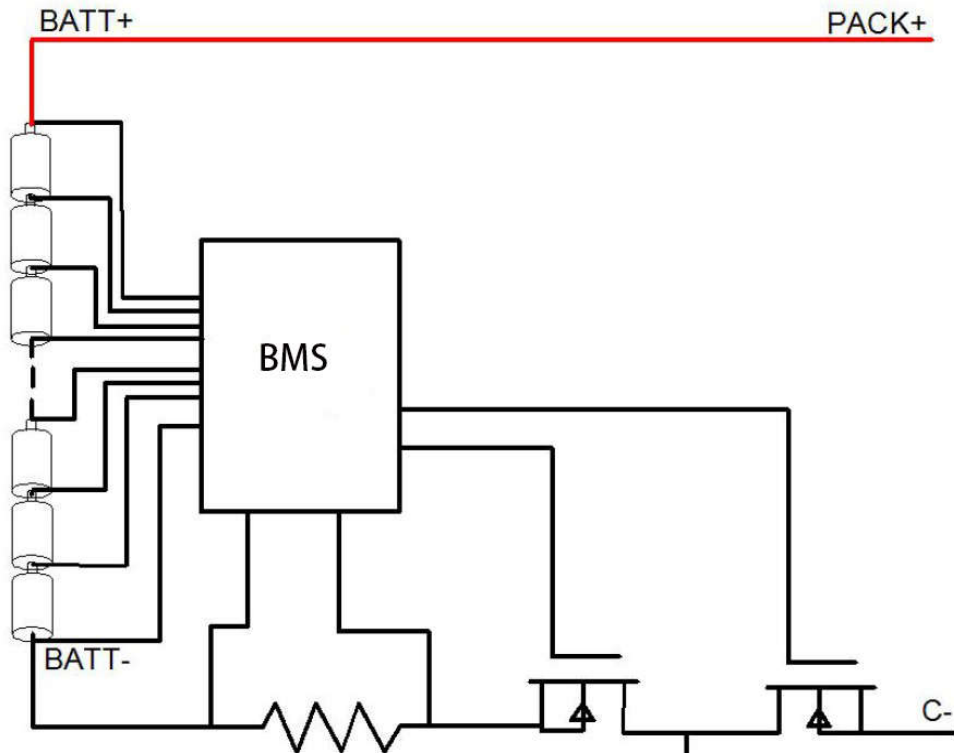


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16S li-ion UART 60A BMS Manual

1. Functional block diagram



2. Basic parameters

2.1 Use range:

Battery pack structure:	16S
Charging method:	CC-CV (constant current and constant voltage)
Discharge method:	constant current discharge
Output terminal:	C-;
Input terminal:	B-, BC0 ~ BC16

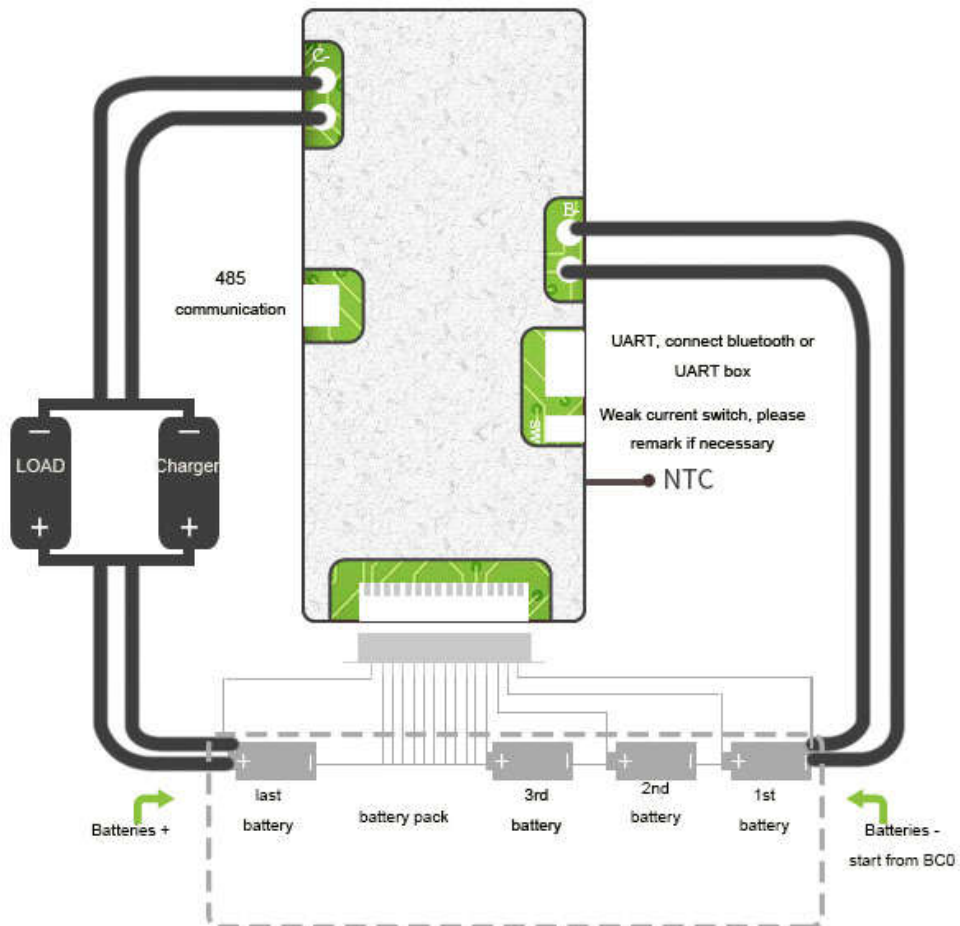
2.2 Electrical parameters (to test in temperature 25 + 2 °C, relative humidity 65 + / - 20% of the interior.)

Features	Test items	specification			
		Min	Normal	Max	Unit
Operating Voltage	voltage range	44.8		68	V
Working current	Charging current (continuous)		60		A
	Discharge current (continuous)		60		A

Charge protection	Charger voltage (CC-CV)		58.8		V
	Overcharge protection voltage	4.2	4.25	4.3	V
	Overcharge protection delay time	1000	2000	3000	mS
	Overcharge protection recovery voltage	4.1	4.15	4.2	V
Discharge protection	Over discharge protection voltage	2.6	2.7	2.8	V
	Over-discharge protection delay time	1000	2000	3000	mS
	Over discharge protection recovery voltage	2.9	3	3.1	V
Overcurrent protection	Charging overcurrent protection value	65	70	75	A
	Charge overcurrent delay	1		3	S
	Charging overcurrent release recovery condition	Delayed 32S release			
	Discharge overcurrent 1 protection current value	65	70	75	A
	Discharge overcurrent 1 Protection delay	1		3	S
	Discharge overcurrent 2 protection current value	135	150	165	A
	Discharge overcurrent 2 Protection delay	100		500	mS
Short circuit protection	Discharge overcurrent protection recovery conditions	Delayed 32S release			
	Short-circuit protection delay time	200		500	uS
	Short circuit protection recovery	Charge recovery			
balance function	Balance turn-on voltage	3.95	4	4.05	V
	balance opening pressure difference		30		mV
	Balanced mode	Charge balance			
	balance current	40		60	mA
Temperature protection	Charging high temperature protection value	63	65	67	°C
	Charging high temperature protection release value	53	55	57	°C
	Charging low temperature protection value	-7	-5	-3	°C
	Charging low temperature protection release value	-2	0	2	°C
	Discharge high temperature protection value	73	75	77	°C
	Discharge high temperature protection release value	63	65	67	°C
	Discharge low temperature protection value	-12	-10	-8	°C
	Discharge low temperature protection release value	-2	0	2	°C
Internal resistance	Discharge circuit internal resistance	/	5	10	mR
Self-consumption	Operating mode			20	mA
	Sleep mode			200	uA
	Sleep conditions and delays	10S delay in no current / communication / protection state			

Operating temperature	Normal working range	-20	70	°C
storage temperature	Humidity is below 90%,	-40	85	°C
Protection plate size	length Width Height	170x60x17		mm

3.Wiring diagram



1). In the process of use, it is necessary to follow the design parameters and conditions of use, and not to violate the parameters of this specification, otherwise it is easy to damage and protect, Plate, which could damage the battery pack.

2). Prevent static electricity during use. When testing, installing, and touching the protection board, take appropriate measures to discharge static electricity.

3). The charging port can withstand the maximum DC voltage. Chargers higher than this voltage cannot guarantee that the protection board will not be damaged. Please click here. The charger is used within the specifications. It is best to choose a charger with a trickle shutdown function at the end of the charging current to achieve double insurance. Do not The charger with trickle-off function is designed for lead-acid batteries and is not suitable for lithium batteries.

4). Be careful not to touch the components on the circuit board, such as lead pins, soldering iron, tin slag, etc. during use, otherwise the protection board may be damaged.

5). The maximum discharge current is the maximum current that lasts for a few seconds. During the test, the unsustainable time is too long to avoid overheating and damage of the power MOS.

6). When assembling the protective plate and battery pack, do not place the heat-dissipating aluminum plate close to the surface of the battery cell, otherwise, heat will be transferred to the battery cell, affecting the safety of the battery pack.

7). If any abnormal situation occurs during use, please stop using it immediately and return it to the original factory or ask professional maintenance personnel for repair.

8). If it is a split protection board, P- is not allowed to be used as a charging port, because when P- is used as a charging port, the battery pack has no overcharge protection. C-prohibited to use as discharge port when splitting

9). It is forbidden to use two or more protection boards in series and in parallel.

10). This protection board has done a lot of reliability tests, the reliability is far higher than the general protection board on the market, and the technology of the battery core must be guaranteed at the same time, so as to reduce the occurrence of combustion as much as possible.

11). This protection board is not equipped with a 0V battery charging function. Once the battery is 0V, the battery performance will be severely degraded and may even be damaged.

12). In order not to damage the battery, users need to recharge regularly when they are not in use for a long time (battery pack capacity is greater than 2AH, stored for more than 3 months); and they must be recharged in time within 12 hours after the battery is discharged during use To prevent the battery from discharging to 0V due to self-consumption. It is required that the customer must have obvious user identification on the battery case for regular battery maintenance.

13). This protection board does not have anti-charge protection function. If the polarity of the charger is reversed, the protection board may be damaged.