

# Streamline BMS\* Functional Testing !!



Please prepare the PC by the user.

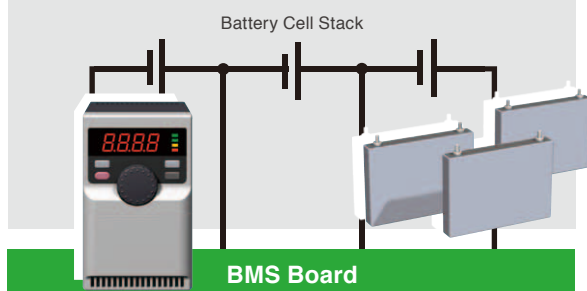
- **Powerful support of BMS functional tests for LIB packs in xEV and storage batteries such as ESS or UPS**
- **Use as voltage generator or simulated battery in place of actual batteries and power supplies to establish an efficient testing environment**

\*BMS : Battery Management System

### Conventional test system

Generating the right cell behavior is challenging

Real Battery and Real Sensor

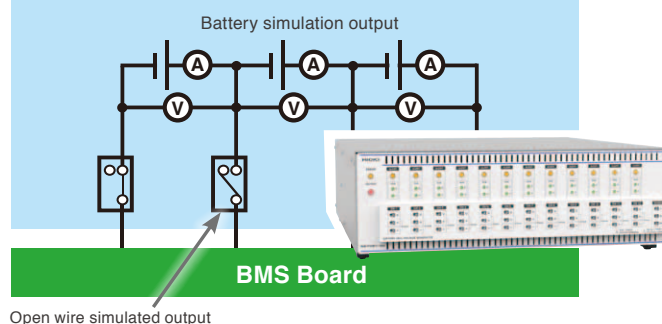


### Systemize testing with the SS7081-50

Simulate cell behavior safely and easily

SS7081-50

12 cells with 1 unit



### ● Use as a Battery or Power Supply Simulation System

- **High precision testing of dark or standby current**  
(Example Accuracy: 4  $\mu$ A, During measurement:  $\pm 0.012 \mu$ A)
- **Cell imbalance simulation with high accuracy output**  
(Example Accuracy: 3.6 V, On output:  $\pm 1.04$  mV)
- **Voltage measurement with high accuracy**  
(Example Accuracy: 3.6 V, During measurement:  $\pm 0.46$  mV)
- **Balancing current measurement with high accuracy**  
(Example Accuracy: 50 mA, During measurement:  $\pm 0.135$  mA)

### ● Measure Actual Batteries Even More Safely

- **Open, Short simulation**
- **Overcharge, overdischarge simulation** (0 to 5 V output/channel)
- **Sensor simulation** (Abnormal current, Abnormal temperature)

Maximum Series  
Generated Voltage

1000V

Insulation Resistance  
(Between Channels)

1000M $\Omega$   
Over

Output Current

$\pm 200$ mA  
( $\pm 1$ A)

Channels

12ch

# Highly precise voltage output and testing plus very low current measurement

Ideal for advanced BMC IC testing.

Equipped with a minute current range. Ideal for measuring not only cell balance current but also dark current and standby current.

## Build into battery HILS\* systems

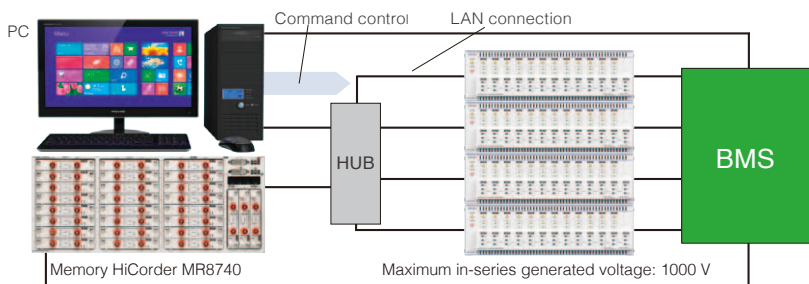
OCV (open circuit voltage) testing is incorporated into the battery HILS, helping to improve the quality of software through automatic testing and the development efficiency of BMS control logic.

\*Hardware-in-the-loop simulation (HILS), a type of simulation designed for use in product development, can model actual devices by calculating mathematical formulas that simulate the behavior of an engine, vehicle, or other hardware in real time.

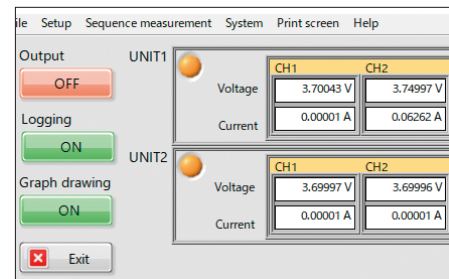
## Supporting a Diverse Array of Applications

Simulate 1 channel per cell, and verify the cell balance of 12 channels = 12 cells, or create a simulated environment of abnormal conditions that cannot be realized with real batteries in order to validate safety designs.

In addition, you can establish a multi-channel (multi-cell) environment with a maximum series output voltage of 1000 V or less by connecting the main unit to a LAN.



Example BMS mass-production line system architecture  
(Cell balancing inspection using the SS7081-50 and sensor I/O inspection using the MR8740)

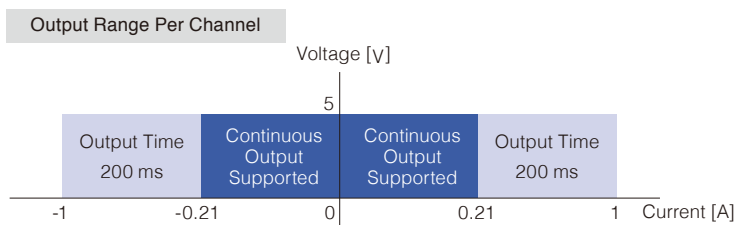


Sample application designed to assist in evaluating and verifying development samples  
(Reference Screenshot)

## Specifications

Number of channels	12	
Maximum in-series connections	In-series connections of instrument up to and including a maximum in-series output voltage of 1000 V	
Output range (All channels independent)	DC voltage	0.0000 V to 5.0250 V
	Maximum output current	±1.00000 A Continuous output is supported from a minimum of -210 mA to a maximum of 210 mA. The maximum output time for currents less than -210 mA or greater than 210 mA is 200 ms.
Measurement range	DC voltage	-0.00100 V to 5.10000 V
	DC current (2 ranges)	±120.0000 µA (100 µA range) ±1.200 00 A (1A range)
Integration time	1 PLC (50 Hz: 20 ms; 60 Hz: 16.7 ms)	
Insulation resistance	1000 MΩ or greater (between positive/negative terminals and chassis) 1000 MΩ or greater (between channels)	
Terminal-to-ground capacitance	1000 pF or less per channel	

Voltage output accuracy	±0.0150% of setting ±500 µV	
	Output resistance 3 mΩ or less (Does not include connector's contact resistance)	
Voltage measurement accuracy	±0.0100% rdg. ±100 µV	
	Current measurement accuracy	1 A range ±0.0700% rdg. ±100 µA 100 µA range ±0.0350% rdg. of ±10 nA
Power supply	Universal (100 V to 240 V AC)	
Interface	LAN	
Exterior dimensions	430 (16.93 in)W ±3 mm (0.12 in) × 132 (5.20 in)H ±3 mm (0.12 in) × 483 (19.02 in)D ±3 mm (0.12 in)	
Mass	9.72 kg (342.9 oz.) ±0.5 kg (17.6 oz.)	
Accessories	User manual, power cord, rack frame	



BATTERY CELL VOLTAGE GENERATOR SS7081-50

**Scheduled launch: March 2020**

For a demonstration or further specifications, or to evaluate the system on your premises, please contact your local Hioki distributor.

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