Pulsar®

USER MANUAL

EN

Edition: 2 from 25.01.2022

Supersedes the edition: 1 from 24.09.2020

SWB-120

v1.1

Buffer power supply system for PoE switches, 52VDC/2x17Ah/120W

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
- Deep discharge battery protection
- Battery charging current: 0,5 A
- Metal enclosure – color white RAL9003
- Removable universal mounting plate
- START function of manual switch to battery power
- Optical indication
- Protections:
  - SCP short circuit protection
  - OLP overload protection
  - OVP overvoltage protection
  - surge protection
  - antisabotage protection: unwanted enclosure opening
  - against reverse polarity connection
- Warranty – 2 years from production date

TABLE OF CONTENTS:

1. Technical description.

1.1. General description.

Buffer power supply system for PoE switches, SWB-120 is designed for uninterrupted power supply of PoE switches with 52 V DC. It was designed based on switching power supply module with built-in DC / DC converter with high energy efficiency, placed in metal enclosure (color RAL 9003). DC / DC converter used to increase voltage allows to reduce costs of system by limiting batteries to 2 pc. Enclosure has a place for 2 pcs of 17Ah / 12 V (SLA) battery and is equipped with a tamper switch signaling opening door (front panel). Device is equipped with removable universal mounting plate, which allows to mount PoE switches with dimensions up to 245x150x90 (WxHxD) [mm].
For example Pulsar's models: **S64, SG64, SFG64, SFG64F1, S108, SG108, SF108**

Device can operate in one of two configurations:

1. **PoE output power 120 W + 0,5 A battery charging**
2. **PoE output power 80 W + 2 A battery charging**

1.2. Block diagram (Fig.1).

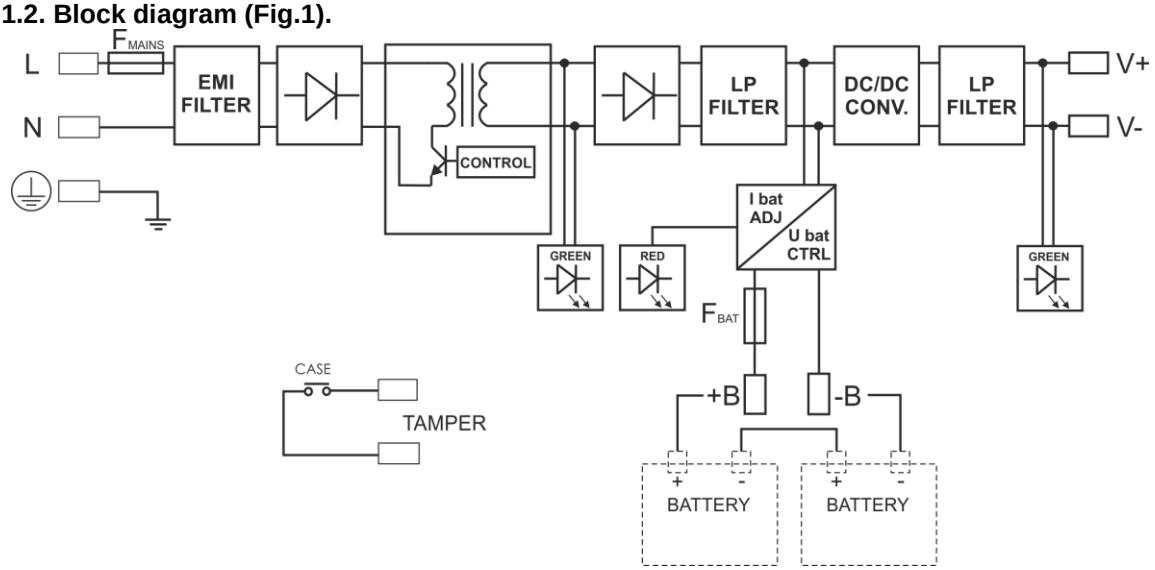
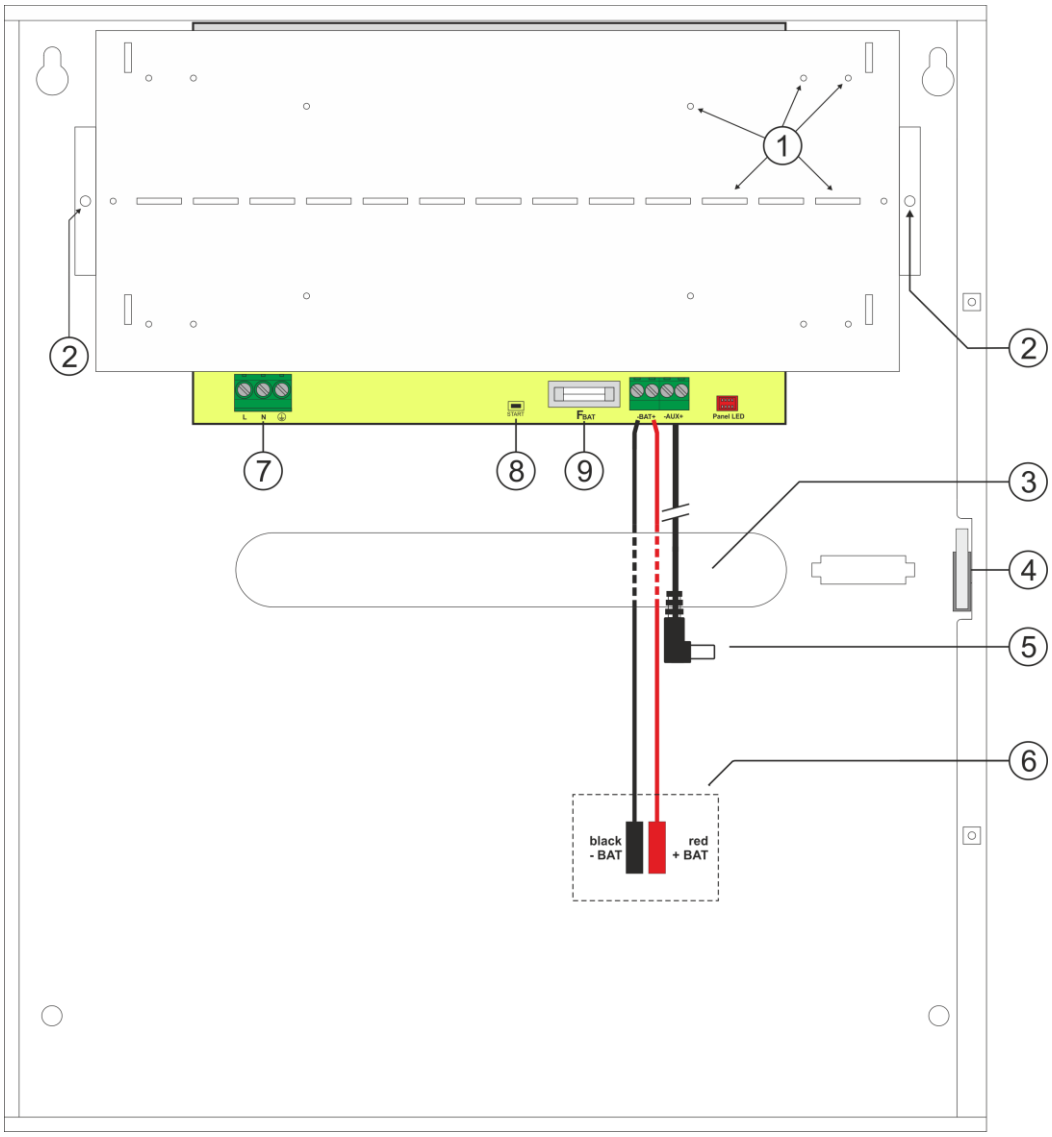


Fig.1. Block diagram of PSU.

1.3. Description of PSU components and connectors.

Table 1. View of PSU (see Fig. 3).

Element no.	Description
[1]	Mounting holes
[2]	Screws for locking mounting plate
[3]	Cable bushing
[4]	**TAMPER;** microswitch of antisabotage protection (NC)
[5]	Switch power cable terminated with a DC 2.1/5.5 plug
[6]	BAT +, BAT - battery output + BAT red, - BAT black
[7]	**L-N** power supply connector 230 V AC, ⏚ – connector for connection of a protective conductor
[8]	START button (launching from battery)
[9]	Battery fuse



ig.3. View of PSU.

1.4. Specifications:

- **electrical parameters (tab. 3)**
- **mechanical parameters (tab. 4)**
- **operation safety (tab. 5)**
- **operating parameters (tab. 6)**

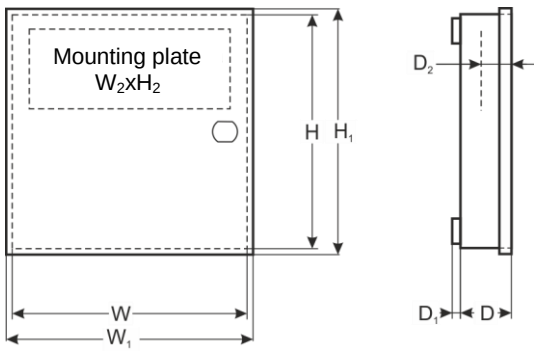


Table 2. Specifications.

Power supply	~ 200 – 240 V; 1,3 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	glass fuse F_{BAT}: F5A/250V
Deep discharge battery protection UVP	U<19 V (± 5%) – disconnection of battery circuit
Overload protection (OLP)	105 – 150% of power supply, automatic recovery
Surge protection	varistors
Current consumption by PSU during battery-assisted operation	about 30 mA
LED optical indication output	LED AC - presence of AC voltage LED DC - presence of DC voltage in the output of the PSU LED CHARGE - battery charging process
Connectors	Power input: Φ0,63-2,50 (AWG 22-10) PoE power supply output: DC plug 2.1/5.5 BAT output: battery wires Φ6 (M6-1,5) 45cm,
Dimensions	W=330, H=380, D+D_1=173+8 [+/- 2mm] W_1=335, H_1=385 [+/- 2mm] W_2=245, H_2=150, D_2=90 [+/- 2mm]
Enclosure	Steel sheet, DC01 1,0mm color RAL 9003
Closing	Cheese head screw x 2 (at front, lock assembly possible)
Notes	Enclosure does not adjoin assembly surface so that cables can be led.
Additional equipment	Mounting screws (x4)
Net / gross weight	5,6 / 6,2 [kg]
Declaration	CE

Table 3. Operation safety.

Protection class EN 62368-1	I (first)
Degree of Protection EN 60529	IP20
Electrical strength of insulation: - between input input and output circuits of the PSU - between input circuit and protection circuit - between output circuit and protection circuit	 2500 V AC min. 1500 V AC min. 500 V AC 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 insulation	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) for ~230 V in and low-voltage installations. 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.

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, user should be informed how to disconnect power supply unit from mains supply (most frequently through separating and assigning an appropriate fuse in the fuse-box)..

2.2 Installation procedure.

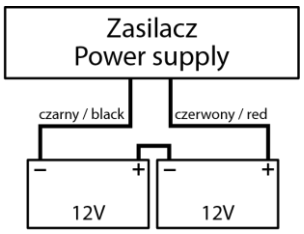
CAUTION!
Before installation, cut off voltage in 230 V power-supply circuit. To switch power off, use an external switch, in which distance between contacts of all poles in disconnection state is not less than 3mm.

It is required to install an installation switch with a nominal current of min. 6 A in power supply circuits outside the power supply unit.

1. Mount the device in a selected location and connect the wires.
2. Remove mounting plate by unscrewing screws, then release plate from hooks (slide up and slightly pull).
3. Connect the power cables (~230 V) to L-N clips of the PSU. Connect the ground wire to the clip marked by the earth symbol ⏚. Use a three-core cable (with a yellow and green protection wire) to make the connection. Lead the cables to the appropriate clips through the insulating bushing of the PSU.

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

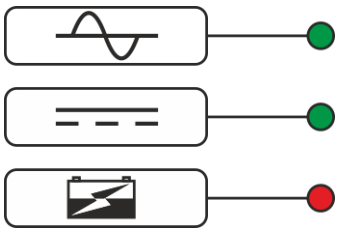
4. Connect battery in correct polarity.
5. Make the selection is done with use of the IBAT jumpers (see: tab.1)
6. Screw switch to mounting plate.
7. Connect switch using cable terminated with a DC 2.1/5.5 plug.
8. Mount inside enclosure.
9. Connect the power 230 V
10. After installing and checking proper working, the enclosure can be closed.



3. Operating status indication.

The power supply unit features LED status indication

3.1 Optical indication.



Green LED AC:
- **on – PSU is supplied with 230 V**
- **off – no 230 V power, battery-assisted operation**

Green LED DC:
- **on – presence of DC voltage in output of PSU**
- **off – no voltage in output of PSU**

Red LED CHARGE:
- **off – no battery charging**
- **on – battery charging process**

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 PSU module from power supply network. PSU does not require performing any specific maintenance measures, however, in 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 same parameters.

WEEE MARK
According to the EU WEE Directive – It is required not to dispose of electric or electronic waste as unsorted municipal waste and to collect such WEEE separately.

CAUTION! *Power supply module unit is adapted for a sealed lead-acid battery (SLA). After operation period it must not be disposed of but recycled according to applicable law.*

Pulsar sp. j.
Siedlec 150, 32-744 Łapczyca, Poland
Tel. (+48) 14-610-19-40, Fax. (+48) 14-610-19-50
e-mail: biuro@pulsar.pl, sales@pulsar.pl
http:// www.pulsar.pl, www.zasilacze.pl