

VEHICLE ELECTRONIC ARCHITECTURES

Battery Monitoring System



Battery Monitoring System

Features

- One sensor and controller per pair of 12v batteries
- Measures voltage, current, temperature and conductance of each battery
- Display of :
 - Battery State of charge
 - Time remaining
 - Current (Charge/Discharge)
 - Start of Health

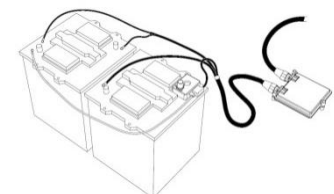
The Ultra Electronics Battery Monitoring System (BMS) has been designed for use on military vehicles. Based on patented technology that incorporates a real-time self-learning algorithm, the BMS simultaneously measures conductance, voltage, current, temperature and time, to provide an accurate measurement of the state of vehicle batteries. The system has been proven in theatre for mission critical asset availability planning. Of particular importance to the user is the ability of the system to report the time remaining of each battery, which is invaluable for vehicles operating in Silent Watch Mode.

The System is designed to connect to the existing automotive CANbus, as part of the automotive management system. BMS can be used as part of a GVA compliant platform Power Management System, or as a standalone system connected to a display screen.

The sensor unit mounts directly to one of the battery negative battery posts, with short flying leads connecting to all the other battery terminals, ensuring all parameters are measured. An LED indicator on top of the sensor indicates the its operational states.

Critical information presented includes:

- Time Remaining
- State of Charge
- State of Health



Additionally, the user can view diagnostics information to gain access to more detailed battery performance and power generation information.

3500 Systems have been fielded worldwide.



Conductance based solution

Conductance measurement has become established in the automotive and standby power industry as the only reliable method for quantifying the health of a lead acid battery.

The BMS combines conductance measurement with voltage, current, temperature and time to provide accurate State of Health and State of Charge for each battery in the vehicle.



Ineffective battery management can ultimately result in excessive downtime of critical equipment.



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Dimensions	
Sensor Unit	Control Unit
81 x 64 x 24mm	146 x 160 x 51mm
0.5kg	0.4kg
Specification	
Input Voltage	+14 to +32V DC
Current	Standby : 12mA Operating : 60mA
Operating Temperature	-40°C to + 71°C
Operating Conditions	Designed to Def Stan 00-35

Benefits:

- **Repeatable accuracy for new and old batteries**
 - System can be input with unique performance parameters for battery model
- **Power consumption monitoring**
 - Provides accurate time remaining measurements for silent watch applications
- **Critical power threshold alerts**
 - BMS data can be used by Platform Management Systems for charging management, and alarm generation
- **Reduced life cycle cost**
 - Batteries are often left on the platform until they have completely failed and have to be replaced. BMS Identifies batteries that are starting to degrade, so they can be removed and reconditioned, before total failure and then returned to service
- **State of Health Accuracy**
 - Some systems will report an unhealthy battery as healthy if it has a high state of charge. BMS stores historical data about the battery it is connected to. This is compared against real time performance to report accurate State of Health
- **COTS System**
 - Range of sensor harnesses for different platform applications

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