

ESSENTIAL SERIES | GROUP 31 | HEATED

12V 300Ah LiFePO4 Battery

High-capacity heated Bluetooth LiFePO4 power for RV, marine, solar, off-grid, and backup systems.



MASTER RATINGS TABLE

Single source for nominal voltage, capacity, stored energy, and current ratings.

12.8V
NOMINAL VOLTAGE

300Ah
NOMINAL CAPACITY

3.84kWh
STORED ENERGY

200A
MAX CONTINUOUS DISCHARGE

200A
MAX CONTINUOUS CHARGE

400A @ 3s
PEAK DISCHARGE

Max 4S / 4P
SERIES / PARALLEL

IP54
WEATHER RESISTANT

DEEP-CYCLE LOAD WARNING

The 400A rating is a short-duration 3-second peak only. Do not design continuous loads above the 200A per-battery continuous limit. This model is designed for deep-cycle service; for engine starting or cranking, use a cranking-rated battery or confirm compatibility with Epoch before installation.

BLUETOOTH MONITORING

INTERNAL HEATING

IP54 RATED

11 YEAR WARRANTY

MAX 4S4P

Heated Bluetooth LiFePO4 Power

The Epoch 12V 300Ah Essential Series LiFePO4 Battery is engineered for demanding 12V house-power, solar, marine, RV, mobile, off-grid, and backup applications. It combines approximately 3.84kWh of stored energy, internal low-temperature charging support, Bluetooth monitoring, and an advanced BMS in a high-capacity Group 31 footprint.

Primary use

Deep-cycle 12V house power and auxiliary energy storage. Not for cranking unless Epoch confirms compatibility.



Internal heating

Built-in heating helps support charging in cold conditions within the specified operating range.



Bluetooth monitoring

Compatible with Epoch Li-Ion iOS and Android apps for battery status monitoring.



Advanced BMS

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



4,000+ cycles

Long-cycle LiFePO4 design for maintenance-free energy storage compared with lead-acid batteries.



IP54 enclosure

Dust-protected and splash-resistant for everyday RV, marine, mobile, and outdoor use.



Expandable system

Supports up to four batteries in series and up to four in parallel when matched and properly protected.

COMPATIBLE APPLICATIONS

- RV, camper, travel trailer, and motorhome house-power systems
- Marine house batteries for electronics and accessories
- Solar energy storage for cabins, trailers, boats, and off-grid systems
- Van, overland, mobile auxiliary, backup, and 12V equipment power

Category	Rating / Detail
Series	Essential Series
Battery type	Heated Bluetooth deep-cycle LiFePO4
Group size	Group 31
Cell configuration	4S1P prismatic LiFePO4
Warranty	11-year manufacturer warranty

Deep-cycle battery notice

Use lithium-compatible charging equipment. Do not mix batteries of different model, age, capacity, or state of charge in series/parallel banks.

Master Specification Tables

Ratings at 25 deg C unless otherwise noted. Verify charger programming, cable ampacity, fuse ratings, battery tray clearance, and environmental limits before final installation.

Electrical	Rating
Nominal voltage	12.8V
Nominal capacity	300Ah @ 0.2C
Nominal energy	3.84kWh
Operating range	10.0V - 14.6V
Max charge voltage	14.6V
Max continuous discharge	200A
Peak discharge	400A @ 3 seconds
Max continuous charge	200A
Recommended charge	50A
Internal resistance	<= 30mOhm
Short-circuit protection	800A @ 500us
Cell configuration	4S1P prismatic LiFePO4
Series / parallel	Max 4S4P

Mechanical / Environmental	Rating
Base dimensions	13.75 in L x 7.63 in W x 10.0 in H
Weight	58 lb / 26.3 kg
Group size	Group 31
Terminal	M8 bolt / 8-12 N.m
Case material	ABS/PC blend, UL94-V0
IP rating	IP54
Charge temp	-20C to 55C with heating
Discharge temp	-20C to 60C
Storage temp	0C to 35C recommended
Series / parallel	Max 4 in series, max 4 in parallel
Cycle life	4,000+ cycles

DIMENSIONAL REFERENCE



Length 13.75 in

Height 10.0 in

Overall base: 13.75 in L x 7.63 in W x 10.0 in H

Group 31 footprint

Plan tray clearance, terminal hardware, handles, cable bend radius, ventilation, and service access.

TOP VIEW

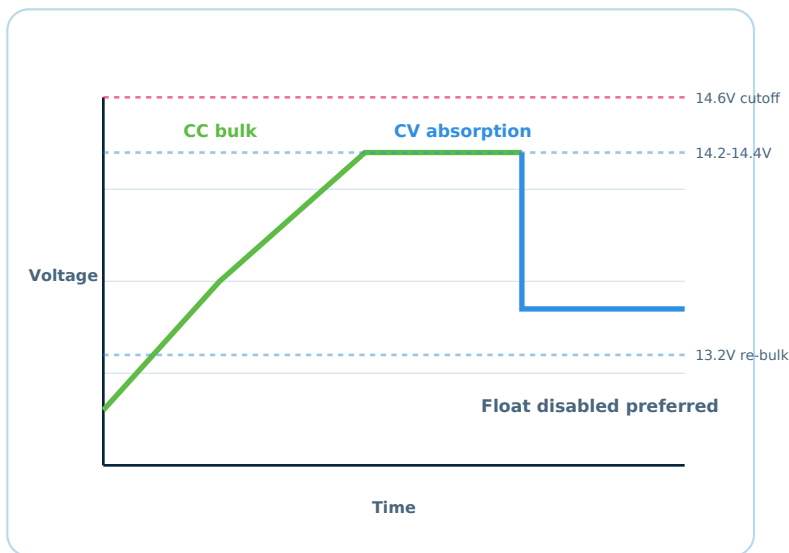
13.75 in

7.63 in

Handles / bolts: 15.5 in L; 10.5 in H with terminal bolts

Recommended Charging Settings

Program chargers, inverter/chargers, converters, solar controllers, and DC-to-DC chargers for LiFePO₄ operation. Disable equalization and temperature compensation.



Setting	Recommended value
Max continuous charge	200A
Bulk / absorption	14.2V - 14.4V
Absorption end	Current $\leq$ C/20 or 15 min max
Float	Disabled preferred, or 13.3V - 13.6V
Re-bulk	13.2V
Equalization	Disabled
Temperature compensation	0mV/deg C / none
BMS high-voltage cutoff	14.6V
SOC recalibration	14.6V

INTERNAL HEATING WORKFLOW

1. Charger connected

Apply a lithium charge profile within Epoch voltage and current limits.

2. BMS checks temp

BMS monitors cell temperature and prevents charging outside limits.

3. Heating enabled

Internal heater warms cells before charging resumes.

4. Charge proceeds

Charging resumes within the allowed temperature range and BMS limits.

Charge only with compatible LiFePO₄ equipment. Do not use lead-acid equalization modes. Stop operation if abnormal heat, odor, swelling, damage, or repeated BMS disconnects occur.

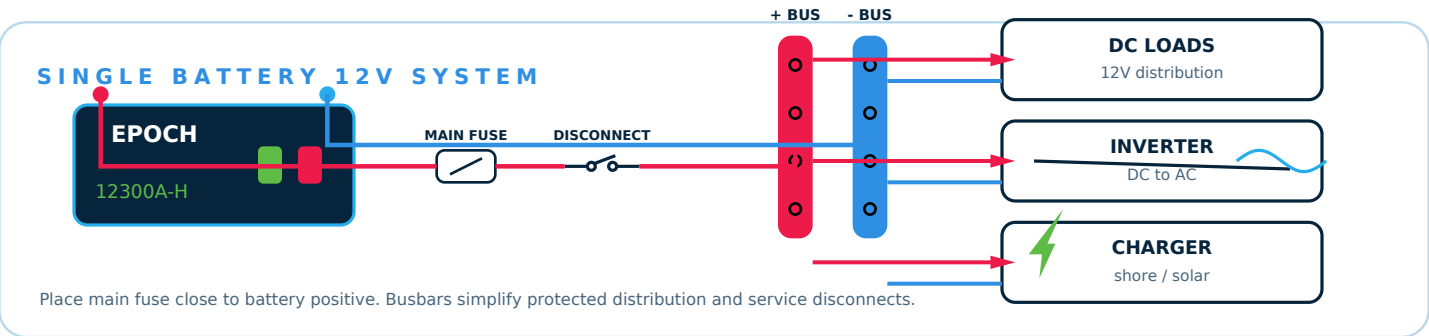
BMS protection	Function
Overcharge / over-discharge	Disconnects or limits operation to protect cells
Over-current	Protects against sustained loads above ratings
Short circuit	Rapid BMS cutoff / protected
High / low temperature	Disconnects when outside operation range
Operating voltage range	10.0V - 14.6V

12V Wiring Configurations

Vector schematic diagrams for LiFePO4 system planning. Final designs must be reviewed for cable ampacity, fuse coordination, voltage drop, environmental conditions, and applicable electrical or marine codes.

IMPORTANT

Use matched batteries.
Fuse each branch/string
and verify cable ampacity.



Configuration	Nominal voltage	Capacity	Stored energy	Notes
1 battery	12.8V	300Ah	3.84kWh	Single Group 31 battery
2 batteries parallel	12.8V	600Ah	7.68kWh	Use common busbars
3 batteries parallel	12.8V	900Ah	11.52kWh	Balance branch lengths
4 batteries parallel	12.8V	1,200Ah	15.36kWh	Maximum supported parallel bank

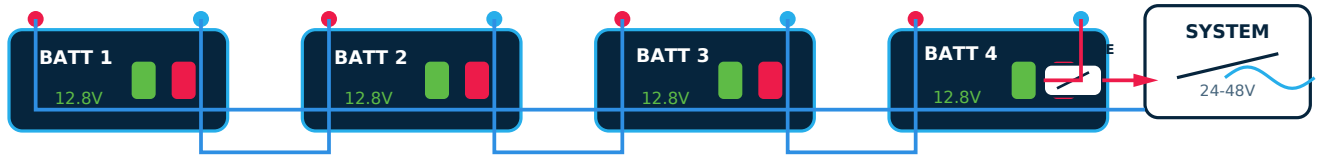
Higher Voltage Battery Banks

Model 12300A-H supports up to four batteries in series and up to four in parallel when installed as matched batteries with compatible charging equipment, fusing, disconnects, and system-level protection.

Banking rule

Use matched batteries at the same SOC before connecting.

SERIES BATTERY BANK - UP TO 4S



Series wiring increases voltage while amp-hour capacity remains 300Ah. Use a charger/inverter rated for the full bank voltage.

SERIES-PARALLEL CONCEPT - 2S2P EXAMPLE



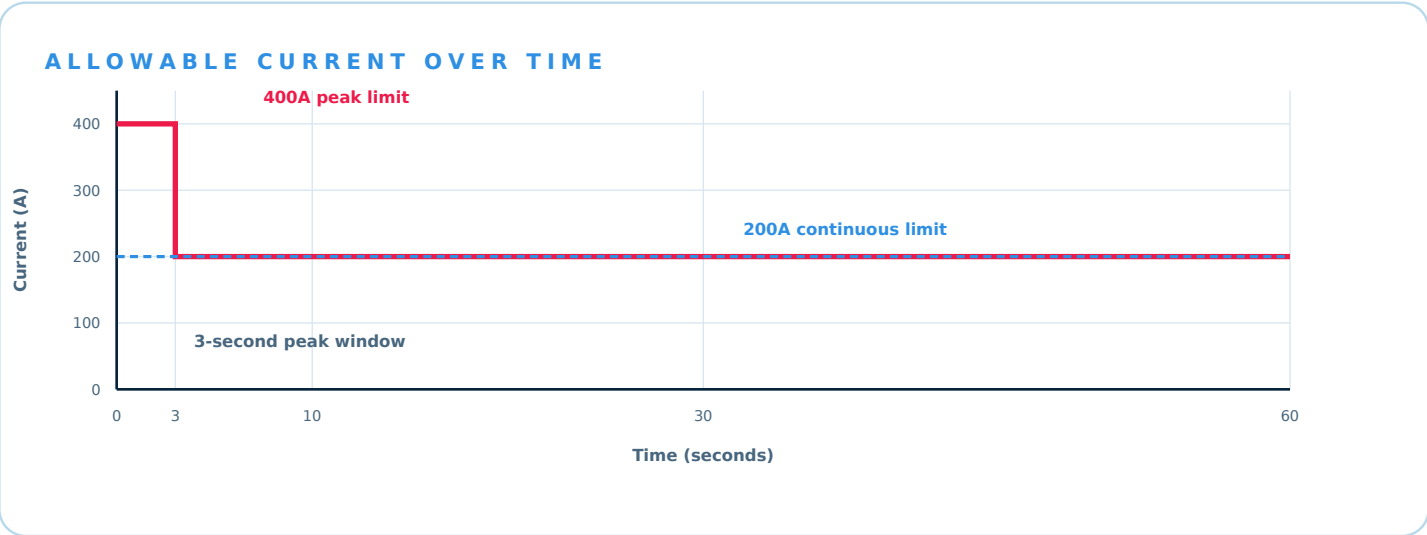
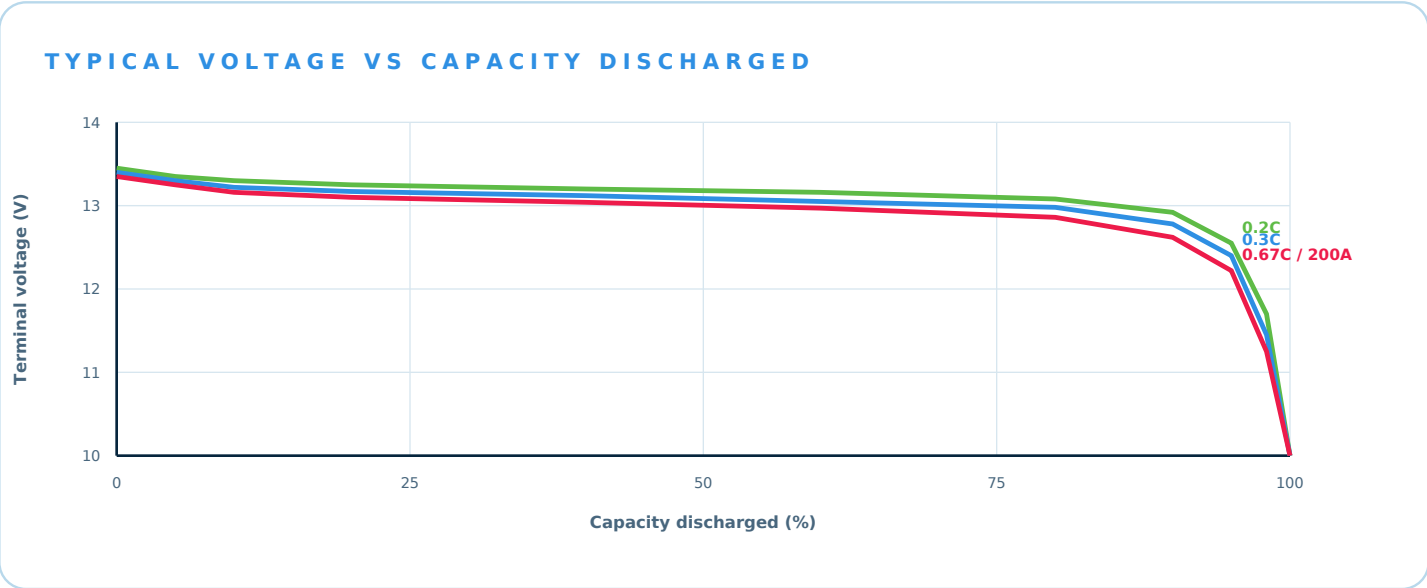
Series-parallel banks must use identical strings, string fusing, equal cable lengths, and busbar takeoffs.

Configuration	Nominal voltage	Capacity	Stored energy	Notes
2S	25.6V	300Ah	7.68kWh	24V systems
3S	38.4V	300Ah	11.52kWh	36V systems
4S	51.2V	300Ah	15.36kWh	48V systems
4S4P max	51.2V	1,200Ah	61.44kWh	Maximum supported bank

Do not hot-connect batteries. Pre-charge large inverters where required. Confirm full-bank charger voltage, inverter low-voltage settings, conductor insulation rating, enclosure clearance, and overcurrent protection before energizing.

Performance Planning Curves

Curves below are planning visuals for LiFePO4 behavior and current-limit communication. Actual voltage, runtime, and available capacity vary with temperature, battery age, cable voltage drop, load profile, BMS limits, and test method.



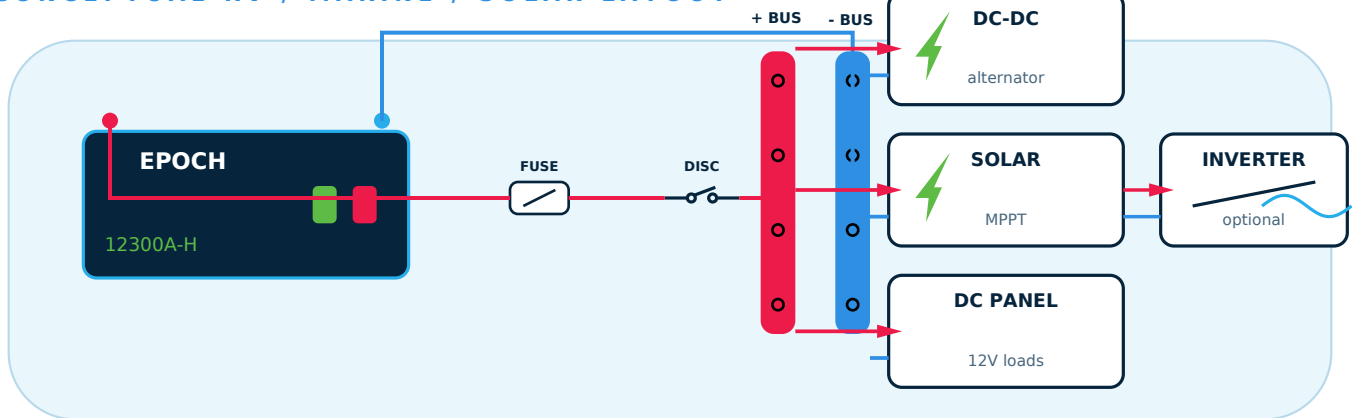
Application Layouts & Planning

Designed for larger 12V energy systems that need high-capacity LiFePO4 storage with Bluetooth monitoring and cold-weather charging support. Use the diagram as a conceptual planning reference, not as installation instructions.

Compatibility target

Confirm charger, inverter, alternator, and load requirements.

CONCEPTUAL RV / MARINE / SOLAR LAYOUT



Conceptual layout only. Verify charger settings, cable size, fuse ratings, and system voltage before installation.

TYPICAL LOADS

Electronics

Fish finders, navigation, radios, pumps, lighting

House power

12V panels, small inverters, RV, van, and solar

RUNTIME ESTIMATE

Nominal energy

3.84kWh per battery

80% planning energy

Approx. 3.07kWh per battery

Formula

Runtime hr = usable Wh / load W

EXAMPLES

100W DC load

Approx. 30.7 hr at 80% planning energy

500W DC load

Approx. 6.1 hr at 80% planning energy

Parallel bank

Multiply usable energy by number of batteries

Planning note

Runtime examples are simplified estimates. Inverters, converters, cabling, temperature, age, BMS limits, duty cycle, and real load behavior will change real-world results.

Safety, Storage & Commissioning

This page summarizes planning practices for safe handling and system readiness. Refer to the latest Epoch user manual and local codes for complete instructions before installation, operation, transport, or service.

INSTALLATION CHECKLIST

- ✓ Use only LiFePO4-compatible chargers and disabled equalization modes.
- ✓ Route cables away from sharp edges, hot surfaces, abrasion points, and moving parts.
- ✓ Install appropriate fuses or circuit breakers and verify voltage ratings.
- ✓ Secure the battery upright in a dry, ventilated, accessible location.

STORAGE & HANDLING

- ✓ Store in a cool, dry location and protect from direct sunlight, rain, and impact.
- ✓ For long-term storage, maintain approximately 50% SOC and periodically recharge.
- ✓ Do not submerge, pressure wash, short-circuit, disassemble, crush, or incinerate.
- ✓ Keep away from children, pets, conductive tools, flames, and incompatible batteries.

Compliance / Listings	Detail
Cell compliance	UL 1642 cells, UL 9540A cells, IEC 62619:2022
Product compliance	CE, RoHS
Transport	UN 38.3, Class 9 lithium battery shipping classification
Warranty	11-year manufacturer warranty
Protection	Advanced BMS with overcharge, over-discharge, over-current, short-circuit, and temperature disconnects

Critical warnings

- Never reverse polarity or connect positive and negative terminals directly with a conductor.
- Stop use and disconnect if the battery emits odor, becomes abnormally hot, is damaged, deformed, submerged, or shows abnormal behavior.
- For emergency response, use appropriate lithium battery fire response procedures and contact qualified personnel.

Revision	Date	Description
V01	2026-06-20	Expanded visual data sheet for 12300A-H using current product-page data and the established Epoch data-sheet template.

Epoch Batteries

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