



Guide for Li-Po batteries

Engineering Physics' Robot competition 2023





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1 Safety

1.1 Storage

You have to be careful with the battery. Always store it in a protected container when not in use, such as the original packaging or a charging bag. If the battery has changed shape or swelled, immediately disconnect the battery and contact the competition management. Never use a battery that is swollen.

1.2 Short circuit

Be careful not to short-circuit the battery, for example by loose cables touching. The battery can briefly discharge up to 132 Amps, which melts most of the plastic that the cables touch and damages the battery.

1.3 In case of fire

Should the battery be damaged so much that it start to burn, EVACUATE the premises immediately. The gases that are formed are toxic, and lithium fires cannot be extinguished.

1.4 Charging bag

You must use a charging bag when charging the battery. This is fireproof and should reduce the risk of accidents when charging.



Figure 1. Fireproof charging bag that must be used while charging the battery. Can also be used to store the battery.



2 Battery alarm

In order not to discharge the battery too much, which also damages the battery, the battery alarm must be connected while the battery is being used on the robot. The battery alarm plugs directly into the white connector on the battery, so that the pin marked with a minus sign is connected to the black cable (figure 2).

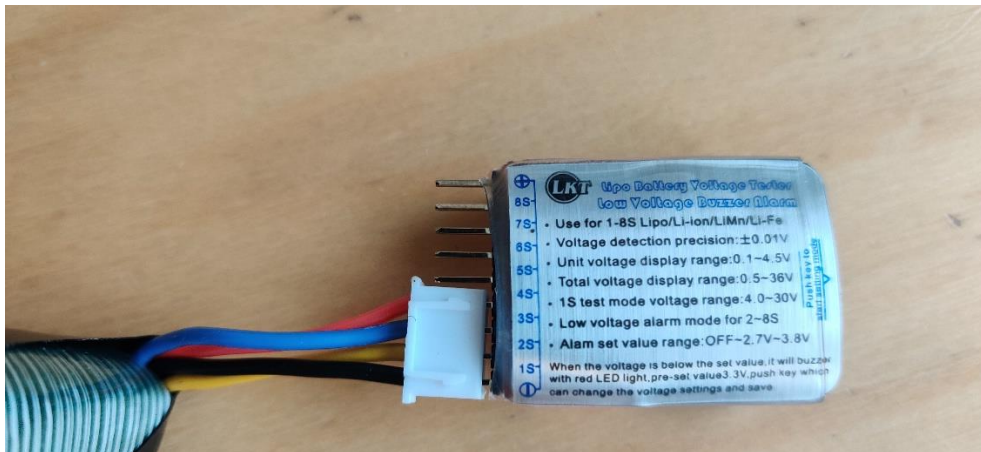


Figure 2. The black wire goes to the minus sign. The battery alarm must be connected while the battery is being used on the robot.



3 Charging

3.1 Instructions

Figure 3 shows where the cables should be connected and figure 4 shows how the connections should look like when charging. A charging bag must of course also be used. Once the battery is connected and the charger has power, use the **Inc.** button to navigate the menu until the **LiPo Balance** mode is selected (figure 5). Then hold down the **Start** button until the charger beeps. Then release the button to briefly check the battery (figure 6). After that, the charger waits until you either press **Start** to start charging or **Stop** (red text) to cancel charging (figure 7). When the battery is charging, you can see its status (figure 8). You can stop charging at any time by pressing **Stop** (red text) and the charger will beep when charging is complete (NOTE: always stop charging before disconnecting the battery).

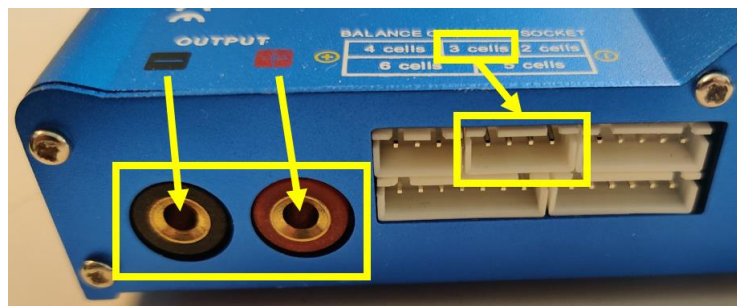


Figure 3. On the left, connect the banana plugs (NOTE: be sure to connect the colors correctly). It goes to the yellow connector on the battery. The white connector plugs in on the right where it fits.



Figure 4. This is what it looks like if the battery is connected correctly. (NOTE: Never charge the battery without being in a charging bag.)



Figure 5. Make sure the charger is in BALANCE mode. Change mode by pressing Inc. or Dec. the buttons. Then hold down the Start button until the charger beeps to start charging.



Figure 6. After holding down the Start button and releasing it, this text appears.



Figure 7. Finally, you can press Start to load or Stop (red text) to cancel.



Figure 8. Now the battery is charging. Press Stop (red text) to stop charging. (NOTE: Always stop charging before unplugging the cables.)