



Vinci

BMS families for large batteries and battery arrays

Complete Battery Management System
for 24~48 V Li-ion or lead acid batteries.
Outstanding versatility, feature rich.
Expandable up to 63 batteries in parallel.

Standard specifications:

- 24 ~ 1600 V, 1 kWh~10 MWh
- Any Li-ion chemistry, Lead acid
- Up to 62 banks, up to 24 cells / bank
- Centralized or Master / slave topology
- Wire or fiber-optic links to slaves
- Wired (tap wires) or distributed (cell boards)
- Redundant, dual BMS framework for reliability
- Bullet-proof against tap mis-wire within slave
- Rugged, sealed, industrial grade packaging
- Thermal management: up to 1 sensor / cell
- Contactor driver, precharge, MOSFET drive
- Hall Effect or shunt current sensing
- Ground fault detector
- Energy (top balance, 100 % SoC), power (mid balance, 50 % SoC) or both.
- SoC, SoH, extensive fault check, data logging
- CAN bus, PIDs (OBD II)
- Monitoring and field config with GUI
- Off the shelf, stocked



Applications:

- LV: Solar, telecom, house power, server farms
- EV: passenger vehicles, truck, industrial, mining, marine, air...
- HV: grid-tied, off-grid, micro-grid, distributed resources



Elithion's Vinci: the most advanced family of off-the-shelf BMS solutions

The Vinci family of BMS solutions is the culmination of Elithion's years of experience in Battery Management Systems.

Each Vinci BMS solution is carefully tailored to a given application, fulfilling its every need.

We wrote the book on Li-ion BMS... literally.



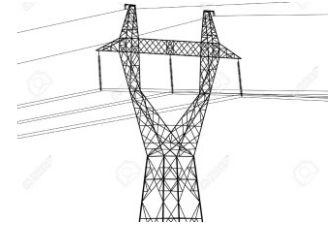
Elithion Inc.

Leading manufacturer of Lithium-ion Battery Management Systems (BMS)

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Vinci LV Brochure 4/20/16



**Vinci LV
Low Voltage**

**Vinci EV
Electric Vehicle**

**Vinci HV
High Voltage**

Application	Location	Stationary, Mobile	Mobile	Stationary
	Voltage	24~48 V	96~900 V	500~1600 V
	Typical:	Solar, telecom, house power, servers	Traction packs for EV, HEV, PHEV	Grid, micro-grid, off-grid
Battery	Chemistry	Any Li-ion & Lead acid	Any Li-ion	3.2 and 3.7 V Li-ion
	Size	Small, medium	Medium, large	Large, very large
	Sub-modules	Single case	May be split into 2+ packs	May be split into modules
Array	Batteries	Up to 63 in parallel	n.a.	Up to 62 in series and parallel
	BMS topology	Centralized (1 module) Optional: additional slaves	Master / Slave (Master, Application Module, Slaves)	
Topology	Cell sense topology	Wired (1 wire / cell)	Wired (1 wire / cell) Distributed, copper Distributed, fiber optic	Distributed (1 cell-board / cell), fiber optic
	Slave type	Optional: VinciLink (2 wire)	VinciLink (2 wire) VinciBus (CAN)	VinciBus (CAN)
Balancing	Technology	Dissipative ("passive") Charge Transfer ("active")	Dissipative	Dissipative
	SoC Level	Top	Top (energy, EV) Mid (power, HEV)	Top (energy, back-up) Mid (power, load leveling)
Battery isolation	Technology	Transformer	Transformer, opto-isolator or fiber-optic	Fiber-optic
	Testing	Fault current, location, resistance; capacitance to ground		
Bus connection	Safe-connect	Yes	N.a.	Yes
	Protector	Optional, ≤ 2000 A	Optional, ≤ 300 A	Not available
	"Bullet proof"	Yes (w/ dissipative only)	No	No
Features	Current sensing	Ext. Hall effect Ext. shunt, Internal	Ext. Hall effect Ext shunt	
	Thermal mgmt	No	Fan, heater drive	
	Meter drivers	Voltage, current, SoC		
Req. power supply		None: self powered	12 V	
	Standard	CAN USB	CAN USB	CAN USB
	Optional	XanBus, WiFi ModBus RTU (RS485) TCP/IP (Ethernet)	RS232 J1772	ModBus RTU (RS485) ModBus TCP/IP (Ethernet) RS232, WiFi



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