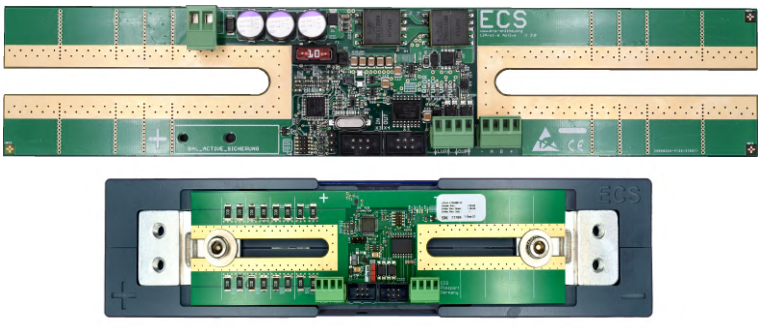
BMS battery management system for
Lithium celles (e.g. LiFePo4, LiFeYPO4, LTO)

LiPro1-6 ACTIVE V2

The LiPro1-6 Active V2 module from ECS is used to monitor the charging and discharging of lithium cells so that individual cells in a series-connected battery pack are neither overcharged nor over-discharged. It contains an integrated balancer to compensate for uneven charging of lithium cells connected in series. The LiPro1-6 Active V2 has two separate safety loops for deep discharge protection and overcharge protection, so that the load and charge cut-off can be controlled separately.

This active version of the LiPro family can utilize the energy of cells with a high state of charge to support cells with a lower charge.

LiPro - Qualität. Keine Kompromisse



Example images on cells

Made in Germany

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
- High equalizing current of 5 to 8 A (depending on battery voltage)
- Overtemperature protection on each cell
- Deep discharge protection
- Overcharge protection
- 4 LEDs to display: function, error, LVP, UVP
- Active charge transfer with an efficiency of 80 - 85 %

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 LiPro1-6 can be connected to the bus

New in the V2:

- Power consumption reduced to < 30 mW
- Temperature compensation of the switching thresholds can be activated
- New design, now also suitable for small cells, e.g. from EVE, LISHEN, CALB, etc.
- Maximum tolerance of limit values improved to < 0.1 %
- Parameters can be password protected
- Under temperature cut-off for charge and load can be set separately
- Various diagnostic options especially for system integrators

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Lithium celles (e.g. LiFePo4, LiFeYPO4, LTO)

LiPro1-6 ACTIVE V2

Mechanical data	
Dimensions	Length: 150 - 270 mm
	Width: 53 mm
	Height: 20 mm (Bottom edge board to top edge plug)
Weight	77 g
Suitable for pole spacing	90 to 260 mm
Fastening thread	Up to M8
Max. cable size	Switching outputs: 0.1 to 1.5 mm² Charge equalization: 0.5 to 2.5 mm²
Protection class	IP00 printed circuit board painted to protect against environmental influences (condensation)
Electrical data	
Operating voltage range	1 to 4.95 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	< 30 mW (< 10 mA @ 3.2 V This means a discharge of less than 8 Ah in a month)
Balancer current	**8000 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
Charge balancer	
Voltage range battery bank	10 - 63 V
Efficiency	81 - 86 %
Temperature compensation	**Adjustable for all parameters!**

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