



BMS battery management system for lithium rechargeable battery pack			
Model: BMS LIBRA15S1P150LP-CA			
Electrical Characteristics			
No.		Test item	Criterion
1	Type of cells	Type	All rechargeable lithium
		Number of cells	1*(8÷15)
		Range voltage for single cell	1,5÷4,5 VDC
		Cells in series	yes (8÷15)
		Cells in parallels	yes
2	Voltage	Range min/max	24÷60 VDC
		Minimum voltage measured	1 mV
3	Current	Low Current consumption for single cell with auxiliary charger	≤400 nA
		Maximal continuous charging current	60A or 80A (two versions)
		Maximal continuous discharging current Standard power version	60A or 80A (two versions)
		Minimum measured current	10 mA
4	Balance	Type of Balance	Passive
		Number of balance	three type (A,B,C)
		Minimum balance voltage for single cell	1 mV
		Balance current for single cell	150 mA
5	Over charge Protection	Over charge detection voltage	settable ±1mV
		Over charge release voltage	settable ±1mV
6	Over discharge protection	Over discharge detection voltage	settable ±1mV
		Over discharge release voltage	settable ±1mV
7	Over current protection	Over discharge detection current	settable ±1A
		Detection delay time	settable ±1s
8	Shorth circuit	Shorth circuit max current	yes
		Settable on/off	yes
9	Temperature	Number of sensors of temperature (cells)	2
		Number of sensors of temperature (PCB)	1
		Battery temperature misure	settable ±1°C
		PCB temperature misure	settable ±1°C
10	Time	Real time clock	yes
		Auto power off	settable ≥1min



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Communications			
1	Communication	Buzzer	yes
		USB	1
		TX opto isolated	1
		RS485 opto isolated	1
		i2C	optional
		Digital output	2
		Digital input	0
		Led command output	2
		Led view system state	7
		Bluetooth	yes
2	Parameters of BMS	Settable by PC	yes
3	Software of communication	windows support	yes
4	Communication with smartphone	Application Android	yes
5	Communication with smartphone	Application ios	In development

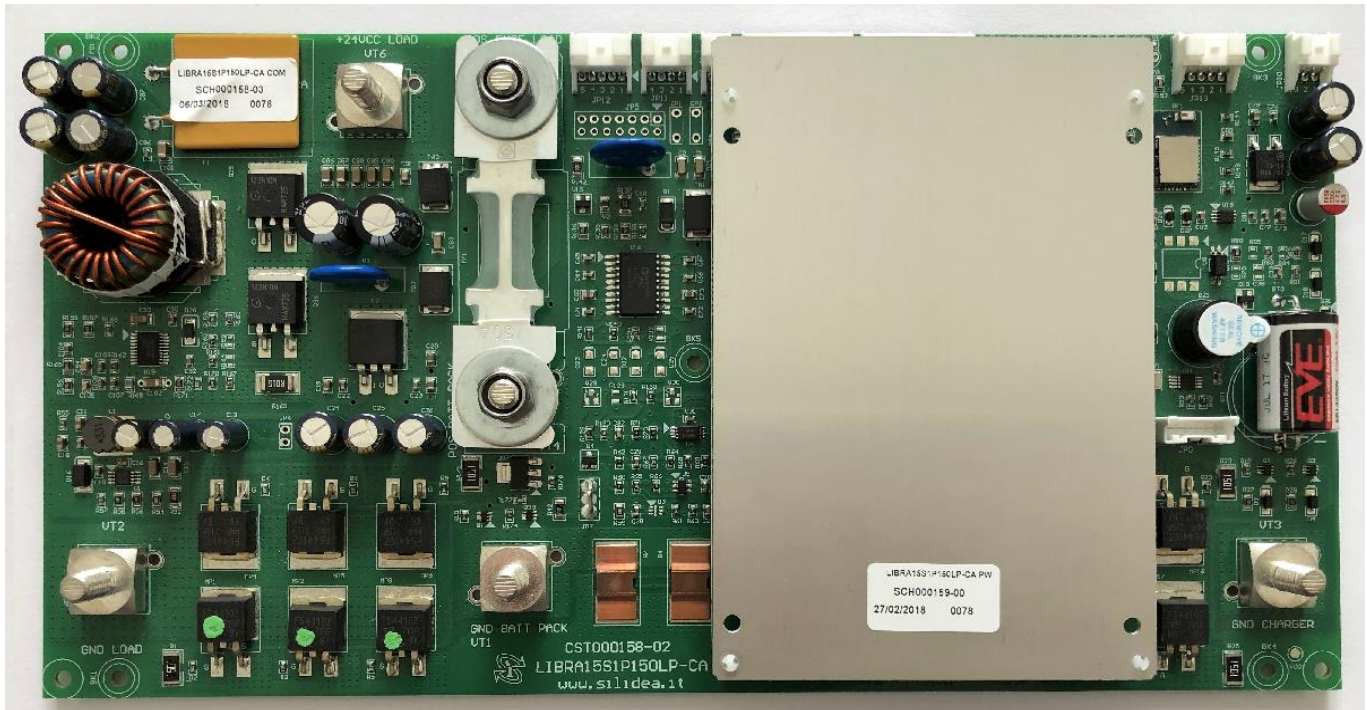
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Model: BMS LIBRA15S1P150LP-CA			
Internal memory of the BMS			
No.	Test item		Criterion
1	Time	Day last charge	yes
		Data of last charge	yes
		Charge cycles	yes
		Max time between charges counter	yes
2	Current	Register of Amper/hours	yes
3	Operation data	Internal register	11 parameters
4	Production data	Internal register	4 parameters
5	Historical log data	Register fifo	64 events



BMS battery management system for litium rechargeable battery pack			
Model: BMS LIBRA15S1P150LP-CA			
Electrical and Mechanical Characteristics			
No.	Test item		Criterion
1	Type of core	Micro Controller	16 bit
2	Misure current	Analog-to-Digital Converters	16 bit
3	Misure Voltage	Analog-to-Digital Converters	16 bit
4	Power regulator	Switching Regulators	high efficiency
5	ON/OFF	Single switch SPST	yes
		Single push button	no
6	Efficiency BMS	At maximum power	99,98%
7	Internal DC/DC output	DC/DC output 24V@5A	24V@5A@120W
8	Auxiliary output DC/DC converter	At maximum power 24V@5A	93,50%
9	Protection Auxiliary output DC/DC	Electronic short circuit protection	yes
10	Led 1	State views	charge/discharge
11	Led 2	State views	on/off bluetooth
12	Led 3	State views	on/off BMS
13	Led 4	State views	25% SOC
14	Led 5	State views	50% SOC
15	Led 6	State views	75% SOC
16	Led 7	State views	100% SOC
17	Fuse power	Fuse 48V (the values depend from the use)	50A @ 48V
18	Bidirectional charge interruption		yes
19	Precharge output load		yes
20	Power consumption	Stand By State	≤400 nA
21	Power consumption	ON State all power on	≤60 mA
22	Connection aux charger	Faston male	One 6,3*0,8 mm
23	Signal connector cells and temp	JST connector PA with lock	PAP-10V-S
24	Various signal connector	JST connector PA with lock	PAP-XXV-S
25	Connection power fuse	Power connector Press Fit	screw M6
26	Connection power charge	Power connector Press Fit	screw M6
27	Connection power load	Power connector Press Fit	screw M6
28	PCB	Command	FR4
		Power	Alluminium
29	Weight	Measure	382 g
30	Dimension	Measure	260*135*20 mm
31	IP International Protection	Rating	no
32	Case	Type	no
33	Temperature	Operating Temperature Range	-20, +70 °C
		Storage Temperature Range	-20, +85 °C



Photo of the product:



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