

ESSENTIAL SERIES

12V 334Ah

HEATED BLUETOOTH LiFePO4 BATTERY

MODEL 12334A-H

A 12.8 V, 334 Ah, 4.28 kWh lithium iron phosphate battery for high-capacity 12 V deep-cycle systems. It combines internal heating for cold-weather charging, Bluetooth monitoring and an advanced battery management system in a Group 31 footprint with an IP54 enclosure.



MASTER RATINGS

AT 25 °C UNLESS NOTED

12.8_V

NOMINAL VOLTAGE
Operating range 10.0–14.6 V

334_{Ah}

NOMINAL CAPACITY
Rated at 0.2C (66.8 A)

4.28_{kWh}

STORED ENERGY
4,275 Wh nominal

200_A

CONTINUOUS DISCHARGE
Peak 400 A for ≤ 3 s

200_A

MAX CONTINUOUS CHARGE
167 A recommended

14.2–14.4_V

BULK / ABSORPTION
Float off preferred · max 14.6 V

–20–55_{°C}

CHARGE TEMPERATURE
With internal heating

4S16P

MAXIMUM BANK
Up to 48 V class · 5,344 Ah

NOTICE

Deep-cycle load application. The 12334A-H is not a cranking-rated battery. Size continuous loads, conductors and overcurrent protection to the 200 A continuous rating — the 400 A rating applies for up to 3 seconds only. Use a LiFePO4 charge profile with equalization and temperature compensation disabled.



11-year
Warranty



4,000+
Cycles



Bluetooth
iOS / Android app



Internal
Heating



Advanced
BMS protection



Group 31
Footprint



IP54
Splash-resistant



LiFePO4
Stable chemistry

01 PRODUCT OVERVIEW

DESIGN INTENT AND FEATURES

A 12.8 V, 334 Ah, 4.28 kWh lithium iron phosphate battery for high-capacity 12 V deep-cycle systems. It combines internal heating for cold-weather charging, Bluetooth monitoring and an advanced battery management system in a Group 31 footprint with an IP54 enclosure.

Designed for RV, marine house-power, solar, off-grid, backup, van, camper and auxiliary 12 V deep-cycle systems where the application requirements match the specifications in this data sheet. It fits many Group 31 installations, but verify tray fitment, terminal clearance, cable size, overcurrent protection, charger profile and load requirements before replacing a lead-acid or AGM battery.



LiFePO4 chemistry

Lithium iron phosphate cells for thermal stability, long cycle life and dependable deep-cycle operation.



334 Ah · 4.28 kWh

About 4.28 kWh of nominal stored energy in a Group 31 case weighing 60 lb.



Internal heating

Below 0 °C, charge current powers heating pads that warm the battery to 5 °C before charging resumes.



Bluetooth monitoring

The Epoch Li-Ion app shows SOC, voltage, current and temperature from a built-in BMS shunt; no external shunt needed.



Advanced BMS

Protection against overcharge, over-discharge, over-current, short circuit and temperature extremes.



IP54 enclosure

Dust-protected and splash-resistant for everyday RV, marine, mobile and outdoor use. Not submersible.



Expandable to 4S16P

Up to four matched batteries in series (48 V class) and sixteen in parallel (5,344 Ah), with correct fusing and wiring.



Maintenance-free

No watering, acid service or routine lead-acid maintenance. Periodic inspection keeps it safe.

Compatible applications

- RV, camper, travel-trailer and motorhome house-power systems
- Van conversions and overland auxiliary power systems
- Marine house banks for electronics, pumps, lighting and navigation
- Solar and off-grid storage for cabins, trailers, boats and backup systems
- Large 12 V inverter systems whose loads stay within the 200 A continuous limit
- 24 V, 36 V and 48 V systems using matched batteries in series, up to the 4S16P limit

Compatible accessories

- Epoch 12V 15A lithium battery charger
- Epoch battery tray for 12300A-H / 12334A-H / 12314-ECO

Confirm accessory compatibility with Epoch before ordering.

PRODUCT IDENTIFICATION

Model / SKU	12334A-H
Battery type	Heated Bluetooth deep-cycle LiFePO4
Group size	BCI Group 31
Chemistry	LiFePO4 (lithium iron phosphate)
Cell type	Prismatic LiFePO4
Cell configuration	4S1P
Bluetooth	Yes — Epoch Li-Ion app (iOS and Android)
Bluetooth security PIN	Printed on the battery's lid; can be changed in the app
Current sensing	BMS-integrated shunt; 0.2 A accuracy on discharge
Internal heating	Yes — for cold-weather charging
Cycle life	4,000+ cycles
Warranty	11-year limited manufacturer warranty

02 ELECTRICAL SPECIFICATIONS

RATINGS AT 25 °C UNLESS NOTED

ELECTRICAL		TEMPERATURE AND ENVIRONMENT	
Nominal voltage	12.8 V	Charge temperature (with heating)	–20 °C to 55 °C (–4 °F to 131 °F)
Nominal capacity	334 Ah @ 0.2C	Discharge temperature	–20 °C to 60 °C (–4 °F to 140 °F)
Stored energy (nominal)	4.28 kWh (4,275 Wh)	Storage temperature (recommended)	0 °C to 35 °C (32 °F to 95 °F)
Operating voltage range	10.0–14.6 V	Enclosure rating	IP54 — dust-protected, splash-resistant; not submersible
Maximum charge voltage	14.6 V		
CURRENT RATINGS		HEATING SYSTEM	
Max continuous discharge	200 A	Low-temperature charge cut-off	0 °C (32 °F) — charging is disabled
Recommended discharge current	167 A	Cell charge acceptance	Only when every battery temperature reading is at or above 0 °C (32 °F)
Peak discharge	400 A for up to 3 s	Heater power source	Incoming charge current only; never stored battery energy
Max continuous charge	200 A	Heater activation	Charger connected and supplying at least 0.5 A
Recommended charge current	167 A	Charging resumes after a cut-off	Automatically at 5 °C (41 °F)
BATTERY BANKS		Heating system tested to	–20 °C (–4 °F)
Series connection	Max 4 batteries (up to 48 V system class)	Rated external ambient	Down to –40 °C (–40 °F)
Parallel connection	Max 16 batteries (up to 5,344 Ah)		
Maximum configuration	4S16P		

C-rate reference for this battery

RATING	CURRENT	C-RATE
Max continuous discharge	200 A	0.6C
Recommended discharge	167 A	0.5C
Max continuous charge	200 A	0.6C
Recommended charge	167 A	0.5C
Capacity rating condition	66.8 A	0.2C
Absorption end (tail current)	16.7 A	C/20

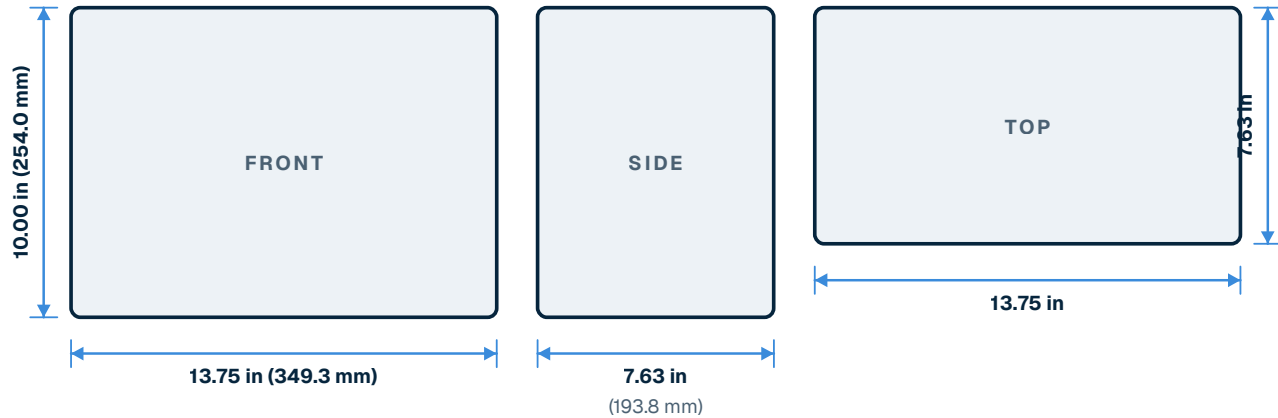
C-rate expresses current relative to capacity: 1C = 334 A for a 334 Ah battery. Peak discharge of 400 A is permitted for up to 3 seconds; continuous loads, busbars, switches, conductors and overcurrent protection must be sized to the continuous rating, the surge profile, voltage drop and applicable standards.

03 MECHANICAL AND INSTALLATION

DIMENSIONS, TERMINALS AND MOUNTING

MODEL-SPECIFIC DATA

Simplified case outline. All three views share one scale; drawing is not full size.



Overall case dimensions (Group 31 footprint). The battery is 15.5 in (393.7 mm) long at the handles and 10.5 in (266.7 mm) high with terminal bolts. Allow additional space for terminal hardware, cable bend radius, ventilation access and service removal.

MECHANICAL

Dimensions (L × W × H)	13.75 × 7.63 × 10.00 in (349.3 × 193.8 × 254.0 mm)
Length at handles	15.5 in (393.7 mm)
Height with terminal bolts	10.5 in (266.7 mm)
Weight	60 lb (27.2 kg)
Terminal type	M8 threaded terminal
Terminal torque	8–12 N·m (71–106 in-lb)

Installation requirements

- Secure the battery with a tray, strap, bracket or enclosure suited to the application; it must not slide, tip or strike nearby equipment. Choose mounting hardware rated for the battery's weight of 60 lb (27.2 kg).
- Install upright unless Epoch documentation for this model allows another orientation.
- Tighten the M8 terminal hardware to 8–12 N·m (71–106 in-lb). Do not over-tighten.
- Place the main fuse or DC-rated breaker as close as practical to the battery positive terminal.
- Leave clearance above the terminals for cable bend radius, terminal boots and inspection.
- IP54 is dust-protected and splash-resistant. Do not submerge, pressure-wash or expose the battery to bilge flooding or continuous water.

04 CHARGING AND THERMAL MANAGEMENT

LIFEPO4 PROFILE AND INTERNAL HEATING

RECOMMENDED CHARGING SETTINGS

Bulk / absorption voltage	14.2–14.4 V
Absorption end	Charge current $\leq C/20$ (16.7 A) or 15 min, whichever comes first
Float voltage	Disabled (preferred) or 13.3–13.6 V
Re-bulk voltage	13.2 V
Maximum continuous charge current	200 A
Recommended charge current	167 A
Temperature compensation	0 mV/°C (off)
Equalization	Disabled
Charger temperature limit setting	0 °C to 55 °C (32 °F to 131 °F) unless the charger has approved cold-charge logic
BMS high-voltage cutoff	14.6 V
SOC recalibration voltage	14.6 V

Charging sources

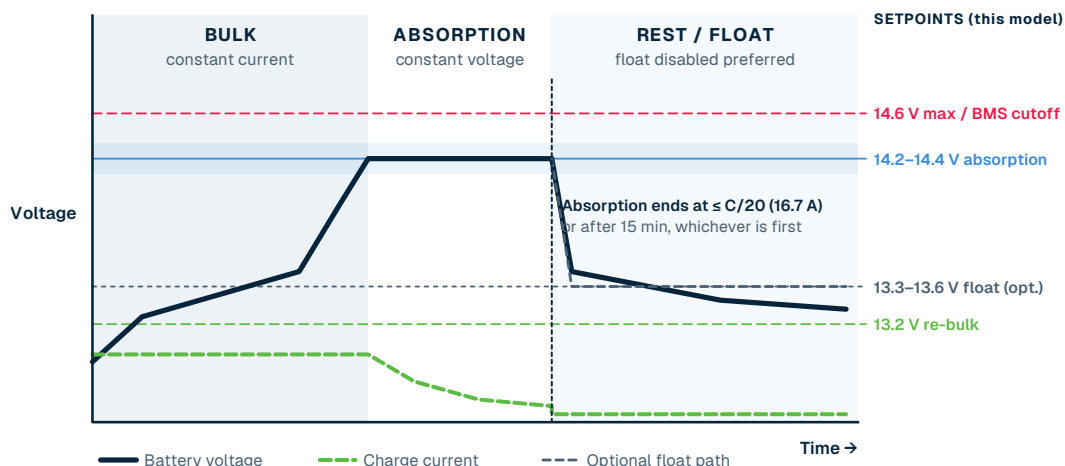
- **AC chargers and inverter chargers:** LiFePO4 profile or the settings shown; no lead-acid, AGM or gel profiles.
- **Solar controllers:** settings shown; confirm array open-circuit voltage suits the controller and bank.
- **Alternators:** DC-to-DC charger programmed for LiFePO4 highly recommended.
- **Multiple sources:** combined current ≤ 200 A continuous and within wiring limits.
- No equalization, desulfation or repair modes; temperature compensation 0 mV/°C.

Cold-weather charging sequence

- 1 • **Charger connected** A LiFePO4 charger supplies at least 0.5 A of charge current.
- 2 • **Charging paused** At 0 °C the low-temperature cut-off disables charging.
- 3 • **Pads warm the battery** Incoming charge current powers the heating pads, not stored battery energy.
- 4 • **Charging resumes** Automatically once the battery reaches 5 °C.

Heating needs a connected charger supplying at least 0.5 A; it never uses stored battery energy. Little or no charge current during warm-up is normal.

CONCEPTUAL DIAGRAM



05 BMS PROTECTION AND PERFORMANCE

PROTECTION FUNCTIONS, DISCHARGE LIMITS, RUNTIME

BMS PROTECTION FUNCTIONS

Overcharge	Disconnects or limits operation to protect the cells
Over-discharge	Disconnects or limits operation to protect the cells
Over-current	Protects against sustained loads above ratings
Short circuit	Rapid BMS cutoff
High temperature	Disconnects outside the operating range
Low temperature	Charging disabled at 0 °C; resumes at 5 °C after heating

What the BMS does — and does not do

The battery management system monitors cell voltage, current and temperature and switches charging or discharging off to protect the cells. Current is measured by a BMS-integrated shunt with 0.2 A accuracy on discharge, so no external shunt is needed. It does not replace external overcurrent protection for the wiring. After a protection event, record the app data, remove the cause and allow protection to reset when conditions return to normal.

Runtime planning

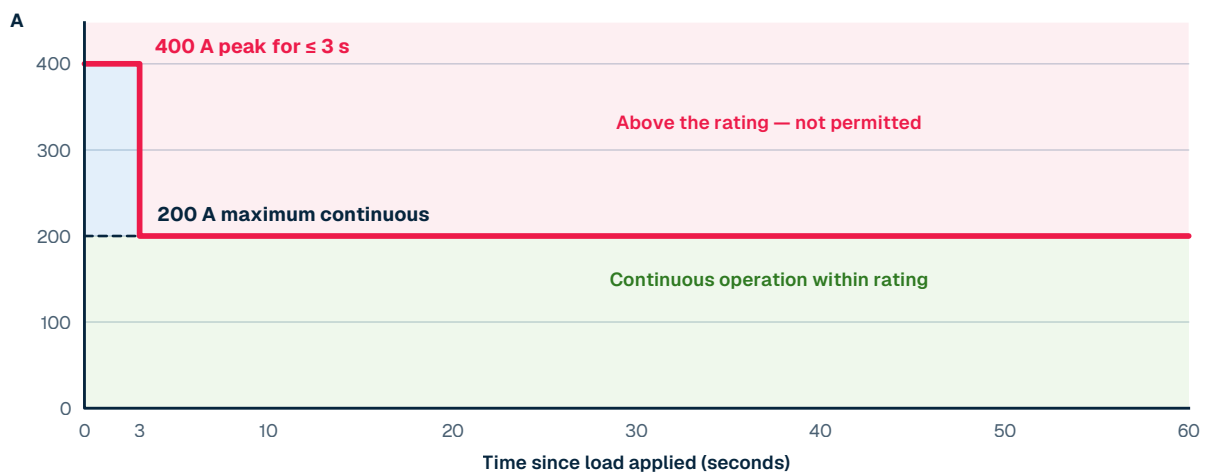
Planning basis: 80% of nominal energy ≈ 3,420 Wh (267.2 Ah) per battery — a conservative assumption, not a rating.

$$\text{Runtime (h)} \approx \text{usable Wh} \div \text{load (W)}$$

LOAD	CALCULATION	RUNTIME
100 W	3,420 Wh ÷ 100 W	≈ 34.2 h
250 W	3,420 Wh ÷ 250 W	≈ 13.7 h
500 W	3,420 Wh ÷ 500 W	≈ 6.8 h
10 A DC load	267.2 Ah ÷ 10 A	≈ 26.7 h

For a parallel bank, multiply usable energy by the number of batteries. Inverter efficiency and idle draw, cabling, temperature, battery age, BMS limits and duty cycle change real-world results.

MODEL-SPECIFIC DATA

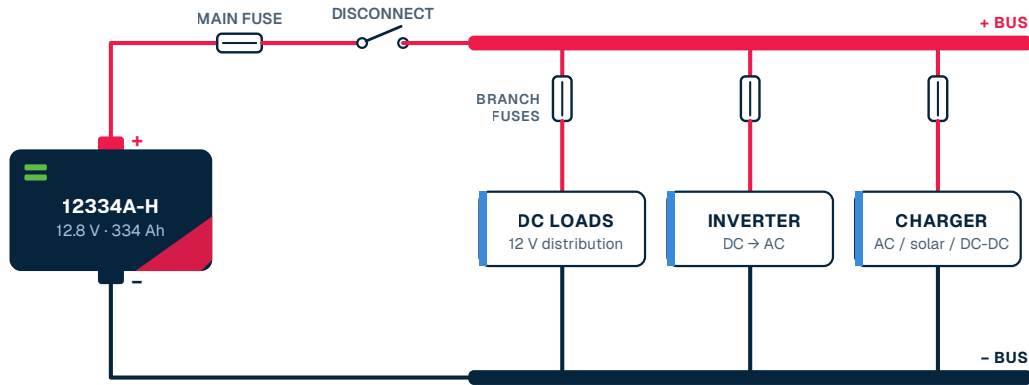


Allowable discharge current over time for one 12334A-H. The 400 A rating is a short-duration peak only: do not size continuous loads, busbars, switches, conductors or overcurrent protection around it. Use the continuous load current, surge profile, voltage drop and applicable standards.

06 SYSTEM CONFIGURATION

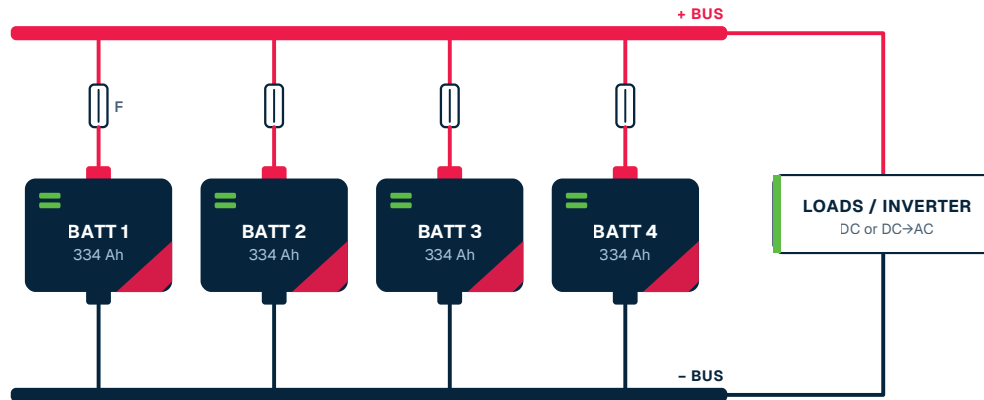
SINGLE BATTERY AND PARALLEL BANKS

CONCEPTUAL DIAGRAM



Single-battery 12 V system: main fuse close to the battery positive terminal, service disconnect, and fused branch circuits from busbars. Terminal positions are simplified — both terminals are on the battery lid.

CONCEPTUAL DIAGRAM



Parallel bank, up to 16 batteries, four shown (12 V class, up to 5,344 Ah). Fuse each battery branch and keep branch cables equal in length and gauge to common busbars.

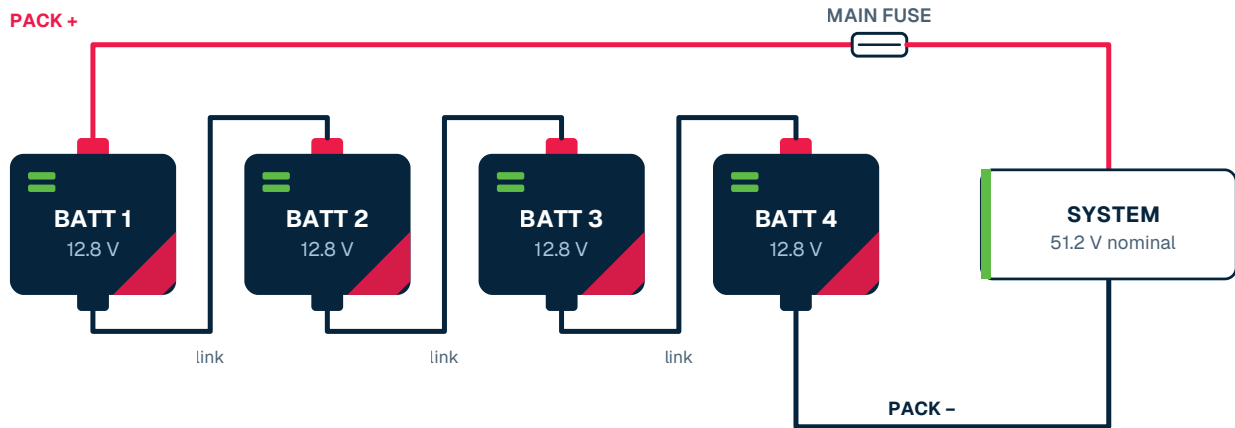
Bank rules

- Maximum 4 in series and 16 in parallel (4S16P, 64 batteries).
- Use only matched 12334A-H batteries of similar age, condition and firmware.
- Charge each battery fully and bring all to the same state of charge before connecting.
- Equal cable lengths and gauges; common busbars; fuse each battery or string as the design requires.
- Do not hot-connect batteries. Pre-charge large inverters where required.
- Never mix with lead-acid batteries or with other models, capacities, ages or chemistries.

06 SYSTEM CONFIGURATION

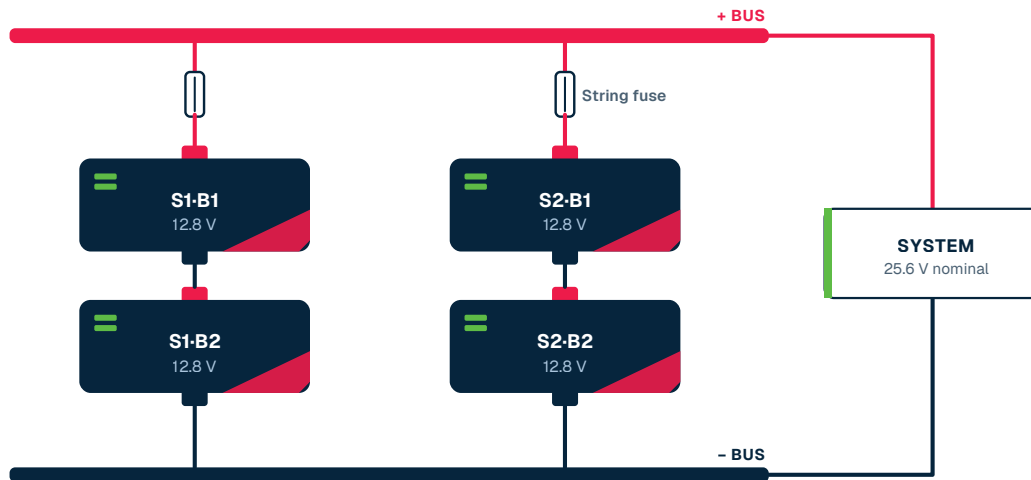
SERIES AND SERIES-PARALLEL BANKS

CONCEPTUAL DIAGRAM



Series bank, up to 4 batteries (48 V class). Each link joins one battery's negative terminal to the next battery's positive terminal. Chargers, inverters, fuses and switches must be rated for the full bank voltage.

CONCEPTUAL DIAGRAM



Series-parallel (2S2P example). Strings must be identical and individually fused, with equal cable lengths to the busbars.

CONFIGURATION MATRIX — NOMINAL VOLTAGE · CAPACITY · STORED ENERGY

	1P	4P	8P	16P
1S	12.8 V · 334 Ah · 4.28 kWh	12.8 V · 1,336 Ah · 17.10 kWh	12.8 V · 2,672 Ah · 34.20 kWh	12.8 V · 5,344 Ah · 68.40 kWh
2S	25.6 V · 334 Ah · 8.55 kWh	25.6 V · 1,336 Ah · 34.20 kWh	25.6 V · 2,672 Ah · 68.40 kWh	25.6 V · 5,344 Ah · 136.81 kWh
3S	38.4 V · 334 Ah · 12.83 kWh	38.4 V · 1,336 Ah · 51.30 kWh	38.4 V · 2,672 Ah · 102.60 kWh	38.4 V · 5,344 Ah · 205.21 kWh
4S	51.2 V · 334 Ah · 17.10 kWh	51.2 V · 1,336 Ah · 68.40 kWh	51.2 V · 2,672 Ah · 136.81 kWh	51.2 V · 5,344 Ah · 273.61 kWh

07 SAFETY, STORAGE AND COMPLIANCE

CRITICAL WARNINGS AND DOCUMENTATION

⚠ DANGER

Short-circuit hazard. Never connect the terminals together or allow tools or jewelry to bridge them. A short circuit can release extremely high current and cause arcing, burns or fire.

⚠ WARNING

The internal BMS does not replace a correctly rated external fuse or DC circuit breaker. Do not bypass the BMS, force-charge a protected battery or defeat a low-temperature lockout.

⚠ WARNING

Stop use if the battery is swollen, leaking, smoking, unusually hot or damaged. Do not use water directly on a damaged or burning lithium battery unless directed by emergency responders. Follow the Safety Data Sheet (SDS).

Commissioning checks

- ☐ Label shows model 12334A-H; charger programmed for LiFePO4.
- ☐ Polarity and voltage confirmed with a multimeter.
- ☐ Main fuse or breaker sized for the wire, load and system voltage.
- ☐ Terminals torqued to 8–12 N·m; boots installed.
- ☐ First charge completed; app shows no active faults.
- ☐ Battery registered within 90 days of purchase.

Storage and handling

- Store clean and dry, 0 °C to 35 °C (32 °F to 95 °F) where practical, at about 50% SOC or higher.
- Disconnect loads and chargers; check SOC at least every 3 months and recharge as needed.
- Warranty excludes storage above 60 °C (140 °F) or below –40 °C (–40 °F) and batteries left uncharged for more than three months.
- Ship damaged or returned batteries only under an RMA, in compliance with lithium battery shipping regulations.

COMPLIANCE AND LISTINGS

Cell-level certifications	UL 1642; IEC 62619
Label markings	CE; RoHS; UN 38.3
Enclosure	IP54 per IEC 60529

UL 1642 and IEC 62619 certifications apply at the cell level (the cells used in this battery), not to the complete battery assembly.

REVISION DATE CHANGE

V01	2026-06-20	Initial release.
V02	2026-09-27	New document format; specifications reconciled with the product page and V01 documents. Recommended charge and discharge current 167 A (0.5C) added. Heating logic, shunt, PIN and lid labels added. Storage check at least every 3 months.

Related documents: 12334A-H User Manual (Letter and 5 × 7 print editions), 12334A-H Product Spec Sheet, Safety Data Sheet (SDS) and 11-year limited warranty terms.

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Specifications are subject to change without notice. Always confirm the ratings on the battery label and use the latest documentation at epochbatteries.com/resources.