

## PAY SPECIAL ATTENTION

- 1. The Difference Between Split Port And The Same Port:** Split port means that the positive and negative poles of charging and discharging should be separated; The charging current and discharging current of the same port are the same, and the charging and discharging are in the same interface.
- 2. Enhanced Version And Balanced Version:** Balanced refers to the use of resistors to discharge high voltage cells during charging, waiting for low voltage cells to charge up the voltage to achieve consistent voltage across all voltages and improve the performance of the entire battery.
- 3. Before installing protection, the batteries must be properly matched** (the voltage difference between each battery should not exceed 0.05v. The difference in internal resistance is not greater than 5m, and the difference in capacity is 30mAh lower). The better the battery consistency, the longer the distance traveled, and the more stable the protection performance achieved.
- 4. Batteries should be connected in parallel before being connected in series, and ensure correct welding** (18650 batteries should be spot welded with nickel plates, and other batteries should be soldered with solder). Do not screw them down, as it may burn out the IC of the protective plate.TZT.
- 5. Confirm Whether The Battery Model Is A Lithium Battery Or An Iron Lithium Battery:** the protection parameters for the two are different. Lithium batteries include: (ternary lithium, lithium cobalt oxide, manganese oxide), all of which have a reference voltage of 3.7V, collectively referred to as lithium batteries. Therefore, when selecting a protective plate, it is necessary to choose a lithium battery protective plate. The reference voltage of lithium iron phosphate battery is 3.2V, so the lithium iron phosphate protection board must be used when selecting the protection board.



# Lithium battery charging module

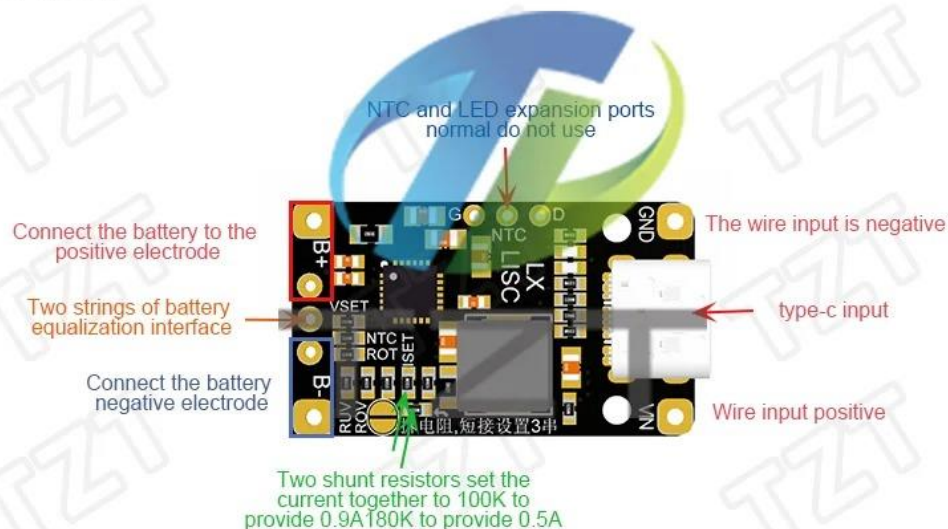
## INTRODUCTION

The module is applicable to two or three channeled 3.7V lithium batteries. By short circuit setting, the default is two strings. When two strings are used, the module can use its own battery equalization function, which is very practical. The type-c port and welding wire can be used for input. When the type-c port is connected to the fast charging power supply, the charging voltage is automatically adjusted to improve efficiency. If the input voltage is less than the battery voltage when the welding wire is input, the module can only work in the boost state

## PARAMETERS

- Support QC fast charge
- 15W synchronous switching boost charging
- Boost charging efficiency 94%
- Can be set to charge 2 or 3 strings of lithium batteries
- 2 strings with balanced charging
- Adjustable charging current
- Input overvoltage and undervoltage protection
- Adjustable charging timeout protection
- Output overcurrent, overvoltage, short circuit protection

## DETAILS



RISET sets the battery side charge current:  
 $ICHG = 90000/RISET$

RISET	Charging current
180K	0.5A
90K	1A
75K	1.2A
60K	1.5A

RVSET sets the constant voltage charge voltage

RISET	2 strings of charging constant voltage charging voltage	3 strings of charging constant voltage charging voltage
1K	8.1V	12.3V
68K	8.2V	12.4V
120K	8.3V	12.5V
NC	8.4V	12.6V

**Note! Normal use does not require too many setting modules, just choose 2 strings or 3 strings of charging as needed**

Input: optional type-c port or wire bonding input, type-c access to QC fast charge can

input power supply type of the battery, the charging voltage can automatically adjust the charging voltage, improve charging efficiency, if the wire input, the input power supply should be less than the battery voltage (battery series connection \* battery voltage).

Output: support 2 strings and 3 strings, the battery needs to add a protective board, default 2 strings, when changing 3 strings, you need to shorten the short contact, and then remove the resistance next to it. When 2 strings can use the equalization function, the two strings of batteries are connected to the BM pin in the middle (this equalization speed is limited, and the two strings of batteries should try to ensure that the parameters are consistent when using).

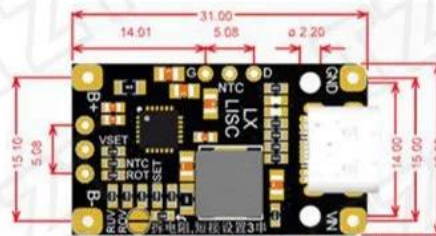
Current setting: The green arrow in the figure above refers to the default current of the two parallel current settings is 100K (0.9A) and 180K (0.5A). Resistors can be removed or replaced according to your needs. The calculation formula is current =  $90000/\text{resistance}$ .

Battery charging up to the voltage setting, the default single string is 4.2V, the general battery is also this value, no need to change. If you need to change, you can set the board VSET resistor against the RVSET setup table.

Charging timeout time setting, default no timeout time, set the ROT resistance value to set: 68K-4 hours, 120K-12 hours, no stick-24 hours.

NTC access: normal personal use, if necessary, the NTC resistance value to 82K, NTC solder joints and GND next to the 100K thermistor (B=410).

LED indicator: normal red light is on, the charging process blue light is on, the blue light is off after charging full, and the blue light flashes after detecting abnormalities.



In millimeters, unmarked places can be calculated according to the symmetry of position

Size: 31\*15.1\*4.5 does not contain type-c protruding part of the tail left 3P-2.54 weld joint, can be added corresponding to the socket.



Remove this resistor and set up 3 strings

Weight: 2.80g

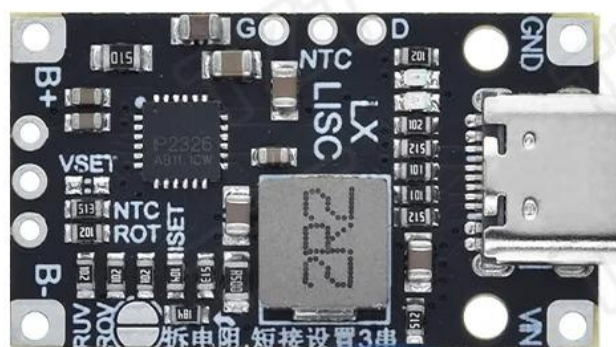
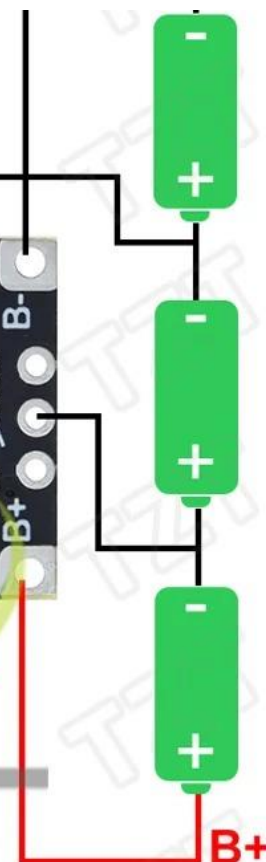
B-

**Remove the resistance  
When connecting 3S**



**Type-C 15W 2-3S**

**Lithium Battery  
Charging boost Module**



31.00mm

18.00mm



31.00mm

18.00mm