



## Quick Charger for Lithium Battery

# Operation Instruction

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Shanghai Hirano Environmental Technology Co.,Ltd



## Safety Precautions

please must observe

In order to ensure the safety of users and prevent harm to others people, please read this instruction carefully and use the product correctly.

Please reading this manual carefully and strictly observe the safety precautions.

### • Warning

Symbol	Represents the content and instructions
	<ul style="list-style-type: none"><li>● Do not pull out the plug while charging.</li><li>● Do not open the maintenance cover, doing so can result in electric shock.</li></ul>

### • Icon description

Icon	Illustration
 <b>caution</b>	Means attention, be careful to operation.
 <b>forbid</b>	This sign means forbidden. Prohibit operation, it may cause danger.
 <b>force</b>	This sign means force. You must implement those operations.



## Safety Precautions

please must observe



### Warning

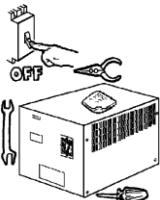
- This charger is using indoor, do not using outdoor.
- It is forbidden to charging under the circumstance of high humidity.
- Charging operation according to operation instruction.
- Unconventionality use environment or irregular operation may cause damage to charger and battery.



### force



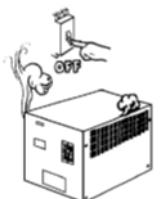
force



- Turn off the power before checking and repairing the charger.
- If you keep the power supply connected, static electricity may be generated.



force



- Shut off the power immediately if smoke or spark is generated.
- Continued use in this state has the potential to cause fire accident.



force



- Please use within the input/output range specified in the specification.
- If it overheats, there is a possibility of mechanical failure.



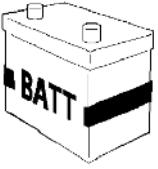
force



- Please wear safety helmet and safety shoes when handling the charger.
- There is a possibility of causing accident or injury.



force



- Check with the nameplate to confirm the matching degree with the battery.
- When the voltage and capacity do not match, it will cause the battery trouble and shorter life.



## Safety Precautions

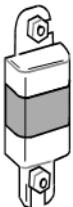
please must observe



### force



force



- Please use the specified specification fuse.
- use the non-conforming fuses can lead to overheating or smoke, causing accidents.



force



- When unplugging, be sure to take the power plug .
- Pulling the electric wire can causing fire accident and electric shock.



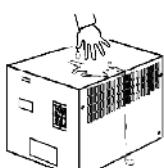
force



- If the electric wire is aging (inside line exposed, broken, etc.), please immediately replace the designated electric wire.
- It may cause fire or leakage of electricity.



force



- Make sure your hands are dry during operating charger.
- May cause charger failure, fire accident or leakage of electricity.



force



- Non-professional technicians, do not disassemble.
- May get electric shock if you touch a conductive parts.



## Safety Precautions

please must observe



forbid



- Do not open the maintenance cover without the guidance of professional technicians.
- Irregular decomposition can cause in death, serious injury or fire.



- This charger is use for lithium ion battery for forklift truck. Never use it for other purposes.
- If used incorrectly, it can be the cause of machine failure.



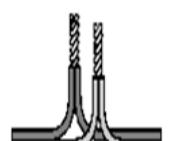
- Please use the specified power supply voltage. (refer to nameplate)
- Input power overvoltage or undervoltage, will cause charger heating or parts failure, unable to operation.



- Please use the specified power supply voltage. (refer to nameplate)
- Input power overvoltage or undervoltage, will cause charger heating or parts failure, unable to operation.



- Do not cut off the power cord strap.
- If power cord be drag, it will be damaged, causing short circuit, fire accidents.



- Do not extend the power cord or cut off the power cord.
- Cause charger of overheating or fire.



## Safety Precautions

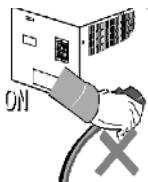
please must observe



forbid



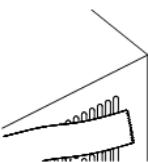
forbid



- Do not unplug the battery socket while charging.
- May cause leakage of electricity or fire.



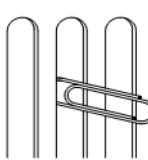
forbid



- Do not block both sides of the charger air vent.
- May cause charger of overheating, smoke or fire during charging.



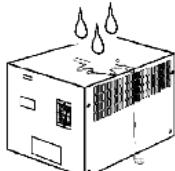
forbid



- Do not place metal foreign matters at the air change port.
- May cause charger failure.



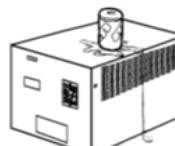
forbid



- Charger must be placed in a waterproof and moisture-proof place.
- May cause charger failure.



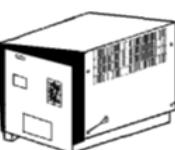
forbid



- Do not place liquid containers or small metal objects on top of the charger.
- If liquid is spilled or metal objects fall into it, it can cause fire and other accidents.



forbid



- Protection cover must be return to the original state after regular checking .
- exposed inside of charger may cause electric shock or scald.



## Safety Precautions

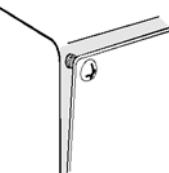
please must observe



forbid



forbid



- If the screw becomes loose, do not use the charger.
- Make sure to tighten the screws in charger before use.



forbid



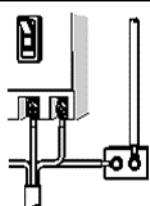
- Charger during transport should be handled gently, to avoid impact.
- If the case of the charger be damaged, it may cause the charger malfunction.



Caution



ground connection



- The input power must be ground connection.
- If the earth is not have ground connection, may cause electric shock or fire accident.

# Instructions

## 1 . Foreword

### ➤ Outline

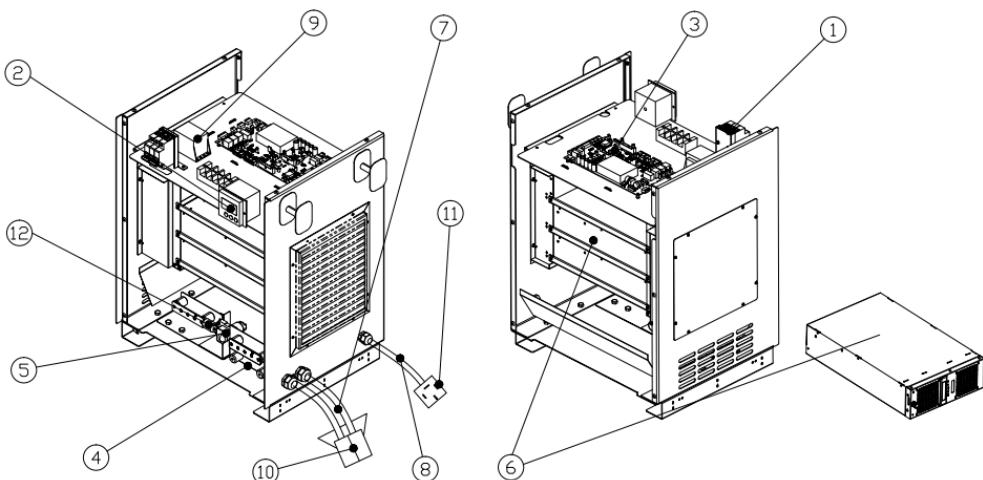
- This charger is an external charger for forklift truck.

### ➤ Characteristic

- Intelligent control
- Simplicity of operator
- Safe and high efficiency

## 2 . The name and functions of parts

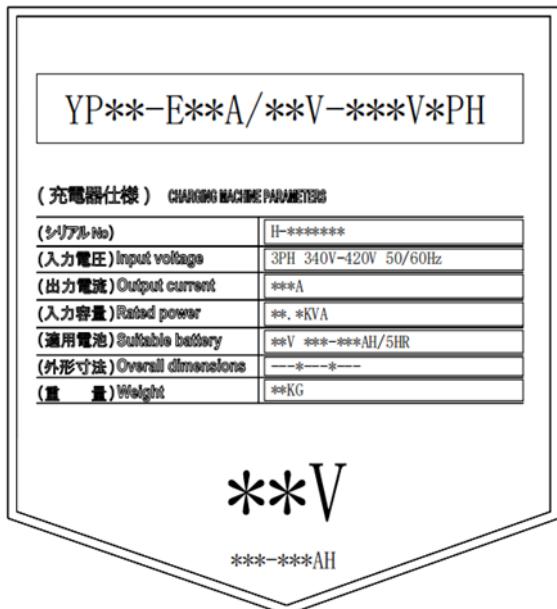
### ➤ Charger



No.	Name
①	Air switch
②	LCD
③	PCB board
④	shunt
⑤	Contactor
⑥	Power pmodule
⑦	out-put line
⑧	in-put line
⑨	transformer
⑩	out-put plug
⑪	in-out plug
⑫	fuse

# Instructions

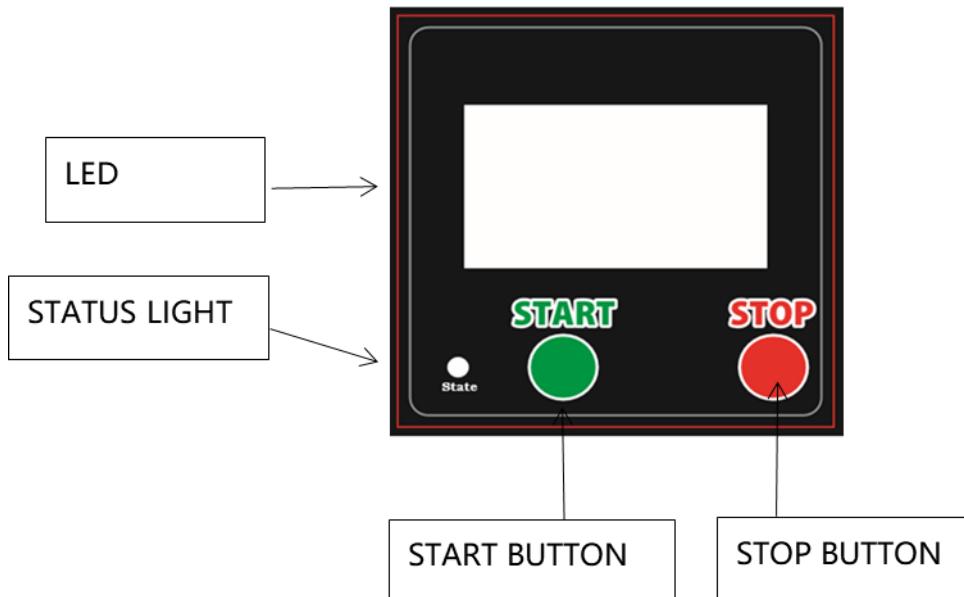
## ➤ Nameplate



### Remark:

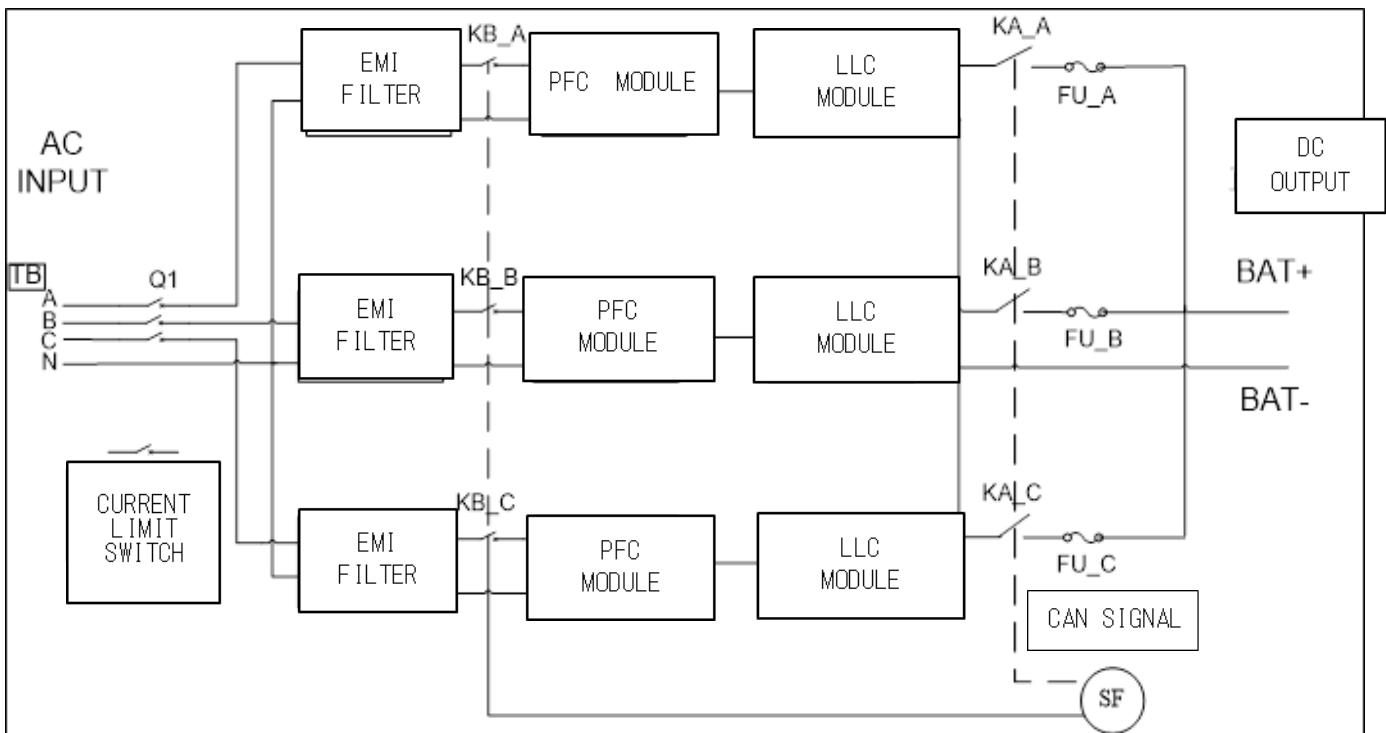
- Please use the specified power supply voltage.
- Input power overvoltage or undervoltage, will cause charger heating or parts failure, unable to operate .

## ➤ Charger controller interface



# Instructions

## ➤ Wiring diagram



FU	Fuse	TB	terminal
Q1	Input circuit breaker	SF	Intelligent controller
KA	Output circuit breaker	CAN_H	CAN signal
KB	relay	CAN_L	CAN signal

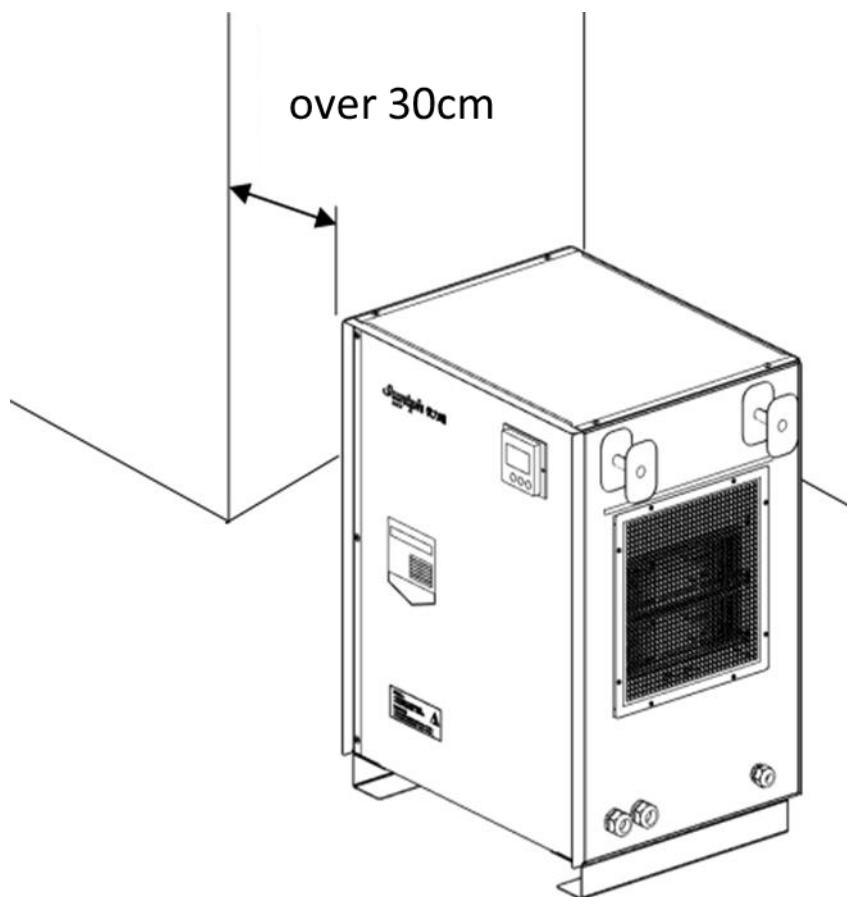
- Type of battery: Lithium iron battery
- Battery voltage: 48V/72V/80V (please choose suitable charger)
- Mismatches in voltage and capacity can cause battery failures and shortened life.



### 3 . Method of application

#### ➤ Placement of charger

- Put the charger in the dry and east ventilation place.
- When transport the charger, it is necessary to firmly support the bottom of the charger for handling.
- Charger will be heating during use, set the distance between the side and the wall to be over than 30cm.



#### ➤ Operating environment

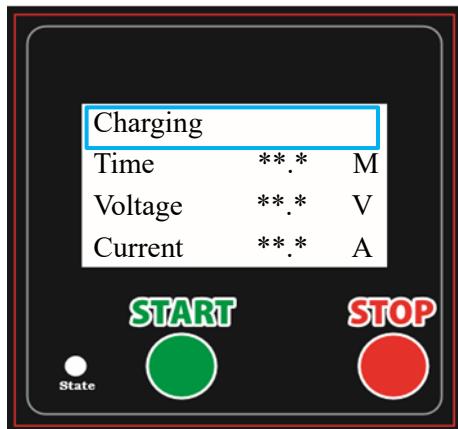
storage temperature range	- 40 ~ 70 °C
Operating temperature range	- 0 ~ 45°C
humidity range	0 ~ 95 % no dew

## ➤ Wiring method of charger

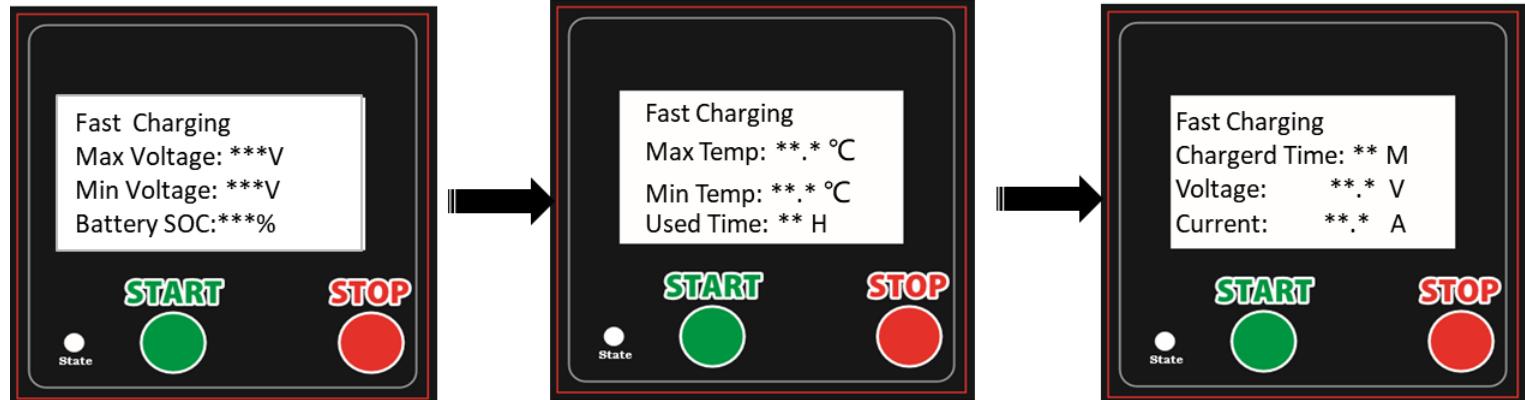
- The operation of wiring must be carried out by professionals
- The input wire can be connected before the AC socket be unplugged.
- Earth line must be connected, the green line is earth line.

## ➤ Operation method of charger

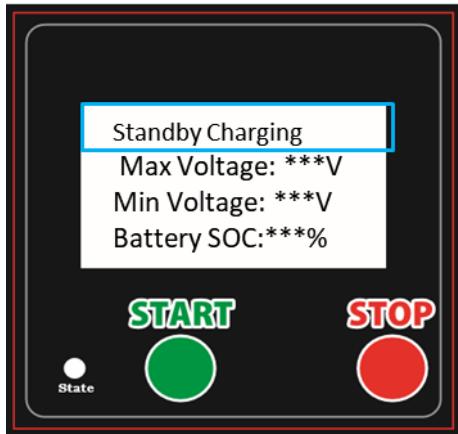
- Charge the battery, it needs skilled personnel to operate.
- Drive the forklift truck to near the charger.
- Confirmed the voltage and capacity of the battery to be match with the charger.
- Connect the output plug of the charger to the battery, plug the input plug of the charger, and open the air-switch.
- The charger automatically starts fast charging mode.



- LCD display: Fast Charging
- Status light: Flash once in 2 seconds.
- LCD display: The following interface is displayed in cycles.

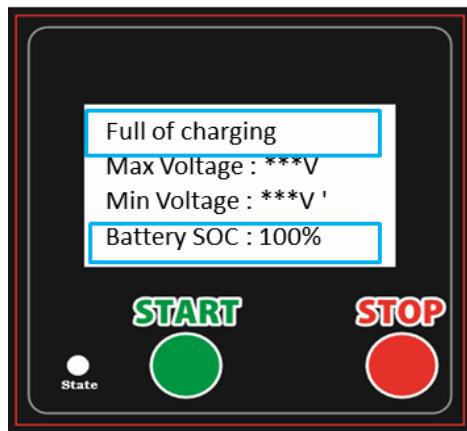


➤ Stop charging



- press the stop button, until the LCD display shows standby Charging, status light shops flashing, the charger stops charging.

➤ Charging completed



- After charging is completed, the charger stops automatically and the battery SOC shows 100%.
- LCD display: Full of charging, battery SOC 100%.

## 4 . Point inspection

### ➤ Point inspection items

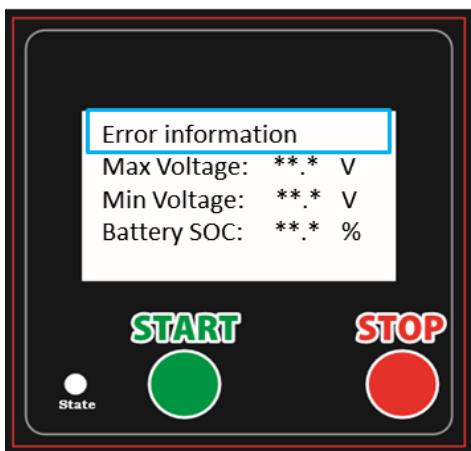
- Check whether the input and output wires are not damaged.
- Check whether Battery connection plug damaged.
- If you find the above abnormality, please replace the new product immediately. (monthly inspection).
- Confirm the input circuit breaker for the charger. If you have any problem, please contact the company or our dealer.
- Turn off the charger when the cause of the failure is unclear.

### ➤ Note for obsolescence

- Charger waste is industrial waste and should be handled by professionals or



## 5 . Trouble shooting methods



- Description: the charger has fault protection function. If the system cannot be started normally or the fault occurs during the charging process, the LCD display will prompt the fault cause.

### ➤ Error information & handing method

No.	Fault information	Cause the reason	Handing method
1	High Voltage AB/BC/AC	input voltage>465V	Check input voltage
2	Under Voltage AB/BC/AC	Input voltage< 320V	Check input voltage
3	Connect the opposite direction of battery	The charging port of the charger is connected backwards	Check the output interface
4	High charging port voltage	Rechargeable battery type does not match	Check battery type
5	Battery not connected	①The battery is not properly connected ②The type of battery to be recharged does not match	Check battery type
6	Output flow	Charging control panel sampling is inaccurate	Replace the PCB
7	The battery thermal	Abnormal battery	Check battery

8	Cell over voltage	Abnormal battery	Check battery
9	Battery low temperature	Abnormal battery	Check battery
10	The battery failure	Battery have other abnormalities	Check battery
11	Failure of charging module A/B	Power grid fluctuation and other reasons	recoverable
12	Overttemperature of charging module A/B	The air duct of the charger is blocked	Clean up the air duct
13	Charging module A/B overcurrent	Module failure	Replace the charging module
14	Charging fan A/B fails	Module fan failure	Replace the charging module
15	Charging module output failure	Module failure	Replace the charging module

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