

Product Specification

Part Number: ANT-18S-XXXXA-XX

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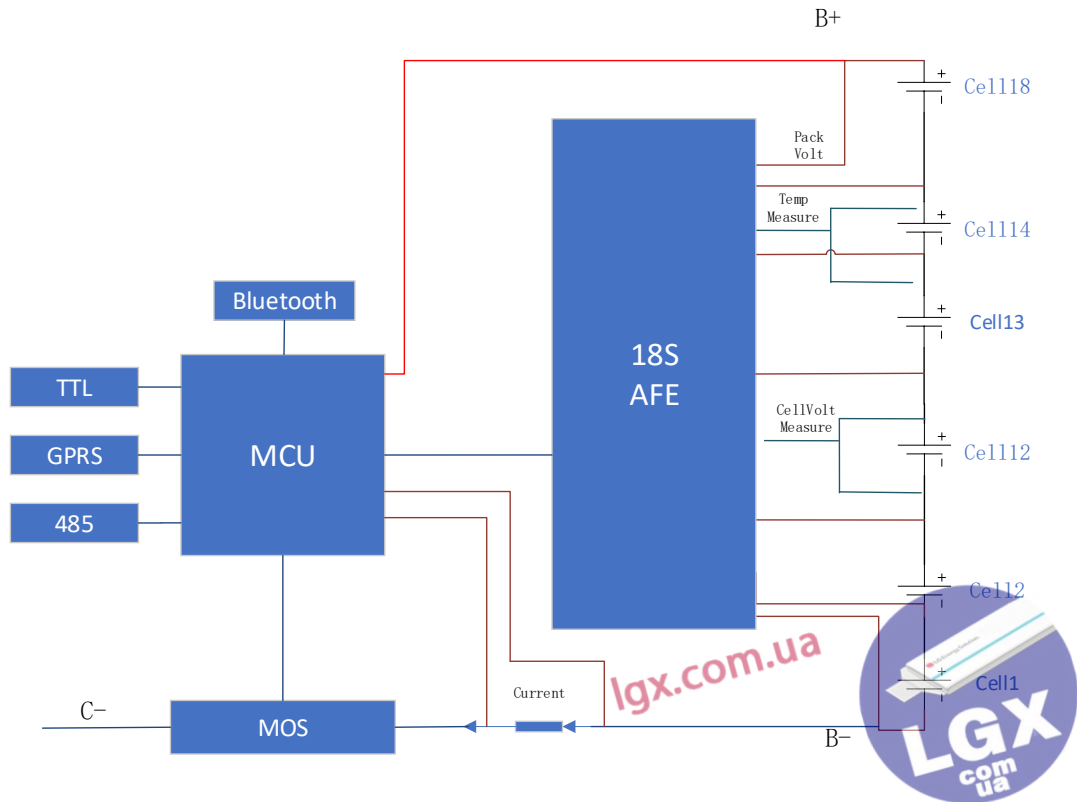
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1.1 Introduction

ANT-18S-XXXA-XX is a smart BMS. Main function includes: cell voltage/ temperature/pack voltage/current measurement, passive balance control, CAN bus, RS485, TTL port, Bluetooth (APP supported), SOC calculation, MOS control.

1.2 System Topology



1.3 Function

1.3.1 RS485 Bus

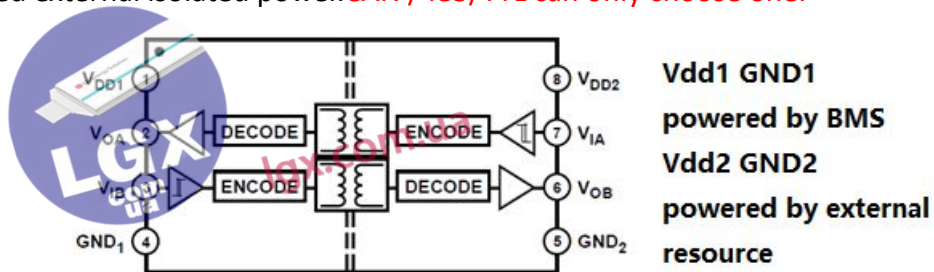
2500V isolated。 Typical baud rate is 19200.

CAN /485/TTL can only choose one.

1.3.2 TTL Port

2500V isolated。 Typical baud rate is 19200.

Need external isolated power.**CAN /485/TTL can only choose one.**



1.3.3 Cell voltage measurement

Measures Up to 18 Battery Cells in Series.

1.3.4 Temperature measurement

MOS, balance circuit, and external temperature measurement.

1.3.5 SOC

AH integral method with OCV calibration.

1.3.6 MOS Control

Drive charge & discharge MOS to protect the battery.

1.3.7 Pack voltage measurement

Pre-charge and pack voltage are get by this function.

1.3.8 Current measurement

Short-circuit, auto wake up, soc calculation.

1.3.9 Balancing

Passive cell balancing with programmable current.

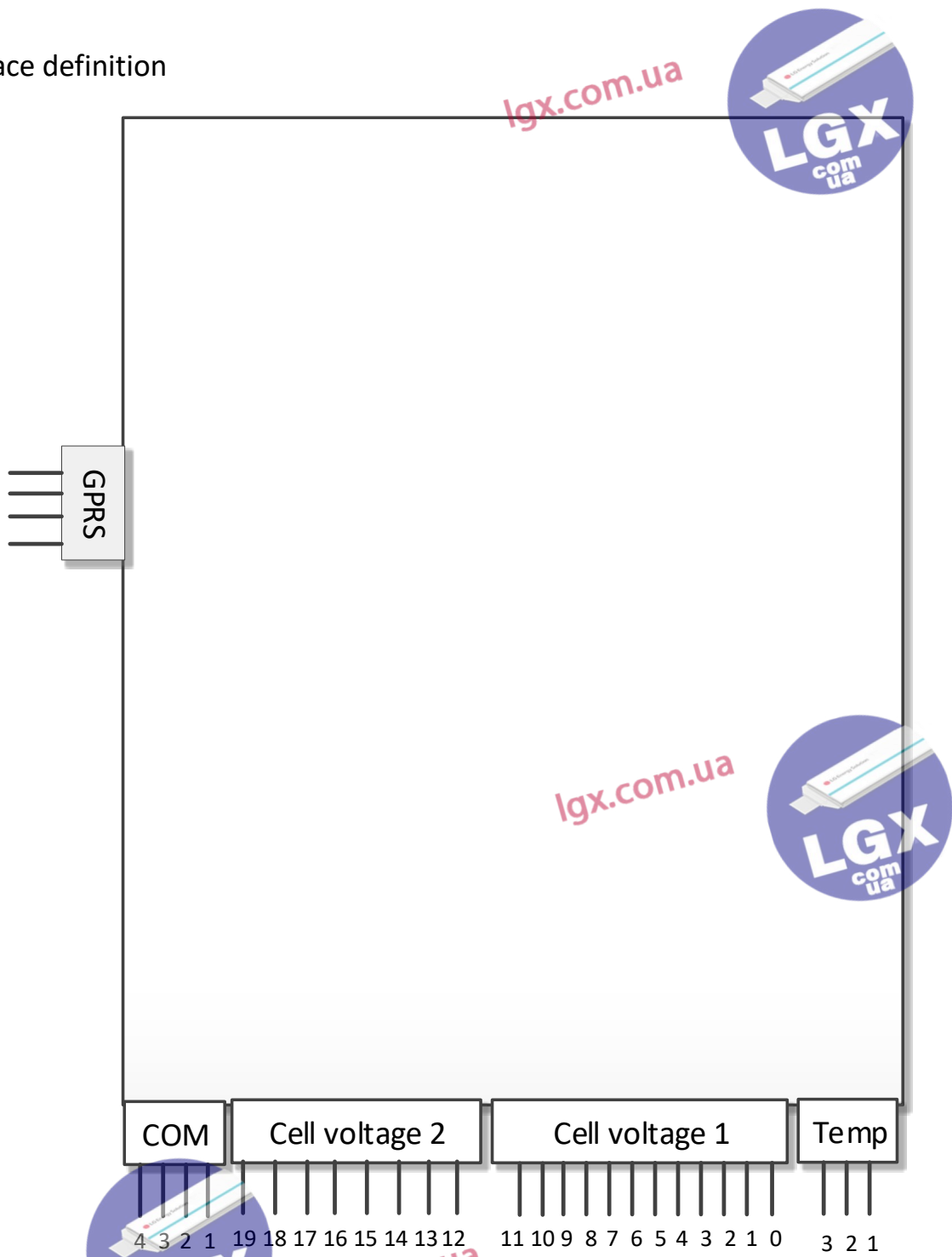
100mA/ channel for maximum.



1.4 Electrical characteristics

Index	Parameter	Detail	Remark
1	Total supply voltage	20-80V DC from battery	Auto change to sleep state
2	Cell number	8-18S	
3	Working state power consumption	< 10mA (60V)	
4	Sleep state power consumption	< 5mA (60V)	Auto wake up
5	Deep sleep state power consumption	< 20uA (60V)	Manual wake up
6	Working temperature	-40 ~ 85 °C	
7	Storage temperature	-40 ~ 95 °C	
8	Working humidity	5% ~ 95%	Conformal Coating
9	Cell voltage measurement	0-5V, measurement error< 25mV Typical is 5mV	Resolution 1mV
10	Open wire detection	Supported	
11	Passive balancing	Maximum 100mA/channel	
12	Temperature measurement	-30 ~ 125 °C ,	2 channels
13	Current measurement	-150A ~ 300A, error<2% FSR	1channel
14	SOC	< 8%	
15	CAN	1 channel, bootloader supported	Choose one in three
16	485	1 channel, bootloader supported	Choose one in three
17	TTL	1 channel, bootloader supported	Choose one in three
18	Current ability	Rated 100A, Pulse 300A (30s) The value depends highly on heat radiation.	
19	Short circuit	default 300A	
20	System log	Support	FLASH
21	Bluetooth	Support	Connect to APP
22	IP level	IP30	
23	Weight	< 400g	
24	Size	122*72*16mm	

2. Interface definition



2.1 Output negative:

C-, Black wire. Charge and discharge negative share the same port.

2.2 Battery negative:

B-, blue wire. Connect to pack negative.

B- must be connected to battery first, then cell voltage interface can be plugged in.

2.3 Cell voltage port

3. 18 series cell voltage and BMS power wire.

Index	Item	Details
0	B-	Connected to pack negative
1	B1+	Connect to positive terminal of cell 1
2	B2+	Connect to positive terminal of cell 2
3	B3+	Connect to positive terminal of cell 3
4	B4+	Connect to positive terminal of cell 4
5	B5+	Connect to positive terminal of cell 5
6	B6+	Connect to positive terminal of cell 6
7	B7+	Connect to positive terminal of cell 7
8	B8+	Connect to positive terminal of cell 8
9	B9+	Connect to positive terminal of cell 9
10	B10+	Connect to positive terminal of cell 10
11	B11+	Connect to positive terminal of cell 11
12	B12+	Connect to positive terminal of cell 12
13	B13+	Connect to positive terminal of cell 13
14	B14+	Connect to positive terminal of cell 14
15	B15+	Connect to positive terminal of cell 15
16	B16+	Connect to positive terminal of cell 16
17	B17+	Connect to positive terminal of cell 17
18	B18+	Connect to positive terminal of cell 18
19	B+	Connect to pack positive

For application less than 18s, please refer to the wiring guidance!!!

3.1 Temperature port

Index	Item	Details	Index	Item	Details
1	GND	NTC common ground	3	T2	NTC2 positive
2	T1	NTC1 positive			

3.2 Communication port

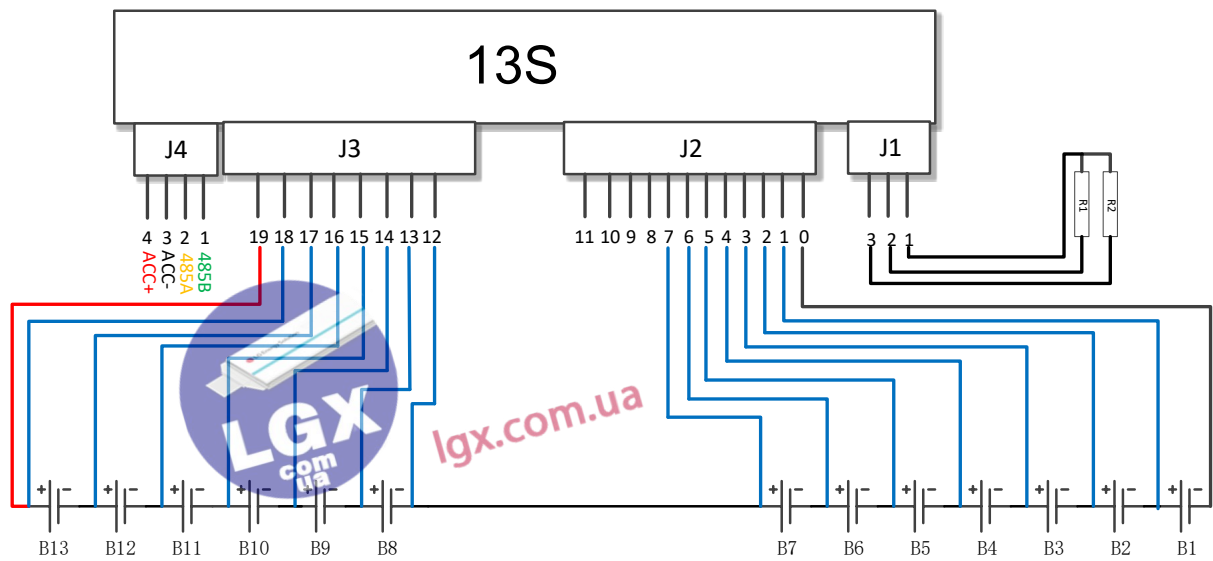
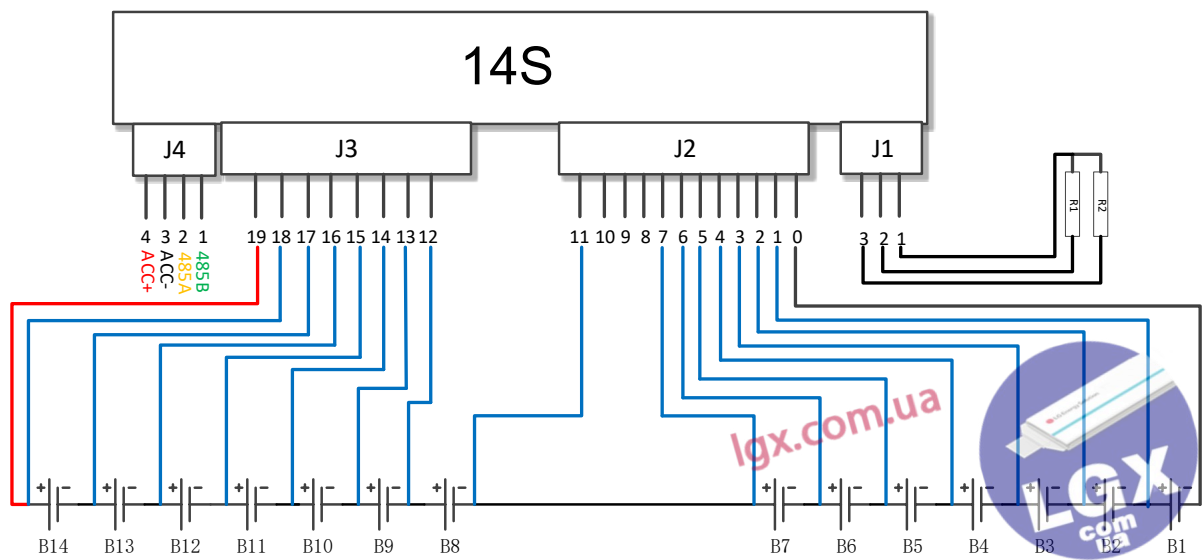
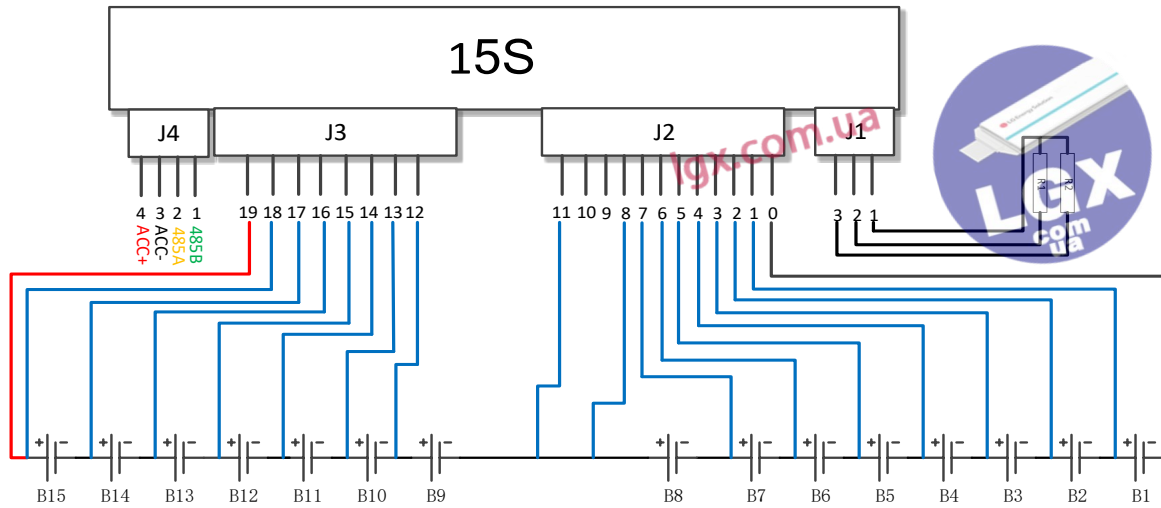
Index	Item	Details	Index	Item	Details
1	CANL	CAN Low/485B	3	ACC-	Activation negative
2	CANH	CAN High/485A	4	ACC+	Activation positive

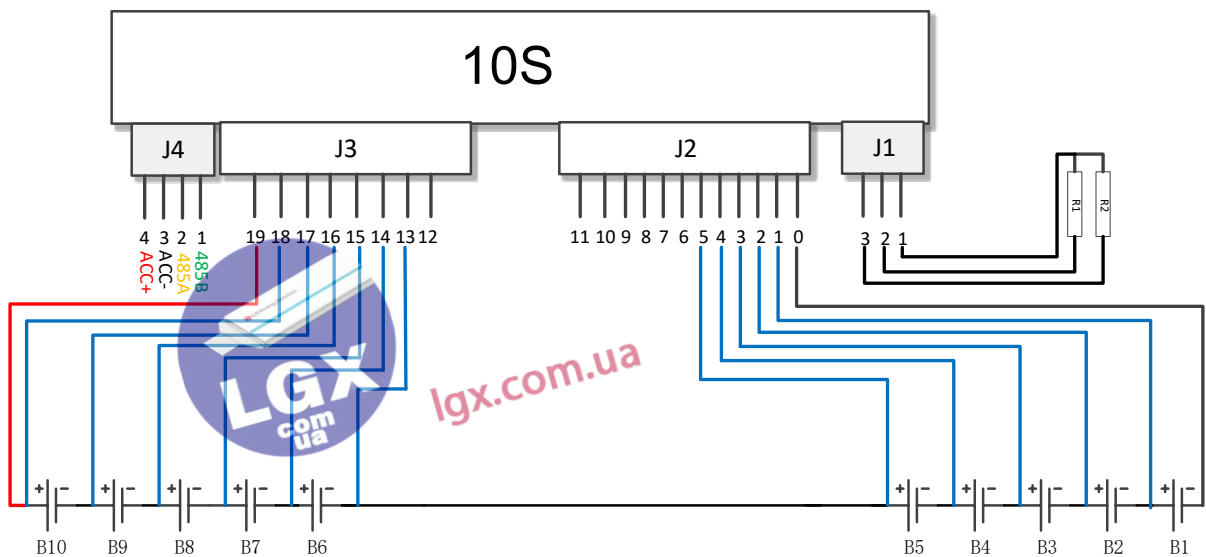
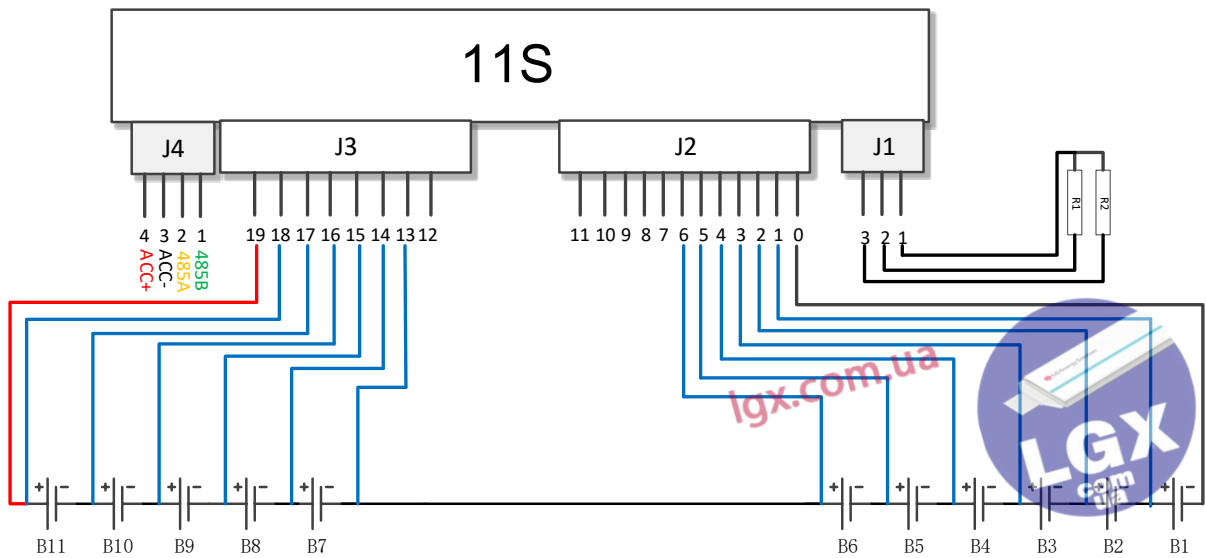
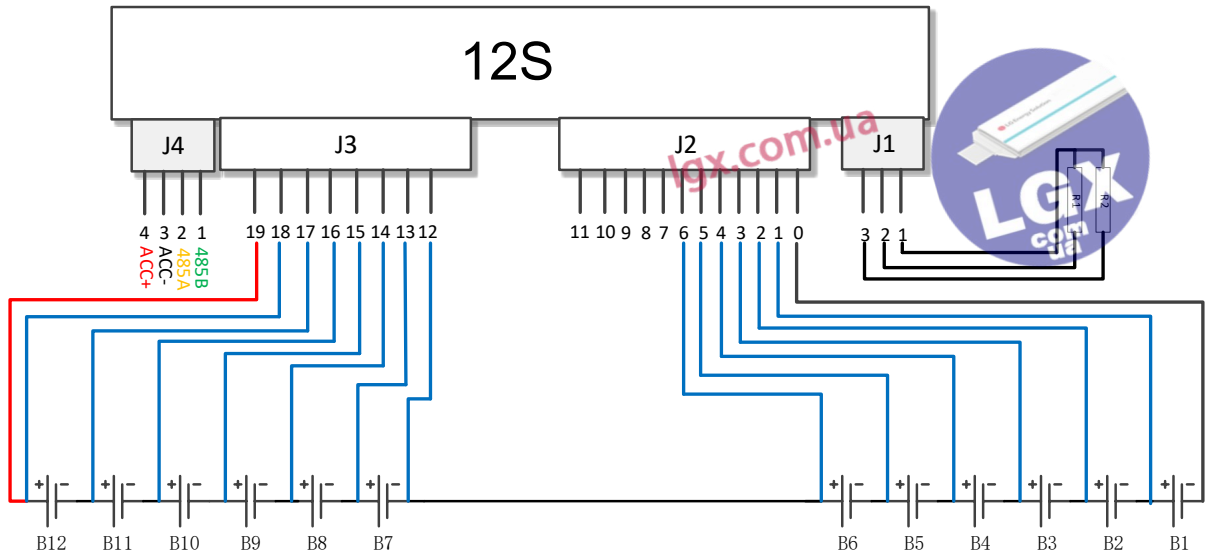
Remark: A Voltage source range from 3-12V can activate BMS via ACC + and ACC-.

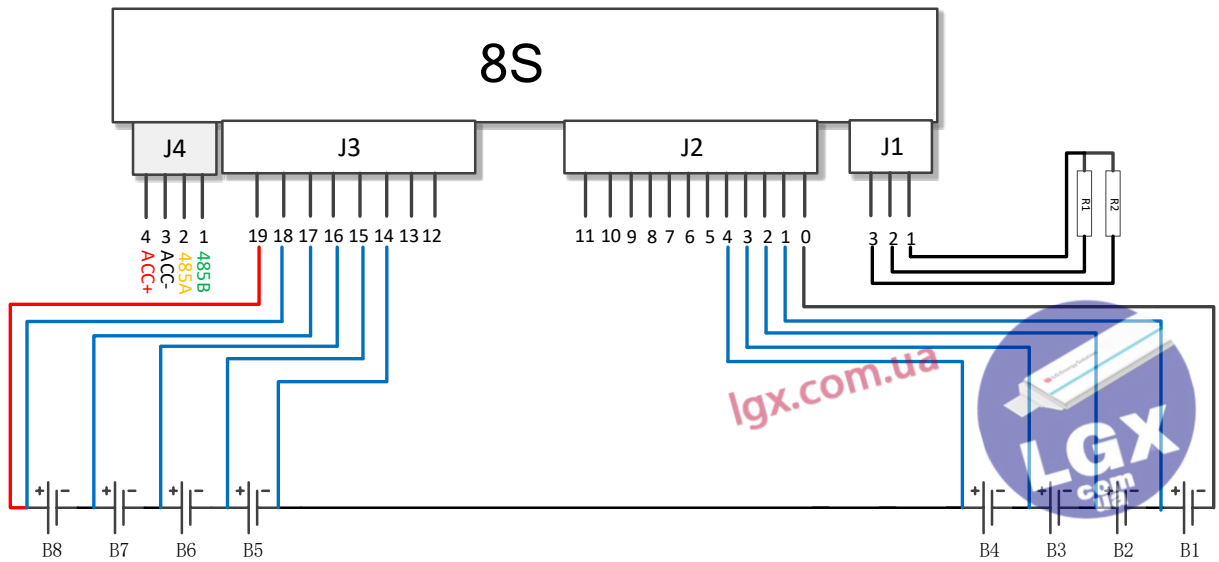
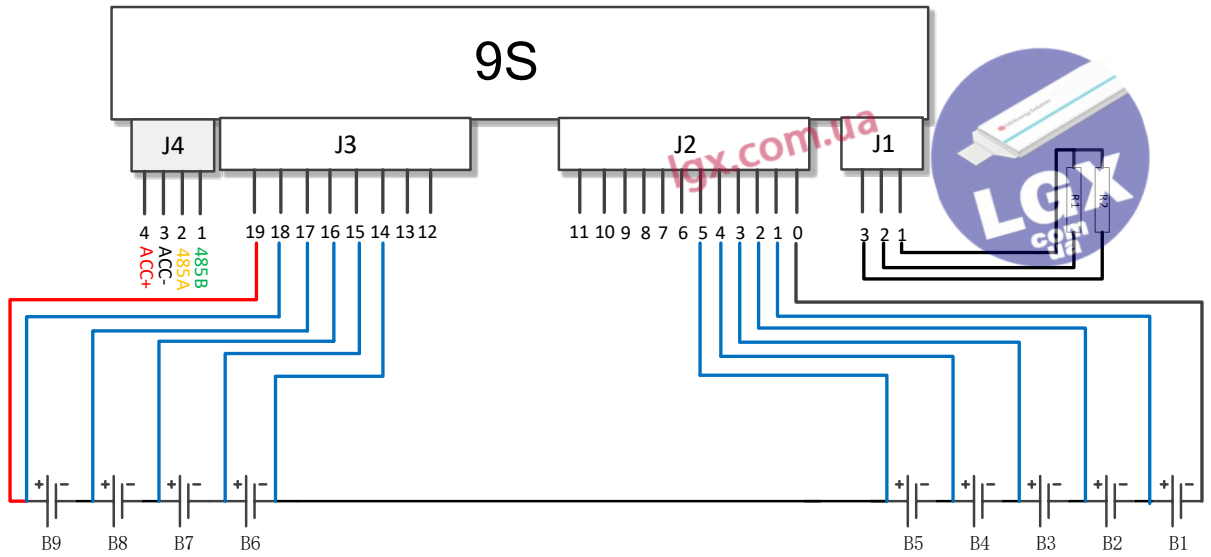
By the way, a charger can also activate BMS.

3.3 GPRS port

Index	Item	Details	Index	Item	Details
1	V	Battery total positive	4	RX	BMS signal reception
2	TX	BMS signal transmission	5	G	GND







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5. PC software



The screenshot shows the BMS_V1.5 software interface. It includes a connection settings section with COM3 selected and a baud rate of 19200. The MOS status shows charging and discharging MOS are both enabled, and balancing is disabled. The battery status section displays: Total Voltage: 64.6V, Current: 0.00A, SOC: 89%, Remaining Capacity: 88.299AH, and Voltage Difference: 0.000V. Individual cell voltages are listed from 4.035V to 4.035V. The system log shows various charging and discharging events for 29 cells.

6. APP



The screenshot shows the BMS Control APP interface. It features a connection button, a password verification field, and a password modification field. Below these are buttons for various functions: Titanium parameters, Open charging, Open discharging, Modify Bluetooth address, Close charging, Close discharging, Restart system, Factory settings, Screen refresh, Automatic balancing, and Titanium parameters. The bottom navigation bar includes BMS Control, Parameter Settings, and Real-time Status.

BMS Control



The screenshot shows the BMS Parameter setting APP interface. It displays a list of parameters for setting, including: Single cell overvoltage warning, Single cell undervoltage warning, Single cell overvoltage protection, Single cell undervoltage protection, Single cell overvoltage recovery, Single cell undervoltage recovery, Total overvoltage protection, Total undervoltage protection, Charging overcurrent protection, and Charging overcurrent delay. Each parameter has a value field and a 'Setting' button. The bottom navigation bar includes BMS Control, Parameter Settings, and Real-time Status.

BMS Parameter setting



The screenshot shows the BMS State APP interface. It displays real-time battery status: RV:16043, Running time: 53 days 1 hour 31 minutes 17 seconds. Charging MOS is Open, Discharging MOS is Open, and Balancing is Closed. Battery parameters include: Total Voltage: 64.6V, Capacity: 88.299AH, Total Cycle: 0, Highest Voltage: 4.035V, Average Voltage: 4.035V, MOS: 11°C, T1: -40°C, T2: -40°C, T3: -40°C, T4: -40°C. A table shows individual cell voltages from [01] to [15], all at 4.035V. The bottom navigation bar includes BMS Control, Parameter Settings, and Real-time Status.

BMS State

7. Structure

