RackPack

v1.0

Battery enclosure for 4x18Ah; 10–60V, RACK 19” 2U

Edition: 1 from 13.03.2026
Supersedes edition: ----------

Features:

- capability to install 1 – 4 batteries 18Ah/12V SLA or 20Ah/12V LiFePO4
- high current capacity: **up to 20 A**
- dedicated to **RACK** series power supplies
- LED battery charge level indicator (triggered by the TEST button)
- easy installation
- possibility to mount ARAS…N rails
- warranty: 2 years

TABLE OF CONTENTS:

1. Technical description.

1.1. General description.

The RackPack battery enclosure is designed to accommodate 1 – 4 batteries of 18Ah/12V (SLA) (or 20Ah/12V LiFePO4) inside a Rack cabinet. It is equipped with a fuse accessible from the front panel and a battery charge level indicator using LED diodes. Connections between the batteries are implemented using “Selector Board” PCBs, which simplifies the installation process. The unit is assembled in a metal enclosure (RAL 9005 – black) intended for installation in 19” RACK cabinets.

Table 1. Capacity depending on the type of connections used

Number of batteries	Selector Board 12V	Selector Board 24V	Selector Board 48V
1	1x C	-	-
2	2x C	1x C	-
3	3x C	-	-
4	4x C	2x C	1x C

C – capacity of a single battery

1.2. Block diagram (Fig.1).

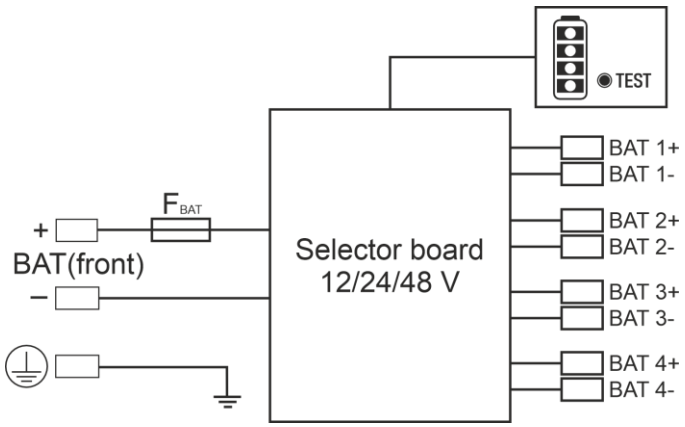


Fig.1. Block diagram of the module.

1.3. Description of components and connectors.

Table 2. Elements and connector of PSU (see Fig. 2a, 2b).

Element no.	Description
[1]	**–BAT+** output
[2]	**Battery charge level indicator**
[3]	**TEST** button
[4]	**F_{BAT}** fuse
[5]	Cable gland for routing the **temperature sensor**
[6]	Connector for connection of a protective conductor
[7]	Selector board **PCB**
[8]	Battery connectors (BAT1 – BAT4)
[9]	„Selector Board" installation location
[10]	Battery type selection jumper ▬ - SLA (Pb) batteries ▪▪ - LiFePO4 batteries

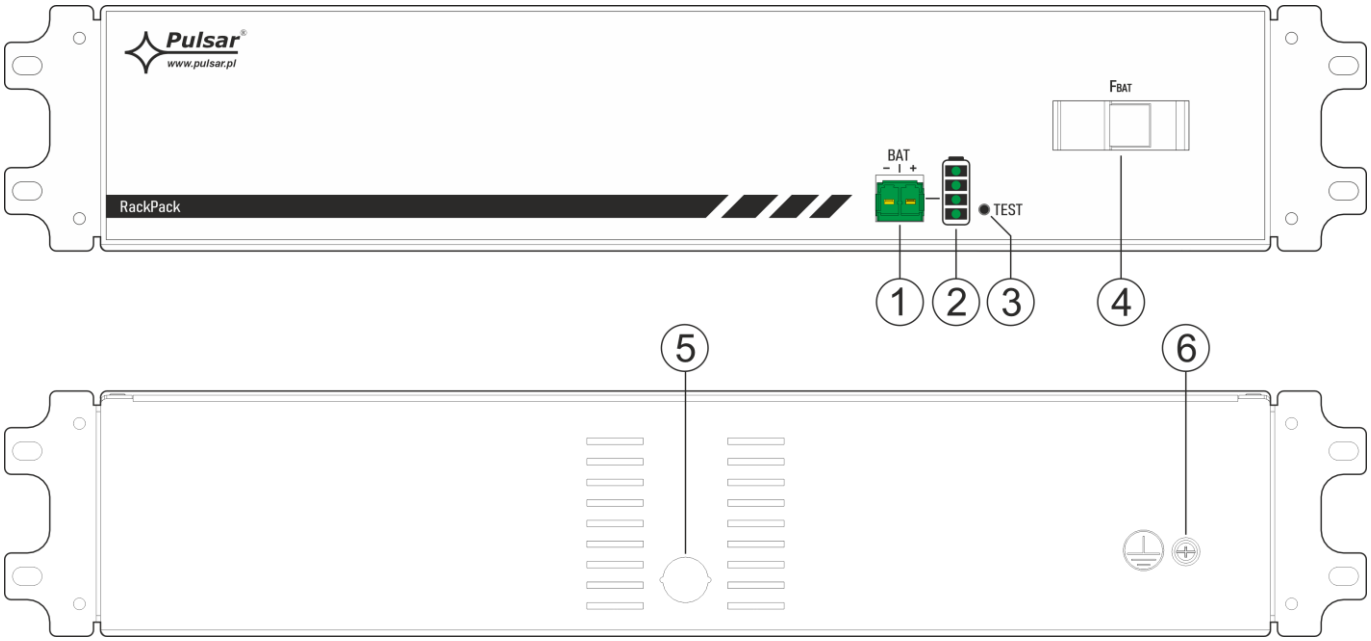


Fig.2a. View of device

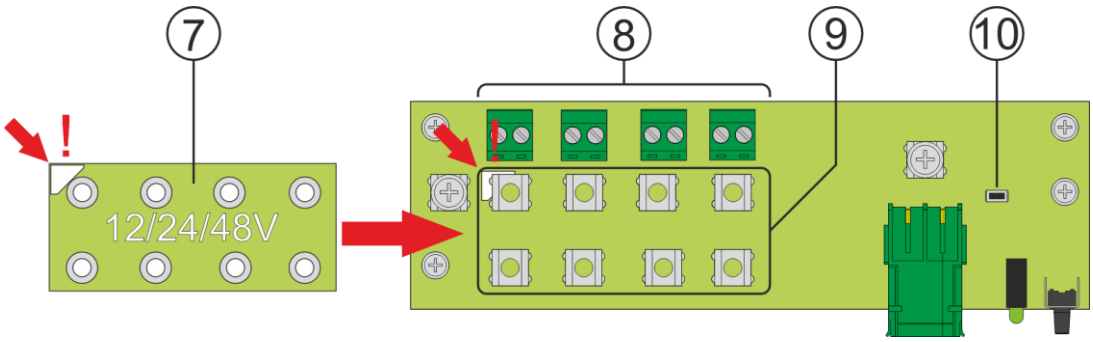


Fig.2b. View of PCB

1.4. Specifications:
- **electrical parameters (Tab. 3)**
- **operation safety (Tab. 4)**
- **operating parameters (Tab. 5)**

Table 3. Electrical parameters.

Recomended battery/batteries	4x 18Ah/12V (SLA) or 4x 20Ah/12V (LiFePO4)
Output load	20A max.
Output voltage	60 V DC max.
Short circuit protection (SCP)	- F_{BAT} fuse (in case of a failure, fuse-element replacement required)
Fuse link	25A gG 10x38mm
Optical indication	Battery charge level indicator, activated by the TEST button
Terminals:	Φ0,5÷3,2 (AWG 24-8) 0,5-4mm^2
Enclosure dimensions (LxWxH) [±2mm]	W=19", H=2U; 483 x 88 x 430 (WxHxD)
Enclosure colour:	RAL 9005 (black)
Net/gross weight	5,5 / 6,1 [kg]
Equipment:	"Selector Board" PCBs -12; 24; 48 V + set of screws and washers, PC 5/2-2P connector, set of cables for battery connection, mounting kit (4x M6 screws + cage nuts + plastic washers), spare fuse

Table 4. Operation safety.

Protection class EN 62368-1	I (first)
Degree of protection EN 60529	IP20
Electrical strength of insulation: - between the output circuit and the protective circuit	500 V DC min.
Isolation resistance: - between the output circuit and the protective circuit	100 MΩ, 500 V DC

Table 5. 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.

The module is intended to be installed by a qualified installer holding appropriate (required and necessary for the given country) permits and authorizations to connect (interfere) with low-voltage installations. The device is intended for installation in a 19" RACK cabinet. In order to meet the EU requirements, follow the guidelines on: power supply, enclosures and shielding: - according to application.

2.2 Installation procedure.

1. Remove the enclosure cover.
2. Install one Selector Board PCB in the required voltage version. Use the supplied M4 screws with washers for installation. The tightening torque should be 1.4–1.7 Nm. The board can be installed in only one orientation (pay attention to the markings).
3. Battery installation should begin from the rear panel. The location and exact installation sequence are shown in Figure 3.

Batteries should be installed individually, avoiding short-circuiting the terminals. Connections should be made in a way that minimizes the risk of short circuits (e.g. to the enclosure). All operations must be carried out strictly in accordance with the procedure specified in this manual. Changing the sequence of steps is prohibited. Incorrect procedure may result in fire or explosion. Transport with batteries installed is prohibited! Use only batteries of the same type and capacity. Do not mix new and used batteries.

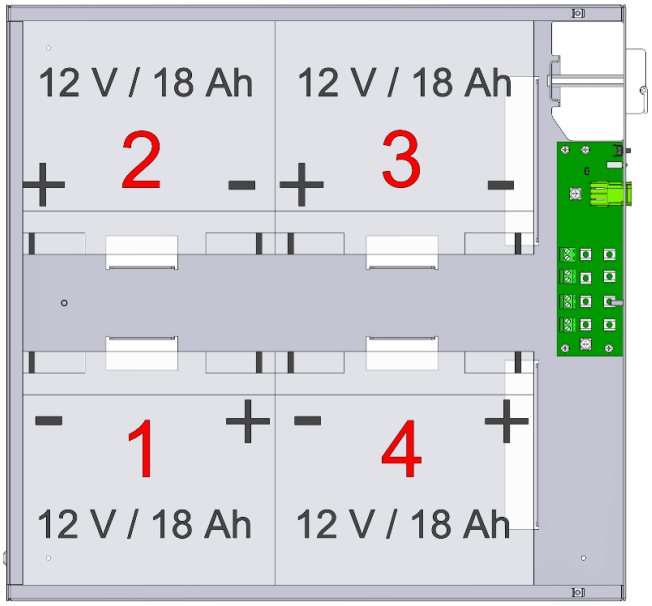


Fig.3. Location and installation sequence of batteries

4. Make connections to the batteries, connecting one terminal at a time. First connect the negative terminal of battery 1 by fastening the wire to the PCB, then to the battery. Next, connect the positive terminal starting from the PCB. Only after connection, place the battery in the enclosure. Continue in the same way for the remaining batteries. Pay attention to polarity and the order of terminals!

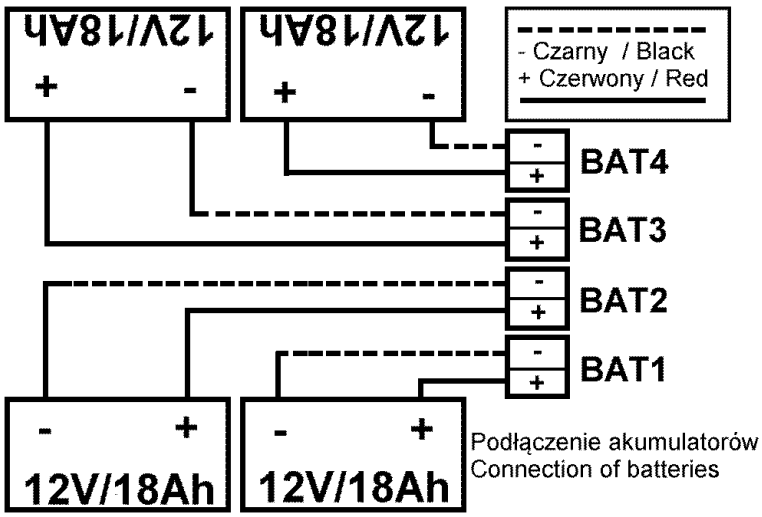


Fig.4. Battery connection.

The minimum number of batteries is 1 for 12 V configuration, 2 for 24 V (connect to terminals BAT1 and BAT3, or BAT2 and BAT4), and 4 for 48 V.

5. Select the battery type using the jumper (item 10, Fig. 2b).
6. After installing the batteries, reinstall the cover.
7. Install the unit in the Rack cabinet. The use of RACK mounting rails is recommended (e.g. RASM600 – taking into account the depth of the 19" RACK cabinet).
8. Make connections to the buffer power supply. During handling, it is recommended to remove the F_{BAT} fuse.

Due to the risk of flammable gas generation during battery charging, the RACK cabinet and the room in which it is installed must be adequately ventilated.

3. Operating status indication.

3.1 Optical indication.

The enclosure is equipped with a battery charge level indicator based on LED diodes:

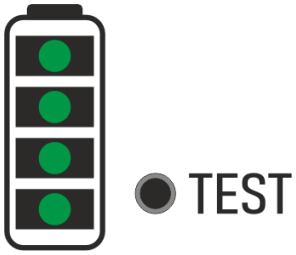
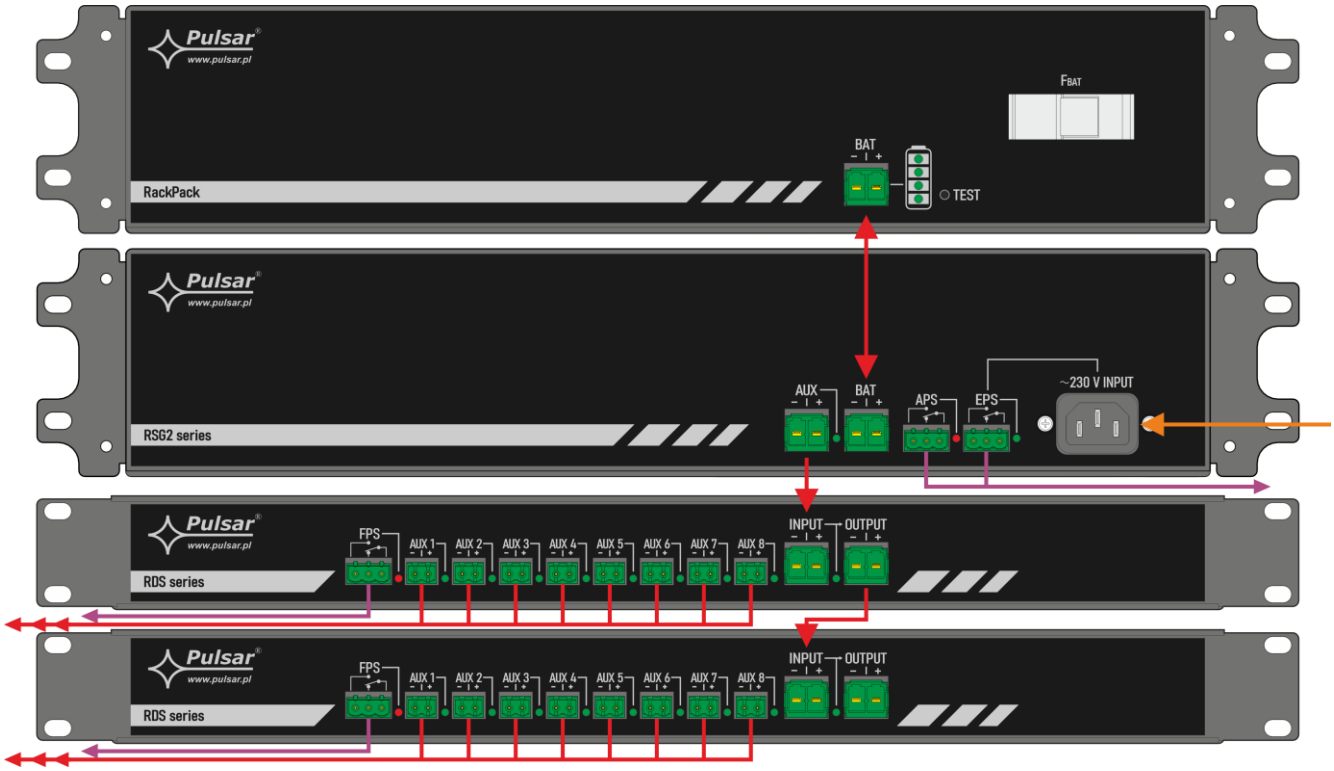


Fig.5. Battery charge level indicator.

The indicator is activated while the TEST button is pressed. The displayed result is approximate and depends on the operating condition of the batteries (charging/discharging, battery load). It must not be used to determine the degree of battery wear. The indicator must not be blocked, as this could lead to excessive battery discharge.

4. Integration of RACK series devices.

The RackPack battery enclosure is part of the Pulsar RACK system, which also includes RSG2 series buffer power supplies, RWB units (dedicated to IP monitoring systems), and the RDS fuse module. The devices are visually matched and feature a standardized connection method, which simplifies installation and allows the system to be adapted to individual requirements. An example configuration is shown below:



5. Maintenance.

The figure set of contacts shows a potential-free status of relay, which corresponds to power supply failur. PSU does not require any specific maintenance, however, its interior should be cleaned with compressed air if it is used in dusty conditions. In case of fuse replacement, use only compatible replacement parts.

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

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