



SLIMLINE LITHIUM IRON PHOSPHATE BATTERY

USER MANUAL



PLEASE READ THIS MANUAL CAREFULLY BEFORE OPERATION AND MAINTENANCE,
FOLLOW ALL PROVIDED WARNING & CAUTION, AND KEEP IT FOR FUTURE REFERENCE.

V1.1

ABOUT US

ATEM POWER, born in June 2017, as a synonym for exciting outdoor experience, is an Australian company with dedication and passion for the R&D of high quality products in the field of renewable energy products, batteries and related accessories.

Since the company was founded, we have committed to innovation that aims to make your life infinitely more convenient. And the belief in our conviction for quality and commitment allows us to innovate in developing products that are optimally tailored to the needs of our amazing customers.

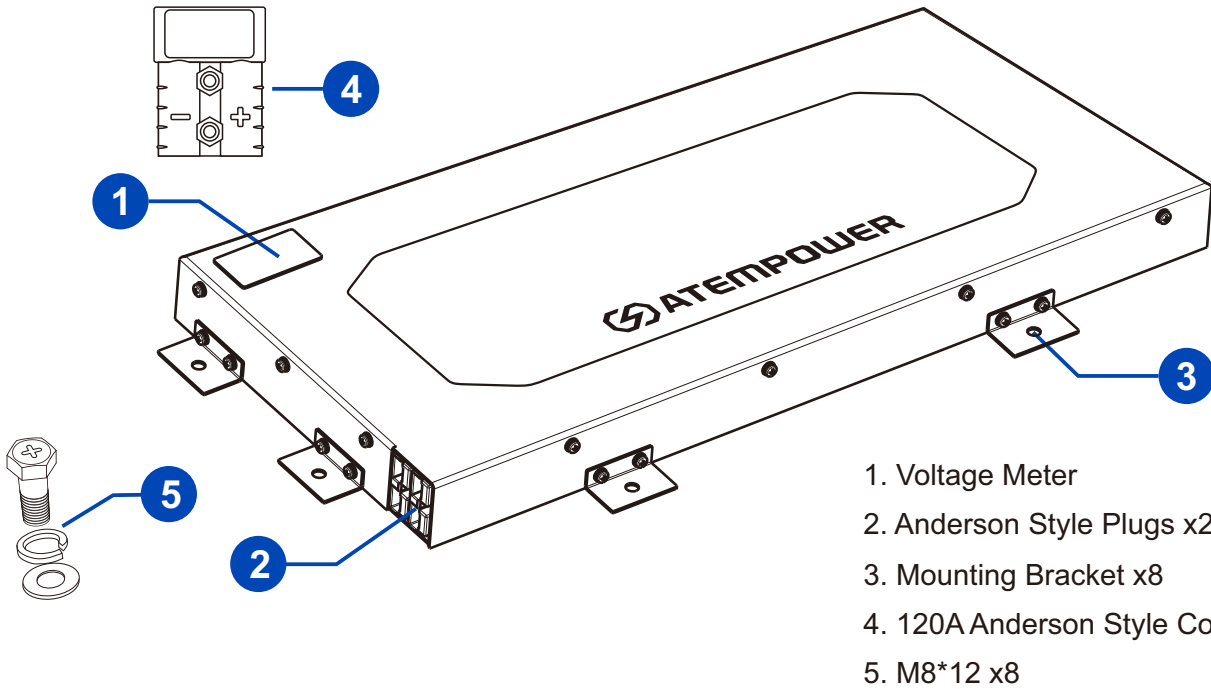
We engineer and supply solar products for homes, 4x4s, recreational vehicles and virtually any application you can think of. And we also develop reliable, high performing deep-cycled batteries and lithium batteries for standby or daily power needs. Accessories include battery chargers and inverters that are ideal for RV's, commercial vehicles, boats, yachts and many more applications!

At ATEM POWER, we stay true to our DNA by prioritizing technological innovation designed to improve our products and striving to provide excellent customer care. Because we are motivated to explore the limits of solar power!

WARNING & CAUTION

- Work on the lithium iron phosphate battery should be carried out by qualified personnel. And you are required to read thoroughly the warnings, cautions and the warranty prior to installation or use.
- Please wear protective eyeglasses, insulating gloves and clothing for necessary protection. **DO NOT** wear any metallic items such as watches, bracelets, etc.
- Make sure that the installation location meets the following conditions: the floor is flat and level; there are **NO** flammable or explosive materials; there is minimal dust and dirt in the area.
- **DO NOT** touch the exposed electrolyte, and **DO NOT** open or dismantle the lithium iron phosphate battery if the battery casing is damaged. If your skin or eyes contact with it, flush with plenty of clean water and seek medical assistance.
- **DO NOT** place items or tools on the lithium iron phosphate battery.
- **DO NOT** open or disassemble the battery.
- **DO NOT** put the battery into the water or wet it.
- **DO NOT** operate or store your battery near heat sources or expose it to flammable or harsh chemicals or vapors.
- Use a type D, foam or CO₂ fire extinguisher in case of fire.
- **NEVER** strike or throw your battery, please handle wire care since it is sensitive to mechanical shocks.
- The parameters of the charger should meet the requirements of the technical specifications of this battery. If charged after the ATEM POWER lithium iron phosphate battery was discharged below the discharge cut-off voltage, or when it is damaged, this LiFePO₄ battery can release a harmful mixture of gasses such as phosphate.
- Ensure the battery is **COMPLETELY** dry before reactivation or reconnecting to the charging source and load, or else it will adversely affect its performance and present a safety hazard.
- Regularly check the battery cables and connections and replace the damaged cables and tighten any loose connections.
- It is important to use the battery under the same brand with equal voltage and it is not recommended to mix batteries of a different age. Fully charge it before it is going to be connected in series or parallel, and combination of series and parallel connections is **NOT** allowed, since this battery is designed to either allow for up to 2 batteries in parallel or 2 batteries in series.
- **NEVER** pierce the battery case with sharp objects, and hammering or pedaling the battery and direct soldering of battery terminals are **PROHIBITED**.
- It is recommended to use 8 AWG or smaller cables, cables no bigger than 6 AWG are preferential when the distance is over 3m.

IDENTIFICATION OF PARTS & ACCESSORIES



DIMENSIONS (MOUNTING BRACKETS INCLUDED):



INSTALLATION

The ATEM POWER slimline battery is designed to be stowed in a car, pickup, RV or 4WD or as a battery for camping and other outdoor activities where space is at a premium.

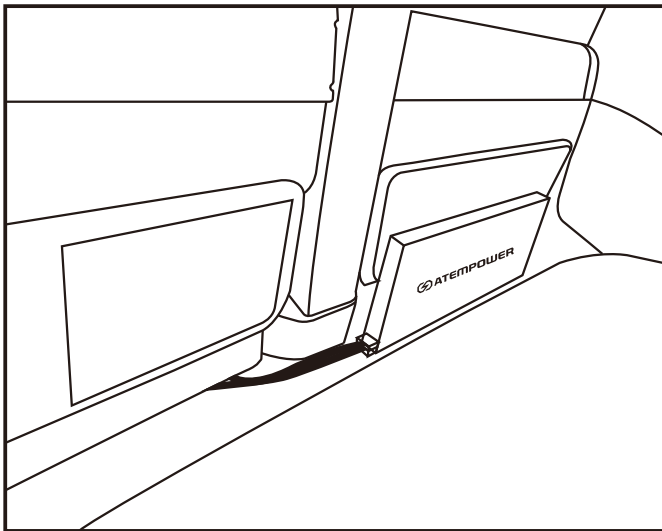


Figure 1b-Strapped at the back of a 4x4

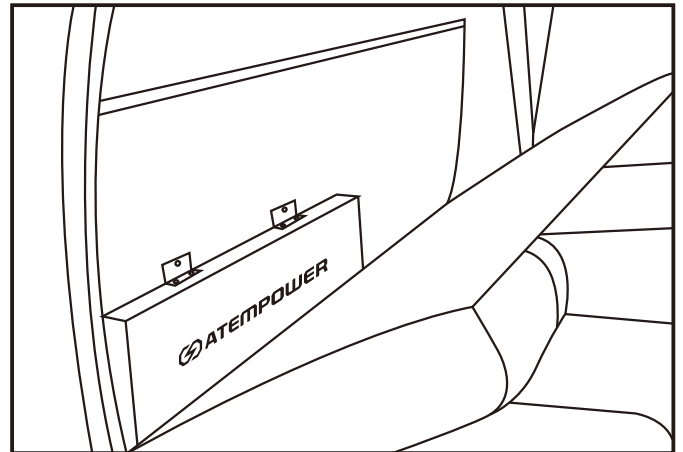


Figure 1a-Behind the seat

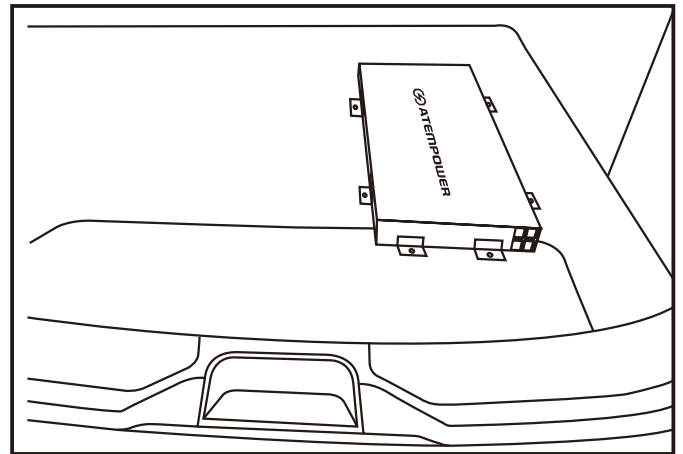


Figure 1c-Back of 4x4

As with all battery installations, always make sure it is properly strapped down or securely fixed in place before heading out on the road.

SERIAL AND PARALLEL BATTERY CONFIGURATIONS

Series Connection:

Please connect the ATEM POWER batteries in series as shown, the cables should be of the same type and specification. (see Figure 1.)

Note: Disconnect the series connection when the batteries need charging, please charge your batteries separately before connecting them in series again. When connected in series, the battery volume will be lower than its standard capacity.

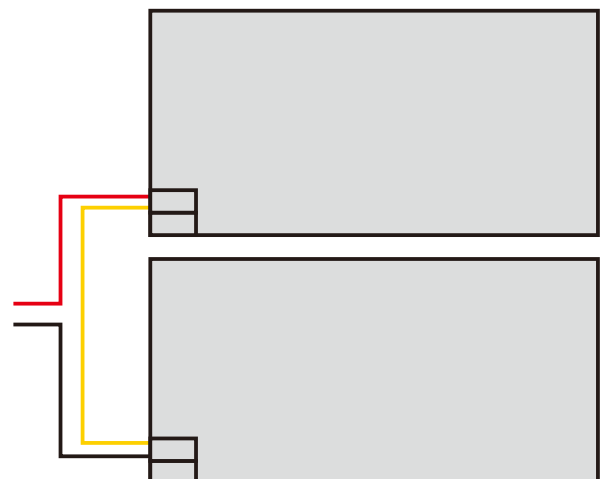


Figure 1.

Parallel Connection:

Please connect the ATEM POWER batteries in parallel as shown, the cable should be thicker to prevent damages caused by over-current. (see Figure 2.)

Note: 2*8 AWG; 2*6AWG (>3m) or 4AWG cables are recommended.

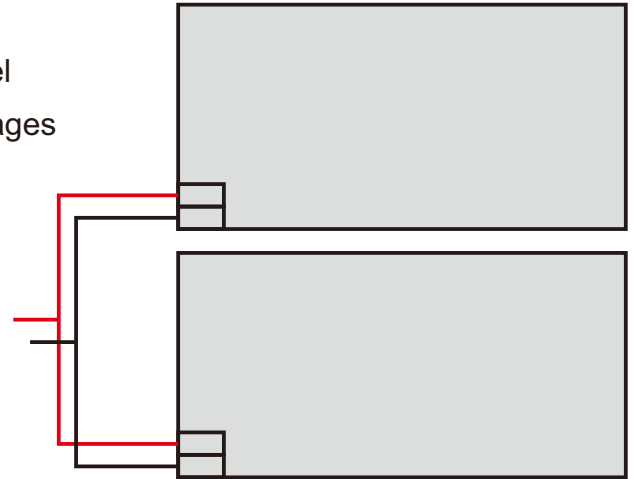


Figure 2.

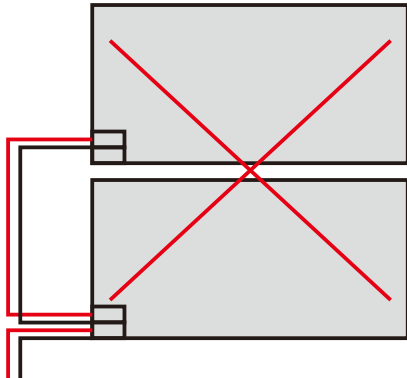


Figure 3.

The example of parallel connection shown below is strictly prohibited. (see Figure 3.)

MOUNTING & ORIENTATION

It is recommended to use M8 screws, whose length should be $\geq 10\text{mm}$, to mount your slimline battery, which can be mounted flat or on its side in any orientation, except on its side with the voltage meter at the bottom. In this configuration the internal cells are upside down which is against ATEM POWER's recommendations. (see Figure 4.)

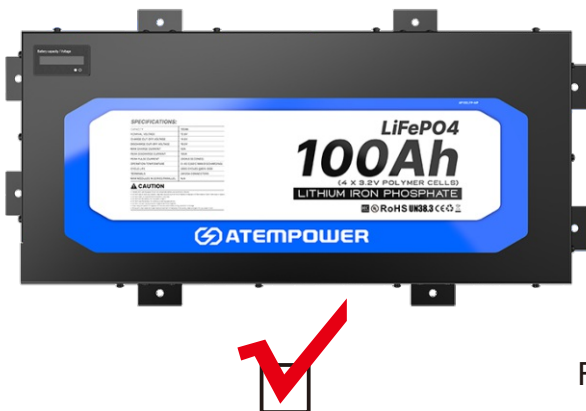


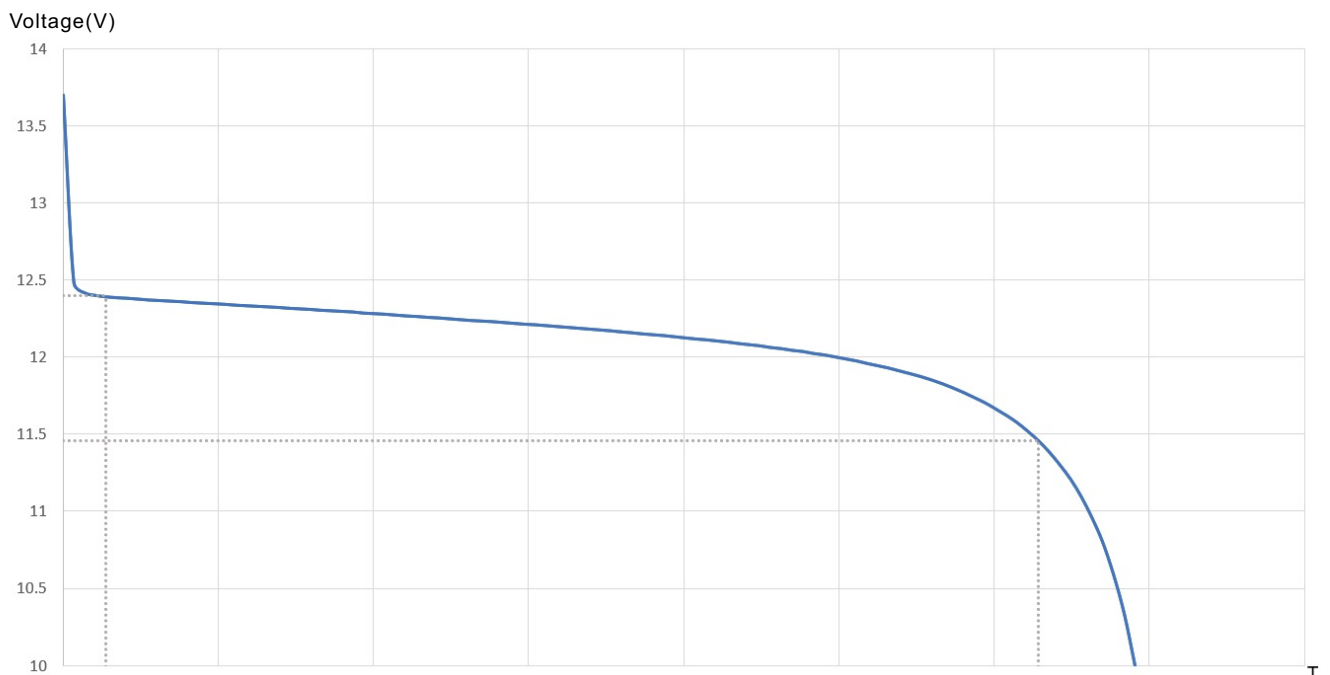
Figure 4.

- When mounting the ATEM POWER slimline battery, DO NOT under any circumstances inadvertently drill or penetrate into the electronic components or wires of your vehicle, which may cause potential threats to your safety.
- Use ONLY the existing mounting holes in the battery and screw lengths should be proper to mount your battery.
- In addition, this battery MUSTN'T BE mounted loosely.

PARAMETERS

| Model | AP100LFP-MP |
|--|--------------|
| Cycle Life | 2,000 Cycles |
| Nominal Capacity | 100Ah |
| Internal Impedance | ≤10mΩ |
| Self-discharge Rate(per month) | 2% |
| Nominal Voltage | 12.8V |
| Max. Charge Current | 50A |
| Max. Discharge Current | 200A(≤7S) |
| Charge Voltage | 10V-14.6V |
| Max. Modules in Series/Parallel | 2S/2P |
| Charge Temperature | -20°C~70°C |
| Discharge Temperature | -20°C~70°C |
| Standard Operation Temperature | -20°C~70°C |
| Max. Continuous Charge Current (25°C) | 50A |
| Max. Continuous Discharge Current (25°C) | 100A |
| Recommended Charge Current | 50A |

DISCHARGE CURVE



TROUBLESHOOTING

If any problems occur during battery operation, please refer to the following instructions or contact us for professional help.

| PROBLEM | SUGGESTED SOLUTION |
|--|--|
| Overcharge | Disconnect your battery from charging, and allow it to recover. |
| Over-current /short circuit protection | Disconnect your battery, if it recovers abnormally, please use LiFePO4 battery charger to activate it. |
| Over-discharge | Built-in BMS will automatically cut off its output, and in this circumstance, you are recommended to use LiFePO4 battery charger to activate your battery. |
| Temperature beyond normal ranges | Built-in BMS will automatically disconnect the battery from the load, and allow it to cool down or warm up to room temperatures. If your battery recovers abnormally, please use LiFePO4 battery charger to activate it. |

Note: It is highly likely that your battery is damaged if it cannot be activated by the charger.

BATTERY MAINTENANCE & STORAGE

- Regularly inspections are essential. The battery, should be clean, dry and free of corrosion.
- Disconnect your battery from charging load or source before cleaning the top of your battery, and connections with a damp cloth or non-metallic brush. Please ensure that your battery is COMPLETELY dry before reactivating.
- Store your battery in an open, well ventilated and dry area in temperatures between -20°C ~70°C.
- Avoid sharp impacts or extreme pressure.
- Give your battery a full charge prior to use when it is taken out of storage.
- Charge your battery at least once every 3 months to prevent over-discharge.
- DO NOT forget to disconnect your battery from equipment to eliminate any potential parasitic loads that may discharge it.



WARRANTY



ATEM POWER (“Manufacturer”) warrants, to the original purchaser, (“User”) that its lithium iron phosphate (“Battery(ies)”), if purchased from Manufacturer or an authorized distributor or dealer, and used in a deep-cycle application, will be free of defects in material and/or workmanship from the date sold and for the duration (the “Warranty Period”) of 3 YEARS. Within the Warranty Period, subject to the exclusions listed below, the Manufacturer will replace or repair, if serviceable, the battery and/or parts of the battery, if the components in question are determined to be defective in material or workmanship. If the Manufacturer deems the battery and/or components to be not repairable, a new, similar battery will be offered. This Limited Warranty is to the original purchaser of the battery and is not transferable to any other person or entity.

EXCLUSIONS:

This warranty does not cover defects that are caused by normal wear and tear, inadequate maintenance, insufficient ventilation, transportation, storage or faulty repair, misuse, neglect, accident or abuse, modification to the battery, failure to observe operating instructions and parameters or improper installation. The user must follow recommendations for series and parallel installations, and it is recommended that the installation of the batteries must be performed by suitably qualified technicians or the warranty will be voided. For further clarity, this warranty is also void if the battery:

- is used as a primary or backup power source for life support systems or other medical equipment, or any use where product failure could lead to injury to persons or loss of life or catastrophic property damage,
- operates (charge or discharge) below or above its authorized temperature range,
- is used for applications other than which it was designed and intended for,
- is not maintained in accordance with the parameters as set forth in the user manual,
- is not paired with a suitable charger,
- is subjected to excess vibration as might be caused by out of balance or improperly operated pads in floor burnishing machines,
- manufacturing date codes, safety certification numbers or serial and tracking numbers are destroyed or altered,
- is disassembled, altered, or repaired by someone other than an authorized Manufacturer's agent, has been subject to misuse, abuse or physical damage, or has been modified, altered or operated with other components not approved by ATEM POWER,
- has been damaged by force majeure (e.g. flash of lightning, overvoltage, storm, fire),
- selected by the user is not of the correct size, design, and capacity for the intended application,
- is damaged due to improper installation; loose connections, under-sized cabling, incorrect connections (series and parallel) for desired voltage and AH requirements, or reverse polarity connections, inappropriate storage conditions as defined by the Manufacturer; exposure to extreme hot or cold temperatures, fire or freezing, or water damage including submersion,
- is damaged by external influences while in the user's possession, including unusual physical or electrical stress such as power surges, uncontrolled voltages and currents, lightning, flood, fire, exposure to excessive hot or cold temperatures, or accidents.

CLAIMS:

Request return authorization. No returns will be credited without an authorization. In the case of returned products, the batteries must be packed with enough padding and in the appropriate cartons to eliminate the risk of damage in transit. Manufacturer's exclusive liability for breach of any warranty on the battery shall be to replace the battery within the warranty period in accordance with the terms of this limited warranty. In no event shall Manufacturer be liable for any loss or damages of any other kind, whether direct, incidental, consequential including lost profits, exemplary, special or otherwise, including any lost profits or removal, shipping, or installation expenses.

For more information, please visit: www.atempower.com