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

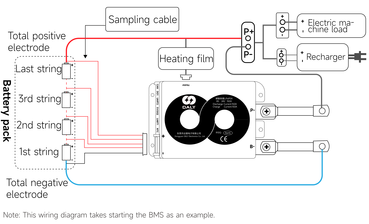
Truck start BMS Operating Instruction Manual

1、Products introduction

• With the widespread application of lithium batteries, requirements for battery management systems such as high performance, high reliability and high cost perfor mance have also been put forward.

• DALY truck starting BMS is a software BMS specially developed and designed for starting trucks, ships, park ing air conditioners and truck starting power battery packs. It can withstand an instant high current of 2000A. The built-in heating module can be directly connected to the heating film and integrates filtering. The module absorbs high voltage pulses from the truck motor. It also has functions such as one-click forced start and intelligent communication.

2、Opretion intructions



Note: This wiring diagram takes starting the BMS as an example.

1. BMS connection battery wiring sequence:

Special note:

·Special note: Cables from different manufacturers are not universal, please make sure to use DALY matching cables; the B-/P-line is not equipped by default (note: the internal resistance of the B-line is in the range of 0.5mR ~ 0.8mR);

·Remember! ! ! When welding the sampling cable, do not insert the cable into the BMS;

1.1 Connect the cable starting from the thin black wire connecting the total negative terminal B-, the second wire (red wire) connects the positive terminal of the first string of batteries, and then connects the positive terminal of each string of batteries in turn, until the last string of total positive terminal B+;

1.2 After the cable is connected, do not insert the plug directly into the BMS. First, measure the voltage between every two adjacent metal terminals on the back of the plug.If it is a Li-ion（NMC） battery, the voltage should be between 3.0 and 4.15V, and the LFP battery should be between 2.5 and 3.6V.LTO battery should be between 1.8-2.8V, ensure that the voltage is correct before the next step;

1.3 Insert the NTC (make sure the temperature control probe is inserted at the NTC);

1.4 Connect the B- wire (thick blue wire) of BMSD to the main negative terminal of the battery;

1.5 Plug the optional Bluetooth into the UART interface (if there is no optional Bluetooth, the battery data cannot be viewed through the mobile APP; the battery data can be viewed through the computer's host computer);

1.6 Insert the cable into the BMS.

2.1 Measure whether the voltage of battery B+, B- is equal to the voltage of B+, P- (that is: whether the voltage of the battery pack itself is equal to the voltage after BMS).If equal, the BMS is working normally and can be used normally. If not, please check again according to the wiring sequence above.

3. load and charger:

3.1 P- line can connect to the negative terminal of the load supply or negative terminal of the charger;

3.2 P+line can connect to the positive terminal of the load or the positive terminal of the charger.

4. Download the communication software (SMART BMS APP on mobile phone, host computer on computer) and set the capacity (AH) of the battery pack to the correct capacity.

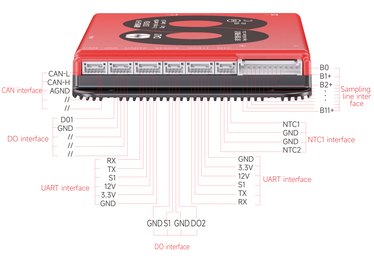
4.1 Search SMART BMS in the mobile application market, download and install it;

4.2 Turn on the positioning and Bluetooth functions of your phone;

4.3 Open the SMARTBMS APP. You can see the Bluetooth serial number on the first interface (the same as the serial number on the actual Bluetooth device). Click on the Bluetooth serial number to enter the APP;

4.4 There is parameter setting in the lower right corner of the interface, click to open, click on the second interface "Battery Cell Characteristics", you can see the rated capacity, enter the actual capacity XX of your battery pack, click Settings, enter the password 123456, refresh the capacity will Updated to the capacity you just entered;

4.5 After the capacity is set, the battery pack can be charged. Charging triggers the overcharge secondary protection, and the SOC will be automatically calibrated to 100%.



Upper computer tutorial (English)

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

5. "one key force start function"

5.1 Physical button start: Press the strong start switch for 3 seconds to turn on the strong start function. The BMS can be forced to turn on the discharge function for 60 seconds;

5.2 Start the mobile APP: Connect the mobile phone to Bluetooth, enter the Bluetooth APP, click on parameter settings and then click to enter the system settings. After entering the system settings, click the one-key force start button and enter the password 123456. Click to open and click OK to turn on the one-key force start function.

3、Interface definition description

No.	Feature	pin number	interval	Interface description	Process mode
1	Voltage acquisition I	5	2.0	B0-B4	Plug with buckle
2	Voltage acquisition II	9	2.0	B0-B8	Plug with buckle
3	Voltage acquisition III	11	2.0	B0-B10	Plug with buckle
4	NTC	4	1.25	NTC,GND,NTC	Plug with buckle
5	UART 1	6	1.25	RX1,TX1,GND,12V,3.3V,S1	Plug with buckle
6	UART 2	6	1.25	RX2,TX2,GND,12V,3.3V,S1	Plug with buckle
7	DO	5	1.25	DO1,GND	Plug with buckle
8	CAN	5	1.25	CAN_L,CAN_H,GND	Plug with buckle
9	S1	4	1.25	DO2,S1,GND	Plug with buckle
10	Heater	2	//	Heater	XT30U-F

4、Reliability technical parameters(detailed parameters refer to the product specification)

No.	Item	Condition
1	Detection accuracy	Current detection accuracy: ≤(± 3% FSR) Voltage detection accuracy: ≤± 15 mV
		Temperature detection accuracy: ≤2℃ (at room temperature)
2	Information storage	Store up to 380 pieces of history information, including protection time, current total volt age, current, temperature, SOC, etc.
3	SOC measurement	Current integration method, accuracy≤10%(affected by ambient temperature)
4	Working environment conditions	Operating temperature:-40℃~85℃
		Relative humidity: 5% ~ 90%RH
5	Storage environment conditions	Storage temperature: -40℃~85℃
		Relative humidity :5% ~ 75%

5、Points for attention

1. Please use it in the temperature and humidity range specified in the Product Specification. If it is outside the range, it may cause the failure of the BMS;

2. Lithium battery must be charged with a lithium battery charger, such as improper charging, it may cause BMS damage;

3. BMS of different voltage platforms cannot be mixed;

4. Different manufacturers of wiring is not same, please make sure to use our company supporting wiring; If the wiring is damaged, please contact our sales staff;

5. Do not make the cooling surface of the BMS directly contact the battery, otherwise the heat will be transferred to the battery, affecting the safety of the battery;

6. When using, do not change the location of the sampling cable without permission;

7. Special statement: BMS is an accessory with high precision. It will be not returned or replaced after welding, and the repair of man-made damage needs to be charged.Property damage caused by battery failure must be borne by the user. Our company only repairs and provides after-sales service to the bms;

8. Button wake-up logic:
① When the lithium battery is in a low-power sleep state, short press the force start button to wake up the lithium battery, and the force start button light remains off when the BMS is working normally;
② Press button to force start: When the battery is under-voltage or other discharge-related faults occur, the BMS will turn off the discharge mos to control the lithium battery from being discharged. At this time, the ignition cannot be started. By pressing and holding the force start button for 3±1s, the discharge mos will be forced to close for 60±10 seconds to meet the power demand under special circumstances; during the force start time, the force start button is always on, and after the force start, the light goes out;
③Enter the loading mode: Press and hold the forced start button for 5s~10s, the force start button light will light up for 0.5 seconds and then go off for 1 second, and then go out for three consecutive times to enter the loading mode. After entering the loading mode, the BMS enters the sleep state. Short press the force start button to wake up the lithium battery;

9.The recommended torque of B-P-lock screw is 8-10N·m (Nm).