LARGE ENERGY STORAGE LITHIUM BMS

100% Safety Index

ONLINE TRANSPARENT TRANSMISSION PROGRAM UPGRADE	DESIGN OF A CLOSED-LOOP BIDIRECTIONAL IO CONTROL SYSTEM TO ACHIEVE AUTOMATIC ADDRESSING	MULTI-PORTS DYNAMIC ENVIRONMENT DATA ACCESS	HIGH ACCURACY, FAST INSULATION COLLECTION

Gerchamp large-scale energy storage BMS solution is mainly applied to grid ESS, industrial and commercial ESS, home high voltage ESS and other fields. The system adopts 3+1 level structure, providing data acquisition, data analysis, logic processing, data mapping integrated system solution, which can provide overcharge, overdischarge, overcurrent, overtemperature and short-circuit protection for the battery pack, real-time detection, fault diagnosis and early warning for the safety status of the battery, and accurate estimation of SOC/SOH to ensure efficient, reliable and safe operation of the ESS.

SYSTEM CONFIGURATION

GBMU MODULE

Using 32-bit automotive-grade MCU chip + AFE collection + CAN communication architecture; the whole device is over 90% domestic, using 2-channel bidirectional IO ports and secondary lock terminals to realize multi-BMU loop automatic address coding

GRCU MODULE

Using ARM-M3 chip+2-channel total voltage collection+2-channel Large/small range current sensors + CAN communication architecture, the whole device is over 80% domestic, insulation collection optimal design, to avoid the influence of Y capacitors in PCS

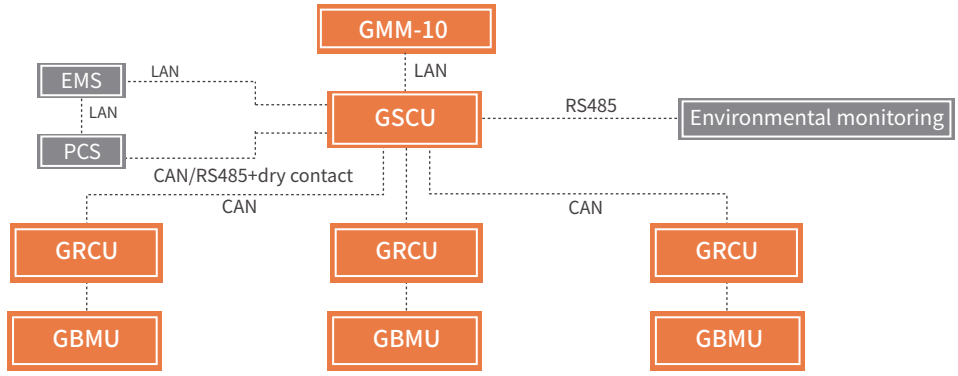
GSCU MODULE

Using ARM-A7 CPU+3-channel Ethernet+ 3-channel CAN communication+4-channel RS485+1-channel 232 communication architecture to meet multi-environment sensor and device access. The software can directly upgrade GSCU, GRCU, GBMU module programs online to meet IEC61850 communication protocol

GMM-10 MODULE

Display battery pack voltage, current, SOC/SOH and other data; Display data such as voltage, temperature, SOC/SOH of battery cell; Display battery pack status and other data

SYSTEM ARCHITECTURE



3+1 Level structure

TECHNICAL PARAMETERS

Battery cell type	Cell voltage		Cell temperature		Cell equalization	
	Range	0~5V	Range	-40~125°C	Current	100mA/3.3V
	Resolution	1mv	Resolution	0.1°C	Equalization resistance	33Ω
	Accuracy	⩽5mv	Accuracy	⩽1°C	/	/
	Cycle	100ms	Cycle	200ms	/	/
	Channel	4~24 strings	Channel	0~12	/	/

Battery pack type	Total voltage		Total current		Insulation monitoring		SOC		SOH	
	Range	0~1500V	Range	-500~500A	Range	0~50MΩ	Range	0~100%	Range	0~100%
	Resolution	0.1V	Resolution	0.1A	Resolution	0.1KΩ	Resolution	1%	Resolution	1%
	Accuracy	＜1000V (1%FS) ⩾1000V (0.5%)	Accuracy	＜1%FS	Accuracy	＜3%(500~1500V and＞600KΩ)	Accuracy	＜±5%	Accuracy	＜±8%
	Cycle	100ms	Cycle	50ms	Cycle	8S	/	/	/	/
	Channel	Total positive/ precharge	Channel	Large/small range/CAN	Channel	Total positive/total negative to pack case				

Communication type	Ethernet		RS485		RS232		CAN	
	Channel Qty	3-channel	Channel Qty	4-channel	Channel Qty	1-channel	Channel Qty	2-channel
	Communication rate	10M/100M	Communication rate	9600bps	Communication rate	9600bps	Communication rate	250Kbps
	Electrical isolation	3820Vdc	Electrical isolation	3820Vdc	Electrical isolation	3820Vdc	Electrical isolation	3820Vdc
	Support protocol	Modbus	Support protocol	Modbus	Support protocol	Modbus	Support protocol	Internet protocol

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