

Installation Guide

With reference to **EZA80V2** and **EZA130V2**



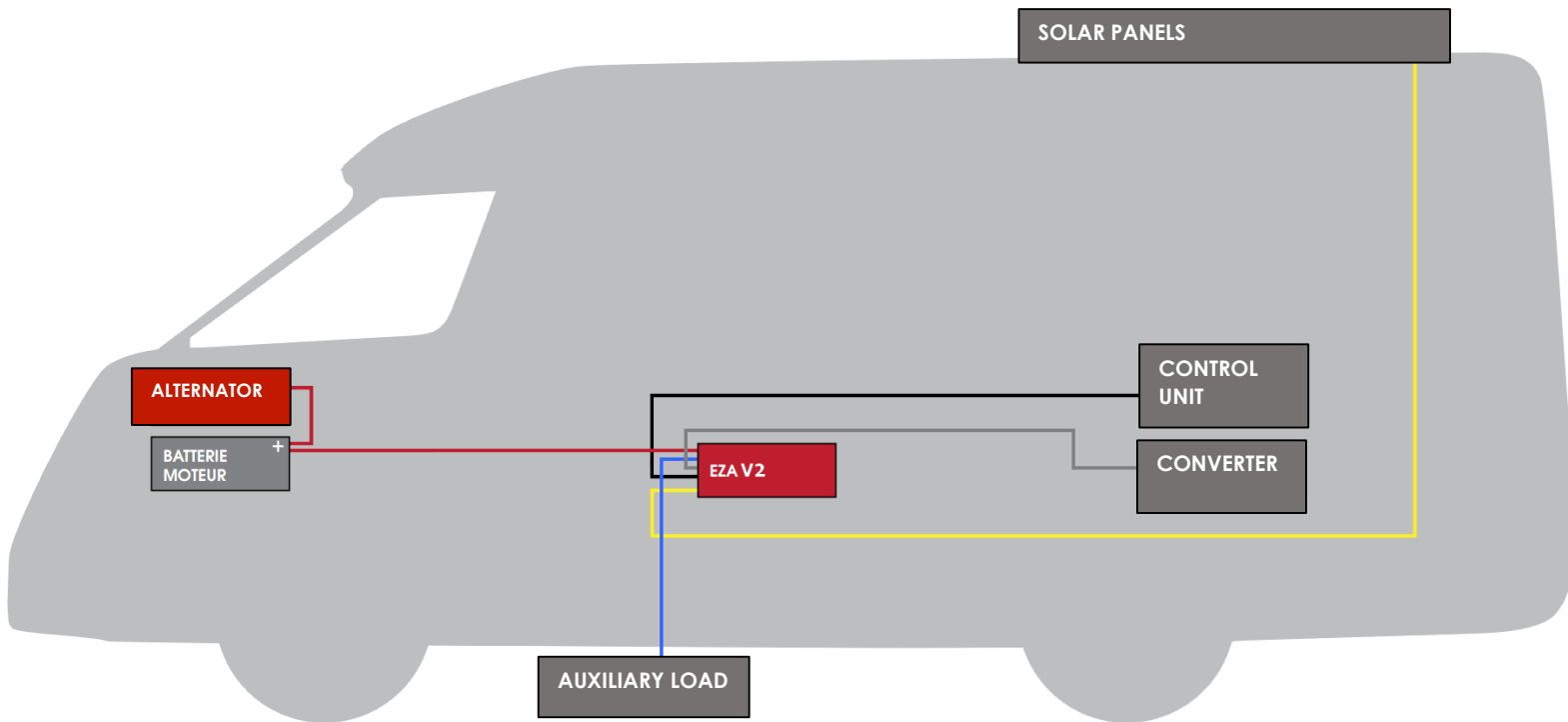
eza.fr



EZA ENERGIE ZEN ALTERNATIVE

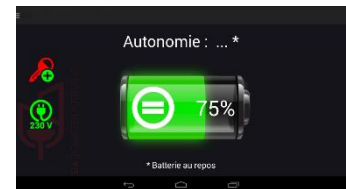
Please read this guide carefully before installing, activating, and using the system: then give it to the end-user.

Simplified installation diagram



EZA App

Check and view: the **EZA App** is available for Android and iOS. To download it, go to <http://eza.fr/app.html> or type 'EZA App' into the Play Store or Apple Store.



Synchronisation: To learn how to use the **EZA App** to its full potential, please follow the synchronisation procedure described in the appendix of this installation guide



Contents

- 1 Delivery contents
- 2 Explanation of symbols
- 3 Security notices
- 4 Correct usage
- 5 Details for connection
- 6 Installing the EZA 80Ah and EZA 130Ah
- 7 Before first use
- 8 Connecting an auxiliary device
- 9 Switching off the EZA 80Ah and the EZA 130Ah
- 10 Cleaning the EZA 80Ah and the EZA 130Ah
- 11 Recycling
- 12 Terms and conditions of the guarantee
- 13 Appendix 1: directions for use and synchronisation procedure for the EZA application
- 14 Technical features

IMPORTANT

INSTALLATION MUST BE PERFORMED BY A SPECIALIST.

BEFORE INSTALLING AN EZA POWER PACK, CHECK THE FUNCTIONING OF THE ORIGINAL LEISURE BATTERY SYSTEM.

ASSESS THE CONDITION OF THE ELECTRICAL WIRING.

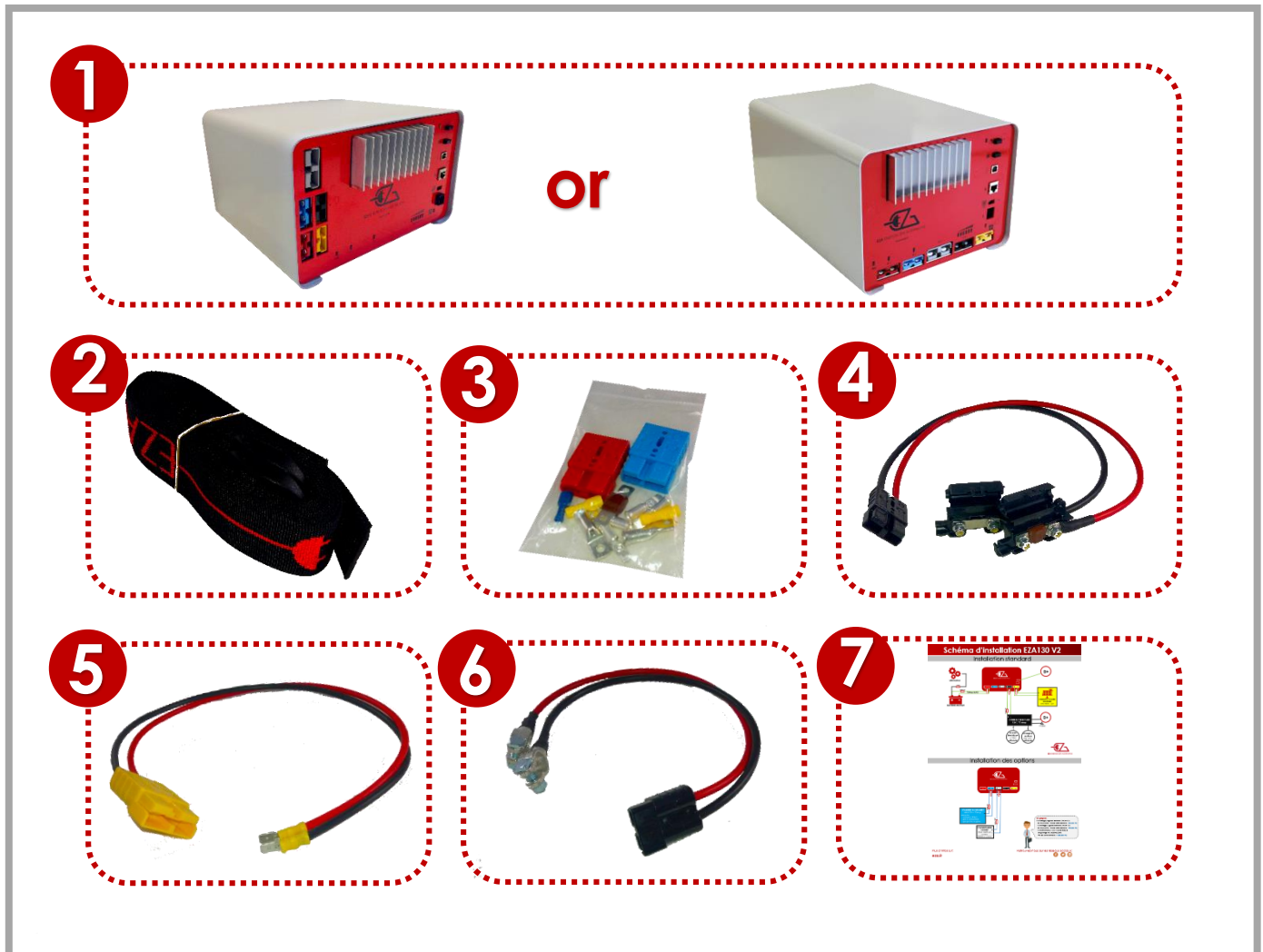
CHECK:

THE ROUTING OF CONNECTIONS

LOCATION OF ALTERNATOR – BATTERIES – ELECTRIC BOARD – AFTER CONTACT OR D+ – SOLAR PANEL, ETC.



1- Delivery contents



Pos. in fig.	Description
1	1 EZA 80Ah or 130Ah power pack
2	2 attachment straps
3	1 screw and connector kit
4	1 connector cable for EZA power pack output
5	1 solar panel or wind power unit connector cable
6	1 maintenance cable to be kept should you ever wish to replace the EZA power pack for conventional lead-acid batteries. For example, if you sell the vehicle and want to keep the EZA or if the EZA should develop a fault.
7	1 operating manual



2- Explanation of symbols



WARNING!

Security notices: not following these notices could cause injuries or damage the material or the installation.

3- Security notices

The manufacturer will not take any responsibility for damage in the following cases:

- Errors made during assembly or connection
- Mechanical constraints or power surges which damage the equipment
- Modifications made to the product without explicit authorisation from the manufacturer
- Use which differs from that described in the guide and notices. When using electrical appliances, the following general security notices should be respected so as to avoid:
 - Electric shock
 - Fire
 - Injuries.
- Electrical appliances are not toys!
Children are not capable of assessing potential hazards. Do not let children use electrical appliances without supervision. Watch children to make sure they do not play with the equipment.
- People (including children) who are not able to use this equipment in complete safety, whether due to physical, mental or sensory impairment, or due to lack of experience or knowledge, are not authorised to do so.
- Use the apparatus for the purpose for which it is intended.
- Do not modify or transform the apparatus.



- All maintenance and repairs must be performed by someone who is qualified and perfectly aware of the dangers and regulations relating to these procedures. Any poorly performed repair risks causing serious danger. If repairs are necessary, go to your seller (whose address should be on the warranty card).
- Only use the apparatus if the EZA 80Ah or EZA 130Ah and all connections are intact.
- Cut off electricity flow during any work on the apparatus
- Bear in mind the heat produced by the apparatus and keep a clear distance of 20 cm around it.
- Install the apparatus in a dry place which is sheltered from splashes of water.
- It is essential that the power pack is mounted the right way up: any other position is forbidden.
- Protect the apparatus from corrosive gases and from dirty or humid air.
- Fix the apparatus to the floor using supplied attachment straps and clips.

4- Correct usage

The EZA 80Ah and 130Ah batteries are meant for on-board mobile use. They are equipped with several charging plugs according to the available sources of energy.

It is possible to attach equipment with a voltage of 12V, or a 12VCC/230VAC inverter with a maximum output of 1500W.

The EZA 80Ah and 130Ah batteries must not be used to start a vehicle's engine.



5- Details for connection

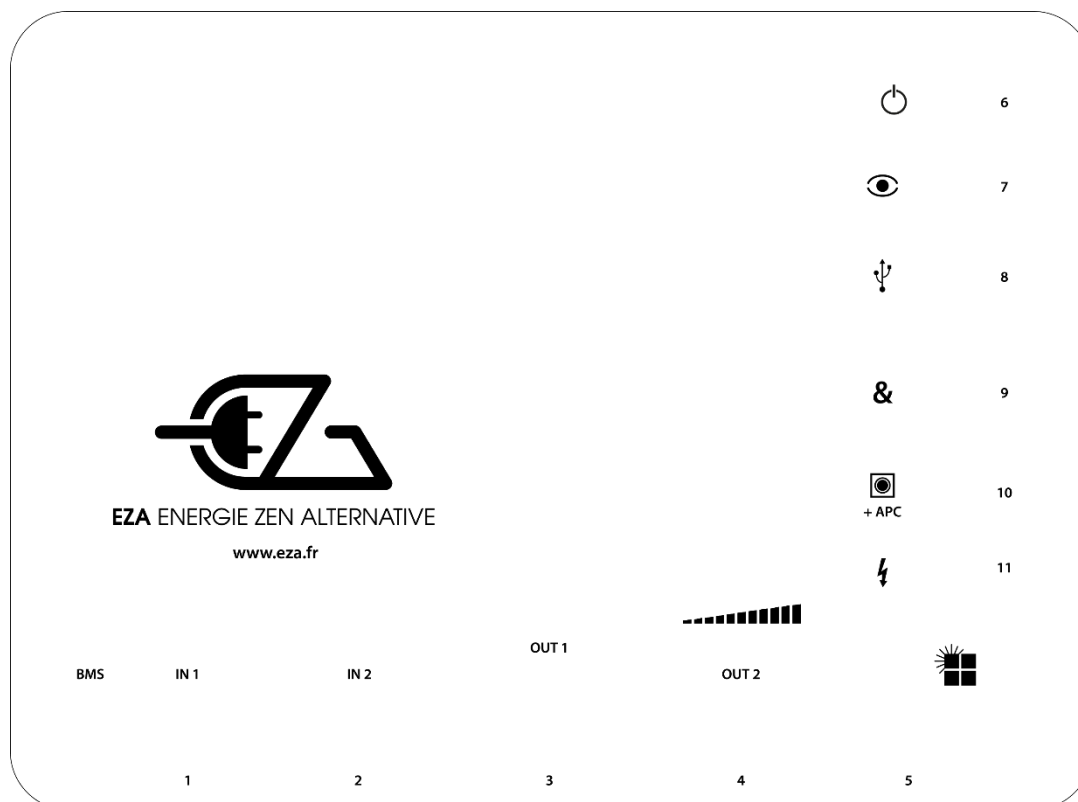
The EZA 80Ah and EZA 130Ah batteries are energy storage units equipped with a powerful Lithium-Iron-Phosphate (LiFePO₄) cell, which allows you to power 12V DC or 230V AC electrical equipment using an inverter.

They can be directly connected through a vehicle's control unit using the provided specific cables.

In order to increase capacity, it is possible to connect up to four EZA 80 Ah and / or 130Ah batteries in parallel, but only by using a specific EZA coupling unit.



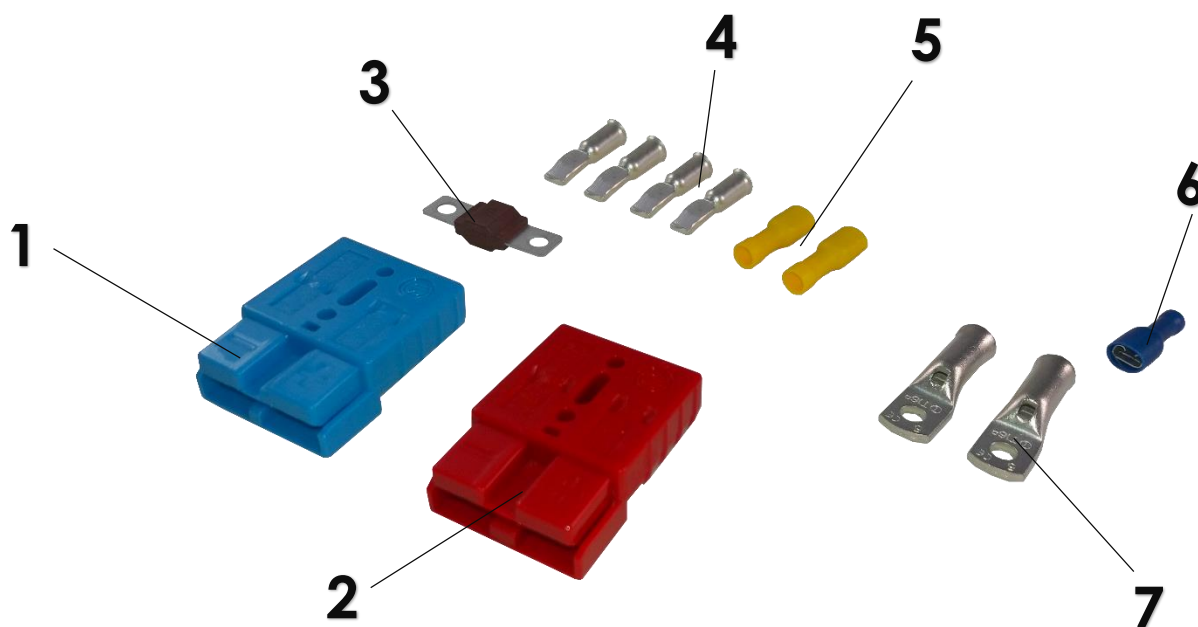
Description of the connection panel



Pos. in fig.	Description
1	Engine battery load line connector
2	Auxiliary load line connector
3	Inverter connector
4	Support connector
5	Solar panel or wind power unit load line connector
6	On/off button to put in hibernation mode
7	LED visualisation button
8	Maintenance USB connector
9	Battery coupling connector
10	+APC or D+ connector
11	Control cable connector for 230V AC network (for optional EZA controlled inverter)



Description of the supplied connectors



Pos. in fig.	Description
1	1 BLUE Anderson socket (SB50B) for auxiliary load connection
2	1 RED Anderson socket (SB50R) for engine battery connection (16 ² cable)
3	1 70A fuse to be placed on the positive end of the cable linking the EZA power pack and the engine battery
4	4 SB50 Anderson terminal lugs for 16 ² cable
5	2 terminal lugs for solar panel / wind power unit
6	1 connection cable lug for +APC or D+
7	2 lugs for 16 ² cable



- The EZA 80Ah or 130Ah power pack must only be connected using the supplied connection cables.

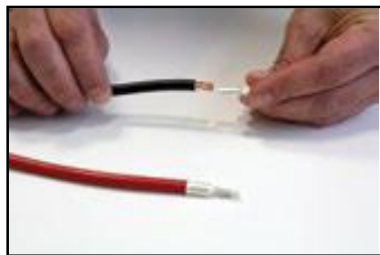


6- Installing the EZA 80Ah and EZA 130Ah batteries

Please read the following instructions carefully before choosing the installation location:

- The EZA 80Ah and EZA 130Ah batteries must remain the right way up, on a flat and stable surface.
- The installation location must be protected from moisture and dust.
- The installation location must not be in an area containing flammable materials.
- The installation location must be well ventilated. If you are installing it in a small space, there must be enough room around the EZA to be able to pull out the Anderson sockets without too much difficulty with a few centimetres on either side.

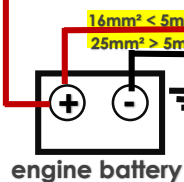
6.1- Connecting the fast charge line (1st red socket)



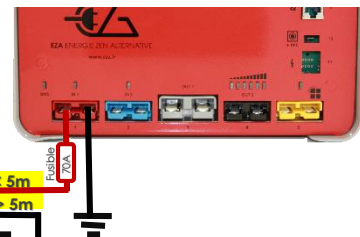
1/ Attach the Anderson terminal lugs onto the 16² cables. Insert the lugs into the red Anderson socket **paying attention to the direction and the polarity.**



alternator



engine battery



2/ Route the cable to the engine battery and the connector **paying attention to the polarity.**

3/ Attach the cable to the EZA power pack using the electrical connector



- If the distance between the EZA Power Pack and the engine battery requires a cable over 5 metres long, you must use a minimum 25² cable with an Anderson socket SB120R (CABLEZA25) and an ADAPTKIT to connect to the EZA Power Pack (included with the CABLEZA25).

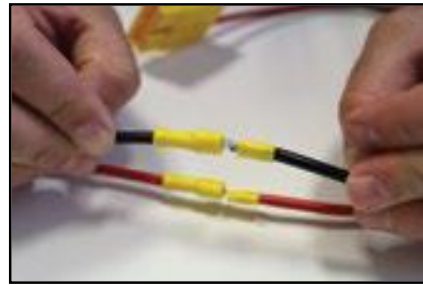


6.2- Connecting the photovoltaic / wind power unit load line (yellow socket no.5)

- A specific socket is used to connect the solar panel or wind power unit. This socket is equipped with a special, high efficiency lithium battery regulator which can accept a maximum power of 400W.



- **Only connect devices which supply a voltage value between 18 and 22 Volts and a maximum current of 40A. Maximum allowed power: 400W.**
- **Make sure that no external solar panel regulator is connected to the solar panel. A specific high efficiency lithium regulator is integrated in the EZA power pack.**



1/ Identify the inlet for the solar panel / wind power unit and attach the lugs onto each end. Link the inlet of the solar panel(s) / wind power unit(s) directly to the connection kit.



2/ Connect the solar panel / wind power unit using the connection kit on the EZA power pack connection panel.



6.3- Connecting the 'supply' charge/discharge line (black socket no.4)



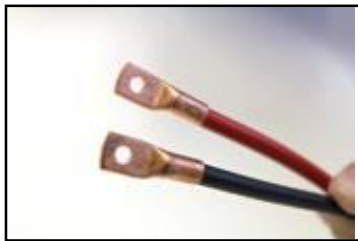
- Use the specific equipment meant for this
- Only connect devices which require a supply voltage of 12VCC and pay attention to polarity

1



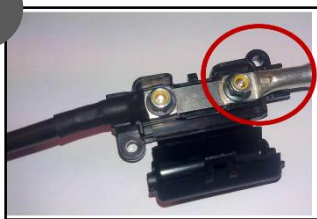
1/ Get the connection cable for EZA output

2



2/ Get the cables from the original service battery back and attach the adapted lugs to the section of cable.

3



3/ Connect the attached cables to the fuse holder **paying attention to polarity** using lugs and nuts. Fold the fuse holder back shut.

4



4/ Connect the kit to the EZA power pack with the black connector.

Please respect the maximum authorised power and voltage for this charge/discharge line: 70A and 12V



6.4- Connecting the +APC or the D+



Connect an information cable which indicates the presence of the +APC or the D+ to connector no.10 (+APC) of the EZA power pack (attention: **do not confuse this with the permanent +**).

6.5- Synchronisation of the EZA application

The EZA application is available for free download from Google Play Store and the iTunes Store. This application allows you to:

- Check the EZA power pack is properly installed and working well.
- Have an image of all the information necessary to use the V2 EZA power pack. This information is transmitted instantly to the application.



- To best synchronise the EZA power pack with the EZA application and for the application to work best, it is vital to consult the directions for use provided for this purpose (in the appendix).

The **directions for use** and the description of the synchronisation process for the **EZA App** are located in the appendix of this installation guide.

7- Before first use



- Check the functioning of the installation.
- An initial full charge is necessary to synchronise the EZA power pack with the EZA application. This charge must reach a voltage of 14.2V.



8- Connecting an auxiliary device (OPTIONS)

8.1- Connecting an inverter

Connect the inverter to the **grey no.3 socket** using an **Anderson SB120G socket**. Special cabling is optionally available (ref. CABLECONV).

Follow the installation instructions opposite.

Please respect the maximum power allowed for this discharge line: 1500W continuous and 1800W surge.



We suggest a 1500W EZA inverter managed by the EZA app (ref. **MODPILCONV**). There is a specific installation process, you can find the installation diagram on **eza.fr**



INVERTER
12/230V
MAX 1500W
continuous
1800W surge

8.2- Attach an auxiliary charger (lithium charger, fuel cell, power generator, etc.)

Connect the charger to the **socket using an Anderson SI** (included with the connectors

Follow the installation instructions shown opposite.

Please respect the maximum allowed power and voltage for this charge line: 70A and 12V.



CHARGE AUXILIAIRE
MAX 12V – 70Amp
exemples :
- chargeur Lithium
- pile à combustible
- groupe électrogène,....



eza.fr



Follow us!



PAGE 13



EZA ENERGIE ZEN ALTERNATIVE

8.3- Connecting the engine battery recharge cable



1. Disconnect the red cable from the EZA power pack and connect it to the red socket on the 'engine battery recharge cable'.
2. Disconnect the black socket from the EZA power pack and connect the black socket from the 'engine battery recharge cable' to the black socket on the EZA power pack.
3. Let the engine battery charge for 10 to 15 min.
4. **WARNING: don't start the engine with the 'engine battery recharge cable' connected.**
5. Disconnect the 'engine battery recharge cable' and reconnect the socket as it was initially (before point no.1).
6. Start the engine.



9- Switching off the EZA 80Ah and the EZA 130Ah

To disconnect the EZA completely:

- ✓ Make sure the EZA charge level is over 50%
- ✓ Turn off the power switch
- ✓ Disconnect the connections

The EZA power pack is now disconnected. Its discharge to empty rate is 3% /year.

10- Cleaning the EZA 80Ah and the EZA 130Ah



- Do not use any sharp or hard object nor any detergent for cleaning. This could damage the product.

- Clean the product with a damp cloth.

11- Recycling the EZA 80Ah and the EZA 130Ah

Used batteries are not household waste.

Take faulty or used batteries back to the seller or to a collection centre.

The LiFePO4 power cells are 100% recyclable.



12- TERMS AND CONDITIONS OF GUARANTEE

1. DURATION OF THE GUARANTEE

EZA (or LAVI) agrees to a 24 month guarantee for EZA 80, 130, 260 with the possibility of extending this guarantee to 60 months. The limited guarantee is effective from the billing date and after registration with LAVI, at latest 10 days after billing (see the guarantee card).

2. FIELD OF APPLICATION

The guarantee is granted only to individuals and is not applicable in the field of industrial use or the mishandling of the device. This limited guarantee is applicable for: any manufacturing fault or defect from our production department which leads to the improper functioning of the EZA in normal conditions of use; for any abnormal deterioration of our equipment, in normal conditions of installation, storage and use.

3. FIELD OF EXCLUSION

Any use, defect or improper functioning which is caused by not respecting the installation notices and directions for use are excluded from the guarantee, in particular: uses which contradict the instructions; damage caused by the spill of various products (water, oil, etc....) or linked to specific climatic conditions (ice, floods, etc....); damage linked to any act of vandalism, impact or accident; in the case where the device has been opened; in the case where the device has been modified; in the case where annual check requirements have not been respected.

4. GUARANTEE FIELD

This guarantee covers the defects described in paragraph 2 of the present terms and conditions, after the sales contract has been signed by the installer and the user. EZA reserves the right to choose how to fix the stated defects, whether through reparation or through replacing the device. EZA reserves the right to use exchange pieces which are recycled and in working use in the framework of repairs. In the case of intervention on the device and after repairs have been performed, the guarantee period on the repaired or exchanged parts does not reset to zero. It continues to run until the expiry date of the existing guarantee.



This guarantee does not give the right to extra claims, especially not to compensation, damages or interest for the buyer or third parties. The guarantee does not cover fees that may be incurred due to difficult device installation conditions (for example disassembling items or pieces of the body), nor damages that may be caused by the installer.

6. GUARANTEE CLAIMS

In the case of abnormalities you should contact the EZA aftersales service for a first diagnosis. Please indicate the nature of the defect, the model of the device as well as the serial number. So as to avoid damage in transit, the device should only be sent with the agreement of the EZA aftersales service. Before sending, it is important to incorporate the necessary packaging recommendations given by the EZA aftersales service or the sender will be held responsible for any possible damages linked to transportation. If the device's return seems necessary, the seller (LAVI customer) must be responsible for the device's return and will be held responsible for any potential damage linked to transportation. In the case of sending the device to the manufacturer, the device should be sent under the ordinary system. You should attach proof of purchase to the delivery which shows the date and place of purchase in the form of a copy of the original invoice which acts as proof of the guarantee. If necessary the invoice for guarantee extension should also be attached. In the case of a guarantee, the factory covers the fees and transport/delivery/return. If the damages are not covered by the guarantee, the manufacturer will warn the customer and indicate the reparation fees that he is not obliged to accept. In this case, the delivery fees will also be the customer's responsibility.



13- Appendices



EZA Application

How to use



Attention: before starting the EZA app, make sure that your EZA power pack is on. The 'ON' light on the EZA power pack should be green. **To download the app on your Android device, go to eza.fr or type 'EZA App' into the Play Store**

1. Start

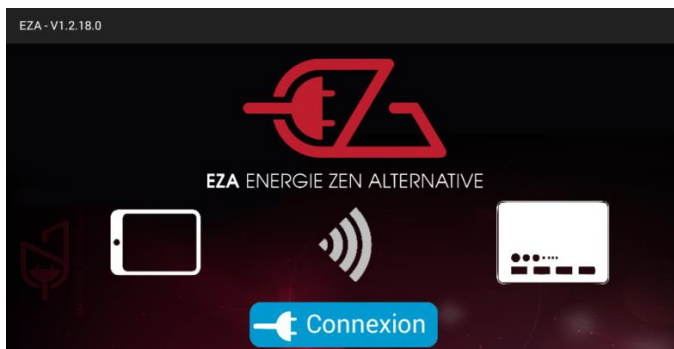
1.1. Launching the application



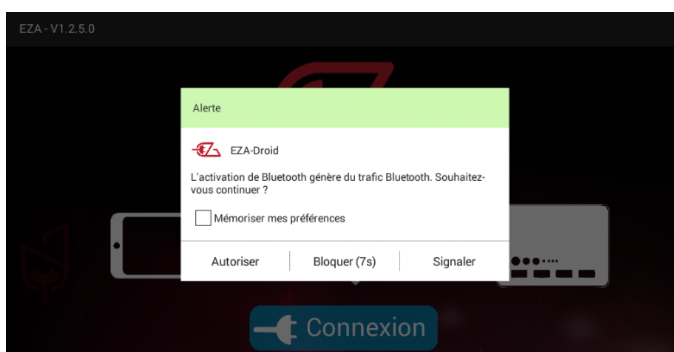
To open the EZA application, start by pressing the '**EZA-droid**' icon in the list of applications on your tablet or smartphone.

1.2. Bluetooth linking process

When starting the application, a connection page appears. This page will allow you to synchronise your smartphone/tablet with your EZA power pack.



Press the '**connection**' button located in the middle of this page.



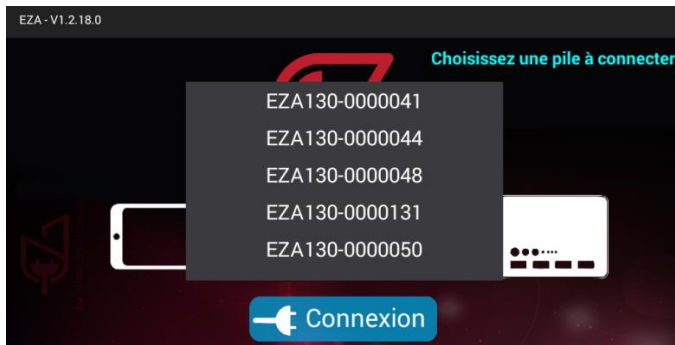
A warning message may appear if Bluetooth is not already activated on your device.

Press '**allow**' to allow your smartphone or tablet to connect to your EZA power pack through Bluetooth.

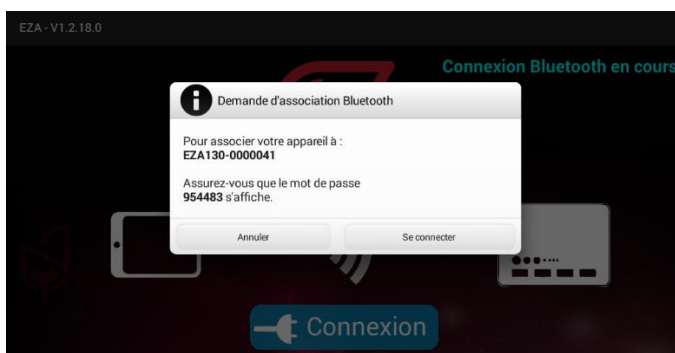


EZA Application

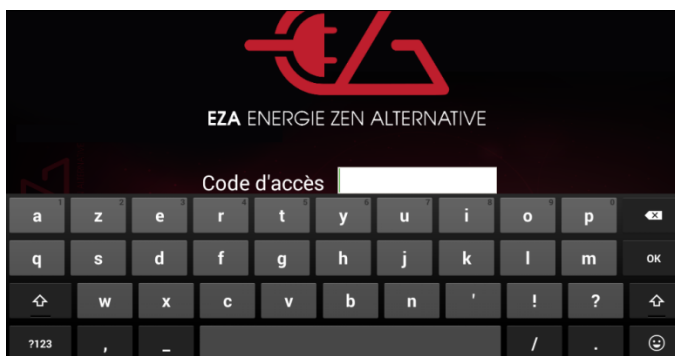
Directions for use



If several EZA batteries are close to your smartphone or tablet, the list of available EZA batteries will appear. Press the name of your EZA power pack. You can find this number on a sticker on your EZA power pack.



A window will appear. Press 'connect'.



A new page will appear asking you for an access code. This access code is available on the back of your EZA power pack. The code can be found on the bottom right of the sticker on the back of the EZA power pack. It will start with A. Type this code then press 'confirm'

Example:



Back of the EZA



EZA Application

Directions for use



Your device is now associated with your EZA power pack. **Fully charge the EZA power pack** to synchronise it and to then be able to see its charging state on the application.

This first full charge must reach a voltage of 14.2V. We recommend using a special lithium battery charger or to drive a sufficiently long time.

2. Use

2.1. Menu

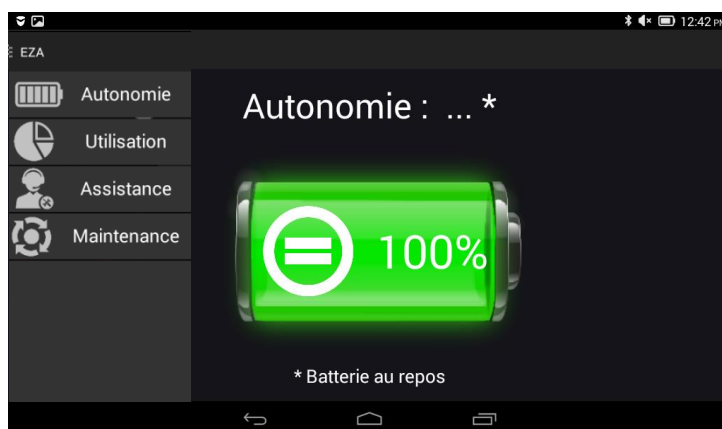


After this first full charge is complete, you'll have access to the 'battery life' page which tells you about the charge level of your EZA power pack.

Pressing on the menu icon: ≡ will make the menu appear/disappear.

This menu gives you access to all of the functions offered by the application:

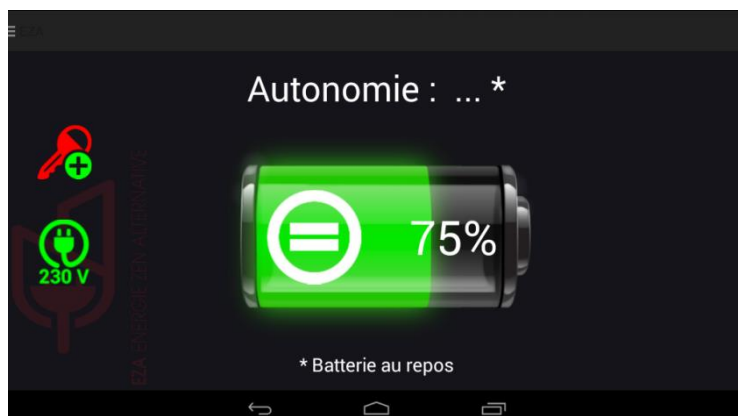
- An image of the remaining **EZA power pack life** on the page 'battery life'.
- A real time image of the **changes in charge or discharge of your EZA power pack** on the page 'use'.
- Information about the **use** of your EZA power pack.
- **Assistance** information in the case of a problem.
- **Maintenance information** for your power pack.



EZA Application

Directions for use

2.2. Functions



Battery life page: this page allows you to find out the charge level of your EZA power pack. You will also find an estimation of your EZA's remaining period of use.

The two icons on the left part of the screen show:

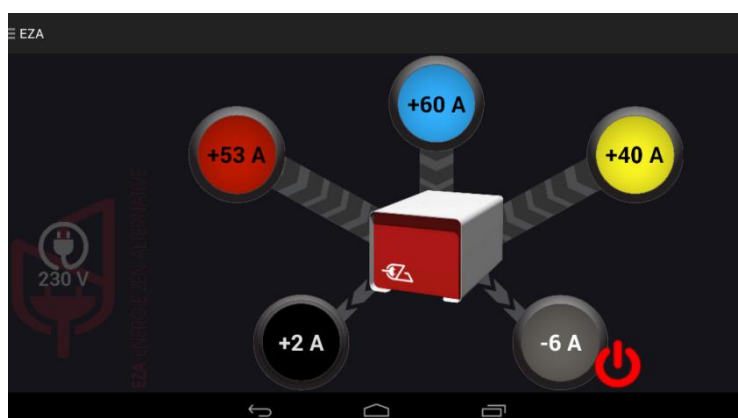


The presence of +APC on your installation

Make sure this icon is activated to allow your EZA power pack to charge via the engine battery when starting the car! If the icon is not visible, the connection between the EZA power pack and the +APC or D+ has not been properly installed, contact your installer.



The presence of 230V on your installation (This information is only visible with an EZA converter and a M040 cable linking the converter to the EZA)



Use page: this page lets you see the real time information on the charge and discharge of your EZA power pack. Each change is represented by a colour, identical to that of the socket on the front of your EZA power pack.

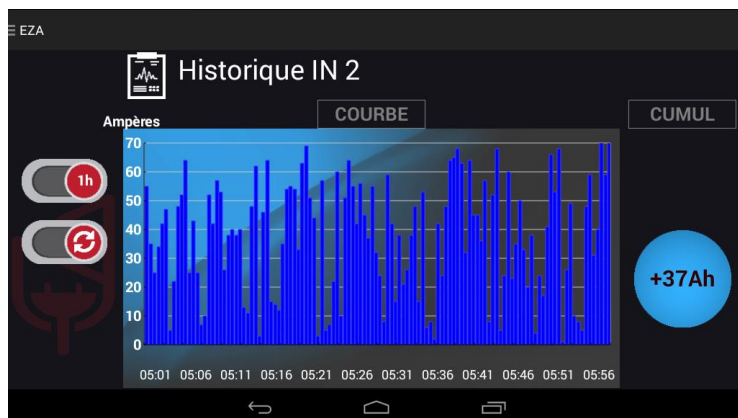
- Red: charge via engine battery
- Blue: charge via an auxiliary charger (optional)
- Yellow: charge via solar panel or wind power unit
- Black : supply charge and discharge
- Grey: inverter discharge (optional)




EZA Application

Directions for use

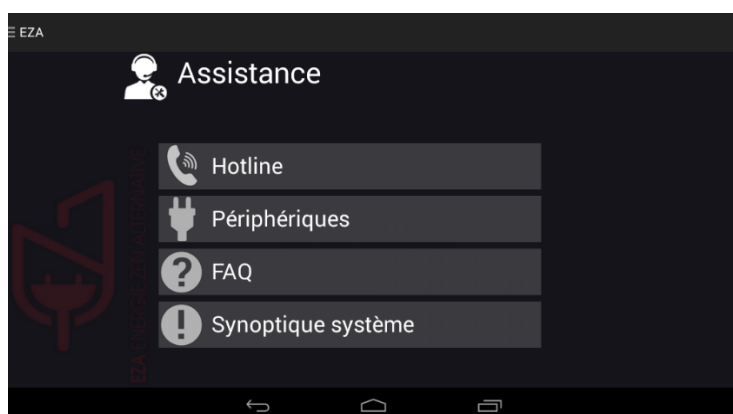
2.2. Functions



History page: this page lets you see the history of charge and discharge for each of the changes shown on the 'use' page. To access this page, press on the coloured circle for the incoming/outgoing energy that you want to analyse.

 This icon allows you to look at your data over 1 hour or 24 hours.

 This icon allows you to update your data.

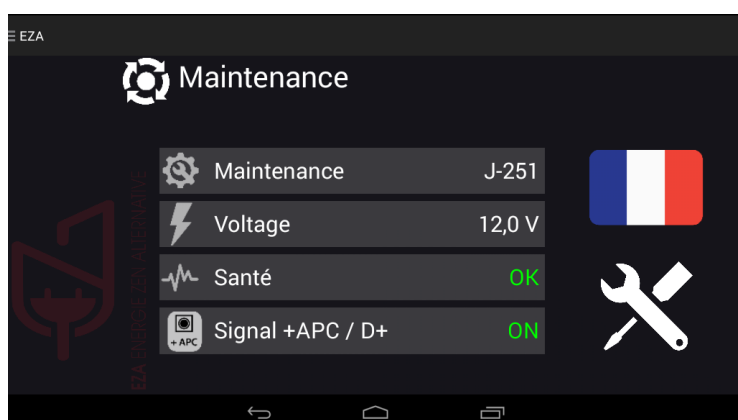


Help page: this page holds all the useful information that you may need in the case of a technical problem or question. Press a button in the sub-menu to see the content.

Maintenance page: this page allows you to manage the maintenance of your battery and to access the adjustment controls on your application.

You can see:

- The approximate time period until your next EZA power pack inspection
- The voltage of your installation
- The health of your EZA power pack
- The presence of the +APC / D+ signal



You can change the default language of your application. To do so, click on the flag.



The 'workshop intervention' icon is for the installer of your EZA. This page will allow them to see the information relating to a health check on your EZA.

PAGE 23



eza.fr



Follow us!

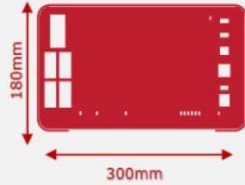


EZA ENERGIE ZEN ALTERNATIVE

14- Technical features

EZA Power Pack 80Ah

Technical features



Depth:
260 mm

General features

Capacity: 80 Ah
Nominal voltage: 12V
Technology: LiFePO4
Impedance: <30mΩ
Operational temperature: -20°C/+60°C
Storage temperature: -10°C/+45°C
Rate of discharge to empty: <3%/year
Integrated battery surveillance module: BMS
Maintenance interface: USB
Battery management: EZA App
Bluetooth module
Details of the changes on each charge/discharge line
Recording of events (SD memory card)
Possibility of coupling batteries (x4 max.)
Converter management
EURO 6 compatible

Protection

Protected charge lines
Protected discharge lines
Battery security in case of short circuit
Battery security in case of overcharging
Battery security in case of deep discharge

Maintenance

Diagnostic plug connector

Alternator charge line

EURO 6 compatible charge line regulator: 0-70A (integrated)
Max. current: 70A
Max. charge voltage: 14.6V

Photovoltaic charge line

Integrated photovoltaic regulator: 12V/50A
Max. solar panel voltage: 22V
Line protection: 50A

Auxiliary load line

Max. external charger: 12V/70A
Line protection: 70A

Supply discharge line

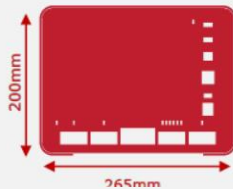
Min. voltage: 10V
Energy cut off: 9.8V
Line protection: 70A

Converter discharge line

Min. voltage: 10V
Energy cut off: 9.8V
Line protection: 125A
Max. constant current: 125A/1500W
Surge current: 5ms 150A

EZA Power Pack 130Ah

Technical features



Depth:
380 mm

General features

Capacity: 130 Ah
Nominal voltage: 12V
Technology: LiFePO4
Impedance: <30mΩ
Operational temperature: -20°C/+60°C
Storage temperature: -10°C/+45°C
Rate of discharge to empty: <3%/year
Integrated battery surveillance module: BMS
Maintenance interface: USB
Battery management: EZA App
Bluetooth module
Details of the changes on each charge/discharge line
Recording of events (SD memory card)
Possibility of coupling batteries (x4 max.)
Converter management
EURO 6 compatible

Protection

Protected charge lines
Protected discharge lines
Battery security in case of short circuit
Battery security in case of overcharging
Battery security in case of deep discharge

Maintenance

Diagnostic plug connector

Alternator charge line

EURO 6 compatible charge line regulator: 0-70A (integrated)
Max. current: 70A
Max. charge voltage: 14.6V

Photovoltaic charge line

Integrated photovoltaic regulator: 12V/50A
Max. solar panel voltage: 22V
Line protection: 50A

Auxiliary load line

Max. external charger: 12V/70A
Line protection: 70A

Supply discharge line

Min. voltage: 10V
Energy cut off: 9.8V
Line protection: 70A

Converter discharge line

Min. voltage: 10V
Energy cut off: 9.8V
Line protection: 125A
Max. constant current: 125A/1500W
Surge current: 5ms 150A

