

EP⁰CH

B A T T E R I E S



USER MANUAL

B12460 | B12300

www.epochbatteries.com

support@epochbatteries.com

888-501-1846

Updated: 09/09/23

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THANK YOU

Thank you for choosing Epoch Batteries. We greatly appreciate your support. Our team works diligently behind the scenes to develop advanced battery systems and provide top-notch service for our customers. Please do not hesitate to reach out to us anytime. The hard work and dedication of our staff along with the support and feedback of our customers, community members, collaborators, industry partners, and ambassadors – allow us to deliver exceptional products at competitive prices with unrivaled support. Thanks again for giving us your vote of confidence.

Sincerely,



support@epochbatteries.com

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Literature updates will be published on our website and apps.

SAFETY INFORMATION

Precautions

Failure to follow these instructions / guidelines can result in property damage, personal injury, or worse.

Please read the following information carefully before installation and keep available for future reference:

- Do not use if any components are damaged. If damaged upon arrival, please contact vendor.
- Do not attempt to charge or discharge the battery in climates exceeding battery specifications.
- Do not connect the battery to any batteries with different specifications or chemistry.
- Do not place conductive materials near battery terminals or connections.
 - The area surrounding the battery should be kept clear from debris.
- Do not operate the battery near fire or flammable / explosive materials.
- Do not disassemble or modify the battery.
- Do not float / trickle charge the battery.

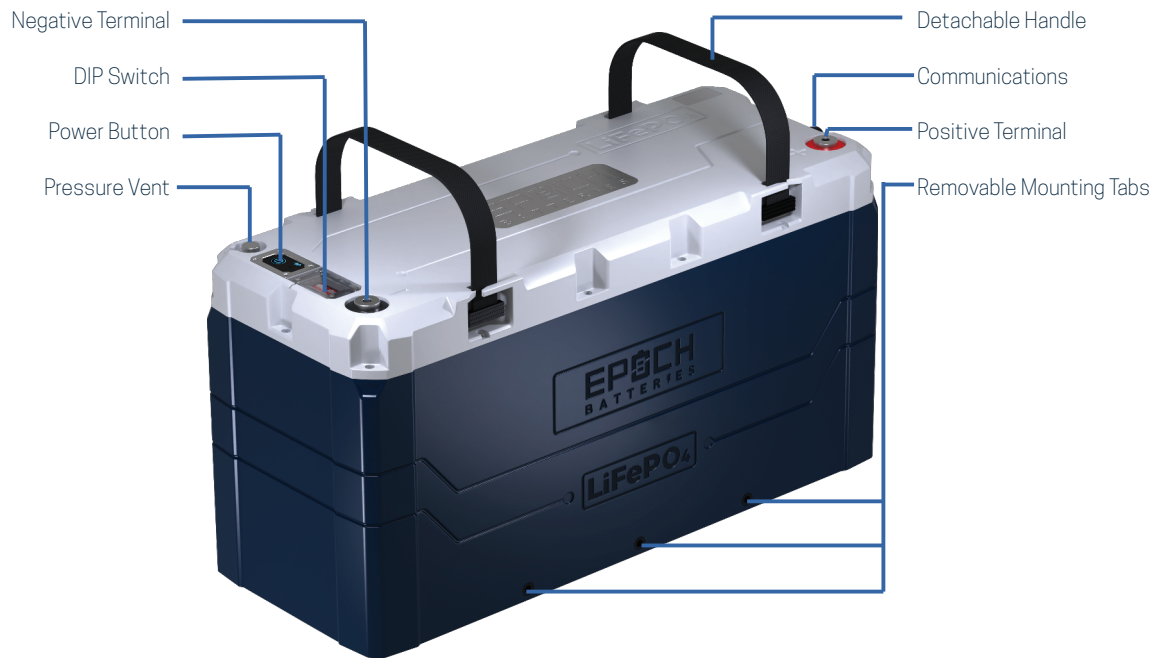
Disclaimers

- Buyer is responsible for any damages resulting from the mishandling or misuse of our products, and/or failure to follow the safety guidelines.
- Mishandling and/or misuse of the products may void warranty.

Disposal & Recycling

- Ensure that batteries are disposed of properly, in accordance with laws and regulations in your area.
- This product contains lithium batteries and other recyclable materials.
- We strongly encourage our customers to recycle retired batteries.
 - For more information, please contact the number below:

PRODUCT OVERVIEW



Key Features

- Lithium Iron Phosphate (LiFePO₄) chemistry. Exceptionally stable & maintenance-free, with high cycle life.
- Bluetooth communications & app to monitor battery performance in real-time, view historical data, documentation, and quick access to contact information.
- CAN bus communications with 3rd party compatibility.
- Detachable mounting tabs, for secure mounting to a wider variety of surfaces.

Safety Features

- Custom Battery Management System (BMS) with automatic cell balancing, high/low current protection, high/low voltage protection, high/low temperature protection, short circuit protection, and more.
- IP67 rated dust and water resistance. Fully submersible for up to 30 seconds in 1 meter of water.
- UL94 Grade V-0 fireproof. Case material designed to self-extinguish within 10 seconds.
- Shock and vibration resistance protects components in harsh / demanding conditions.
- Pressure vent to release pressure accumulated during high current usage.
- Internal heating allows for safe charging in freezing conditions.

OPERATION

Power:

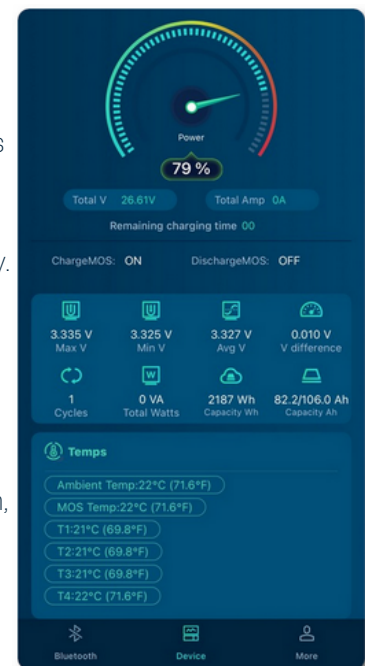
- The batteries are powered on and off manually via the power button.
 - Press and hold power button until blue LED illuminates.
- The battery must be powered on to accept charge.
- It is recommended to power off before placing in storage.
- When left powered on, the battery will enter a low-power state after 12 hours without load.
 - Applying a 5A or greater load to the battery (charging or discharging) will exit this state.

Charging:

- Ensure battery power is on before charging.
- Charging source must be optimized for lithium and have at least a 5A output.
- If fully depleted: connect charging source, wait 2-3 minutes, press and hold power button until blue light illuminates.

Bluetooth & App:

- Ensure battery power is on before connecting.
- Ensure Bluetooth is enabled on your mobile device.
 - Android devices running Android 10+ will need to have location services enabled for fine Bluetooth scanning.
- Download our app from the QR Code below or via:
 - Searching “Epoch Batteries” or “Epoch Li-Ion” on App Store / Google Play.
 - Links to a posted on our website.
- Once installed, launch the app and grant permission to access Bluetooth if prompted.
- Select battery from list of Bluetooth devices.
 - Once connected, device details (shown right) will open automatically.
- Select “More” on the bottom-right to access historical data, documentation, and contact information.



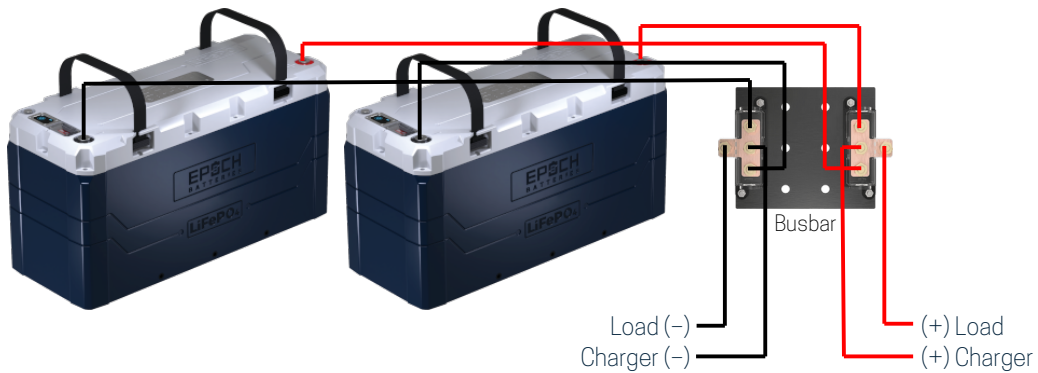
CONFIGURATION

Batteries need to be fully charged and powered off before establishing any of the connections listed below.

Parallel

When connecting batteries in parallel, it is highly recommended to connect the batteries via busbar (for energy distribution and balancing). Up to four batteries can be connected in parallel.

- Ensure each battery is fully charged and powered off prior to establishing busbar connections.
- Connect positive terminals to positive busbar and negative terminals to negative busbar.
- Each battery should have its own busbar post with no shared connections (charger and load on separate posts).



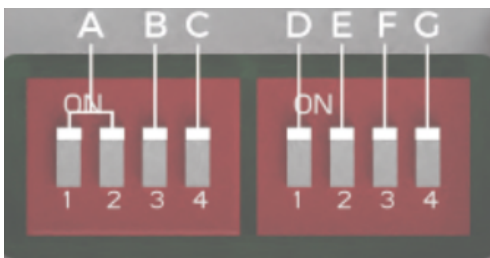
Series

Up to four batteries can be connected in series. When connecting in series:

- Ensure each battery is fully charged and powered off prior to establishing connections.
- Connect the positive terminal of one battery to the negative terminal of another.



DIP Switch



- A) Battery address (0 = On / 1 = Off)
 - 11 = Host
 - 01 = Slave 1
 - 10 = Slave 2
 - 00 = Slave 3
- B) Series / Parallel (On = Parallel / Off = Series)
- C) Off = End of Bank
- D) Reserved
- E) Reserved
- F) Inverter Termination Resistor (On = Disabled / Off = Enabled)
- G) CAN Termination Resistor (On = Disabled / Off = Enabled)

SPECIFICATIONS

Battery

Model	B12300	B12460
Nominal Voltage	12.8V	12.8V
Maximum Voltage	14.6V	14.6V
Minimum Voltage	10V	10V
Nominal Capacity	300Ah	460Ah
Stored Energy	3840Wh	5888Wh
Life Cycles	>3000	>3000
Continuous Charge Current	150A	230A
Continuous Discharge Current	300A	300A
Max Discharge Current	500A (30s)	500A (30s)
Max Self-Discharge	3%/mo	3%/mo
Charge Temperature	32°~131°F (0°~55°C)	32°~131°F (0°~55°C)
Discharge Temperature	-4°~131°F (-20~55°C)	-4°~131°F (-20~55°C)
Storage Temperature (1mo)	-4~113°F (-20~45°C)	-4~113°F (-20~45°C)
Storage Temperature (1yr)	32~95°F (0~35°C)	32~95°F (0~35°C)
Case Material	PC+ABS UL94 V-0	PC+ABS UL94 V-0
Weight	75lbs (34kg)	97lbs (44kg)
Dimensions	16.7" × 8.7" × 11.8"	20.9" × 8.7" × 12.1"
Ingress Protection	IP67	IP67
Series Connections	4	4
Parallel Connections	4	4

BMS

Self-discharge Current (Powered On)	<30mA	Discharging Overcurrent Protection Delay	1000ms
Self-discharge Current (Powered Off)	<30μA	Short Circuit Protection Current	1500A @ 4000μs
Overcharging Protection Activation	3.65±0.025V	Charging High Temperature Protection	55°C (131°F)
Overcharging Protection Release	3.31±0.025V	Charging High Temperature Release	50°C (122°F)
Over-discharging Protection Activation	2.7±0.05V	Charging Low Temperature Protection	0°C (32°F)
Over-discharging Protection Release	3.0±0.05V	Charging Low Temperature Release	5°C (41°F)
Charging Overcurrent Protection Current	300A±10%	Discharging High Temperature Protection	60°C (140°F)
Charging Overcurrent Protection Delay	1000ms	Discharging High Temperature Release	55°C (131°F)
Charging Overcurrent Protection Release	1min	Discharging Low Temperature Protection	-20°C (-4°F)
Discharging Overcurrent Protection Current	600±22A	Discharging Low Temperature Release	-10°C (14°F)

WARRANTY

Registration

Must be registered at <https://www.epochbatteries.com/pages/product-registration> within 60 days of purchase to receive full warranty coverage. Any Epoch Batteries system not registered within 60 days from date of purchase shall be covered by the conditions of our warranty policy for a period of one (1) year from date of purchase. This warranty is extended to the original purchaser only and is non-transferable.

Exclusions

- Damage due to being unsecured or insufficiently secured
- Improper installation, use, maintenance, or service
- Loose battery terminal connections
- Reverse polarity connections
- Inappropriate storage conditions as defined by Battery Owner's Manual including but not limited to, exposure to extreme ambient temperatures above 140°F or below -40°F, fire, or water submersion, and/or storing Battery in a completely discharged state
- Any short circuit caused by accidental, intentional, or inadvertent connection of the positive and negative terminals
- Damage caused by impact, accident, collision, or drop
- Under/over charging the Battery as defined in its respective Battery Owner's Manual
- Use with other third-party product(s) which fail
- High resistance as a result of corroded terminals, poor crimps, or insufficient cable size
- Battery that fails as a result of a faulty electrical system
- Battery that has been opened, modified or tampered with in any way.
- Battery that was used for applications other than which it was designed and intended for, including repeated engine starting, or drawing more amps than the battery is rated to continually discharge in its respective specifications
- Battery that has not been charged for over 1 year (batteries need to be charged periodically to maintain Battery cell health)
- Battery that has been used in a commercial application where it is cycled to more than 80% depth of discharge repeatedly within 24 hour periods.

For additional information, please visit: <https://www.epochbatteries.com/pages/11-year-warranty>