Battery HILS

BMS Development Verification

A&D — Discover Precision

Battery HILS is a turnkey solution

Battery HILS by A&D Technology is compatible with third-party battery models, and is a completely turnkey system that can be operated immediately after delivery, through system construction engineering from model incorporation to BMS connection to HILS

Cost benefit from function consolidation

This is a compact and cost-effective HIL system that offers functionality such as analog voltage output, disconnection, voltage and current monitoring and noise contamination all on one multi-function I/O board.

BMS (Battery Management System)

HELIOS-PRO

Up to 192 voltage output unit

Designed for Safety

The BMS is housed in a rack that prevents contact with any high-voltage parts of the system (includes interlock function), and temperature monitoring in an enclosure, over current and short circuit protection.

Advantages of the automated test tool

A&D's BMS HILS has the ability to create and execute real-time tests, including reproduction tests that utilize real measurement data. In addition to test automation, having the ability to complete repeatable tests with precise reproducibility, allows the user to further improve the development of BMS control logic and verification. Additionally, A&D provides test automation engineering services.

Battery Model

BMS HILS supports NEXTY Electronics battery models and allows for simulation of individual cell voltages, State of Charge (SOC), State of Health(SOH) and Cell Temperatures. It also support any other Simulink based battery models.

Highlights:

- Simulate up to 192 battery cells

- Expandable in increments of 12 cells

- Multi-functional

- Disconnect function (between HILS and BMS)

- Voltage monitoring (Multi functional)

- Current monitoring (Multi functional)

- Noise contamination (optional)

- Supports modeling in Simulink®

- Storage space for BMS available in rack

- Supports:
  - Low computation load
  - Cell voltage calculation
  - SOC calculation
  - Cell temperature calculation

Standard Application

An application (Simulink model + operation GUI) with the following functions is provided.
- Cell voltage setting
- Disconnect function
- Voltage/Current monitoring(Multi func. type)
- Noise contamination(optional)

Main Display

Cell Voltage Setting Display

Appearance

W570mm/H1287mm/D850mm

Specifications

Type		Basic Functionality	Multi Functionality
DSP Enclosure		VS2000 HELIOS (Intel Xeon processor)	
Maximum #Channels		192 channels	
Voltage output function	Range	0 to 5V (16 bit resolution)	
	Accuracy	+/- 0.1% of full scale	
	Output current	+/- 200mA	
Voltage measurement function	Range	---	0 to 5V (16-bit resolution)
	Accuracy	---	+/- 0.1% of full scale
Current measurement function	Range	---	+/-200mA or +/ 20mA
	Accuracy	---	+/- 0.1% of full scale
Disconnection function		Disconnection possible for each channel*	
Noise contamination function	Overview	---	Sine wave imposed on cell voltage
	Frequency	---	10 KHz
	Amplitude	---	1Vp-p
CAN communication function		2 high-speed CAN channels	
Power supply		AC 100V 15A	

*Maximum of 43 continuous channels can be disconnected at one time, but there is no limit to the total number of channels that can be disconnected.