



PORTABLE GROUND POWER UNIT

Operating & Safety Instructions

Read this manual before operating the Aero-Jolt. Keep this manual accessible for reference.



MODEL
Aero-Jolt 28 VDC Portable GPU

DOCUMENT REVISION
Rev. 2 — 2026

MANUFACTURER
Air Mount Technic Co., Ltd.

DOCUMENT NUMBER
AJ-OM-2026-002

Table of Contents

01	Safety & Important Information	1
02	Product Overview	2
03	Pre-Use Inspection	3
04	Operating Procedure	4
05	Charging the Aero-Jolt	5
06	Touchscreen Interface Guide	6
07	Status Messages & Indicators	9
08	Troubleshooting.....	10
09	Maintenance & Storage	11
10	Specifications.....	12
11	Battery Technology	13
12	Warranty & Contact	14

01 Safety & Important Information

The Aero-Jolt is a high-current lithium-ion power source. Improper handling can result in fire, electric shock, equipment damage, or personal injury. Read all warnings and instructions in this manual before use and ensure that anyone operating the unit has done the same.

DANGER — HIGH CURRENT

Never short-circuit the 3-pin output connector. The unit is capable of delivering up to 1600 amps, and a short will cause sparks, melted contacts, and possible fire.

Never insert metal tools, wires, or fingers into the output connector. Treat the contact pins as live whenever the unit is powered on.

WARNING

Use only with aircraft electrical systems rated for 28 VDC ground power.

Do not operate the unit if the case, cable, connector, or display is visibly damaged.

Do not expose the unit to standing water, fuel, or solvents. The case is shock-resistant, not waterproof.

Do not modify, disassemble, or attempt to repair internal components. Doing so voids the warranty and may create a fire hazard.

Use only the supplied AC charger. Third-party chargers may damage the battery management system.

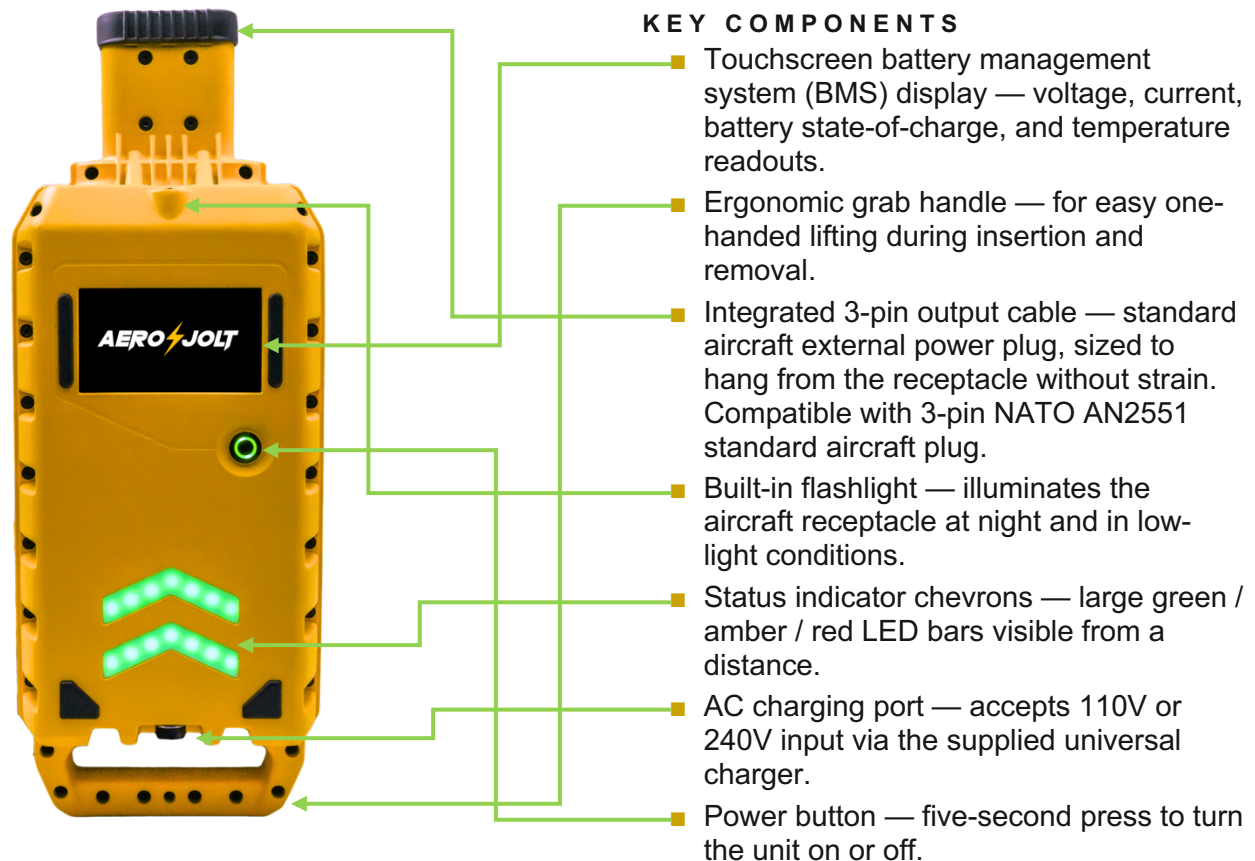
NOTE

This manual covers the AJ-2026 hardware revision. If your unit displays a different hardware revision on the touchscreen Information page, contact Air Mount Technic for the appropriate manual.

The Aero-Jolt has 2 modes. Mode 1 is intended as a starting power source for general aviation aircraft. Mode 2 is to provide 10-20 A of continuous power for 30-60 minutes dependent on real-time conditions and power consumption. Current draw of 200 A or more will cause the Aero-Jolt to revert to Mode 1.

02 Product Overview

The Aero-Jolt is a portable, lithium-ion ground power unit that delivers clean, fully regulated 28 VDC power. With 1600A peak and 800A continuous output, the Aero-Jolt possesses sufficient current capacity to start piston, turboprop, turboshaft, small fan jet, and APU. Moreover, the Aero-Jolt possesses the stamina for multiple consecutive starts, extended avionics troubleshooting, and full FMS database uploads.



WHAT'S IN THE SHOCK-PROOF CARRYING CASE

- Aero-Jolt unit
- 110V / 240V universal AC deep-cycle charger
- 1.5 m extension umbilical cord
- Nose extension for 90-degree receptacle doors
- Operator's Manual

03 Pre-Use Inspection

Perform the following checks before each use. If any item fails inspection, do not operate the unit.

1. Inspect the case for cracks, deep gouges, or signs of impact damage.
2. Inspect the 3-pin output cable along its entire length for cuts, abrasion, exposed conductors, or hardened insulation.
3. Inspect the 3-pin connector for signs of pin security, melted plastic, or arcing.
4. Inspect the AC charging port and the supplied charger's plug and lead for damage.
5. Press and hold the power button for 5 seconds. Confirm the touchscreen powers "On" and displays a normal ready state.
6. Confirm the battery state-of-charge is at least 50%. Recharge if indication is below 50%.
7. Confirm ambient temperature is within the operating range of -4°F to 140°F (-20°C to 60°C). Outside this range the BMS will not deliver power.

04 Operating Procedure

The Aero-Jolt is designed for in-cockpit-assisted start. Follow the steps below in order. Do not deviate from this sequence; the Battery Management System (BMS) expects a specific connection order to enable safe output.

STEP 1 — POWER ON

1. Press and hold the power button for **5 seconds** until the touchscreen turns on, then release. The display will show **Ready** once internal checks complete (typically 2–3 seconds).
2. Verify the battery state-of-charge shown on the display is sufficient for the planned start. A minimum of 50% is recommended for piston engines; a minimum of 70% is recommended for starting turbo-shaft engines.

STEP 2 — CONNECT TO THE AIRCRAFT

3. Confirm the aircraft master switch and avionics master switches are OFF.
4. Insert the Aero-Jolt 3-pin connector into the aircraft's external power receptacle. Push firmly until the connector seats. The unit is designed to hang freely from the plug without straining the connector within a 45-degree range. If the connection exceeds 45 degrees, use the included extension cable to prevent damage to the connector.
5. Verify the touchscreen now shows current draw climbing toward the aircraft's standby load (typically 5–15 A).

STEP 3 — START THE ENGINE

6. Confirm the cockpit voltage indicator shows the expected 26–28 V and follow the aircraft flight manual starting instructions for external power start.
7. Start the engine according to the aircraft's normal starting procedure. **Do not exceed a single 20-second cranking attempt.** If the engine does not start within 20 seconds, the Aero-Jolt will automatically cut output to protect the battery and the aircraft starter.
8. Once the engine is at "idle" follow the aircraft flight manual instructions for transfer of DC power to the main bus and disconnection of the Aero-Jolt.

STEP 4 — DISCONNECT

9. Withdraw the 3-pin plug from the receptacle. Stow the cable neatly to prevent damage.
10. Power off the Aero-Jolt by pressing and holding the power button for 5 seconds. The unit will also auto-shutdown after 10 minutes of inactivity.

IMPORTANT — START LIMITS

If the current draw exceeds 200A — typical of cold-weather turbine starts — the BMS limits the output duration to 20 seconds and then automatically cuts the power.

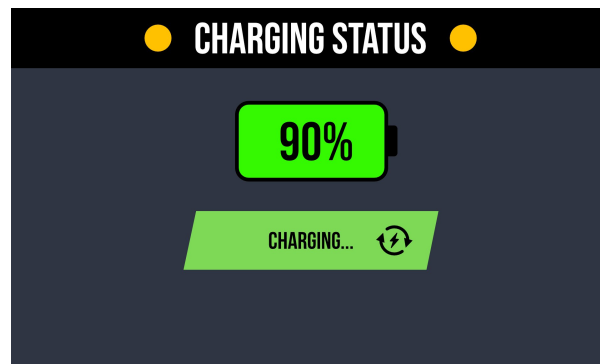
After any high-current start (over 200A) or a BMS cut-off event, wait at least 5 minutes before attempting another start. This allows the battery cells and protection circuits to cool.

A safety trip will fire automatically if peak current exceeds 1600A. After a trip, power-cycle the unit; if it will not return to Ready, remove the Aero-Jolt from service and contact the Aero-Jolt customer service desk per the information included in this manual.

05 Charging the Aero-Jolt

The Aero-Jolt charges from any 110V or 240V AC outlet using the supplied universal deep-cycle charger. Charging from fully depleted to fully charged requires approximately 6 hours; a top-up of the battery pack after a single start typically takes 30 minutes.

1. Place the unit on a flat, dry surface in a well-ventilated area away from flammable materials.
2. Plug the charger into the AC charging port on the back of the Aero-Jolt.
3. Plug the charger into an AC power source. The touchscreen will display a charging indicator and the present current draw (typically 5–6A at 24VDC on the charge bus).
4. When the display indicates the battery is full, disconnect the charger from the AC power supply first, then remove the charger plug from the Aero-Jolt.



Charging Status screen — battery percentage and live charge state.

MAINTENANCE CHARGE

When the Aero-Jolt is not in regular use, you should perform a full charge at least once per month. Lithium cells gradually self-discharge; allowing them to drop below 5% for extended periods will permanently reduce battery capacity.

For long-term storage (longer than 30 days), charge the unit to approximately 60% before placing it in storage.

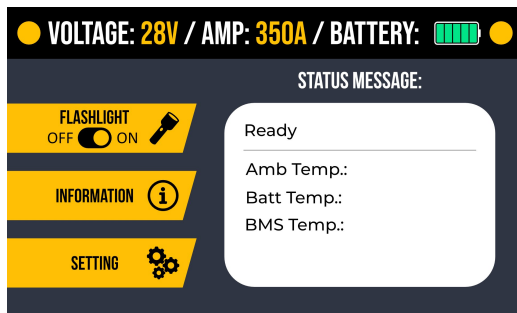
06 Touchscreen Interface Guide

The Aero-Jolt is operated entirely through its touchscreen interface. This section walks through every screen in the interface, from power-on to shut-down. All values shown in the illustrations are examples only.



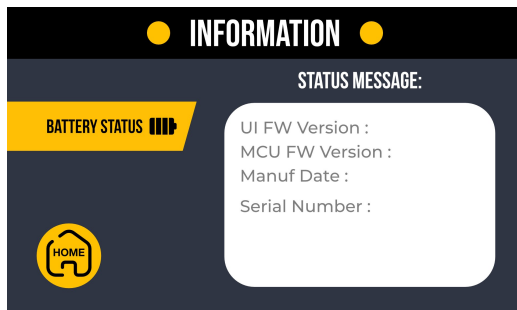
6.1 Power-On Splash

- Appears for a few seconds after the power button is pressed.
- Displays the Aero-Jolt logo while the unit runs its internal self-check.



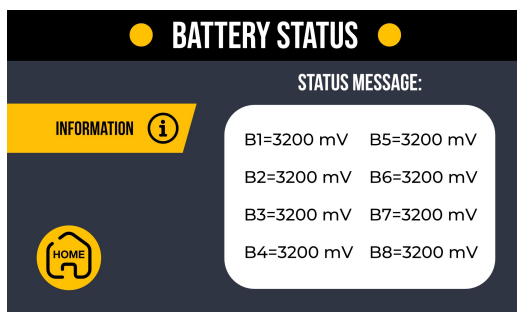
6.2 Home / Main Dashboard

- Top bar indicates live Voltage, current amperage draw, and battery charge level.
- Status Message panel reports the current state (e.g., Ready, Error, Waiting...) plus Ambient, Battery, and BMS temperatures.
- Quick controls: Flashlight on/off toggle, Information, and Setting.



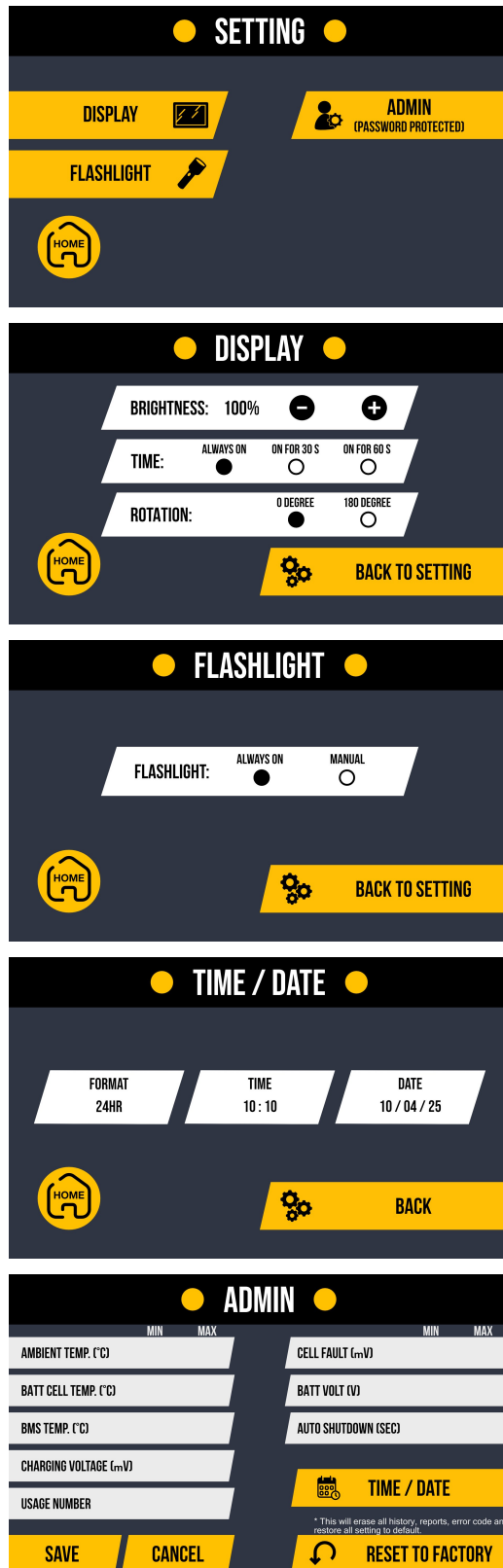
6.3 Information

- Reports UI firmware version, MCU firmware version, manufacture date, and unit serial number.
- Use the serial number here when contacting Air Mount Technic for service.
- Tap Battery Status to view individual cell voltages.



6.4 Battery Status

- Lists the live voltage of each battery cell group (B1–B8) in millivolts.
- Cells should read closely matched. A cell reading far from the others may indicate an aging or faulty cell. A faulty set of cells will be indicated by a red color — contact customer service should a cell set indicate “red”.



6.5 Settings Menu

- Gateway to Display and Flashlight preferences.
- Admin is password-protected and reserved for service technicians.

6.6 Display

- Brightness — adjust screen brightness with the minus / plus controls.
- Time — keep the display Always On, or auto-dim after 30 or 60 seconds.
- Rotation — orient the display 0° or 180° for either handle position.

6.7 Flashlight

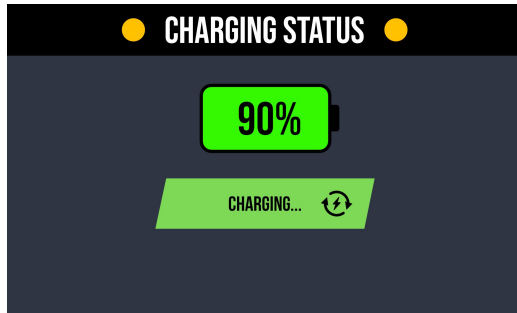
- Always On — the flashlight stays lit whenever the unit is powered.
- Manual — the flashlight is controlled by the Home-Screen toggle.

6.8 Time / Date

- Set the clock Format (12 / 24 hour), the Time, and the Date.
- An accurate clock keeps the on-board usage and event log correctly time-stamped.

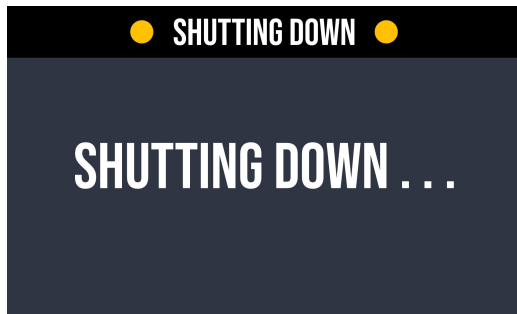
6.9 Admin (Password Protected)

- Service-level screen for setting min / max alarm thresholds: ambient, battery-cell, and BMS temperature; charging voltage; cell-fault voltage; battery voltage; and auto-shutdown timer.
- Includes Time / Date and a Reset to Factory function.
- Reset to Factory erases all history, reports, and error codes and restores default settings. Use only under guidance from customer service.



6.10 Charging Status

- Shown while the AC charger is connected.
- Displays the battery percentage and an animated Charging indicator.



6.11 Shutting Down

- Appears after a 5-second power-button hold or a 10-minute idle auto-shutdown.
- Wait for the screen to go dark before transporting or storing the unit.

07 Status Messages & Indicators

The touchscreen reports the operational state of the unit. The table below lists the messages you may encounter, what they mean, and what to do.

MESSAGE	MEANING	ACTION
Ready	Internal self-check passed. Output is enabled and the unit is ready to deliver power.	Proceed with normal connection and start procedure.
Charging	AC charger is connected and the battery is taking charge.	Leave connected until the display indicates a full charge.
Recharge Battery	Battery state-of-charge is too low to support a reliable start.	Connect the AC charger. Do not attempt a start until charging completes.
High Temp.	BMS, battery or ambient temperature has exceeded the limit. Output is disabled until the unit cools.	Move the unit to a cooler location. Allow at least 15 minutes before retrying. Do not pour water or other liquids on the case.
Low Temp.	BMS, battery, or ambient temperature is below the limit. Output is disabled to protect the cells.	Move the unit to a heated environment. Allow it to warm to operating temperature before retrying.
Error / Hard Fault	BMS has detected over- or under-voltage, over-current, or an internal hard fault.	Recharge the battery and power-cycle the unit. If the fault persists, take the unit out of service and return it for inspection.
Cooldown — Wait 5:00	A high-current start (over 200A) or a protective cut-off has just occurred.	Wait at least 5 minutes before the next start attempt. The display counts the cooldown.

STATUS INDICATOR CHEVRONS (EXTERNAL LEDS)

INDICATOR	STATE
Solid green	Ready. Output enabled.
Pulsing red	Low battery/Temperature has gone below or above the set limit/Hard error
Pulsing amber	Automatic between-start stand by time

08 Troubleshooting

Most issues fall into one of the patterns below. If the suggested action does not resolve the problem, take the unit out of service and contact Air Mount Technic.

SYMPTOM	LIKELY CAUSE	ACTION
Touchscreen does not turn on when the power button is held.	Battery deeply discharged, or charger has not been connected for an extended period.	Connect the AC charger. The display should illuminate within 30 seconds. Allow the unit to charge for at least 30 minutes before the next use.
Display shows Ready, but the aircraft does not see ground power.	Connector is not fully seated, or the aircraft's external power switch is off.	Re-seat the 3-pin connector until the locking ring engages. Verify the aircraft's external / ground power switch is on.
Output cuts off mid-start.	Current exceeded 200A for more than 20 seconds, or peak exceeded the 900A safety trip.	Wait at least 5 minutes for cooldown. Confirm the engine is in a normal cranking range; if cranking current remains abnormally high, the aircraft starter or battery may need service.
Unit will not charge.	Wrong charger, damaged charger lead, or unit is outside operating temperature range.	Use only the supplied charger. Inspect the charger lead. Move the unit to within – 4 °F to 140 °F before retrying.
Persistent Error message after recharge and power cycle.	Internal fault that requires service.	Take the unit out of service. Contact Air Mount Technic for return-for-service authorization.
Battery does not hold charge from one use to the next.	Cells nearing end of useful life, or unit stored below 5% SOC for an extended period.	Contact Air Mount Technic. Battery service is covered for the warranty period under normal use.

09 Maintenance & Storage

ROUTINE MAINTENANCE

- Wipe the case clean with a dry or lightly damp cloth. Do not use solvents, gasoline, or pressurized water.
- Inspect the output cable, connector pins, and locking ring for damage at every use.
- Verify the touchscreen, status chevrons, and flashlight all function correctly each month.
- Perform a full charge cycle at least once every 30 days to maintain cell balance and capacity.

STORAGE

- Store the unit indoors in a dry, ventilated space, ideally at room temperature (50–85 °F).
- For storage longer than 30 days, charge to approximately 60% before storing and recharge to 60% every 3 months thereafter.
- Do not store the unit in a vehicle in summer heat or in an unheated hangar in winter.
- Do not stack heavy objects on the case. Although the case is shock-resistant, prolonged compression can damage the touchscreen.

TRANSPORT

- The Aero-Jolt is UN 38.3 tested for transport. For air transport, follow current IATA Lithium Battery Regulations and your carrier's requirements.
- Ensure the power button is off and the output cable is stowed in the recess provided before transport.

10 Specifications

The values below describe the AJ-2026 hardware revision under standard test conditions. Field performance varies with temperature, battery age, and aircraft load.

PARAMETER	VALUE
Nominal Output Voltage	28 V DC
Continuous Current (20 s)	800 A maximum
Peak Current (Safety Cut-off)	1600 A
Battery Pack Capacity & Type	19 Ah LiFePO ₄ (Nanophosphate)
Starts Per Full Charge	3–6 (depending on engine type and ambient temperature)
Charge Cycles	1000+ to 80% capacity retention
Charge Rate	5A nominal
Charge Time — After One Start	Approximately 30 minutes
Charge Time — Depleted > Full	Approximately 6 hours
AC Charger Input	110V / 240V universal
DC Charge Circuit Rating	5–6A at 24VDC
Standby Endurance (10–15 A draw)	30-60 minutes
Operating Temperature	–4 °F to 140 °F (–20 °C to 60 °C)
Dimensions	48 × 18 × 16 cm
Weight	16.75 lb (7.6 kg)
Case	Filled engineered plastic, shock-resistant
User Interface	Capacitive color touchscreen
Auto Shut-off	10 minutes of inactivity
Certifications	UL 1973, UL 9540, UL 9540A, UN 38.3
Warranty	2-year limited

11 Battery Technology

The Aero-Jolt is powered by Lithium Werks 26650 Nanophosphate® cells, built on lithium iron phosphate (LiFePO_4) chemistry. LiFePO_4 batteries deliver exceptional power and an exceptional safety margin: compared with the cobalt- and nickel-based chemistries used in most lithium-ion products, LiFePO_4 batteries are thermally stable and resists thermal runaway over a wide range of temperatures and operating conditions.

This LiFePO_4 chemistry is what allows the Aero-Jolt to deliver high-current engine-starting pulses while remaining safe to handle on the flight line. Multiple layers of protection at the chemistry, cell, and pack levels work together with the on-board BMS to manage voltage, current, and temperature.

WHY LiFePO_4

- Thermally stable chemistry with a high thermal-runaway onset temperature and low, non-propagating energy release.
- Consistent power output with low-capacity loss over a long service life.
- Significant “abuse tolerance” compared with metal-oxide lithium-ion chemistries.

CELL HIGHLIGHTS (PER CELL)

PARAMETER	VALUE
Chemistry	Lithium iron phosphate (LiFePO_4), Nanophosphate®
Cell Format	26650 cylindrical
Nominal Cell Voltage	3.3 V
Thermal-Runaway Onset	$\geq 210^\circ\text{C}$ (low-energy, non-propagating)
Cell Cycle Life	> 4000 cycles (1C / 1C, 100% DOD)
Cell Safety Standards	UL 1642, UL 1973, IEC 62133-2, UN 38.3

Cell data is summarized from the Lithium Werks 26650 Nanophosphate® Power Cell data sheet (ANR26650M1B). Pack-level ratings for the Aero-Jolt are stated conservatively and may differ from individual cell ratings.

12 Warranty & Contact

Air Mount Technic Co., Ltd. provides a limited 2-year warranty on the Aero-Jolt against defects in materials and workmanship from the date of purchase, when used in accordance with this manual. Warranty service is available through service centers in the USA, Europe, Asia, and Australia. Damage caused by misuse, modification, exposure to liquids, or use of a non-supplied charger is not covered.

To initiate a service request, contact Air Mount Technic with your unit's serial number (printed on the case rating plate and viewable on the Information page of the touchscreen) and a description of the issue.

CHANNEL	DETAIL
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Service Regions	USA · Europe · Asia · Australia

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