

Die neue, einfache Art  
E-Bikes aufzuladen



# Operating information



bike & car universal charging station for electric vehicles

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## 1. Introduction

This operating information is part of the delivery and the original operating manual for the bike-energy system within the meaning of the Electrical Engineering Order. This document contains important information, which acquaint you with the assembling, power connection, operation and maintenance, as well as with the safe and proper handling of the bike-energy charging station. To avoid malfunctions, read the operating manual carefully before you start with the installation and start-up. For queries please contact the manufacturer. Liability is not assumed for damages and malfunctions resulting from ignoring this manual.

## 2. Safety instructions

*We expressly recommend to have the power connection and maintenance only performed by a certified electrician.*

Signs attached to the bike-energy charging station have to be observed.

The operator is responsible for the proper installation and maintenance of the charging station. In case of damage, use of the system is prohibited and it has to be disconnected from the mains. The local regulations of the network operator have to be observed and it has to be examined if they are compliant to the data of the bike-energy charging station, if necessary.

There has to be an all-pole disconnecter in the electrical installation, which complies with the erection specifications and the overvoltage category III for full disconnection (e.g.: circuit breaker)

*A RCCB protect switch 30 mA must be provided by the customer!*

*For e-car charging a RCCB protect switch Type B sensitive to all current types must be provided by the customer!*

bike-energy is a high-tech product with forward-looking technology.  
Responsible handling, like with all electrical devices, is assumed.

### 3. Manufacturer

Stranger Elektrotechnik  
Ennsparck 2  
5541 Altenmarkt  
Austria

Tel.: +43 / (0) 6452 / 5253-0  
Fax.: +43/ (0) 6452 / 5253-40  
e-mail: [info@stranger.at](mailto:info@stranger.at)  
web: [www.stranger.at](http://www.stranger.at) , [www.bike-energy.com](http://www.bike-energy.com)

UID number: ATU 35215708  
HFU-DG number: 700830720

### 4. Specifications

#### 4.1 Power supply

<u>type</u>	<u>power supply</u>	<u>wire cross-section</u>
LP21	1 Ph + N + PE 230 V 10-16 A	3x2,5 mm <sup>2</sup>
LP22	1 Ph + N + PE 230 V 10-16 A	3x2,5 mm <sup>2</sup>
LPC2	3 Ph + N + PE 3x400 V 16-32 A	5x6,0 mm <sup>2</sup>
LB21	1 Ph + N + PE 230 V 10-16 A	3x2,5 mm <sup>2</sup>
LB23	1 Ph + N + PE 230 V 10-16 A	3x2,5 mm <sup>2</sup>
LBC2	3 Ph + N + PE 3x400 V 16-32 A	5x6,0 mm <sup>2</sup>

#### 4.2 Body, dimensions, weights

Impact resistant plastics, additionally foil-coated, rear wall aluminum metal plate, type of protection: IP55, UV- and weatherproof

<u>product</u>	<u>dimensions</u>	<u>weight</u>
LP	365x380x200 HxWxD	10,00 kg
LB21	230x300x110 HxWxD	3,50 kg
LB23	274x1665x140 HxWxD	14,00 kg

#### 4.3 Protection class

III safety extra low-voltage for RoPD plug-in systems for e-bikes,  
I protection class for safety socket and type 2 car charging-system

#### 4.4 Temperature range

bike-energy systems are designed for an ambient temperature between -20°C and +50°C

#### 4.5 E-bike charging system

Charging electronics – programmable U-I Source,  
with energy bus preparation,  
CAN open bus capable and RS485 interface.

Input: 53 VDC, 0-5,5 A

Output: 15-48 VDC, 0-6A, max. 288 W

Display: 2x16 signs per channel

Safety socket 230 V, 16 A additionally available.

#### 4.6 E-car charging system

Type 2 charging socket IEC 621962 for mode 3 charging.  
communication box integrated.

Charging capacity adjustable: 13, 16, 20, 32 A

Safety socket 230 V, 16 A additionally available.

### 5. Quality certificates

bike-energy certified for the highest quality- and safety level

#### 5.1 CE evidence of conformity

The CE evidence of conformity (see pt. 9, declaration of conformity),  
in accordance with low voltage- and EMV- directives, points out,  
that all relevant norms and criteria for safe operation are complied with.



## 5.2 TÜV

TÜV AUSRIA SERVICES GmbH, Deutschstraße10, Wien,  
confirms, that bike-energy systems comply fully with all safety-relevant criteria.

## 5.3 Quality guarantee

### 5.3.1 Safety for batteries

- Highest safety level for plugged batteries
  - Batteries are exclusively charged in the original charging protocol
  - Battery service life is prolonged by 100 %
- bike-energy charging stations have a professional battery charging system.  
(see pt.6 High-tech charging)

If e-bikes are exclusively charged at bike-energy charging stations, the battery service life is prolonged by 100 %. (see fig. 1 of pt. 6 battery-university)

### 5.3.2 Safety for user and operator

- bike-energy charging stations guarantee safe charging outdoor.
- E-bikes which can be connected without home-charger, can be charged even in the rain and in wet conditions.
- E-bikes can be charged up to 4 times faster – with maximum battery protection.
- E-bikers do not have to take their home-chargers along.
- Instead of using a plug, the cable is simply docked to the station with a safety magnetic coupling. When suddenly strained, the cable uncouples instantly, so that people and material are protected.

## 6. High-tech charging *protective charging*

bike-energy protects the battery and prolongs the service life!

The bike-energy charging electronics was developed in cooperation with leading international experts of battery technology, with the objective of maximum battery protection!

bike-energy protects the battery at a maximum.

The intelligent charging cable (adapter) detects any connected battery and the integrated memory delivers the data to the charging station.

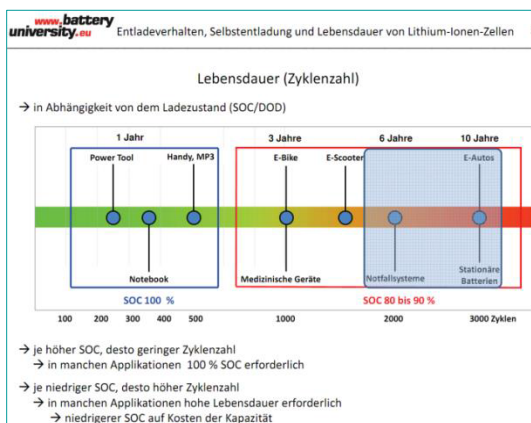
bike-energy charges ultra-slowly in the first few minutes for maximum battery protection.

bike-energy uses the most intelligent and efficient chargers for maximum battery protection.

bike-energy can also charge batteries fast.  
Only for batteries, which are designed for fast charging.

bike-energy reduces feed-in rapidly at the end of the charging process.  
This protects the battery at the maximum

bike-energy charges the battery only up to 90 %.  
As a result, the service life of the battery is twice as long.



QUALITÄTS  
GARANTIE

bike-energy protects the battery and prolongs the service life!

## 7. Installation and electrical connection

Ideal installation height (recommended):

LP and LB series: lower edge 100 cm above the floor.

The connecting cable should be flush-mounted and come out of the wall in a height of 105 cm.

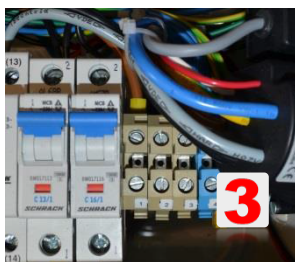
(cable entry + 50 mm from the lower edge of the device)



1. Separate installation plate **1** from the body, undo the locating screws at the lower edge.
2. Stable mounting of the installation plate on the wall with the help of screws, dowels, e.g.



3. Detach the case cover **2**.
4. Insertion of the connecting cable into the provided nozzles M25 or M32.



5. Cable relief and connecting **3** by an electrician.
6. For closing the case cover, tighten the screws evenly.
7. Hang the bike-energy body from above to the installation plate.



Insert the fixing screws at the lower edge and tighten them.

8. Start-up and functional check by an electrician.

## 8. Operation

### 8.1 E-bike charging system

state	display	explanation
non-operating	READY	electronics are in 'ready mode'
during docking	SELFTEST...	internal safety test
after ca. 5 sec	SELFTEST...OK	test positive
afterwards	SYSTEM CHECK	connection to e-bike is
established		
afterwards	BOSCH LOADING: 000:01	battery type appears (e.g.
Bosch)		+ charging time elapsed
since		start in min/sec
Battery fully charged	CHARGING COMPLETED 032:50	charging time e.g.
32min:50sec		

In case of faulty operation: undock charging cable – wait for 5 sec – dock on the charging cable again. If other error reports appear: 'AKKU FAIL' or 'U-LEKO = U-AKKU': disconnect power supply (by station operator) – wait for 5 sec – switch on again.

Docking system: RoPD System-C, suitable for all bike-energy charging cables (adapter).

The docking system is part of a modern safety magnetic coupling: Instead of using a plug, the cable is simply docked – for maximum safety! There is no voltage at the magnetic contacts (only one pin has 5 V for recognition when contacting the adapter). When suddenly strained, the cable uncouples instantly.

For charging outdoors.

### 8.2 E-car charging system

Type 2 plug, mode 3 charging, IEC 621962

Type 2 plug: For 1- and 3-phase charging, charging capacity up to 22 kW (opt. 44kW)

Charging mode 3: With alternating current (AC) at the type 2 socket. Communication between charging station and vehicle. The socket is only under voltage after affirmative communication and enabling.

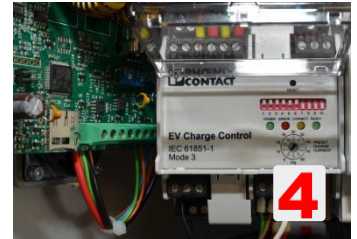
state	display	explanation
non-operating mode'	ready	electronics are in 'ready

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charging cable plugged in charging 22 kW battery charged	vehicle recognized / full... vehicle charging  vehicle recognized / full	vehicle recognized vehicle charges with up to  charging completed
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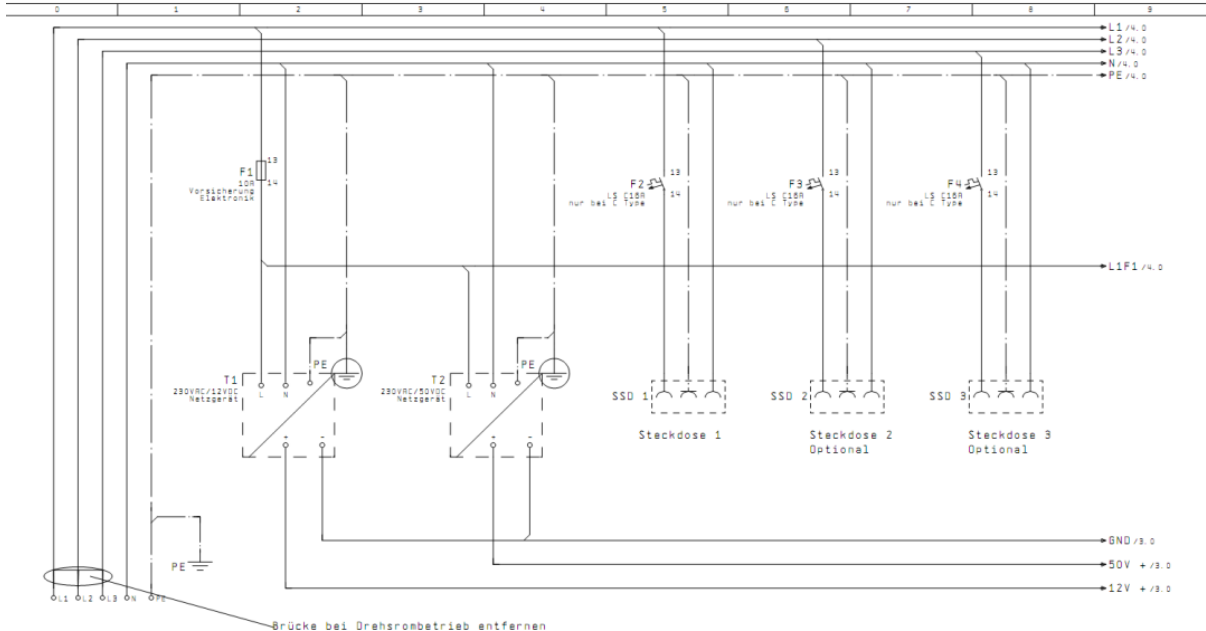
The maximum charging capacity can be preset at the selector switch of the charge controller 'preset-charge-current' **4** by an authorized electrician. Defined values: 6 A, 10 A, 13 A, 16 A, 20 A, 32 A. The settings 63 A, 70 A, 80 A are not permitted!



### 9 Circuit diagrams

		<b>EPLAN Software &amp; Service</b> <small>GmbH &amp; Co. KG                  An der alten Ziegelei 2                  D-40789 Nonheim                  Tel.: 02173/3964-0</small>																				
Kunde : Anlagenbezeichnung : Wandladestation Zeichnungsnummer : 2014 Kommission : BIKE Energy																						
Hersteller (Firma) : Stranger Elektrotechnik GmbH A-5541 Altenmarkt Pfad (ohne \EPLAN\): Projektname : Fabrikat : Stranger Type : Installationsort : Projektverantwortlicher : Teilebesonderheit :																						
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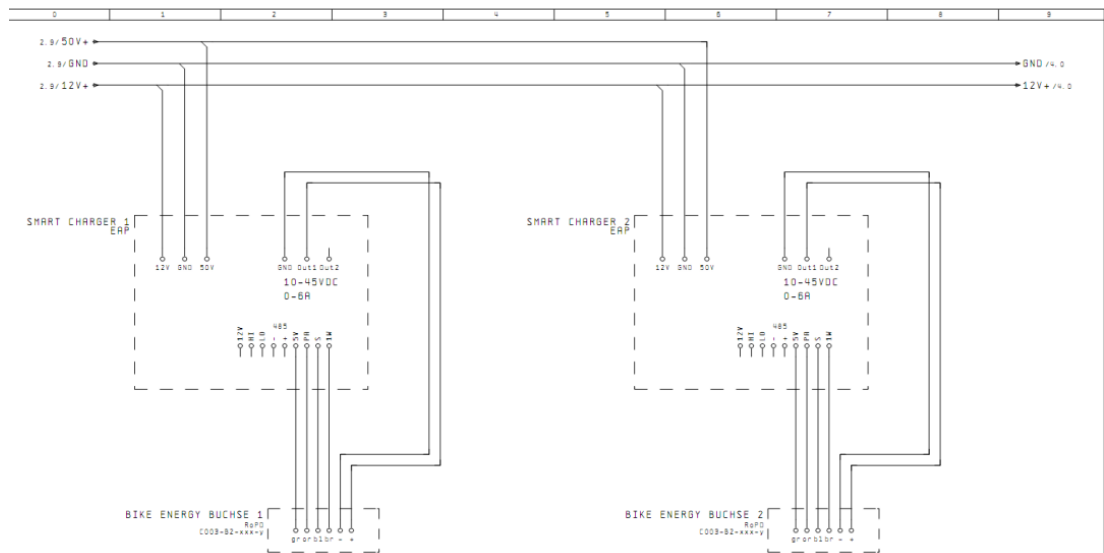
Anspeisung  
 LP u. LB 230V/400V 16A  
 LPC u. LBC 230V/400V 32A

Brücke bei Drehsrombetrieb entfernen

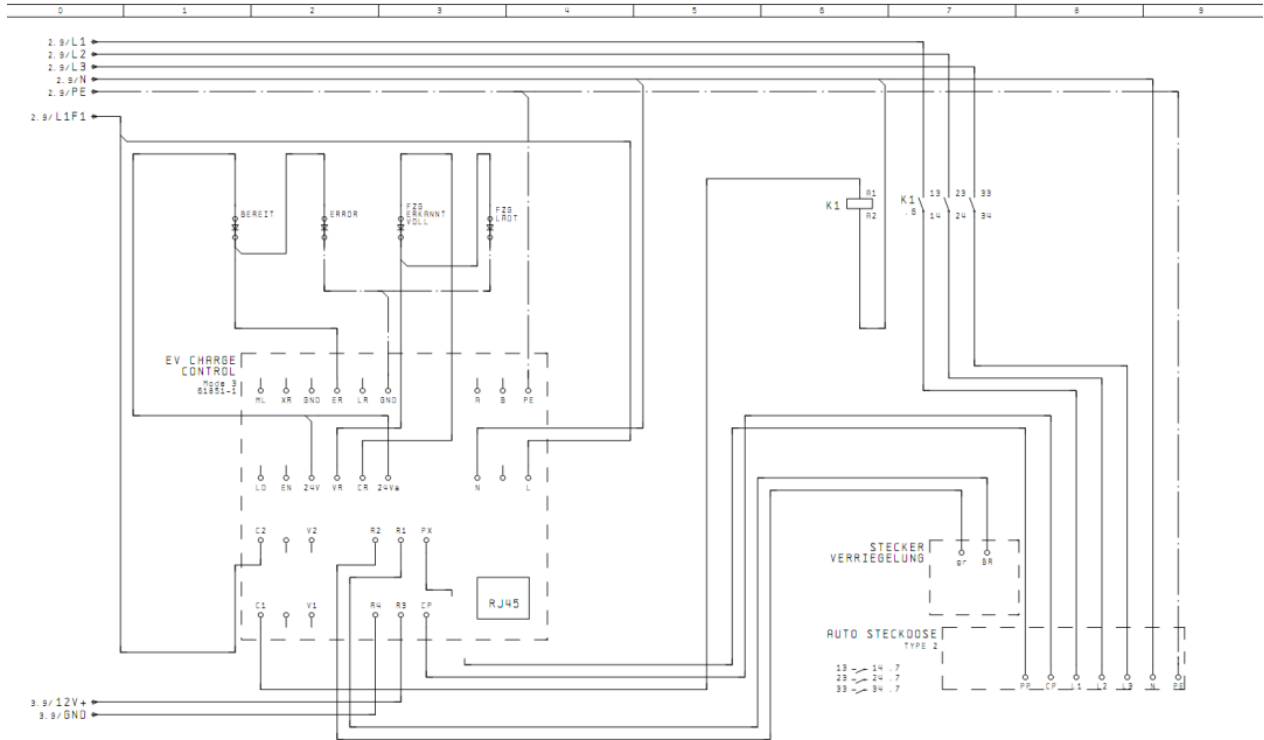
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Änderung	Datum	Name	Norm	Urspr.	Erst	Erst	

## 10. Conformity declaration

EC-conformity declaration 2014

The manufacturer:

Stranger Elektrotechnik  
Ennsparck 2  
5541 Altenmarkt  
Austria

Tel.: +43 / (0) 6452 / 5253-0  
Fax.: +43/ (0) 6452 / 5253-40  
e-mail: info@stranger.at  
web: www.office@bike-energy.com

declares hereby, that the following products:

Product description: bike (&car) -energy, charging station for e-vehicles, in particular e-bikes, Pedelecs and e-cars  
Type designation: bike-energy LS14, LP21, LP22, LPC2, LB21, LB23, LBC2  
Build year: 2014  
Specifications AC: 230 V/ 400V 50 Hz, 13 A-33A, preliminary fuse depending on type, see manual  
Specifications DC: 15-48 VDC, 0-6 A, protective extra-low voltage, RoPD plug system

comply with all the relevant provisions of:

for switching power supply Mean Well Enterprises Co.:

Tested according to: EN60950-1: 2006+A11+A1+A12  
by TÜV Rheinland certificate no. R50051294

for bike-energy Smart Charger:

General directive on electronics: EN 55022:2006+A1:2007  
Electromagnetic compatibility: 2004/108/EC

for e-car charging system:

Type 2 socket according to: IEC 621962  
for mode 3 charging

Technical documents available at:

bike-energy  
Stranger Elektrotechnik  
Ennsпарк 2  
5541 Altenmarkt  
Austria

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CEO, head of engineering and production