

## General Description

The Millswood Engineering Battery Cell Monitor & Balancer is a precision instrument that ensures multi-cell batteries are maintained in an optimal state, improving system reliability and prolonging battery life.



Figure 1 – Battery Cell Monitor & Balancer

The Battery Cell Monitor & Balancer does exactly as its name suggests: it monitors cells within a battery, and it balances those cells if and when they require it.

The Battery Cell Monitor & Balancer can be used in two ways:

- As a programmable hand-held battery verification tool, or
- Installed in a UAV, either with or without interfacing to the vehicle's CAN bus.

Interfacing with a vehicle's CAN bus provides real-time access to individual cell voltages and battery temperature (with the addition of a suitable external sensor). Control of balancing is also possible via commands sent over the CAN bus.

The Battery Cell Monitor & Balancer plugs directly into the balance connector present on most Lithium-based batteries. In many cases, this is the only connection required. A pair of indicator lights on the front panel show the battery's state of charge and state of balance.

## Features

- Supports multiple battery chemistries – LiPo, LiS and LiFe.
- Supports 4S, 5S and 6S cell configurations.
- DC-isolated CAN interface, allowing stacking (for series connected batteries).
- Battery temperature monitoring with suitable external sensor.
- User-friendly configuration software.
- Rich variety of balancing control options.
- Seamless integration with 250W PMU and 1600W GCU.
- Weight: 45g.
- Dimensions: 80 x 35 x 11.5mm.

## Specifications in brief

### Electrical:

<b>Battery chemistries</b>	LiPo, LiS, LiFe
<b>Battery voltage</b>	26 VDC (max.)
<b>Battery cell count</b>	4S, 5S, 6S
<b>Balancing current</b>	0.5 Amps (max.)
<b>Voltage measurement accuracy</b>	±8 mV
<b>Power dissipation</b>	2.5 Watts (max.)
<b>Visual indicators</b>	Charge (red/green), balance (red/green)

### Miscellaneous:

<b>Environmental protection class</b>	IP50
<b>Operating temperature range</b>	-40 to +85°C
<b>Altitude rating</b>	10,000m
<b>Cooling</b>	Passive conduction & convection
<b>Enclosure</b>	Lightweight custom-machined aluminium
<b>Dimensions</b>	80 x 35 x 11.5mm
<b>Weight</b>	45g
<b>Connectors</b>	JST XH (balance), 2 x JST GH (CAN), micro USB
<b>Communications protocols</b>	CAN, DC isolated (1Mb/S)