

Battery Monitoring System

Mk 2

Features

- One sensor per pair of 12V batteries
- Measures voltage, current, temperature and conductance of each battery
- Display of:
 - battery state of charge
 - time remaining
 - cranking state of health
 - reserve capacity state of health
 - state of life
- CAN interface



The Ultra Electronics battery monitoring system (BMS) has been specifically designed for use on military vehicles. Based on patented technology that incorporates a real-time complex algorithm, the BMS simultaneously measures conductance, voltage, current, temperature, and time to provide a highly reliable and accurate measurement of the state of health of a vehicle's batteries. The Mk1 BMS was proven in theatre for mission critical time remaining applications and has now been refined with the more compact and lighter Mk2 version, which is compatible with a broader range of military vehicle configurations.

The battery monitoring system provides the vehicle crew with accurate real-time battery health data. Technological advances in electronic equipment installed in modern military vehicles has led to increased demand on the vehicle battery bank. Historically, little or no attention has been paid to the condition of the batteries until a failure occurs.

A **sensor unit** mounts directly to the lower negative battery terminal. An LED indicator on top of the sensor indicates the state of function.



Each sensor outputs data via a **control unit** onto CAN bus so that information can be displayed either on existing vehicle displays or on a standard battery monitoring display. The display presents critical information such as:

- Time remaining
- State of charge
- State of health

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

Benefits

- **Power consumption monitoring**
 - providing accurate time remaining measurements for silent watch applications
- **Critical power threshold alerts**
 - crew alerts activate when power is too low to guarantee completion of a mission
- **Reduced life cycle cost**
 - identifies faulty batteries so that only the defective batteries are replaced

Conductance based solution

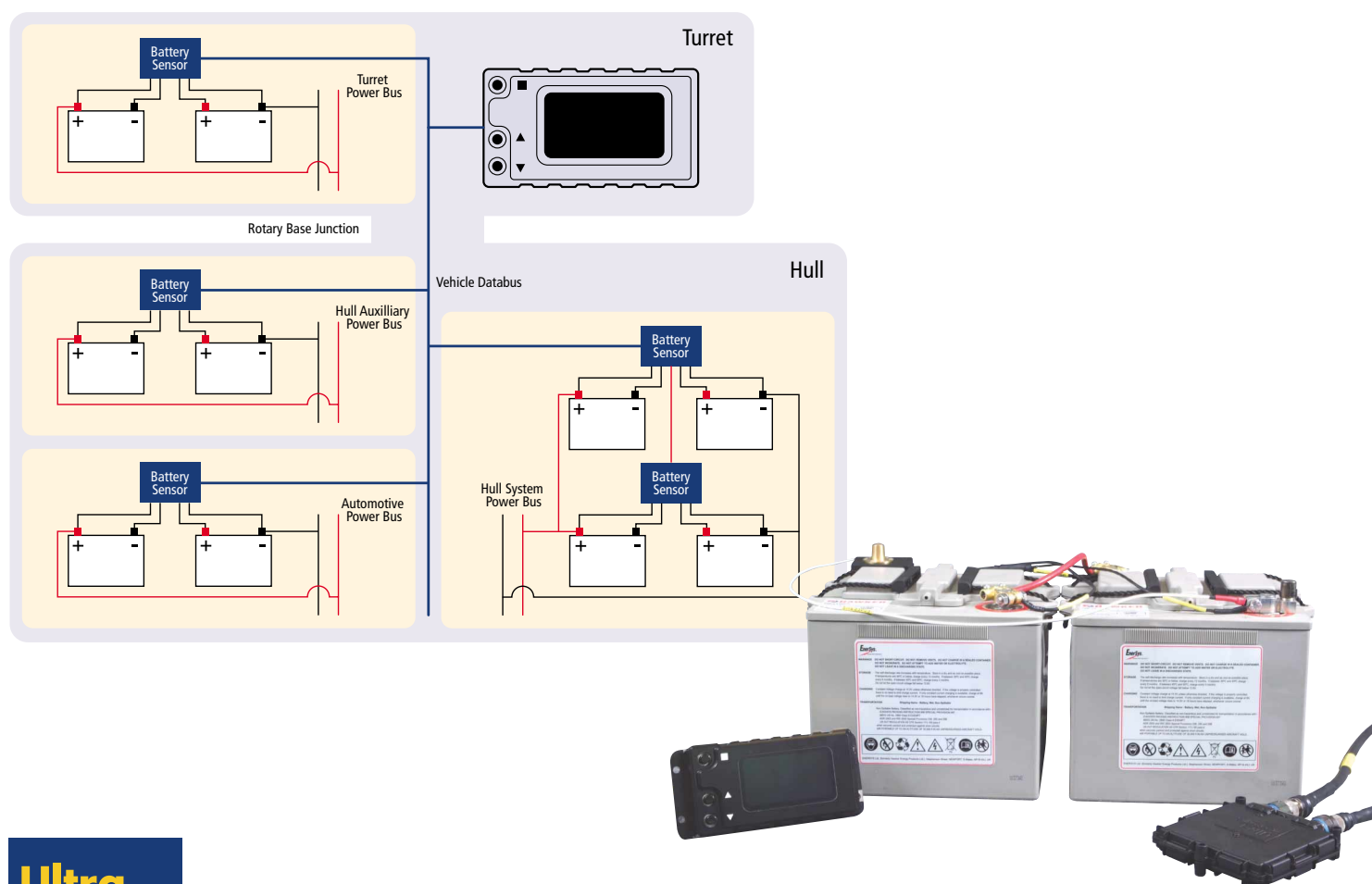
Conductance measurement has become established in the automotive and standby power industry as the only reliable method for quantifying the health of a lead acid battery.

The battery monitoring system 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.

Specification

	Sensor	Control unit	Display
Dimensions:	81 x 64 x 25 mm	146 x 160 x 29 mm	90 x 175 x 51mm
Mass:	0.5kg	0.4kg	1.5kg
Input voltage:	+14V to +32V		28V to Def Stan 61-5 Part 6 Issue 5
Current:	210mA (active mode) 70mA (sleep mode)		250mA
Battery types:	2 x 12V lead acid in series (flooded or gel)		
Operating temperature:	-40°C to +71°C (Mil Std 810E)		
Operating conditions:	Designed to Def-Stan 00-35 (tracked vehicle)		

Typical battery monitoring system



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Conductance based solution

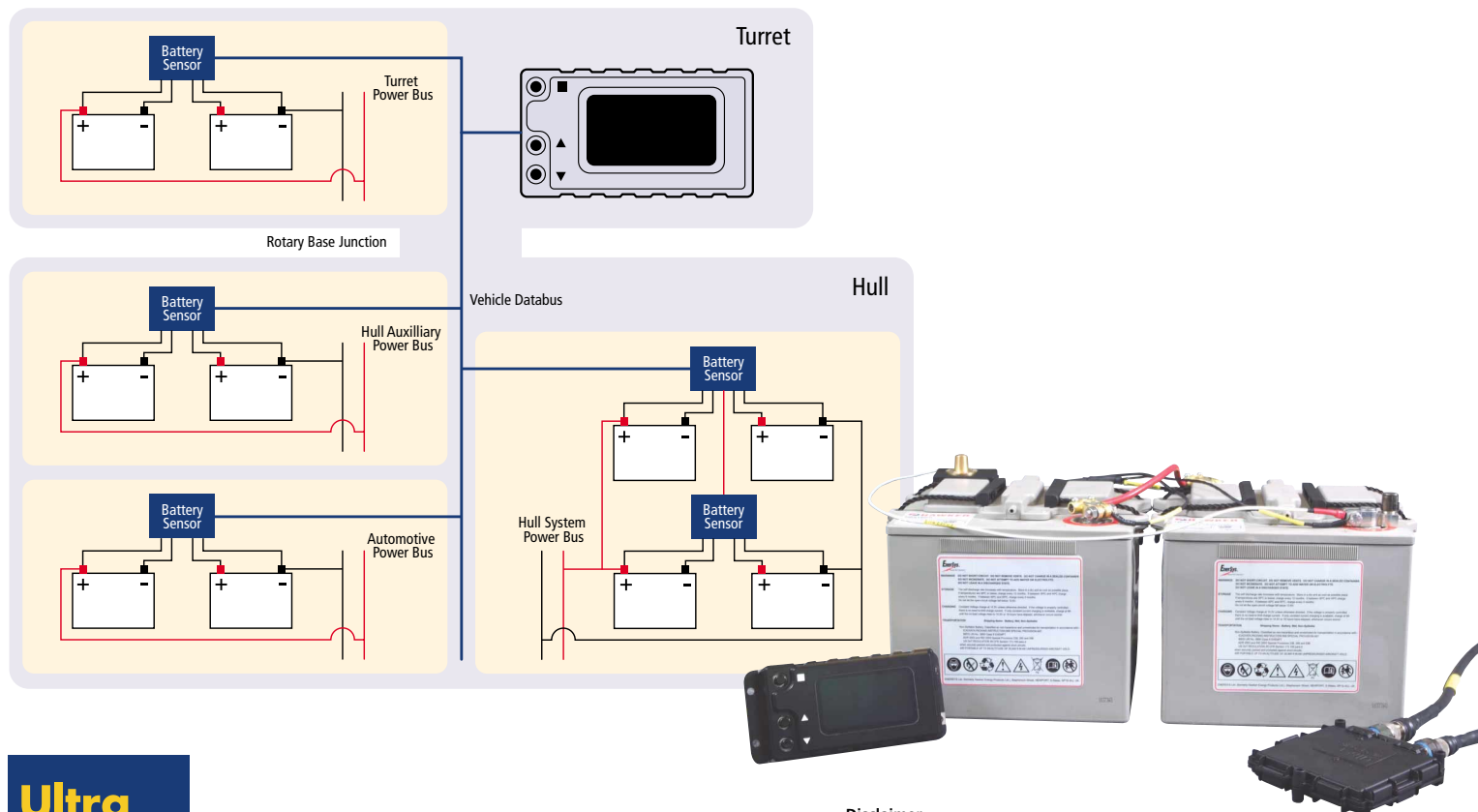
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