

FAQ

+ How long will my battery last?

Several factors that affect battery life including weather, temperature, recharge cycles, depth of discharge (DOD), discharge current, charging current, charging method, vibration and duration of static use can all have dramatic effects on battery life. A properly maintained battery should last 1000+ charge discharge cycles or three times as long as lead-acid use in similar conditions.

+ Can I use lithium ion batteries with other types of batteries?

No. If different types of batteries are used together, or new batteries are used with old ones, the difference in characteristics such as voltage, capacity, and/or internal resistance may cause uneven discharge between the batteries leading to cell damage potentially resultant in fire.

+ Is it okay to use a universal lead acid charger with high enough charging current?

Using a lead acid battery charger is not recommended because they charge at a lower 2.30V to 2.45V per cell in addition to charging in multiple stages with a final float charge setting. This is distinctly different from the Li-Ion 2-Stage charge profile. Mixing of chargers between chemistries will result in damage to the battery.

+ Can I connect two of the same Li-ion batteries together for more voltage/ capacity?

Linking our Li-ion batteries in series or parallel connection is NOT RECOMMENDED and may exceed factory recommended usage parameters. It is recommended to purchase a single battery with the requisite capacity and discharge characteristics. Our Battery Management System (BMS) is designed for operations within a singular battery unit and we cannot guarantee operability of multiple batteries connected together regardless of configuration. If, however, multiple batteries are required please ensure 1) the batteries are from the same batch 2) the batteries are of the same make and model and 3) peak discharge is maintained at <0.5C peak.

+ My battery will not charge/discharge?

There are multiple reasons including but not limited to 1) charger failure, 2) external damage to battery has compromised either the cell pack or BMS, 3) battery voltage has fallen to zero in one or more cells, 4) there is a connection error within the pack, 5) a malfunction(s) has occurred within the BMS component(s) or in extreme cases 6) extreme high/low temperatures may be inhibiting charging efficiency of the cell pack itself.

+ Can I jump start a dead lithium ion battery?

It is not recommended. Li-ion batteries enter an elevated sensitivity state when empty and the introduction of unmodulated amperage in this state will damage the cell. We highly recommend using our chargers to recharge a fully discharged Li-ion battery as our chargers have the sensing circuitry required to modulate charge current to optimally recondition fully discharged batteries.

CONTACT

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WARRANTY

NMC 5-Year and LiFePO4 10-Year, repairs and/or exchanges may be accepted within 2 Years of purchase and are subject to 30-day money back guarantee for any initial quality issues originating from Aegis Battery, issues resultant from negligent and/or abusive use not inclusive. Returns are subject to a 10% Restock Fee + Shipping Cost Charge. Exchanges are subject to a Shipping Cost Charge as determined by location and level of service.

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LITHIUMMASTER

P/N: ABL-12045P

**LiFePO4 LITHIUM IRON PHOSPHATE
USER MANUAL
WARRANTY
CONTACT AND SUPPORT**

12V

45AH

540WH

50A MAX DISCHARGE

***Subjects of this content pertains to Aegis Battery Li-ion NMC Batteries for Deep Cycle usage only and are not representative of any other type, chemistry, make, and/or model of battery thereof.**

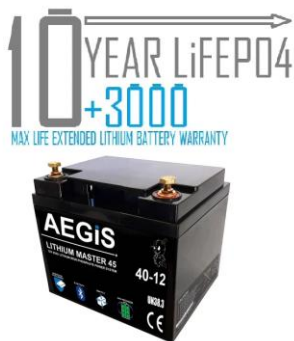
INTRODUCTION

Thank you for purchasing an Aegis Battery product. It is advised to read and familiarize with the contents of this manual prior to use as failure to do so may result in degraded battery characteristics.

The model you have purchased is the **ABL-012045P 12V, 45Ah** rated Li-ion LiFePO4 Battery featuring enhanced safety, non-toxicity, higher performance and extended service life as compared with traditional lead-type batteries including but not limited to SLA, AGL and GEL. This battery was assembled in our ISO 9001 Certified production facilities and as such you can expect performance and consistency from this product and every other product you may be using or have used.

CONTENTS

- + Aegis Energies (dba: Aegis Battery) Li-ion NMC Battery Pack
- + Model Compatible Charger (If optional Charger was purchased)
- + 1 Copy User Manual



SPECIFICATIONS*

Battery Type	ABS CASE
Voltage (V)	12V
Capacity (Ah)	45Ah
Energy Stored (Wh)	540 Watt-Hours
Weight	10.4 lbs. (4.7 kg)
Dimension (L x W x H)	197 mm x 161 mm x 169 mm 7.6 in. x 6.4 in. x 6.7 in.
Normal Charge Voltage	29.4V
Normal Charge Current	6.0 Amps
Normal Battery Cutoff Voltage	19.6V
Nominal Continuous Discharge Current	25.0 Amps
Maximum Continuous Discharge Current	50.0 Amps
Maximum Peak Pulse Discharge Current	80.0 Amps (5 Seconds)
Charge Temperature	0°C to 45°C
Discharge Temperature	-20°C to 60°C
Operating/Storage Humidity	60±25%R.H
Automatic Battery Protection Module/System	Low Voltage Disconnect Over Voltage Disconnect Short Circuit Protection Reverse Polarity Protection Cell Balancing

(*For full specifications, please visit www.lithiummaster.com)

CHARGING



PRIOR TO INITIAL USE, ENSURE BATTERY HAS TAKEN FULL CHARGE AND IS IN A FULLY CHARGED STATE. OUR BATTERIES MAY NOT BE SHIPPED FULLY CHARGED!



MAKE SURE THE CHARGER'S INDICATOR LIGHT HAS TURNED GREEN AND WAIT FOR 30 MIN. ELAPSE BEFORE UNPLUGGING, CHARGE TIME VARIES FROM MODEL TO MODEL!

When charging your battery, please follow the provided sequence below:

1. Attach Battery Charging Connector to Charger (This will vary depending on your selected model and configuration of battery)
2. Attach Charger to 110VAC Outlet
3. When Charging you should observe a **RED** LED Indicator: this indicates that the battery is currently in the Constant Current (CC) charging phase
4. Wait for a **GREEN** LED Indicator: this indicates the battery is currently in the Constant Voltage (CV) charging phase
5. Wait 30 MINUTES before unplugging the Charger from the 110VAC Outlet **FIRST** and then disconnecting the Battery from the Charger **SECOND**

DISCHARGING (STANDARD, SERIES/PARALLEL <0.5C DISCHARGE)

1. Make sure your load accepts **12V** nominal voltage.
2. Ensure the connection between the battery and the load can handle the current draw. Please consult references for the appropriate wire type.
3. The maximum continuous discharge current is **45A**. Please make sure your electrical load consumes a current **less than 45A continuous and 540 watts of power.**
4. The battery outputs steady voltage until little capacity remains, do NOT rely on voltage as an indicator of remaining capacity, Aegis Battery recommends the usage of an In-Line Watt Meter for conveyance of accurate battery discharge telemetry.

Series: Each battery must be charged separately and given a full charge before connecting in series.

Parallel: Only connect batteries with equal state of charge in parallel. Also, measure the internal resistance of each battery and only use batteries with closely matched internal resistance of the same make, model and batch origin. It is highly recommended that resistors be used to achieve equal internal resistance between batteries and to add fuse(s) to the circuit for safety reasons.

SAFETY GUIDELINES

Please adhere to the following Safety Guidelines in addition to all disclosed information when using your battery. Any damage incurred as a result of a failure to adhere to the recommended usage guidelines as collectively disclosed may result in a partial or complete voiding of the warranty as provided upon purchase of this battery product. **Additional Safety Guidelines are as follows.**

1. Do not disassemble and/or attempt self-repair
2. Do not short circuit positive and negative terminals
3. Do not use lead acid chargers as they will cause damage to internal hardware
4. Do not dispose in normal refuse bin, recycle this product only at designated facilities
5. For long term storage, fully charge the battery and then discharge to 50% of the full capacity
6. Do not leave the battery unattended for more than 6 months or in the presence of children
7. Do not use the battery in or expose the battery to extreme temperatures

