

CELL SIMULATION FAULT SIMULATION RACK/MODULE CS 31-1-18



OVERVIEW

The Cells Simulation Rack/Module is a battery simulator module with 18 isolated cells used to simulate battery features. The voltage of each cell can be adjusted through Standard CAN, Ethernet TCP and USB-C, as well as getting the voltage and the current measurements.

A single module can be used or several in series according to the requirements (based on how many cells are needed). Also, the module can be used independently or in a mountable rack system.

To simulate the failure of cell such as short, open and reverse.

KEY FEATURES

- 18 independent and isolated cells in total.
- Extendable number of cells by adding more modules in series.
- Standalone module or bench rack mounted.
- Each cell has an adjustable output voltage of 0 V to 7 V with 1.0 mV precision.
- The current sourcing of each cell is up to 1 A.
- Voltage measurement with a precision of 0.4 mV.
- High current measurement with a precision of 1mA.
- Low current measurement with a precision of 20 μ A.
- Controllable by CAN ISO 11898-2, Ethernet TCP and USB-C.
- Fault simulation, including short circuit, open circuit, reverse voltage for each cell independently.

DIMENSION

L*W*H = 482mm*350mm*89mm

OPERATING TEMPERATURE

-20 °C ~ +60 °C

POWER REQUIREMENT

DC power supply: 24 VDC

DETAILED SPECIFICATIONS:

Cell Voltage Output	Value	Unit
Range	0 to 7	V
Stability Precision	1000	μ V
Setting Precision	1000	μ V
Isolation Voltage	1500, Tested for 1 minute and 1mA max	V

Cell Discharge Current	Value	Unit
Range	0 to 1	A

Cell Charge Current	Value	Unit
Range	500	mA

Cell Voltage Measurement	Value	Unit
Range	-7 to 7	V
Resolution	16	bit
Precision	400	μ V

Low Cell Current Measurement	Value	Unit
Range	-1 to 1	mA
Resolution	16	bit
Precision	5	μ A

High Cell Current Measurement	Value	Unit
Range	-1000 to 1000	mA
Resolution	16	bit
Precision	1	mA

FAULT SIMULATION

Short Circuit Fault Simulation:

The battery simulator can achieve the simulation of short circuits between positive and negative terminals through an optional single-cell fault simulation module. This type of simulation helps to test the response speed and effectiveness of the BMS's protection mechanisms when detecting short circuit faults.

Open Circuit Fault Simulation:

Similarly, using the fault simulation module, the simulator can mimic the condition of an open circuit between positive and negative terminals. This aids in evaluating the BMS's detection capability and handling measures when an open circuit fault occurs.

Polarity Reversal Simulation:

The battery simulator supports the simulation of polarity reversal. By simulating a situation where the battery polarity is reversed, it can test whether the BMS can accurately detect polarity errors and take appropriate protective measures.

APPLICATION EXAMPLE

- 144 cells rack mount bench with a total of 8 18 cells modules for BMS testing.
- The 8 modules are connected in series and also synchronized to work as one module that can be controlled via a single communication link with a computer (Ethernet TCP, USB-C or RS-232).



ENVIRONMENTAL

The Cells Simulation module is intended for indoor use only but may be used outdoors if installed in a suitable enclosure. Refer to the manual for more information about meeting these specifications.

Operating temperature

-40°C--+55°C

Storage temperature

-40°C--+85°C

Ingress protection (IP code)

None

Operating humidity

10-90% RH non condensing

Storage humidity

5-95% RH non condensing

DIMENSION

L*W*H = 482mm*350mm*89mm



ART Logics (Shanghai) Testing Equipment CO., Ltd

艾驰电子检测设备技术（上海）有限公司

Tel: 021-61075469

Room 105, No. 258, Chengjiaqiao Road, Shanghai, P.R. China



www.art-logics.com
support@art-logics.com