



USER MANUAL

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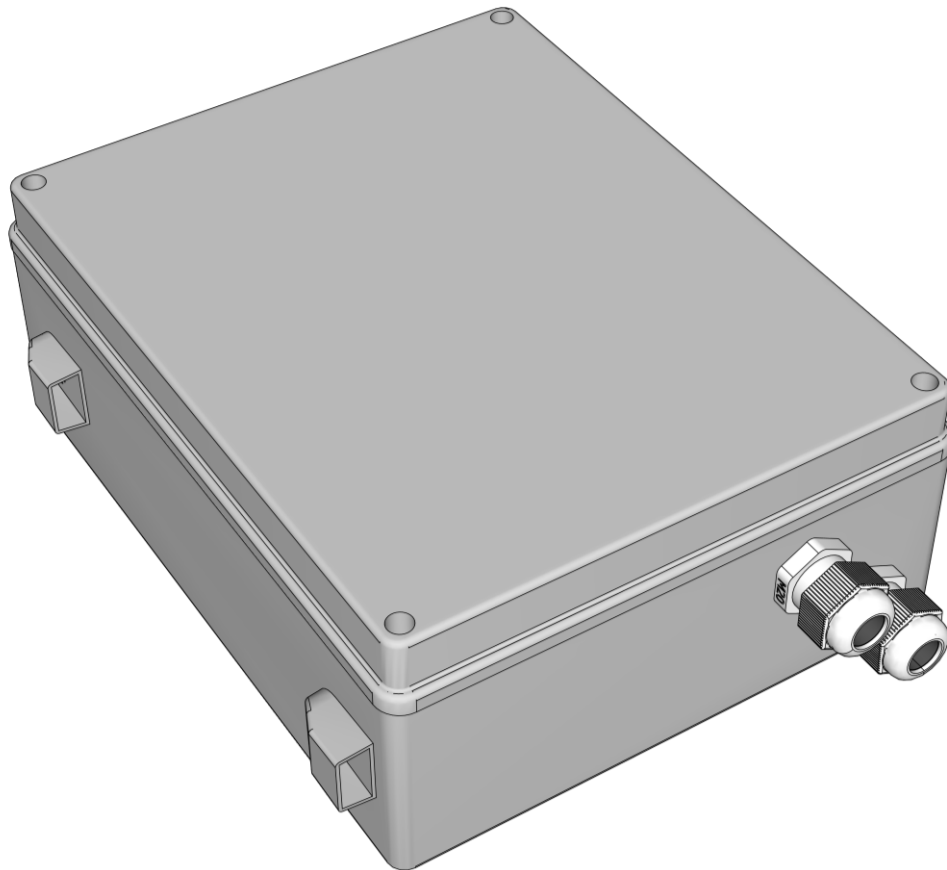
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HPSBH-12V3A-B

v1.0

**HPSBH 13,8V/3A/7Ah switched mode power supply with
battery backup, ABS enclosure IP44**



Features:

- supply voltage ~200 - 240 V
- DC 13,8 V/3 A uninterruptible power supply
- space for battery 7Ah/12V (SLA)
- high efficiency (up to 87%)
- LED optical indication
- deep discharge battery protection (UVP)
- enclosure **ABS – IP44**
- used glands help to provide wires into enclosure
- possibility of pole mounting (requires OZB3 adapter - optional accessory)
- battery charging and maintenance control
- battery output protection against short circuit and reverse connection
- protections:
 - SCP short circuit protection
 - OLP overload protection
 - OVP overvoltage protection
 - surge protection
- warranty – 2 years from production date

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The buffer power supply is used for uninterrupted supply equipment requiring stabilized voltage of 12 V DC (+/-15%). The PSU provides voltage of **U=13,8 V DC**. Current efficiency:

Output current 3 A + 0,5 A battery charging current

Total current of the receivers + battery: 3,5 A max.

In case of power failure, a battery back-up is activated immediately. Power supply is placed in **ABS (IP44)** enclosure, which can accommodate a 7Ah/12V (SLA) battery.

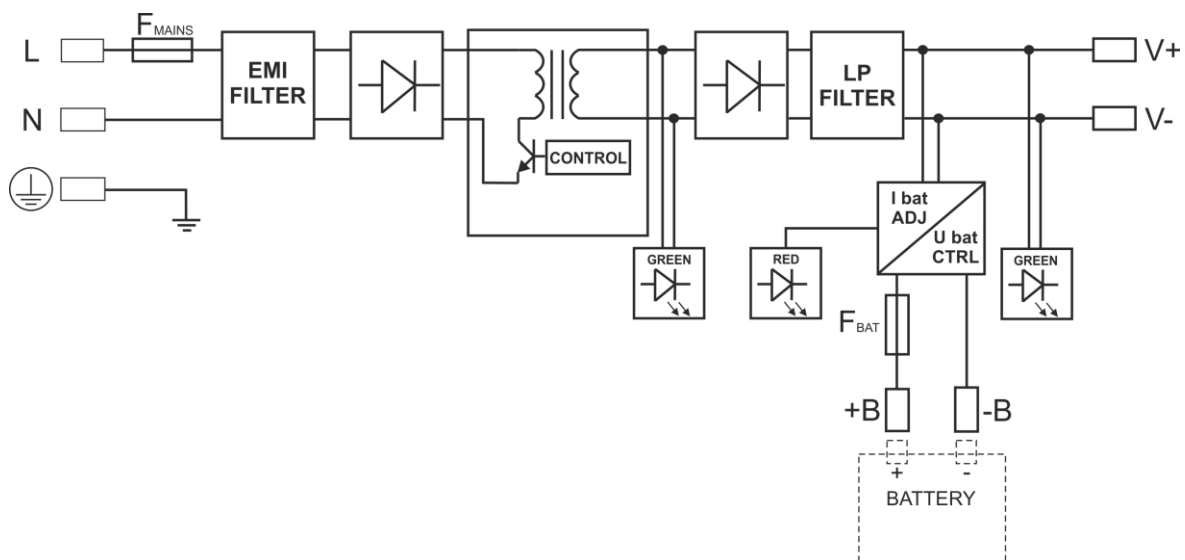
1.2. Block diagram (Fig. 1).

Fig. 1. Block diagram of PSU.

1.3. Description of PSU components and connectors.

Table 1. Elements and connector of PSU (see Fig. 2).

Element no.	Description
[1]	Ventilation
[2]	Battery space (7Ah; 12 V; SLA)
[3]	Power supply unit
[4]	The potentiometer for output voltage adjustment
[5]	Output of PSU (V+, V-)
[6]	L-N power supply connector 230 V AC, \perp - connector for connection of a protective conductor
[7]	BAT +, BAT - battery outputs + BAT red, - BAT black
[8]	Cable glands

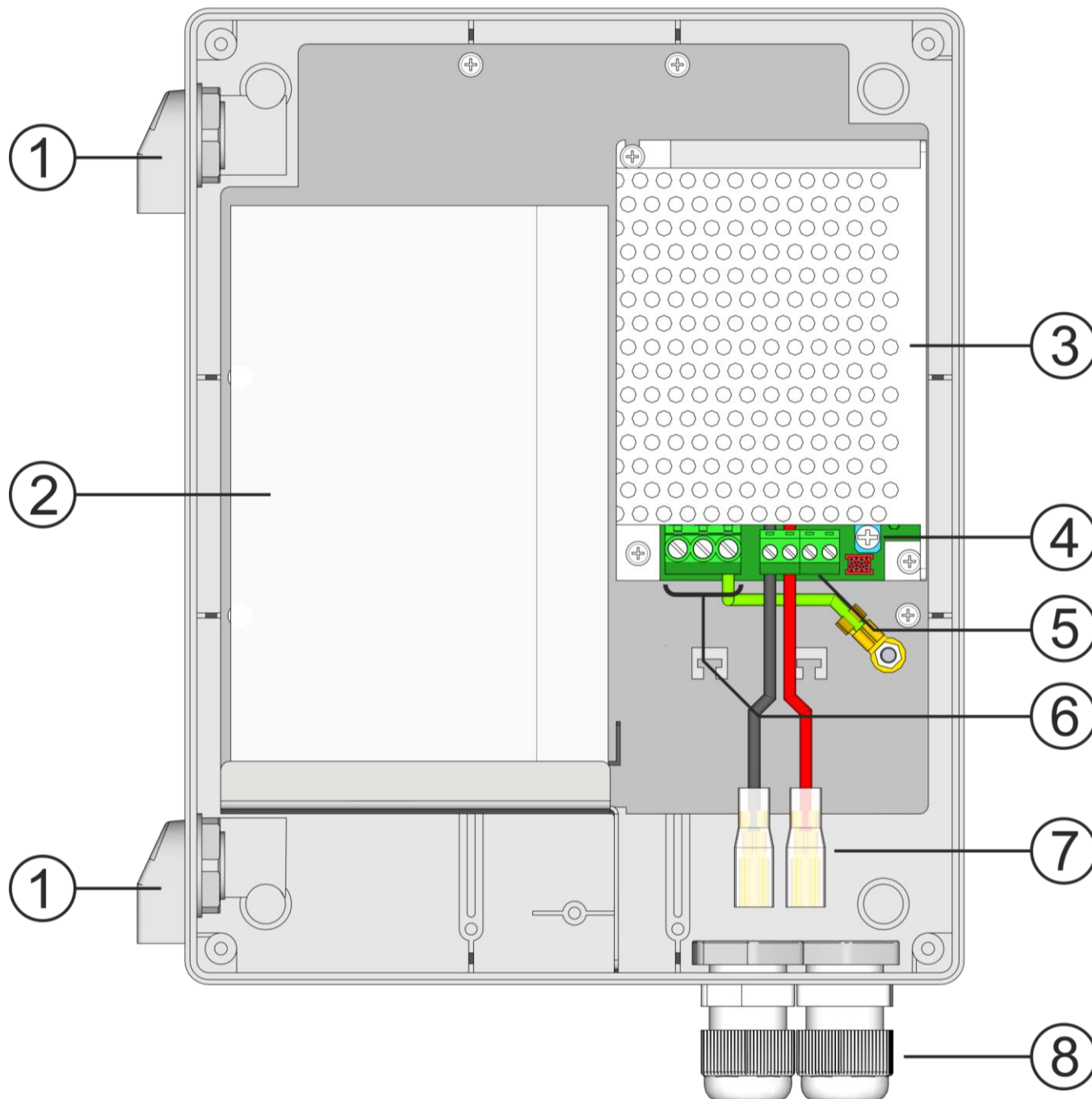


Fig. 2. View of PSU.

1.4. Specifications:

- electrical parameters (Tab. 2)
- mechanical parameters (Tab. 3)
- operation safety (Tab. 4)
- operating parameters (Tab. 5)

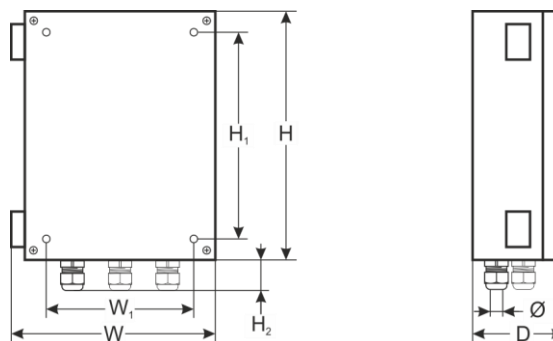


Table 2. Electrical parameters.

Supply voltage	~ 200 - 240 V
Current consumption	0,5 A
Power frequency	50/60 Hz
Inrush current	40 A
Output power PSU	48 W
Total output current with charging	3,5 A
Efficiency	87%
Output voltage	11 - 13,8 V – buffer operation 10 - 13,8 V – battery-assisted operation
Ripple voltage (max.)	100 mV p-p
Current consumption by PSU systems during battery-assisted operation	40 mA
Battery capacity	7 Ah/ 12 V (SLA)
Charging current (jumper selectable)	0,5 A
Overload protection (OLP)	105-150% PSU power, automatically recovered
Over voltage protection (OVP)	>19 V (activation requires disconnecting the load or supply for about approx. 1 min.)
Battery circuit protection SCP and reverse polarity connection	- polymer fuse (returnable)
Deep discharge battery protection UVP	U<9,5 V (± 5%) – disconnection of battery circuit
Optical indication	- LEDs on PSU's PCB
Terminals: Mains supply:	0,5 – 2,5 mm ² (AWG 26 – 12)
Outputs: Battery outputs:	
Notes	Battery wires 6,3F – 45cm Convexional cooling

Table 3. Mechanical parameters.

Enclosure dimensions	W=210, H=248, D=95 [+/- 2mm]
Fixing	W ₁ =155, H ₁ =205 [+/- 2mm]
Cable gland height	H ₂ =35 [+/- 2mm]
Recommended battery	W=157, H=100, D=68 [+/- 2mm]
Number of cable glands/cable diameter	2 pc. / 10 - 14 mm
Net/gross weight	1,2 / 1,3 [kg]
Enclosure	ABS enclosure, IP44
Closing	Screw x 4 (at front)

Table 4. Operation safety.

Protection class EN 62368-1	I (first)
Protection grade EN 60529	IP44
Electrical strength of insulation: - between input and output circuits of PSU - between input circuit and protection circuit - between output circuit and protection circuit	4000 V DC min. 2500 V DC min. 500 V DC min.
Insulation resistance: - between input circuit and output or protection circuit	100 MΩ, 500 V DC

Table 5. Operating parameters.

Operating temperature	-10°C...+40°C
Storage temperature	-20°C...+60°C
Relative humidity	20%...90%, without condensation
Vibrations during operation	unacceptable
Impulse waves during operation	unacceptable
Direct insolation	unacceptable
Vibrations and impulse waves during transport	According to PN-83/T-42106

2. Installation.

2.1 Requirements.

Buffer power supply is designed to be installed only by qualified installer with necessary permits and authorisations (required in installation country) to connect (interfere) with the ~230 V mains supply. Unit should be mounted in confined spaces, in accordance, with normal relative humidity (RH=90% maximum, without condensing) and temperature from -10°C to +40°C.

Device must be mounted in a vertical position with cable glands facing downwards. Mounting in any other position is not permitted. Ensure free convective airflow around enclosure.

In order to meet the EU requirements, follow the guidelines on: power supply, enclosures and shielding: - according to application.

Because the power supply is designed for the continuous operation and is not equipped with ON/OFF switch, the power supply circuit should have the appropriate overload protection. Moreover, the user shall be informed about the method of unplugging (most frequently through separating and assigning an appropriate fuse in the fuse-box).

The electrical system shall follow valid standards and regulations.

2.2 Installation procedure.

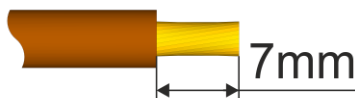


CAUTION!

Before installation, cut off voltage in 230 V power-supply circuit. To switch power off, use an external switch, in which distance between contacts of all poles in disconnection state is not less than 3mm.

It is required to install in the supply circuits, in addition to power supply, circuit breaker with 6 A nominal current.

1. Mount device and feed connection wires through glands and filler inserts. Then tighten the glands (unused ones should be blanked off).
2. Connect power cables (~230 V) to L-N clips of PSU. Connect ground wire to clip marked by earth symbol (⊕). Use a three-core cable (with a yellow and green protection wire) to make connection (⊕). Lead the power cables to the relevant terminals of the power supply via an isolation conduit. Wires should be deisolated to a length of 7mm.



The shock protection circuit shall be done with a particular care: the yellow and green wire coat of the power cable should be connected to the terminal marked with the grounding symbol on the PSU enclosure. Operation of the PSU without the properly made and fully operational shock protection circuit is UNACCEPTABLE! It can cause damage to the equipment or an electric shock

3. Check output voltage and adjust if necessary using potentiometer.
4. Connect equipment to the appropriate output terminals of power supply (positive connector +V, negative connector -V).
5. Mount the battery in the battery compartment of the enclosure. Mount the battery in the battery compartment of the enclosure. Connect the batteries with the PSU paying special attention to the correct polarity and type of connections.
6. Switch on ~230 V supply. LEDs on the PCB of power supply should light.
7. After installing and checking proper working, the enclosure can be closed (ensure that cover fits evenly over its entire surface).

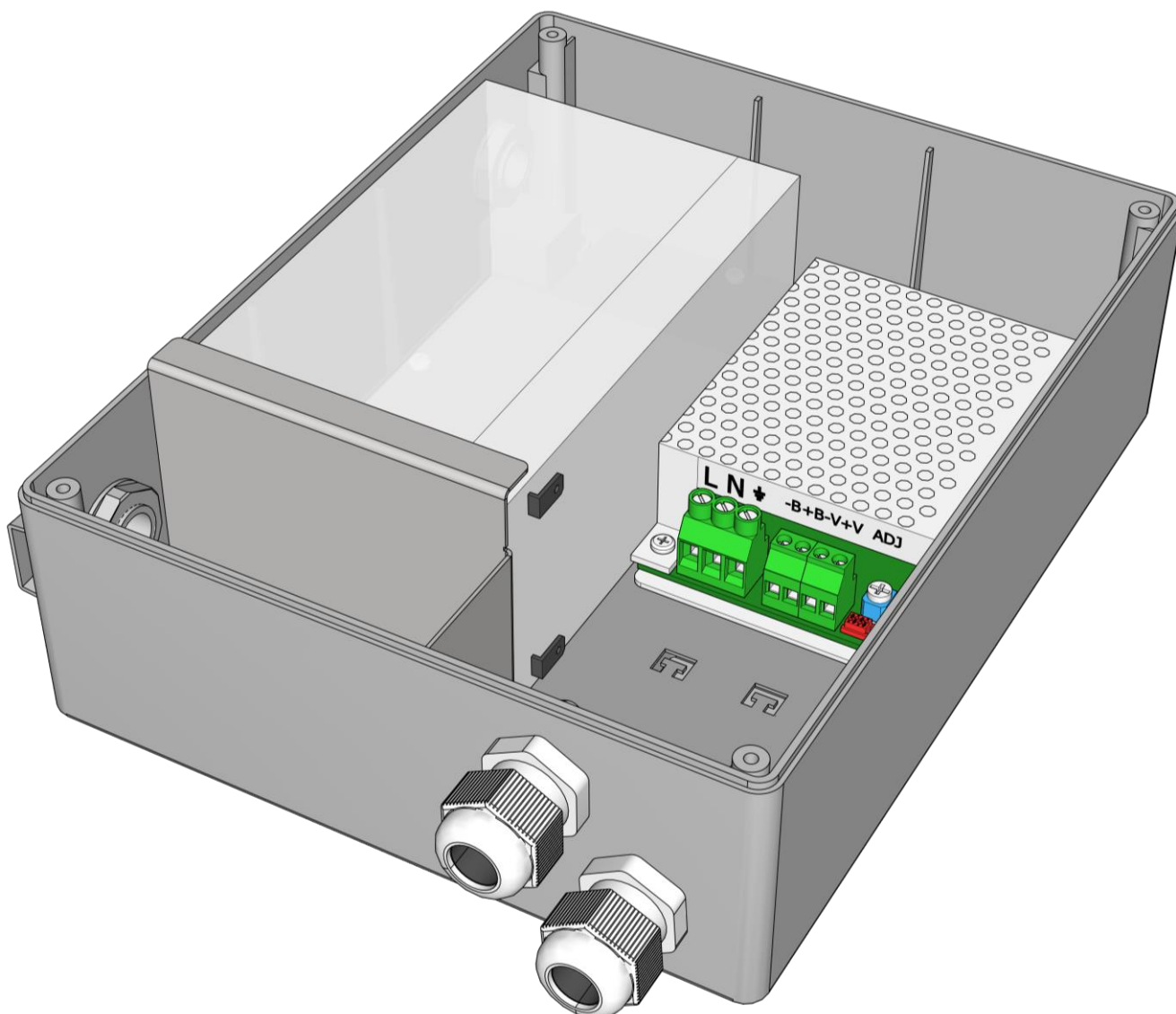


Fig. 3. PSU installation example

3. Operating status indication.

Moreover, PSU is equipped with LED indicating presence of voltage at PSU output, located on PCB of PSU module.

4. Maintenance.

Any and all maintenance operations may be performed following the disconnection of the PSU from the power supply network. The PSU does not require performing any specific maintenance measures, however, in the case of significant dust rate, its interior is recommended to be cleaned with compressed air. In the case of a fuse replacement, use a replacement of the same parameters.



WEEE LABEL

CAUTION! Waste electrical and electronic equipment must not be disposed of with normal household waste. According to the European Union WEEE Directive, waste electrical and electronic equipment should be disposed of separately from normal household waste.

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