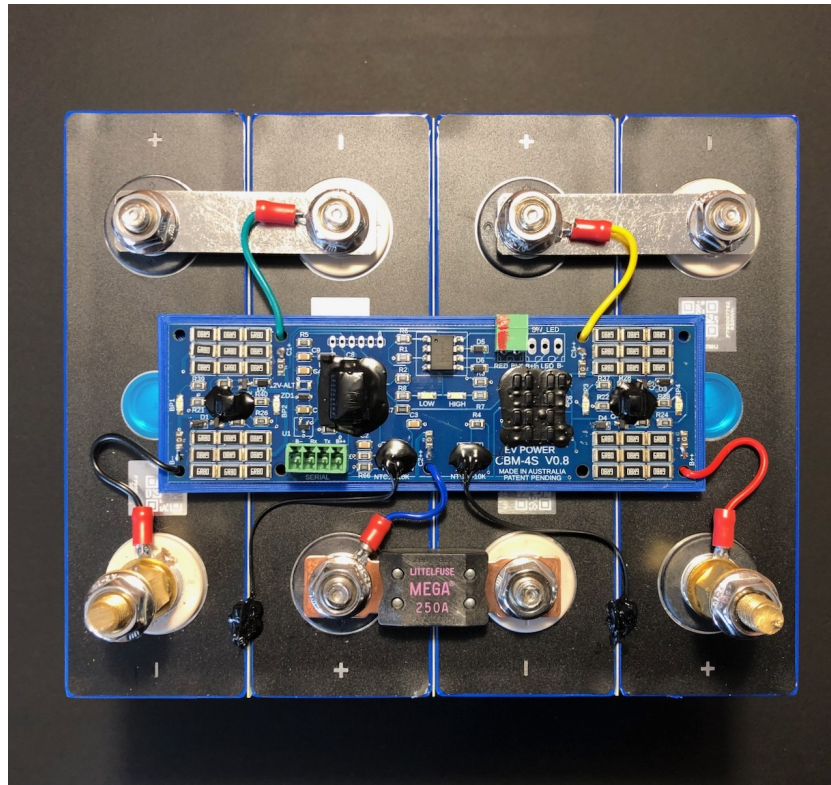


EV Power 4 Cell Balancer Monitor CBM-4S V0.8

Datasheet.



Introduction

The EV Power CBM-4S module is a second generation (Gen2) battery management module designed to balance and monitor up to four lithium ion cells connected in series. It works in combination with a EV Power Battery Control Unit (BCU) such as BCU-MICRO20 via a polarized one wire interface.

The Gen2 system is designed for modular arrangements of up to four batteries (one CBM-4S per 4 cell battery) connected in series up to about 60VDC.

Cell voltages are monitored and the polarized NC Loop interface (patent pending) can indicate a high cell voltage on any cell in the battery or separately distinguish a low cell voltage back to the BCU.

This allows the BCU to take different actions (shut off charge or discharge) depending on the battery cells state, which was not possible with the Gen1 system. Two green LEDs indicate high or low cell (On when OK).

Cell balancing is achieved via a resistive shunt across a cell that is switched on when the cell voltage is above the balancing threshold and outside the delta voltage range. This allows balancing to commence at a lower voltage than by monitoring individual cells. An upper "must balance" voltage can also be specified. Red LEDs adjacent to each shunt circuit indicate when balancing is active.

Cell temperatures are monitored via two thermistors with flexible leads.

The CBM-4S has configurable cell voltage monitoring and balancing characteristics via connection to a computer terminal interface.* No proprietary software is required.

Features

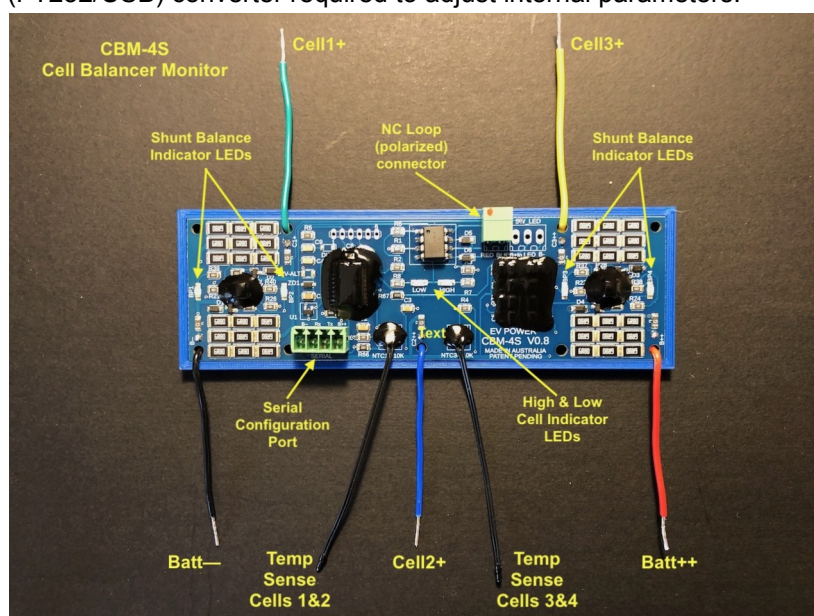
- Simple installation and intuitive operation.
- Mounts directly on top of a prismatic cell based battery.
- Cell Chemistry agnostic, LiFePo4, NCM, LTO, SIB etc
- Single wire interface between multiple batteries and a Battery Control Unit.
- Gen2 NC Loop – polarized one wire normally closed (daisy chain) signal interface.
- Cell balancing is applied intelligently across 4 cells.
- Powered by the battery it is connected to.
- Backwards compatible (via a minor hardware change) with Gen1 non-polarised NC loop interface.
- Fully configurable via a computer, no special software required. **

Specifications

Nominal Battery Voltage	8 - 14VDC
Battery Capacity Range	40 - 400Ah
Operating Battery Voltage Range	6 - 18VDC
Cell Voltage Measurement Range	0 - 4500mV
Operating Current	<4mA
Operating Temperature Range	-20°C to +90°C
Temperature Resolution	± 1°C
Number of Cell voltages monitored	4 (3 cells version by special order)
Number of Temperatures monitored	2 *
Dimensions	145 x 47 x 17mm(h)
Weight	25g
Cell Voltage Measurement Resolution	± 5mV
Battery Voltage Measurement Resolution	± 10mV
Max Cell Balancing Current	~400mA per cell

* flexible wire sensor beads can be placed between cells 1&2 and 3&4 to monitor 4 cells

** Serial/USB (FT232/USB) converter required to adjust internal parameters.



CBM-4S 48V Pack Wiring Example

