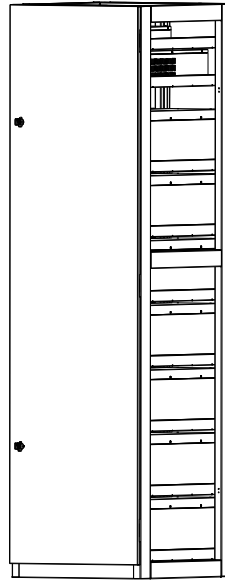


Mega Storage Lithium Iron Battery System Specification

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1. Specifications of Battery System



	Model	PBT-LI409100S2 / PBT-LI512100S2 / PBT-LI614100S2 / PBT-LI716100S2
	Rated Energy	41.0 / 51.2 / 61.4 / 71.7kWh
	Usable Energy	37.9 / 47.4 / 56.8 / 66.3kWh @ 50A
	Nominal Voltage	409.6 / 512 / 614.4 / 716.8Vdc
	Nominal Capacity	100Ah
	Charge Voltage	448 / 560 / 672 / 784Vdc
	Operating Voltage Range	384 ~ 467.2 / 480 ~ 584 / 576 ~ 700.8 / 672 ~ 817.6Vdc
	Continuous Power	20.5 / 25.6 / 30.7 / 35.8kW
	Peak Power	41 / 51.2 / 61.4 / 71.7kW @ 10s
Protection	Over/Under Temperature	Yes
	Over/Under Voltage	Yes
	Over Current	Yes
	Short Circuit	Yes
General	Dimensions (W * H * D)	550mm*2050mm*615mm
	System Weight	420 / 505 / 590 / 675kg
	Battery Module Weight	42.5kg
	Communication Interface	Ethernet, 4G, Wi-Fi, CAN

	Display	LED, BCD
	Operating Temperature Range	32°F ~ 113°F (0 °C ~ 45°C)
	Recommended Operating Temperature Range	50°F ~ 95°F (10 °C ~ 35°C)
	Relative Humidity	0 ~ 95% (No Condensation)
	Protection Rating	NEMA 2 (IP21)
	Altitude	≤ 9842ft (3000m)
Standards Compliance	EMC	FCC Part 15
	Safety	UL9540, UL1973, UL1642, UL1998

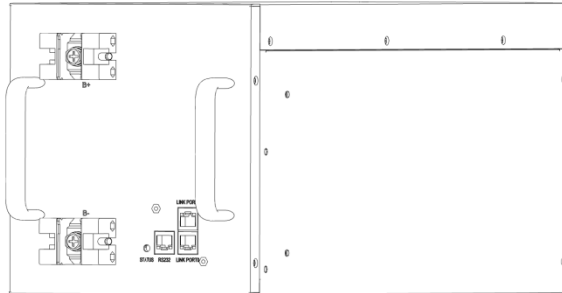
2. Battery Management System features

Two-level battery management system architecture, BCMS-BMU, makes the system extremely secure and long-life. BMS performs the following functions:

- All the voltage, temperature and current information sampling
- Calculation of SoC, SoH
- Charging/Discharging control
- Voltage balance among Cells and then among the battery modules
- Fault diagnosis, protection and self-recover
- Thermal management
- Status analysis and upload to higher level EMS

Optional EMS will provide level 3 protection to make the system safer

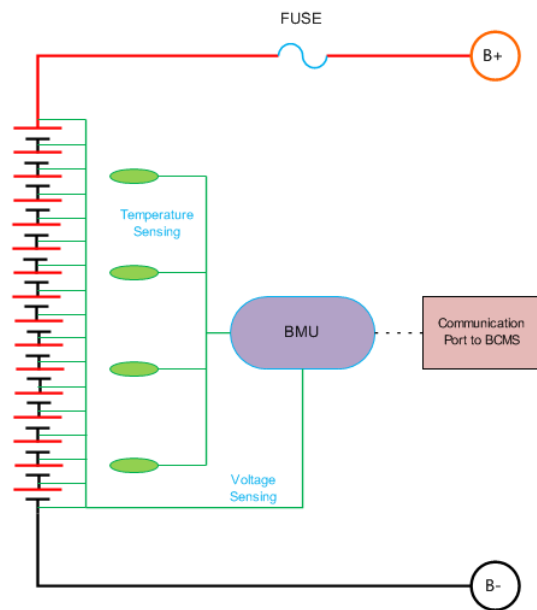
3. Battery Module



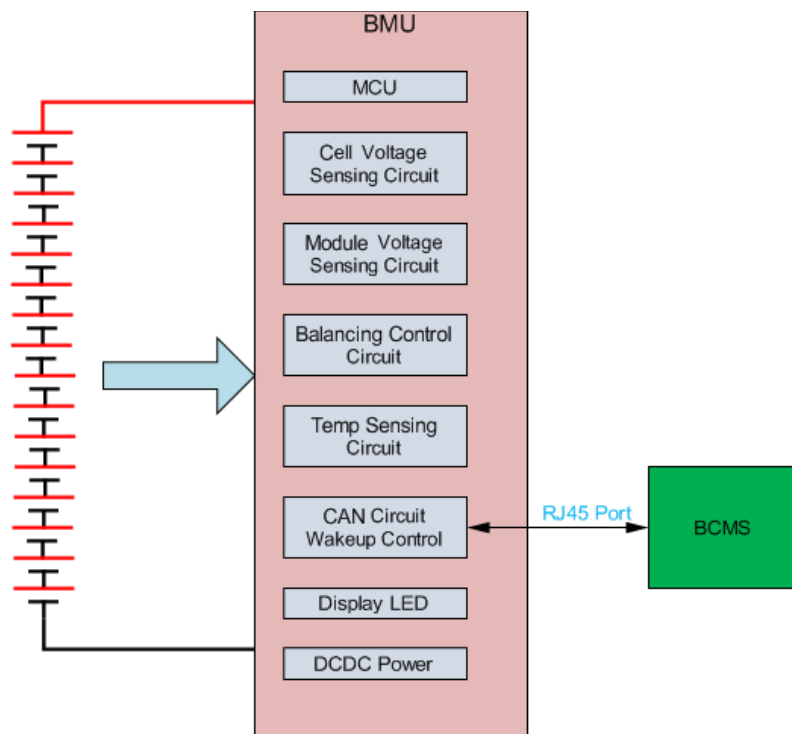
3.1. Specifications of Battery Module

Model	PBT-LI51100S2
Cell Chemistry	Lithium Iron Phosphate
Cell Connection Type	1P16S
Battery Module Capacity / Ah	100
Battery Module Voltage / V	51.2
Battery Module Energy / kWh	5.12
Battery Module Charge Voltage / V	56
Battery Module Charge Current(Normal) / A	50
Battery Module Charge Current(MAX.) / A	50
Battery Module Discharge Cut-off Voltage / V	48
Battery Module Discharge Current(Normal) / A	50
Battery Module Discharge Current(MAX.) / A	50
Communication	CAN, RS232
Display	LED
Dimensions (L*W*H)	550*204*220 mm
Storage Temperature	14°F ~ 113°F (-10°C ~ 45°C)
Relative Humidity	0 ~ 95% (No Condensation)
Protection Rating	NEMA 2 (IP21)

3.2. Circuit schematic diagram of Battery Module



3.3. Functional Diagram of BMU

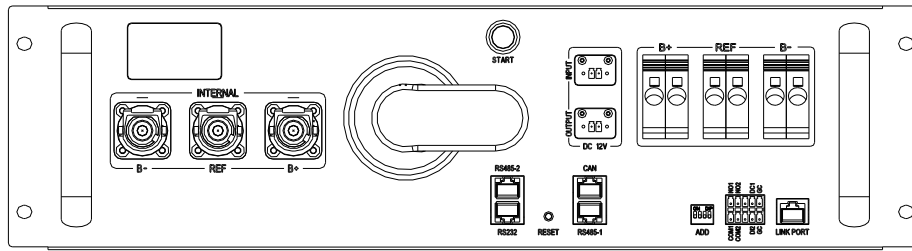


The Battery Management Unit (BMU) includes 16S cell voltage acquisition circuit, module voltage acquisition circuit, equalization circuit, 4-channel temperature acquisition circuit, CAN communication and wake-up circuit, LED indicator circuit, auxiliary power supply circuit that takes power from the battery pack, and MCU control circuit . The BMU is responsible for the collection of battery pack voltage, cell voltage, and cell temperature parameters, completing cell balance control, and reporting all battery pack information to the Battery Cluster Management System (BCMS). BMU, at the same time, indicates the operating status of the directly attached battery pack.

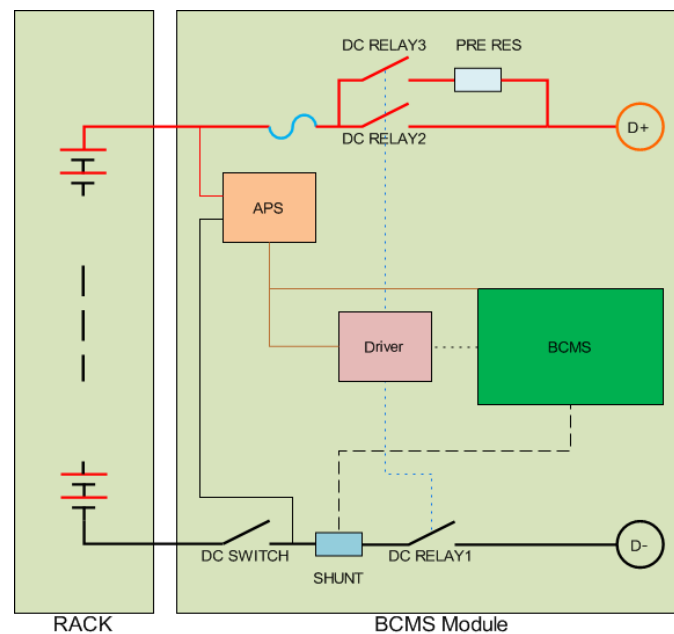
3.4. LED Indicators Description of Battery Module

Battery module Status	Status Indications (RGB)		
	Green	Red	Blue
Sleep	OFF	OFF	OFF
Normal	ON	OFF	OFF
Self-inspecting	OFF	OFF	Blinking
Startup or upgrade	Blinking Yellow		OFF
Alarming	ON		OFF
Protection/Fault	OFF	ON	OFF

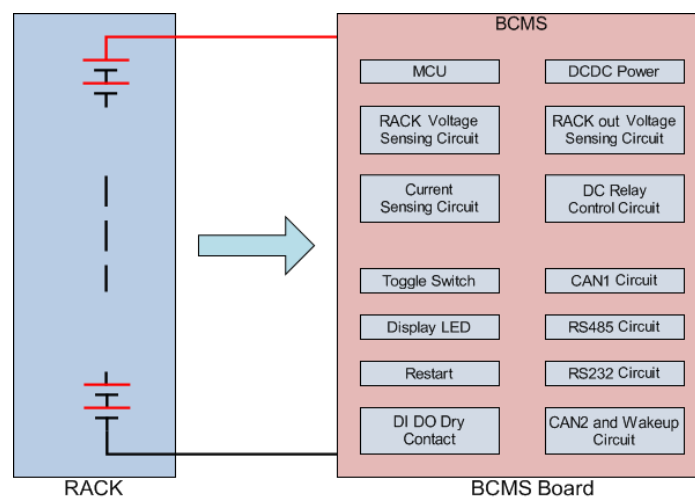
4. BCMS Module



4.1. Circuit schematic diagram of BCMS



4.2. Functional Diagram of BCMS



The BCMS module is used to manage a battery cluster composed of 8-14 16S battery modules. It has protection functions against overvoltage,

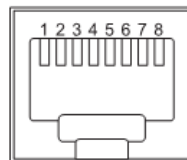
undervoltage, overtemperature, low temperature, overcurrent, and short circuit. BCMS monitors the SOC and SOH of the battery cluster and adjust charging and discharging rate in real time to ensure the safe operation of the battery cluster

4.3. BCD Indicators Description of BCMS Module

BCMS Indicators description

BCMS module Status	Status Indications	
	NO.1	NO.2-NO.3
Charge	Orange "C"	SOC
Discharge	Green "d"	SOC
Standby	Quench	SOC
Alarm	Red "A"	Fault Code
Protection	Red "E"	Fault Code

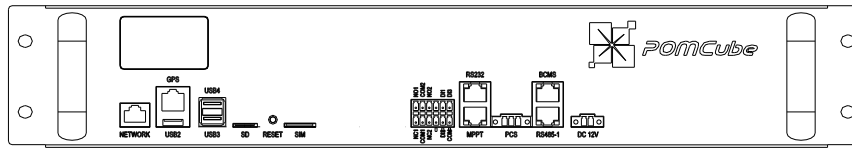
4.4. Communication pins definition of BCMS



BCMS Communication Interfaces description

CAN—with 8P8C vertical RJ45 socket		RS485—with 8P8C vertical RJ45 socket		RS232—with 8P8C vertical RJ45 socket	
CAN pin	Definition	RJ45 pin	Definition	RJ45 pin	Definition
2	CAN-G	6	RS485-G	3	RS232-TX
4	CAN-H	7	RS485-A	6	RS232-RX
5	CAN-L	8	RS485-B	8	RS232-G
Others	NC	Others	NC	Others	NC

5. EMS Module



5.1. Specifications of EMS Module

Model	PES-AAB2-4G
Power	12V / 0.5A
OS	Linux
Storage	SD Card
GPS Support	Yes
AGS Support	Yes
Cloud Support	AWS
Monitor	App/Web OSS
OTA Software Upgrade	Yes
Display	BCD
Feature	Energy Management Battery Monitor / Control External Device Monitor / Control
Switch On/Off Detection	2 Channels
Communication	Ethernet/Wi-Fi / 4G / CAN / RS485 / RS232

NOTE: The images shown in this document are for reference only and may slightly differ from the actual product. We reserve the right to make product modifications because of continuous improvement without notice.