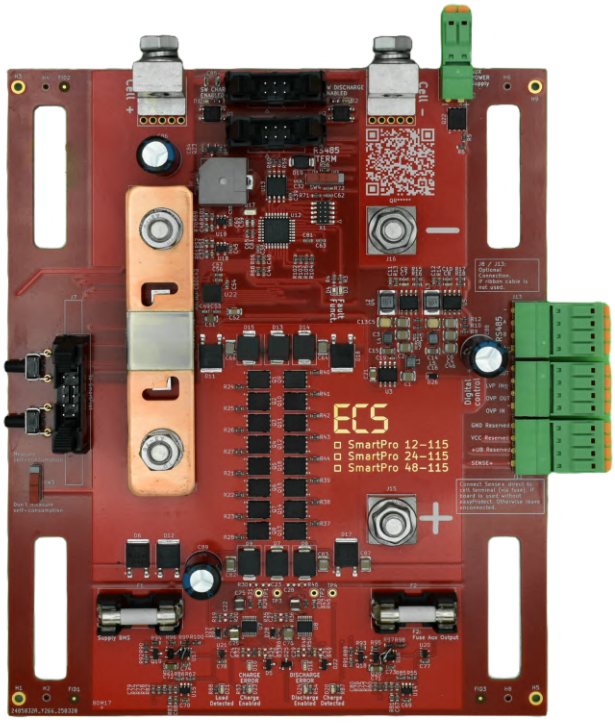
INTELLIGENT COMBINATION MODULE FOR BATTERY MONITORING & CHARGE / LOAD CONTROL

SmartPro

SmartPro is the central component of our BMS. Together with our LiPros (cell voltage measurement, cell temperature measurement and charge equalization) and our PowerPro (fuse, secondary protection and main switch), it forms a highly accurate, powerful and multi-redundant battery management system. SmartPro combines high-precision current measurement to determine the SOC with high-performance charging and load control. SmartPro is equipped with surge arresters that safely dissipate voltage peaks caused by line inductances. SmartPro can be flange-mounted on the side of the battery pack. The input is located at the top on the edge of the circuit board so that simple installation and wiring is possible.



Made in Germany

Product features and advantages

- High-precision current measurement, temperature coefficient shunt less than 10 ppm
- 24-bit precision ADC
- Current measuring amplifier with < 0.1 µV/°C drift
- Hardware-based short-circuit monitoring and shutdown
- Open data bus: Modbus RTU
- Aux output e.g. for heating control
- Highly integrated system for monitoring and protecting battery systems
- Versions available for 12, 24 and 48 V battery systems
- Self-consumption can be measured or not measured (for calibration purposes)
- Many others diagnostic data, e.g. SOH, internal resistance, battery efficiency, total charged Ah and Wh, last calibration...
- Extended SOC calculation methods: in addition to an Ah-based method, it is possible to switch to Wh based and temperature compensated methods

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& CHARGE / LOAD CONTROL

SmartPro

	SmartPro 12-115	SmartPro 24-115	SmartPro 48-115	Unit
	Electrical data			
Nominal system voltage	12	24	48	V
Max operating voltage	15	30	60	V
Max continuous current	125			A
Max peak current (100 us)	650			A
Max continuous power	1500	3000	6000	W
Switch-on resistance	< 1	< 1.25	< 1.5	mΩ
	Overvoltage protection			
Breakdown voltage	17.5	35	70	V
Total power Surge protection (Pppm) (Peak pulse power dissipation with a 10/1000 µs waveform)	10	20	40	kW
	Control system			
Control voltage LVP, OVP	4.7 to 60			V
Power consumption	0.1 typ.			W
	Additional output			
Max switching voltage	15	30	60	V
Max switching current	10	5	2.5	A
Functions	Programmable for heating control, SOC display, error message, Others on request			
	Current measurement accuracy			
Measuring range current	±125			A
Resolution	0.001			A
Total maximum error (Contains offset error + linearity error + temperature drift	< 0.04 FS (from -10 to +50 °C)			%
Offset error	< 0.01 FS (from -10 to +50 °C)			%
	Voltage measurement accuracy			
Measuring range battery voltage	15	30	60	V
Total maximum error (Contains offset error + linearity error + temperature drift	0.1 FS			%
	Mechanical data			
Dimensions (LxWxH) without plug	160 mm x 146 mm x 35 mm			mm
	Slotted holes for M8 threaded rod Distance: 123 mm for cell width up to max. 115 mm			mm
Weight	300			g
Terminal bolt outputs	M6 Distance: 80			mm
Connection terminals inputs	M6 Distance: 62 mm			mm
Protection class	IP00			

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