

ESSENTIAL SERIES | GROUP 31 | DUAL PURPOSE

12V 172Ah LiFePO4 Battery

Dual-purpose cranking and deep-cycle lithium battery for compatible marine, RV, solar, and 12V replacement power systems.



MODEL 12172A-DP

BLUETOOTH MONITORING

IP65 RATED

MAX 4 IN PARALLEL

MASTER SPECIFICATION TABLE

12.8V

NOMINAL VOLTAGE

172Ah

NOMINAL CAPACITY

2.20kWh

STORED ENERGY

200A

CONTINUOUS OUTPUT

1,000A @ 5s

PEAK CRANKING

200A

MAX CHARGE CURRENT

10.0V - 14.6V

OPERATING RANGE

4 batteries

MAX PARALLEL

Group 31

GROUP SIZE

12.91 in L x 6.22 in W x 8.46 in H

DIMENSIONS

40 lb / 18.14 kg

WEIGHT

IP65

ENCLOSURE

DESIGN MARGIN WARNING

The 1,000A cranking output is a 5-second pulse capability, not a continuous load rating. Design cables, busbars, disconnects, fuses, and connected equipment around the 200A continuous limit and applicable electrical or marine standards.

Information is based on Epoch-published product resources available at time of draft creation. Verify specifications, firmware behavior, compatible applications, and charging guidance with the current product manual before public release or installation use.

Electrical, System & BMS Specifications

Model-specific ratings and protections for specification review and system planning.

Core metrics are consolidated in the master table on Page 1. The tables below provide supporting electrical, mechanical, BMS, and charging details.

ELECTRICAL & SYSTEM

Model / SKU	12172A-DP
Series	Essential Series
Battery type	Dual-purpose cranking + deep-cycle
Chemistry	LiFePO4 / lithium iron phosphate
Cell type	Prismatic LiFePO4
Cell configuration	4S1P
Battery group size	Group 31
Bluetooth	Yes - iOS and Android apps
Self-heating	No

CURRENT, VOLTAGE & TEMPERATURE

Operating voltage range	10.0V - 14.6V
Maximum charge voltage	15.0V
Max continuous discharge	200A
Max continuous charge	200A
Peak discharge	1,000A @ 5 seconds - cranking only
Cranking capability	Approx. 1,000 CCA
Charge temperature	-5 degC to 55 degC / 23 degF to 131 degF
Discharge temperature	-20 degC to 60 degC / -4 degF to 140 degF
Recommended storage	0 degC to 35 degC / 32 degF to 95 degF

RECOMMENDED CHARGING SETTINGS

Bulk / absorption voltage	14.2V - 14.6V
Absorption time	< C/20 or 15 min max
Float voltage	13.4V - 13.8V or disabled
Re-bulk	13.2V
Equalization	Disabled
Temperature compensation	0 / disabled
Recommended charge rate	50% of battery or bank capacity
BMS high-voltage cutoff	14.6V
SOC recalibration	14.6V

BMS PROTECTIONS

Smart BMS	Built-in battery management
Overcharge	Protected
Over-discharge	Protected
Over-current	Protected
Short circuit	Protected
High temperature	Disconnect protection
Low temperature	Disconnect protection
Low-temperature charge	Protection enabled

MECHANICAL & CONNECTIONS

Dimensions	12.91 in L x 6.22 in W x 8.46 in H
Metric dimensions	32.79 cm x 15.80 cm x 21.49 cm
Weight	40 lb / 18.14 kg
Terminal type	M8 female
Case material	ABS and PC blend
Flame rating	UL94-V0
Enclosure	IP65 dust / water resistance

COMPLIANCE & SUPPORT

Cell certification	UL 1642 cells
Thermal runaway	UL 9540A cells
Battery certification	IEC 62619:2022
Compliance	CE, RoHS
Shipping	UN 38.3, Class 9
Warranty	11-year manufacturer warranty

Mechanical Package & Installation Reference

DIMENSIONAL REFERENCE

Width 6.22 in / 15.80 cm



Height 8.46 in / 21.49 cm

Length 12.91 in / 32.79 cm

Photo reference not to scale.
Verify tray clearance and cable access.

DIMENSIONAL PACKAGE

Overall dimensions	12.91 in L x 6.22 in W x 8.46 in H
Length	12.91 in / 32.79 cm
Width	6.22 in / 15.80 cm
Height	8.46 in / 21.49 cm
Weight	40 lb / 18.14 kg
Group size	Group 31
Terminal type	M8 female

MOUNTING & HANDLING

Orientation	Install face-up unless product manual permits otherwise
Clearance	Maintain service access for terminals, fuses, and app troubleshooting
Environment	Use dry, secure, protected locations with adequate ventilation
Cable routing	Avoid strain at terminals; support heavy conductors
Over-current protection	Install properly rated fuses or breakers close to battery positive
Commissioning	Verify polarity, charger settings, BMS status, and no abnormal heat

TERMINAL HARDWARE

Use manufacturer-approved hardware and torque guidance. Recheck connections after initial service interval.

CABLE SIZING

Size conductors for current, length, voltage drop, temperature, bundling, and applicable electrical or marine codes.

PARALLEL BANKS

Use identical model batteries with similar state of charge, matched cable lengths, and busbar-based distribution.

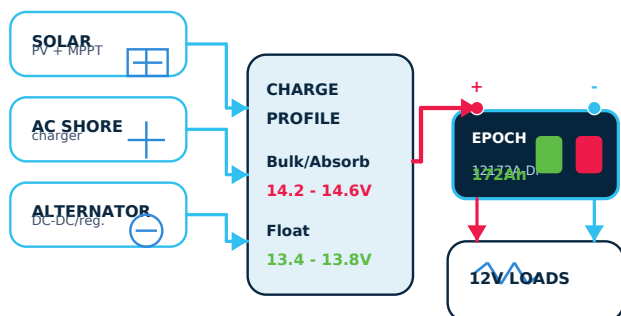
NO SERIES

Series connection is not listed for this model. Do not wire in series without written model-specific approval.

Charging Guidance & Performance Graphs

Program all charge sources for lithium-compatible LiFePO4 operation. Graphs communicate planning limits and should be replaced with validated test data for final engineering release.

CHARGE SOURCE INTEGRATION



Confirm every charging source can be programmed for LiFePO4 settings before connection.

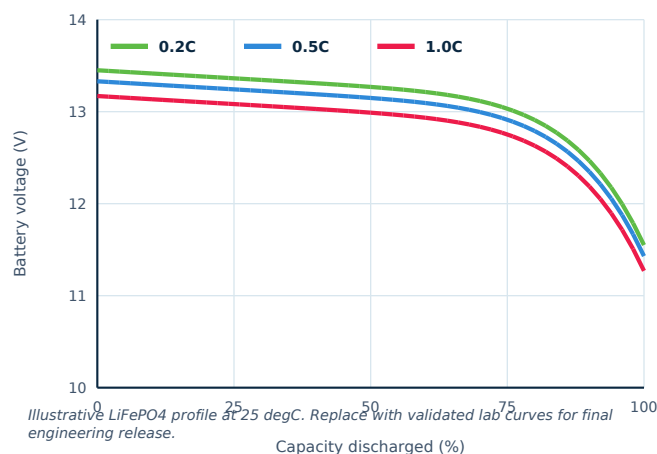
CHARGING SETTINGS

Bulk / absorption	14.2V - 14.6V
Float	13.4V - 13.8V or disabled
Equalization	Disabled
Temperature compensation	0 / disabled
Recommended charge rate	50% of battery or bank capacity

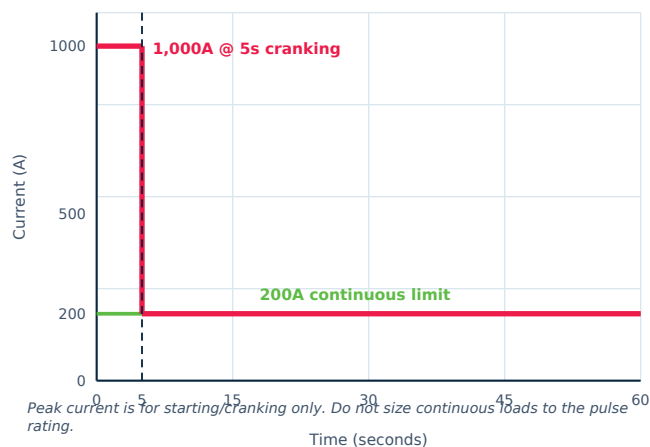
ALTERNATOR / OUTBOARD NOTE

For alternator or outboard charging, confirm the charging system is LiFePO₄-compatible. Some systems may require a lithium-ready regulator, DC-to-DC charger, or manufacturer-specific guidance.

VOLTAGE VS. CAPACITY



PULSE DISCHARGE LIMIT



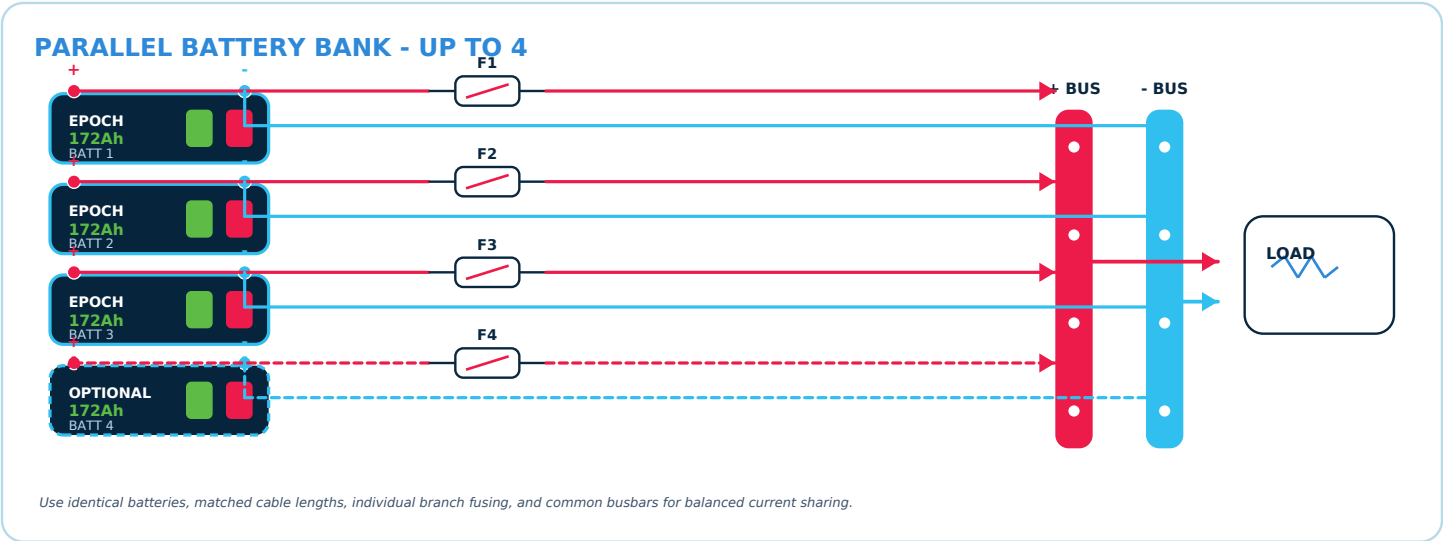
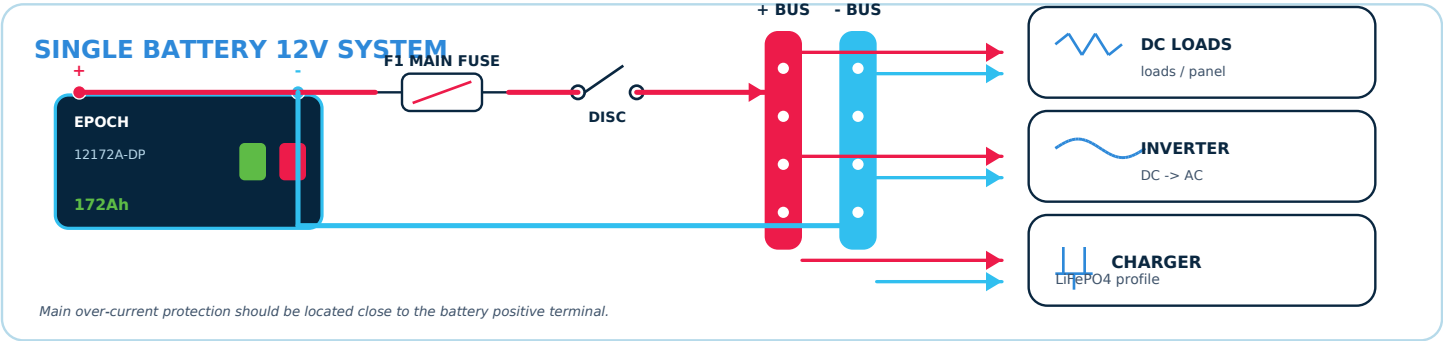
COMMISSIONING CHECK

Final systems should be verified for voltage drop, cable ampacity, fuse coordination, thermal environment, BMS status, and real load profile before commissioning.

12V Wiring Configurations

Vector-based schematic diagrams for conceptual LiFePO4 battery system planning. Final designs must be reviewed for ampacity, fusing, voltage drop and applicable codes.

For model 12172A-DP, use parallel expansion only. Do not wire this model in series unless Epoch publishes written model-specific approval.



NO SERIES WIRING
Series connection is not listed for this model. Use parallel expansion only unless Epoch publishes written model-specific series approval.

CONFIGURATION	VOLTAGE	CAPACITY	ENERGY	NOTES
1 battery	12.8V	172Ah	2.20kWh	Single unit
2 parallel	12.8V	344Ah	4.40kWh	Matched cables
3 parallel	12.8V	516Ah	6.60kWh	Balanced branches
4 parallel	12.8V	688Ah	8.80kWh	Maximum bank

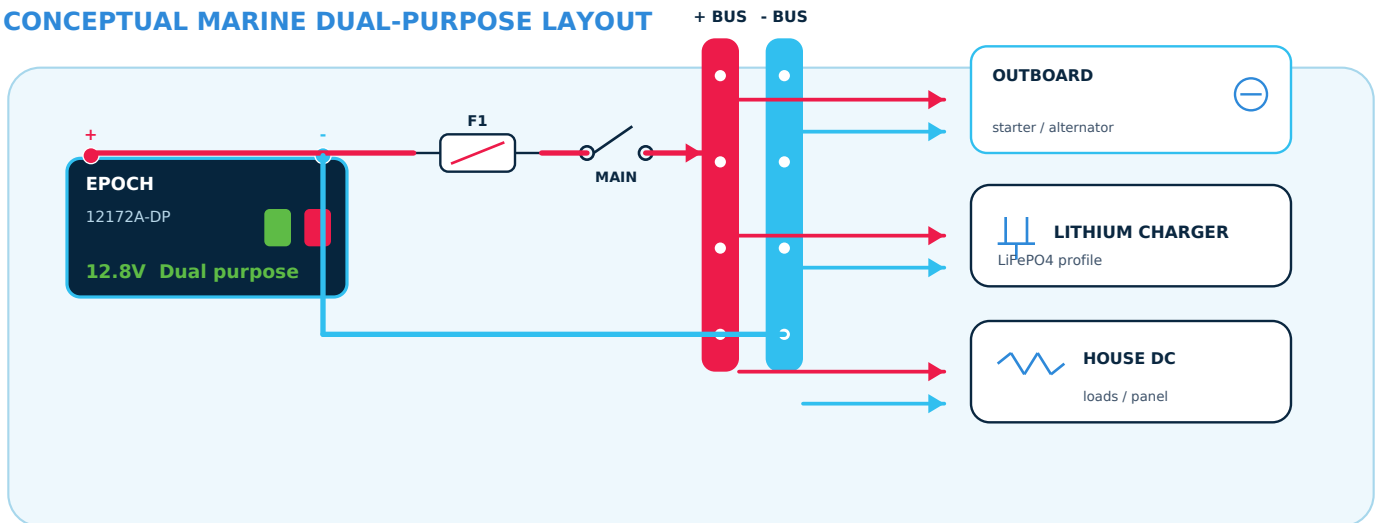
Application Layouts & Load Planning

Conceptual layouts show how the dual-purpose battery can support compatible cranking and deep-cycle loads when charging, fusing, switching, and load requirements match.

COMPATIBILITY TARGET

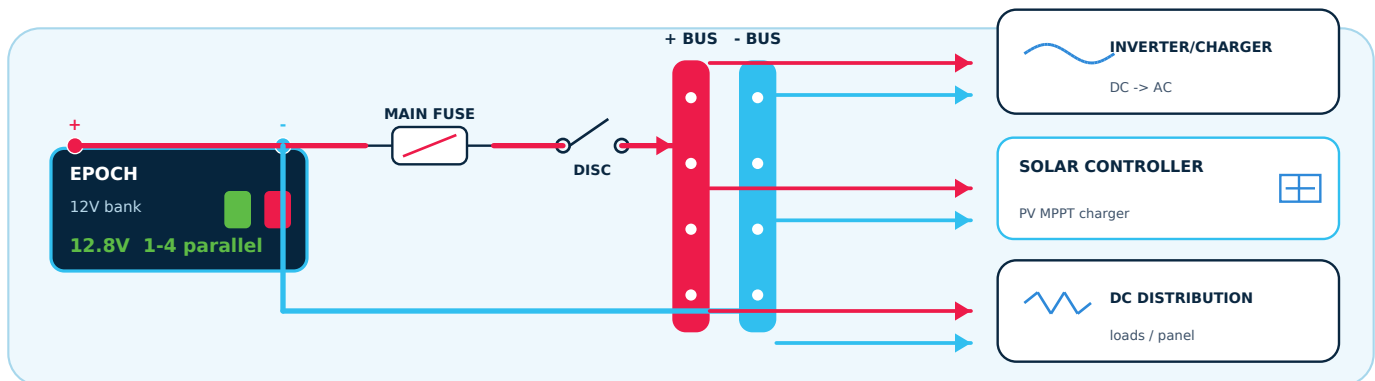
Compatible outboard target is up to 250 hp when system requirements, engine specifications, and charging profile match.

CONCEPTUAL MARINE DUAL-PURPOSE LAYOUT



Verify engine, alternator, charger, fuse, switch, cable, and marine-code requirements before installation.

RV / SOLAR / INVERTER-CHARGER LAYOUT



Use LiFePO4-compatible charging profiles and verify all charge sources before energizing the system.

RUNTIME FORMULA

Runtime (hr) = usable Wh / load W. Derate for inverter and environmental losses.

EXAMPLE 100W LOAD

Approx. 17.6 hr at 80% planning energy before conversion losses.

EXAMPLE 500W LOAD

Approx. 3.5 hr at 80% planning energy before conversion losses.

BMS Protection, Storage & Handling

Correct handling, charging, protection, and installation are essential for safety, performance, and service life.

MONITORING

Bluetooth app visibility can help review battery status, voltage, current, temperature, and protection state during commissioning and normal use.

BMS PROTECTION SUITE

Smart BMS	Built-in battery management
Overcharge	Protected
Over-discharge	Protected
Over-current	Protected
Short circuit	Protected
High temperature	Disconnect protection
Low temperature	Disconnect protection
Low-temp charge	Protection enabled

HANDLING WARNINGS

Do not short	Never connect positive and negative terminals together with a conductor.
Do not reverse	Verify polarity before connecting chargers, inverters, loads, or busbars.
Do not modify	Do not disassemble, puncture, crush, or alter the battery enclosure.
Use correct charger	Use LiFePO4-compatible charge settings; disable equalization unless instructed.
Stop use	Disconnect and inspect if abnormal heat, odor, deformation, damage, or BMS faults occur.

TRANSPORT & STORAGE

Storage SOC	Store near 50% state of charge for long-term storage.
Temperature	Recommended 0 degC to 35 degC / 32 degF to 95 degF.
Environment	Dry, clean, dark, well-ventilated indoor location.
Inspection	Check voltage and recharge periodically during extended storage.

INSTALLER RESPONSIBILITY

These diagrams and settings are planning references only and do not replace the product manual, applicable codes, or review by a qualified electrical or marine professional.

REVISION RECORD

REVISION	DATE	CONTENT	PREPARED FOR
V00	2026-06-20	Updated data sheet with consolidated master specs, corrected mechanical text, rebuilt vector wiring diagrams, charging guidance, discharge curves, pulse graph, and safety notes.	Epoch Batteries

Information is based on Epoch-published product resources available at time of draft creation. Product design, certification status, specifications, firmware behavior, compatible applications, and charging guidance may change. Verify all data with Epoch engineering, product management, and the current product manual before public release or installation use.