OPERATING MANUAL

AES PowerPack Plus 48 V

AES SuperPack 48 V

AES Akku Energie Systeme GmbH, Biedenkamp 8, 21509 Glinde

You have chosen a AES PowerPack Plus or AES SuperPack from AES Akku Energie Systeme GmbH. We are delighted that you have chosen a long-life product that was manufactured to the highest industrial standards.

Your AES Team

COMPANY INFO

Operating manual
„AES PowerPack Plus 48 V
„AES SuperPack 48 V“

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AKKU
ENERGIE
SYSTEME

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Important Notes on this Manual

Please read these operating instructions carefully before installation or starting any work. These contain important information on the proper functioning of the bicycle battery AES PowerPack Plus 48 and AES SuperPack 48 V. („PowerPack Plus 48 V“ referred to as „AES PPP“ ; „SuperPack 48 V“ referred to a „ AES SP“).

This manual is intended for all users of the AES PPP and/or AES SP batteries and the charger as well as for trained electricians, who are qualified for commissioning.

Safekeeping of Manual

This manual should be kept in a safe place near the AES PPP / AES SP and the charger. It must always be accessible to all users and to electricians responsible for commissioning and maintenance. In the event of a change of user , the user manual must be transferred.

Limitation of Liability

AES Akku Energie Systeme GmbH does not assume any liability for any personal injury, damage to property, damage to the product or consequential damage caused by non-observance of this manual, improper use of the product, repairs or other work carried out on the product by non-qualified electricians. Unauthorized modifications or changes to the product are hereby prohibited.

1 Safety

1.1 Safety Instructions for using the AES PPP / AES SP

- The AES PPP / AES SP may only be used as intended in these operating instructions.
- The AES PPP / AES SP must not be charged outdoors.
- Opening the AES PPP / AES SP voids the warranty.
- The AES PPP / AES SP must not be opened under any circumstances! There is a potential risk due to high currents.
- There must be no flammable material within a radius of 1 m around the AES PPP / AES SP.
- The electrical contacts inside the connection socket of the AES PPP / AES SP must not be touched.
- Manipulating or greasing the contacts is prohibited.
- The AES PPP / AES SP must be placed out of reach of children and on a non-flammable surface.
- Never cover the AES PPP / AES SP.
- No objects may be placed on the AES PPP / AES SP.
- Before inserting the AES PPP / AES SP into the receptacle on the system, the electrical contacts of the battery must be clean and dry.
- When charging the AES PPP / AES SP, ensure sufficient ventilation.
- Never charge or use a damaged AES PPP / AES SP.
- Do not charge the AES PPP / AES SP unattended.
- The charging location should be equipped with a functioning class D fire extinguisher (for metal fires).

1.2 Safety Instructions for charging the AES PPP / AES SP

- The AES PPP / AES SP may only be charged with an original charger or one approved by AES.

- Make sure that the cables of the charger are not bent and do not touch any hot surfaces or sharp edges.

- Please check the AES PPP / AES SP and the charger for damage before each use. If any damage is found, do not operate the battery or the charger. Please instruct qualified electricians to carry out maintenance subsequently.

- The user is prohibited from carrying out unauthorized repairs to the AES PPP / AES SP.

CAUTION: If you want to clean the AES PPP / AES SP, make sure that it is not connected to the charger or to any system.

1.3 Fire Protection Instructions

IMPORTANT: Do not attempt to extinguish fires involving lithium batteries yourself. The course of such fires cannot be predicted and risk of personal injury cannot be excluded.

In the event of a fire involving the bicycle battery AES PowerPack Plus / AES SuperPack respectively, comply with applicable regulations. Notify the fire service and draw the attention of fire service personnel to the following dangerous goods: UN3480, lithium-ion battery, Class 9.

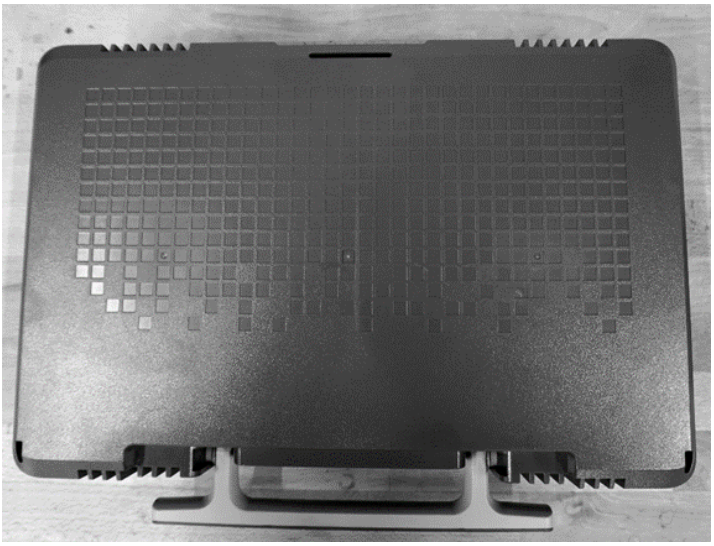
2 General Instructions for Handling

2.1 Illustration

This shows a AES PPP / AES SP from every angle:

front (handle with charge status display); top AES PPP, bottom AES SP

rear (with socket),



from top with extended handle

from below.

2.2 General Instructions for Handling

Push the AES PPP / AES SP evenly with both hands and never with force into the holder on the eBike.

2.3 Communication with Drive Systems / Electrical Consumers

The AES PPP / AES SP can be used in the CAN bus version and in the simple version, without CAN bus communication. For CAN bus communication, it requires a software configuration adapted to the consumer. Such a consumer can be, among other things, a motor system. The individual configuration is done after consultation with AES before delivery of the battery.

2.4. Operation

2.4.1 CAN bus Version

This battery can only be used in combination with motor systems/consumers programmed for these beforehand. Switching on and off depends on the system used. If you want to read off the charge status during operation, press the button on the charge status display again**.**

2.4.2. Simple Version

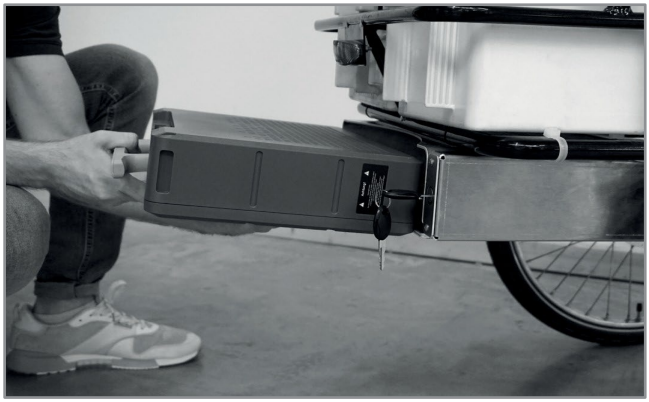
This version does not need a CAN bus connection for operation. To switch on the battery, the so-called wake-up line must be connected to battery minus. Depending on the structure of the system, this is permanently connected in the wiring harness of the system or realized with a switch. If the connection of the Wake-Up Line is disconnected, either by pressing the switch or taking the battery out of the holder, it switches off automatically after 7 seconds.

2.5 Display Indication

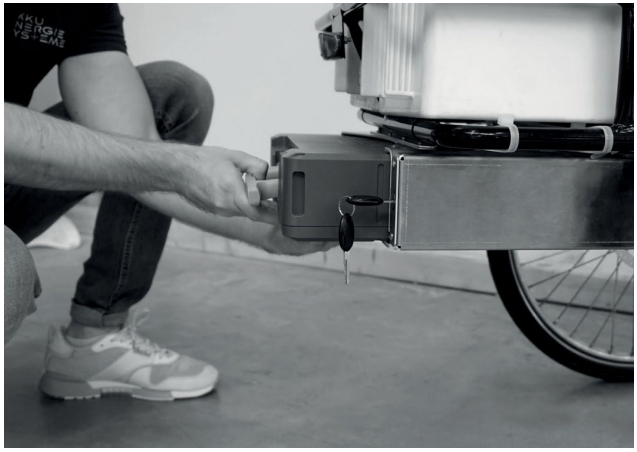
The display shows both the voltage of the battery in volts and the charge status. This is represented by a battery symbol with 1 to 7 bars, as well as numerically in percent.

2.6 Installing the Battery in the Holder

Guide the AES PPP / AES SP to the holder with both hands on the handle side (see picture). Make sure that the battery is correctly aligned.



Push the battery pack evenly and carefully into the holder (see picture below). As soon as you have inserted the battery completely, you need to fix it in the holder. For this reason, lock the holder with the key provided for this purpose. Remove the key and store it safely.



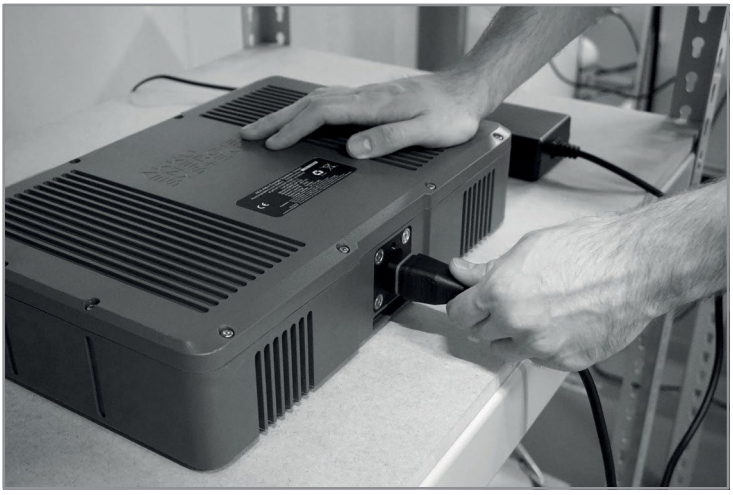
2.7 Note on Correct Storage

Outdoor temperatures below +5 °C can temporarily reduce the capacity of the AES PPP / AES SP by up to 10 %. At low outside temperatures, the battery should therefore be stored at room temperatures and only connected to the system shortly before use.

3 Charging Process and Charge Level Display

3.1 Charging Process with Charger

Place the AES PPP / AES SP next to the charger on a non-flammable surface. Do not cover the AES PPP / AES SP or the charger (see picture).



When using a single charger, be sure to grip the charger plug as shown in the picture below. Do not hold the plug by the cable either when plugging it in or when unplugging it.

Position the battery so that you can follow the charging progress on the charging status display. During the charging process, the charging status display shows a flashing icon on the display. In addition, the flashing battery icon and the percentage display indicate the progress of the charging process (see picture).

To charge an AES PPP / AES SP, a charger with a maximum charge voltage corresponding to the battery must be used. An original charger or one approved by AES must be used.

3.2 Display of Charging Status

To see the charge status, please press the button to the right of the charge status display once briefly.

The battery status is displayed graphically by a battery symbol with 1 to 7 bars as well as numerically in percent. Additionally, the current voltage of the battery is shown in volts (V).

To set the charge level indicator on a new battery, it must first be fully charged and then completely discharged.

4 Technical Features - AES PPP / AES SP

	AES PPP	AES SP
Nominal Voltage	48 V DC	48 V DC
Capacity	30 Ah	30 Ah
Energy	1440 Wh	1,440 Wh
Cell Interconnection	15S / 2P	15S / 2P
Charging Current	15 A	22 A
Peak Charging	16 A - 18 A for 15 s 19 A - 25 A for 5 s 26 A - 30 A for 3 s	23 A - 28 A for 15 s 29 A - 40 A for 5 s 41 A - 43 A for 3 s
Continuous Discharge Current	35 A	60 A
Peak Discharge Current	36 A - 45 A for 15 s 46 A - 50 A for 5 s 51 A - 55 A for 3 s	61 A - 90 A for 15 s 91 A - 100 A for 5 s 101 A - 105 A for 3 s
CAN bus	yes	yes
IoT Compatible	yes	yes
Cell Type	3.2 V / 15 Ah LiFePO4	3.2 V / 15 Ah LiFePO4
Charge-/ Discharge Cycles at 90% remaining Capacity	> 2.500	> 2.500
Charge-/ Discharge cycles at 80% remaining Capacity	> 3.000	> 3.000
Weight	12 kg	12 kg
Dimensions (mm)	L 400 x B 268 x H 89	L 400 x B 268 x H 89
Casing	ABS plastic	ABS plastic
Charging Temperature	+32 °F to +113 °F	+32 °F to +113 °F
Discharge Temperature	-4 °F to +140 °F	-4 °F to +140 °F

5 Care Instructions

An empty AES PPP / AES SP must be fully charged within 24 hours!

Regardless of use, the AES PPP / AES SP must be fully charged after 4 weeks at latest!

If you want to clean the AES SP / AES PPP, make sure it is neither connected to a charger nor to a electrical consumer.

If you want to clean the charger, first disconnect the power connection by pulling the mains plug out of the power socket!

The inside of the electrical connection socket of the AES PPP / AES SP should be cleaned exclusively by expert personnel or by the manufacturer AES Akku Energie Systeme GmbH.
Do not use aggressive cleaners or solvents such as acetone.
Please use a soft, clean and lint-free cloth.

6 Electrical tests

The electrical test of the AES PPP / AES SP 48 V takes place at the manufacturer AES Akku Energie Systeme GmbH where all relevant data such as capacity, end-of-charge voltage, quiescent voltage and the uniformity of the individual cell voltages are checked.

7 CE-Declaration of Conformity

CE-Konformitätserklärung
CE-Declaration of Conformity

Die/*The*

AES Akku Energie Systeme GmbH
Biedenkamp 8
21509 Glinde

erklären in alleiniger Verantwortung, dass der Akku
declare in sole responsibility that the battery pack

AES Super Pack 48V/30Ah

konform ist zu der
is compliant with the

CE

EN 62133-2:2017

EN 15194:2017, clause 4.2.15.1 Emission

EN 55025:2008

UN Transporttest 3480 / UN transport test 3480
UN Prüfhandbuch Teil III, Abschnitt 38.3 / UN Manual of Tests part III, section 38.3

Glinde, den/the 22.11.2022
Ort/Place, Datum/Date

M. Behlke
Geschäftsführer/CEO

Die entsprechenden Erklärungen und Unterlagen sind bei der AES Akku Energie Systeme GmbH hinterlegt.
The relevant statements and documents are deposited in the AES Akku Energie Systeme GmbH.

CE-Konformitätserklärung
CE-Declaration of Conformity

Die/*The*

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AES Power Pack Plus 48V/30Ah

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EN 50604-1:2016+A1:2021

EN 15194:2017, clause 4.2.15.1 Emission

EN 55025:2008

UN Transporttest 3480 / UN transport test 3480
UN Prüfhandbuch Teil III, Abschnitt 38.3 / UN Manual of Tests part III, section 38.3

ANSI/CAN/UL/ULC 2271

Glinde, den/the 28.04.2023
Ort/Place, Datum/Date

M. Behlke
Geschäftsführer/CEO

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