

Lithionics Battery



NeverDie® Battery Management System (BMS) Advanced Series



Product Overview Rev.6 ©2016 Lithionics Battery

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Safety Precautions

- All electrical work should be performed in accordance with local and national electrical codes.
- Voltage is present at the battery terminals, use insulated tools and gloves while working on the system.
- Always turn off equipment connected to the system in addition to turning OFF the Power switch provided on the system to isolate the batteries from other electrical circuits, before performing any repairs or maintenance on the system.
- Always use proper wire sizes to connect the system to inverters, chargers or other equipment.
- Always use crimped connections to connect to the battery terminals.
- Read and follow the inverter, charger or other equipment manufacturers safety precautions prior to connecting the system to that equipment.

Included Features

- **OptoLoop® interface.** Uniquely designed continuous opto-isolated loop circuit running through each battery cell's MCU. OptoLoop® alerts the BMS if any single cell is outside of acceptable voltage and temperature parameters.
- **Power/Storage Mode Switch.** Shuts off battery power in Storage Mode, provides additional safety and compliance with US/DOT regulations for shipping batteries.
- **200A Contactor.** Zero coil energy consumption compared to classic relays which consume over 2 Watts of power continuously.
- **Reset/On/Off button (multifunctional).** Intelligent control of multiple functions, see more details in Product Manual sections below.
- **Coulomb Counter based SOC meter.** Precision SOC measurements using Hall Effect sensor and Coulomb Counter to integrate charge/discharge current over time.
- **Reserve Voltage Cutoff (RVC).** NeverDie® function - 10% energy reserve when you need it most. Configurable reserve level based on true SOC value.
- **Low and High Voltage Cutoff (LVC/HVC).** Pack level and Cell level battery protection from over-charge and over-discharge.
- **Automatic Charger Detection.** Senses voltage on the load side of the BMS when charge source is present and turns the battery on for charging.
- **Alternator Field Control Circuit (FCC).** Protects alternator diodes by safely discharging field energy prior to disconnecting the battery.
- **Automatic Generator Start/Restart (AGS/R).** Normally Open dry contacts to signal generator on/off when battery needs charging. Requires generator with auto-start function.
- **Short Circuit Detection.** Disconnects the battery when short circuit is detected.
- **Alarm Signal Circuit.** Sends audible or visual alarm signal to get attention when BMS detects a problem with battery modules.
- **TVS Flyback Diode.** Protects BMS from inductive kickback at the load side when contactor is open.

- **Sealed NEMA Enclosure.** BMS is housed in a sealed NEMA box for convenient placement near the battery modules.
- **VTE Power Posts.** Heavy duty terminal posts for battery and load connections.
- **LCD Display interface.** Connector for optional remote LCD Pod.
- **CANBus Data interface.** Connector for CANBus Data Logging.
- **RS232 Serial Data interface.** Connector for RS232 Serial Interface.
- **Deep Sleep Mode.** Zero BMS idle load on fully discharged battery.

Optional Features

- **400A Contactor.** Double the current rating for higher power systems.
- **Dual Contactor.** Separate Charge and Load busses for more complex systems.
- **EURO DIN Advanced connectors.** Improves connection safety by eliminating terminal posts.
- **Pre-charge Relay.** Pre-charges capacitive loads such as inverters or motor controllers to protect BMS contactor from welding during inrush transient. Standard on High Voltage systems >48V.
- **TSM2500 Charger control.** Controls TSM2500 Chargers over CANBus interface (chargers sold separately).
- **AC power sense for Charge Detection.** Enables charging when AC power is present, but charger must sense the battery to start charging.
- **Remote Power/Reset switch.** Wiring harness with Power/Reset switch for remote battery operations.
- **Round LCD pod.** Round 2" LCD display for panel mount, shows all available battery data such as SOC, Volts, Amps, Watts, etc.
- **Rectangular LCD pod.** Same as above, but in rectangular NEMA box for surface mounts.
- **Tri-Color LED pod.** Used for simple state of charge indication Green/Yellow/Red.
- **DB9 or USB dongle for Serial interface.** Wired DB9 or USB dongle for PC interface connections for data logging and configuration.
- **TCP/IP Data interface.** Ethernet network interface for TCP/IP data logging and configuration.
- **Bluetooth Data interface.** Bluetooth wireless interface for Android phones and tablets for data logging.
- **DAP (Drive Away Protection).** Extra safety feature for propulsion applications prevents moving while charging.
- **Bilge Pump Terminal.** Separate contactor for bilge pump with energy reserve to run the pump when other loads are turned off.

Custom Features

- **Wi-Fi Interface, RS485/Modbus interface, etc.** Custom data interfaces and other unique features can be developed for customers with unique requirements. Development / Engineering costs will apply. Contact Lithionics Battery sales team for details.