Formation System
for Li-ion Battery
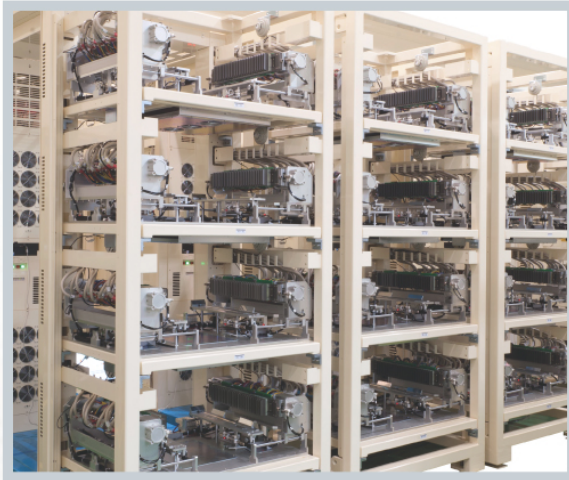

>>> Features

- High-accuracy and high-stabilized formation system
- Production management program interface
- Provide formation cell information and data analyzing program
- Manual operation and maintenance program
- Provide User-defined program
- Consists of User-defined channels
- Auto Operating Jig System
- Cylinder/Prismatic/Polymer/Coin cell Test Jig
- CC, CV, CC/CV, CP
- Various Safety Function
- 1~2 Range Operation
- Uses CPU exclusively for controlling
- 100ms Data Sampling Rate
- Auto Calibration
- DC_IR / Temperature
- Temperature monitoring and uniformed system
- Provides Tray/Stacker Crane/Server System

>>> Specification

Item	Specification	Remark
Charging & Discharging Voltage range	0V ~ 5V	
Charging & Discharging Current range	0A ~ 70A	3 Range
Charging & Discharging mode	CC, CV, CC/CV, CP	
Resolution	16Bit	
Accuracy	$\pm$0.05%	Full Scale
Data Sampling time	100ms	
Safety function	OVP, OCP, OTP, EMO S/W	

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Formation System

for Li-ion Battery for Automotive Battery / EDLC

》》 Features

- High-accuracy and high-stabilized formation system
- Production management program interface
- Provide formation cell information and data analyzing program
- Manual operation and maintenance program
- Provide User-defined program
- Consists of User-defined channels
- Auto Operating Jig System
- CC, CV, CC/CV, CP
- Various Safety Function
- 3 Range Operation
- Uses CPU exclusively for controlling
- 100ms Data Sampling Rate
- DC_IR / Temperature
- Temperature monitoring and uniformed system
- Provides Tray/Stacker Crane/Server System

》》 Specification

Item	Specification	Remark
Charging & Discharging Voltage range	0 ~ 60V	
Charging & Discharging Current range	0A ~ 300A	3 Range
Charging & Discharging mode	CC, CV, CC/CV, CP	
Resolution	16Bit	
Accuracy	$\pm 0.1\%$	
Data Sampling time	100ms	
Safety function	OVP, OCP, OTP, EMO S/W	
Optional	Low contact Resistance Probe Jig	

Cycle Test System
for Li-ion Battery / EDLC

>>> Features

- High-accuracy and high-stabilized cycle test
- User friendly interface program
- Various analyzing programs for quality assessment and R&D
- Module consisting from 10, 20, 40 channels
- CC, CV, CC/ CV, CP
- Cylinder/Prismatic/Polymer/Coin cell Test Jig
- 2~4 Range Operation
- Uses CPU exclusively for controlling
- 100ms Data Sampling Rate
- DC_IR / Temperature

>>> Specification

Item	Specification	Remark
Charging & Discharging Voltage range	0V to 5V	※Option: Minus Discharging
Charging & Discharging Current range	100mA, 10A, 50A, 100A, 300A, 600A	Max Current, Range : 2 to 4
Charging & Discharging mode	CC, CV, CC-CV, CP	
Resolution	16Bit	
Accuracy	±0.1% or ±0.05%	Full Scale
Data Sampling time	100ms	
Safety function	OVP, OCP, OTP, EMO S/W	
Optional	Temperature measurement Battery JIG (Coin, cylindrical, laminate type etc.)	

Pack Test System
for Automotive

>>> Features

- Energy Saving by discharge energy regeneration
- High efficiency, high power pack charge/discharge system
- High-accuracy and high-stabilized cycle test
- User friendly interface program
- Various analyzing programs for quality assessment and R&D
- Module consisting from 1 to 5 channels
- High-capacity cell test by parallel channel
- BMS / CAN Communication
- CC, CC-CV, CP, Simulation mode(Pattern mode)
- 1~4 Range Operation Option
- 100ms Data Sampling Rate
- DC_IR / Temperature
- Estimate supporting voltage/supporting temperature

>>> Specification

Item	Specification	Remark
Charging & Discharging Voltage range	5V to 600V	Range:1 to 3
Charging & Discharging Current range	50A, 100A, 250A, 400A, 500A (Parallel)	Range:1 to 4
Charging & Discharging mode	CC, CV, CC-CV, CP	※Option: Dynamic simulation test (Pattern)
Resolution	16Bit	
Accuracy	±0.1%	Full Scale
Data Sampling time	100ms	
Safety function	OVP, OCP, OTP, EMO S/W	
Optional	Cell/Pack Volts & Temperature Measuring Other tests measuring : Pack battery DC Insulation Resistance and etc	

EV Charging System

>>> What is EV Charging System?

This system is aimed at supplying power from the power system to the electric car so as to efficiently provide power to the battery of electric car. This system is divided into household charger, charging stand, and rapid charger.

>>> Features

- Output: 3kW ~ 100kW
- For charging station, housing, parking lot, resting place
- Real-time control using high-reliability 32bet DSP
- Maintaining optimal charged condition by BMS communication

>>> Specification

Model	Item	Specification	
Quick Charger	Input	3-phase 110V/220V/380VAC	Efficiency 90% Operation, display part switch and panel Charging stand and rapid charging system that allows multiple electric cars to charge on the parking lot, road, etc.
	Output	DC450V 110A 50kW DC 100~500V	
Charging Stand	Charging Method	CC, CV, CP	
	Communication	CAN, RS - 232	

ESS (Energy Storage System)

Energy Storage System is aimed at converting power system (GRID) into DC power and keeping it in the battery. This DC power can be converted into power system again when necessary, thus contributing to improving the efficiency of electrical energy, enhanc ing the use of new and renewable energy, and stabilizing the power supply.

>>> Features

- Small, medium, and large type energy storage systems
- Communication-use / Reserve power-use / Security equipment-use
- Power storage system linked with new and renewable energy (solar power, wind power)
- Controlling using BMS
- Improving the charging rate
- High-efficiency charging/discharging system

>>> Specification

Advantage of ESS			
Battery capacity	3kW~100kW / 1MW when connected in parallel		
Type of battery	Li-LB, Li-PB	Building first/second/third safety devices. Maintaining optimal condition by preventing over-charging, over-current, and over-discharge, while regulating temperature and balance	Easy to install the storage system by applications (Wind power, solar power energy storage)
Monitoring	Checking the balance of current, Operating time		
Safety	Supplying the power in stable structure		
Cell Balancing	BMS		
Operating temperature	-20℃ ~ 60℃		

UPS (Uninterruptible Power Supply)

>>> What is UPS?

UPS is Uninterruptible Power Supply that constantly supplies stable power to the load by preventing unusual power caused by electrical interruption, change in voltage, change in frequency, power-line voltage frequency noise, etc.

>>> Features

- ALL IGBT PWM Double Converter
- Real-time high-speed control using 32bet DSP
- Excellence in voltage stability in spite of rapid load variation
- Function of real-time self-test
- Monitoring of storage battery by BMS

>>> Specification

Item		Specification	Remark
Input	AC Voltage	3-phase 3w AC200V / 1-phase 3w AC200V	
	Frequency	50/60Hz	
Output	AC Voltage	1-phase 3w AC200V	
	Frequency	50Hz / 60Hz $\pm 0.5\%$	
	Capacity	6KW (Peak)	(Inverter)
	Transfer Time	30ms	
Battery	Capacity	22KW	
	Battery Type	Li-ion	