MANUAL AND

Installation GUIDE

Model: LFP20024LCD
24V 200AH // MAX CHARGE/
DISCHARGE CURRENT: 100A/170A

RoHS Compliant

Elker

Charging Parameters

Charging Voltage

The ideal charging voltage is between 28.4v-29.2v. for full charge and balance. The absorption mode Is not necessary, but float charge is recommended for the cells to stay balanced.

Temperature Compensation

Temperature compensation is not needed with our batteries and in some cases, may trigger the built in BMS to go into protect mode. For this reason, we recommend that temperature compensation be shut off or set to 0.

Equalization

Equalization is not recommended for our batteries. Most chargers will allow you to shut this feature off or use a setting that does not use equalization. If you cannot turn off this mode, then you will need to adjust the equalization voltage to below 28.8v

Float

The float voltage should be set at 27.6V

BMS Basic Features

All Elker batteries come with a built-in Battery Management System (BMS) that protect the cells from various situations. BMS protects against the following conditions:

High voltage: > 29.4V

If an individual cell voltage exceeds a prescribed threshold during charging, the BMS will prevent a charge current from continuing. Discharge is always allowed under this condition.

Low voltage: < 20V

If an individual cell falls below a prescribed threshold during discharge, the BMS will prevent further discharge. Although the battery is in “low-voltage disconnect” mode, it will still allow a charging current. (Note: many chargers must detect a voltage over 20v to send a charge to the battery).

High temp.: > 57°C

The BMS will not allow a charging or discharging current.

Low temp.: < -3°C

The BMS will not allow a charging current.

High Current >170A

The BMS will not allow a current that exceeds 250A (+/- 5%) Amps for 30s, or 400A (+/- 10%) for 3 seconds. After a high current disconnection, the battery will automatically reconnect after 5 seconds.

A passive balancing process is activated by the BMS at the top of each charge cycle, when the battery voltage exceeds around 27.2V. This ensures that all the cells remain at the same state of charge, which helps for pack longevity and performance.

Charging Parameters

The batteries may be mounted in any orientation. But care must be taken in connecting to the battery terminals. The positive and negative terminals are labeled and color coded (red for +, black for -).

DO NOT REVERSE POLARITY THE BATTERY AS THIS WILL DAMAGE BOTH THE BATTERY AND THE DEVICE BEING CONNECTED!!!

Parallel

Multiple LFP20024LCD may be connected in parallel to increase the current capacity of the batteries. When batteries are mounted in parallel, the voltage of the system does not change, but the current limits are additive. Two LFP20024LCD batteries mounted in parallel deliver 200A continuously and 340A for 3 seconds. Three LFP20024LCD batteries mounted in parallel can deliver 300A continuously and 510A for 3 seconds. Therefore, all cables and connections MUST be able to accommodate the high currents that can be delivered by the battery. Appropriate fuses and circuit breakers are also highly recommended to protect the components from current spikes and short circuits.

Series

Two LFP20024LCD batteries may be connected in series to increase the voltage of the system up to a 48V system. When 2 batteries are connected in series, they will form a nominal 48V system and should be charged using a bulk and absorption voltage of 57.6V, and a float voltage of 55.2V

Use wires atleast 35mm2 or 4 AWG to ensure the best efficiency and safety

Special consideration must be made for connection to devices that have a large input capacitance, because of the tendency of there devices to draw large current spikes upon initial connection to the batteries. This includes inverter/chargers that are greater than 4000 Watts in size. This applies to 12V, 24V, and 48V inverter chargers.

WHEN CONNECTING TO BATTERY TERMINALS, DO NOT FINGER TIGHTEN. ALL CONNECTIONS MUST BE TIGHTENED TO THE SPECIFICATIONS OF THE BOLT MANUFACTURER. FOR THE BOLTS INCLUDED WITH THE BATTERY, TIGHTEN USING A TORQUE WRENCH TO BETWEEN 9 AND 11 ftlbs. FAILURE TO ADEQUATELY SECURING CONNECTIONS CAN RESULT IN FIRE

Storage and maintenance

All Elker Batteries come with a built-in battery management system (BMS) that protects the cells for long-term cycling. The BMS protects against the following conditions:

Maintenance

Elker Batteries require very little maintenance if any at all. If your batteries are in series and not being charged by a multi-bank charger it is recommended that you fully charge the batteries individually once a year. This will balance out the entire battery bank to ensure the batteries will reach its expected life span. If your batteries are in parallel this is not necessary. Our BMS has a built in passive balancing system that will take care of this for you.

Storage

Storage could not be easier simply charge the batteries to at least 50% state-of-charge and disconnect from any charge or discharge

Return & Refund Policy. Thanks for shopping at Elker Solutions. If you are not entirely satisfied with your purchase, we,re here to help you.

Returns

You have 30 calendar days to return an item from the date the item shipped. To be eligible for a return, your item must be in the same condition that you received it in. Keep the orginal packeg- ing for 30 days. Your item must be in the orginal packaging. Your item needs to have the receipt or proof of purchase.

Refunds

Once we receive your item, we will inspect it and notify you that we have received your returned item. We will immediately notify you on the status of your refund after inspecting the item. If your return is approved, we will initiate a refund to your credit card (or orginal method of payment). You will receive the credit within a certain amount of days, depending on your card issuer's policies.

Specifications and Data Sheet

1. Model	**LFP20024LCD**
2. EAN / GTIN	**3830079460125**
3. Nominal Capacity	**200Ah@0.2C**
4. Nominal Voltage	**25.6v**
5. Energy	**5120Wh**
6. Cycle Life	**4000+ Cycles**
7. Self-discharge	**≤3,5 % per month at 25**
8. Internal Resistance	**≤35mΩ**
9. Charging Voltage	**28.4 - 29.2V**
10. Standby Voltage	**27V - 27.6V**
11. Discharging cut-off Voltage	**20.0v**
12. Recommended Charge Current	**80A**
13. Max. Charge Current	**100A**
14. Max. Discharge Current	**170A**
15. Max. Pulse Current	**400A(3s)**
16. Battery Managment System (BMS)	**Integrated BMS with balance function**
17. Connection options	**Series and Parallel**
18. Waterproof	**IP65**
19. Temperature range (discharge)	**-20°C ~ +60°C**
20. Temperature range (charge) *	**0°C ~ +55°C**
21. Temperature range (storage)	**20°C ~ +60°C**
22. Terminals	**M8 Included**
23. Warranty	**3 Years**
24. Weight	**36kg**
25. Battery Cells	**Prismatic CALB**
26. Casing	**Plastic**
27. Dimensions (L x W x H) in mm	**522*238*217***

Important Note!

Usage and Storage:

1. Prior to usage, examine the battery for any observable physical damage or structural abnormalities.

2. DO NOT USE the battery if its terminals are bent or broken, if it is excessively hot, wet, or if the box it arrived in has sustained severe physical or water damage that has affected the battery, if it is leaking, if its casing is loose, cracked, bloated, melted, heavily stressed, or indented. If any of these issues are detected, or if you suspect that the battery's integrity has been compromised, please contact our support team immediately for further assistance.

3. For optimal performance and to prevent damage or malfunctions, it is highly recommended that a professional or experienced individual install these battery packs. Be sure to keep an eye on battery packs during the initial charging and discharging process. Observe the temperature and performance for any physical or internal operational inconsistencies. For issues regarding operation, please contact support.

4. It is recommended that the battery pack be stored in a cool, dry, and well-ventilated space. It should not be stacked under heavy objects, exposed to open flames, high temperatures, or corrosive materials.

5. The battery should be stored in the appropriate temperature conditions as specified. The recommended storage humidity is 60±15%.

6. Store the battery at 40% - 60% capacity. Every three months while in storage, charge the battery completely, then discharge it fully, and finally recharge it back to 40% - 60% capacity again to prevent over-discharge during storage.

Terms and Conditions:

Before using this battery pack, it is important to carefully read and understand all the specifications, usage instructions, storage conditions, and warnings provided in this document. It is crucial to always follow the recommended handling and usage directions to prevent any potential issues such as malfunction, degradation, reduced capacity, overheating, explosion, or fire hazard. Customers must take responsibility for properly using and storing the battery pack as instructed in this document. If the battery pack shows signs of excessive overheating, leaking, malfunctioning, or visible damage, it should not be used and the support team should be contacted immediately for assistance. Any damages caused by the misuse of this battery, whether accidental or intentional, are not the responsibility of the manufacturer.

Contact Us

If you have any further questions, or need help with anything regarding your battery please do not hesitate to contact us.

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