

BVS

Battery maintenance and charging



BVS Control Unit

Cell voltage, string voltage, current and temperature during the discharge test

BVS

Battery voltage supervisor

amperis

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Automatic supervision of every cell during capacity tests.

Product overview



BVS Control Unit

Control unit: data acquisition and power supply for the modules



CVM

Cell voltage module, installed directly on the cell

Every cell, watched in real time

The system records cell voltage, inter-cell connection voltage and temperature during discharge and charging tests, to meet IEC, IEEE and NERC requirements. The modules detect the cells failing the test and flag them with LEDs, so they can be safely bypassed.

Modular architecture

A control unit powers and polls the cell voltage modules over RS485; optional modules add the overall string voltage and current, so the system automates the capacity test with any load bank.

Main features

- Two versions: one module per cell or one module per 4 cells.
- Cell voltage up to ± 30 V with 1 mV resolution.
- Four ambient temperature channels on the control unit.
- Optional string voltage (± 600 V) and string current modules.
- A module failure does not interrupt the communication of the rest.
- Data to PC over USB or Bluetooth; internal 2 GB SD memory.



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Applications and software



Complete system supervising a bank during the discharge test

Applications

- Real-time cell assessment during capacity tests.
- Supervision during bank charging and recharging.
- Detection of degraded cells and inter-cell connections.
- Fully automated capacity test together with the discharge unit.
- Stationary banks in substations, UPS, telecom and power plants.

PC software for control and analysis

The included PC software gathers the data from all modules, shows per-cell and per-string trends, lets the user set warning limits and generates reports in Excel, PDF, Word or RTF together with the results of the discharge unit.

Alongside the discharge unit

During a capacity test the supervisor acts as a complement to the discharge unit: the results of both are presented in one report and the test can be stopped when a cell goes out of limits.



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BVS — MEASUREMENT DATA

Cell voltage	±30 V DC; 1 mV resolution; ±0.1% of reading ±0.1% FS
Inter-cell connection voltage	±50 mV DC; 1 µV resolution; ±1% of reading ±1% FS
String voltage (optional module)	±600 V DC; 1 mV resolution; ±0.1% of reading ±0.1% FS
String current (optional module)	±1 V DC input; 0.1 µV resolution; ±0.1% of reading ±0.1% FS
Temperature	-20 to +80 °C; 4 ambient channels on the control unit
Sample rate	Down to 1 s, depending on the number of modules

The inter-cell measurement corresponds to the one-module-per-cell version.
Specifications valid at +25 °C. The manufacturer reserves the right to change them without prior notice.



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BVS — TECHNICAL SPECIFICATIONS

Version	BVS (CVM module)	BVS-4 (CVM-4 module)
Cells per module	1	4
Measured parameters	Cell voltage, inter-cell voltage and cell temperature (optional)	Voltage of 4 cells and cell temperature (optional)
Cell temperature channels	1 per cell	1 per 4 cells
Communication with the control unit	RS485	RS485
Communication with the PC	USB or Bluetooth	USB or Bluetooth
Control unit power supply	90 – 264 V AC, 50/60 Hz; 110 VA	90 – 264 V AC, 50/60 Hz; 110 VA
Module dimensions	140 × 66 × 28 mm	152 × 66 × 28 mm
Module weight	0.14 kg	0.14 kg
Control unit	180 × 205 × 63 mm; 0.78 kg	180 × 205 × 63 mm; 0.78 kg
Optional modules	String voltage (SVM) and string current (SCM); 0.18 kg	String voltage (SVM) and string current (SCM); 0.18 kg

Operating temperature: -20 to +55 °C; relative humidity up to 95% (up to 31 °C), non-condensing.
Safety: EN 61010-1, IEC 61010-1, UL 61010-1; pollution degree 2.



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