LiPro1-2 V3

The **LiPro1-2 V3** module from ECS is used to monitor the charging and discharging of lithium cells, ensuring that individual cells in a series-connected battery pack are neither overcharged nor over-discharged. It features an integrated balancer to compensate for uneven charging of lithium cells connected in series. The LiPro1-2 V3 also includes two separate safety loops for deep discharge protection and overcharge protection, allowing the load and charge cut-off to be controlled independently.

LiPro - Quality. No compromises
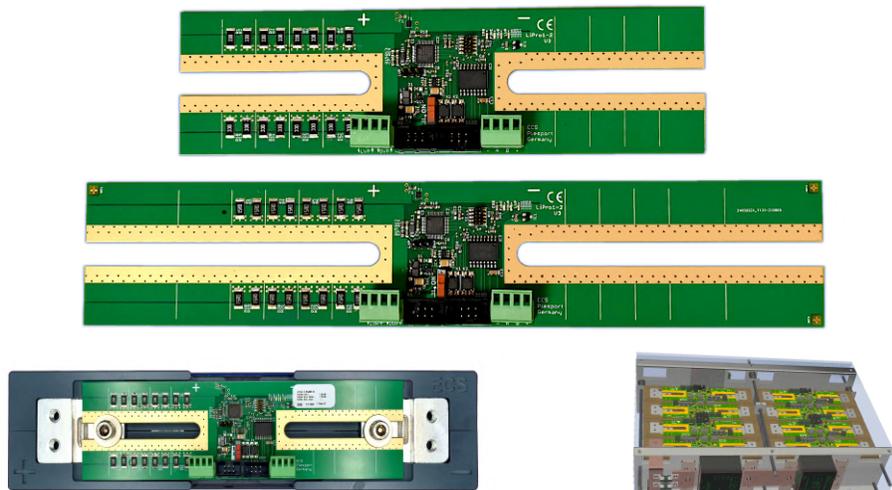
Example images on cells

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Product features and advantages
- Suitable for CALB, LISHEN, EVE, WINSTON and other prismatic cells
- 2 separate safety loops against deep discharge or overcharging
- Microprocessor controlled/ multiple redundant systems possible
- Temperature compensation of the switching thresholds can be activated
- Balancer current approx. 0 - 2 A
- Overtemperature protection on each cell
- Deep discharge protection (LVP)
- Overcharge protection (OVP)
- 4 LEDs to display: function, error, LVP, UVP

Also available with galvanically isolated RS485 interface:
- RS485 interface works with open industry standard protocol (Modbus)
- All data can be read out
- Programmable switching thresholds
- Up to 128 LiPro1-2 can be connected to the bus

New in the V3 version:
- New design, now also suitable for small cells, e.g. from EVE, LISHEN, CALB, etc.
- Maximum tolerance of limit values improved to < 0.1%
- Under temperature cut-off for charge and load can be set separately
- Parameters can be protected (interesting for our OEM partners)
- Various diagnostic options especially for system integrators
- Built-in buzzer for standalone alarm notifications (optional)

LiPro1-2 V3

BMS battery management system for
Lithium celles (e.g. LiFePo4, LiFeYPO4, LTO)

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Mechanical data	
Dimensions	Length: 85 - 270 mm
	Width: 53 mm
	Height: 20 mm (Bottom edge board to top edge plug)
Weight	40 g
Suitable for pole spacing	59 to 260 mm
Fastening thread	Up to M8
Max. cable size	AWG 26 -16 (0.1 to 1.5 mm²)
Protection class	IP00 printed circuit board painted to protect against environmental influences (condensation)
Electrical data	
Operating voltage range	0.8 to 5 V
Overcharge protection (OVP disconnect)	3.65 V (factory setting, adjustable)
Overcharge protection (OVP reconnect)	3.50 V (factory setting, adjustable)
Deep discharge protection (LVP delayed)	3.10 V (factory setting with temperature compensation, adjustable)
Deep discharge protection (LVP instantaneous)	3.00 V (factory setting with temperature compensation, adjustable)
Deep discharge protection (LVP reconnect)	3.20 V (factory setting, adjustable)
Balancer voltage	3.60 V (factory setting, adjustable)
LVP alarm (red LED)	3.00 V (factory setting with temperature compensation, adjustable)
OVP alarm (red LED)	3.70 V (factory setting, adjustable)
Tolerance of tensions	**Maximum +/- 5 mV, typical < +/- 2 mV**
Power usage	< 15 mW (< 5 mA @ 3.2 V This means a discharge of less than 4 Ah in a month)
Balancer current	Approx. 0 – 2000 mA (depending on cell voltage)
Temperature Cutoff	50 °C (factory setting adjustable)
Environmental data	
Ambient temperature	-40 °C to +50 °C
Storage temperature	-40 °C to +85 °C
Output	
Function	1 x safety loop LVP for controlling consumers 1 x safety loop OVP for controlling the chargers
Contact and method of execution	NC (normally closed) – contact is opened in the event of an error, thereby ensuring wire breakage
Max. switch current	1000 mA
Max. switch voltage	80 V
On resistance	<0.5 Ω
Leakage current	<1 µA
RS485 interface (optional)	
Baud rate	19200 (factory setting adjustable)
Protocol	Modbus RTU
Execution	Galvanically isolated
Temperature compensation	**Adjustable for all parameters!**

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