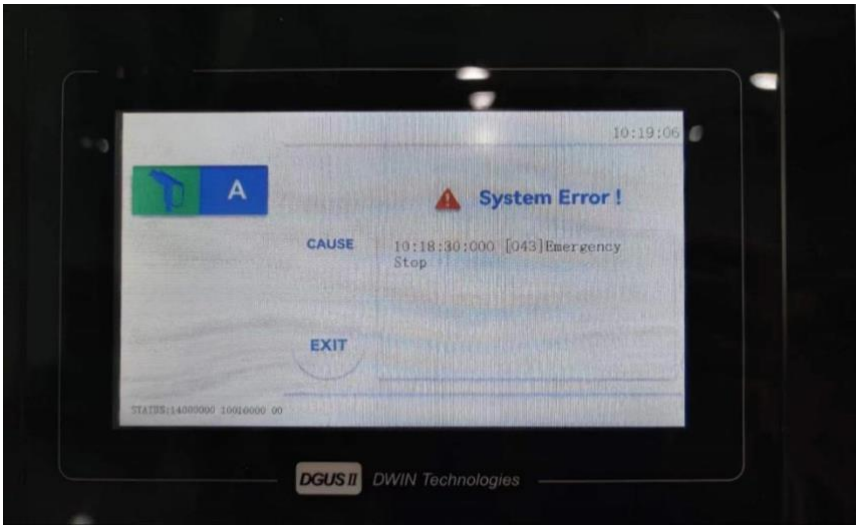
Charging information screen



Charge Settlement Page

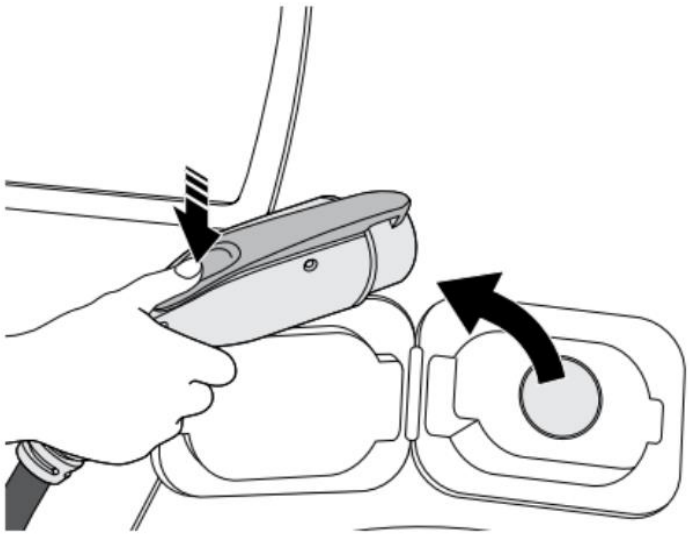
T-Power Pty Ltd ABN: 65 651 645 948
Address: Factory 1, 7 Technology Circuit, Hallam, VIC 3803, Australia
Direct: (+61) 03 8759 5876 Mobile: (+61) 423 081 808
Email: info@t-power.com.au Web: www.t-power.com.au

2. Emergency stop, press the emergency stop button, the charging indicator lights up red, the display prompts "Fault! Can be queried through the 'Alarm Record', as shown in the figure below:



Alarms page

1. End charging, the charger indicator yellow light off, pull out the charging gun can be, the vehicle end of the gun as shown in the following figure:



Vehicle-side draw diagram

Chapter IV. Maintenance and servicing

4.1 Routine maintenance

1. Operating ambient temperature range: -30℃ ~ 60℃;
2. Avoid wet, potentially waterlogged locations;
3. The energy storage and charging system is stored, and if it has not been used for six months, the storage battery needs to be replenished with electricity once;
4. Before use, you need to check whether there is any damage to the output and input ports of the energy storage and charging system, and only use it after everything is normal;

4.2 Maintenance of the energy storage charging system

1. Keep the exterior of the energy storage and charging system and the working environment in a clean and dry condition.
2. It is prohibited to use organic solvents such as banana water, petrol, alcohol or other organic solvents to scrub the energy storage and charging system.
3. The use of the energy storage charging system should try to keep the ambient temperature between -30℃~60℃.
4. If the energy storage charging system is not used for a long period of time, it is recommended that the storage battery be charged and discharged one cycle every three months.

Chapter 5 Product Specifications Parameters

5.1 Electrical parameters

SN	description	parametric	remark
Parameters of single cell			

1.	Battery Type	Square Lithium Iron Phosphate	
2.	Rated voltage/capacity	614.4V105Ah	
3.	voltage range	2.00V-3.65V	
4.	weights	1980±30G	
5.	sizes	1060*630*240mm	Width-Thickness-Height
6.	operating temperature	Discharge -30°C to +60°C Charging -30°Cto+60°C	
7.	Number of cycles	>3500 cycles (1C cycles, ambient temperature, capacity retention: 80%)	
Battery Pack parameters			
1.	Models	614.4V105Ah	
2.	total power	64.51KW	
3.	Maximum continuous charging current	105A	The BMS system intelligently adjusts according to different

T-Power Pty Ltd ABN: 65 651 645 948
Address: Factory 1, 7 Technology Circuit, Hallam, VIC 3803, Australia
Direct: (+61) 03 8759 5876 Mobile: (+61) 423 081 808
Email: info@t-power.com.au Web: www.t-power.com.au

4.	Maximum Continuous Discharge Current	105A	SOCs and different temperatures of the battery

SN	description	parametric	remark
Charging system basic parameters			
1.	Charge Gun Cable Length	7 meters	
2.	sizes	1576.2*925*1050 mm	Length*Width*Height, excluding snagging and coiled wire dimensions
Input Characteristics			
1.	DC Input Voltage	200V-1000VDC	
2.	DC Input Current	0~105A	European standard port, storage batteries recharge themselves
Output Characteristics			
1.	Output Voltage Adjustment Range	200V-1000VDC	Catering for passenger cars, buses and lorries charging
2.	Output Current Adjustment Range	0-200A	The system intelligently adjusts the output current according to the state of the storage battery.

3.	efficiency	≥95 per cent	
4.	Total output power	60KW	
Protective properties			
1.	Input under-voltage protection point	200VDC	
2.	Input over-voltage protection point	1000VDC	
3.	Input over-current protection	YES	
4.	Output over-voltage protection	YES	
5.	Output over-current protection	YES	
6.	short circuit protection	YES	
7.	Over-temperature alarm	50-60°C	
8.	Over-temperature protection	60°C	
9.	Charge gun over-temperature alarm	90°C	
10.	Charge gun over-temperature protection	105°C	
11.	Emergency shutdown	YES	

	protection		
12.	soft start time	5-10 seconds	
13.	user interface	YES	7.0 inch LCD

5.2 Operating instructions

5.2.1 Switching on and off procedures

A. Discharge mode

- Switch on the key switch, at which point the device starts to self-test and the touch LED display lights up.
- 5-10 seconds system start-up is complete, the storage and charging system equipment are in standby mode.
- Touch the LED display to show 'Normal, please click "Start Charging".
- Connect the DC charging gun with the electric car, touch the LED display, the charging indicator of the car gun connection status is always on.
- Click Start Charging, the electronic lock of the charging gun locks and the cooling fan starts to run, entering the charging state.

B. Energy storage battery replenishment mode

- The storage and charging system need to be switched on!
- Connect the charging gun of the external European standard charging post to the charging cradle of the storage and charging device and click on the external charging post display to charge;
- The storage and charging system communicate with the external charging pile OK, the touch LED display lights up, and after successful charging, the user clicks on the 'Storage and Charging Battery' page to view the storage battery status information.

5.2.2 Shutdown procedure

- The touch screen indicates the end of charging (or manually tap to stop charging).
- The electronic lock automatically unlocks and unplugs the DC charging gun.
- Switch off the power switch.