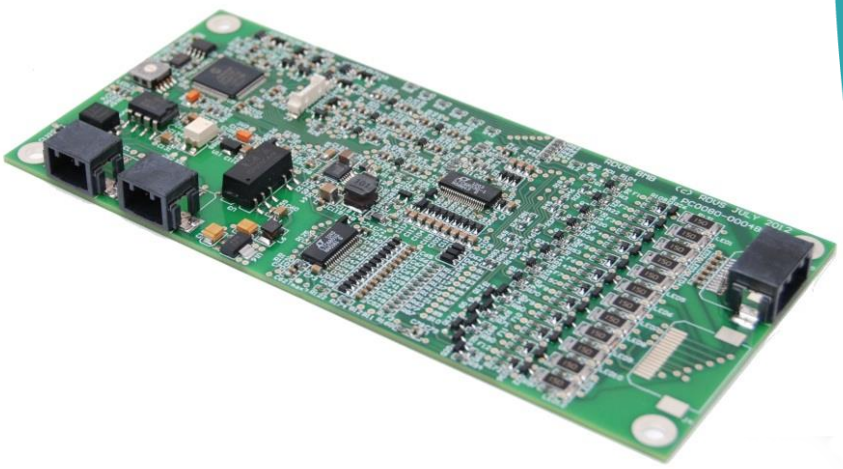

Battery Management Board

Standard Model: RDVS BMB-4/12S

The RDVS Battery Management Board (BMB) monitors and controls four to twelve cells, of most common chemistries, in a battery system.

The design is modular and scalable as part of a large battery system with a master controller such as the RDVS ‘Integrated Battery Interface System’. Each BMB board features board- and cell-level temperature monitoring, dual voltage monitoring systems for plausibility verification, passive cell-by-cell balancing and continuous hardware safety monitoring of individual cell voltage ranges. The boards have the option to be powered from the cell stack or from the vehicle low voltage supply and our firmware provides support for third party algorithms for ‘state of charge’ calculation.

Typical applications include: Full EV, Hybrid EV, Range Extended EV, Stationary power systems and Maritime systems.

Battery Management Board

Electrical
Engineering
Solutions

www.rdvs.co.uk

+44 (0)1295 709595

ISO 9001:2008
FS 563617

ISO 14001:2004
EMS 563618

Features

- Fully integrates with the RDVS 'Integrated Battery Interface System' module to create a complete battery electronics solution
- Each BMB easily configurable for 4 to 12 cells
- Up to 15 BMB modules possible per battery string
- Individual cell voltage measurements accurate to 5mV over full temperature range
- Additional voltage measurement plausibility checking
- Passive cell balancing on individual cells, up to 1W per cell
- Temperature monitoring (six remote sensor inputs, two on-board sensors)
- Hardware safety monitor and shutdown
- High integrity software – can form part of an ISO26262 compliant system
- CAN bus communications with other modules and master module
- Can be used with most chemistries, voltage limits configurable
- BMB module can be mounted directly to the cells
- Can be used with any capacity cells
- Minimum number of inter-board connections with both in and out connectors
- All connections made using extremely compact, robust JST CPT series automotive connectors
- Horizontal connectors throughout allow for very low profile design – max height 11mm
- Low voltage systems are galvanically isolated from cells
- Designed to meet automotive standards for electrical and environmental performance
- Conformal coated PCB

Physical Attributes

- Board dimensions: 160mm x 75mm
- Cell connections: 16-way JST CPT
- Temperature sensor connections: 12-way JST CPT
- Low voltage inter-board connections: 8-way JST CPT
- Mounting holes: 4 x M4

Environmental

- Operating voltage range: 12-60V DC
- Cell min/max voltage: 0.76/4.5V DC
- Vehicle supply voltage range: 9-16V DC when used with RDVS 'Integrated Battery Interface System'
- Typical power consumption:
  - 100uA max quiescent per cell
  - Running from vehicle supply <200mA
  - Running from cell pack voltage <25mA
- Temperature: -40°C to +85°C operating
- Humidity: IEC 60068-2-38 Z/AD
- Vibration/shock: IEC 60068-2-64, IEC 60068-2-6, IEC 60068-2-27
- EMC: ISO7637, ISO11452, 2004/104/EC
- ESD: ISO10605
- RoHS compliant

All parameters are subject to individual installation conditions and may require additional validation – this may be carried out to customer specification if required

Design integration and engineering support available, bespoke hardware and software versions of this product available on request