

# Bobine

User manual





**Please read this user manual carefully.**

We would like to thank you for choosing a PESS Energy product and we hope that you will enjoy using your device in your daily work.

If in spite of this manual, you encounter any misunderstandings or situations that have not been mentioned in this document, please contact us by e-mail at [contact@pessenergy.com](mailto:contact@pessenergy.com) or by telephone on +334 91 58 86 74. Please read all the instructions in this manual carefully.

Follow all warnings and information contained in this manual. PESS Energy cannot be held responsible for any damage or injury caused by incorrect use. This user manual applies to the Powerbank Bobine, referred to as 'the device'.

In order to continuously improve our products and ensure customer satisfaction, we reserve the right to make technical changes to the device without prior notice.

For more information about our company and our products, you can find us on our official website [www.pessenergy.com](http://www.pessenergy.com).

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# I. Use cases illustrations

## CARRYING AND STORING

On the move



On the stairs

! Heavy load: 55 kg



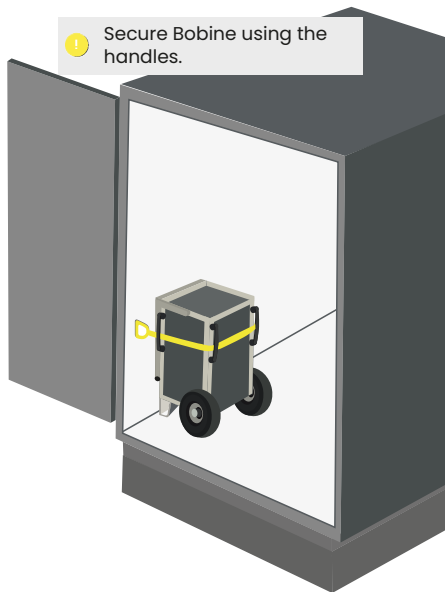
Loading

! Heavy load: 55 kg



Transportation

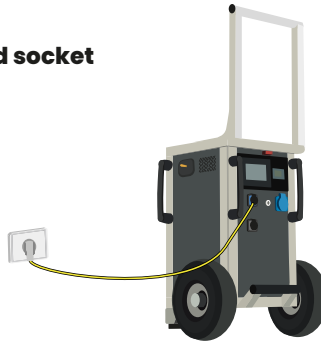
! Secure Bobine using the handles.



## Different charging options

### Charging via a 16A household socket

**Recharge time:** : 3h  
**Max power:** : 2000W



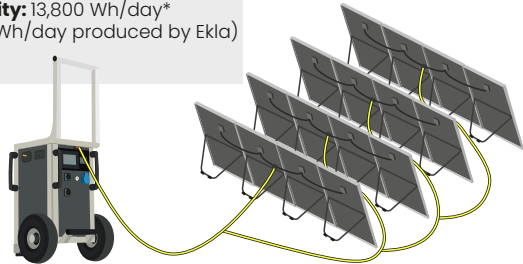
### Charging via solar panels

**Generate clean energy anywhere**

**Max PV input power:** up to 5000 W  
**Theoretical cumulative capacity:** 13,800 Wh/day\*  
(5000 Wh for Bobine and 8800 Wh/day produced by Ekla)  
**Recharge time:** <6 hours\*  
\*depends on weather, season, and location

#### **Ekla accessory**

Maximum power: 1700 Wp  
Actual power: 1400 W  
Production capacity\*:  
between 7 and 14 kWh/day



### Charging at an electric vehicle charging station

**Recharge time:** : Up to 6 Bobine  
at the same time <4 hours

**EV Adapter Accessory**



## Power supply for your equipment

1 Output : max 3600W



BTP

### Example

Hammer drill 1500W  
Total drilling time between 4 and 6 hours

CINE EVENT

### Exemple

Light Evoke 2400 W  
Autonomie : 4h

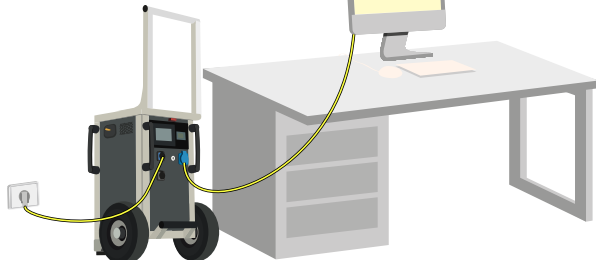
## Securing your sensitive equipment

### Back-up

In case of grid interruption, Bobine will take over

- 1 Max Output:
- 3600W when product is 100% charged
  - 1500W when product is discharged

Switch time : 20ms



## Add up the capacity (duration) of your Bobine

### Daisy chain 16A

Output : 3600W  
Capacity : 10 000Wh

- ⚠ All products must first be fully charged, risk of overcharging
- ⚠ Max 2 Bobine



### Team work

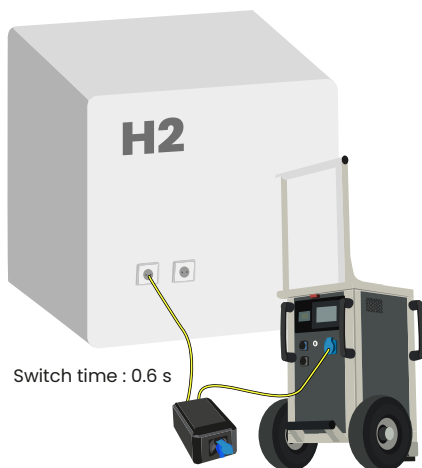
Output : 3600W  
Capacity : 10 000Wh

**InfiniT Accessory**  
Zero interruption box

Switch time : 0.6 s

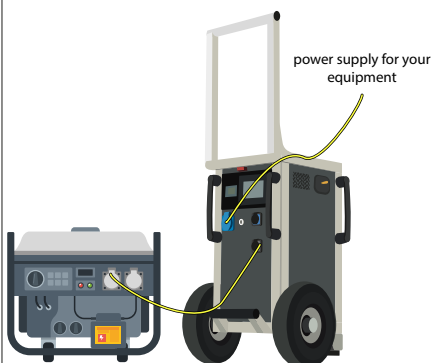


### Teamwork with two different energy sources



### Teamwork with thermal generator

Starting an automatic generator via dry contact



Start signal at 0%  
Shutdown signal at 80% battery

## II. Instructions

### 1. General safety instructions

- This device generates electricity on a private network, under the responsibility of the user. Only qualified personnel may use this device.
- For optimal and safe operation of the device, please follow the required specifications on the electrical power of your devices to be powered.
- Equipment with a combined continuous electrical power of more than 3600 W must not be connected to the device.
- If you wish to disconnect the AC or DC terminals, please follow the operating procedure carefully (*see section IV.2 'Starting up the device'*).
- Neutral system :
  - TN-S for mobile use : Before any use, the device must be earthed using an earth rod.
  - TT for grid use : the device is earthed to the mains socket via its charging cable. Make sure you comply with local requirements and applicable regulations when installing the device.
- The device must be stored charged at a temperature between -20°C and +50°C, in a dry, ventilated, clean area away from direct sunlight.
- The photovoltaic (PV) input is a maximum of 5000 W (MPPT from 120 to 450 VDC - 500 Voc) (*see III.2 'Technical characteristics of the device'*).
- When not in use, the device must be switched off by pressing the 'POWER' button. (*see IV.3 'Switching off the device'*).
- Do not use the device when it is completely discharged.
- Do not immerse the device.
- **The emergency power cut also marked 'Emergency off switch' on the device** (*see III.3 Figure 1*) **must only be used in the following cases :**
  - ◇ Smoke and/or fire emanating from the device (use only if possible).
  - ◇ Long-term storage of the device (more than 3 months).
  - ◇ In the event of a device fault (*see section V.1.Figure 5: Start-up procedure in the event of a fault*)
  - ◇ Problem caused by equipment connected to the device.
  - ◇ During a maintenance procedure.

- It is forbidden to connect electrical equipment to the output of the device during charging to a 16A mains socket (risk of INPUT and mains overload) with the exception of Daisy Chain..
- Do not open the device (**risk of electric shock, loss of manufacturer's warranty**). Repairs may only be carried out by repairers authorised by PESS Energy. If any faults remain after repair, please return your device to the authorised PESS Energy repair centre or to the retailer who sold it to you.
- Do not short-circuit any of the device's inputs or outputs.
- Do not connect 2 output sockets to each other.
- Do not connect an output socket to the device's charging socket.
- Do not connect an output socket to a PV input socket on the device.
- Do not cover the device when in use (unless using the optional rain cover supplied by PESS ENERGY)
- When in use, the device should be kept in the shade.
- The device must not be exposed to rain (unless using the optional rain cover supplied by PESS ENERGY)
- It is forbidden to climb on the device.
- It is forbidden to use the handlebars (*see III.3.Figure 1*) of the device as a lifting point.
- The device must be handled with care.
- The device must only be lifted using the handles.

## 2. Important instructions for the environment

- PESS Energy is responsible for the end-of-life and recycling of the product.
- This device must not be disposed of with other waste in order to prevent possible damage to the environment or human health. Contact the retailer who sold it to you in order to recycle it responsibly and safely.
- The cardboard packaging and wooden pallet support that protect the device during transport can be recycled. They should be discarded in the appropriate containers. Other plastic waste should be discarded in the rubbish bin.

### III. Device presentation

This device is a mobile energy unit, combining inverter, solar charger and battery charger functions to provide uninterrupted power supply. Its LCD screen allows the user to control the device's functions and easily access information such as the battery's state of charge, temperature, error messages and the device's input and output power.

#### 1. General characteristics of the device

- Integrated 6000W max continuous 230 Vac – 50Hz inverter.
- Integrated battery charger.
- MPPT : Integrated solar charge controller – 5000W max continuous.
- Compatible with 230VAC and 50–60 Hz mains voltage or a 170–280VAC generator.
- Protection against overloading, overheating and short circuits.
- System pre-heating function

#### 2. Technical characteristics of the device

| Technical data             |                              | BOBINE                                                           |
|----------------------------|------------------------------|------------------------------------------------------------------|
| AC Production <sup>1</sup> | Rated power                  | 4000 W                                                           |
|                            | Peak power                   | 180% for 100 ms, 120% for 5 s,<br>105–120% for 10 s              |
|                            | Battery capacity             | 5000 Wh                                                          |
|                            | AC output voltage            | 230 VAC ±5%                                                      |
|                            | Frequency                    | 50 Hz                                                            |
|                            | Signal type                  | Pure sinus                                                       |
|                            | UPS/Off-grid Transfer Time   | 10ms (for personal computers)<br>/ 20ms (for domestic equipment) |
| Connections                | AC output connections        | 1x single-phase sockets 16A                                      |
|                            | AC input connections         | 1x Input Power Twist NAC3 (20A)                                  |
|                            | DC input connections (SOLAR) | 1x Anderson 50A – 5000W                                          |
|                            | Dry contact                  | 1x SpeakON 4P socket –<br>Automatic generator set start          |

<sup>1</sup> At room temperature (20°C).

|                      |                                                |                                                            |
|----------------------|------------------------------------------------|------------------------------------------------------------|
| <b>Recharge</b>      | AC Power supply                                | 230 VAC 50 Hz                                              |
|                      | Max charging power AC socket 16A               | 2000 W                                                     |
|                      | Recharging time (if empty)                     | 3 hours on a 16A socket                                    |
| <b>Protection</b>    | AC Protection                                  | Differential Switch 30mA (16A)                             |
|                      | AC Circuit breaker                             | 1x 16A circuit breaker                                     |
|                      | DC Emergency off switch                        | Punch button                                               |
|                      | DC Protection (Battery)                        | Fusible magnéto thermique 200 A / BMS                      |
|                      | DC Protection (PV)                             | Fusible magnéto thermique 2 P – 40 A / Disjoncteur 40 A DC |
|                      | Neutral earthing system                        | TN-S                                                       |
| <b>Solar panels</b>  | Max PV Power                                   | 5000 W                                                     |
|                      | MPPT Voltage Range                             | 120 VDC – 450 VDC                                          |
|                      | Integrated Maximum Power Point Tracking (MPPT) |                                                            |
|                      | PV max current                                 | 20 A                                                       |
| <b>Use time</b>      | Use time at 300W                               | 16 h                                                       |
|                      | Use time at 500W                               | 10 h                                                       |
|                      | Use time at 1000W                              | 5 h                                                        |
|                      | Use time at 2000W                              | 2h30                                                       |
|                      | Use time at 3000W                              | > 1h30                                                     |
|                      | Use time at 4000W                              | > 1h                                                       |
| <b>Temperatures</b>  | Recharge temperature <sup>1</sup>              | -20 ~ +50 °C                                               |
|                      | Use temperature <sup>2</sup>                   | -10 ~ +50 °C                                               |
|                      | Storage temperature                            | 0 ~ +45 °C                                                 |
| <b>Physical</b>      | Dimensions (H x L x l)                         | 68 x 53 x 64 cm                                            |
|                      | Net Weight                                     | 90 kg                                                      |
| <b>Environnement</b> | Protection Class                               | IP 23                                                      |
|                      | Certifications                                 | CE – UN 38.3                                               |
|                      | Manufacturer's warranty                        | 2 years                                                    |

1 Between -20 °C and +5 °C the device does not charge but activates its preheating system. Please follow the procedure for switching the device on once the minimum temperature of 5°C has been reached.

2 Refer to IV.2 for details of how to start up the device in the various situations identified.

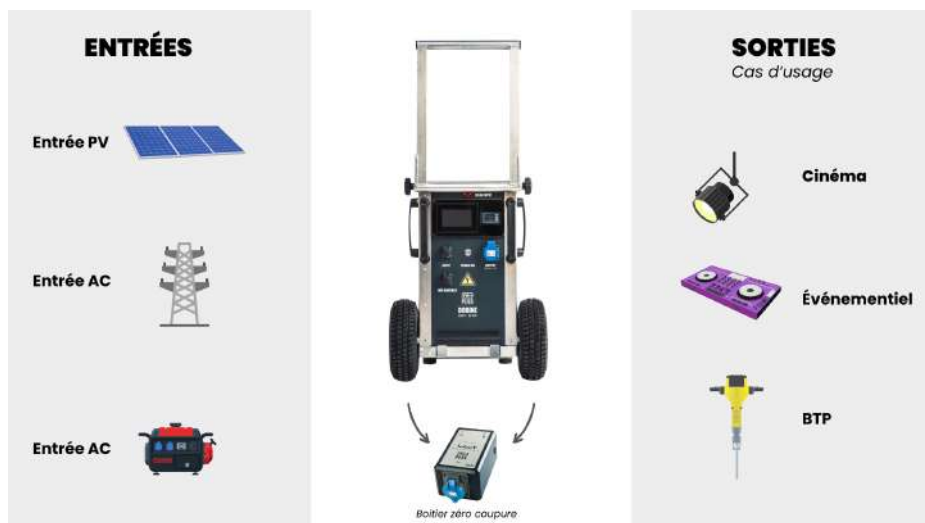
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|                      |                         |                                        |
|----------------------|-------------------------|----------------------------------------|
| <b>Environnement</b> | Protection Class        | IP 23                                  |
|                      | Certifications          | CE - UN 38.3                           |
|                      | Manufacturer's warranty | 2 years                                |
|                      | EMC Classification      | Class A / Pollution degree 3           |
|                      | Diversity Factor (RDF)  | 1                                      |
|                      | Max Altitude            | 2000m                                  |
|                      | Relative Humidity       | Max 100% at 25 °C without condensation |

### 3. Basic System Architecture

The following illustration shows the basic functions of the device, which can be used as an electrical power source and/or solar power generator.



Contact PESS Energy for other possible system configurations, depending on your needs. This device can power all types of home or professional devices, including motorized devices.



- |                                                               |                                                                          |
|---------------------------------------------------------------|--------------------------------------------------------------------------|
| <b>1</b> Power                                                | <b>6</b> Coupure d'urgence                                               |
| <b>2</b> Écrans de contrôle et niveau de charge               | <b>7</b> Contact sec                                                     |
| <b>3</b> INPUT AC Prise de recharge 20A                       | <b>8</b> Bouton reset «Lightboard»                                       |
| <b>4</b> 1 Prise de sortie 230 VAC - 16A                      | <b>9</b> Interrupteur différentiel 16A - 30mA Disjoncteur solaire DC 20A |
| <b>5</b> Prise de recharge solaire Anderson - 20A (5000W max) | <b>10</b> Prises d'air                                                   |

*Figure 1: Connector layout and key elements*



Figure 2 : Screens

## IV. Getting started with the device and using it

### 1. Before powering on

- Make sure that the air intakes (see III.3. Figure 1) of the device are not obstructed.
- Connect the device to the ground using an earth stake (see III.3. Figure 1).
- The device can be operated standing or lying on its front (sockets facing upwards).

### 2. Using the device

Throughout the duration of use of the device, monitor the device's charge levels and the remaining time of use (on the charge level screen) not to be surprised by the shutdown of the device and to anticipate its recharging.

**Do not connect too many devices at the same time (max 3600W continuous), which will cause the device to overload and fail.**

In the event of exposure to excessively extreme temperatures, beyond the ranges specified in III.2 «Technical characteristics of the device», the device will stop to get to safety.

## a. Getting Started

For the location of the buttons, refer to III.3 Figure 1.

1. Ensure that the emergency off switch button is in the « I » position and the circuit breakers and differentials are in the ON position (Up position).
2. Press the «Power» button to start the powerbank.
3. The LED on the «Power» button illuminates when there is power on the output sockets.

## b. Powering your electrical equipment

Connect your devices to the AC sockets of the device, making sure that the maximum electrical power of your equipment does not exceed the maximum power of the device (3600 W).

Check that the device is working. The value displayed on the charge level display must not exceed 3600 W (see III.3. Figure 3) and control the remaining time of use.



**Never unplug an electric device while in use. Be sure to turn off your power-consuming equipment before unplugging. Never exceed the maximum allowable current through the output outlets.**

## c. Shutting down the device

- 1) Turn off the device by pressing the «POWER» button, the white light of the device will then turn off.
- 2) Check that the screens turn off (this can take up to 30sec).
- 3) Unplug all your equipment

**The emergency off switch button must be held in the «pulled» position.**



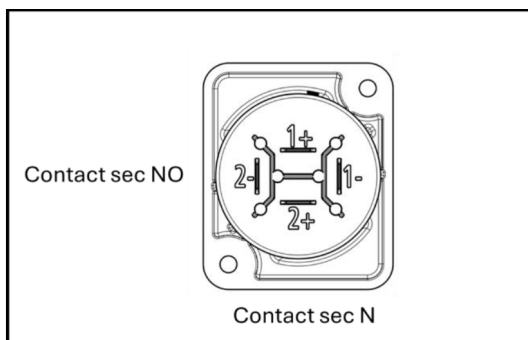
**It must only be positioned in the «pushed» position in the special cases mentioned in III.1 «General safety instructions»; transport and shut down of the device are excluded. Abusive and improper use of the device may cause the device to malfunction.**





### **d. Automatic starting of a gas generator**

The «Dry Contact» socket is a SpeakON 4P socket. 2 poles allow you to trigger the start automatically. See the following wiring diagram.



- Wire a 16A output of your gas generator to the 16A input socket of the Bobine.
- Also connect the dry contact cable to the starter motor and the charging of the starter battery of your gas generator.
- Turn on your Bobine to power your electrical loads.

When Bobine approaches 0%, the external generator will start automatically.

### **e. Electrical overload or leakage**

In the event of an overload, check your electrical installation, turn the device off and on again by pressing the «POWER» button. If necessary, contact PESS Energy.

In both cases (overload or electrical leakage), the device goes into safety. As soon as possible, you should disconnect all cables (in and out) and check the ground connection of the device and your equipment(s) if necessary.

If the device is working properly, make sure that the equipment plugged into the device does not have any electrical faults or insulation.

Then reset the differential switch. If the differential breaks again, contact PESS Energy.

### **f. Device failure**

If the device does not start or if it switches off prematurely, contact the retailer the retailer who sold it to you.

### **g. Long-term device storage (more than 2 days)**

- Store the charged device.
- Push the emergency off switch button to turn off the power.
- It is recommended to store the device at a temperature between 0 and 35°C, in a dry, ventilated, clean and dark area.

### **h. Maintenance**

- Cycle (complete charge and discharge) of the battery at least once a month.
- Check sockets, charging cables and ground stakes.

## **3. Recharging the device**

### **a. Recharging the device from the grid**

**First connect the cable to the «INPUT AC» charging port of the device, then the mains socket (230VAC, 16A socket) using only the cable supplied with it.**

Check that the device starts recharging :

- ◇ *The value displayed on the charge level screen should not exceed 2000W at 16A*
- ◇ The green color of the charge level screen
- ◇ should appear and then disappear cyclically.

In the event of exposure to temperatures that are too extreme, beyond the ranges specified in III.2 «Technical characteristics of the device», the device will not be able to charge and will be safe.

- ! When charging is complete, first unplug the power cord from the wall outlet, then disconnect the cable from the device's "INPUT AC" charging port.
- ! Do not leave the device charging unattended.
- ! The 'SumVHigh\_Level1' alert appears on the screen when the batteries are 100% charged. The 'SumVlow\_Level1' alert appears when the device needs to be recharged.

### c. Recharging the device on photovoltaic panels

The photovoltaic installation must be sized within the limits of the power allowed by the device, as specified in III.2 «Technical characteristics of the device». A total voltage of the solar installation below 120VDC will not trigger charging. A voltage higher than 450VDC may degrade the device.

- 1) Lower/position the «PV IN» circuit breaker to «OFF» (*see III.3. Figure 1*) before connecting the PV system
  - 2) Make sure the emergency off switch button is in the «pulled» position
  - 3) First connect the Anderson solar panel socket to the device (*see III.3. Figure 1*) and then connect your photovoltaic installation
  - 4) You will only be able to raise the «PV IN» circuit breaker when your installation is connected (*see previous steps*).
- Charging starts automatically.
  - The value displayed on the charge level screen must not exceed 6000W.
  - It is possible to use the device while recharging on solar panels.

- ! Do not handle the Anderson solar panel plug when the PV IN circuit breaker is raised/set to «ON».
- ! Do not allow the device to charge unattended.

When the recharge is complete, turn the circuit breaker down to «PV OFF» and then disconnect your solar installation before handling the device's Anderson plug.

For further information, please refer to the user manual of the EKLA kit (PESS Energy PV solution).

#### **d. Recharging the device at an electric car charging station**



**The use of an EV adapter (type 2 plug) is required (available in option). Carefully follow the instructions in the EV adapter's user manual.**

#### **4. Transport of the device**

- The device can be carried upright or lying on its front (with the sockets facing upwards).
- The device must be adequately secured to the transport vehicle when it is being moved. To do this, use a number of straps which must be positioned on the reinforcements of the device (*see I. 'Illustrations of use'*).
- The device must be turned off before transport by pressing the «POWER» button.
- The circuit breakers of the device must be lowered/in the «OFF» position for the duration of transport.
- If you accidentally press the 'Lightboard' button when packing the device for transport, the screens may remain lit even though the device is switched off. They will switch off automatically after a few seconds.
- The transport and/or shipment of the product by the user may be subject to the mandatory provisions governing the transport of hazardous materials (lithium ion batteries contained in equipment – UN3481). For more information, consult the Product Safety Data Sheet and/or contact your freight forwarder.

- ! The emergency off switch button must be held in the «pulled» position. It must only be in the «pushed» position in the special cases mentioned in III.1 «General safety instructions»; transport and stopping of the device are excluded. Abusive and improper use of the device may cause the device to malfunction.

## V. FAQ

### 1. What to do if the device is shut down due to a fault?

- Press the «Power» button. The button should be in the OFF position
- Press the «Reset» button to observe the data on the device. If everything is green, continue the procedure. In case of a red usage status indicator, please follow the following diagram «Fault start-up procedure»
- Wait 10s
- Press the «Power» button again to restart the device

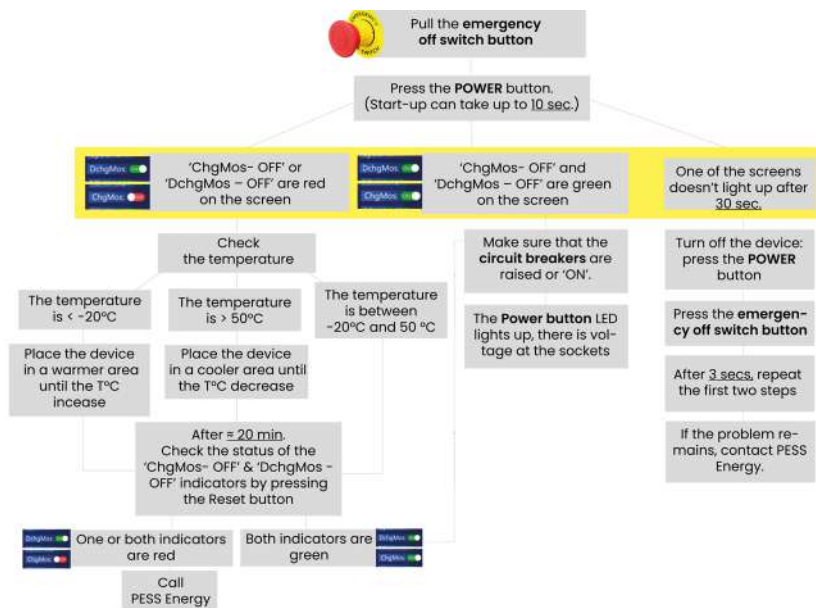


Figure 5 – Start-up procedure in the event of a fault

## **2. Why is there no power in the sockets?**

- Check that the circuit breakers are in the «ON» position.
- Check that the emergency off switch button is pulled correctly.

## **3. Why don't the screens light up?**

- Check that the emergency off switch button is pulled.
- It may take up to 10 seconds for the screens to turn on.
- The device may have run out of battery, plug it into a mains socket and check that it is turned on.

## VI. Repairs and warranty interventions

### 1. PESS Energy Guarantee

The devices are warranted for 2 years, parts and labor, from the date of shipment from the PESS Energy production site, only for European Union countries, excluding French overseas departments and territories.

### 2. Repair by PESS Energy Authorized Repairers

Repairs by a repairer approved by PESS Energy:

- Any damage resulting from the use or wear and tear of the device, when repairable.

- Any breakdown, not covered by the manufacturer's warranty.

The repair is guaranteed (part and labour) by the repairer for a period of 6 months (without any increase in the manufacturer's warranty of the device).

If the damage to the device is too severe and results from improper use (*see VI «Cases of misuse of the device»*), PESS Energy may carry out the repairs, at the customer's expense.

#### a. Warranty Repairs

Any failure not resulting from misuse and occurring within 2 years of the date of shipment of the device may be repaired under the manufacturer's warranty. The location of warranty repair will be decided based on the analysis of the breakdown that will be communicated by the customer.

Repairs under manufacturer's warranty (spare parts and labour) are covered by PESS Energy.

#### b. Out-of-warranty repair

Any breakdown occurring beyond the 2 years of the manufacturer's warranty may be repaired by an approved repairer, or if necessary PESS Energy, at the expense of the customer, on the basis of intervention estimates that may be proposed to him, before intervention.

### **c. Warranty Exclusions**

PESS Energy cannot be held responsible for a defect (breakdown or wear and tear) if it results from improper use of the device. In this case, the repairs and warranty of the device may also be cancelled.

### **d. End of life of the device**

Regarding the disposal of your device at the end of its life, please refer to II.2 «Important instructions for the environment».

## **VII. Cases of misuse of the device**

- Opening the device is not allowed.
- Shocks, punctures, falls (noticeable damage to the chassis or trims).
- Water penetration, immersion, humidity greater than 95%.
- Excessive dust.
- Storage out of the temperature range.
- Use outside the temperature range.
- Short circuit of the input and output sockets.
- Extended storage of unloaded equipment.
- Overloading of the device's inputs and/or outputs.
- Changed the factory computer settings.
- Installation of components not approved by the manufacturer.
- Use in the event of an exclusion of use (see VII «Exclusions of use»).

Misuse of a device will result in a total suspension of the manufacturer's warranty.

## VIII. Exclusions from use

In addition to the «Safety Instructions» given in III, it is forbidden to :

- Climb onto the device.
- Lift the device more than one metre off the ground.
- Drop the device.
- Pierce the device.
- Insert foreign objects into the device.
- Short circuit in and around the device.
- Set the device on fire.
- Driving over a person, or fragile ground with the device.
- Spray the device with water or any other liquid, or immerse it.
- Store the device discharged.
- Store the device outdoors for a long time (>2 days).
- Dispose of the device in nature.
- Transporting the device in an inappropriate vehicle.
- Transport of the device badly strapped.



Find all the technical  
documentation here



**PESS ENERGY** *PILLOT ENERGY STORAGE SOLUTION*

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