Pulsar®

USER MANUAL

EN

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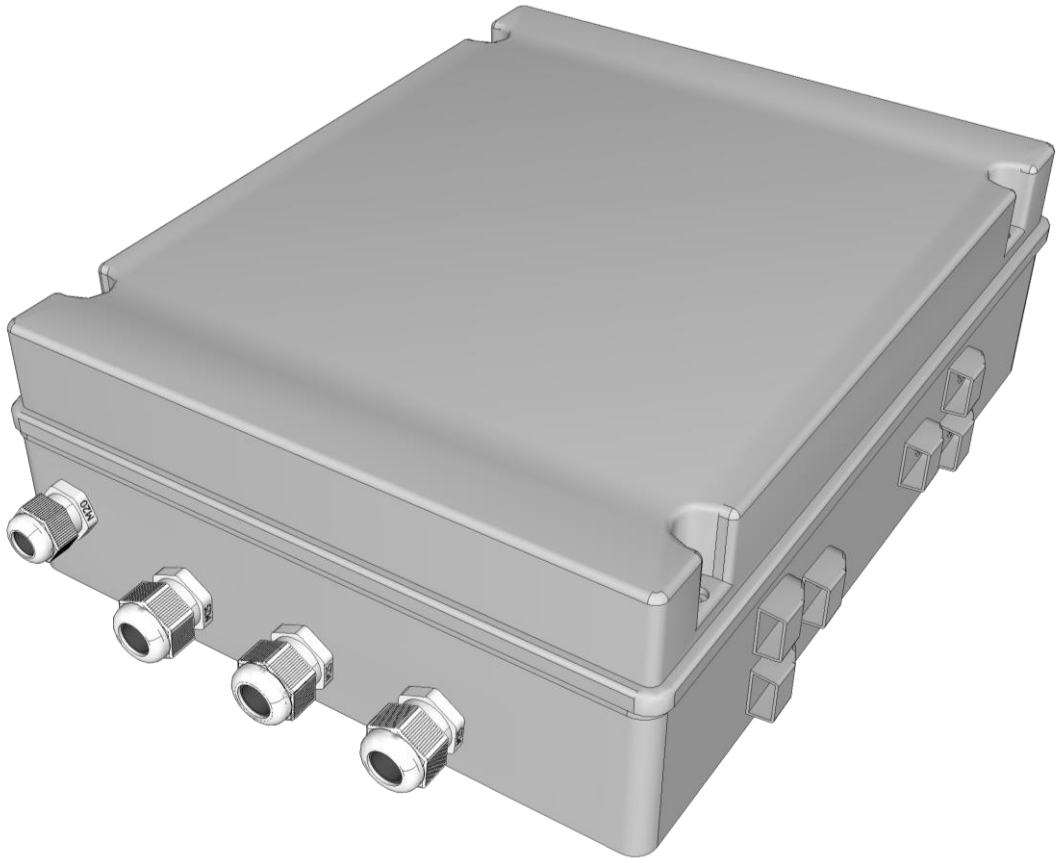
Supersedes edition: ---------

SWBH-120

v1.0

Power supply system for PoE switches with battery backup, 52VDC/2x12Ah/120W, ABS enclosure IP44



Features:

- Supply voltage ~200 **–** 240 V
- High efficiency (87%)
- Battery charging and maintenance control
- Built-in DC/DC converter allows reduce installation costs and stabilise output voltage regardless of battery charge status
- Battery charging current: 0,5 A
- Enclosure **ABS – IP44**
- Used glands help to provide wires into enclosure
- Possibility of pole mounting (requires USH-1 adapter **–** optional accessory)
- START function of manual switch to battery power
- Deep discharge battery protection (UVP)
- Optical indication
- Protections:
  - SCP short circuit protection
  - OLP overload protection
  - OVP overvoltage protection
  - surge protection
  - battery protection against reverse connection
- Warranty – 2 years

TABLE OF CONTENTS:

1. Technical description.

1.1. General description.

Buffer power supply system for PoE switches SWBH-120 is designed for uninterrupted power supply of PoE switches with 52 V DC. It was designed based on switching power supply module with attached DC/DC converter with high energy efficiency, placed in in **ABS (IP44)** enclosure**.** DC/DC converter used to increase voltage allows to reduce costs of system by limiting batteries to 2 pcs. Enclosure has a place for 12Ah/12 V (SLA) battery. Device is equipped with removable universal mounting plate, which allows to mount PoE switches with dimensions up to 210x123x38 (WxHxD) [mm]. For example Pulsar's models: **S64WP, SG64WP, SFG64F1WP, SFG64WP, S108WP, SG108WP, ISFG42, ISFG64**.

1.2. Block diagram (Fig.1).

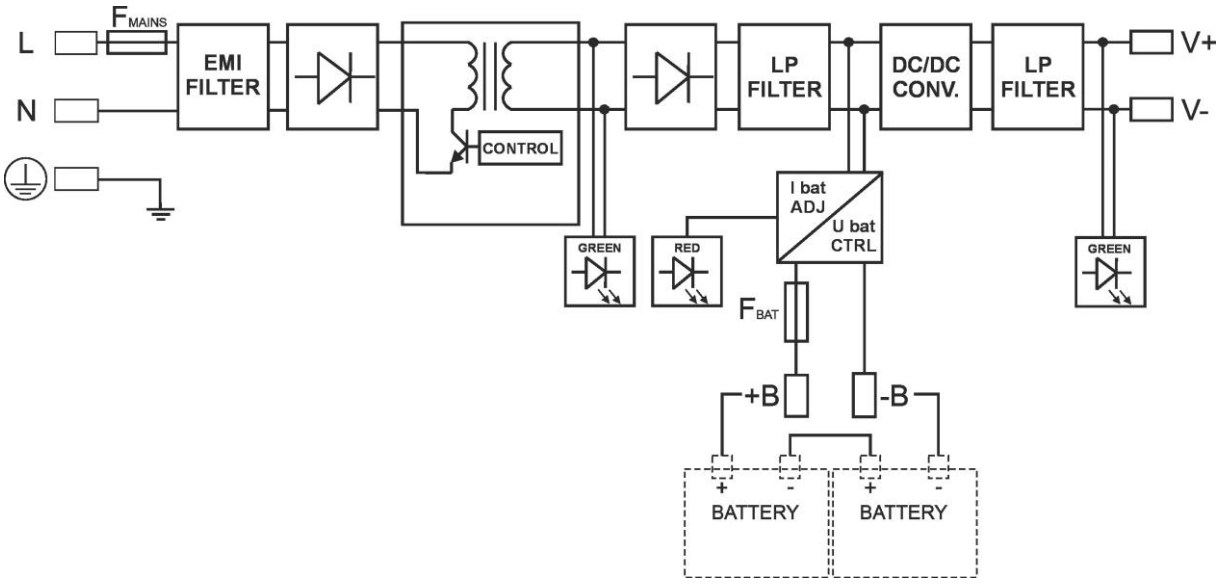


Fig. 1. Block diagram of PSU.

1.3. Description of PSU components and connectors.

Table 1. View of PSU (see Fig. 2).

Element no.	Description
[1]	Ventilation
[2]	**L-N** power supply connector 230 V AC, ⏚ – connector for connection of a protective conductor
[3]	Power supply unit
[4]	Switch power cable terminated with a DC 2.1/5.5 plug
[5]	Mounting plate
[6]	START button (launching from battery)
[7]	Battery fuse
[8]	Strap for mounting battery
[9]	Battery space (2x12Ah; 12 V; SLA)
[10]	BAT +, BAT - battery outputs + BAT red, - BAT black
[11]	Cable glands

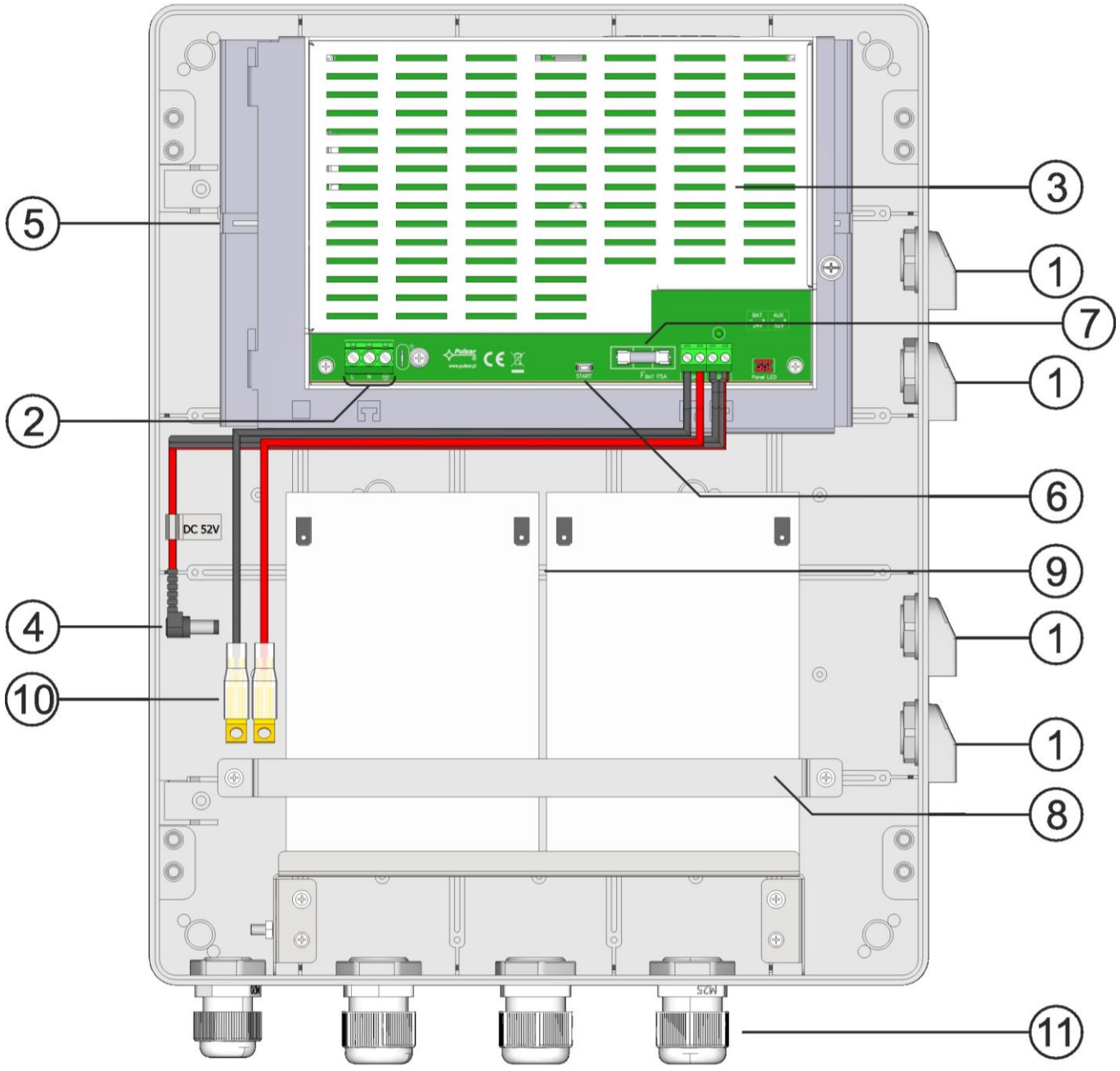


Fig. 2. View of PSU.

1.4. Equipment parameters:
- **specifications (Tab. 2)**
- **operation safety (Tab. 3)**
- **operating parameters (Tab. 4)**

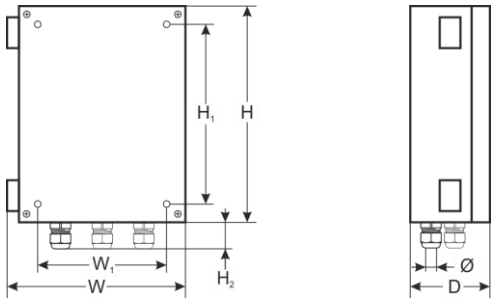


Table 2. Specifications.

Power supply	~ 200 – 240 V; 1,2 A; 50/60 Hz
Inrush current	50 A
Efficiency	87%
PoE supply	52 V DC; 120 W
Ripple voltage	100 mV p-p max.
Battery charging voltage	22-27,6 V DC
Battery charging current	0,5 A
Battery circuit protection SCP and reverse polarity connection	F_{BAT} fuse: F5A/250V
Deep discharge battery protection UVP	U<18 V (± 5%) – disconnection of battery circuit
Overload protection (OLP)	105 – 150% PSU power, automatically recovered
Surge protection	varistors
Current consumption (durring buffer operation)	approx. 30 mA
Connectors	Power input: Φ0,63-2,50 (AWG 22-10) PoE power supply output: DC 2,1/5,5 plug BAT output: Battery wires 6,3F – 45cm
External dimensions	W=320, H=385, D=130 [+/- 2mm]
Installation	W_1=265, H_1=346 [+/- 2mm]
Space for battery	W=215, H=160, D=95 [+/- 2mm]
Cable gland height	H_2=37 [+/- 2mm]
Number of cable glands / cable diameter:	3 pcs. / 13 – 18 mm + 1 pcs. / 10 – 14 mm
Gland filling inserts	4x Φ5mm (3 pcs.); 3x Φ5mm (2 pcs.); 2x Φ5mm (1 pc.)
Enclosure	ABS enclosure, IP44
Closing	Screw x 4 (at front)
Additional equipment	Mounting screws (x4), DC wires, gland filling inserts
Net/gross weight	3,5 / 3,8 [kg]
Declaration	CE

Table 3. Operation safety.

Protection class EN 62368-1	I (first)
Protection grade EN 60529	IP44
Electrical strength of insulation: - between input and output circuits of the 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 4. Operating parameters.

Operating temperature	-10ºC...+40ºC
Storage temperature	-20ºC...+60ºC
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.

Device is to be mounted by a qualified installer, holding relevant permits and licenses (applicable and required for a given country) with ~230 V mains supply. Unit should be mounted in confined spaces 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.

As power supply is designed for a continuous operation and is not equipped with a power-switch, therefore, an appropriate overload protection in power supply circuit should be provided. Moreover, the user shall be informed about

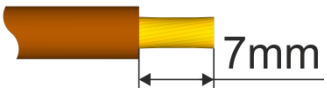
the method of unplugging (most frequently through separating and assigning an appropriate fuse in the fuse-box).
The electrical system shall follow valid standards and regulations.

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.

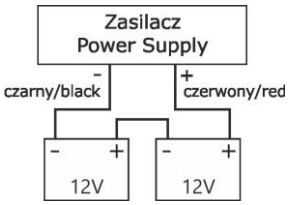
It is required to install in the supply circuits, in addition to power supply, circuit breaker with 6 A nominal current.

1. Remove mounting plate with mounted power supply (tilt it away)
2. Mount device and feed connection wires through glands and filler inserts. Then tighten the glands (unused ones should be blanked off).
3. Screw switch to mounting plate and connect it using wire with DC 2.1/5.5 plug.
4. Connect the wires for switch.
5. Install mounting plate with mounted power supply.
6. 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.

7. Connect battery in correct polarity and serial connection.
8. Lock battery with attached strap.
9. Switch on ~230 V supply.
   After installing and checking proper working, the enclosure can be closed (ensure that cover fits evenly over its entire surface).



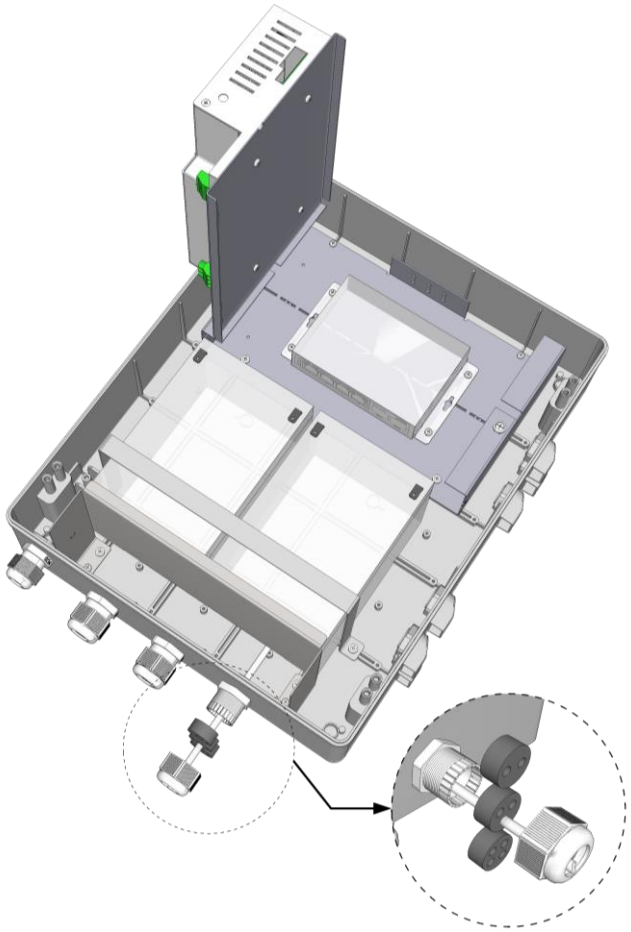


Fig. 3. Example of installation.

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
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.

CAUTION! *The power supply unit is adapted for cooperation with the sealed lead-acid batteries (SLA). After the operation period they must not be thrown but recycled according to the applicable law.*

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