LiFePO$_4$ Lithium Batteries

LC S Series

Instruction Manual

ECTIVE

ADVANTAGES OF YOUR ECTIVE LC BATTERY

High Cycle Stability
More than 6800 cycles at 80 % DoD results in lower costs over the operating life.

Short Charging Times
Lithium batteries are ready for use again at full power much faster than conventional batteries.

Built-in protection thanks to the new ECTIVE CoreTech BMS
The innovative ECTIVE CoreTech BMS protects the battery and allows completely worry-free use.

Easy to Store
$LiFePO_4$ batteries can be stored for more than 6 months thanks to the extremely low self-discharge rate.

Bluetooth Function
Easily monitor the status of the ECTIVE LC S battery from your smartphone!

Long Service Life
Lithium batteries have a particularly long service life - and require very little maintenance.

Absolutely Safe
Due to their chemical composition, it is impossible for $LiFePO_4$ batteries to burn or explode.

Extreme Heat Tolerance
The battery continues to work reliably even at ambient temperatures of over 60 °C.

Less Weight
$LiFePO_4$ batteries weigh only around a third to a quarter of a comparable conventional battery.

Cold Resistance
ECTIVE LC S batteries can be charged even at extremely low temperatures of down to -30 °C.

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Ready to get ECTIVE! Quick-Start Guide

1. First familiarize yourself with the safety instructions on p. 2.
2. Before connecting and commissioning the battery, make sure that both the packaging and the battery are undamaged.
3. To ensure that the battery functions reliably in the long term, it must be charged to at least 80 % of its capacity within 14 days of receipt.
4. If the battery is not used for a longer period of time, be sure to switch it off at the on/off switch to minimize discharge. Otherwise, the battery must be recharged every 3 months.

SAFETY INSTRUCTIONS

- It is essential that you read these instructions before initial commissioning and follow the safety guidelines and operating instructions.
- Only use the battery for the purposes intended in these instructions. The manufacturer is not liable for any damage caused by any other use or improper use.
- Caution! The battery connections are permanently live. Avoid short circuits and do not place any tools or other conductive objects on the battery. Do not wear any metal objects on your body, such as watches or jewelry, when working with the battery.
- In the event of a battery fire, use a CO_2 fire extinguisher, foam or a class D fire extinguisher.
- Installation, maintenance and other work on the battery may only be carried out by trained specialist personnel. Only insulated tools may be used for all work on the battery and protective goggles and safety clothing must be worn.
- Protect the battery from high temperatures (over 60 °C), direct sunlight, dirt and moisture.
- Protect the battery from physical damage. Do not open the battery without consulting the manufacturer. Dispose of damaged batteries in accordance with the statutory regulations.
- Avoid deep discharging, excessive charging currents and overcharging, as otherwise hazardous gases may be produced. Use a circuit breaker or safety relay to prevent deep discharge.
- Avoid polarity reversal at all costs during installation.
- If substances escape from the battery housing and come into contact with the skin or eyes, rinse immediately with plenty of clean water and contact a doctor.
- If the battery is not used for a longer period of time: Disconnect the battery from any charging sources and then switch off the battery at the on/off switch to minimize self-consumption and self-discharge. Always follow this sequence! If applicable, also disconnect any solar panels from the solar charge controller.

SCOPE OF DELIVERY

Please check that the packaging and battery are undamaged before installation and commissioning. The scope of delivery includes:

- 1 × **ECTIVE LC S Battery**
  High-quality, safe ECTIVE $LiFePO_4$ battery with Bluetooth module, BMS and low-temperature function for charging at temperatures as low as -30 °C.
- 1 × **Safety leaflet**
  The most important safety instructions including a link to this detailed operating manual.

TRANSPORTATION

The battery may only be transported in the original packaging or an appropriate alternative packaging that meets the relevant requirements: The battery belongs to category UN3480, class 9, packing group II and consequently it must be packed in accordance with packing instruction P903 (transportation by land or water: ADR, RID & IMDG) or P965 (transportation by air: IATA).
The battery has been tested in accordance with the UN Manual of Tests and Criteria, Part III, Subsection 38.3 (ST/SG/AC.10/11/Version 5).

MODELS OF THE ECTIVE LC S SERIES

ECTIVE LC 105 S
Nominal voltage: 12,8 V
Nominal capacity: 105 A
Battery capacity: 1344 Wh
Discharge time (25 A): 252 min
Weight: 10,4 kg
Size: 278 × 175 × 190 mm

ECTIVE LC 135 S
Nominal voltage: 12,8 V
Nominal capacity: 135 A
Battery capacity: 1728 Wh
Discharge time (25 A): 324 min
Weight: 12,2 kg
Size: 315 × 175 × 190 mm

ECTIVE LC 185 S
Nominal voltage: 12,8 V
Nominal capacity: 185 A
Battery capacity: 2368 Wh
Discharge time (25 A): 444 min
Weight: 18,5 kg
Size: 353 × 175 × 190 mm

ECTIVE LC 270 S
Nominal voltage: 12,8 V
Nominal capacity: 270 A
Battery capacity: 3456 Wh
Discharge time (25 A): 648 min
Weight: 27,0 kg
Size: 359 × 178 × 190 mm

ECTIVE LC 460 S
Nominal voltage: 12,8 V
Nominal capacity: 460 A
Battery capacity: 5888 Wh
Discharge time (25 A): 1104 min
Weight: 39,3 kg
Size: 522 × 244 × 223 mm

ECTIVE LC 280 S Under Seat
Nominal voltage: 12,8 V
Nominal capacity: 280 A
Battery capacity: 3584 Wh
Discharge time (25 A): 672 min
Weight: 28,0 kg
Size: 330 × 345 × 145 mm

ECTIVE LC 320 S Under Seat
Nominal voltage: 12,8 V
Nominal capacity: 320 A
Battery capacity: 4096 Wh
Discharge time (25 A): 768 min
Weight: 32,0 kg
Size: 355 × 224 × 190 mm

ECTIVE LC 540 S Under Seat
Nominal voltage: 12,8 V
Nominal capacity: 540 A
Battery capacity: 6912 Wh
Discharge time (25 A): 1296 min
Weight: 46,0 kg
Size: 355 × 350 × 190 mm

ECTIVE LC 700 S Under Seat
Nominal voltage: 12,8 V
Nominal capacity: 700 A
Battery capacity: 8960 Wh
Discharge time (25 A): 1680 min
Weight: 60,40 kg
Size: 360 × 378 × 220 mm

All models have a Bluetooth module, the innovative ECTIVE CoreTech BMS, active cell balancing (1 A), an on/off switch and a heating function (120 W), which enables charging at temperatures as low as -30 °C.

All other values can be found in the “Technical data” section.

Integrated heating function

The integrated 120 W heating function enables charging at temperatures as low as -30 °C. To ensure that this function is reliable, the charger used must be set to supply mode.

Under Seat Batteries

In motorhomes, space saving plays an important role in addition to weight. The Under Seat models in the ECTIVE LC S series were developed for precisely this purpose. They can be installed directly under the passenger seat in many motorhomes and thus easily replace a previous wet, gel or AGM battery. With an ECTIVE under-seat battery, you can make optimum use of the space in your motorhome while benefiting from the numerous advantages of the proven $LiFePO_4$ batteries.

DEVICE OVERVIEW

ECTIVE LC 105 S

ECTIVE LC 135 S

ECTIVE LC 185 S

1. On/off switch

The battery can be switched on and off using this button. Depending on the battery generation, the function may vary slightly when switched off („OFF“): While older models can only be charged and discharged when switched on („ON“), the current version can still be charged when switched off, but cannot be discharged. In addition, in the current version, the battery management system and Bluetooth function are in standby mode when the battery is switched off. If the battery is not used for a long period of time, switch it off to minimise self-discharge. Disconnect the battery from all charging sources before switching it off. If a solar system is connected to the battery, also disconnect the solar modules from the solar charge controller.

2. CAN-BUS connections

2 × connections for CAN communication cable.

3. Round poles

Observe polarity! The poles must not be reversed when connecting. When not in use, the poles should be covered with the plastic caps supplied to prevent short circuits.

4. IP65 Casing

Batteries with protection class IP65 are dustproof and protected against water jets from any angle.

5. Integrated Bluetooth function

The Bluetooth function allows the battery to be monitored from a smartphone or tablet.

On/off switch

2 × CAN-BUS

ECTIVE LC 460 S

1. M8 poles (9 to 11 Nm)

The poles must not be reversed when connecting.

2. On/off switch

The battery can be switched on and off using this button. Depending on the battery generation, the function may vary slightly when switched off („OFF“): While older models can only be charged and discharged when switched on („ON“), the current version can still be charged when switched off, but cannot be discharged. In addition, in the current version, the battery management system and Bluetooth function are in standby mode when the battery is switched off. If the battery is not used for a long period of time, switch it off to minimise self-discharge. Disconnect the battery from all charging sources before switching it off. If a solar system is connected to the battery, also disconnect the solar modules from the solar charge controller.

3. CAN-BUS connections

2 × connections for CAN communication cable.

4. IP65 Casing

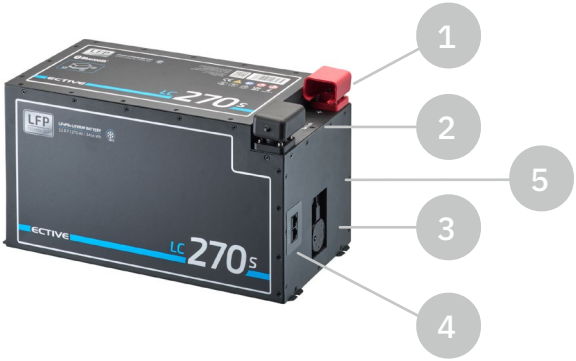
Batteries with protection class IP65 are dustproof and protected against water jets from any angle.

5. Integrated Bluetooth function

The Bluetooth function allows the battery to be monitored from a smartphone or tablet.

On/off switch

2 × CAN-BUS



ECTIVE LC 270 S

ECTIVE LC 320 S Under Seat

ECTIVE LC 540 S Under Seat

1. M8 poles (9 to 11 Nm)

The poles must not be reversed when connecting.

2. On/off switch

The battery can be switched on and off using this button. Depending on the battery generation, the function may vary slightly when switched off („OFF“): While older models can only be charged and discharged when switched on („ON“), the current version can still be charged when switched off, but cannot be discharged. In addition, in the current version, the battery management system and Bluetooth function are in standby mode when the battery is switched off. If the battery is not used for a long period of time, switch it off to minimise self-discharge. Disconnect the battery from all charging sources before switching it off. If a solar system is connected to the battery, also disconnect the solar modules from the solar charge controller.

3. Bluetooth module

The Bluetooth module allows the battery to be monitored from a smartphone or tablet. The reset button allows the Bluetooth function to be restarted.

4. CAN-BUS connections

2 × connections for CAN communication cable.

5. IP21 Casing

Batteries with protection class IP21 are protected against dripping water.

On/off switch

Bluetooth module

2 × CAN-BUS

ECTIVE LC 280 S Under Seat

ECTIVE LC 700 S Under Seat

1. M8 poles (9 to 11 Nm)

The poles must not be reversed when connecting.

2. On/off switch

The battery can be switched on and off using this button. Depending on the battery generation, the function may vary slightly when switched off („OFF“): While older models can only be charged and discharged when switched on („ON“), the current version can still be charged when switched off, but cannot be discharged. In addition, in the current version, the battery management system and Bluetooth function are in standby mode when the battery is switched off. If the battery is not used for a long period of time, switch it off to minimise self-discharge. Disconnect the battery from all charging sources before switching it off. If a solar system is connected to the battery, also disconnect the solar modules from the solar charge controller.

3. CAN-BUS connections

2 × connections for CAN communication cable.

4. IP21 Casing

Batteries with protection class IP21 are protected against dripping water.

5. Integrated Bluetooth function

The Bluetooth function allows the battery to be monitored from a smartphone or tablet.

On/off switch

2 × CAN-BUS

INSTALLATION

The installation and commissioning of an ECTIVE LC S battery should only be carried out by a suitably trained or experienced person who is familiar with the installation of car or boat batteries.

The instructions in the “Safety instructions” section must be followed during installation. Appropriate protective equipment must be worn or used:

- Insulated gloves
- Safety shoes
- Insulated tools

Connect the battery to consumers and charging sources in accordance with your electrical system. Make sure to avoid polarity reversals, short circuits and connection errors. Switch off consumers before connecting them to the battery.

$LiFePO_4$ batteries can be mounted upright or sideways.

⚠ Caution!

- Check the housing and poles for damage before installation. Only use undamaged batteries.
- Ensure that the polarity of the connections is correct!
- Use an appropriate external fuse!
- Ensure that the battery is firmly and securely installed and that it cannot move during use. Use a battery holder or a tensioning strap for example.
- Ensure that the battery is not exposed to direct sunlight or heat sources. Switch off consumers before connecting them to the battery.

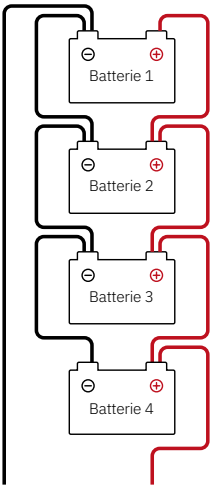
To generate a higher total capacity or voltage, several ECTIVE LC S batteries can be connected in parallel or in series:

Parallel connection (12 V)

When several ECTIVE batteries are connected in parallel, the total capacity is increased while the voltage remains the same. This also leads to correspondingly higher charging and discharging currents.

When connecting the terminals, ensure that you follow the diagram shown here.

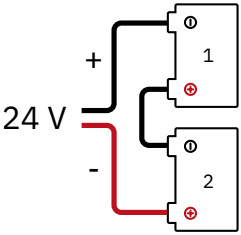
⚠ Ensure that only batteries of the same type, age and capacity are connected in parallel. Fully charge all batteries individually beforehand.



Series connection - 24 V

To increase the total voltage while maintaining the same capacity, you can connect a maximum of two batteries in series.
When connecting the terminals, ensure that you follow the diagram opposite.

⚠ Ensure that only batteries of the same type, age and capacity are connected in parallel. Fully charge both batteries individually beforehand!



FIRST COMMISSIONING

Before using the battery, it is essential to check whether both chargers and consumers are compatible with the battery, in particular the battery voltage.

The battery is not fully charged on delivery. To guarantee the longest possible service life, fully charge the battery before use.

To use the battery for the first time, proceed as follows:

- Check all connections for connection errors and that the contacts are secure.
- Press the ON/OFF switch to switch on the battery.
- The battery is now ready for use.

CHARGING

⚠ **Caution!** Please observe the following instructions when charging the battery:

- When choosing a charger, make sure that it is suitable for LiFePO4 batteries and that the final charging voltage corresponds to that of your battery. Connecting unsuitable chargers can damage your lithium battery immediately and permanently.
- The charging current and charging voltage must not exceed the maximum values of your battery.
- If the BMS interrupts the charging process, check the battery and the charger immediately.
- Only switch on the charger after you have connected it to the battery. Switch it off before you disconnect it. Disconnect the charger from the battery if you do not plan to use it for a longer period of time.
- You should charge the battery as quickly as possible if the charge level falls below 20 % or the BMS has switched off the battery due to undervoltage.
- Fully charge a new battery before using it for the first time.
- At low temperatures, the battery is charged at a reduced charging current, which results in a longer charging process.
- A slight humming noise (possibly slight vibration) may be noticeable when the battery is under a higher load (high charging or discharging current). This is caused by the active cooling of the integrated BMS.

BATTERY MANAGEMENT SYSTEM (BMS)

The lithium batteries in the ECTIVE LC S series are equipped with our innovative, particularly powerful ECTIVE CoreTech BMS battery management system. This helps to conserve the battery, protect it from damage and extend its service life. If a problem occurs, the BMS switches off the battery so that there is no longer any voltage at the terminal connections. Once the problem has been rectified (e.g. the connection to the load has been disconnected), the BMS automatically switches the battery back on again.

Overload protection: protects against excessive discharge currents

Deep discharge protection: protects the individual cells against deep discharge

Overvoltage protection: protects the cells against excessive charging voltages

Passive and active cell balancing (1 A):
constant balancing of the cells at the same charge level

Charge control: protection against faulty or unsafe charging

Temperature protection: protection of the battery against excessively high temperatures. This active cooling may cause a slight vibration or noticeable humming.

Short-circuit protection: protection against short circuits

⚠ In the event of a deep discharge, the integrated BMS switches off automatically to protect the battery from possible damage. To reactivate the BMS and thus the battery, ideally use a charger for LiFePO4 batteries. Battery chargers for lead batteries that have a supply mode can also be used for this purpose. Alternatively, the BMS can also be reactivated using a second battery connected in parallel.

With the new **ECTIVE CoreTech BMS**, we are taking the next step in the development of innovative, high-performance battery management systems. In addition to the familiar basic BMS functions, the **CoreTech BMS** offers the following technical highlights:

- **Up to 300 A continuous discharge current**
  Very high capacities in compact housings
  Active and passive cell balancing

MAINTENANCE AND STORAGE

LiFePO4 batteries are completely maintenance-free.

Keep the battery clean and ensure that the connections are secure. Use a damp cloth for cleaning. Check the battery and connections for damage.

The self-discharge rate of the cells is approximately 1 - 3 % per month. If the battery is not used for a longer period of time (several months), be sure to switch the battery off using the On/Off switch. If the battery is not switched off, the self-consumption is 2 to 14 Ah per month!

If necessary, cover the terminals to protect them from short circuits. Ensure that the storage location is cool, well ventilated and protected from sunlight.

Charge the battery to at least 80 % before storage. Check the charge level at least once a year and recharge the battery accordingly. Do not use a trickle charger.

Ensure that batteries stored at very low temperatures (down to -10 °C) are slowly brought up to operating temperature.

COMMUNICATION INTERFACES

connECTIVE app via Bluetooth

ECTIVE NaC series batteries feature a Bluetooth module that allows convenient monitoring of battery values from a smartphone via the connECTIVE app.

ECTIVE LC S battery

connECTIVE App

Here's how it works:

1. Download the official **connECTIVE** app from the App Store (iOS) or Google Play Store (Android). You can find the downloads via the QR codes below, as well as our website: ective.de.
2. Activate the **Bluetooth function** on your smartphone.
3. Install and launch the app. If requested, **permit** the app to use bluetooth.
4. Tap the **Plus symbol** on the screen to search for **nearby devices**. When first connecting your battery, it may appear as a combination of letters and numbers in the list of available devices. This name can be changed later.
   If no devices appear, check the distance between your battery and phone and make sure the battery is turned on.
5. Tap on the battery in the **list of available devices** to add it to the app. Now, whenever the phone and the battery are within range, they will **automatically connect**.
6. The battery now appears in the list of connected devices. Tap on it to open the **Product Dashboard** where you can find more detailed information about the battery‘s status.

We update the **connECTIVE app** regularly. Please ensure that the relevant updates to the app are carried out on your device to ensure smooth operation.

Further information about the **connECTIVE app** and detailed instructions can be found at **ective.de/app**.

Download the connECTIVE app now:

GET IT ON Google Play

Download on the App Store

CAN-BUS

The CAN-BUS connections of the ECTIVE LC S batteries allow the battery to communicate with components in the motorhome. This allows charge states, temperatures and other operating data to be exchanged in real time and enables optimum operation.

TECHNICAL SPECIFICATIONS

	LC 105 S	LC 185 S	LC 270 S
Nominal voltage	12,8 V	12,8 V	12,8 V
Nominal capacity	105 A	185 A	270 A
Discharge time (25 A)	252 min.	444 min.	648 min.
Battery capacity	1344 Wh	2368 Wh	3456 Wh
Resistance	<20 mΩ	<15 mΩ	<15 mΩ
Self-discharge	≤ 2 % / month	≤ 2 % / month	≤ 2 % / month
Self-consumption	2 bis 14 Ah / month	2 bis 14 Ah / month	2 bis 14 Ah / month
Cell technology	$LiFePO_4$	$LiFePO_4$	$LiFePO_4$
Rec. charging current	50 A	92A	135 A
Max. charging current	100 A	185 A	200 A
Rec. charging voltage	14,6~14,8 V	14,6~14,8 V	14,6~14,8 V
BMS threshold value (V)	15,6 V	15,6 V	15,6 V
Overcharge release	<14,4 V	<14,4 V	<14,4 V
Trickle charge	>13,6 V	>13,6 V	>13,6 V
Max. Batteries in series	2	2	2
Cont. discharge current	150 A	200 A	200 A
Peak discharge current	250 ± 30 A (5,5 s ± 1 s)	300 ± 30 A (5,5 s ± 1 s)	300 ± 30 A (5,5 s ± 1 s)
BMS threshold value (A)	600 A (2 ms)	600 A (2 ms)	600 A (2 ms)
Disconnection (low voltage)	11,2 V	11,2 V	11,2 V
BMS threshold value (V)	>10 V	>10 V	>10 V
Reconnection (V)	> 11,2 V (2,8 V / Cell)	> 11,2 V (2,8 V / Cell)	> 11,2 V (2,8 V / Cell)
Active balancing	1 A	1 A	1 A
Heating function	120 W	120 W	120 W
Poles	Round poles	Round poles	M8 (9 to 11 Nm)
Temp. (discharge)	–20 to 60 °C	–20 to 60 °C	–20 to 60 °C
Temp. (charge)	–30 to 55 °C	–30 to 55 °C	–30 to 55 °C
Temp. (storage)	–10 to 45 °C	–10 to 45 °C	–10 to 45 °C
BMS Max. Temp.	65 °C	65 °C	65 °C
Temp. for reconnection	50 °C	50 °C	50 °C
Dimensions (L × W × H)	278 × 175 × 190 mm	353 × 175 × 190 mm	359 × 178 × 190 mm
Weight	10,40	18,50	27,00

	LC 460 S	LC 320 S Under Seat	LC 540 S Under Seat
Nominal voltage	12,8 V	12,8 V	12,8 V
Nominal capacity	460 A	320 A	540 A
Discharge time (25 A)	1104 min.	768 min.	1296 min.
Battery capacity	5888 Wh	4096 Wh	6912 Wh
Resistance	<10 mΩ	<10 mΩ	<10 mΩ
Self-discharge	≤ 2 % / month	≤ 2 % / month	≤ 2 % / month
Self-consumption	2 bis 14 Ah / month	2 bis 14 Ah / month	2 bis 14 Ah / month
Cell technology	$LiFePO_4$	$LiFePO_4$	$LiFePO_4$
Rec. charging current	150A	100 A	150 A
Max. charging current	300 A	200 A	300 A
Rec. charging voltage	14,6~14,8 V	14,4~14,6 V	14,4~14,6 V
BMS threshold value (V)	15,6 V	15,6 V	15,6 V
Overcharge release	<14,4 V	<14,4 V	<14,4 V
Trickle charge	>13,6 V	>13,6 V	>13,6 V
Max. Batteries in series	2	2	2
Cont. discharge current	300 A	200 A	300 A
Peak discharge current	400 ± 30 A (5,5 s ± 1 s)	300 ± 30 A (5,5 s ± 1 s)	400 ± 30 A (5,5 s ± 1 s)
BMS threshold value (A)	600 A (2 ms)	600 A (2 ms)	600 A (2 ms)
Disconnection (low voltage)	11,2 V	11,2 V	11,2 V
BMS threshold value (V)	>10 V	>10V	>10V
Reconnection (V)	> 11,2 V (2,8 V / Cell)	> 11,2 V (2,8 V / Cell)	> 11,2 V (2,8 V / Cell)
Active balancing	1 A	1 A	1 A
Heating function	120 W	120 W	120 W
Poles	M8 (9 to 11 Nm)	M8 (9 to 11 Nm)	M8 (9 to 11 Nm)
Temp. (discharge)	–20 to 60 °C	–20 to 60 °C	–20 to 60 °C
Temp. (charge)	–30 to 55 °C	–30 to 55 °C	–30 to 55 °C
Temp. (storage)	–10 to 45 °C	–10 to 45 °C	–10 to 45 °C
BMS Max. Temp.	65 °C	65 °C	65 °C
Temp. for reconnection	50 °C	50 °C	50 °C
Dimensions (L × W × H)	522 × 244 × 223 mm	355 × 224 × 190 mm	355 × 350 × 190 mm
Weight	39,30	32,00	46,00

LC S BATTERIES IN THE ECTIVE ECOSYSTEM

The batteries in the ECTIVE LC S series fit perfectly into the ECTIVE ecosystem, as our range includes the right products: Both for charging with different power sources and on the consumer side in the form of our powerful PRO inverters. Please always check the compatibility between your battery and other devices before purchasing.
Would you like to add the right ECTIVE components to your system? We have put together a few suggestions here! Find out more at **ective.de**!

Chargers: ECTIVE Multiload PRO

The new models in the ECTIVE Multiload PRO series charge both conventional and $LiFePO_4$ batteries reliably and efficiently. ECTIVE chargers also have various protection mechanisms and features that ensure batteries are always charged quickly and safely. When choosing your charger, pay particular attention to the charging current specification and select a device that is suitable for your battery.

MPPT solar charge controller: ECTIVE SC PRO

The MPPT solar charge controllers in the SC PRO series are the highest-voltage charge controllers in the ECTIVE range to date. Thanks to the ability to process up to 150 V solar module voltage and to connect two devices for even more power, all ECTIVE solar modules can be used without hesitation. As our SC PRO charge controllers have charging characteristics for any conventional battery technology, they are perfectly suited for the ECTIVE LC S series lithium batteries.

Wechselrichter: ECTIVE TSI PRO, CSI PRO, SSI PRO

The versatile inverters in our PRO series convert the direct current provided by the battery into high-quality alternating current that supplies even the most demanding electronic loads with precise power. They also offer numerous safety and convenience features such as a mains or battery priority circuit and an RCD with overcurrent protection. The inverters in the CSI-PRO and SSI-PRO series also have an integrated battery charger and the SSI-PRO inverter models can charge batteries directly with solar power thanks to the integrated MPPT solar charge controller. When selecting the inverter, please pay attention to the appropriate recommended continuous discharge current or battery capacity.

ECTIVE Multiload PRO

ECTIVE SC PRO

ECTIVE SSI PRO

SERVICE / COMPLAINTS

When manufacturing ECTIVE products, we ensure compliance with the strictest quality criteria. Accordingly, the statutory warranty for production and material defects applies at the time of delivery.

The warranty and liability for damage are excluded in the following cases:

- Damage to the device due to overvoltage and mechanical damage.
- Connection and installation errors.
- Use of the device for unintended purposes.
- Mechanical modifications without written authorisation from the manufacturer.
- Wear and tear during normal use.

These conditions are recognised when the battery is put into operation. Any use of the battery is at your own risk. The warranty claim can only be asserted with a corresponding proof of purchase.

If you have any questions about your battery, please contact our customer service. Please provide us with the article and invoice number.

Service contact

batterium GmbH
Robert-Bosch-Straße 1, 71691 Freiberg am Neckar, Germany
T: +49 7141 1410870
info@ective.de | ective.de

Tipp: When contacting us directly, please have your customer or invoice number and the article number ready.

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RETURNS

If you wish to return your battery, use the original packaging or an equivalent alternative (see section „Transportation“). A warranty claim cannot be made if the packaging is inadequate. In that case, the product is considered damaged and cannot be refunded.
Please also enclose the following documents with your consignment:

- Copy of the invoice
- Reason for the return with a detailed description of the problem or fault

Please send returns to the following service address:

batterium GmbH
Robert-Bosch-Straße 1, 71691 Freiberg am Neckar, Germany
T: +49 7141 1410870
info@ective.de | ective.de

DISPOSAL

Never dispose of $LiFePO_4$ batteries in household or commercial waste! Instead, the batteries must be returned to collection points for recycling. Alternatively, you can contact the manufacturer to return them.
When disposing of the battery, ensure that it is fully discharged and insulate the terminals to prevent short circuits.

Please dispose of all packaging material correctly or recycle it.

In Germany, the Electrical and Electronic Equipment Act [ElektroG] regulates the placing on the market, disposal and recycling of electrical and electronic equipment.

ECTIVE

ist eine Marke der / is a brand of
batterium GmbH
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ECTIVE.DE