EPOCH BATTERIES

TECHNICAL DATA SHEET
REVISION V01
OCTOBER 2026 · FIRST RELEASE

ESSENTIAL SERIES | 48V | HEATED | VICTRON CAN

48V 125Ah LiFePO4 BATTERY

Heated 48V LiFePO4 battery with Bluetooth, RS485 battery linking and Victron CAN communication for off-grid, solar, RV, marine and golf-cart power.



MODEL **48125A-COMM**

MASTER RATINGS

Single source for nominal voltage, capacity, stored energy and current ratings. Ratings at 25 °C.

51.2V NOMINAL VOLTAGE	**125Ah** NOMINAL CAPACITY	**6.40kWh** STORED ENERGY (6,400 WH)	**150A** CONTINUOUS DISCHARGE
150A CONTINUOUS CHARGE (MAX.)	**300A** PEAK DISCHARGE, 10 S	**15P** MAX. PARALLEL · NO SERIES	**IP54** DUST-PROTECTED, SPLASH RESISTANT

LOAD & INSTALLATION NOTICE

The 300 A rating is a peak of up to 10 seconds only. Design continuous loads, cables and fuses around the 150 A continuous limit. Parallel expansion only, up to 15 batteries; do not wire in series. Use chargers, inverters, fuses and switches rated for the 48V system voltage (up to 58.0 V while charging).

HEATED 48V DEEP CYCLE · EPOCH LI-ION APP · SELF-HEATING · IP54 RATED · 7,000+ CYCLES · 11-YEAR WARRANTY

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HEATED 48V LiFePO4 POWER

ESSENTIAL SERIES · MODEL 48125A-COMM

The Epoch 48V 125Ah Essential Series stores 6.40 kWh in one 51.2 V battery. It delivers and accepts up to 150 A continuously, supplies 300 A for up to 10 seconds for start-up surges, heats itself for charging in freezing weather, balances its 16 cells with a 2 A active balancer, and reports to the Epoch Li-Ion app over Bluetooth and to Victron GX devices over CAN. Up to 15 batteries can be connected in parallel.

LiFePO4 (lithium iron phosphate) chemistry gives a flat voltage curve, long cycle life and maintenance-free service compared with lead-acid batteries. The built-in battery management system (BMS) monitors the cells and disconnects them when operating limits are exceeded.

PRIMARY USE

48V energy storage for off-grid and solar systems, RV, van and boat house power, golf carts and backup power, installed in a dry, protected location.

HOW TO READ THIS SHEET

Ratings are at 25 °C unless noted. Figures marked **Model-specific data** plot this model's published ratings; figures marked **Conceptual diagram** explain principles and are not installation instructions.

KEY FEATURES

125 Ah / 6.40 kWh
48V energy storage in one 25.2 × 9.65 × 8.66 in case, 110 lb.

Self-heating
Charge current powers the heater at 0 °C; charging resumes at 5 °C.

Victron CAN comms
Reports to a Cerbo GX or Ekrano GX; banks link through RS485 ports.

150 A continuous
Charge and discharge; 300 A for up to 10 s for start-up surges.

Bluetooth monitoring
Epoch Li-Ion app: state of charge, voltage, current, temperature and protection status.

2 A active balancing
Engages when cell voltages differ by more than 0.015 V.

COMPATIBLE APPLICATIONS

Off-grid and solar
Cabins, homes and solar banks with 48V inverter chargers.

RV and van
48V house power in protected interior bays.

Boats
48V house power in dry, protected compartments.

Golf carts
Controllers within 150 A continuous, 300 A for 10 s.

Victron systems
Cerbo GX / Ekrano GX with CAN and DVCC.

Large banks
Up to 15 batteries in parallel (96 kWh).

PRODUCT IDENTIFICATION	
Model / SKU	48125A-COMM
Battery type	Heated 48V deep-cycle LiFePO4 battery with Bluetooth, RS485 / CAN and Victron communication
Chemistry	LiFePO4 (lithium iron phosphate)
Cells	Grade-A prismatic LiFePO4, 16S1P
Victron comms	Yes — CAN-bus to Victron GX (DVCC)
Bluetooth	Yes — Epoch Li-Ion app, iOS and Android
Self-heating	Yes — internal heating pads
Warranty	11-year manufacturer warranty

INSTALLATION NOTICE

48V battery: use chargers, inverters, fuses and switches rated for a 48V (51.2 V nominal) LiFePO4 system. Parallel expansion only, up to 15 batteries — do not wire in series. 300 A is a 10-second peak only: design continuous loads for 150 A. IP54: install in a dry, protected location.

ELECTRICAL SPECIFICATIONS

VOLTAGE, CAPACITY AND CURRENT RATINGS

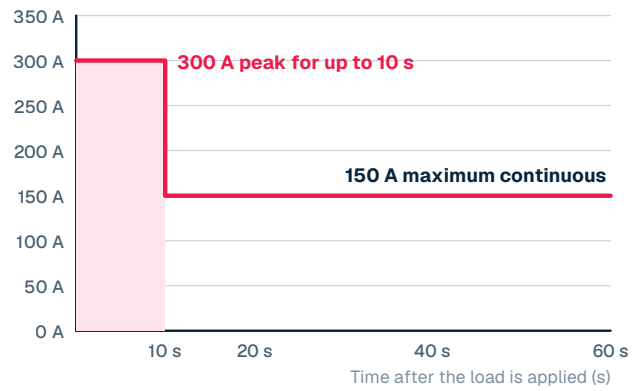
Ratings at 25 °C unless otherwise noted. Verify charger programming, cable ampacity, fuse ratings and environmental limits before final installation.

VOLTAGE AND CAPACITY	
Nominal voltage	51.2 V
Nominal capacity	125 Ah
Stored energy	6.40 kWh (6,400 Wh)
Operating voltage range	41.6–58.0 V
Maximum charge voltage	58.0 V
Cell configuration	16S1P LiFePO4
Cycle life	7,000+ cycles
Cell balancing	2 A active, above 0.015 V cell difference
Current measurement	Integrated shunt, 0.2 A accuracy (discharge)
Communication	Bluetooth; RS485 link ports; CAN to Victron GX

CURRENT RATINGS	
Maximum continuous discharge	150 A
Peak discharge	300 A for up to 10 seconds
Maximum continuous charge	150 A
Recommended charge current	62.5 A (up to 50% of capacity)
Series connection	Not approved for this model
Parallel connection	Maximum 15 batteries
Maximum configuration	15P, matched batteries and rated equipment

ALLOWABLE DISCHARGE CURRENT

MODEL-SPECIFIC DATA



The 300 A rating is for short start-up surges from inverters, motors and compressors, lasting up to 10 seconds. Any load that lasts longer than 10 seconds must stay at or below 150 A.

C-RATE REFERENCE

C-RATE	CURRENT	MEANING FOR THIS BATTERY
0.2C	25 A	Light, steady loads; typical rate for capacity planning
0.5C	62.5 A	Recommended charge current
1.2C	150 A	Maximum continuous discharge and charge
2.4C	300 A	Peak discharge, up to 10 seconds only

DEFINITION · C-RATE

C-rate expresses current relative to capacity. For a 125 Ah battery, 1C = 125 A and 0.5C = 62.5 A. Lower rates generally mean less heat and voltage drop.

ENERGY CHECK

51.2 V × 125 Ah

= 6,400 Wh = 6.40 kWh nominal

PLANNING ENERGY (80%)

≈ 5,120 Wh

Used for runtime estimates in this sheet

FULL CONTINUOUS LOAD

150 A ≈ 7,680 W

≈ 0.7 h at planning energy

MECHANICAL & ENVIRONMENTAL

DIMENSIONS, WEIGHT AND TEMPERATURE LIMITS

OUTLINE DIMENSIONS

MODEL-SPECIFIC DATA

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



DEFINITION · IP54

Under IEC 60529, the first digit rates protection against solids and the second against water. **5** = dust-protected; **4** = protected against splashing water from any direction. IP54 is not waterproof: do not submerge, pressure wash, or install where standing water can collect.

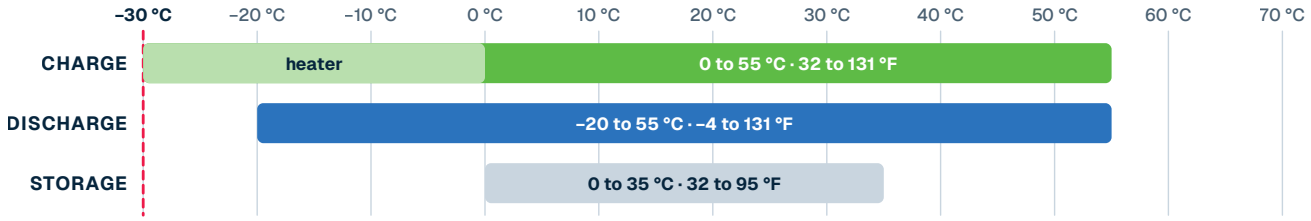
Overall: 25.2 in L × 9.65 in W × 8.66 in H (640 × 245 × 220 mm). Plan clearance for terminal hardware, cable bend radius, terminal covers, ventilation and service access.

MECHANICAL	
Dimensions (L × W × H)	25.2 × 9.65 × 8.66 in (640 × 245 × 220 mm)
Weight	110 lb / 50 kg
Case	ABS plastic
Terminals	Threaded inserts, red (+) / black (–)
Terminal torque	Use bolts that match the terminal thread and tighten securely; do not over-tighten
Mounting orientation	Upright, unless Epoch documentation for this model allows otherwise
Enclosure	IP54 — dust-protected, splash resistant; not submersible

TEMPERATURE AND ENVIRONMENT	
Charge temperature	–30 to 55 °C / –22 to 131 °F
Discharge temperature	–20 to 55 °C / –4 to 131 °F
Storage temperature	0 to 35 °C / 32 to 95 °F, up to 1 year; –20 to 45 °C (–4 to 113 °F) for up to 1 month
Self-heating	Yes — internal heating pads
Low-temperature charge protection	Heater on at 0 °C; charging resumes at 5 °C
High / low temperature protection	BMS disconnect outside the operating range

TEMPERATURE OPERATING WINDOWS

MODEL-SPECIFIC DATA



Charging from –30 °C uses the internal heater (light green): below 0 °C it warms the cells with a charger connected; charging resumes above 5 °C.

Storage bar shows the recommended storage range (up to 1 year; –20 to 45 °C (–4 to 113 °F) for up to 1 month).

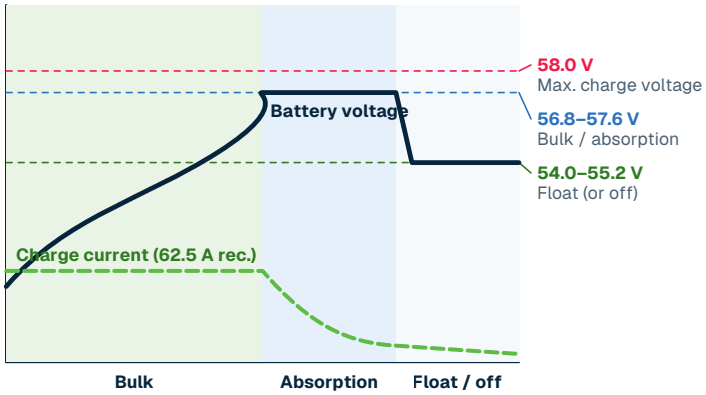
RECOMMENDED CHARGING SETTINGS

PROGRAM EVERY CHARGING SOURCE FOR 48V LIFEPO4

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

LIFEPO4 CHARGE PROFILE

CONCEPTUAL DIAGRAM



Bulk = constant current · Absorption = constant voltage

Shape only. Bulk charges at constant current until the absorption voltage is reached; absorption holds that voltage while current tapers.

SETTING · RECOMMENDED VALUE	
Maximum continuous charge	150 A
Recommended charge current	Up to 62.5 A (50% of capacity)
Bulk / absorption	56.8–57.6 V
Float	54.0–55.2 V; off preferred where supported
Equalization	Disabled
Temperature compensation	0 mV/°C (disabled)
Charge temperature	–30 to 55 °C / –22 to 131 °F

LOW-TEMPERATURE CHARGE PROTECTION

CONCEPTUAL DIAGRAM

1. Charger connected
A charger supplying at least 0.5 A is connected.

→

2. Cells at 0 °C
The BMS stops charging and sends the charge current to the heater.

→

3. Heater warms cells
Powered only by the charger, never by stored energy.

→

4. At 5 °C: charge
Normal charging resumes automatically.

COMPATIBLE CHARGING SOURCES

- ✓ 48V LiFePO4 battery chargers, including the Epoch 48V 15A Lithium Battery Charger.
- ✓ Solar charge controllers (MPPT or PWM) with a programmable or LiFePO4 profile.
- ✓ DC-to-DC chargers for alternator charging.
- ✓ Converters and inverter chargers that can be set to the values above.
- ✓ Victron systems with a Cerbo or Ekrano GX: CAN comms let the battery set charge limits through DVCC.

CHARGING NOTICES

- This model has internal heating. When the cells reach 0 °C / 32 °F, the BMS stops charging and uses the incoming charge current to power the internal heater. Charging resumes automatically when the cells reach 5 °C / 41 °F. The heater runs only while a charger is connected and supplying at least 0.5 A; it does not use the battery's stored energy.
- Do not use lead-acid equalization, desulfation or repair modes.
- Combined current from all sources must not exceed 150 A per battery.
- If a charger cannot be fully programmed, confirm its bulk/absorption voltage is within range and equalization and temperature compensation are disabled.

PROTECTION, MONITORING & RUNTIME

WHAT THE BMS DOES AND HOW LONG THE BATTERY WILL RUN

BMS PROTECTION	FUNCTION
Overcharge	Stops charging to protect the cells
Over-discharge	Disconnects the load before the cells are damaged
Over-current	Protects against loads above the ratings
Short circuit	Rapid protective cutoff
Over-temperature	Disconnects when the battery is too hot
Low-temperature charge	Charging stops at 0 °C; charge current powers the heater; charging resumes at 5 °C
Cell balancing	2 A active balancer; engages when cell voltages differ by more than 0.015 V
Current measurement	Integrated shunt, 0.2 A accuracy on discharge, for state-of-charge calculation

Operating voltage range: 41.6–58.0 V. A BMS disconnect is a protective event: find and correct the cause before reconnecting. The BMS is not a substitute for correctly sized fuses or breakers.

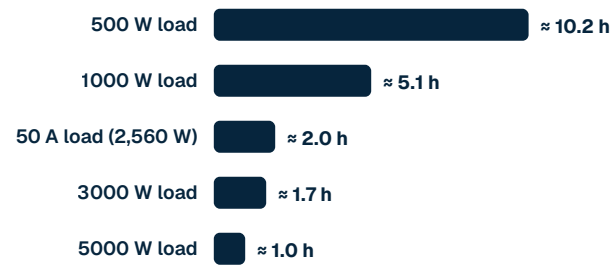
EPOCH LI-ION READING	WHAT IT SHOWS
State of charge	Remaining capacity as a percentage
Voltage and current	Battery voltage and charge or discharge current
Temperature	Battery temperature readings
Protection status	Active BMS protections and alarms
Charge and discharge switches	Turn charging and discharging on or off independently

Bluetooth range, displayed data and app features may vary by device, app version and battery production revision. Use app data as a monitoring aid, not a substitute for safe wiring and correct charger settings.

RUNTIME PLANNING

ESTIMATED RUNTIME

MODEL-SPECIFIC DATA



Runtime (h) = 5,120 Wh ÷ load (W). DC loads at 25 °C on a new, fully charged battery; real results vary.

LOAD	ESTIMATED RUNTIME
500 W load	≈ 10.2 h
1000 W load	≈ 5.1 h
50 A load (2,560 W)	≈ 2.0 h
3000 W load	≈ 1.7 h
5000 W load	≈ 1.0 h

FORMULA

Runtime (h) = usable Wh ÷ load (W)
80% planning energy = 5,120 Wh per battery. For a parallel bank, multiply by the number of batteries.

PLANNING NOTE

Runtime figures are simplified estimates. Inverter and converter losses, cabling, temperature, battery age, BMS limits, duty cycle and real load behavior change real-world results. For AC loads through an inverter, include the inverter's own consumption and efficiency from its manufacturer.

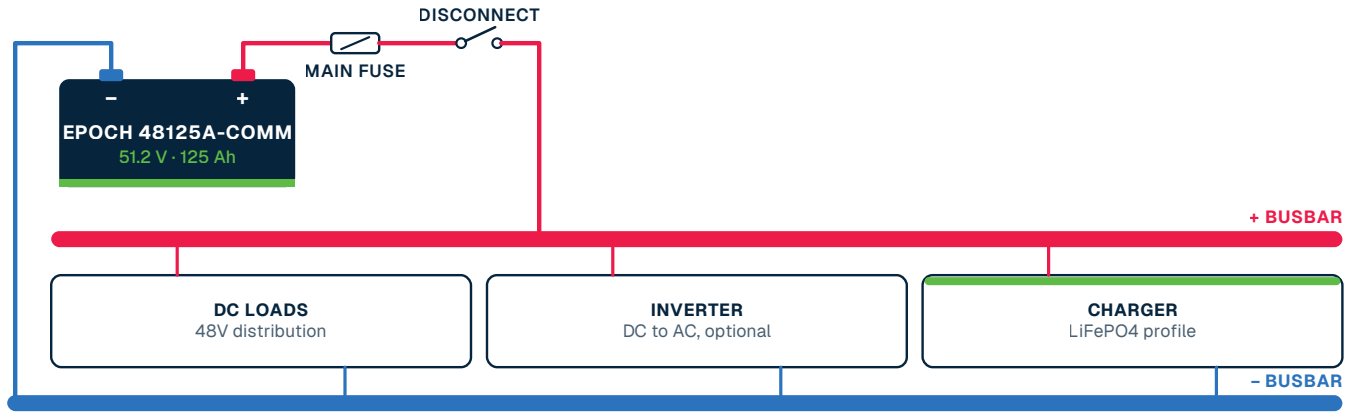
SYSTEM CONFIGURATIONS

SINGLE BATTERY AND PARALLEL BANKS — NO SERIES

The diagrams in this sheet are vector schematics for system planning. Final designs must be reviewed for cable ampacity, fuse coordination, voltage drop, environmental conditions and the electrical or marine codes that apply.

SINGLE-BATTERY 48V SYSTEM

CONCEPTUAL DIAGRAM



Place the main fuse as close as practical to the battery positive terminal. Fuse each load branch for its conductor.

Positive (+) Negative (–)

PARALLEL	SYSTEM	NOMINAL V	CAPACITY	ENERGY
1P	48V	51.2 V	125 Ah	6.40 kWh
2P	48V	51.2 V	250 Ah	12.80 kWh
4P	48V	51.2 V	500 Ah	25.60 kWh
8P	48V	51.2 V	1,000 Ah	51.20 kWh
15P	48V	51.2 V	1,875 Ah	96.00 kWh

⚠ WARNING

No series wiring. Series connection is not approved for 48125A-COMM unless Epoch provides written model-specific guidance. Expand capacity with up to 15 matched batteries in parallel.

BANKING RULES

- Use only matched 48125A-COMM batteries of the same age, condition and state of charge.
- Fully charge each battery before connecting it into a bank.
- Fuse each battery and verify cable ampacity.
- Use equipment rated for the full bank voltage and current.

RECOMMENDED CHARGE CURRENT FOR BANKS

Recommended charge current is up to 50% of the battery or bank capacity:

- 1 battery (125 Ah): 62.5 A
- 2P (250 Ah): 125 A · 4P (500 Ah): 250 A · 8P (1,000 Ah): 500 A · 15P (1,875 Ah): 937.5 A

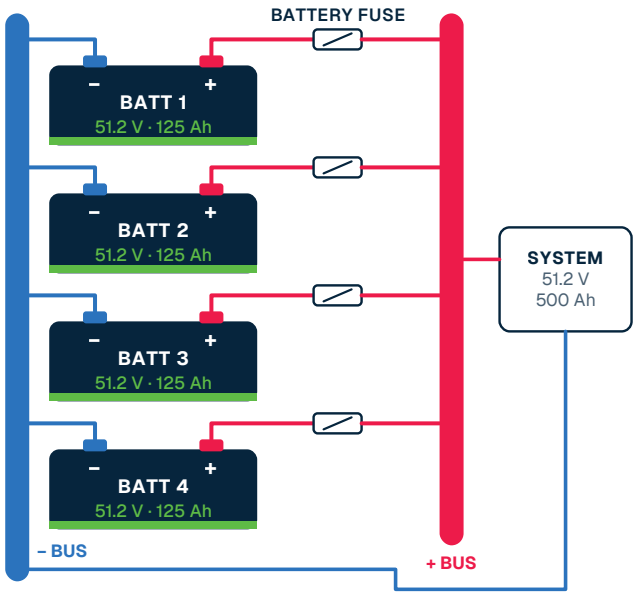
Maximum configuration 15P (15 batteries): 51.2 V nominal, 1,875 Ah, 96.00 kWh.

PARALLEL BANKS & DATA LINK

PARALLEL EXPANSION AND VICTRON CAN NETWORKING

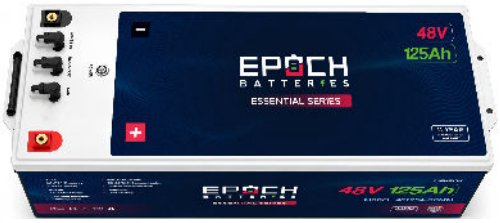
PARALLEL BANK — UP TO 15P

CONCEPTUAL DIAGRAM



4 of up to 15 batteries shown. Equal cable length and gauge from every battery to the busbars. Fuse each battery as the system design requires.

Parallel wiring adds capacity; voltage stays 51.2 V. Use identical batteries, matched cable lengths, branch fusing and common busbars.



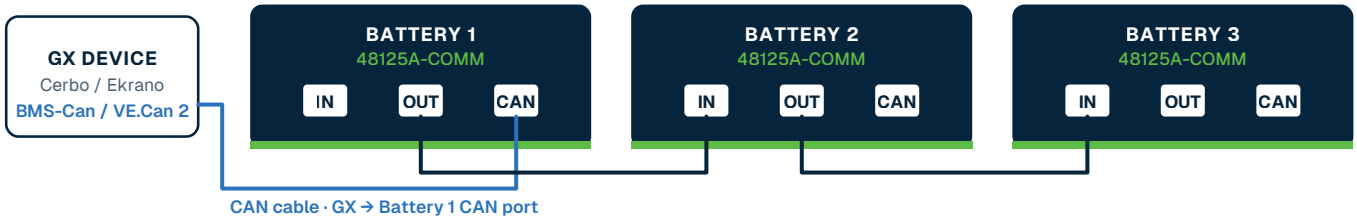
Top panel: RS485-IN / RS485-OUT battery-link ports, CAN port and POWER button (product render).

⚠ WARNING

Do not wire 48125A-COMM batteries in series to build higher-voltage systems unless Epoch provides written model-specific approval. Do not hot-connect batteries; confirm charger settings and overcurrent protection before energizing.

VICTRON CAN DAISY CHAIN

CONCEPTUAL DIAGRAM



Power wiring (busbars and fuses) is not shown. Only Battery 1's CAN port is connected.

The batteries select a master automatically, and the GX shows the linked bank as one battery.

SAFETY, STORAGE & COMMISSIONING

SUMMARY — READ THE USER MANUAL FOR COMPLETE INSTRUCTIONS

This page summarizes 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 charging with equalization disabled.
- ✓ Route cables away from sharp edges, hot surfaces, abrasion points and moving parts.
- ✓ Install appropriate fuses or circuit breakers and verify their voltage ratings.
- ✓ Secure the battery upright in a dry, ventilated, accessible location.
- ✓ Confirm polarity with a multimeter.

STORAGE & HANDLING

- ✓ Store in a cool, dry place at 0 to 35 °C / 32 to 95 °F, protected from sunlight, rain and impact.
- ✓ For long-term storage, keep about 30–50% state of charge and disconnect loads.
- ✓ Check state of charge at least every 3 months and recharge as needed.
- ✓ Do not submerge, pressure wash, short-circuit, disassemble, crush or incinerate.
- ✓ Keep away from children, pets, conductive tools, flames and incompatible batteries.

COMPLIANCE / LISTING	DETAIL
Compliance marks	CE, RoHS, WEEE
Transport	UN 38.3, Class 9
Enclosure	IP54 (IEC 60529)
Warranty	11-year manufacturer warranty; register within 90 days of purchase
Protection	Smart BMS: overcharge, over-discharge, over-current, short circuit, high/low temperature

CRITICAL WARNINGS

- Never reverse polarity or connect the positive and negative terminals together with a conductor.
- Stop use and disconnect if the battery emits odor, becomes abnormally hot, is damaged, deformed or submerged, or behaves abnormally.
- Never open the case: cells and BMS are not user-serviceable.
- For emergencies, follow lithium battery fire-response procedures and contact qualified personnel.

REVISION HISTORY

REVISION	DATE	DESCRIPTION
V01	2026-10-15	First release: user manual, technical data sheet and spec sheet for the 48125A-COMM.

Epoch Batteries
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