



Battery Management System



SPECIFICATION

Product Name: High Voltage BOX

Product model: ESS-HV-BC250

Product Code: 750-200-PDU

Version: Ver1.19

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1. Product Overview

1.1 Overview

750-200-PDU is a high-voltage power circuit management unit independently developed by our company. It is an intermediate unit between battery cluster and energy storage converter (PCS). The high-voltage control box has the functions of battery cluster voltage and current collection, battery cluster circuit contactor control and protection, etc. The circuit breaker, contactor, fuse, precharge control circuit, current sensor, battery cluster control unit (BCU), switching power supply, etc. are installed in the high-voltage control box. The design of high-voltage control box has fully considered the electrical characteristics, heat dissipation performance, safety performance and operability and maintenance of various components, with reasonable spatial layout, compact structure, flexible configuration, safety and reliability. The energy storage battery cluster control master unit (BCU) built in the high-voltage control box has can, daisy chain and 485 communication bus interface, which can realize the communication function between the high-voltage control box and the energy storage battery management module, the host of the energy storage battery management system and the energy storage converter, and realize the control, protection and data communication functions of the energy storage battery cluster

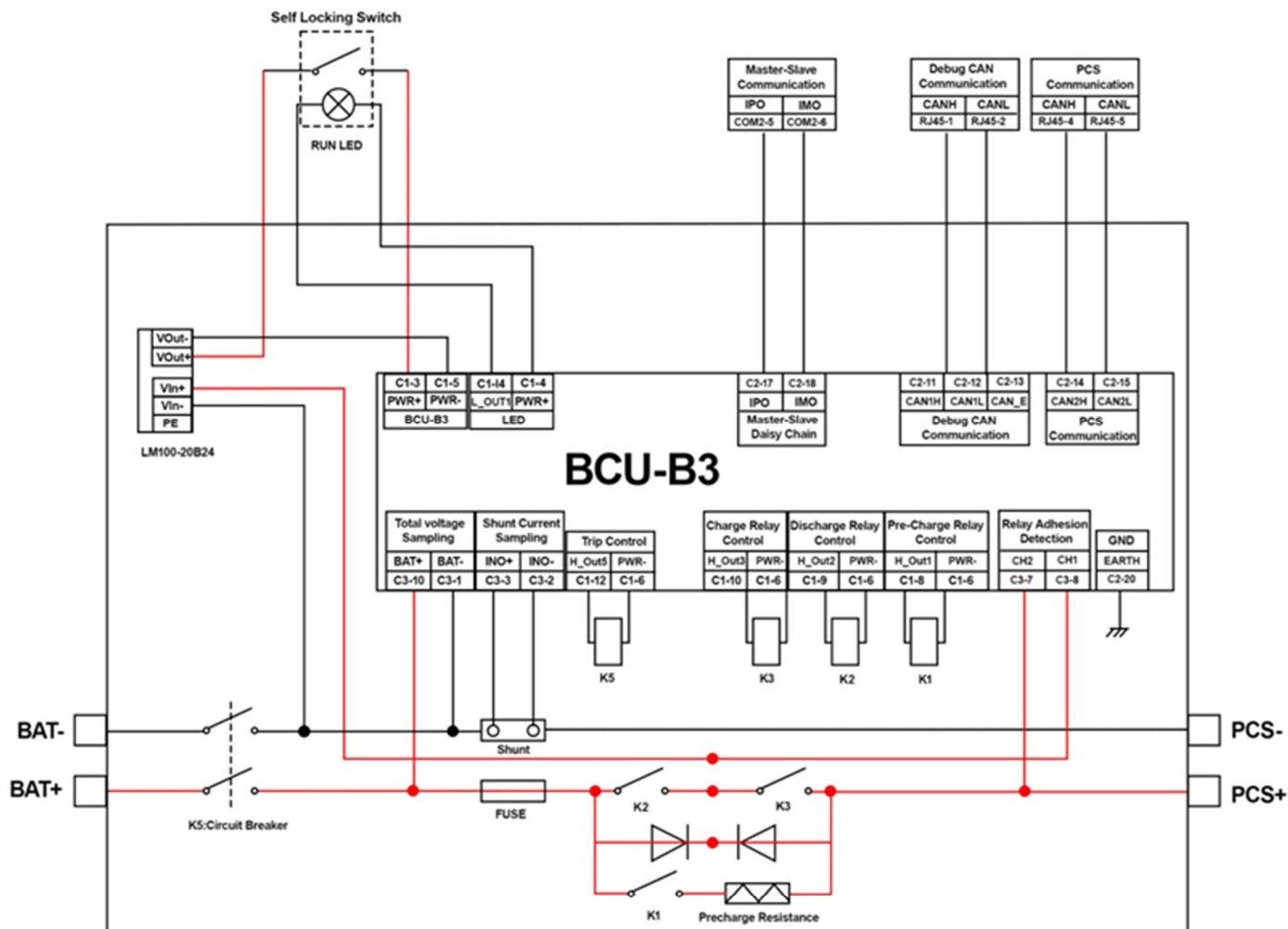
2. Functions and Features

- The standard working voltage is DC 120V-750V
- The battery management module of the energy storage system is provided with the function of power supply product support and can communication or daisy chain communication with the battery management slave module of the energy storage system to realize the collection and management of battery cluster information.
- Support the manual or electric opening and closing control function of DC circuit breaker (optional).
- It has the functions of accurate battery cluster terminal voltage detection, terminal current detection and battery cluster insulation state detection.
- Support the temperature detection of copper bars and power connectors in the high-voltage box to ensure the safety of system operation.
- The panel is designed with an operation status indicator, which can visually identify the current operation status.
- High reliability components are selected, multiple redundancy protection measures are adopted, and the possible harsh electromagnetic environment, high temperature, vibration and other environments in the energy storage system are fully considered. The product has high reliability, high stability and high anti-interference performance.
- It can be applied to various energy storage application scenarios, including power station energy storage, echelon utilization energy storage, etc.

3. BOM of key Components

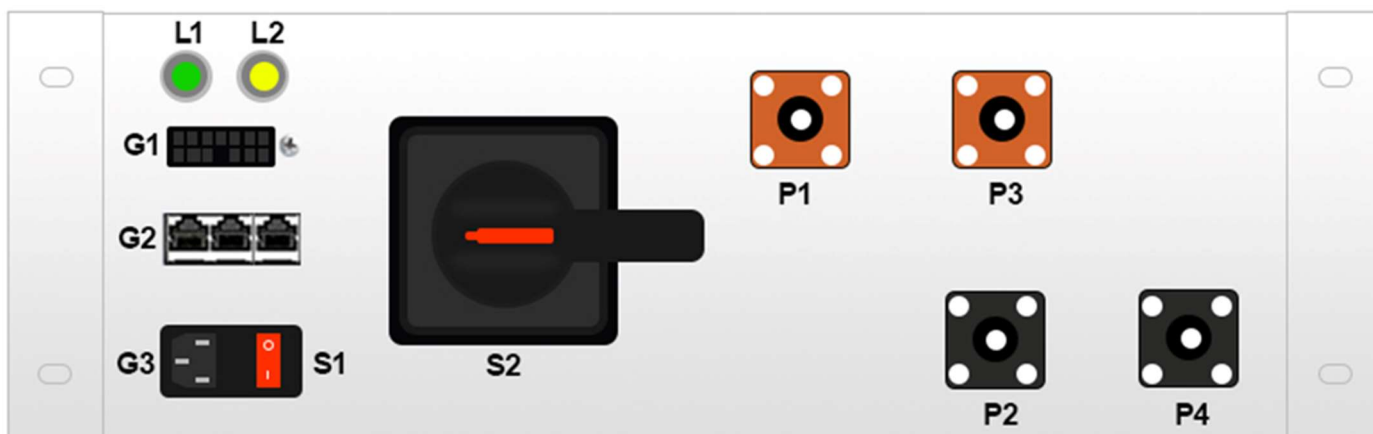
Num	Name	Parameter	Unit	Function	Note
1	Molded Case Circuit Breaker	200A	1	Manual Opening And Closing Of Battery Cluster Circuit	Standard Configuration
2	DC Contactor	250A	1	Automatic Opening And Closing Of Battery Cluster Charging Circuit	Standard Configuration
3	DC Contactor	250A	1	Automatic Opening And Closing Of Battery Cluster Discharge Circuit	Standard Configuration
4	Precharge Contactor	30A	1	Automatic Opening And Closing Of Precharge And Circulating Circuit	Standard Configuration
5	Precharge Resistance	50Ω	1	Precharge And Circulation Circuit Current Limiting	Standard Configuration
6	Diverter	50A/±0.2%	1	Current Measurement	Standard Configuration
7	Fuse	150A	1	Protection Of Main Circuit Overcurrent	Standard Configuration
8	Switching Mode Power Supply	120W/24V	1	BMS Power Supply	Standard Configuration
9	Control Unit	BCU	1	Battery Cluster Control Management Unit	Standard Configuration
10	Energy Storage Connector	0-200A	2	High Voltage Circuit Output	Standard Configuration
11	Energy Storage Connector		1	High Voltage Circuit Input	Standard Configuration
12	Push Button Switch	16mm /Green LED	1	BMS Power Supply Control Circuit Manual Opening And Closing	Standard Configuration
13	RJ45 Module	RJ45 Port	1	Pcs, Can Communication Interface	Standard Configuration

4. Schematic Diagram



5. Product Appearance

5.1 Appearance



5.2 Definition

Num	Port	Function	Note
1	L1	Operation Indicator	
2	L2	Fault Indicator	
3	G1	Slave Control Power Interface	
4	G2	Communication Network Port	
5	G3	External 220V Power Supply	Optional
6	S1	Switch	
7	S2	Manual Switch	Manual Control of Battery Pack High Voltage Output (Breaker Handle)
8	P1	BAT+	Connect The Positive end of The Battery Cluster, And The Interface Is EBC 2+8Cell Battery Connector
9	P2	BAT-	Connect The Negative end of The Battery Cluster, And The Interface Is EBC 2+8Cell Battery Connector
10	P3	PCS+	Connect PCS Postive end With M6 Bolt
11	P4	PCS-	Connect PCS Negative end With M6 Bolt

6. HV BOX Installation Instructions

- ◇ The product installation dimension (depth * width * height):400*743*175mm
(excluding the fixed support);
- ◇ The default product color is plastic sprayed 9016, fine grain matte;
- ◇ The high-voltage box is customized according to customer requirements and fixed
in a stacked manner;

7. Power/Communication Port Definition

Port	Num	Definition	Function	Noted
RJ45	1	CAN1_H	Debug CAN communication	
	2	CAN1_L	Debug CAN communication	
	4	CAN2_H	PCs communication	
	5	CAN2_L	PCs communication	

Noted: RJ45 plug-in model: D-CAT6-PCB

8. HV BOX Power On



9. Technical Support and Service

1. For packaging information, please refer to product shipping packaging information
2. If the product operates above the load indicated in this manual, the product performance cannot be guaranteed to meet all performance indicators in this manual
3. Unless otherwise specified, the data in this paper are measured when $t_a=25\text{ }^{\circ}\text{C}$, humidity<75%, Input nominal voltage and Output rated load
4. The above are the product performance indicators listed in this manual
5. Our company supports OEM/ODM. Please feel free to contact us about product use and technology. We will reply to you as soon as we receive the information. We look forward to communicating with you!