



**POWER & ENERGY IS NOT ONLY THE
GREATEST ENABLER FOR DEFENCE FORCES,
IT IS ALSO THE MOST SIGNIFICANT
LIMITATION**



DATACELL II®

Battery Monitoring System

With Datacell II technology you can know your capability instantly; how much power is available for your vehicle electrical systems, communications, sensors and critically for engine start. Data provided includes:

- Battery Voltage
- State Of Charge (SoC) (% Remaining)
- State Of Health (SoH) (% Remaining)
- Time To Run (Hours / Mins)
- Net Charge / Discharge (Amps)
- Temperature

A single Datacell II installation can support up to four separate battery banks simultaneously.



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THE COSTS OF POWER

The massive array of electrically powered tactical systems installed on new and legacy military vehicle platforms has expanded far beyond the level anticipated just a few years ago. This is a growing trend that is unlikely to diminish the quantity of power required from the vehicle.

Vehicles are not designed to cope with the additional power burden, leading to power shortages in theatre and causing systems to turn off without warning (creating potential safety concerns and a significant tactical disadvantage). It also costs an extraordinary amount of money.

The financial problem is two fold:

First delivering replacement vehicle batteries to the front line and managing the installation and logistics can be ten fold the cost of the battery itself. Considering combat vehicles carry between four and eight batteries results in a significant total cost for replacement.

Second, as a result of a lack of confidence and knowledge regarding battery power availability, crews idle large diesel engines just to ensure that there is charge going into the system. Dependent on the vehicle type and cost of fuel (and transportation), this costs significant an hour per vehicle.

APPLICATIONS

The Datacell II monitor system provides unparalleled accuracy and is a must for anyone reliant on battery power in a military vehicle.

DataCell II provides not only crucial 'state of charge' information for vehicle commanders, but also informs them of the time in hours and minutes they can continue to operate for before power runs out. These features completely take the guess work out of scenarios such as silent watch and avoid crews idling engines and APU's unnecessarily.

DataCell II not only prevents unexpected and dangerous power failures but radically reduces expenditure on replacement batteries and associated logistics. Its accurate state of health readings allow maintenance crews to pinpoint batteries that are failing so they can be charged in advance of a problem. It also prevents good batteries being unnecessarily replaced as a result of a mis-diagnosed electrical problem. Using a blend of traditional battery monitoring technology and unique mathematical models written specifically for the theatre proven Armasafe range of batteries. DataCell II overcomes the difficulties experienced by users with conventional ampere hour counters (mainly long term inaccuracy for

SoC (state of charge). Datacell is not affected by the nature of live vehicle electrical systems (batteries under varying load, at different temperatures, peaks and spikes) as it does not require complex, power hungry electronic sensors on the batteries. It also does not suffer from power consumption issues associated with Ohmic (impedance) based units.

As well as monitoring batteries, DataCell II can be used to comprehensively manage power on-board. When embedded in a VBMS (Vehicle Battery Management System) it becomes even more powerful and effective, controlling charge delivery, flat battery protection, import and export power and wide range of other critical functions.

In isolation, DataCell II can be used to automatically prevent power shortage issues. Its hard wire outputs can be used to switch an external relay on and off to control a charge source or load.

DataCell II has been successfully used to enable and disable remote weapons stations to prevent them flattening batteries so that the vehicle engine cannot be restarted.



Battery Monitoring System

PRODUCT HIGHLIGHTS

- Ensures vehicle commanders know exactly how much power they have in reserve during missions such as silent watch
- Avoids unforeseen power shortages and failures (improving crew safety and mission effectiveness)
- Vastly reduces battery failures as a result of misuse, saving money and keeping vehicles on the move
- State of Charge (% of energy remaining)
- State of Health (% of original capacity remaining)
- Time remaining (until programmed discharge level reached)
- Net charge / discharge (amps)
- Programmable alarms (SoC, SoH, Voltage)
- Hardwire alarm outputs for LED lamp illumination or control of external relays (generator start, consumer load control, buzzers etc)
- Simultaneously measures up to four battery banks. Can be split voltage 12 or 24 V DC
- Choice of display options available:
 - LCD monitoring panel
 - Configurable CAN Bus serial interface (SDK)
- Windows configuration, diagnostics and logging software
- Gauge Builder software allows custom graphic displays on third party on-vehicle computer screens
- Easily integrated into existing Vetronics systems or can be added as a standalone system.
- Full installation and operation support available along with comprehensive training programmes for operators and maintenance teams.
- Part of a comprehensive range of power management systems
- Datacell II is optimised for operation with the theatre proven Armasafe Plus VRLA batteries



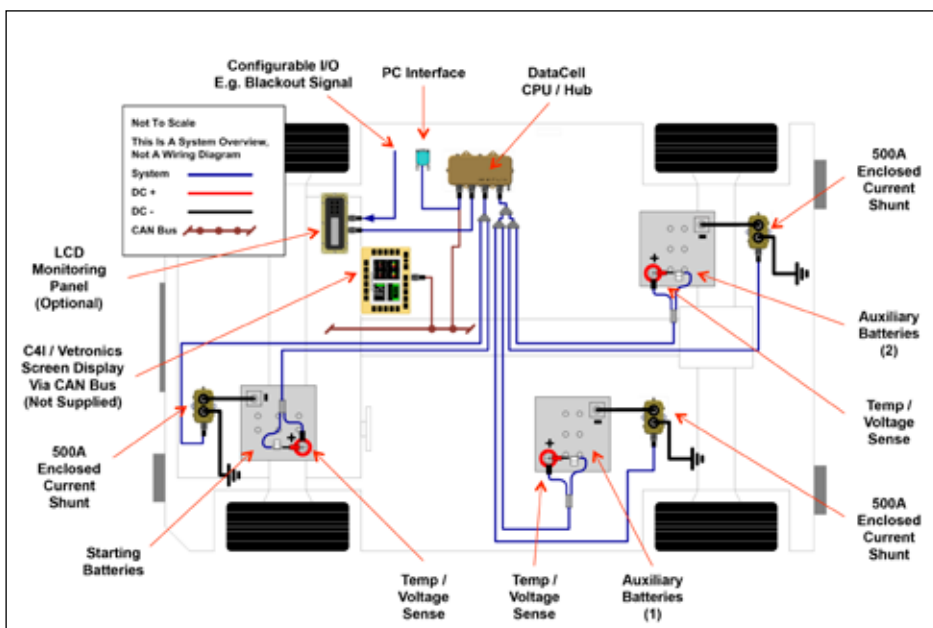
LCD Panel



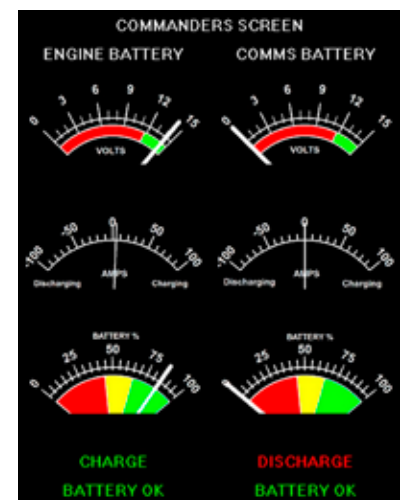
DataCell II CPU



Shunt



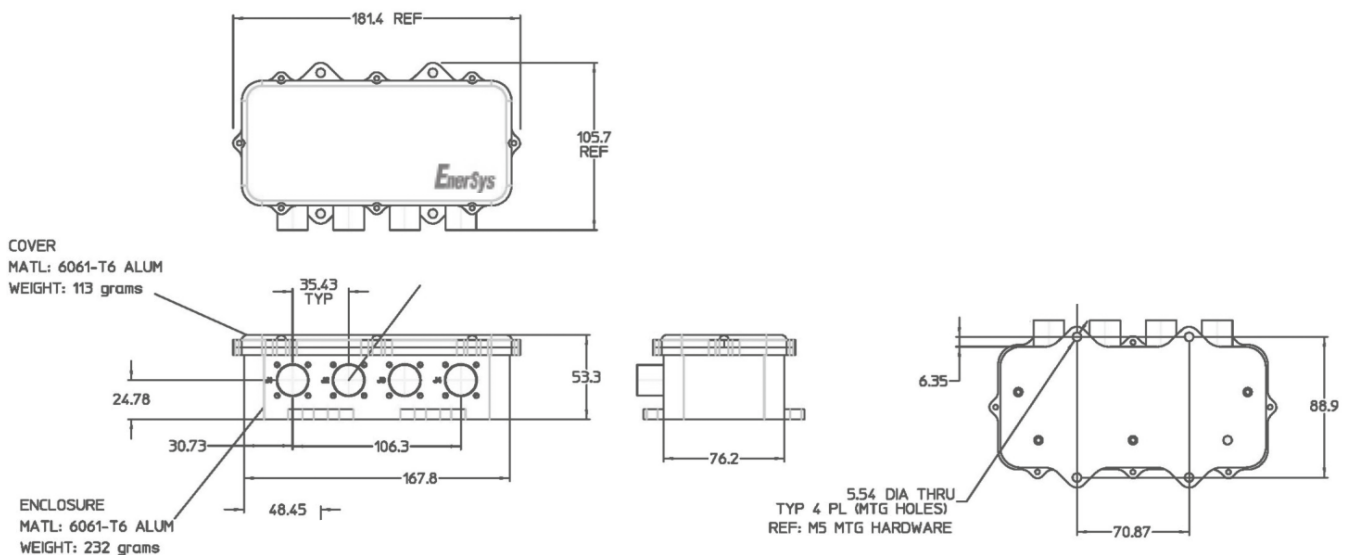
Datacell II Scheme 3 Battery Bank Example



Configurable Integrated Display Example

SPECIFICATIONS:

Supply Voltage Range	8 - 40V DC
Maximum Supply Current (CPU)	<10mA
Operating Temperature Range	-40 TO +80 °C
Accuracy	
State Of Charge (Charge)	Normal Conditions + / - 2%
State Of Charge (Discharge)	Normal Conditions + / - 2%
State of Health	< + / - 2%
Voltage	+ / - 0.5%
Temperature	+ / - 2 °C
Current	+ / - 5% tolerance, + / - 2% offset, +/- 1% LSD
Dimensions (CPU)	See below
Weight (CPU)	0.35 kg
Complies to	CE, ISO 7637-2
Designed to	DEF - STAN 59-411
	MIL - STD 461F
	DEF - STAN 00-35
	MIL - STD 810G
	DEF - STAN 61-5



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