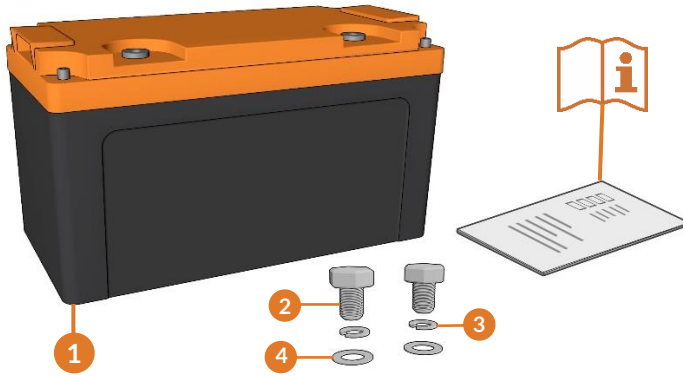




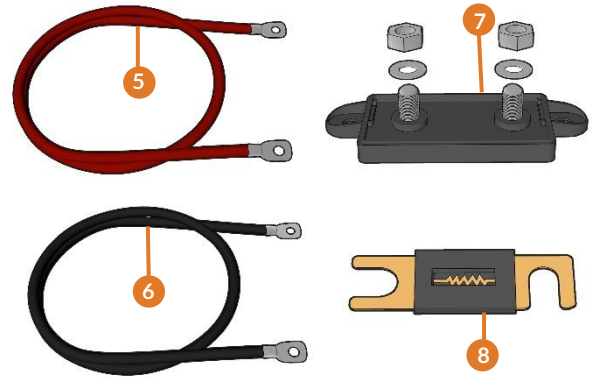
Scope of delivery



1. LIONTRON Battery
3. Spring washer

2. Screws
4. Washer

Accessories sold separately



5. Battery cable (positive)
7. Fuse holder

6. Battery cable (negative)
8. Fuse



Please refer to the operating instructions
Download under <https://liontron.com/downloads>

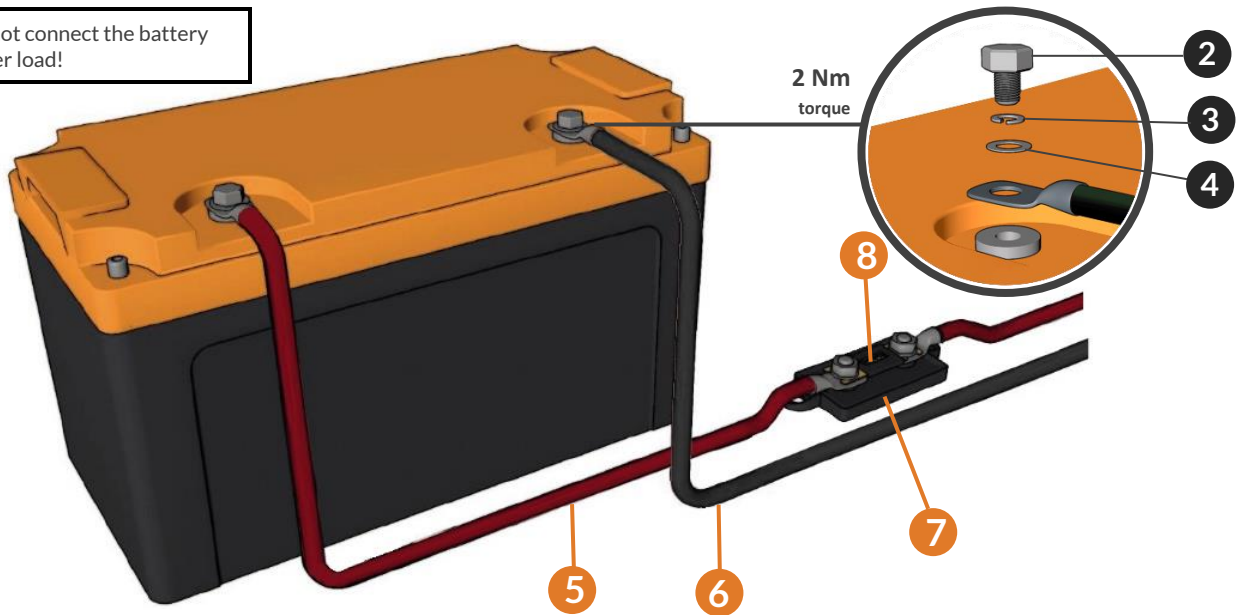


Ensure that the cable cross-section and nominal size of the fuse are correct!

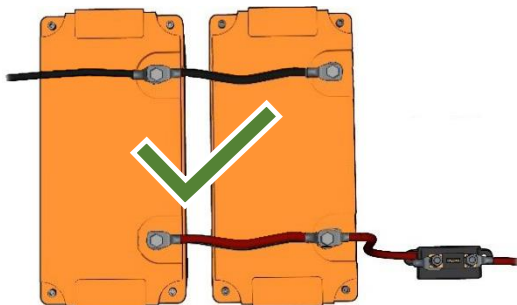
Connection example



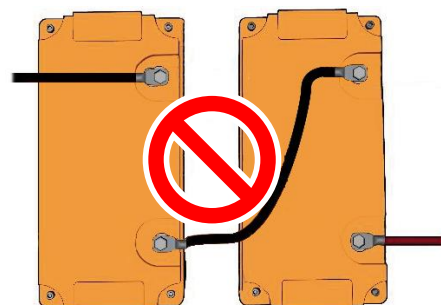
Do not connect the battery under load!



Parallel connection to increase the capacity



Do not serial connect!



Make sure the cable cross-section and cable lengths are identical when setting up the batteries in parallel connection.



The battery is not suitable for serial connection! Disregard can lead to defect!

Mounting position



Make sure the unit is properly and securely fastened and appropriate transported. In case of an accident unsecured batteries could become a projectile! Always handle lithium batteries with care.

Technical data

	12V Models	24V Models
Bulk voltage	14.2 - 14.6V	28.4 - 29.2V
Float voltage	13.5 - 13.8V	27.0 - 27.6V
Max. charging current	depends on model	depends on model
Recommended charging current	0.5C	0.5C
Equalizing voltage	0.0V	0.0V
Re-Bulk-voltage Offset	0.1V	0.1V
Absorption period	fixed	fixed
Absorption time	2 Hrs.	2 Hrs.
Equalizing current in percent	0%	0%
Max. equalizing time	2 Hrs.	2 Hrs.
Voltage when charged:	13.2V	26.4V
Time f. Charge state detection	3min	3min
Peukert-exponent	1.02	1.02
Charging efficiency	95%	95%

Errors and solutions / FAQ

Which charger is suitable for the battery?

We recommend chargers with CCCV characteristic for optimal charging of LiFePO4 batteries. The recommended charging voltage (see table) should be strictly adhered to. A lower charging voltage may result in the battery not being fully charged or the charging time may be significantly longer.

Too high charging voltage triggers the internal protection of the battery and charging is stopped. Repeated or very high overvoltages can cause a defect.

Can I continue using my charger for lead acid batteries?

Chargers for lead-acid batteries may only be used if correct charging voltage is set and no desulfation program is used. For efficient charging, we recommend chargers with a special LiFePO4 mode or professional devices where values can be adjusted to LiFePO4 batteries, such as chargers, solar charge controllers, and combination devices of the Victron Energy brand.

Can I combine the battery with a starter battery?

In principle, only batteries of same type and model should be connected in parallel mode. You should never connect a LiFePO4 battery directly to a lead-acid battery, as problems will inevitably occur due to very different charging and discharging characteristics. For combined use with a lead-acid starter battery, we recommend a suitable B2B charger (also called a charge booster). This allows optimal charging of the LiFePO4 battery by the alternator without direct connection of lead and lithium battery.

The loading process stops the app but does not show 100% yet.

The battery stops charging as soon as one of the cells has reached its maximum charge level. When charging with a very high charging current it is possible that not all cells have reached this state. The battery automatically compensates for these differences and allows charging to take place again as soon as the cells have been equalized. Particularly with new batteries or after prolonged storage, we recommend charging at a lower charging current in order to use the full capacity.

Connection via Bluetooth does not work.

For connection to the battery you need the LIONTRON App. A direct connection via the Bluetooth menu of your smartphone is not possible.

The battery does not appear in the list of available devices in the app

A battery can only be connected to one smartphone at the same time. If the battery does not appear in the list of available devices in the app, make sure another device is not already connected to the battery. Also make sure that Bluetooth is turned on. Your device must support at least Bluetooth 4.0. In some cases, reinstalling the app may help to solve problems.

Different states of charge when several batteries are in parallel connection.

Since each battery in a network calculates the charge state for itself, deviations are normal. Especially with newly connected batteries it can take some cycles until all batteries of a parallel connection have adjusted to each other. If the deviations are still serious even after several working cycles, please check the correct wiring again, as this could be an indication that batteries are not loaded equally.

Make sure the cable cross section and cable lengths are identical when connecting the batteries. Devices should be connected to the positive pole of the first battery and negative pole of the last battery to distribute the load equally on all batteries.

My new battery already shows charge / discharge cycles in the app.

In the context of quality assurance, batteries and components used are subject to regular checks before sale. Some charging and discharging cycles are completely normal and no cause for concern.



You have further questions?

help.liontron.de

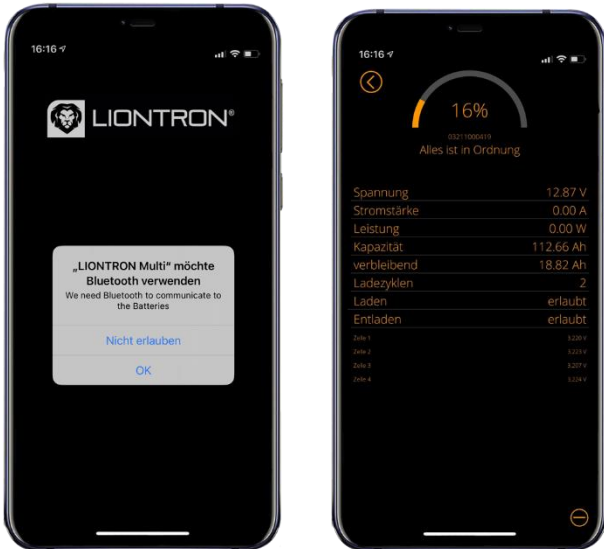


1. Installation

Scan QR-code on the left.

Alternatively, you can install the app via the Google Play Store or App Store or enter the following link in the internet browser of your smartphone:

<https://liontron.com/downloads>



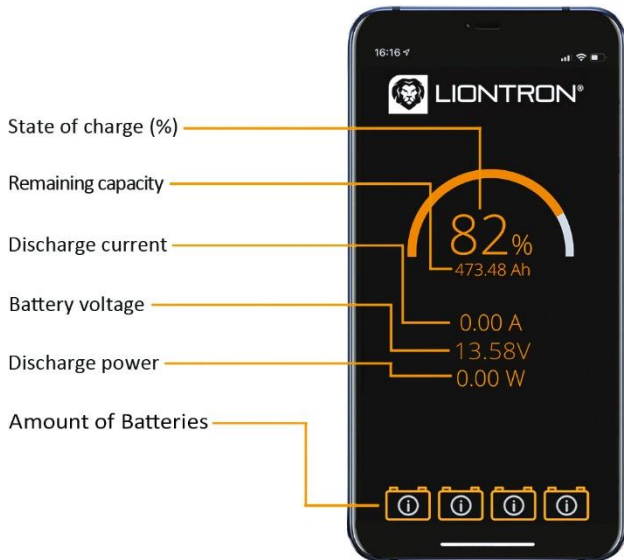
2. Connection

Open the app after successful installation. When using the app for the first time, it is necessary to allow the permission to use the location and to activate Bluetooth.

Press "Allow" or "Ok" when the corresponding message appears on your smartphone.

To connect, select the corresponding battery in the list by tapping.

If there are several batteries, they can be clearly distinguished by their serial number. You will find the serial number on a sticker on the battery case.



3. Monitoring

After successful connection you will receive all relevant values for your battery at one view.

In case of an error, the status of the battery is shown on the display with a corresponding message, e.g. "overvoltage" or "undervoltage".

Bluetooth - Frequency and Transmission power



Communicationsystem	Bluetooth, specification 4.0 compliant
Frequency	2,4GHz ISM Band (2400-2483,5 MHz)
Output power	Max. +8dBm
Usage	Unlimited, worldwide
Communication range	Line of sight approx. 10 m

Markings



Attention. Observe notes.



Not waterproof.



For safe use, instructions must be followed. Follow the instructions on the battery and in the user manual.



Dispose of Lithium LiFePO₄ battery according to local, state and federal laws and regulations. Do not mix with other (industrial) waste.



max. 60 °C

Take care of temperature.



This product or parts of this product can be recycled.



Fire, open light and smoking prohibited! Avoid sparks when handling cables and short circuits.



Mark of conformity (CE mark)



Conformity to RoHS directive

Important notes

The latest version of the operating instructions can be downloaded from www.liontron.de/download or obtained from your dealer on request. The user manual provides you with all necessary information for installation, use and maintenance of the product. Read the manual carefully and make sure you understand its contents before using the product. The safety of the user must be ensured at all times during installation, use and maintenance of the battery.

Intended use

The battery may only be used for the purposes described in the operating instructions. Use for other purposes is considered improper use and will invalidate the product warranty. The manufacturer is not liable for damages caused by incorrect, improper or inappropriate use of the product. The use in aviation or in medical devices which serve for life support is contrary to the intended use. LiFePO₄ batteries are designed for use as energy storage devices. Possible applications of the battery are use as a service and on-board battery in leisure vehicles or shipping.

Please follow the instructions below and keep it near the Lithium LiFePO₄ battery for future reference.

- Do not open the LiFePO₄ battery without consulting the dealer. Unauthorized opening of the battery will invalidate the manufacturer's warranty.
- Use the battery only for the application for which it is intended.
- Do not short the LiFePO₄ battery. The cable connections to the consumers must be protected by a fuse.
- Installation and maintenance may only be carried out by qualified personnel.
- Do not permanently expose to direct sunlight. Protect from the effects of heat. Temperatures above +60 °C can damage the battery.
- Use only compatible chargers. The battery must be disconnected from all devices during longer storage.
- Pay attention to a proper assembly.
- Avoid damage of any kind, e.g. by falling, drilling or similar (danger of short circuit).
- Always keep the battery dry and clean.
- Observe plus (+) and minus (-) markings on the LiFePO₄ battery and the device and make sure the polarity is correct.
- Cycle capacity may vary from nominal capacity due to changes in operating temperature and charge/discharge rate.
- Only suitable for parallel connection. Serial connection is not permitted. Bring to the same state of charge before connecting. Batteries of different manufacturers or different types should not be connected.

Risk of explosion and fire

The connections of the lithium battery are always under voltage. Never place objects or tools on the lithium battery. Avoid short circuits. Use insulated tools. Do not wear metal objects such as watches, bracelets, etc. on your body. Use a class D fire extinguisher, foam or CO₂ fire extinguisher.

Transport Instructions

The lithium battery must be transported in its original packaging or in an appropriate packaging. Never lift the battery by its terminals, but always by its handles. The batteries have been tested according to the UN manual of tests and criteria, part III, subsection 38.3 (ST/SG/AC.10/11/version 5). With regard to transport, the batteries belong to category UN3480, class 9, packing group II. The corresponding regulations must be observed. This means that it has to be packed for transport by land or sea (ADR, RID & IMDG) according to packing instruction P903 and for air transport (IATA) according to packing instruction P965. The original packaging meets these requirements.

Warranty

The Liontron GmbH & Co. KG offers consumers a voluntary manufacturer's warranty of 5 years in addition to the legal warranty. Further information can be found in the warranty conditions available for download (www.liontron.de/download) or you can obtain this from your dealer upon request.

Liontron GmbH & Co. KG – Industriestr. 1, D-41334 Nettetal