

Assembly Instructions for Lithium Iron Phosphate Cells

1. Always use a torque driver or torque wrench when securing electrical connections. Maximum torque is 8 kg-cm, 6.9 lb-in, or .78 nm. Do not over tighten the terminal bolt if a torque driver is not available. The positive terminal of the cell is hollow aluminum – too much torque can break the terminal bolt. Proper torque is just slightly beyond where the spring washer flattens. Breaking the terminals is not covered by warranty.
2. Do not turn or loosen the original nuts on the cell terminals, otherwise leakage may happen. The only exception: Check the terminal nuts with your fingers when you first receive the cells. Shipping vibration can loosen the nuts. Tighten them to no more than 8 kg-cm, 6.9 lb-in, or .78 nm.
3. Keep the insulation caps on the cell terminals at all times. Use electrical tape or some other insulator to protect the terminals when storing cells or assembling a battery pack. The cell will not catch fire if shorted, but the cell can provide all of its energy very quickly. It is enough energy to weld metal to the terminals. Sparks and heat from a short circuit can cause a fire on the bench or in the battery pack.
4. Never remove the insulation film on the cell surface. The outer case of the cell is 'live' and must be insulated from both terminals and any other electrical conductor. Replace any worn insulation with shrink wrap, electrical tape, or another suitable insulator.
5. A battery protection circuit to control **over-charge, over-discharge and over-current** is required in order to get the longest life from the cell. Charge to a maximum of 3.7 volts per cell, and limit discharge to no lower than 2.1 volts per cell. This minimum voltage is measured at the cell. It is possible to monitor total pack voltage with an external volt meter or monitor, but this will not tell you when or if a single cell discharges below 2.1V. Low voltage protection is most important. Maximum continuous discharge is 10C (100A). The cells can provide 12C (120A) for a maximum of 15 seconds.
6. Do not store, charge, or discharge the cell near fire, heater, or high temperature objects.
7. Do not reverse cell connections when charging or discharging.
8. Do not allow the cell to get wet with either fresh or salt water. The cell case is aluminum and will corrode.
9. Do not throw or drop the cell, or subject it to strong impacts or shocks. Do not mount the cell by it's terminals – secure the cell by the case.
10. Do not modify or disassemble the cell, or solder directly onto the cell.
11. Do not continue charging the cell even if the charge is not complete within the specified charging time. A significantly over-charged cell might overheat, vent, explode or cause an external fire.