

PRODUCT INTRODUCTION

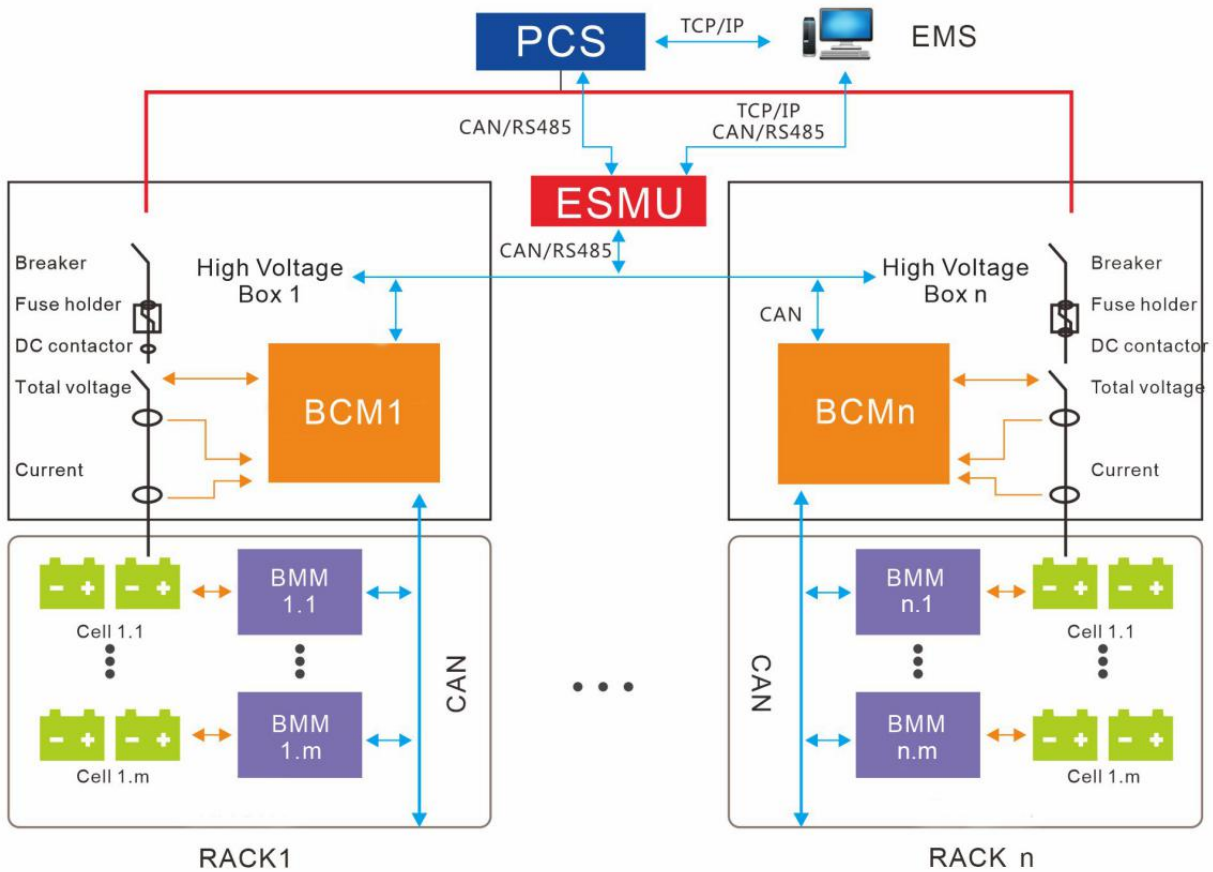
INTRODUCTION

The Battery Management System (BMS) is a core component of electrochemical Energy Storage Systems (ESS). It performs several critical functions, such as monitoring battery state, calculating and reporting its data, safety diagnosis (SOC、SOH、SOS), controlling its environment, authenticating and / or balancing it. The primary works of the BMS is to protect the battery from damage under various operating conditions and works with the other control systems of the ESS, in addition, improve battery consistency, extend its service life.

BMS ARCHITECTURE

- GOLD ELECTRONIC's BMS is divided in three levels. From a bottom up approach, the system starts at the cell level, which referred as BMM, also known as Slave BMS. The BMM is responsible for collecting the voltage, temperature, provide the active or passive balancing management, thermal management of the cells. It also has the function of communicating with the up one level.
- The second level is the rack level, which referred as BCM, also known as Master BMS. The BCM is responsible for collecting voltage, current and temperature, calculating SOC/SOH and other states, execute balancing strategy and diagnose battery faults of the rack. Also according to the fault information, the local protection and relay control functions are realized. Generally placed in the high voltage box, it has the function of communicating with up one level and BMM.
- Lastly, all the racks connected form a "battery string" are controlled by the ESMU, which is the third level. The ESMU is responsible for summarizing and display all the data and fault diagnosis information, also store data of various states of the local battery system. ESMU performs alarm and protection functions according to battery SOC/SOH status, by controlling its breaker to exit the system from the DC circuit to ensure its safety.

CIRCUIT DIAGRAM



The above schematic shows GOLD ELECTRONIC's BMS architecture from the module level. The relationship of BMS, PCS and EMS, also the communication mode of them.

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DATASHEET

SLAVE BMS MODULE (BMM)							
MODEL	ESBMM-1212 <small>(compatible with 1500V)</small>	ESBMM-2412 <small>(compatible with 1500V)</small>	ESBMM-4812	ESBMM-6012	DBM-0822	ESBMM-1222 <small>(compatible with 1500V)</small>	ESBMM-2422 <small>(compatible with 1500V)</small>
Module Type	Passive Balancing				Active Balancing		
Supply Voltage	DC 9-36V						
Collected Voltage Series	12	24	48	60	8	12	24
Voltage Detection Range	0-5V						
Collected Number of Temperature	14	20	12	12	9	14	20
Temperature Detection Range	-40~125°C						
Balance current	100mA				±2A		
Communication Interface	CAN						
Size (CM) (L*W *H)	100*120*27	105*188*20.5	100*179*27	100*195*27	58.6*143.6*18	105*180*28	105*188*20.5
MASTER BMS MODULE (BCM)							
MODEL	ESBCM-F133				ESBCM-C133		
Supply Voltage	DC 12/24V						
Voltage Detection Range for Rack	0~1500V				0~1200V		

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Current Detection Range for Rack	0~1000A	
Input Insulation Resistance	≥10MΩ 1500VDC	
Communication Interface	CAN*3 RS485*2	
DO	6	
DI	6	
Size (CM) (L*W *H)	105*180*28	110*225*27
DISPLAY CONTROL MODULE (ESMU)		
MODEL	ESMU-10II	
Supply Voltage	DC24V	
CAN	3	
LAN	2/3	
Screen Size	10 "Resistive touch screen	
RS485	2	
Storage	SD/SSD	
Size (CM) (L*W *H)	275.85*188.85*41.9	
RESIDENTIAL STORAGE MODULE		

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MODEL	ESFBM-1612
Supply Voltage	DC30-72V
Collected Voltage Series	16
Current Detection Range	0~200A
Temperature Detection Number	6
Temperature Detection Range	-40~125°C
Passive Balancing current	100mA
Active Balancing current (optional)	300mA
DO/DI	4/2
Communication Interface	CAN/485
Size (CM) (L*W *H)	155.7*87*33