

PRO SERIES · 24V · HEATED · BLUETOOTH

24V 60Ah LiFePO4 BATTERY

HEATED 24V DEEP-CYCLE LITHIUM POWER



25.6 V

NOMINAL

60 Ah

CAPACITY

1.54 kWh

STORED ENERGY

80 A

CONTINUOUS

200 A

PEAK · 3 S

MODEL / SKU **DP2460H**

Read this manual completely before installing, charging, operating, storing or servicing the battery. Series connections are not approved for this model. Keep it with the battery for future reference.

IMPORTANT NOTICE [LEGAL PROVISIONS](#)

Purpose of this manual

This manual explains safe handling, installation, charging, operation, storage, maintenance, troubleshooting and warranty support for the Epoch DP2460H Bluetooth LiFePO4 battery. It is written to help users and installers reduce risk, protect connected equipment and get reliable performance.

Qualified installation

Battery systems can deliver high current. Installation and service should be performed by people who understand DC electrical systems, lithium battery charging, overcurrent protection, conductor sizing, terminal hardware and safe work practices. When the battery is part of a boat, RV, vehicle, trailer, cabin or building system, follow all applicable codes and equipment manufacturer requirements.

Product changes

Specifications, accessories, firmware, labels and documentation may change without notice. Use the latest Epoch Batteries documentation and product labeling for installation, operation and service.

Warranty and compliance

Failure to follow this manual, using incompatible chargers or accessories, modifying the battery, improper installation, abuse, water intrusion beyond the product rating, incorrect polarity, overcurrent events, or operation outside the specified limits may void warranty coverage and may create safety hazards.

WARNING

Incorrect installation or use can cause fire, electric shock, severe injury, death, or damage to the battery and connected equipment. Stop and contact Epoch Batteries support if any instruction is unclear.

SAFETY SIGNAL WORDS [ANSI Z535 STYLE](#)

Safety messages in this manual use these signal words to show the severity of a hazard:

DANGER

A hazardous situation that, if not avoided, **will** result in death or serious injury.

WARNING

A hazardous situation that, if not avoided, **could** result in death or serious injury.

CAUTION

A hazardous situation that, if not avoided, could result in minor or moderate injury.

NOTICE

Practices that can damage the battery, connected equipment or property. No personal-injury hazard.

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QUICK REFERENCE · DP2460H

Nominal voltage / capacity / energy	25.6 V · 60 Ah · 1.54 kWh
Continuous discharge / peak	80 A · 200 A for 3 s
Recommended / maximum charge current	Up to 30 A · 60 A
Bulk / absorption · float	28.4–28.8 V · 26.6–27.2 V
Equalization · temperature compensation	Disabled · disabled
Charge temperature	–20 to 55 °C / –4 to 131 °F
Series / parallel	Parallel only · max. 16P
Terminals · torque	M8 · 8–10 Nm (71–89 in-lb)
Support	1-888-501-1846 · support@epochbatteries.com

CONVENTIONS HOW TO READ THIS MANUAL

- **Model-specific data** figures plot this battery's published ratings.
- **Conceptual diagram** figures explain principles. They are not wiring instructions for a specific installation; final designs must follow applicable codes.
- Notes in the right margin give **definitions** of technical terms and practical **tips**. A full glossary is in Appendix A.

-
- Ratings are at 25 °C (77 °F) unless stated otherwise. Temperatures are given in °C and °F; dimensions in inches and millimeters.

01 INTRODUCTION

Thank you for choosing Epoch Batteries. The DP2460H is a 25.6 V, 60 Ah, 1.54 kWh Pro Series LiFePO₄ battery designed for 24V deep-cycle energy systems in a Group 27 footprint.

This manual explains how to use the battery safely in 24V trolling motor, marine house-power, RV, van, solar, off-grid and backup systems where the system requirements match the battery specifications.

WHO SHOULD USE THIS MANUAL

- **End users** who need basic safety, charging, Bluetooth and storage guidance.
- **Installers** who need model-specific electrical limits, terminal information and battery bank considerations.
- **Dealers, support teams and service technicians** who need a consistent troubleshooting and warranty reference.

IMPORTANT COMPATIBILITY NOTE

The DP2460H is a lithium battery and is not a drop-in replacement for every lead-acid installation. Before installation, verify tray fit, terminal clearance, cable size, overcurrent protection, charger profile, charging-source compatibility and load requirements.

DEFINITION

Deep-cycle battery

A battery built to deliver steady current over long periods and be discharged deeply and recharged many times. A cranking (starting) battery is built for very high current for a few seconds to start an engine.

DEFINITION

LiFePO₄

Lithium iron phosphate, a lithium-ion chemistry known for thermal stability and long cycle life. Each LiFePO₄ cell has a nominal voltage of 3.2 V; 8 in series give 25.6 V.

NOTICE

This Pro Series model is a 24V heated deep-cycle LiFePO₄ battery with Bluetooth and CAN communication. It is **not** a cranking battery, and series connections are **not** supported. Batteries ship with the power switch OFF.

BEFORE YOU BEGIN

- 1 Read Section 2 (Safety) and keep this manual with the battery.
- 2 Register the battery within 90 days of purchase for full warranty coverage (Section 15).
- 3 Complete the pre-installation checklist in Section 5 before connecting any cable.
- 4 Record the installation in the commissioning record in Appendix B.

02 SAFETY

Safe use depends on correct equipment, proper wiring, clean connections, compatible chargers, secure terminal hardware, and operation within the temperature and current limits.

GENERAL SAFETY RULES

- Read all instructions before use. Keep the battery away from children and pets.
- Do not open, drill, crush, puncture, drop, burn or modify the battery.
- Do not short the terminals or let tools, jewelry or conductive objects bridge them.
- Use insulated tools and appropriate personal protective equipment, such as safety glasses.
- Confirm polarity before connecting chargers, loads, DC-to-DC chargers, solar controllers, inverters or parallel wiring.
- Stop using the battery immediately if it becomes unusually hot, emits odor, smokes, leaks, swells, makes unusual sounds or is physically damaged.
- The heat-sink fins can get hot during use; do not touch them.
- Keep the pressure-relief valve clear and do not place covers or objects on top of the battery.

DANGER

Do not connect the positive and negative terminals together. A short circuit can release extremely high current and may cause arcing, burns, fire or equipment damage.

DO NOT

- Connect this model in series unless Epoch provides written model-specific approval.
- Mix this battery with lead-acid batteries in the same bank, or mix different models, capacities, ages or chemistries in a parallel bank.
- Connect to a charger, alternator system, converter, inverter charger, solar controller or DC-to-DC charger that cannot be configured for LiFePO₄.
- Use lead-acid equalization, desulfation or repair modes.
- Exceed 60 A continuous charge current, 80 A continuous discharge current, or 200 A peak current for longer than 3 seconds.
- Charge the battery outside its charge temperature range (–20 to 55 °C / –4 to 131 °F (with internal heating)).
- Install without properly sized DC overcurrent protection.
- Submerge, pressure wash, or expose the battery to standing water.
- Continue use after a severe impact, fire event, water intrusion or visible case damage.

TIP

Keep the terminal covers on until the moment each terminal is wired, and refit them as soon as the connection is complete.

EMERGENCY CONDITIONS

If the battery smokes, becomes unusually hot, emits odor, leaks, swells or behaves abnormally, stop use immediately. If it is safe to do so, disconnect chargers and loads. Move people away from the battery and contact emergency services when fire, smoke,

chemical exposure or injury is possible. Follow the product safety data sheet (SDS) and emergency responder instructions.

⚠ WARNING

Do not use water directly on a damaged or burning lithium battery unless directed by emergency responders. Use an appropriate extinguisher and follow local emergency procedures. Never open the battery case: internal cells and BMS components are not user-serviceable.

02

TRANSPORT

The battery is tested to UN 38.3 for lithium battery transport. Protect the terminals from short circuit during transport, secure the battery against movement, and follow the hazardous-materials rules that apply to the shipping method. Ship a battery to Epoch only when instructed (Section 15).

03 PRODUCT OVERVIEW

The Epoch DP2460H is a 24V Pro Series LiFePO4 battery that stores 1.54 kWh in a Group 27 footprint. It delivers 80 A continuous and 200 A for up to 3 seconds, heats itself for cold-weather charging, and reports to the Epoch Pro app over Bluetooth and to compatible equipment, including Victron systems, over CAN/RS485.



Product render shown for identification. Labels, accessories and supplied hardware may vary by production revision.

KEY FEATURES



24V deep-cycle energy

60 Ah / 1.54 kWh at 25.6 V nominal.



80 A continuous

200 A for up to 3 s; 30 A recommended discharge.



60 A charging

Maximum continuous charge 60 A; 30 A recommended.



Self-heating

Warms the battery to 10 °C before charging in cold weather.



Bluetooth monitoring

Epoch Pro app for iOS and Android, with over-the-air firmware updates.



CAN networking

Link in / Link out ports connect a bank and external devices.



IP67 enclosure

Dust-tight and protected against temporary immersion.



Parallel expansion

Up to 16 in parallel. Series is not supported.



11-year warranty

Manufacturer warranty; register within 90 days of purchase.

CONTROLS AND INDICATORS

ITEM	FUNCTION
Power switch	Turns the BMS on or off. Batteries ship OFF; switch OFF for transport or long storage to minimize self-consumption.
RUN / ALM light	Green when normal; red during an alarm or protection event.
SOC lights (4)	Each light represents 25% state of charge; the top light blinks while charging.
Config button	Press 1 s to show SOC; 3 s to unlock networking; 10 s on the master battery to assign network addresses.
Link in / Link out	CAN communication ports for battery-to-battery and external-device communication. Keep the covers on unused ports.
Pressure-relief valve	Relieves internal pressure. Keep it clear; do not cover the top of the battery.
Heat-sink fins	Dissipate heat and can get hot during use. Do not touch them.
Mounting bracket	Secures the battery to the floor or tray; M6 stainless screws recommended.

PRIMARY USES

- 24V trolling motors whose maximum current draw is within 80 A continuous.
- Marine house power for 24V electronics, lighting, pumps, fish finders and navigation.
- Kayak, skiff, pontoon and fishing-boat installations that need IP67 protection.
- RV, camper, van, overland and mobile 24V auxiliary systems.
- Solar and off-grid 24V storage, and Victron-based systems with compatible CAN/RS485 hardware.

IDENTIFYING YOUR BATTERY

The model number (DP2460H) is printed on the battery label. Record the model and serial number in the commissioning record (Appendix B); you will need them for registration, support and warranty claims.

DEFINITION

BMS

Battery management system: electronics inside the battery that monitor cell voltage, current and temperature, and disconnect the battery to protect the cells when a limit is exceeded.

DEFINITION

IP67

An IEC 60529 enclosure rating: dust-tight (6) and protected against temporary immersion up to 1 m for 30 minutes (7). Not rated for water jets or pressure washing.

NOTICE

This model has internal heating. When a charger is connected in cold weather, the heater warms the battery to 10 °C (50 °F) and then switches to charging. With heating, the battery charges down to -20 °C / -4 °F. IP67 protects against temporary immersion only (1 m for 30 minutes). It is not rated for water jets or pressure washing, and the battery must not be left submerged. Keep the pressure-relief valve clear.

04 SPECIFICATIONS

Ratings at 25 °C unless otherwise noted. This section is the reference for every limit used elsewhere in the manual.

GENERAL	
Brand	Epoch Batteries
Model / SKU	DP2460H
Series	Pro Series
Battery type	Heated Bluetooth deep-cycle LiFePO4 battery (24V)
Chemistry	LiFePO4 (lithium iron phosphate)
Cell configuration	8S2P
Bluetooth	Yes — Epoch Pro app, iOS and Android
Self-heating	Yes — internal heating film
Low-temperature charge protection	Heater warms battery to 10 °C before charging
ELECTRICAL	
Nominal voltage	25.6 V
Nominal capacity	60 Ah
Stored energy	1.54 kWh / 1,536 Wh
Operating voltage range	20.0–29.2 V
Maximum charge voltage	29.2 V
CURRENT	
Maximum continuous discharge	80 A (30 A recommended for daily use)
Peak discharge	200 A for up to 3 seconds
Maximum continuous charge	60 A
Recommended charge current	Up to 30 A (50% of capacity)
Series connections	Not approved for this model
Parallel connections	Max. 16 batteries
Maximum configuration	16P, matched batteries and rated equipment
Maximum 24V parallel bank	960 Ah / 24.58 kWh
TEMPERATURE	
Charge temperature	–20 to 55 °C / –4 to 131 °F (with internal heating)
Discharge temperature	–20 to 60 °C / –4 to 140 °F
Storage temperature	0 to 35 °C / 32 to 95 °F, recommended, max. 12 months
MECHANICAL AND ENVIRONMENTAL	
Dimensions (L × W × H)	12.25 × 6.75 × 9 in (311 × 171 × 229 mm)
Footprint	BCI Group 27
Weight	30 lb / 13.7 kg
Case	Sealed IP67 case with heat-sink fins, pressure-relief valve and mounting bracket
Terminals	M8 — 8–10 Nm (71–89 in-lb)
Enclosure	IP67 — dust-tight, temporary immersion; not for submersion
Cycle life	6,000+ cycles
Warranty	11-year manufacturer warranty
PROTECTION AND COMPLIANCE	

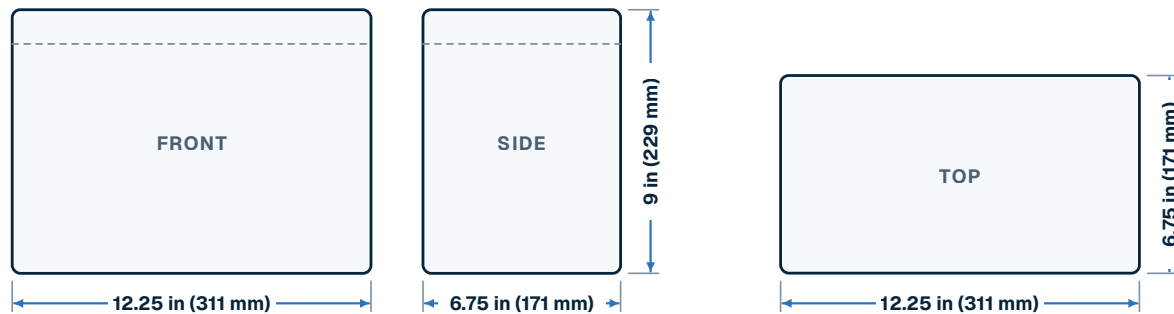
Battery management	Built-in smart BMS
Protection functions	Overcharge, over-discharge, over-current, short circuit, high- and low-temperature disconnects
Cell certification	UL 1642 (cells)
Thermal runaway testing	UL 9540A (cells)
Battery certification	UL 1973 (pack); IEC 62619:2022
Compliance marks	CE, RoHS
Transport	UN 38.3, Class 9

Charger settings are in Section 10.

FIGURE 4-1 · OUTLINE DIMENSIONS

MODEL-SPECIFIC DATA

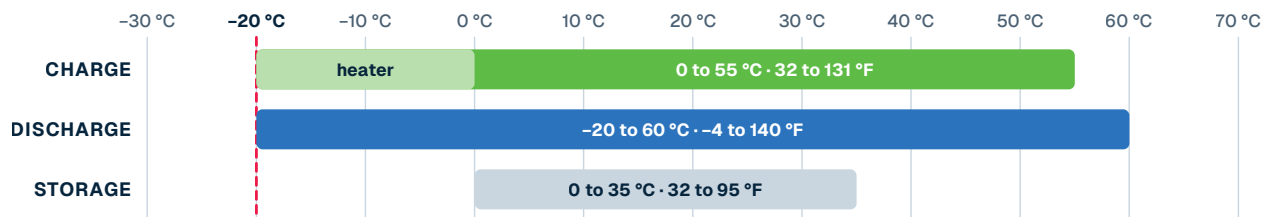
Outline envelope only; case features and terminal hardware are not shown.



Overall 12.25 in L × 6.75 in W × 9 in H; BCI Group 27 footprint. Allow extra clearance above the terminals for cable bend radius, terminal covers and inspection.

FIGURE 4-2 · TEMPERATURE OPERATING WINDOWS

MODEL-SPECIFIC DATA

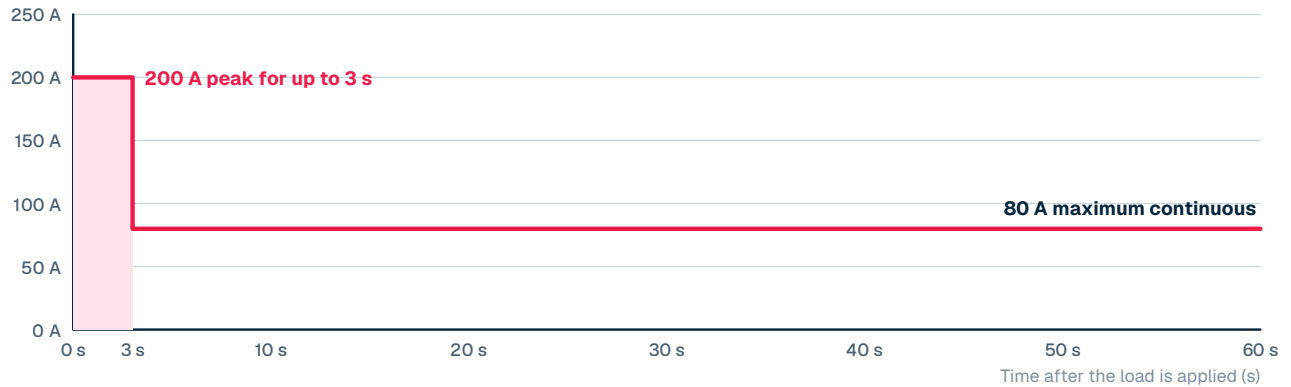


Charging from -20 °C uses the internal heater (light green): below 0 °C it warms the cells with a charger connected; charging resumes above 10 °C.

Storage bar shows the recommended storage range (recommended, max. 12 months).

FIGURE 4-3 · ALLOWABLE DISCHARGE CURRENT OVER TIME

MODEL-SPECIFIC DATA



The peak rating is for short start-up surges such as a motor start. Any load lasting longer than 3 seconds must stay at or below 80 A.

05 PLANNING YOUR SYSTEM

Most installation problems can be prevented before the first cable is attached. Size the loads, the wiring and the protection to the battery ratings first.

PRE-INSTALLATION CHECKLIST

- ☐ Battery case is undamaged, the terminals are clean, and there is no swelling, leak, loose hardware or unusual odor.
- ☐ Battery model, voltage, capacity and current ratings match the application.
- ☐ The tray or mounting location fits the 12.25 in L × 6.75 in W × 9 in H case (BCI Group 27 footprint), with clearance for terminals, cables, covers and ventilation.
- ☐ Every charging source is configured for 24V LiFePO4 charging (Section 10).
- ☐ All batteries in a bank are the same model, age, capacity and state of charge.
- ☐ The main fuse or circuit breaker is DC-rated and selected for the wire, the load and the system voltage.
- ☐ Cables and lugs are sized for current, length, voltage drop and the installation environment.
- ☐ Polarity is clearly identified at every connection point and verified before the final connections.
- ☐ Terminal hardware, a torque wrench (8–10 Nm (71–89 in-lb)) and protective covers are ready.
- ☐ The Epoch Pro app, or another approved monitoring method, is available for commissioning.

MATCHING LOADS TO THE CURRENT RATINGS

Add up the current of every load that can run at the same time. The total must stay at or below **80 A continuous**. The **200 A** rating is only for short start-up surges such as a motor start, lasting up to 3 seconds. For daily use, Epoch recommends keeping loads at or below 30 A.

- **Trolling motors and pumps:** use the motor manufacturer's maximum current draw, not its average.
- **Inverters:** the inverter's DC input current, not its AC output, must stay within 80 A. At 25.6 V, 80 A is about 2,048 W of DC input; usable AC output is lower because of conversion losses. Check the inverter's rated input current.
- **Banks:** parallel banks share current between batteries only when the wiring is balanced (Section 8).

ESTIMATING RUNTIME

For planning, use 80% of the nominal energy: 1,536 Wh × 0.8 ≈ **1,229 Wh** per battery. Then:

$$\text{Runtime (hours)} = \text{usable Wh} \div \text{load (W)}$$

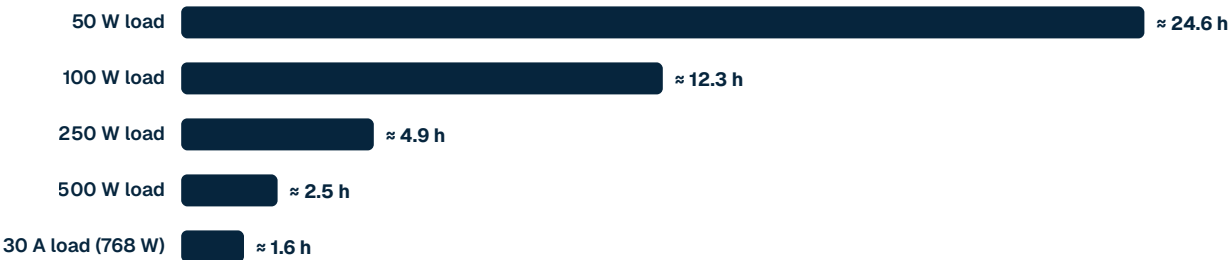
DEFINITION

C-rate

Current relative to capacity. For this 60 Ah battery, 1C = 60 A and 0.5C = 30 A. Lower C-rates mean less heat and voltage drop.

FIGURE 5-1 · ESTIMATED RUNTIME BY LOAD

MODEL-SPECIFIC DATA



Runtime (h) = 1,229 Wh ÷ load (W). DC loads at 25 °C on a new, fully charged battery; real results vary.

Calculated from 1,229 Wh planning energy. Inverter and converter losses, cabling, temperature, battery age, BMS limits and duty cycle change real results. For a parallel bank, multiply usable energy by the number of batteries.

CABLES AND OVERCURRENT PROTECTION

Choose conductors for the maximum current, circuit length, allowable voltage drop, ambient temperature and the code that applies to your installation (for example marine, RV or electrical codes). Install a DC-rated fuse or circuit breaker as close as practical to the battery positive terminal, sized to protect the smallest conductor in the circuit, with suitable voltage and interrupt ratings.

DEFINITION

Inrush current

A brief current spike when a device is first connected or switched on, for example while an inverter charges its internal capacitors. Large inverters may need a pre-charge circuit.

DEFINITION

Voltage drop

Voltage lost in cables and connections as current flows. Long or undersized cables cause heat, low voltage at the load and early low-voltage cutoffs.

DEFINITION

Ampacity

The maximum current a conductor can carry continuously without exceeding its temperature rating. It depends on wire size, insulation and installation conditions.

06 INSTALLATION

Choose a location that keeps the battery dry, secure, ventilated and accessible, then mount it so it cannot move.

LOCATION

- Install in a clean, dry, accessible location protected from accidental impact.
- Allow airflow around the battery and connected equipment.
- Keep away from heat sources, sparks, open flames, fuel and flammable materials.
- Avoid prolonged direct sunlight and any location that exceeds the temperature limits (Section 4).
- Do not install where standing water can collect around the case or terminals, such as a bilge.

MOUNTING AND ORIENTATION

Secure the battery so it cannot slide, tip or strike nearby equipment during operation, vehicle or trailer motion, vessel motion or transport. Use a tray, strap, bracket, battery box or enclosure suited to the application and the battery's weight (30 lb / 13.7 kg). Do not rely on the terminals, terminal bolts or cables to restrain the battery, and do not place heavy equipment on the case.

Install the battery **upright** unless Epoch documentation for this exact model allows another orientation. Keep the top terminals and wiring protected from accidental contact.

TIP

Mounting

Secure the battery with its bracket (M6 stainless screws recommended), keep it face up, and leave the pressure-relief valve and heat-sink fins clear.

⚠ CAUTION

The battery weighs about 30 lb / 13.7 kg. Use proper lifting technique and avoid dropping the battery.

ENVIRONMENTAL PROTECTION

The sealed IP67 case suits wet marine compartments and demanding mobile installations. It protects against temporary immersion only (1 m for 30 minutes); it is not rated for water jets or pressure washing. Keep the pressure-relief valve clear, do not place covers or objects on top of the battery, and allow air to reach the heat-sink fins. In marine compartments, confirm the installation meets applicable marine electrical standards and the boat manufacturer's requirements.

i NOTICE

Leave enough clearance above the terminals for cable bend radius, terminal covers and inspection. Do not force cables to bend sharply at the terminals.

FIT CHECK

Before final mounting, confirm: compartment or tray dimensions against 12.25 in L × 6.75 in W × 9 in H; lid clearance; hold-down method; cable routing and clearance; terminal protection; and access to the fuse and disconnect for service.

07 ELECTRICAL CONNECTIONS

Correct polarity, clean and tight connections, and properly sized protection are the foundation of a safe battery installation.

POLARITY

Connect positive (+) to positive and negative (-) to negative. Reverse polarity can damage the battery, charger, inverter, electronics or connected loads, and is excluded from warranty coverage.

⚠ DANGER

Before tightening the final connection, use a multimeter to confirm system polarity and voltage. Never rely only on cable color or assumptions.

TERMINAL CONNECTION PROCEDURE

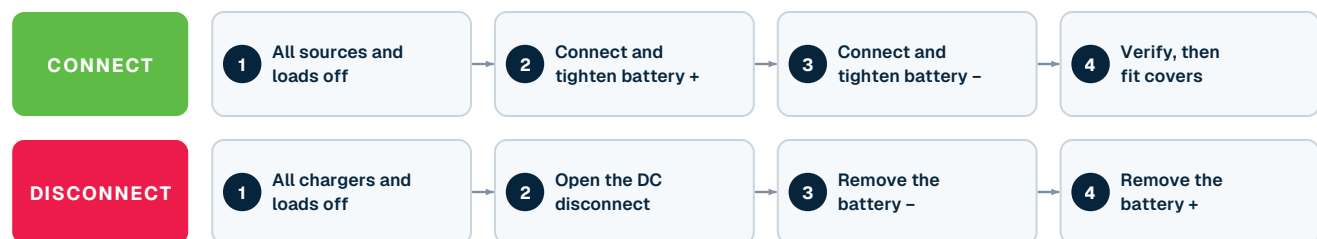
- 1 Turn off chargers, inverters, loads and DC disconnects before wiring.
- 2 Remove jewelry and use insulated tools.
- 3 Keep terminal caps or covers in place until each terminal is being wired.
- 4 Use clean, properly crimped lugs with flat contact surfaces, sized for the cable and the M8 terminal hardware.
- 5 Connect and tighten the positive terminal, then connect and tighten the negative terminal.
- 6 Tighten terminal connections to **8–10 Nm (71–89 in-lb)**. Do not over-tighten terminal hardware.
- 7 Install terminal boots or protective covers after final tightness is confirmed.

TIP

Loose terminals are a common cause of heat at the connection, and are excluded from warranty coverage. Recheck terminal tightness after the first trip and then monthly during active use.

FIGURE 7-1 · CONNECTION AND DISCONNECTION ORDER

CONCEPTUAL DIAGRAM



CABLE AND PROTECTION REQUIREMENTS

ITEM	REQUIREMENT
Cable size	Size conductors for maximum current, circuit length, voltage drop, ambient temperature and applicable code requirements.
Main protection	Install a DC-rated fuse or circuit breaker as close as practical to the battery positive terminal.
Ratings	Protection devices and switches must be rated for the system voltage and the available fault current.

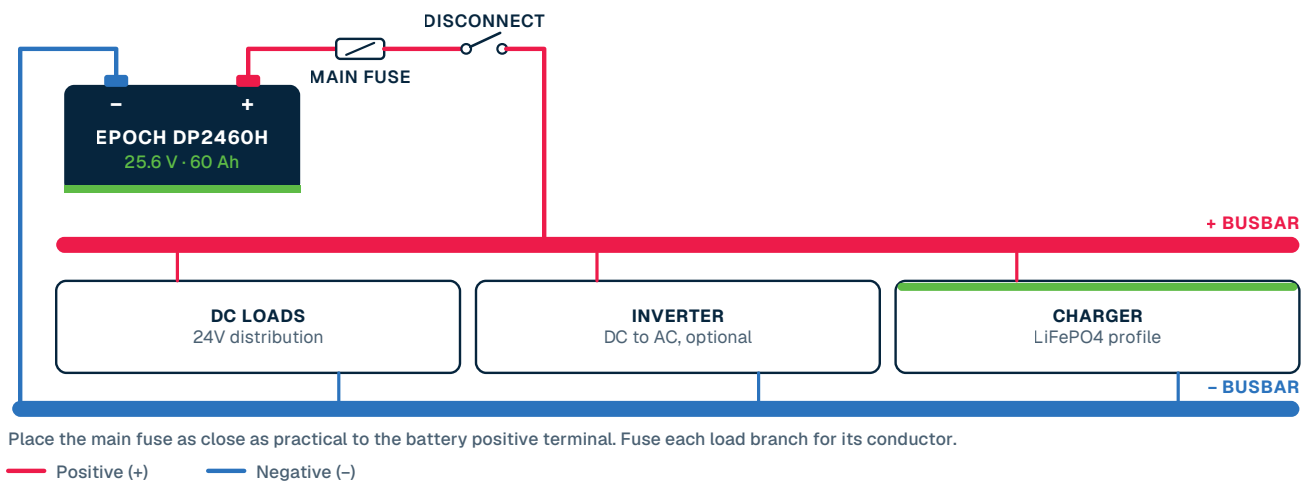
ITEM	REQUIREMENT
Wire ampacity	The fuse or breaker must protect the smallest conductor in the circuit.
Lug stack	Keep the terminal stack flat and secure. Use a busbar if several conductors must connect to one battery terminal.
Cable routing	Route cables away from sharp edges, heat sources, moving parts, fuel lines and wet areas; use grommets through panels and support heavy cables.

⚠ WARNING

A fuse or breaker protects wiring and equipment from fault current. The battery BMS is not a substitute for correctly selected circuit protection.

FIGURE 7-2 · SINGLE-BATTERY 24V SYSTEM

CONCEPTUAL DIAGRAM



Busbars simplify protected distribution and give one place to disconnect for service.

DISCONNECTING THE BATTERY

Turn off all chargers and loads, open the DC disconnect or breaker, remove the negative cable, then remove the positive cable. Cap or cover the terminals immediately.

08 PARALLEL BATTERY BANKS

The DP2460H supports up to 16 identical batteries in parallel to increase capacity while the nominal system voltage stays at 25.6 V. Series connection is not approved.

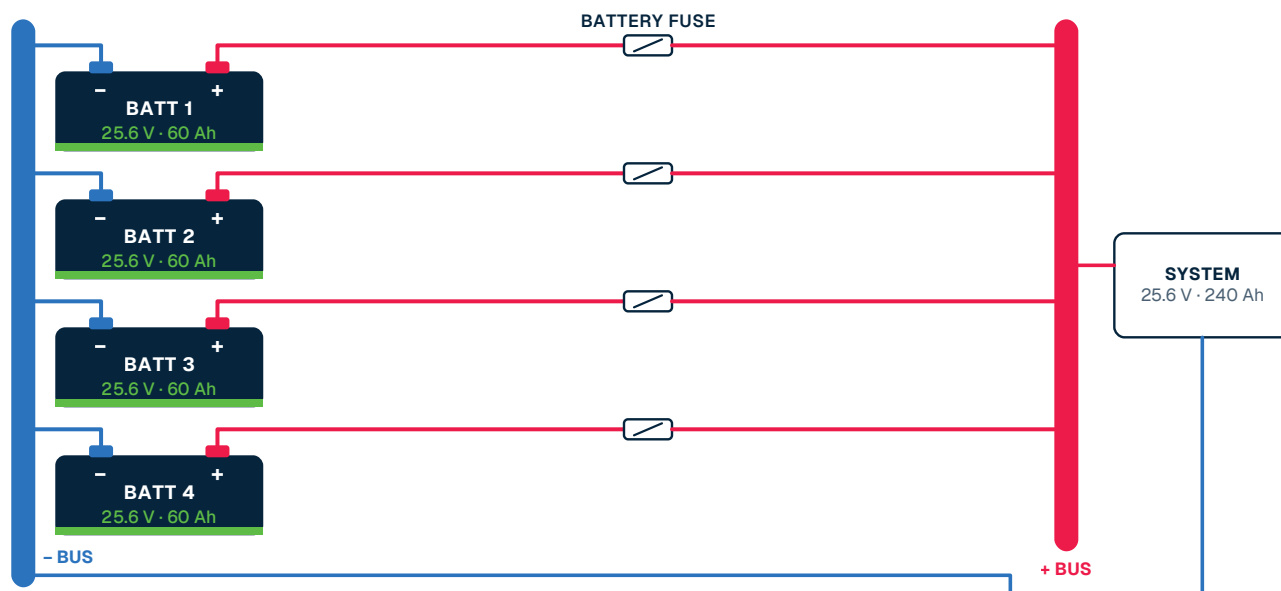
PARALLEL RULES

- Use only DP2460H batteries in a bank; never mix different types, capacities or voltage platforms.
- Before connecting, check each battery's voltage with a multimeter or the app. If any two differ by more than 0.5 V, fully charge each battery separately, rest it for 1 hour, then connect.
- Parallel connection only, up to 16 batteries. Series connection is not supported.
- Use identical cable lengths. Do not take both the positive and the negative output from the same battery.
- Charge at about 0.5C of the bank capacity (30 A per battery).

BATTERIES	SYSTEM CLASS	NOMINAL VOLTAGE	CAPACITY	ENERGY
1P	24V	25.6 V	60 Ah	1.54 kWh
2P	24V	25.6 V	120 Ah	3.07 kWh
4P	24V	25.6 V	240 Ah	6.14 kWh
8P	24V	25.6 V	480 Ah	12.29 kWh
16P	24V	25.6 V	960 Ah	24.58 kWh

FIGURE 8-1 · PARALLEL BANK, UP TO 16P

CONCEPTUAL DIAGRAM



4 of up to 16 batteries shown. Equal cable length and gauge from every battery to the busbars. Fuse each battery as the system design requires.

⚠ WARNING

Do not connect this model in series. Series wiring increases voltage and may exceed the battery design limits unless expressly approved in model-specific Epoch documentation.

BALANCED WIRING PRACTICES

- Charge each battery fully before connecting batteries into a bank.
- Use identical cable lengths and gauges for each battery in a parallel bank whenever practical.
- Connect loads and chargers through properly rated positive and negative busbars for larger banks.
- Fuse each battery when required by the system design and applicable standards.
- Do not daisy-chain batteries where unequal cable resistance could cause uneven charging or discharging.

DEFINITION**Series and parallel**

Series: + of one battery to – of the next; voltages add, capacity stays the same. Parallel: + to + and – to –; capacities add, voltage stays the same. Only parallel is approved for this model.

BATTERY NETWORKING CAN

Batteries can share data over a CAN bus through their Link in and Link out ports. Networking is optional: each battery operates and protects itself without it. Network the bank when an inverter, display, MPPT or other device needs battery data.

- 1 With all batteries switched off, make the parallel power connections.
- 2 Choose the battery that connects to external devices as Battery 1 (master). Connect its Link out to Link in on Battery 2, then Battery 2's Link out to Battery 3's Link in, and so on.
- 3 Switch all batteries on.
- 4 Press and hold the config button on Battery 1 only for 10 seconds. When all indicator lights go off, address assignment is complete.
- 5 In the Epoch Pro app, open the networking screen, tap +, name the system, choose the voltage platform, enter the number in series and in parallel, then connect to Battery 1.

i NOTICE

Connect external devices to the master battery's Link in port. Victron-compatible communication depends on the GX device, inverter charger, cable, firmware and configuration; contact Epoch for setup support.

CHARGING AND MONITORING A BANK

The recommended charge current is up to 50% of the battery or bank capacity: 30 A for one battery; 2P (120 Ah): 60 A · 4P (240 Ah): 120 A · 8P (480 Ah): 240 A · 16P (960 Ah): 480 A, within charger, wiring and system limits. Check each battery in the Epoch Pro app; a battery that reads differently from the others may need attention.

⚠ CAUTION

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

09 APPLICATION GUIDE

Use the battery for 24V deep-cycle loads whose continuous and peak current demands are within the specifications. It is not a cranking battery.

24V TROLLING MOTORS

Use the battery with a 24V trolling motor when the motor's maximum current draw is at or below 80 A continuous and the wiring, fuse, controller and charger match the battery ratings. In compatible systems, one 24V battery can replace a two-battery 12V lead-acid series bank.

MARINE HOUSE POWER

Power 24V electronics, lighting, pumps, fish finders and navigation equipment, keeping the combined current within the battery rating. Secure the battery and protect the terminals.

TIP

Check the trolling motor maker's 24V battery requirements and maximum current draw before installation.

RV, VAN AND OFF-GRID 24V SYSTEMS

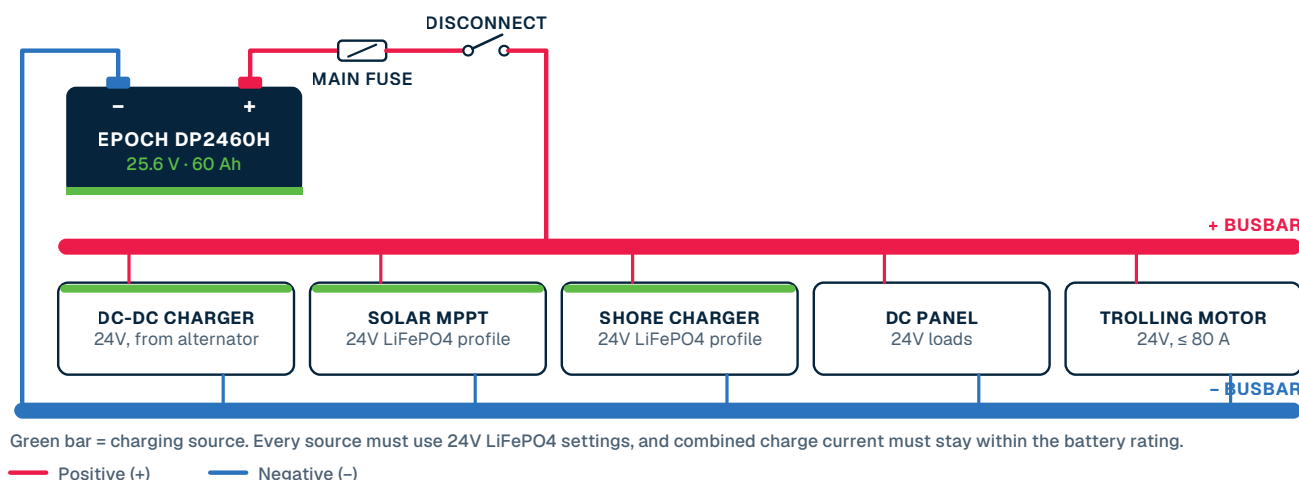
Use the battery as 24V auxiliary or house power, and program converters, inverter chargers, solar controllers and DC-to-DC chargers with the 24V LiFePO4 settings in Section 10.

VICTRON AND CONNECTED SYSTEMS

The battery supports CAN/RS485 communication for compatible Victron systems. Integration depends on the GX device, inverter charger, cable, firmware and configuration; contact Epoch for setup support.

FIGURE 9-1 · TYPICAL 24V SYSTEM LAYOUT

CONCEPTUAL DIAGRAM



For planning only. Verify charger settings, cable size, fuse ratings and system voltage for your installation.

 NOTICE

This is a 24V deep-cycle battery, not a cranking battery. For engine starting, use a cranking-rated battery or confirm compatibility with Epoch and the engine manufacturer.

10 CHARGING

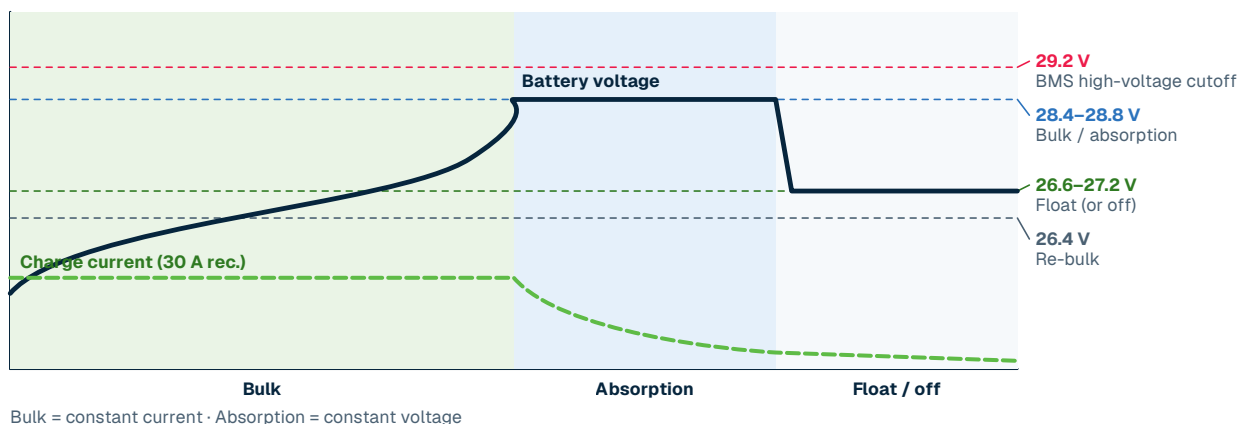
Proper charging is essential for safety, service life and accurate Bluetooth monitoring. Use charging equipment designed for LiFePO4 and program it within the settings below.

CHARGING PROFILE

SETTING	RECOMMENDED VALUE
Bulk / absorption voltage	28.4–28.8 V
Absorption time	End when current falls to C/20 (3 A) or after 15 min, whichever comes first
Float voltage	26.6–27.2 V — disabled is preferred
Re-bulk voltage	26.4 V
Equalization	Disabled — do not use lead-acid equalization or desulfation modes
Temperature compensation	0 mV/°C (disabled)
Maximum charge current	60 A
Recommended charge current	Up to 30 A for one battery; up to 50% of bank capacity for multi-battery banks
BMS high-voltage cutoff	29.2 V
SOC recalibration voltage	29.2 V
Charge temperature	–20 to 55 °C / –4 to 131 °F (with internal heating)

FIGURE 10-1 · LIFEPO4 CHARGE PROFILE

CONCEPTUAL DIAGRAM



Shape only, not to scale. Voltages are the recommended settings for this model.

BEFORE FIRST USE

- 1 Turn the power switch ON (batteries ship switched OFF). The BMS self-check takes up to 10 seconds.
- 2 Inspect the battery and verify that no damage occurred during shipping or handling.
- 3 Verify polarity and charger settings before connecting the charger.

- 4 Fully charge the battery with a compatible LiFePO4 charger before first use, and before connecting several batteries into a bank.
- 5 Confirm the battery status in the Epoch Pro app after charging.

CHARGING SOURCES

Suitable sources include 24V LiFePO4 battery chargers such as the Epoch 24V 15A Lithium Battery Charger, solar charge controllers with a programmable or LiFePO4 profile, DC-to-DC chargers for alternator charging, and converters or inverter chargers that can be set to the values above. A charger below the recommended 30 A is suitable; it simply takes longer. If a charger requires absorption-time or end-current settings, use the values above and avoid long lead-acid absorption periods.

DEFINITION

Bulk and absorption

Bulk charges at constant current until the set voltage is reached. Absorption then holds that voltage while the current tapers off as the battery fills.

DEFINITION

Float

A lower holding voltage after charging. LiFePO4 does not need float charging, so turning float off is preferred where the charger allows it.

CHARGING IN COLD WEATHER

This model has internal heating. When a charger is connected in cold weather, the heater warms the battery to 10 °C (50 °F) and then switches to charging. With heating, the battery charges down to -20 °C / -4 °F. In sub-freezing weather, leave the charger connected; charging starts automatically once the heater has warmed the battery. Discharging works down to -20 °C / -4 °F. Never bypass the protection.

FIGURE 10-2 · LOW-TEMPERATURE CHARGE PROTECTION

CONCEPTUAL DIAGRAM



CHARGING PRECAUTIONS

- Charge in a clean, dry, ventilated location away from flammable materials.
- Do not program a charge voltage above the recommended bulk/absorption range (28.4–28.8 V) or exceed the maximum charge current (60 A).
- Do not use lead-acid repair, recovery, reconditioning, desulfation or automatic equalization modes.
- Monitor the battery during the first full charge, and stop charging if the battery, charger, cables or terminals become unusually hot or show signs of damage.

TIP

Estimating charge time

Bulk time ≈ amp-hours to replace ÷ charger current. Example: replacing 48 Ah takes about 1.6 h at 30 A, plus absorption time. This is an estimate only.

NOTICE

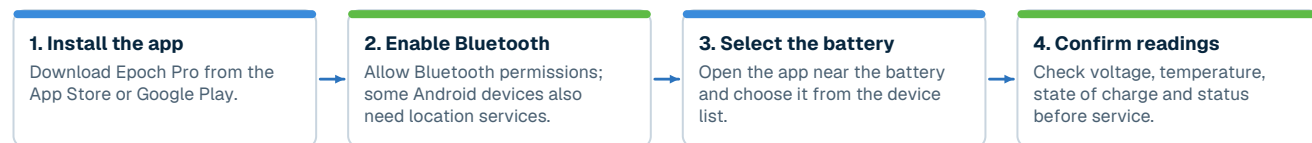
Not all chargers can do multistage lithium charging. If yours cannot be fully programmed, verify that its bulk/absorption voltage is within range and that equalization and temperature compensation are disabled. Consult the charger manual or manufacturer.

11 BLUETOOTH MONITORING

The DP2460H includes Bluetooth monitoring through the free Epoch Pro app for iOS and Android, so you can check the battery without installing a separate gauge.

FIGURE 11-1 · CONNECTING TO THE EPOCH PRO APP

CONCEPTUAL DIAGRAM



APP SETUP

- 1 Download the Epoch Pro app from the Apple App Store or Google Play.
- 2 Enable Bluetooth on the mobile device.
- 3 Allow the required Bluetooth permissions when prompted. Some Android devices also require location services for Bluetooth scanning.
- 4 Open the app near the battery and select the battery from the device list.
- 5 Confirm the displayed voltage, temperature, state of charge and status values before placing the system into service.

INFORMATION AVAILABLE

READING	WHAT IT SHOWS
State of charge	Estimated remaining capacity
Voltage	Battery terminal voltage
Current	Charge or discharge current
Temperature	Battery temperature
Status	Battery status and alerts

DEFINITION

State of charge (SOC)

The estimated energy remaining, as a percentage of full. Depth of discharge (DoD) is the opposite: 100% minus SOC.

NOTICE

The app also sets up multi-battery networks and installs firmware updates over the air.

GETTING THE MOST FROM THE APP

- Fully charge the battery about once a month to keep the state-of-charge estimate accurate.
- A full charge to the SOC recalibration voltage (29.2 V) helps keep the state-of-charge estimate accurate.

- Check readings at installation, after charging, and after the first few high-current loads.
- Use app data as a monitoring aid, not a substitute for safe wiring or correct charger settings. If readings look wrong, verify with a calibrated multimeter where safe.

i NOTICE

Bluetooth range, displayed data, app screens and firmware features may vary by mobile device, app version and battery production revision.

12 OPERATION AND STORAGE

Operate within the limits below, avoid leaving the battery empty, and store it partly charged in a cool, dry place.

OPERATING LIMITS

Continuous discharge limit	80 A
Peak discharge limit	200 A for up to 3 seconds
Continuous charge limit	60 A
Operating voltage range	20.0–29.2 V
Discharge temperature	–20 to 60 °C / –4 to 140 °F
Charge temperature	–20 to 55 °C / –4 to 131 °F (with internal heating)

DEPTH OF DISCHARGE

LiFePO₄ batteries provide more usable energy than lead-acid batteries, but routine operation at a moderate depth of discharge can improve long-term service life. Avoid leaving the battery fully depleted. If the voltage falls to the bottom of the operating range, the BMS disconnects the load; recharge promptly.

STORAGE

- Store in a clean, dry location at 0 to 35 °C / 32 to 95 °F whenever practical, away from direct sunlight, moisture, flammable materials and conductive debris.
- For long-term storage, charge to about 50% state of charge or higher.
- Disconnect loads and chargers during storage unless the system is designed for standby maintenance.
- For transport or long storage, switch the battery OFF to minimize self-consumption.
- **Check voltage or app state of charge at least every 3 months** and recharge if needed. Batteries left uncharged for more than three months are excluded from warranty coverage.
- Protect the terminals from accidental short circuit while the battery is stored or transported.

DEFINITION

Low-voltage protection

A BMS disconnect that stops discharge before the cells are damaged. Small standby loads can keep draining a battery after shutoff, so disconnect loads before storage.

⚠ CAUTION

A battery stored at very low state of charge can enter low-voltage protection and may not be recoverable if left discharged for an extended period. Prolonged storage in a fully discharged state is excluded from warranty coverage.

RETURNING TO SERVICE AFTER STORAGE

- 1 Inspect the case, terminals and cables for damage or contamination.
- 2 Confirm resting voltage and Bluetooth status.
- 3 Fully charge with compatible LiFePO₄ settings.
- 4 Verify that all connections are clean and secure before applying loads.

13 MAINTENANCE

The DP2460H needs no watering or acid service. Routine inspections keep it safe and help catch wiring problems early.

MAINTENANCE SCHEDULE

INTERVAL	ACTION
Before each trip or use	Inspect case, terminals, cables, fuses, disconnects and mounting hardware and app status.
Monthly during active use	Check terminal tightness, cable condition, charger settings, app data and resting voltage.
At least every 3 months in storage	Check state of charge and recharge if needed.
Annually	Inspect terminal hardware, cable insulation, wiring layout, protection devices, battery tray, ventilation and charger settings.
After any fault, impact, water exposure or severe vibration	Stop use, inspect carefully, record symptoms and contact Epoch support before reuse.

CLEANING AND TERMINAL MAINTENANCE

- Turn off and disconnect chargers and loads before maintenance.
- Clean the outside of the case with a dry or slightly damp cloth. Do not use solvents, abrasive cleaners, steam or pressure washing.
- Keep terminals dry and free of corrosion, salt, dirt and conductive debris.
- If a connection has overheated, replace the affected lugs, hardware and protection devices; do not simply retighten damaged parts.
- If terminal hardware is loose and shows no heat damage, tighten to 8–10 Nm (71–89 in-lb). Do not exceed the specified torque.

VOLTAGE AND BLUETOOTH CHECKS

Use a reliable multimeter to check terminal voltage and charger output. Resting voltage changes slowly on LiFePO4 batteries, so it is not a precise state-of-charge indicator. For a more complete health check, use the Bluetooth app, a shunt-based battery monitor and load testing. Record results in the maintenance log (Appendix C).

TIP

Log the app state of charge and resting voltage at the same point each time (for example, after a full charge and an hour of rest) so readings can be compared over the years.

14 TROUBLESHOOTING

Make the system safe before diagnosing: turn off chargers and loads when safe, and avoid short circuits. Stop testing if there is smoke, heat, odor, swelling, liquid, arcing or visible damage.

SYMPTOM	LIKELY CAUSES	CORRECTIVE ACTIONS
Battery will not charge	Charger off or not set for LiFePO ₄ , reverse polarity, BMS protection, battery too cold, blown fuse.	Confirm charger settings, power and polarity. Check fuses and disconnects. Warm the battery into its charge range if cold. Check app status and charger output.
Battery voltage is low	Battery discharged, parasitic load, BMS low-voltage protection.	Disconnect loads. Charge with a compatible 24V LiFePO ₄ charger. Check for parasitic draws before storage.
Low runtime	Higher load than expected, battery not fully charged, cold temperature, imbalance in a bank.	Fully charge. Measure load current. Check app SOC and wiring balance. Test one battery at a time if in a bank.
Fuse or breaker trips	Short circuit, overload, inrush current, undersized protection, damaged cable.	Disconnect loads. Inspect wiring. Confirm load current and protection rating. Replace damaged parts.
Battery or cables are hot	Loose connection, undersized cable, excessive current, poor ventilation, charger fault.	Stop use, let components cool, inspect and replace damaged parts, verify current and cable sizing and charger settings.
Charging paused in cold weather	Expected while the heater warms cells below 0 °C / 32 °F.	Leave the charger connected and allow up to 60 minutes. Contact support if charging never resumes.
Bluetooth will not connect	Bluetooth off, permission not granted, too far away, another device connected, app issue.	Enable Bluetooth and permissions (and location on some Android devices). Move closer. Restart the app or phone.
Unexpected shutoff	BMS protection: low voltage, overcurrent, short circuit, or high/low temperature.	Remove load or charger. Check app status, temperature, voltage, wiring and protection devices before reconnecting.
Water exposure or visible damage	Spray, submersion, impact, overheating or electrical fault.	Stop use. Isolate the battery away from combustibles. Dry the exterior only; do not open it. Contact Epoch support before reuse.

⚠ WARNING

Do not bypass protection devices or repeatedly reset a fuse, breaker, charger or BMS fault without identifying the cause. Repeated faults can indicate unsafe wiring or an equipment mismatch.

WHEN TO CONTACT SUPPORT

Contact Epoch Batteries support at 1-888-501-1846 or support@epochbatteries.com if a problem continues after these checks, or immediately after any impact, water intrusion, overheating or visible damage. Have the model, serial number, purchase date, installation details, charger settings, fuse or breaker rating and any app readings ready.

15 WARRANTY AND SUPPORT

The battery carries an 11-year manufacturer warranty against qualifying defects in materials and workmanship, subject to the Epoch Batteries warranty terms and claim procedures.

REGISTRATION AND COVERAGE

- **Register within 90 days of purchase** for full warranty coverage. If the battery is not registered in that time, the warranty period begins from the battery's original manufacturing date.
- Coverage applies only to the original purchaser and is not transferable. Proof of ownership is required for any claim.
- Full terms: epochbatteries.com/pages/11-year-warranty. Register at epochbatteries.com/pages/product-registration.

WARRANTY EXCLUSIONS

Coverage may be denied or voided when a failure is caused by, for example:

- Misuse, abuse, neglect, improper handling, installation, maintenance or service; an unsecured or improperly secured battery.
- Incorrect polarity, short circuit, overcurrent, loose or corroded terminals, poor crimps, undersized cables or missing overcurrent protection.
- Use outside the specified voltage, current, temperature or environmental limits, including current draw above the rated discharge, or repeated engine starting.
- Storage above 140 °F or below -40 °F, prolonged storage fully discharged, or leaving the battery uncharged for more than three months.
- Series connection, or parallel connections beyond the manufacturer's limits, or mixing different models, capacities, ages or chemistries in a bank.
- Water intrusion, submersion, pressure washing, impact, fire, flood or other external causes; faults in the external electrical system.
- Unauthorized opening, modification, disassembly, repair or tampering; incompatible chargers, accessories or system components.

WARRANTY CLAIM PROCEDURE

- 1 Stop using the battery if a defect or unsafe condition is suspected.
- 2 Gather proof of purchase, model number, serial number, installation date, system configuration, charger model and a description of the issue and when it began.
- 3 Take photos of the installation, terminals, cables, fuses, charger settings and any visible damage. Record voltage, app data and charger display information if available.
- 4 Submit a request through the Warranty Portal (warranty.epochbatteries.com) or contact Epoch support. If approved for evaluation, Epoch provides an RMA number and shipping instructions.
- 5 Do not ship a battery without a valid RMA. Package it in compliance with lithium battery shipping rules, using a UN-approved lithium battery box where required.

SUPPORT

Phone	1-888-501-1846
Email	support@epochbatteries.com
Website	EpochBatteries.com
Warranty portal	warranty.epochbatteries.com

A GLOSSARY

Active balancing

A BMS function that moves charge between cells to keep their voltages matched across the whole state-of-charge range, not only at full charge.

Absorption

The charging stage that holds a set voltage (28.4–28.8 V for this model) while current tapers as the battery fills.

Ampacity

The maximum current a conductor can carry continuously without exceeding its temperature rating; it depends on size, insulation and installation.

Ampere-hour (Ah)

A measure of charge capacity. In principle, a 60 Ah battery can supply 5 A for 10 hours or 60 A for 1 hour under rated conditions.

BMS (battery management system)

Electronics inside the battery that monitor cell voltage, current and temperature and disconnect the battery to protect the cells.

Bulk

The constant-current charging stage, before the absorption voltage is reached.

Busbar

A solid conductor bar that gives several cables a common, low-resistance connection point.

C-rate

Current expressed relative to capacity. For this battery $1C = 60\text{ A}$, $0.5C = 30\text{ A}$ and $0.2C = 12\text{ A}$.

Cranking battery

A starting battery designed to deliver very high current for a few seconds to start an engine. This model is not cranking-rated.

Cycle life

The number of charge–discharge cycles a battery delivers before its capacity falls to a defined end-of-life level under stated test conditions.

Deep-cycle battery

A battery designed for steady current over long periods and for repeated deep discharge and recharge.

Depth of discharge (DoD)

How much of the capacity has been used, as a percentage: 100% minus state of charge.

Equalization

A controlled overcharge used on some lead-acid batteries. It must be disabled for LiFePO₄.

Float

A lower holding voltage after charging. LiFePO₄ does not need float; turning it off is preferred where the charger allows.

Inrush current

A brief current spike when a device such as an inverter is first connected and its internal capacitors charge.

IP67

An IEC 60529 enclosure rating: dust-tight (6) and protected against temporary immersion up to 1 m for 30 minutes (7). Not rated for water jets or pressure washing.

kWh / Wh

Units of energy. Energy = voltage × amp-hours: 25.6 V × 60 Ah = 1536 Wh = 1.54 kWh.

LiFePO4

Lithium iron phosphate, a lithium-ion chemistry known for thermal stability and long cycle life; 3.2 V nominal per cell.

Nominal voltage

The typical average voltage during discharge: 25.6 V for 8 LiFePO4 cells in series.

Parallel connection

Positive to positive and negative to negative. Capacity adds; voltage stays the same.

Parasitic load

A small continuous draw from connected devices that stay powered in standby, such as clocks, alarms or monitors.

Pre-charge

Limiting inrush current by charging an inverter's capacitors through a resistor before closing the main connection.

Re-bulk

The voltage at which a charger restarts a full charge cycle (26.4 V for this model).

RMA

Return merchandise authorization: the approval number required before a product is shipped to Epoch.

Self-heating

An internal heater that warms the cells before charging in cold weather. On this model it runs only while a charger is connected.

Series connection

Positive of one battery to negative of the next. Voltage adds; capacity stays the same. Not approved for this model.

State of charge (SOC)

The estimated remaining energy as a percentage of full.

Temperature compensation

A charger feature that changes voltage with temperature for lead-acid batteries. Set to 0 / disabled for LiFePO4.

UN 38.3

The United Nations test standard for the safe transport of lithium batteries.

Voltage drop

Voltage lost in cables and connections as current flows; excessive drop causes heat and low voltage at the load.

B COMMISSIONING RECORD

Complete this record at installation. Keep it with the battery for support, maintenance and warranty documentation.

Battery model / SKU	DP2460H
Serial number(s)	
Purchase date	
Registration date	
Installation date	
Installer / owner	
Application	
System voltage	
Number of batteries and configuration	
Initial resting voltage	
Initial state of charge (app)	
Charger model and settings	
Main fuse / breaker rating and location	
Cable gauge and length	
Terminal torque confirmed (8–10 Nm (71–89 in-lb))	
Polarity verified with multimeter	
Bluetooth app connected	
Low-temperature charge settings verified	



**POWERING ADVENTURE.
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ADVANCED LITHIUM BATTERY SYSTEMS

1-888-501-1846 · support@epochbatteries.com

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