



1S3P LTO Battery Pack with BMS (revision C)

Quick Start Guide

Thank you for purchasing the LTO battery pack with integrated BMS. This is a 1 cell in series and 3 in parallel Lithium Titanate Oxide (1S3P LTO) pack with smart protection and measurement. Nominal voltage is 2.4 V (range 1.5–2.8 V), so it is *not* a drop-in replacement for Li-Ion or Li-Po packs.

How to Connect

- Connect your load to the output terminals.
- Charge from a constant-voltage 2.8 V source or an LTO charger.
- The charger connects to the same output terminals (load side).
- Optional: I2C (Qwiic/uŠup connector) provides voltage, current and status.

What Not to Do

- Do not use Li-Ion/Li-Po chargers or 5 V USB chargers.
- Do not exceed 2.8 V charging voltage.
- Do not reverse polarity or short the output.
- Avoid continuous currents above 1 A (2 A max for short bursts).

If the voltage goes too high or too low, the BMS will disconnect the cells. This is a safety feature and prevents damage.

If Output Turns Off

The BMS disconnects the load on undervoltage, overvoltage or overcurrent. Remove the load and connect a 2.8 V charger to the output to recover.

Basic Parameters

- Nominal voltage: 2.4 V (LTO), range 1.5–2.8 V
- Capacity: 3900 mAh (3×1300 mAh)
- Continuous charge/discharge: 1 A
- Short bursts: 2 A (up to 10 s)

- UVLO: 1.7 V (default), OVLO: 2.8 V (default)
- Operating temperature: -20 to 55 C

The 1 A limit is a BMS design choice for compact size and long-term outdoor IoT use. The LTO cells themselves can deliver more, but this product is not intended for high-current loads.

Additional Information

Development notes, wiring details, and firmware: <https://uart.cz/2557>

Thank you for your support. I am a hobby developer and build everything myself from design and manufacturing to documentation and shipping. Your purchase helps fund new projects.



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