W-BMS

Wireless Battery Monitoring System

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Innovative Power Solutions

Permanent monitoring of your batteries for extended service life

The battery is a key component in the operation of a UPS.
W-BMS is an effective battery monitoring solution which maximises the availability of the supply in applications where power continuity is vital.

Because 75 % of uninterruptible power supply (back-up power supply) system breakdowns are down to batteries, the reliability of these components is a key feature of your electrical system. Therefore, accurate, detailed monitoring of their operating condition is vital. This actually guarantees maximum continuity of the supply to the system's critical loads, loads which cannot tolerate even a brief interruption let alone a prolonged power cut.

Anticipate malfunctions

W-BMS is a vital tool in the continuous supply of critical systems and performs preventative battery monitoring.
This solution provides the opportunity to eliminate any unscheduled power cut due to battery failure.

Make cost savings

W-BMS enables you to make operating savings by:

- improving UPS uptime,
- reducing maintenance operations by 75 %,
- maximizing battery return on investment,
- anticipating battery malfunctions,
- guaranteeing the safety of maintenance personnel.

Ensure the continuity and safety of the supply to critical loads

It is vital always to know the operating status of the lead acid batteries supplying critical applications.
W-BMS ensures that these are in good condition and will work when you need them.
Unlike other battery monitoring systems, W-BMS has been specifically designed to monitor the impedance of the different battery monoblocs every day.
By avoiding the time-consuming and potentially dangerous manual method of testing individual batteries, W-BMS increases the likelihood of identifying a power failure and greatly increases the safety of maintenance personnel.

The benefits

Close battery monitoring

Most battery monitoring systems perform an impedance test once a week or once a month. However, a battery can fail in as little as two days. It is therefore vital that your system monitors your batteries much more frequently.
W-BMS has been designed to monitor the impedance of each of the battery packs or cells 24/7.

Modular design and central monitoring

W-BMS is the only battery monitoring system that can monitor different voltage monoblocs or different types of batteries (for example generator batteries) centrally.
W-BMS is the easiest battery monitoring system to install and maintain.

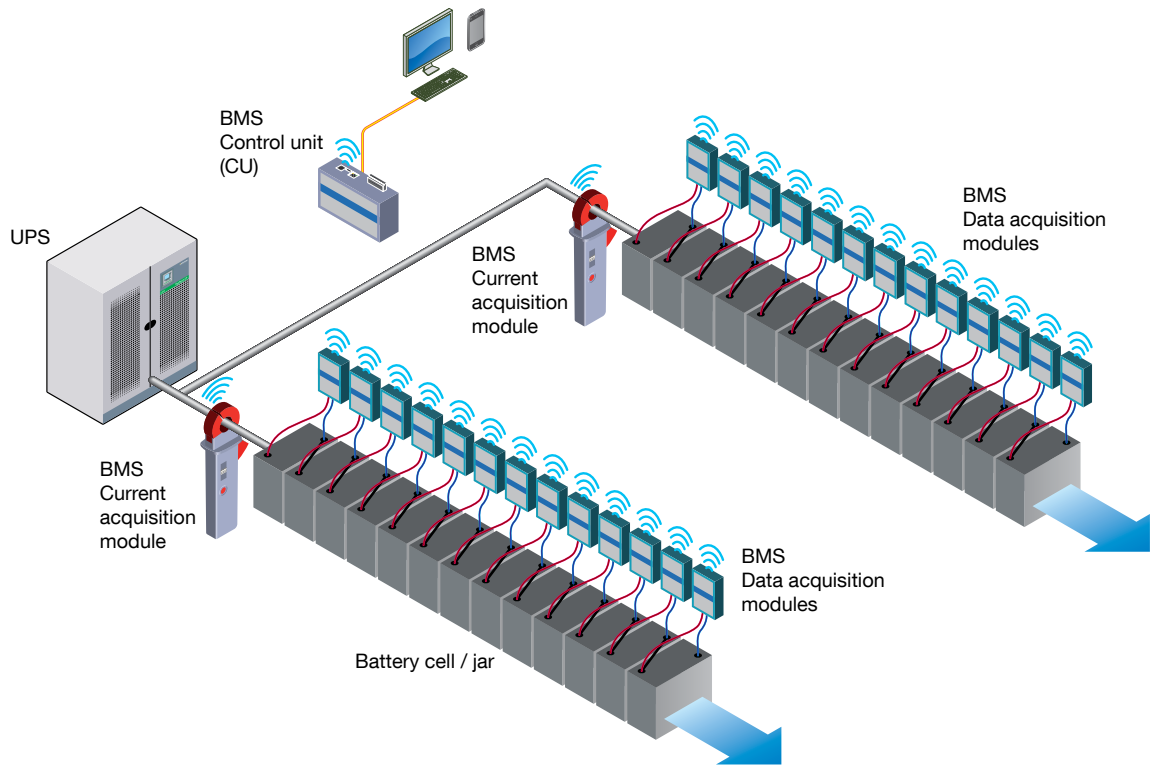
Scalable and simple

Whether you want to add a battery branch, a part or a building, the W-BMS system offers you a vital modular system to future-proof your system.
With only three major components, expanding your system is easy. No rewiring is required and the components can even be moved to cope with your new architecture. Similarly, you can extend your system to cover your auxiliary batteries (for generator batteries, for example).

W-BMS can be adjusted to cope with any changes and is a flexible, permanent solution. Your return on investment is thus guaranteed.

The three W-BMS components

- **CU (Control Unit)**
  - Collects and stores the DAM and IDAM data.
  - Manages the communication with the PC.
  - Sends SMS/E-Mail notifications.
- **DAM (Data Acquisition Module)**
  - Measures the voltage, the temperature and the internal resistance of each battery.
  - Stores the most significant data.
- **IDAM (Current Acquisition Module)**
  - Measures the current of either a battery or a string of batteries.
  - Stores the most significant data.



Wireless radio frequency battery monitoring system.

Technical data

Control Unit (CU)		
Supply voltage	4.5 ÷ 5.5 VDC (external power supply or USB port)	
Current consumption	500 mA max	
Digital input	2x (opto-isolated)	
Digital output	2x (dry-contact)	
Data storage	microSD card	
Number of battery blocks	up to 1024 (full version), up to 50 (light version)	
Connectivity	Ethernet, Modbus/TCP, USB, GSM (SIM-card not included)	
Data Acquisition Module (DAM)		
Model	L type	H type
Rated voltage	2 VDC	12 VDC
Voltage range	1.5 ÷ 5.5 VDC	5 ÷ 18 VDC
Current consumption	80 mA @ 2 VDC	30 mA @ 12 VDC
Measurements	voltage, impedance, temperature	
Battery connection	blade connector (faston), ring or alligator clip	
Current Acquisition Module (IDAM)		
Model	type 1	type 2
Rated current	300 A	600 A
Supply voltage	9 ÷ 18 VDC (external power supply or battery)	
Current consumption	50 mA	
Current range	up to 300 A	up to 600 A

Technology

> Radio frequency

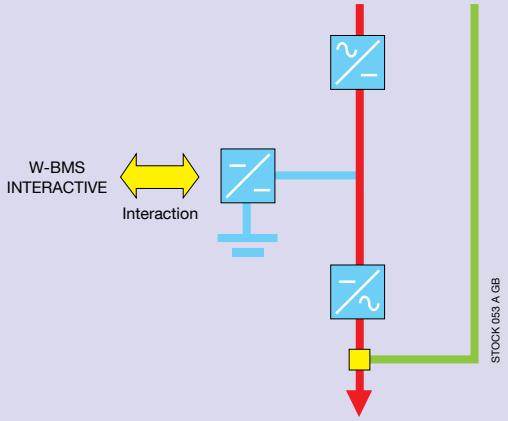
Technical advantages

> Easy to use
> Easy to set up
> Trend analysis to guard against breakdowns
> Remote monitoring
> Remote alarm notification
> Data acquisition
> Analysis software

W-BMS INTERACTIVE option, to optimize battery lifetime

Including all the features of the standard W-BMS, W-BMS INTERACTIVE operates directly with the UPS battery recharging system (EBS). It optimizes battery capacity and maximizes battery life and return on investment.

- **Increase charger precision:** the UPS charger is able to adapt the recharge parameters according to all the information collected by W-BMS INTERACTIVE. Such corrective actions aim to standardize cell behavior to improve battery lifetime and availability.
- **Automatic battery testing:** when required, W-BMS INTERACTIVE and the UPS perform an automatic battery test. The UPS calibrates slow, safe discharge while W-BMS INTERACTIVE collects data and analyses cell blocks.
- **Proactive measures:** when a block starts to weaken, W-BMS INTERACTIVE and the UPS perform an automatic procedure to recover the block before it is totally unusable, and to enhance global battery capacity.



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