





#### 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 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 ROCK-E, hereinafter 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.





## Table des matières

I. Use cases illustrations	.4
II. Instructions	.8
1. General safety instructions	8
2. Important instructions for the environment	9
III. Device presentation	. 10
1. General characteristics of the device	. 10
2. Technical characteristics of the device	10
3. Basic System Architecture	13
IV. Getting started with the device and using it	. 15
1. Before powering on	15
2. Getting Started	15
a. Powering your electrical devices	16
b. Charging the device from mains	16
c. Charging the device on photovoltaic panels	17
d. Charging the device at an electric charging station	17
3. Shutting down the device	18
4. Using the device	18
b. Parallelize devices	18
c. Cas de surcharge ou fuite électrique	19
d.Automatic starting of a gas generator	20
e. Electrical overload or leakage	21
f. Long-term device storage (more than 3 months)	21
g. Maintenance	21
V.FAQ	. 22
1. What to do if the device is shut down due to a fault?	22
2. How do I transport the device?	23
3. How do I lift the device?	23
4. Why is there no power in the sockets?	23
5. Why screens are not turning on?	23
6. The BMS cut out, how do I turn the device back on?	24
VI. Repairs and warranty interventions	.24
1. PESS Energy Guarantee	24
2. Repair by PESS Energy Authorized Repairers	25
a. Warranty Repairs	25
b. Out-of-warranty repair	25
c. Warranty Exclusions	25
d. End of life of the device	25
c. Exclusion de garantie	26
d. Fin de vie de l'appareil	26
VI. Cases of misuse of the device	. 26
VII. Exclusions from use	.26



# I. Use cases illustrations

#### LOADING INTO A VAN





Block the wheels and secure for transport





D To assemble 6 FlyWatt, you need a van at least 1.5 m high

#### DRY CONTACT





#### **16A POWER SUPPLY**

0 Output: max 3600 W



#### **32A POWER SUPPLY**



#### **DAISY CHAIN 16A**

#### **DAISY CHAIN 32A**

#### Add up the capacity (duration) of your FlyWatt devices (from 2 to 10 devices = from 20 to 100 kWh )



**(**\5)

#### **Different ways to recharge your FlyWatt**

#### **RECHARGE ON 16A MAINS** FAST RECHARGING

Recharging time : <4h= 100% Load power : 3000W



#### **RECHARGE ON 32A MAINS**

P17 32A ou marechal 50A

Recharging time : 10h= 100% Load power : 1000W to enable back-up at 32A 6000W



#### **RECHARGE ON DAISY CHAIN 32A**

Input : 32A Output : P17 32A or maréchal 50A Max 6 devices = 6000W with 1000W/device



Do not connect anything to the output of the devices (when charged by 6)
 Devices must be switched on

🕕 It is not necessary to disconnect the paralleling cables

#### **RECHARGE ON SOLAR PANELS**

#### Produce your own energy anywhere

Maximum PV input power: up to 5500W Theoretical cumulative capacity: 18 800Wh/day\* (10 000Wh for FlyWatt and 8800Wh/day produced by Ekla) Recharging time : <12 hours\* 'depends on weather, season and location



**RECHARGE ON ELECTRIC VEHICLE CHARGING POINT** 



Recharging time : Up to 6 FlyWatt < 4 hours



## 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 11 000 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 III.2 'Starting up the device').
- Isolated neutral system (IT). Before use, the device must be earthed using an earth rod (not sold with the device). 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 +45°C, in a dry, ventilated, clean area away from direct sunlight.
- Do not store the device on a puddle.
- The photovoltaic (PV) input is a maximum of 5500 W (MPPT from 90 to 450 VDC 500 Voc) (see §II.2 'Technical characteristics of the device').
- When not in use, the device must be switched off by pressing the 'POWER' button. (see §III.3 'Switching off the appliance' & §II.3 Figure 1 and 2).
- Do not use the device when it is completely discharged.
- The battery isolating switch (also marked 'Emergency stop' on the device, see §II.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).
  - Procedure for restarting the device (in the event of long-term storage or start-up at cold temperature).
  - 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). However, it is allowed to charge the device on a 32A socket while discharging at a maximum continuous power of 7000W.
- 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 cover the device when in use.
- When in use, the device should be kept in the shade.
- The device must be handled with care.
- The device can only be lifted by its handles with the help of 4 people or using a pallet truck when it is positioned on a pallet.
- It is forbidden to climb on the device.

#### 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

- 11 000W max continuous inverter.
- Integrated battery charger.
- MPPT: Integrated solar charge controller 5500W max continuous.
- Mobile, noise-free power transmission.
- Compatible with 230VAC mains voltage or a 230VAC generator.
- Protection against overloading, overheating and short circuits.

### 2. Technical characteristics of the device

Technical data		FLYWATT
AC Production	AC output	11 000 W
	Peak power (0.5 sec)	22 000 W
	Battery capacity	10 000 Wh
	Yield	90 - 93 %
	AC output voltage	230 VAC ±5%
	Frequency	50 Hz
	Signal type	Pure sinus
	Switching times	10ms (for personnal computers) / 20ms (for domestic equip- ment)
Connections	AC output connections (OUT- PUT)	3x single-phase sockets (16A) 1xsingle-phase socket (32A)
	AC input connections (INPUT)	1x Input Power Twist NAC3 (20A) – 3000W fast charging 1x INPUT P17 CEE male (32A) – slow charging (500W) + discharge authorization while charging



	DC input connections (SOLAR)	Anderson SBSX-75A
	Parallel connections of Power- banks (up to 6 maximum)	1x mono socket (50A) 1x XLR 3P Female socket 1x XLR 3P male socket 1x SUB-D15 female socket 1x SUB-D15 male socket
	Dry contact	lx SpeakON 4P socket – Au- tomatic generator set start + charge of the battery starter
	AC Power supply	230 VAC 50 Hz
Recharging	Max charging power AC socket 16A (charge + battery heating)	3600 W
	Charging time (if empty)	< 4 hours on a 16A socket
	Max charging power AC socket 32A	500W + discharge authoriza- tion during charging
	Charging time (if empty)	20 hours on 32A socket (500W charging power)
Protection	AC Protection	Differential Switch 30mA (63A)
	AC Circuit breaker	3x 16A circuit breakers 1x 32A circuit breaker
	DC Emergency Stop	Punch button battery dis- connect
	DC Protection (Battery)	Fuse + BMS
	DC Protection (PV)	Fuse + Circuit Breaker 40A DC
	Earthing	Earth stake
Battery	Battery chimie	NMC
Solar panels	Max PV Power	5500 W
	MPPT Voltage Range	90 VDC - 450 VDC
	Max Input Voltage	500 VDC
	PV max current	40 A



V5 - 19/12/2024



Use time	Use time at 300W	> 32 h
	Use time at 500W	20 h
	Use time at 1000W	10 h
	Use time at 2000W	5 h
	Use time at 3000W	> 3 h
	Use time at 4000W	2 h 30
Temperatures	Recharge temperature	0 ~ +50°C
	Use temperature <sup>12</sup>	−20 ~ +50°C
	Storage temperature <sup>3 4</sup>	0 ~ +45°C
	Long-term storage tempe- rature <sup>5</sup>	0 ~ +35°C
Physicals	Dimensions (H x L x I)	69 x 56 x 85,5 cm
	Net weight	130 kg
Environnement	Waterproofing	IP 54
	Certifications	CE / Directive BT (2014/35/UE) et CEM (2014/30//UE)
	Manufacturer's warranty	2 years

- (2) Refer to \$11.2 to find how to start up the device according to the identified cases.
- (3) The maximum usable power may vary depending on the outside temperature.
- (4) For short-term storage (<1 month).
- (5) For long-term storage (>3 months).



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

V5 - 19/12/2024

# PESS

### 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 such as grinders, vacuum cleaners, jigsaws, compressors, etc.



The «human-machine interface» part is located on the front of the device (see Figure 1).ou les prises de parallélisation se trouvent sur les faces latérales (cf. Figure 2).



Figure 1 : Front of the device



#### Figure 2 : Sides and back of the device







Figure 3 : Zoom of the screens

# IV. Getting started with the device and using it

#### 1. Before powering on

- Make sure that the air intakes (see §II.3. Figure 2) of the device are not obstructed.
- Connect the device to the ground using an earth stake (see §II.3. Figure 1).

### 2. Getting Started

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

1. Ensure that the emergency stop button is in the «pulled» 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.



## a. Powering your electrical devices

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.

Check that the device is working. The value displayed on the charge level display must not exceed 11kW (see §II.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 devices before unplugging. Never exceed the maximum allowable current through the output outlets.

## b. Charging the device from mains

First connect the cable to the «INPUT AC» charging port of the device, then the mains socket (230VAC, 16A or 32A socket) using only the cable supplied with it (see §II.3. Figure 1).

Check that the device starts charging :

- The value displayed on the charge level screen should not exceed
  3.6kW at 16A and 500W at 32A. Optional 32A charging cable.
- 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 §II.2 «Technical characteristics of the device», the device will not be able to charge and will be safe.

Do not connect the 2 INPUT sockets at the same time.

When fully charged, first unplug the AC outlet and then the cable from the device's «INPUT AC» charging port.

Do not allow the device to charge unattended.





### c. Charging the device on photovoltaic panels

The photovoltaic installation must be sized within the limits of the power allowed by the device, as specified in §II.2 «Technical characteristics of the device». A total voltage of the solar installation below 90VDC will not trigger charging. A voltage higher than 450VDC may degrade the device.

1) Lower/position the «PV IN» circuit breaker to «OFF» (see §II.3. Figure 1) before connecting the PV system.

2) Make sure the emergency stop button is in the «pulled» position.

3) First connect the Anderson solar panel socket to the device (see §II.3. Figure 1) and then connect your photovoltaic installation.

4) You will only be able to read 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 5.5kW.

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 charging 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. Charging the device at an electric 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.





### 3. 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 stop button must be held in the «pulled» position. It must only be positioned in the «pushed» position in the special cases mentioned in §I.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.

## 4. 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. 11kW continuous), which will cause the device to overload and fail.

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

### **b.** Parallelize devices

It is possible to put an unlimited number of Flywatts in series to gain autonomy or in parallel, up to 6 FLYWATT to gain power.

#### i. Autonomy gain – Serial coupling

Connect as many FLYWATT as desired by using the **16A charging cable** to connect them (see §III.4.a «use case illustrations» / series parallelization via 16A socket). The output power will be **limited to 3.6kW** (limited by the 16A socket of the upstream units) and the capacity is cumulative. As a result, the use of 2 Flywatts in series will provide up to 20kWh of electrical capacity.





Please note that all flywatts must be 100% charged before this installation.

In the same way, connect as many FLYWATTs as desired by using a 32A charging cable to connect them (see §III.4.a «use case illustrations» / series parallelization via 32A socket). The output power will be limited to 7.36kW (limited by the 32A socket of the upstream units) and the capacity is cumulative. As a result, the use of 2 Flywatts in series will provide up to 20kWh of electrical capacity.

#### ii. Autonomy and power gain – Parallel coupling

The use of parallelization sockets makes it possible to combine the capacity (and therefore the autonomy) and the power of the devices. It is possible to configure up to 6 Flywatts in parallel and thus obtain an electrical installation of up to 66kW and 60kWh.

The use of an external parallelization box as well as parallelization cables are necessary. These elements are available as an option. Refer to the user manual of this gearbox for the different possible connections.

Please contact PESS Energy for more information.

### c. Cas de surcharge ou fuite électrique

In the event of an overload, switch the device off and then on again by pressing the 'POWER' button. If necessary, contact PESS Energy. In both cases (overload or electrical leak), the device will trip. As soon as possible, disconnect all cables (input and output) and check the earth connection of the device and your equipment if necessary.

If the device is operating correctly, check that the equipment electrical connected to it has no or insulation faults. Then reset the differential switch. If the differential switch trips again, contact PESS Energy.



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

The «Dry Contact» socket is a SpeakON 4P socket. 2 poles allow you to recharge the battery of the starter motor of your petrol generator and 2 poles allow you to trigger the start remotely. See the following wiring diagram.



Wire a 32A output of your gas generator to the 32A input socket of the Flywatt. Also connect the dry contact cable to the starter motor and the charging of the starter battery of your gas generator. Turn on your Flywatt to power your electrical loads. When the Flywatt approaches 0%, the external generator will start automatically. The Flywatt will then go into slow charging (500W) and will allow you to use up to **6.86kW** of power to power your loads.





Figure 4 - Wiring of an external generator coupled to a Flywatt

### 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 RCD. If the differential breaks again, contact PESS Energy.

## f. Long-term device storage (more than 3 months)

- Store the charged device.
- Push the emergency stop 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.

### g. Maintenance

- Cycle the battery at least once a month.
- Check sockets, charging cables and ground stakes.



# 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. How do I transport the device?

- The device must be transported, flat, on its wheels.
- Do not stack more than 2 devices
- The device must be attached to the transport vehicle when travelling. To do this, use several straps that will have to be positioned on the reinforcements of the device.
- 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.
- The transport and/or shipment of the product by the user may be subject to the mandatory provisions governing the transport of hazardous materials (lithiumionbatteriescontainedinequipment-UN3481).Formoreinformation, consult the Product Safety Data Sheet and/or contact your freight forwarder.
  - The emergency stop button must be held in the «pulled» position. It must only be in the «pushed» position in the special cases mentioned in §I.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.

### 3. How do I lift the device?

- Lifting is done only with the help of 4 people using the handles provided for this purpose (see §II.3. Figure 2) or using a forklift when the machine is positioned on a pallet.
- Do not lift the device more than one metre from the ground.

### 4. Why is there no power in the sockets?

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

#### 5. Why screens are not turning on?

- Check that the emergency stop 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.

#### 6. The BMS cut out, how do I turn the device back on?

An error message appeared on the control screen, and then the device turned off. Follow the following restart process:

- Push the emergency stop button. Then refer to the different cases:
  - If the BMS has cut out because the battery temperature is too hot, place the device in a cooler area, away from the sun, until the device drops in temperature. Check the status of the «ChgMos» and «DchMos» indicators again by pressing the «reset» button for 3seconds to reset the data. If this works, pull the emergency stop button. Then refer to the steps indicated in §III.2. «Getting Started with the Device».
  - If the BMS has cut out due to a battery temperature that is too cold, place the device in a warmer area while the device heats up. After about twenty minutes, check the temperature of the batteries by pressing the «reset» button for about 3 seconds to reset the data. If this works, pull the emergency stop button. Then refer to the steps indicated in §III.2. «Getting Started with the Device».
  - If the BMS has cut off because of a strong current peak, unplug your devices, check that the cumulative power of your devices does not exceed 11kW. Pull the emergency stop button and turn the machine back on as indicated in §III.2. «Getting Started with the Device». Then gradually plug in your devices.

If the problem persists, contact PESS Energy.

# 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.



v5 - 19/12/2024

# PESS

# 2. Repair by PESS Energy Authorized Repairers

Repairs by a repairer approved by PESS Energy:

-Any dammage 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 (transport, 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 §I.2 «Important instructions for the environment».



# VI. 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.

# VII. Exclusions from use

- In addition to the «Safety Instructions» given in §I, 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 deviced discharged.
- Store the device outdoors for a long time (>3 months).
- Dispose of the device in nature.
- Transporting the device in an inappropriate vehicle.
- Transport of the device badly strapped.









# PESS ENERGY PILLOT ENERGY STORAGE SOLUTION

- pessenergy.com
- pessenergy
- 164 Boulevard Mireille Lauze 13010 Marseille FRANCE
- contact@pessenergy.com
- 0 04 91 58 86 74