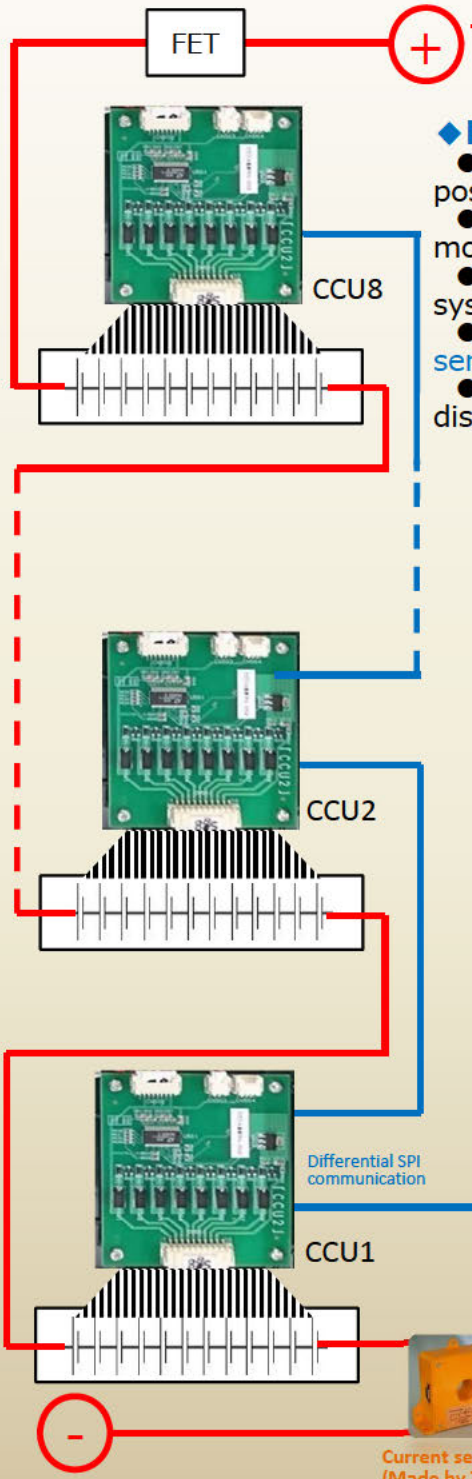
東洋システム株式会社
TOYO SYSTEM CO.,LTD.

Lithium-ion Battery Management System
BMS-Make

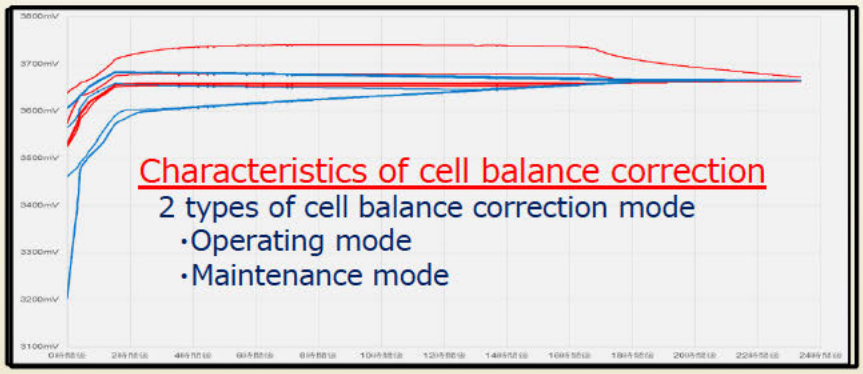
We make multiple serial battery systems based on BMU boards and CCU boards.

★We can build battery systems tailored to customer needs!!★



◆BMS-Make Characteristics◆

- Through connecting the CCU board to the BMU board, it is possible to build a battery system comprising up to 96 series.
- Main unit communications are CAN/RS422/etc･･･We can mount the communications standard you desire.
- Protective function parameters can be set according to the system.
- Accurate SOC calculation using high-precision current sensors made by Toyo System
- Equipped with cell balancing function based on the discharge resistance system



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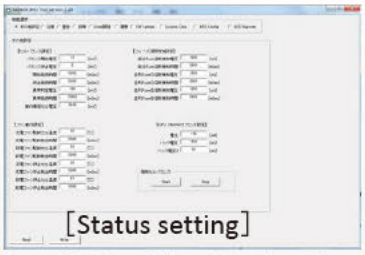
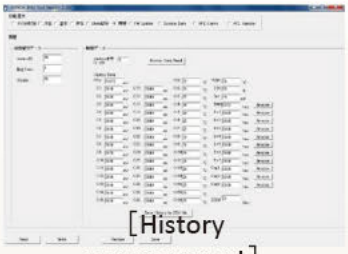
◆BMU-Make Main Performance and Functions◆

Cell voltage precision	±1.2mV
Cell voltage reading time	30ms/CCU8
Standby power	25mW
Insulation voltage between battery/control	±1.5kV


[Status setting]


[History management]

◆Optimum Protective Functions, and Modulation & Packing Technology◆

[Optimum protective functions obtained through total technology.
Diverse module prototype testing/maintenance using 3D printer / Battery pack product production and inspection line]

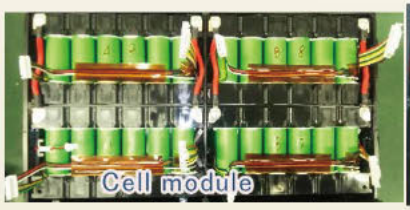
TOSCAT
(Charge-Discharge test system)

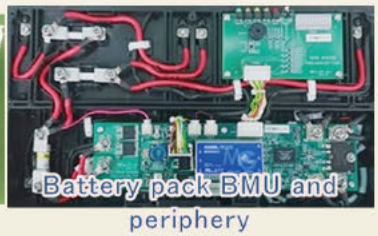
Consignment evaluation

Safety testing

Analysis

Battery pack production


Cell module


Battery pack BMU and periphery

1	Cell voltage monitoring
2	Cell temperature monitoring
3	Board temperature monitoring
4	Cell balance
5	Charge FET control
6	SOC calculation
7	Monitoring of charge-discharge current
8	State display
9	Remaining SOC display
10	Abnormal state detection
11	Communication with robot
12	Communication with charger
13	Saving the abnormality log
14	Low Power consumption mode
15	Communication with maintenance PC
16	Cooling fan control
17	S+ control

Protective functions

Current Sensor Lineup

〈Flux gate magnetic balancing system, whole-element magnetic balancing system, whole-element magnetic proportion system〉

Model	Type	Rated current (A)	Supply voltage	Mount/Conductor specifications
CAL-000	Open loop	±100A~±2000A	±15V	Bolt on/Through
CZL-000	Open loop	±1000A~±6000A	±15V	Bolt on/Through
CAW-000	Open loop	±50A~±200A	±15V	Bolt on/Through
PWC3-000	Closed loop	±1A~±100A	±15V	Bolt on/Through
CFC-000	Flux gate	±50A~±1000A	±15V	Bolt on/Through
CFS-000	Flux gate	±1A~±75A	±15V	Bolt On/Bus-Bar