



# PowerAccu

Power supply for vehicles at exhibitions and fairs

Operating Manual  
v1.4





## Information

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This unit complies with current standards and guidelines: CE, WEEE.



Caution! PowerAccu is extremely heavy! Ensure safe positioning! Do not stack! Do not insert objects into the unit through the ventilation slots!



Dangerous voltage! Operate only with indicated voltage! Do not short circuit battery poles!



Follow instructions!  
Work on PowerAccu only by qualified staff.



When working on the PowerAccu wear safety goggles and protective clothing, observe accident prevention regulations.  
Work on PowerAccu only by qualified staff.



Smoking prohibited! Keep away from open flames and sparks, danger of explosion and fire.



Protect against moisture and wetness!



Use only indoors!



Electrolyte is highly corrosive!  
Caution is advised in case of damaged housings or lids since fixed electrolyte is as corrosive as liquid electrolyte.



Danger of explosion and fire!  
Avoid short circuits! PowerAccu terminals are constantly under voltage.  
Do not place any objects or tools on the PowerAccu.  
Provide for good ventilation while charging.



Not a toy! Children must not play with it. Children must be supervised.



PowerAccu must not be used by persons (incl. children) with restricted physical, sensory or mental capabilities or with lack of experience and knowledge, unless they are supervised or have received appropriate instructions.



### Return and disposal

You are welcome to return a defective or no longer required PowerAccu to Areus Engineering GmbH, we will take over the disposal.

The battery in the PowerAccu is an industrial battery as defined in section 2 German Batteries Act.

#### Note to Batteries Act:

The icon with the crossed-out wastebasket and the "Pb" sign indicates that the product contains a lead battery. Substances in the battery can have a negative effect on the environment or human health. Separate collection and recycling of used batteries is therefore of great importance. In accordance with the German Battery Act you are obliged to return old batteries, or products containing old batteries after use.



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## 1 Introduction

The PowerAccu is intended to supply power to vehicles at exhibitions and fairs. It replaces the normal car battery and supplies the vehicle with power via mains operation (100 to 240 VAC). With the PowerAccu it is possible to start the vehicle and conduct slight maneuvers (maximum walking speed), on private property.

In mains operation (PS) the PowerAccu provides a supply voltage of 13.8V and a maximum current of 100A (PowerAccu 10030), respectively 50A (PowerAccu 5030).

In battery mode (battery) the PowerAccu provides a supply voltage of 12V and has a maximum capacity of 26Ah.



## 2 General information

The PowerAccu may only be used by persons instructed in the handling and expressly authorized to use it.

### 2.1 Warnings

Improper operation and non-compliance with safety instructions can lead to injury of the operator, damage to the unit and loss of warranty!

- ⚠ Do not short circuit battery poles as they are constantly under voltage / current!
- ⚠ Cover battery poles during transport to avoid a short circuit!  
Avoid deep discharge (<9.6V), as this leads to damage of the battery!
- ⚠ Connecting plug of the connection cable must not be removed from the line!

### 2.2 Cooling

The power supply unit in the PowerAccu is cooled by a fan. Air inlets at the front and back of the unit must always be kept free and sufficient air supply must be ensured.

- ⚠ Provide adequate ventilation, do not cover any openings!

### 2.3 Maintenance / Repairs

The PowerAccu must not be opened by the user. Risk of contact with parts carrying dangerous voltages inside the PowerAccu.

When working on the PowerAccu ensure that it is disconnected from the mains!



The PowerAccu may be cleaned by the user with a dry cloth. Do not use any cleaning agents!

The fuse on the side of the PowerAccu can be replaced by the user. Standard automotive fuses with 7.5A may be used! These fuses can be purchased from Areus Engineering GmbH, item number: 100790.

Work on an open PowerAccu may only be conducted by a specialist from Areus Engineering GmbH, who is aware of related hazards and regulations.



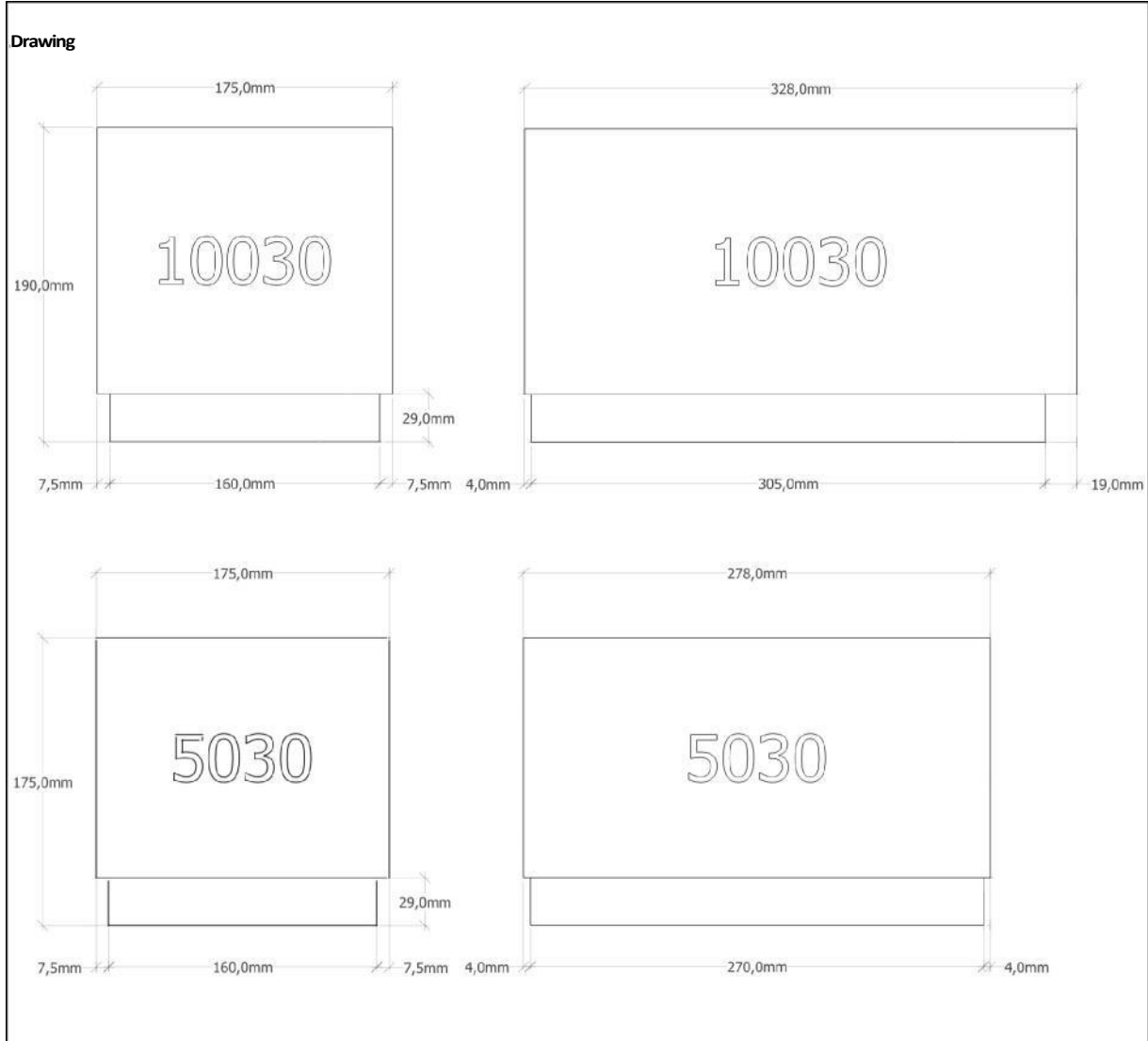


### 3 Technical data

<b>PowerAccu</b>	<b>10030</b>	<b>5030</b>
Item number	100656	100655
<b>Electrical connection</b> Power supply Power consumption at 230 VAC Power factor Frequency range Protection class Connection line	9.0 A	100-240 VAC 3.9 A PF 0,97/230 VAC 47 - 63 Hz I (protective grounding) 1.8 m with connecting plug
<b>Integrated Charger</b> Efficiency Working temperature Fan cooled  Safety standards  Output voltage at battery operation Output voltage at mains operation Rated current Automatic restart after - Over temperature (70°C) - Overload current - Over voltage at outlet		0.88 -5 to +40°C ✓  UL60950-1; TÜV EN60950-1; CE; EN55022; EN61000-3-2; EN61000-3-3; EN61204-3; EN55024; IEC61000-4-2, 3, 4, 5, 6, 8, 11 12 VDC 13.8 VDC 100 A 50 A  ✓ ✓
<b>Built-in Battery</b> Technology Capacity battery Short-circuit current in battery mode Internal resistance Certification		Lead-fleece battery with 100% Pb technology 26 Ah 1556 A 7.9 m Ohm Tested and approved for aerial transport in accordance with US DOT Regulation 49 and ICAO & IATA Packing Instruction 806
<b>Connections</b> Supply vehicle Supply InLight		Standard battery pole with clamp connection (+ pole 19.5 mm; - pole 17.9 mm) Two Molex mounted plugs for connecting two interior lights, separately fused 12 VDC with 7.5 A vehicle flat blade fuse, discharge protection for battery for when there is no mains supply
<b>Mechanics</b> Casing Pole arrangement according to DIN-EN 60095-2  Dimensions (LxWxH) Weight		Standard battery cover, aluminum casing, black with powder coating 0 (front right)  327 x 175 x 190 mm 14.9 kg 278 x 175 x 175 mm 13 kg



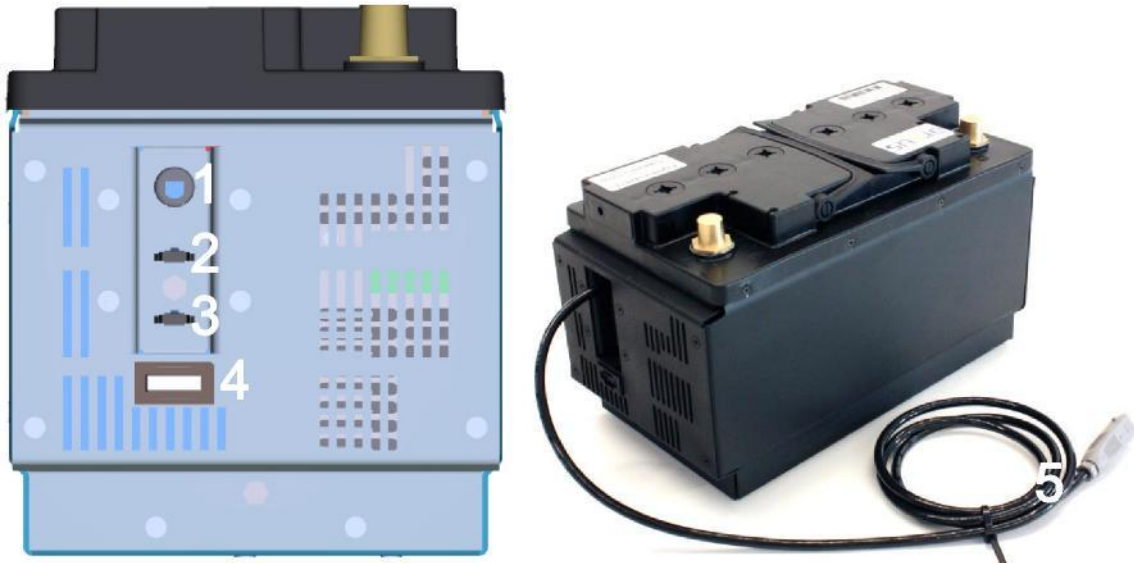
## 4 Dimensions



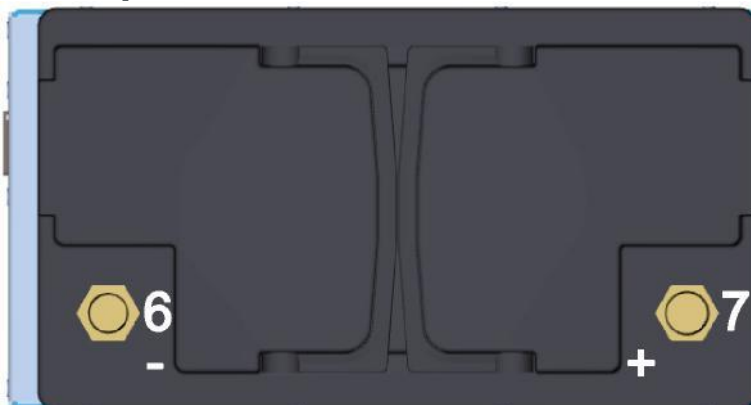


## 5 Unit description

### 5.1 Side view



### 5.2 Top view



### 5.3 Explanations




- 1 Cable entry for connecting cable
- 2 First connector for Areus interior light
- 3 Second connector for Areus interior light
- 4 Automotive flat fuse (7.5A)
- 5 Connecting cable with Hirschmann plug
- 6 Negative battery pole
- 7 Positive battery pole



## 6 Connection

### 6.1 Connection to vehicle

Remove car battery and insert and mount PowerAccu in battery compartment. Connect existing battery pole clamps to the PowerAccu poles, observe correct polarity.



-  When removing battery observe vehicle manufacturer instructions and directions!
-  When installing PowerAccu connect neg. pole first!
  
-  When removing PowerAccu disconnect pos. pole first!

Vehicle is now powered by the battery in the PowerAccu. All vehicle functions possible with the normal battery can be used. Please note that the battery capacity is much less than that of a normal car battery!

### 6.2 Connection to mains supply

To provide power to the vehicle in network operations first connect the connection cable to the grounding adapter cable (Schuko). Do so by connecting the two cables with connecting plugs, flip the safety plug and check for secure locking.

Then insert the grounding plug in a grounding outlet (Schuko).

-  The power supply unit immediately takes over and provides power for the vehicle! The built in battery is charged at the same time.
  
-  When installing in motorhomes or similar vehicles, instructions of power grid operators must be observed!



In mains operation the vehicle is supplied with power from the power supply unit. The built in battery is charged at the same time and is fully charged after four hours, followed by an automatic trickle charging.

By unplugging the grounding plug from the outlet the main operation is interrupted, also the battery charging. From this moment on the vehicle is only powered by battery.

### **6.3 Connecting interior lights**

There are two connectors for Areus interior lights on the PowerAccu. The Areus interior lights can be connected using Areus connecting cables. First connect the connecting cable to the interior light.

 Observe connection sequence!

The connections for the Areus interior lights are protected by an automotive flat fuse located below the connections.

The connections for the Areus interior lights are only active during mains operation (PS). This prevents a deep discharge of the battery by the Areus interior lights.

### **6.4 Malfunctions / Hazards**

In case an error occurs, disconnect the PowerAccu from the mains and from the vehicle! To do so follow points 6.2 and 6.1 in reverse order.

Mark defective PowerAccu accordingly and secure against recommissioning.

A defective PowerAccu can only be put back into operation after thorough examination by Areus Engineering GmbH!

If the power cable of the PowerAccu is damaged it must be repaired or replaced by Areus Engineering GmbH, in order to avoid danger. The PowerAccu must not be operated if the power cable is damaged!



## 7 Installation instructions

### 7.1 Installation

The installation must be conducted in such a manner that the PowerAccu is secure and cannot slide around.

The PowerAccu has a circumferential taper for installation in the position of the car battery using existing mounting fixtures / clamps.

### 7.2 Installation position

The PowerAccu should be installed in place of the car battery. A 5cm space all around must be given and also upwards to body parts, housing components or similar. This means that a minimum space must be provided for the PowerAccu as follows:

- PowerAccu 10030: 427x275x240 mm (LxWxH)
- PowerAccu 5030: 378x275x225 mm (LxWxH)

The ventilation vents in this space must be aligned with the vents on the PowerAccu and must be at least as big as the surface of the vents on the PowerAccu.

### 7.3 Accessibility of grounding safety plug

Since the PowerAccu itself does not have a switch it must be ensured that the grounding plug is freely accessible and in case of malfunction can be pulled quickly.

Optionally a freely and easily accessible switch or circuit breaker in the fixed installation of the building is also possible.