东莞市达锂电子有限公司
DALY Dongguan DALY Electronics Co., Ltd.

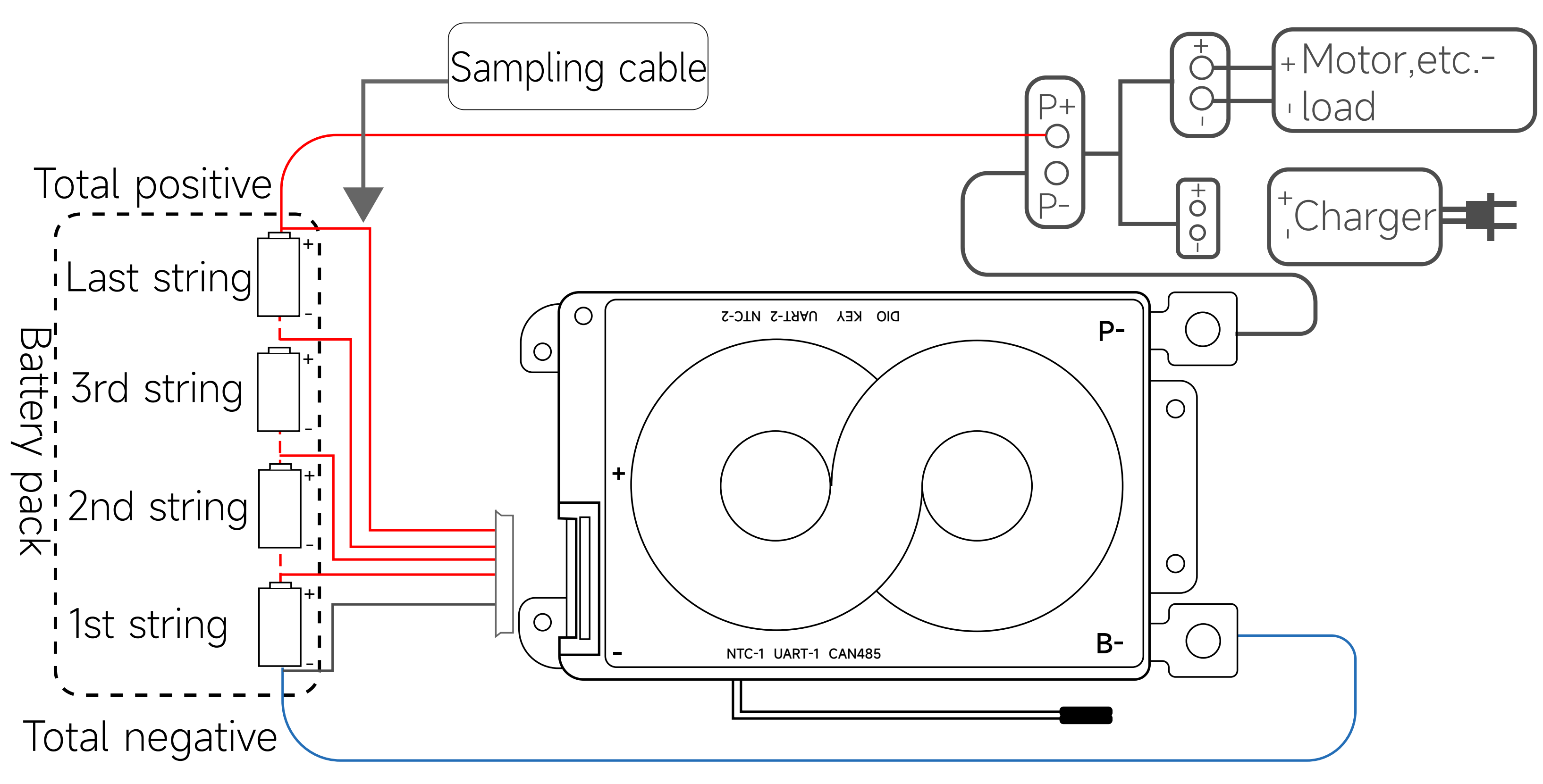
DALY Software H/K/M/S BMS Operating Mnaual

1、Product catalog

DALY Smart BMS Selection				
Product photo				
Model	H	K	M	
Strings	3~16S	3~24S	3~24S	
Current(standard product)	40A/60A	40A/60A/100A	150A	200A

DALY Smart BMS Selection		
Product photo		
Model	S	
Strings	3~24S	
Current(standard product)	250A/300A/400A/500A	

2、Operating instructions



Note: This wiring diagram takes the K series BMS as an example

1. Wiring sequence of battery:

Attention:

·Wires of different BMS suppliers are different, please make sure to use the matching wire; different BMS suppliers' B-and P-cables have different colors, please pay attention to B-and P-logo;

·When welding sampling wires, be sure not to plug the wires to the BMS;

1.1 The sampling wires starts from the thin black wire to the total negative electrode B-, the second wire (red wire) connects the positive electrode of the first string of battery, followed by the positive electrode of each string of battery, until finish connecting the last string of total positive electrode B+;

1.2 After the sampling wires are connected, do not di-

1.2 After the sampling wires are connected, do not directly plug them to the BMS.First check that the sequence is correctly connected.If the voltage of NMC(-Li-ion) battery should be between 3.0~4.15V; the voltage of LFP(LiFePO4) battery should be between 2.5~3.6V; the voltage of LTO(Lithium-titanate battery) should be between 1.8~2.8V.Please make sure that the voltage is correct before the next operation;

1.3 Plug the NTC (ensure that the temperature sensor is

1.3 Plug the NTC (ensure that the temperature sensor is inserted at the NTC port);

1.4 Connect B- on the BMS to the total negative electrode of the battery(the lenath of the B-wire should not exceed 40cm);

1.5 Insert the sampling wire into the BMS;

1.6 Measure whether the battery voltage between B+ & B- and voltage betwen B+ & P- are the same (The voltage of the battery pack is the same as the voltage after the protection plate).If voltage are the same. that means the BMS works normally, If not, please check wiring sequence according to the above;

1.7 Plug the optional Bluetooth module into the UART port (without Bluetoth module.,the battery data cannot be viewed through mobile APP In this way battery data can only be viewed through the PC software. For software tutorial. please refer to the case below.

2. Connect to the load and the charger:

2.1 Connect the P- wire to the negative of the load and to the negative of the charger.

2.2 Connect positive electrode wire of load power supply to the total positive electrode of the battery pack; the positive electrode wire of the charger connect to the total positive electrode of the battery pack.

3、Underloaded communication software（SMART BMS APP at the mobile end or computer on the computer end）The capacity AH of the battery is the correct capacity. If the capacity is set well, the battery can be charged. In the parameter setting interface, non-professional personnel do not propose to modify other parameters, parameter setting error will cause the product can not be used normally. Customers can modify the "protection parameter" and "temperature protection" according to their own needs.

3.1 APP download method:

① Use the browser to scan the QR code on the manual;

② Search for "Smart BMS" in the Apple or Google App stores

③ login website (https://www.dalybms.cn/download.html) under load;

④ Contact customer service to download the APP.

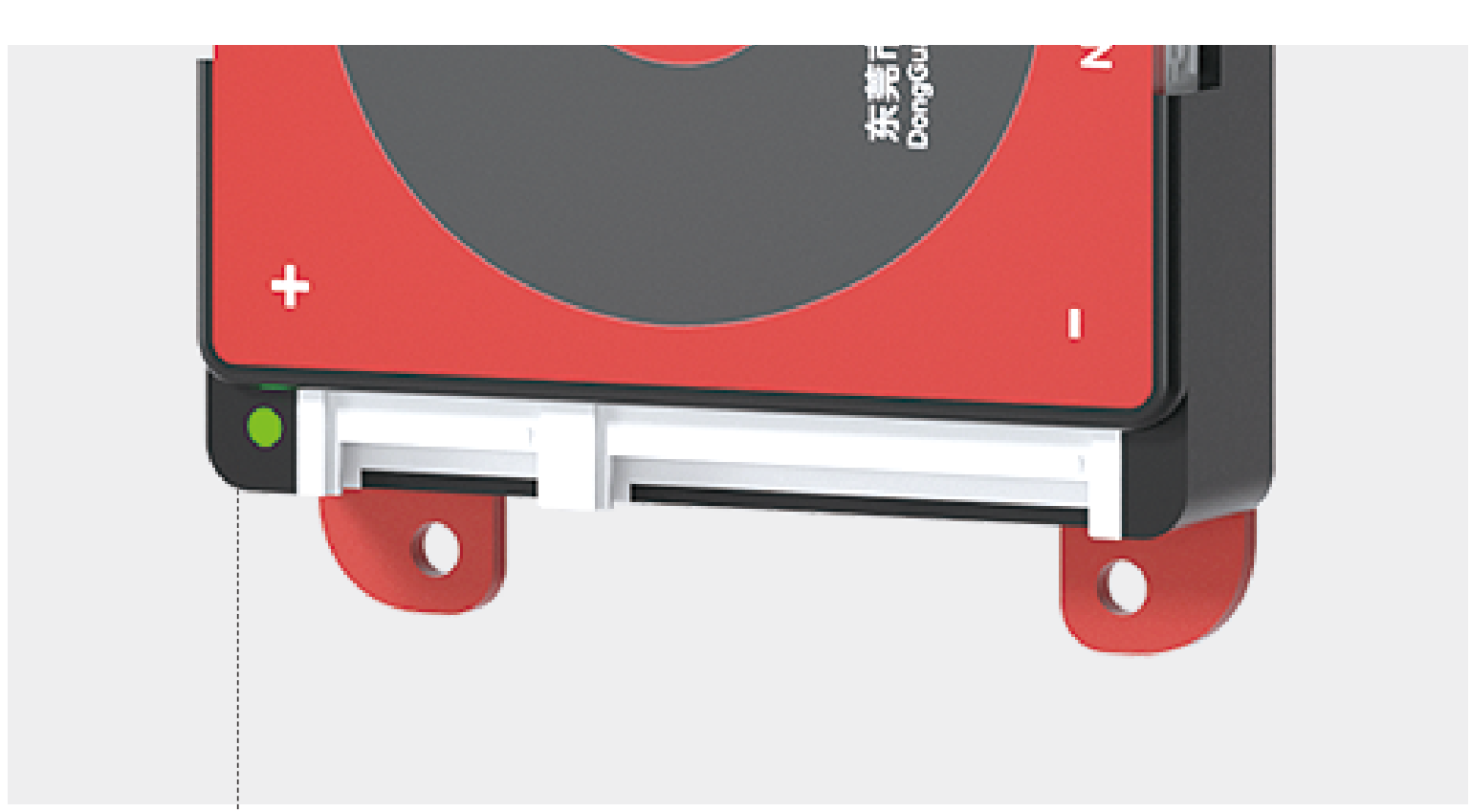
3.2 APP use: Open the bluetooth and the mobile phone set information and enter the APP, the APP will search for the bluetooth SN, check the SN on the BMS without error, and then click the SN to enter the management interface. On the first interface, you can select "single", "parallel" or "serial", then select the bluetooth string number (same as the string number on the bluetooth substance), click the bluetooth string number to enter;

Upper computer tutorial (English)

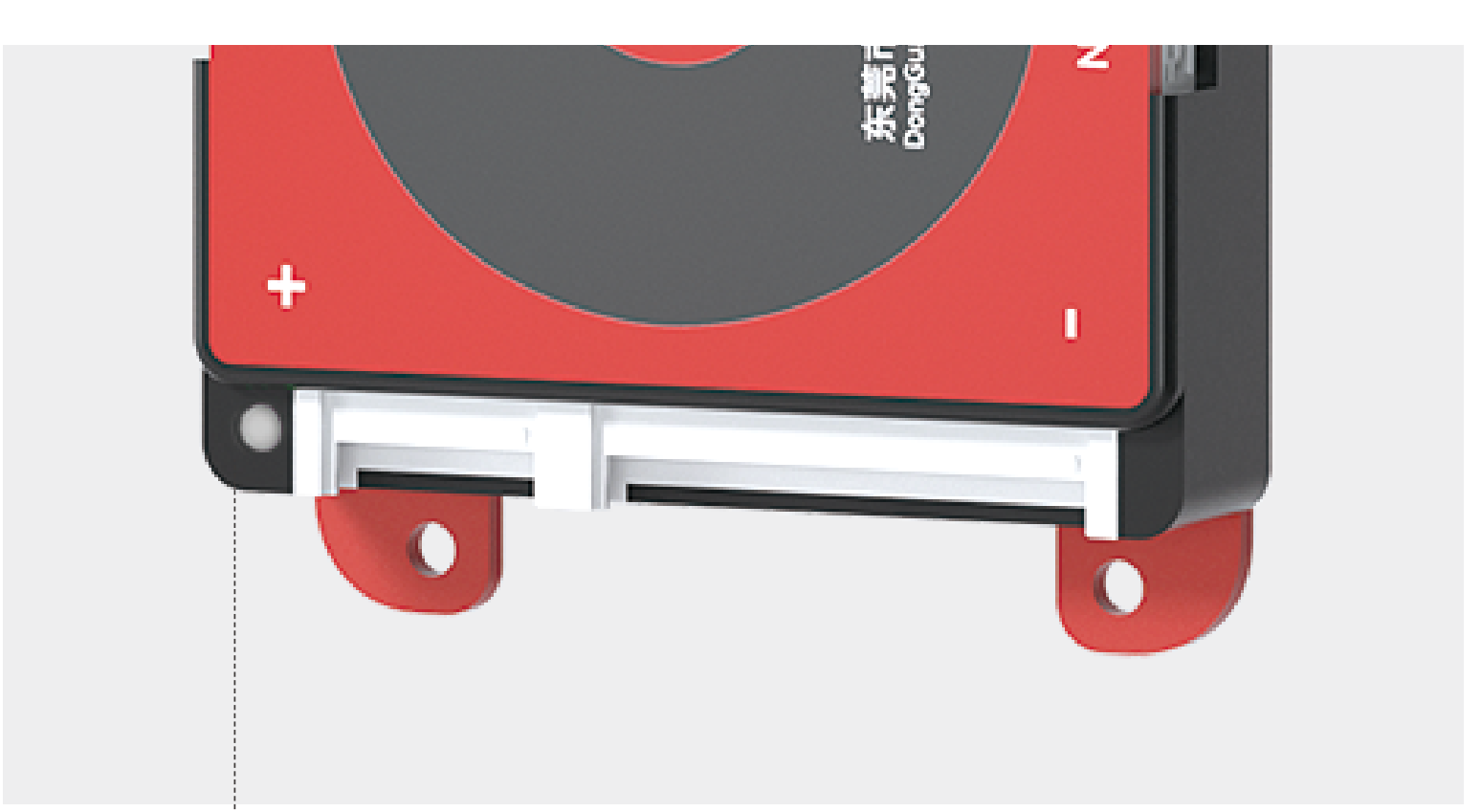
APP/Upper computer download
(In the "Download Center" find
theAPP and K-board host computer
to download files)

3、Operation light description

1. Connect the wires and BMS will be automatically activated. If the BMS running indicator flashes green, it is successfully activated. If not, please check whether the wiring is abnormal.



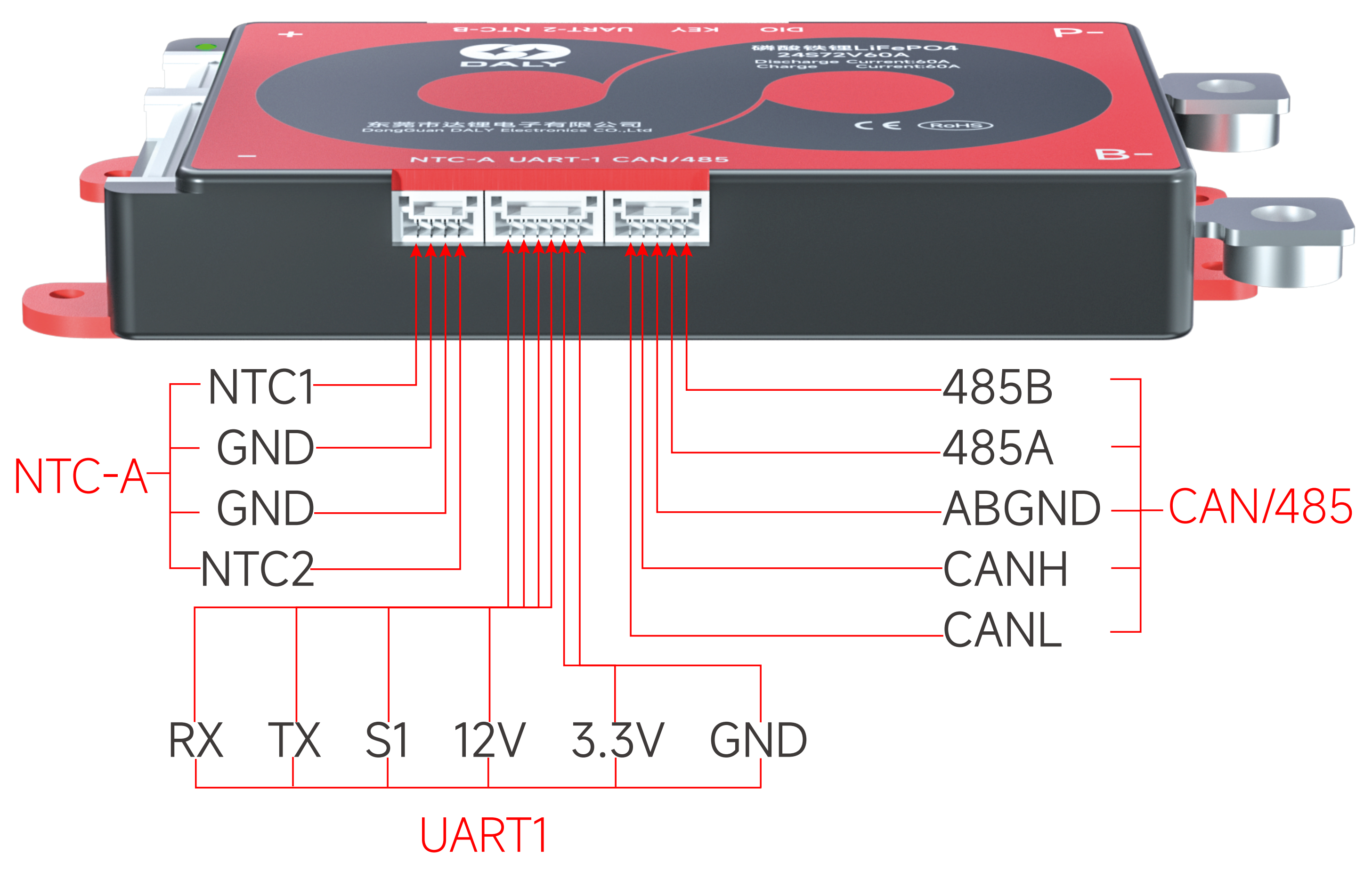
·The lights flash

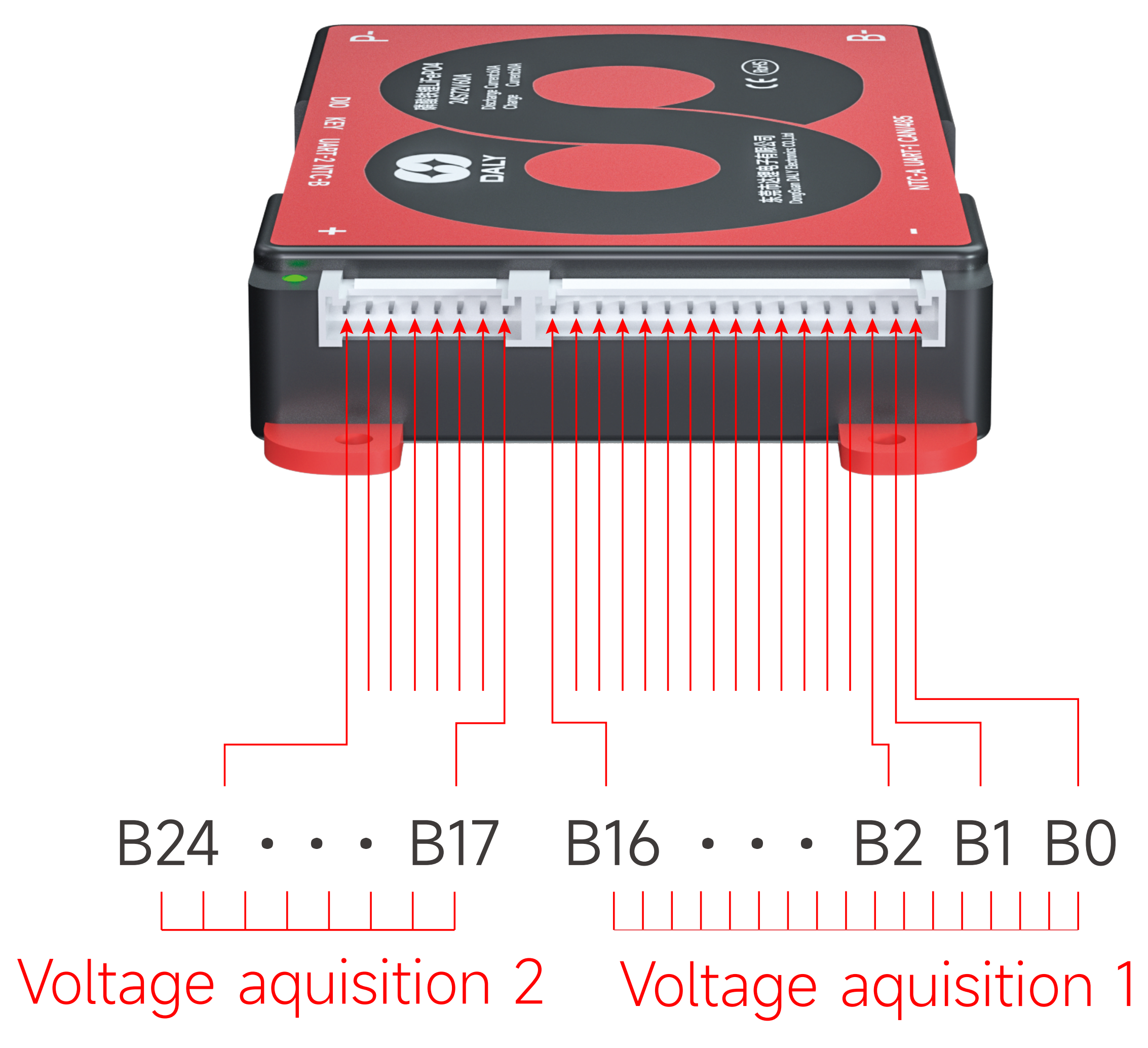


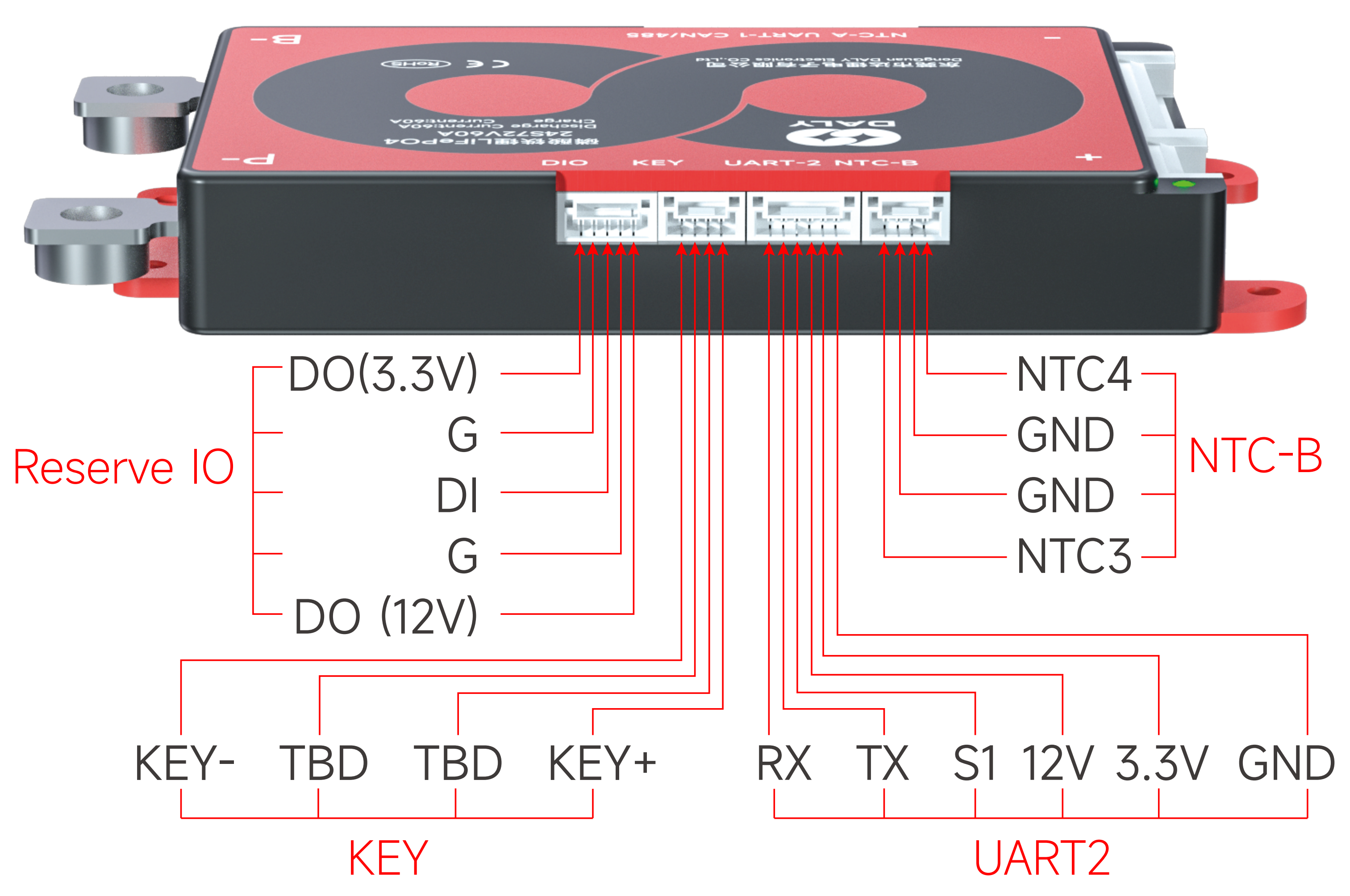
·The lights goes off

Status description of the operating light		
No:	State	Explanation
1	Shutdown、power off 、sleep mode	The lights goes off
2	Working, discharging stage	The lights flash, 0.5S on, 2.5S off, 3S for a cycle
3	Working, charging stage	The lights flash, 0.5S on, 0.5S off, 1S for a cycle
4	Working, no charging or discharging stage	The lights flash, 0.5S on, 9.5S off, 10S for a cycle

4、Interface definition







Note: The H series BMS support the higher strings is 16.

NO:	Feature	pin number	Interval	Interface description	Technology
1	Voltage aquisition1	17	2.0	B0-B16	Plug-in buckle
2	Voltage aquisition2	8	2.0	B17-B24	Plug-in buckle
3	NTC-A	4	1.25	NTC1,GND, GND,NTC2	Patch buckle
4	UART1	6	1.25	GND,3.3V, 12V,S1,TX,RX	Patch buckle
5	CAN/485	5	1.25	485B,485A,ABGND, CANH,CANL	Patch buckle
6	NTC-B	4	1.25	NTC3,GND, GND,NTC4	Patch buckle
7	UART2	6	1.25	GND,3.3V, 12V,S1,TX1,RX1	Patch buckle
8	KEY	4	1.25	KEY+,TBD,TBD,KEY-	Patch buckle
9	Reserve IO	5	1.25	DO (12V),G, DI,G,DO(3.3V)	Patch buckle

Note: H series BMS only have UART1 port and no UART2 port, the NTC-B of all software BMS is optional and need to customized.

5、Reliability technical parameters(refer to production specification for detailed parameters)

NO:	Item	Condition
1	Detection accuracy	Current detection accuracy: ≤(± 3% FSR)
		Voltage detection accuracy: ≤± 10 mV
		Temperature detection accuracy: ≤2°C (at room temperature)
		SOC average accuracy: ≤10% (full temperature) ≤5% (room temperature)
2	Storing of information	Max storage 400 (standard 512Kb EEPROM) resume information, including protection time, real-time total voltage, current, temperature, SOC, etc
3	SOC calculate	Using the current integration method (the OCV correction can be customized)
4	Working environment condi-	Operating temperature: -40°C~85°C
		Relative humidity: 5% ~ 90%RH
5	Storage environment conditions	Storage temperature: -40°C~85°C
		Relative humidity: 5%~75%RH

6、Points for attention

1. Recommended screw torque of 8~10N·m(nm).

2.The default sleep time of the smartBMS is 3600S, i.e. 1 hour. If you want to cancel sleep mode, you can set the sleep time as: 65535.

3. When the BMS is used in a solar charging system, you need to wait for the BMS to detect the battery voltage before charging. A small charging board must be selected for use in order to make the whole system work properly.

4. After confirming that the wire is welded correctly, insert the wire into the BMS (Note: the blue B-wire on the BMS is connected to the total negative electrode of the battery, and the black P-wire is connected to the negative electrode of the charge and discharge), and then install the accessories with the product (such as: standard temperature control/optional power board/optional Bluetooth/optional GPS/ optional display screen/optional customized communication interface) on the BMS.

5. When the NTC is not inserted, the BMS cannot perform normal and will cut off charge and discharge.

6. The number of battery strings and protection parameters (NMC, LFP) at the factory is a default value, but the rated capacity of the battery should be set according to the actual capacity of the battery pack AH. If the capacity AH is not set correctly, the SOC will be inaccurate. When using BMS for the first time, the battery needs to be charged to 100% to calibrate the SOC.

7. SMARTBMS APP password of setting parameters : 123456.

8. If the BMS is damaged, we will only provide paid repairs.Property losses caused by battery failure will be borne by the user. Our company only provides maintenance and after-sales service for the protective board.