

Shenzhen Jiabaida Energy Storage Technology Co., Ltd.

SHENZHEN JIABAIDA ENERGY STORAGE TECHNOLOGY.CO.,LTD

HV-BMU05 Product Technical Specifications

Product Name	Strict control unit	
Product Model	JBD-HV-BMU05-32S12T	
Editor system	Review	batch allow
Liu Tingliang	Yang Wenchao	Liu Wei
Version	A02	

Revision history(Correction record)

Serial Number	Version	Revision Date	Reviser	Revisions
1	A01	2023.11.05	Liu Tingliang	New
2	A02	2024.04.07	Liu Tingliang	1. Add accessories list 2. Add an outer shell structure
3				
4				
5				
7				
8				
9				
10				
11				

Function Configuration Table

project	name	model
Basic functions	String number	32S (compatible with 24~32S, see wiring instructions in the main text)
	Communication methods	-Chrysanthemum chain -CAN
	Equilibrium method	- Passive Balance -Active balancing
	shell	-veneer -Sheet metal casing
Customization requirements		

Parts list

Serial Number	name	Part Number	Material Model	quantity
1	HV from control		JBD-HV-BMU05-32S16T	1 piece
2	Communication harness	40033599	XHD-2x2\4PIN\2.5mm pitch\22#\500mm\Blue-Black-Yellow-White	1 item
3	Sampling harness	40033471	XHD-2x16\32PIN\2.5mm pitch\22#\800mm\Black, white, and red	2 items

1.Product Introduction

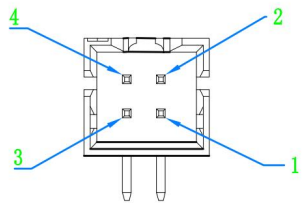
The BMU05-32S12T slave module uses BYD daisy-chain communication. A single module can collect 24~32 cell voltages and supports 12 channels of cell temperature.

2.Performance parameters

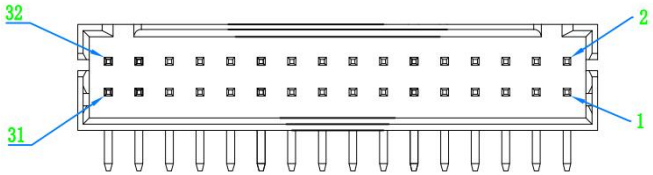
project	Parameter Indicators
Operating temperature	- 40°C~+125°C
Storage temperature	- 65°C~+150°C
Voltage measurement error	$\leq \pm 3\text{mV}$ (0.5~4.5V, +25°C) $\leq \pm 5\text{mV}$ (0.5~4.5V, -20°C~+65°C) $\leq \pm 7\text{mV}$ (0.5~4.5V, -40°C~+125°C)
Communication distance	10-meter twisted-pair communication, 1Mbps isolated serial communication
Sampling rate	All battery voltage detections can be completed within 4ms.
Equalizing current	$\leq 60\text{mA}$

3.Interface definition

Port pin definitions

Port J1					
PIN	Port definition	Function Description	PIN	Port definition	Function Description
1	PA-	negative terminal of the control daisy chain output	3	PB-	From the negative input terminal of the daisy chain
2	PA+	From the positive output of the daisy chain control	4	PB+	From the positive end of the daisy chain input
Port diagram					
			Spacing: 2.50mm Terminal model: PHM-KDY254-202D Cable end housing model: XD-XHD-2x2Y-X Wire diameter requirement: 20AWG-22AWG Daisy-chain communication harness requirements: twisted pair or wrapped shielding.		
Port J2					
PIN	Port definition	Function Description	PIN	Port definition	Function Description
1	T1	Temperature probe T1 3950-10K	17	B3	Connect to the positive terminal of the third battery cell.
2	GND	Temperature probe T1 sampling site	18	B4	Connect to the positive terminal of the 4th battery cell.
3	T2	Temperature probe T2 3950-10K	19	B5	Connect to the positive terminal of the 5th battery cell.
4	GND	Temperature probe T2 sampling site	20	B6	Connect to the positive terminal of the 6th battery cell.
5	T3	Temperature probe T3 3950-10K	twenty one	B7	Connect to the positive terminal of the 7th battery cell.
6	GND	Temperature probe T3 sampling site	twenty two	B8	Connect to the positive terminal of the 8th battery cell.
7	T4	Temperature probe T4 3950-10K	twenty three	B9	Connect to the positive terminal of the 9th battery cell.
8	GND	Temperature probe T4 sampling site	twenty four	B10	Connect to the positive terminal of the 10th battery cell.
9	T5	Temperature probe T5 3950-10K	25	B11	Connect to the positive terminal of the 11th battery cell.
10	GND	Temperature probe T5 sampling site	26	B12	Connect to the positive terminal of the 12th battery cell.
11	T6	Temperature probe T6 3950-10K	27	B13	Connect to the positive terminal of the 13th battery cell.
12	GND	Temperature probe T6 sampling site	28	B14	Connect to the positive terminal of the 14th battery cell.
13	P0-	Connect the negative terminal of the main control circuit to the negative terminal of the first battery cell.	29	B15	Connect to the positive terminal of the 15th battery cell.
14	B0	Connect to the negative terminal of the first battery cell.	30	B16	Connect to the positive terminal of the 16th battery cell.
15	B1	Connect to the positive terminal of the first battery cell.	31	P16+	Connect to the positive terminal of the 16th battery cell.
16	B2	Connect to the positive terminal of the second battery cell.	32	NC	NC
Port J3					
PIN	Port definition	Function Description	PIN	Port definition	Function Description
1	T7	Temperature probe T7 3950-10K	17	B19	Connect to the positive terminal of the 19th battery cell.
2	GND	Temperature probe T7 sampling site	18	B20	Connect to the positive terminal of the 20th battery cell.
3	T8	Temperature probe T8 3950-10K	19	B21	Connect to the positive terminal of the 21st battery cell.
4	GND	Temperature probe T8 sampling site	20	B22	Connect to the positive terminal of the 22nd battery cell.
5	T9	Temperature probe T9 3950-10K	twenty one	B23	Connect to the positive terminal of the 23rd battery cell.
6	GND	Temperature probe T9 sampling site	twenty two	B24	Connect to the positive terminal of the 24th battery cell.
7	T10	Temperature probe T10 3950-10K	twenty three	B25	Connect to the positive terminal of the 25th battery cell.
8	GND	Temperature probe T10 sampling site	twenty four	B26	Connect to the positive terminal of the 26th battery cell.
9	T11	Temperature probe T11 3950-10K	25	B27	Connect to the positive terminal of the 27th battery cell.
10	GND	Temperature probe T11 sampling site	26	B28	Connect to the positive terminal of the 28th battery cell.
11	T12	Temperature probe T12 3950-10K	27	B29	Connect to the positive terminal of the 29th battery cell.
12	GND	Temperature probe T12 sampling site	28	B30	Connect to the positive terminal of the 30th battery cell.

13	P16	Connect to the positive terminal of the 16th battery cell.	29	B31	Connect to the positive terminal of the 31st battery cell.
14	B16	Connect to the positive terminal of the 16th battery cell.	30	B32	Connect to the positive terminal of the 32nd battery cell.
15	B17	Connect to the positive terminal of the 17th battery cell.	31	P32+	Connect the positive terminal of the main control unit to the positive terminal of B32.
16	B18	Connect to the positive terminal of the 18th battery cell.	32	NC	NC

Port diagram					
			Spacing: 2.50mm Terminal model: PHM-KDY254-216D Cable end housing model: XD-XHD-2x16Y-X Wire diameter requirement: 20AWG~22AWG NTC: 10K B value 3950		

4.Wiring instructions

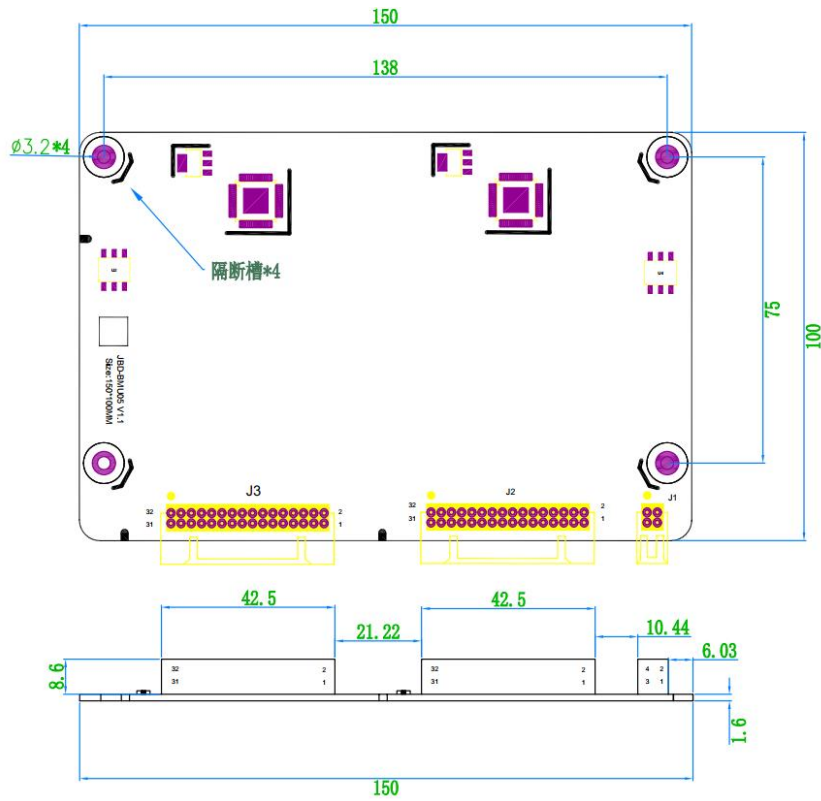
4.1Recommended connection methods for different number of strings:

	C16	C17	C18	C19	C20	C21	C22	C23	C24	C25	C26	C27	C28	C29	C30	C31	C32
32S	B16	B17	B18	B19	B20	B21	B22	B23	B24	B25	B26	B27	B28	B29	B30	B31	B32
31S	B16	B17	B18	B19	B20	B21	B22	B23	B24	B25	B26	B27	B28	B29	B30	B31	B31
30S	B16	B17	B18	B19	B20	B21	B22	B23	B24	B25	B26	B27	B28	B29	B30	B30	B32
29S	B16	B17	B18	B19	B20	B21	B22	B23	B24	B25	B26	B27	B28	B29	B29	B29	B29
28S	B16	B17	B18	B19	B20	B21	B22	B23	B24	B25	B26	B27	B28	B28	B28	B28	B28
27S	B16	B17	B18	B19	B20	B21	B22	B23	B24	B25	B26	B28	B28	B28	B28	B28	B28
26S	B16	B17	B18	B19	B20	B21	B22	B23	B24	B25	B28	B28	B28	B28	B28	B28	B28
25S	B16	B17	B18	B19	B20	B21	B22	B23	B24	B28	B28	B28	B28	B28	B28	B28	B28
24S	B16	B17	B18	B19	B20	B21	B22	B23	B28	B28	B28	B28	B28	B28	B28	B28	B28

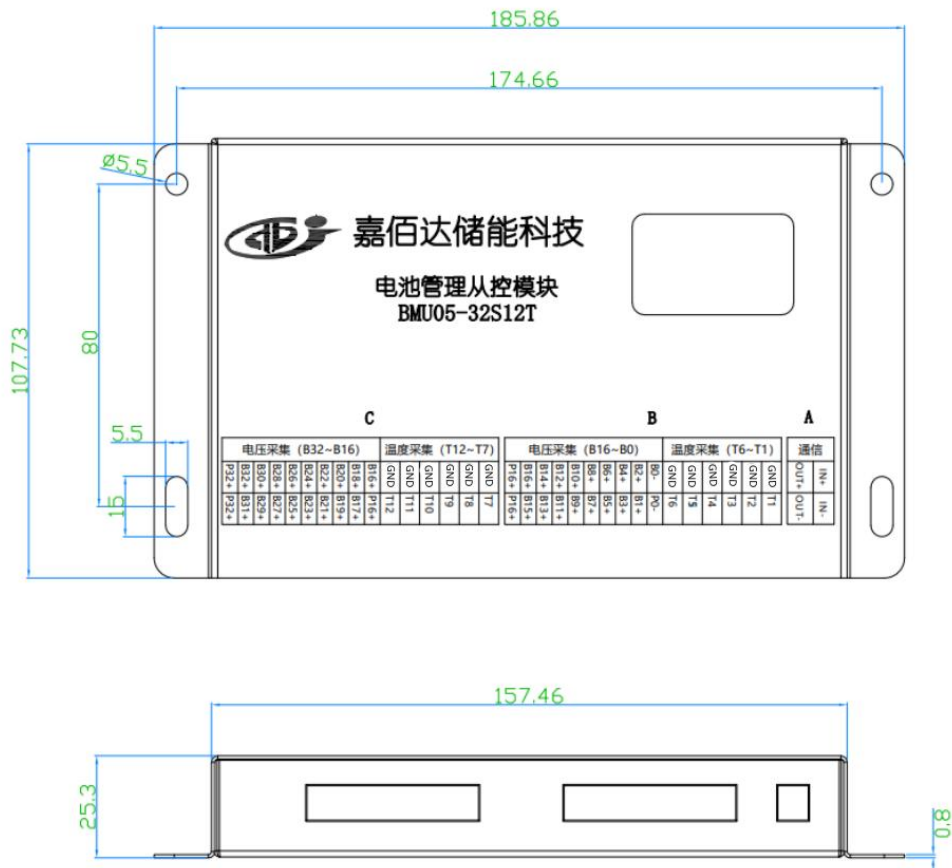
 Note: The orange area indicates multiple voltage acquisition cables connected in parallel.

5. Size and Structure

5.1. PCB Size and Structure



5.2. Shell structure



6.Environmental adaptability

6.1Work environment

- The product is designed to operate normally under the following conditions:

Ambient temperature: -20°C ~ 75°C;

- Relative humidity: 5% ~ 90%;

-Atmospheric pressure: 86 kPa~106 kPa;

6.2Storage environment

This product should be stored in a clean, well-ventilated warehouse with an ambient temperature of -30°C to +85°C and a relative humidity of no more than 70%. The air should not contain corrosive gases or other harmful substances.

The electrically insulating medium must not be subjected to any mechanical impact or heavy pressure. It should not be exposed to direct sunlight, and the distance between it and heat sources (heating equipment, etc.) must not be less than 2 meters. Under these storage conditions, the BMS product can be stored for two years.

7.Packaging and Transportation

- Logo

- The product should have the following clear and durable markings:

-Product Name, Model

- Cell type

- Manufacturing date and serial number

-Package

- Packaging should meet the requirements of moisture-proof and vibration-proof. The packaging box should be sturdy and reliable, and the inside of the box should be lined with moisture-proof material. The product should not move around inside the box.

-Outer cardboard box packaging, with single-layer anti-static bubble wrap;

-transportation

During transportation, the product must not be subjected to severe mechanical impact, direct sunlight, rain, corrosive chemicals, or harmful gases. During loading and unloading, the product must be handled with care and must not be dropped.

Throw, press down.

- The stacking height of packaging boxes should be less than 5 layers.

8.Installation and Usage Precautions

This product is suitable for household high-voltage energy storage systems, which often consist of multiple battery cells connected in series. The system voltage can reach hundreds or thousands of volts. Therefore, relevant safety regulations must be followed and safety precautions must be taken during installation and use to avoid accidents.

Prohibited items	- This system contains high-voltage circuitry. Unauthorized disassembly and assembly of this product is strictly prohibited. Installation and maintenance must be performed with the circuit disconnected to avoid the risk of short circuits.
	- The use of the outgoing ports must strictly follow the operating instructions. Avoid touching the positive and negative terminals of the battery to prevent short circuits and circuit damage. Unused ports should not be used.
	Insulation treatment should be done properly.
	- For bare board installation, you need to assess the safety distance and ensure proper insulation.
Safety regulations	- This product must not be subjected to water immersion tests without authorization.
	Avoid prolonged use in the following work environments:
	- Locations where the temperature or humidity exceeds the range specified in the specifications.
	- Locations subject to strong vibrations or impacts.
	- Locations containing dust, highly corrosive substances, flammable and explosive materials, or high salt spray.
	- Places with direct sunlight or near heat sources.

	- Tools used by installation and commissioning personnel must be insulated.
	- When using different numbers of strings, shorting should be done according to the shorting reference table. When installing the acquisition cable, it should be protected from squeezing and damage.