



Features of the power supply:

- DC 13,8 V/20 A uninterruptible power supply
- high efficiency 86%
- built-in power factor correction system (PFC)
- controlling of battery charging and maintaining
- protecting of battery against excessive discharging (UVP)
- battery charging current 2/4/8 A, changed by jumper
- optional equipment: set of external LED indicators: PKAZ168, mounting plate DIN4
- battery output is full protected against short-circuit and reverse connection
- LED optical signalisation
- protections:
 - short-circuit protection SCP
 - over voltage protection OVP
 - surge protection
 - overload protection OLP
 - OHP overheat protection
- forced cooling - built-in fan
- warranty – 2 years from production date

1. Technical description.

1.1. General description.

Buffer-type power supply units are intended for continuous power supply to devices that require stabilised voltage of **12 V DC (+/-15%)**. The power supply provides a voltage of **U=13,8 V DC** with an output current of:

- 1. Output current of 18 A + 2 A battery charging**
- 2. Output current of 16 A + 4 A battery charging**
- 3. Output current of 12 A + 8 A battery charging**

Total device current + battery: 20 A max.

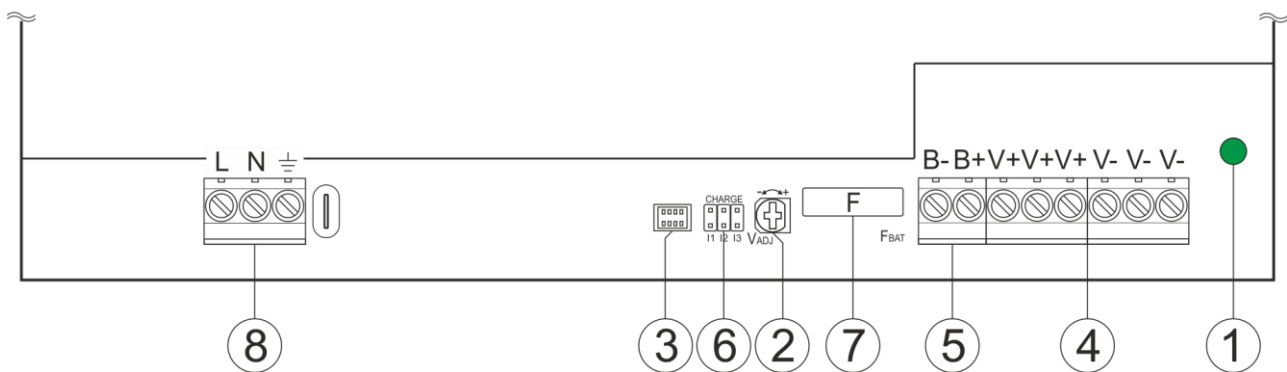
In case of power voltage decay, prompt switching to battery supply occurs. The power supply unit is protected against a short circuit, an overload, a surge or over voltage protection.

1.2. Technical parameters.

Supply voltage	~ 200 – 240 V; 1,5 A; 50/60 Hz
Inrush current	60 A
Supply power	276 W
Efficiency	86%
Factor PF	>0,95
Output voltage (factory settings)	11-13,8 V DC – buffer operation 9,5-13,8 V DC – battery operation
Output current	20 A
Battery charging current	2/4/8 A jumper selectable
Voltage adjustment range	13,5 – 14,4 V DC
Current consumption by PSU during battery-assisted operation	approx. 25 mA
Ripple voltage	150mV p-p max.
Short-circuit protection SCP	electronic, automatic recovery
Overload protection OLP	105-150% PSU power, automatically recovered
Overload protection (battery) OLP	melting fuse T20 A
Surge protection	varistors
Overvoltage protection OVP	>19 V (activation requires disconnecting the load or supply for about approx. 1 min)
Excessive discharge protection UVP	U<9,5 V (± 5%) – disconnection of battery
Optical signalisation	LED green – indicates DC voltage at the power
LED optical indication output (intended for optional)	LED AC – presence of AC voltage

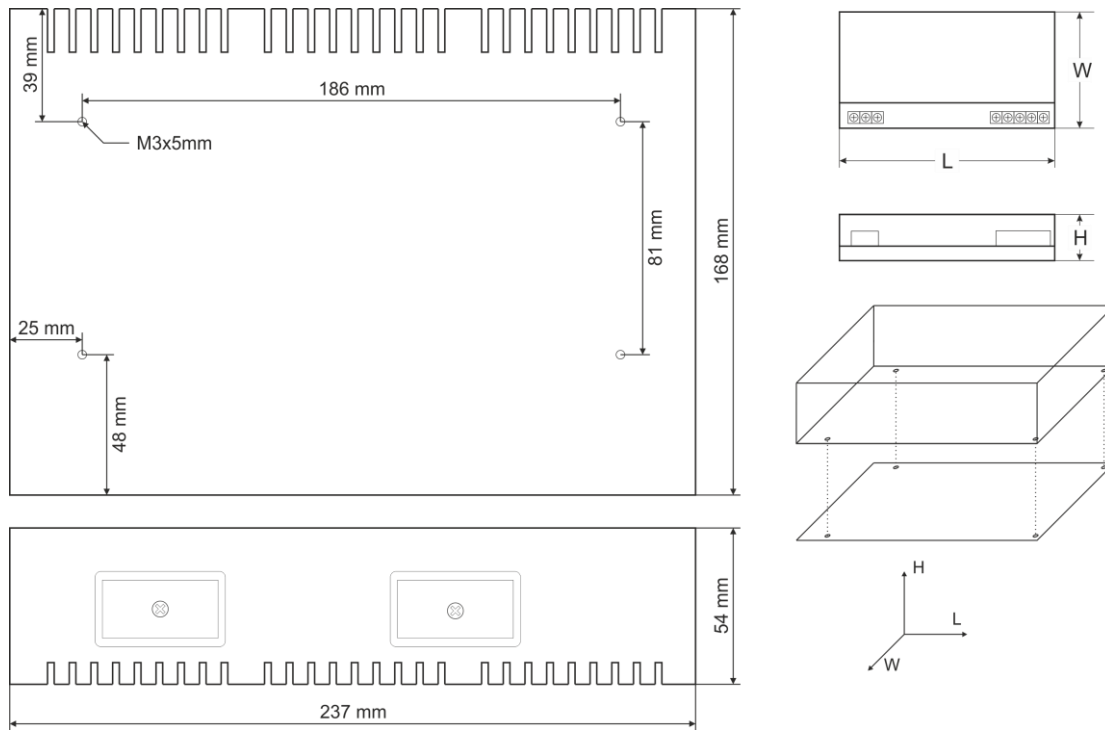
indication set PKAZ168)	LED DC – presence of DC voltage on power supply output LED CHARGE – battery charging process
Optional equipment	A set for optical indication LED PKAZ168
Operation conditions	Temperature: -10°C ÷ +40°C relative humidity 20%...90%, without condensation
Dimensions	L=237, W= 168, H=54 [±2mm]
Net/gross weight	1,24 / 1,30 [kg]
Protection class electric shock protection	I (first) – requires a protective conductor
Connectors	I/O PCB: 0,5 – 2,5 mm ² (AWG 26 – 12) output of optical signalization: 4 pins micromatch socket
Additional accessories	Battery wire Φ6 (M6-2,5), 45cm
Electrical strength of insulation: - between input (network) circuit and output circuits of power-supply - 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
Storage temperature	-20°C...+60°C
Vibrations and impulse waves during transport	according to PN-83/T-42106

1.3. Description of terminals.



Elements/connectors [Fig.1]	Description
[1]	LED for DC output voltage
[2]	Potentiometer - output voltage adjust
[3]	Connector of optical signalization LED
[4]	Power supply output (V+, V-)
[5]	Battery connector (B+, B-)
[6]	Jumper - battery charging current configuration: J1= <input type="checkbox"/> J2= <input type="checkbox"/> J3= <input type="checkbox"/> Ibat =2A J1= <input type="checkbox"/> J2= <input type="checkbox"/> J3= <input type="checkbox"/> Ibat =4A J1= <input type="checkbox"/> J2= <input type="checkbox"/> J3= <input type="checkbox"/> Ibat =8A Legend: <input checked="" type="checkbox"/> jumper installed, <input type="checkbox"/> jumper removed
[7]	Battery fuse
[8]	L-N – input voltage connectors 230 V AC, ⏚ – protective conductor connector

1.4. Dimensions and fitting of the PSB-12V20A power supply.



2. Installation.

2.1. Requirements.

PSU is to be mounted by a qualified installer, holding relevant permits and licenses (applicable and required for a given country) for low-voltage installations. The device shall be mounted in closed rooms of the normal air humidity (RH=90% max. without condensation) and the temperature within the range from -10°C to +40°C.

The power supply shall be mounted in a close casing (a cubicle, a terminal device) and in order to fulfill LVD and EMC requirements the rules for power-supply, encasing and shielding shall be observed according to application.

Due to the power supply design, the protection wire has to be connected to the corresponding connector of the supply unit. Before installation, prepare a PSU load balance with point 1.1.

2.2. Installation procedure.



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

1. Mount the PSU in a selected location and connect the wires.
2. Connect the power cables (~230 V) to L-N clips of the PSU.



The shock protection circuit shall be performed with a particular care, i.e. the yellow and green wire coat of the power cable shall stick to one side of the '⊕' terminal - in the PSU enclosure. Operation of the PSU without a properly made and fully operational shock protection circuit is UNACCEPTABLE! It can cause a device failure or an electric shock.

3. Connect the ground wire to the clip marked by the earth symbol \perp (connector of power supply module). Use a three-core cable (with a yellow and green protection wire) to make the connection. Lead the cables to the appropriate clips of the subplate through the insulating bushing.
4. Check the PSU output voltage, if needed correct the setting it should be by the potentiometer.
5. Connect load / loads to proper output connectors of the power supply (positive end is marked as +V, negative end as V-)
6. Screw the battery cables to the BAT connector (**black B-**, **red B +**).
7. Connect the battery in series paying attention to polarity.
8. Connect the PKAZ168 external optical signalling (**optional equipment**)
9. Once the tests and control operation have been completed, close the enclosure/cabinet.

3. Maintenance.

All maintenance procedures can be performed after the disconnection of the power supply from the electrical grid. The power supply does not require any special maintenance procedures, but in the case of significant dust accumulation, dusting using compressed air is recommended.

WEEE MARKING

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.

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