



# **PSAC 04244SEP**

v.1.0

**PSAC 24VAC/4A/4x1A/SEP AC power supply for CCTV**

EN

Edition: 1 from 06.12.2011  
Replaces edition: .....

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### Features of the power supply unit:

- 4 independent, galvanically separated outputs
  - Voltage regulation (by jumper)
  - LED optical signalisation
  - AW technical output
  - protections:
    - SCP short-circuit protection
    - overvoltage protection
    - overload OLP
    - against sabotage
    - OHP thermal protection of transformer
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#### 1. Technical description.

##### 1.1. General description.

AC/AC **PSAC 04244SEP** power supply is using for supplying CCTV devices requiring AC voltage of **24 V** with overall efficiency of **4A@24V AC**. The power supply is housed in a metal case (**colour RAL 9003**). The casing is equipped with a micro switch that signals the opening of the doors (front panel).

#### Information about additional elements of **PSAC 04244SEP** power supply

- module of the AC/AC power supply in ABS casing, MSC 1512 (module of MSC 12V/1.5A or 24V/1A power supply, exchanged voltage) allowing to create a 24 V AC and 12 V DC/24 V DC supply system.

## 1.2. Block diagram (fig.1).

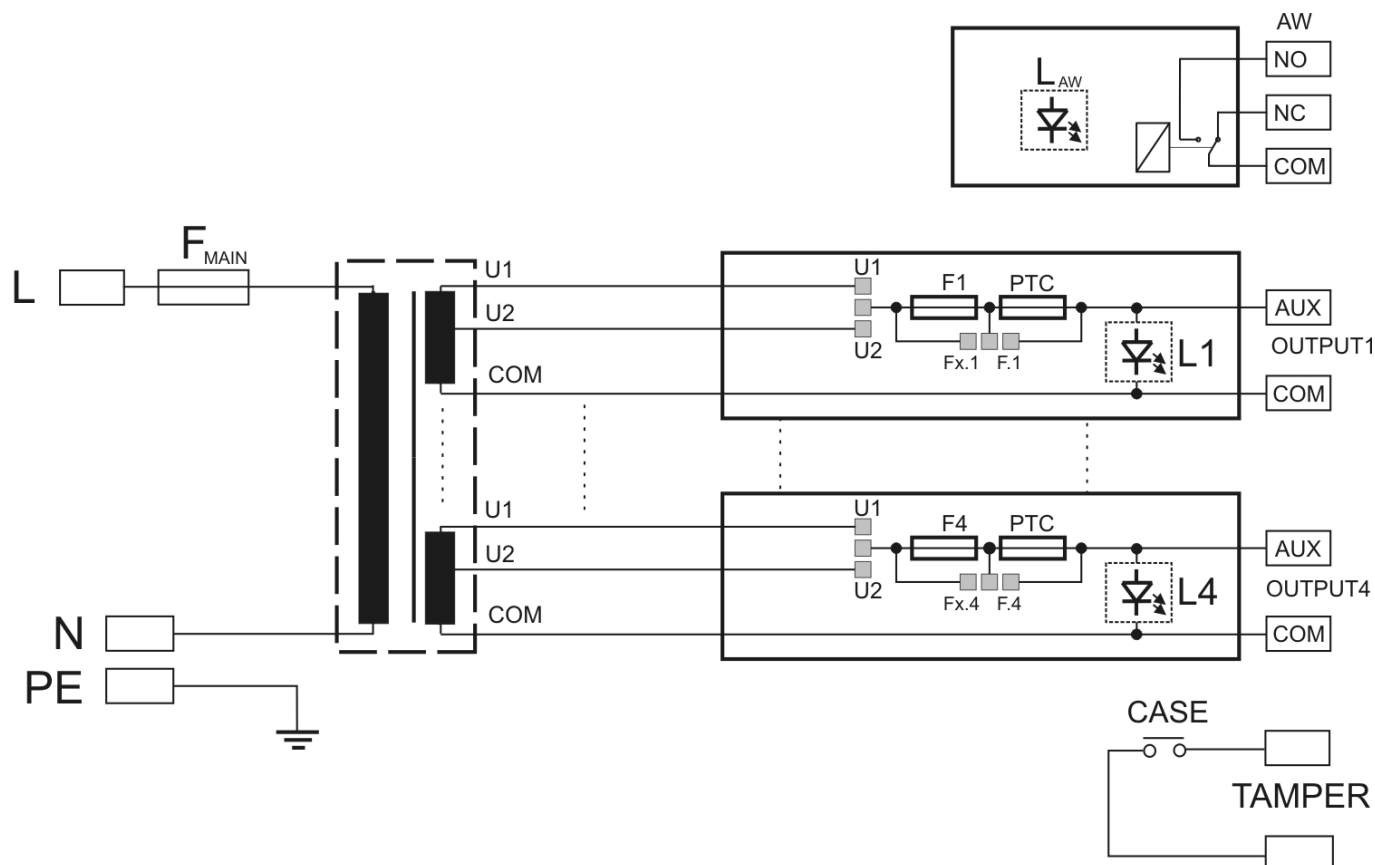










Fig.1. Block diagram of the power supply.

## 1.3. Description of elements and connectors of the power supply ( table 1, table 2, fig. 2, fig.4).

Table 1. Terminal and elements of LB4-SEP.

Element No. [Fig. 2]	Description of LB4-SEP elements
[1]	L1÷L4 - LED (green) signalling the status of L1=OUT1 output, etc.
[2]	F1÷F4 fuses in output circuits, F1=OUT1 etc.
[3]	COM-U1-U2 Input of the AC supply (required transformer separation)
[4]	OUT1, OUT2, OUT3, OUT4 independently protected outputs
[5]	L <sub>AW</sub> LED (red) signalling failure of one of the outputs (activation of a safety device)
[6]	AW output signalling failure of one of the outputs, relay type. <b>Attention!</b> Fig.2 shows non-potential state of relay i.e. the state of failure
[7]	Jumper of the change in PTC/fuse-element safety device type Fx Fx.x   Fx jumper used, fuse-element protection device selected Fx Fx.x   Fx.x jumper used, polymer protection device selected
[8]	Jumper of the output voltage change (independently for each output): U2 U1   U2 jumper used, voltage on OUTx= U2 output U2 U1   U1 jumper used, voltage on OUTx= U1 output

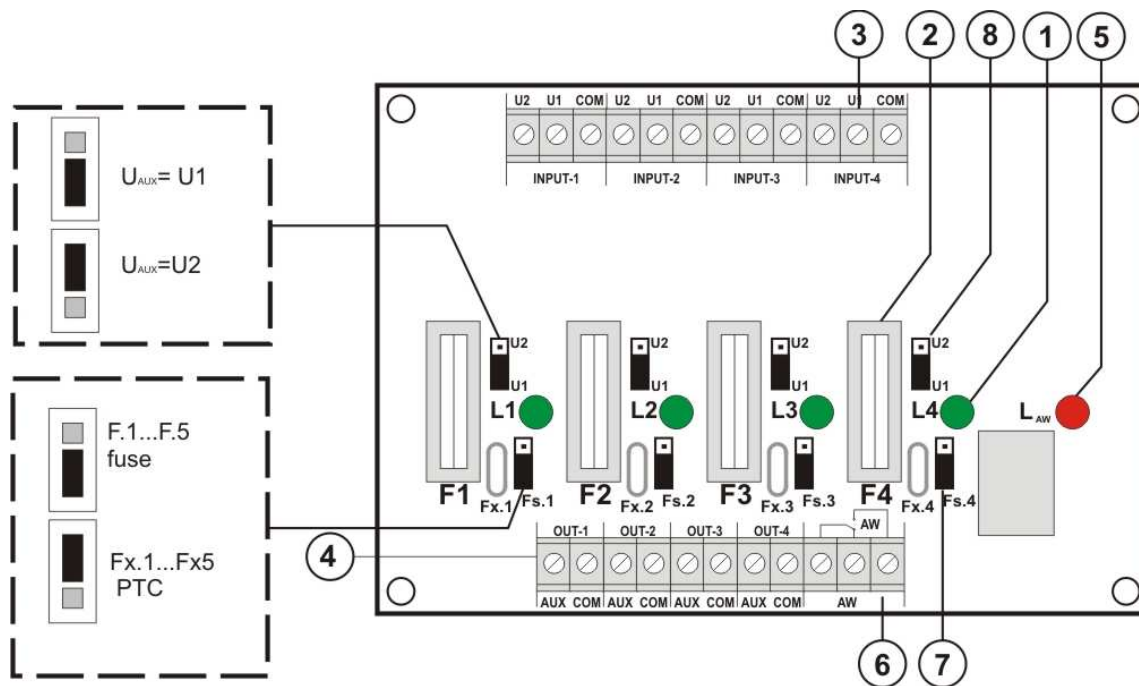



Fig.2. View of the LB4-SEP fuse block..

Table 1. Terminals and elements of PSAC 04244SEP.

Element No. [Fig. 4]	Description of power supply elements
[1]	Separating transformer
[2]	Fuse block LB4-SEP (tab. 1)
[3]	TAMPER, anti-sabotage protection contact (NC)
[4]	F <sub>MAIN</sub> fuse in supply circuit (230 V AC)
[5]	L-N connection of 230 V AC power supply,  PE protection connection

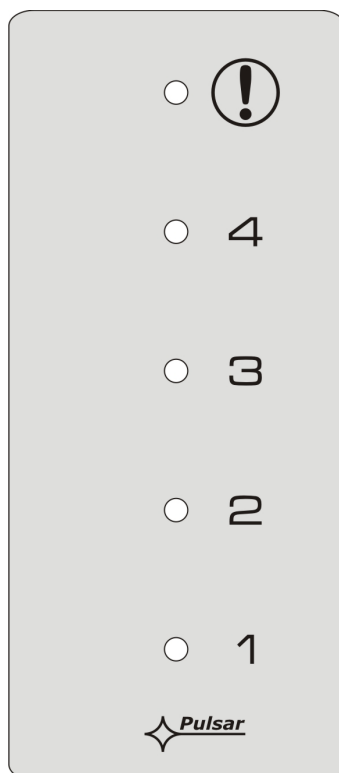


Fig.3. View of the power supply panel.

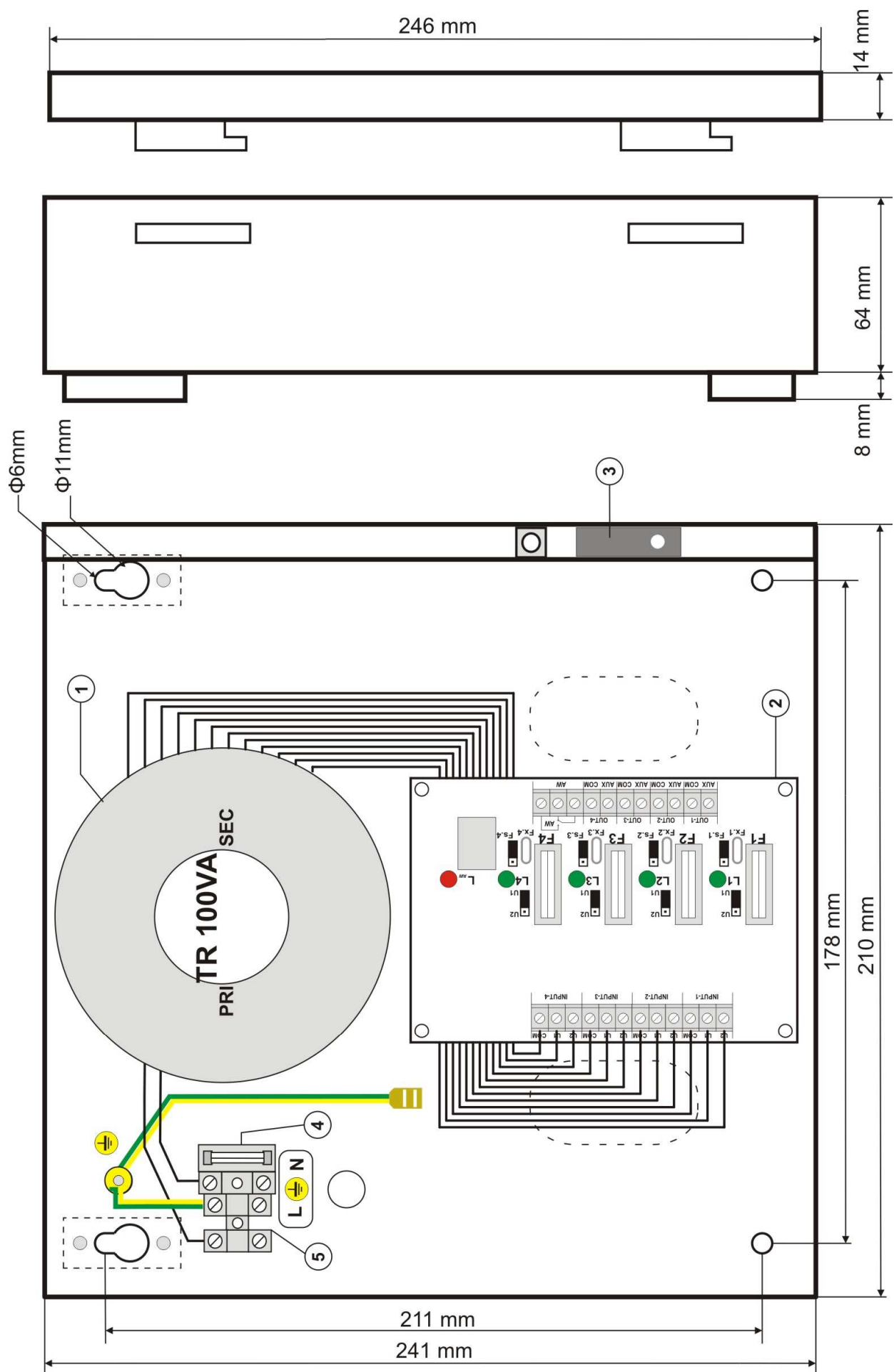


Fig.4. View of the power supply.

#### 1.4. Technical parameters:

- electrical parameters (table 3)
- mechanical parameters (table 4)
- user safety (table 5)
- operation parameters (table 6)

##### Electrical parameters (table 3).

Supply voltage	230 V AC (-15%/+10%)
Supply frequency	50 Hz
PSU power	100 VA max.
Current consumption	0,5 A max.
Output voltage	U1 : 23,0÷28,0 V AC (100% load ÷ 0% load) U2 : 25,5÷31,5 V AC (100% load ÷ 0% load)
Voltage setting range	U1/U2 (jump change)
Output current	4x 1A $\Sigma$ 4,0 A@24 V AC max or $\Sigma$ 3,7 A@27 V AC max
Short-circuit protection SCP	4x F 1,0A fuse element or PTC 1A - failure of the fuse-element safety device requires changing the fuse-element insert
Overloading protection OLP	AC 24 V circuit : 4x F 1,0A or PTC 1A (changed by jumper) AC 230V circuit : 1x T 1,0A
Thermal protection OHP	yes- transformer
Overvoltage protection	varistors
Technical outputs: - AW output signalling failure of one of the AUX outputs (activation of the safety device)  - TAMPER output signalling opening of the power supply casing	relay type, 1A@ 30V DC/50V AC max. <b>Attention!</b> Fig.2 shows non-potential state of relay i.e. the state of failure - microswitch, NC connectors (closed casing), 0.5A@50 V DC (max.)
Optical signalling: LED L1÷L4 (green)  LED L <sub>AW</sub> (red)	- status of OUT1 ÷ OUT4 normal status = illuminated, failure status = not illuminated - failure signalling of min. one output normal status = not illuminated, failure status = illuminated
F <sub>MAIN</sub> fuse F1÷F4 fuses	T 1A/ 250 V F 1A/ 250 V lub PTC 1A

##### Mechanical parameters (table 4).

Casing dimensions	215 x 246 x 64 (210 x 241 x 56+8) (WxHxD)
Fixing	178 x 211 4x $\Phi$ 6
Net/gross weight	2,70/2,90 kg
Colour of the casing	RAL 9003
Closing	Cylindrical screw: from the front of the casing
Connections	Supply: $\Phi$ 0.63÷2.50 (AWG 22-10) Outputs: $\Phi$ 0.41÷1.63 (AWG 26-14) TAMPER output: cables, 30cm
Remarks	The casing is equipped with distance from the mounting basis in order to guide the wiring system, convection cooling.

##### User safety (table5).

PN-EN 60950-1:2007 protection class	I (first)
PN-EN 60529: 2002 (U) protection degree	IP20
Insulation electric strength: - between the input (network) circuit and output circuits of the power supply (I/P-O/P) - between the input circuit and the PE protective circuit (I/P-FG) - between the output circuit and the PE protective circuit (O/P-FG)	3000 V AC min. 1500 V AC min. 500 V AC min.
Insulation strength: - between the input circuit and the output or protective circuit	100 M $\Omega$ , 500 V DC

##### Operating parameters (table 6).

Operating temperature	-10°C...+40°C
Storing temperature	-20°C...+60°C
Relative humidity	20%...90% without condensation
Vibrations during operation	unacceptable
Surges during operation	unacceptable
Direct exposure to sunlight	unacceptable
Vibrations and surges during transport	according PN-83/T-42106

## 2. Installation.

### 2.1 Requirements.


AC/AC power supply shall be mounted by the qualified installer having appropriate (required and necessary for a given country) permissions and qualifications for connecting (operating) 230V/AC installations and low-voltage installations. The device shall be mounted in closed rooms, according to the environment class II, 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 operate in a vertical position so that free and convectional air flow through ventilating holes of the casing is guaranteed.

Before installation is started, the balance of the power-supply load shall be performed. During normal operation the sum of the currents consumed by the receivers cannot exceed **I=4.0A@24 V AC**. Because the power-supply is designed for a continuous operation and is not equipped with a power-switch, therefore an appropriate overload protection in the power supply circuit shall be guaranteed. Moreover, the user shall be informed about the method of isolation of the power supply from the power voltage (usually through assignment and marking of an appropriate fuse in the fuse-box). The electrical system shall be made in accordance with valid standards and regulations.

### 2.2 Procedure of installation.

**1. Before initiating the installation it is necessary to ensure that the voltage in the 230 V power circuit is disconnected.**

2. Mount the power supply in the selected place and guide connecting conductors

3. Connect the power cables (~230 V AC) with L-N power supply terminals. Connect the earth conductor to the clamp marked with  earthing symbol. The connection should be performed with 3-core cable (with yellow-green PE protecting conductor). Power conductors should be connected to proper terminals, through seal wire.



**The circuit of the shock protection shall be performed with a particular care, i.e. the yellow and green protection wire of the power cable shall be connected from one side to the terminal marked by the symbol of  in the casing of the power-supply. Operation of the power-supply without the properly made and fully operational circuit of the shock protection is UNACCEPTABLE!  
It can result in failure of devices and electric shock.**

4. Connect the cables of consumers to the **OUT1÷OUT4** terminals on LB4-SEP fuse block.

5. If necessary, connect device cables (alarm unit, controller, signaller, etc.) to technical outputs of the power supply:

- **AW** output signalling the activity of the fuse (output of the LB4-SEP fuse block).
- **TAMPER** output signalling opening of the power supply casing.

6. In case of installation, where significant drops in voltage in effective resistance of receiver supply cables can occur, it is possible to correct the value of output voltage with the help of U1/U2 jumper, independently for each output.

7. Connect 230 V AC supply.

8. Check optical signalling of the power supply operation: LED L1÷L4 (green) should be constantly illuminated.

9. Close the casing after installing and verifying the correctness of the power supply activity.

### 3. Signalling the operation of power supply.

The power supply is equipped with optical signalling the status of operation. Presence of voltage on power supply outputs is signalled by illumination of green LED diodes on the plate of LB4-SEP fuse block. Failure is signalled by red LED diode [!] AW. Condition of the power supply may be controlled remotely by AW technical output.

#### 3.1 Optical signalling.

- **LED L1....L4** (green) signal the supply status on OUT1÷OUT4 outputs.  
In case of loss of voltage on the output (burnout of the fuse/ activation of the PTC), appropriate LED diode stops to be illuminated (L1 for OUT1, L2 for OUT2, etc.).
- **LED [!] AW** (red) indicates failure of at least one output (number of the output is signalled by the green LED L1÷L4).

#### 3.2 Technical outputs.

The power supply is equipped with signalling output, enabling to submit information about the failure or sabotage.

- **AW** – relay type output signalling the activity of one of the output fuse.  
**Attention!** Fig.2 shows non-potential state of relay i.e. the state of failure.
- **TAMPER** - output signalling opening of the power supply casing, output of the potential-free contact signaling the status of the power supply doors, power supply closed: NC, power supply open: NO.

## 4. Service and operation.

### 4.1 Overload and short-circuit of the power supply output.

Outputs OUT1÷OUT4 of the power supply are protected against short-circuits with fuse-element safety device (inserts) or PTC. In case of damaging fuse-element safety device it is necessary to exchange the fuse (compliant with the original).

If PTC polymer fuses protection was chosen, then automatic disconnection of the output voltage was signalled by switching off the green diode. It is then necessary to disconnect the load from the power supply output for the period of about 1 min.

Loading the power supply with the current exceeding  $\Sigma 4.0A@24\text{ V AC}$  (110% ÷ 150% of the S power) results in the failure of the  $F_{\text{MAIN}}$  fuse in the 230 V AC circuit and/or F1÷F4 fuses. In case of failure it is essential to exchange the fuse, compliant with original.

### 4.2 Maintenance.

All maintenance procedure may be performed after disconnecting the power supply from the power network. The power supply unit does not require performing any special maintenance procedures, however, in case of significant drop of the dustiness, it is only essential to remove the dust from the interior with the help of compressed air. In case of changing the fuse it is essential to use substitutes compliant with the original parts (recommended).



#### WEEE MARKING

**The used electric and electronic device may not be thrown out together with common household wastes. According to WEEE directive, binding within the EU, in case of used electric and electronic devices separate means of utilization should be utilized.**

#### GENERAL WARRANTY CONDITIONS

1. Pulsar K. Bogusz Sp.j. (producer) provides two-year quality warranty for the device, counting from the date of sale indicated on the bill of sale.
2. In case when there is no bill of sale when filing the claim, three-year warranty period shall be counted from the date when the device was manufactured.
3. Warranty shall cover free repair or provision of functional equivalent (the producer shall select the equivalent) of the faulty device due to reasons lying in the domain of the producer, including production and material faults, unless these faults have been filed within the warranty period (point 1 and 2).
4. Device falling under warranty period should be delivered to the point, where it was purchased or directly to the seat of the producer.
5. Warranty covers complete devices with written description of the fault on properly filled claim application form.
6. When a claim shall be positively considered, the Producer shall be obliged to realise warranty repairs in the shortest possible time, however this period of time should not extend 14 working days from the date when the device was delivered to the producer's service point.
7. Repair period, of which mention has been made in point 5 may be prolonged in case of lack of technical possibilities to perform the repair and in case of device conditionally accepted to the service point, as the claimant did not meet the warranty conditions.
8. All service activities resulting from the warranty shall be performed solely within the service point of the producer.
9. Warranty does not cover faults of the device resulting from:
  - reasons not lying within the power of the producer,
  - mechanical failures,
  - improper storage and transport,
  - usage not compliant with the user manual or the anticipated use of the device,
  - random events, including atmospheric discharges, power line failure, fire, flooding, influence of high temperatures and chemical agents,
  - improper installation and set up (not compliant with principles included in the user manual).
10. Statement of performing changes in construction or repairs performed outside the service point of the producer or when the serial numbers or warranty stickers on the device were anyhow damaged shall result in the loss of warranty rights.
11. Responsibility of the producer towards the purchaser shall limit to the value of the device, settled according to the determined wholesale price suggested by the producer from the date of purchase.
12. Producer shall bear no responsibility for faults resulting from damaging, improper activity or impossibility to use the device, especially when the above results from non-observance of recommendations and requirements included in the user manual or use of the device.

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