PSCU 08348SEP

v.1.0

PSCU 34VDC/8A/8x1A/SEP

Power supply for 8 HD cameras, 8A, for transmission lines

EN**

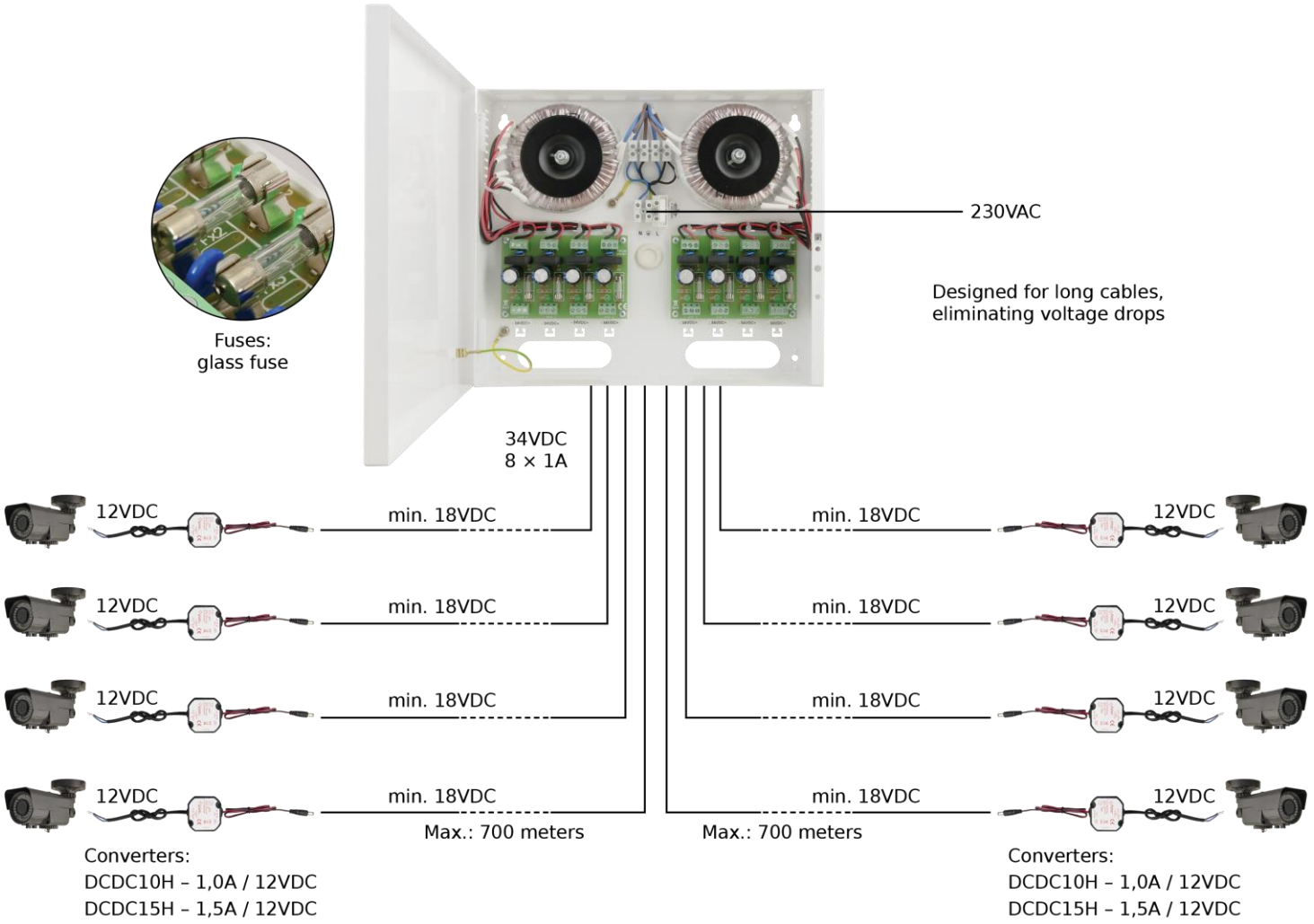
Edition: 1 from 31.05.2017

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

PSU features:

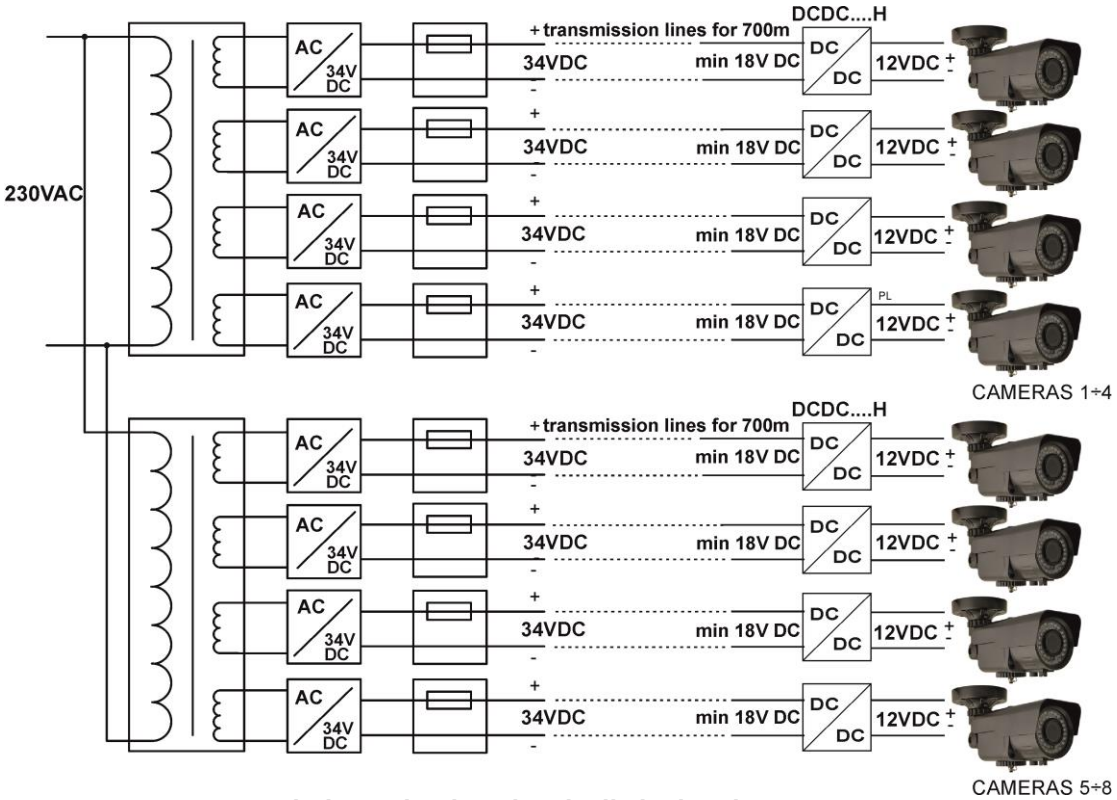
- DC 34V/8x1A unregulated power output
- Supply voltage 230V AC
- 8 independent, galvanically isolated outputs
- 8 outputs independently protected by 1A fuses
- LED optical indication
- Protections:
  - Short-circuit protection SCP
  - overload protection OLP
  - transformer overheat protection OHP
  - surge protection
- warranty – 5 years from the production date

Example of application of the PSCU08348SEP for 8 cameras, 8A for long lines.



8 x 1A / 34V DC

Schematic diagram of the PSCU08348SEP power supply application.



8 independently galvanically isolated outputs

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1. Technical description.

1.1 General description.

The **PSCU08348SEP** power supply is dedicated to solve the problem of long sections of cables (voltage drops). The PSU supplies constant voltage in the range **30÷35V DC** and current efficiency of **I=8x1A**, by a supply line to the **DCDC10H** or **DCDC15H** converters. The choice of the converter is determined by the maximum current consumption of the camera. The **DCDC10H** converter is designed to supply cameras with current consumption of **0,8A/12V DC max**. For cameras with max current consumption of **1,2A/12V DC**, **DCDC15H** converter is recommended. The converters' voltage is regulated to **12VDC,** enabling power supply of the cameras. The PSU is fitted with 8 independent, galvanically isolated outputs protected by melting fuses.

1.2 Block diagram (Fig.1).

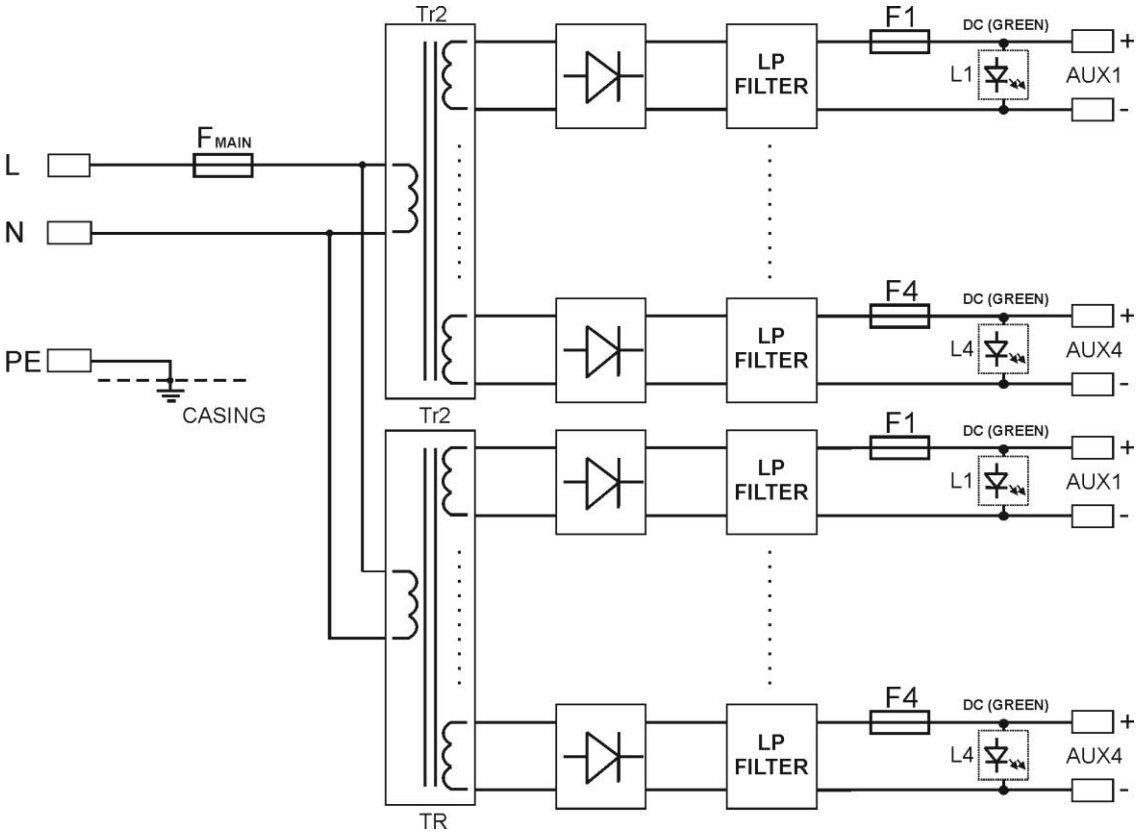


Fig.1. Block diagram of the PSU.

1.3 Description of components and connectors of the power supply (Table.1, Fig. 2).

Table 1. Components of the LP4/SEP strip (see Fig. 2).

Component no.	Description
①	**AC1÷AC4 –** AC power supply input from the transformer
②	**F1÷F4 –** fuses in the AUX1...AUX4 output circuits
③	**L1÷L4 –** LEDs indicating voltage at the individual outputs
④	**AUX1÷AUX4 –** independently protected outputs

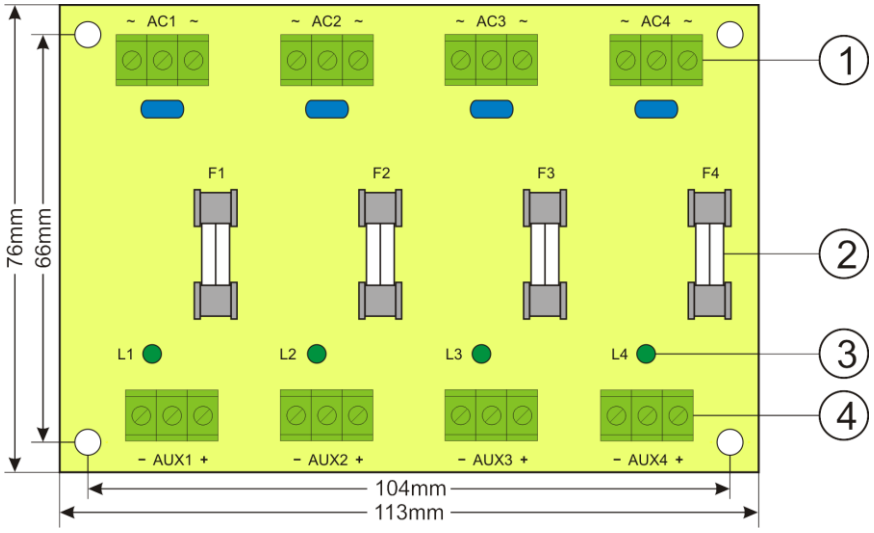


Fig. 2. The view of the LP4/SEP strip.

Tab.2 Components of the PSU (see Fig. 3).

Component [Fig. 3]	Description
①	**Isolation transformer**
②	**LP4/SEP rectifying strip**
③	**F_{MAIN}** – fuse in the power supply circuit (230V AC)
④	**L-N** power supply connector 230V AC, ⏚ protective connector PE

Table 2. Components of the PSU.

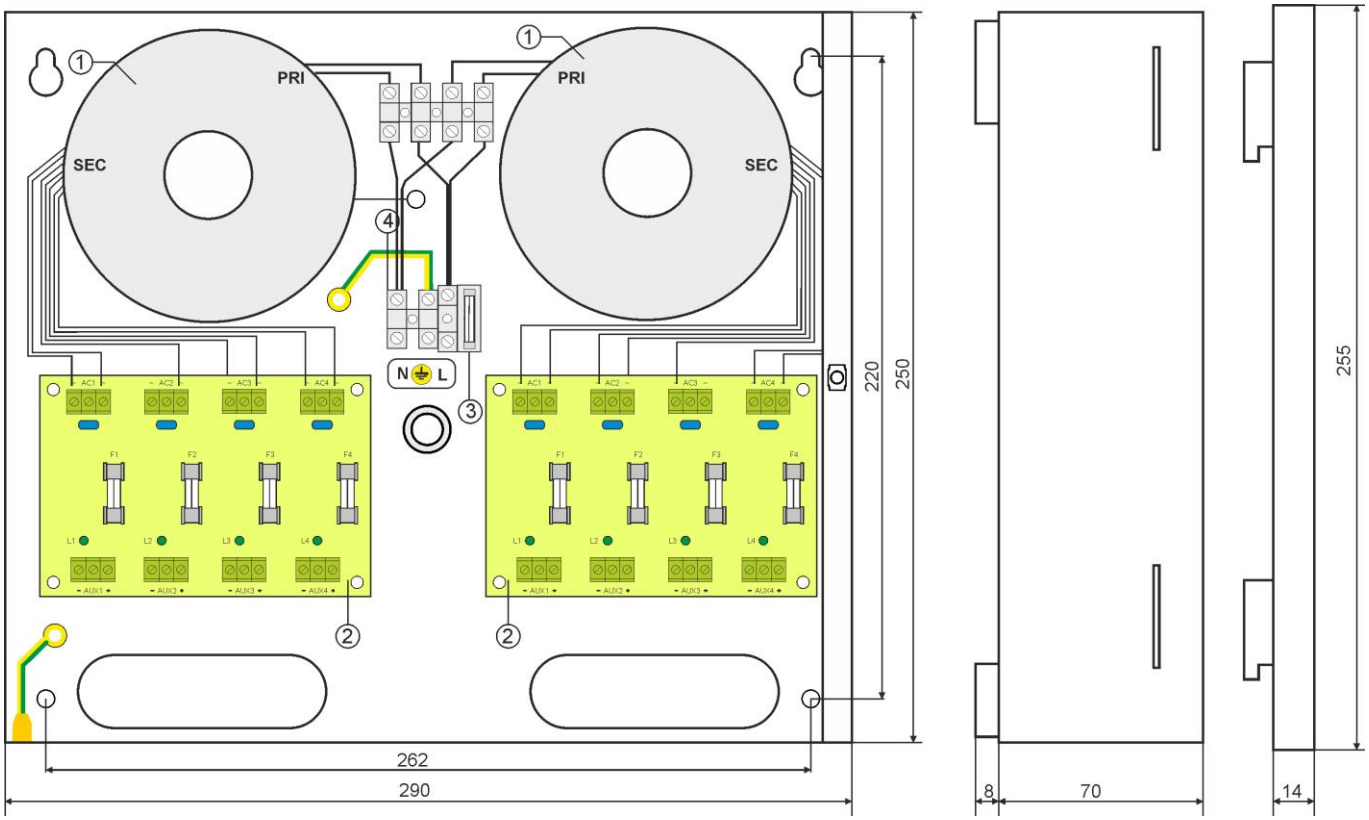


Fig.3. The view of the PSU.

1.4 Technical parameters:

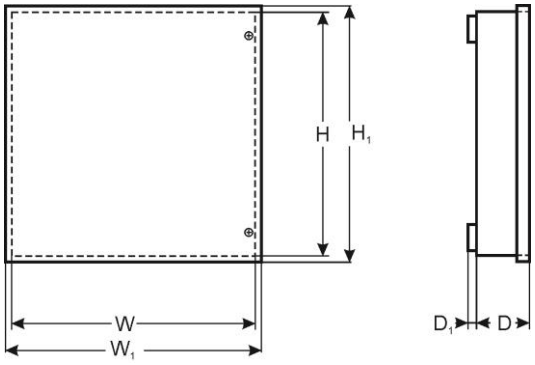
- **Electrical parameters (Table 3)**
- **Mechanical parameters (Table 4)**
- **Safety of use (Table 5)**
- **Operation parameters (Table 6)**

Electrical parameters (Table 3)

Supply voltage	230V AC
Current consumption	1,6A@230V AC max.
PSU's power	240W max.
Output voltage	30V÷ 35V DC (100% load ÷ 0% load)
Output current	8x1A@30V DC max.
Short-circuit protection SCP	8x T 1A melting fuse (failure requires fuse replacement)
Overload protection OLP	DC 30V: 8 x T 1A circuit AC 230V: T 6,3A circuit
Surge protection	varistors

Mechanical parameters (Table 4)

Dimensions	W=290, H=250, D+D_1 =72 +8 [+/- 2 mm] W_1=295, H_1=255 [+/- 2 mm]
Mounting	see Fig. 3
Battery housing	5,2kg / 5,4kg
Net/gross weight	Steel plate, DC01 1,0mm color RAL 9003
Enclosure	Cylindrical screw x 2 (at the front)
Terminals	Mains supply: Φ0,63-2,50 (AWG 22-10) Outputs: Φ0,51-2,05 (AWG 24-12)
Notes	The enclosure does not adjoin the mounting surface so that cables can be led.



Safety of use (Table 5)

Protection class PN-EN 60950-1:2007	I (first)
Protection grade PN-EN 60529: 2002 (U)	IP20
Insulation electrical strength: - between input (network) circuit and the output circuits of the PSU (I/P-O/P) - between input circuit and PE protection circuit (I/P-FG) - between output circuit and PE protection circuit (O/P-FG)	 3000 V/AC min. 1500 V/AC min. 500 V/AC min.
Insulation resistance: - between input circuit and output or protection circuit	 100 MΩ, 500V/DC

Operation parameters (Table 6)

Environmental class	II
Operating temperature	-10ºC...+40ºC
Storing temperature	-20ºC...+60ºC
Relative humidity	20%...90%, no condensation
Vibrations during operation	unacceptable
Surges during operation	unacceptable
Direct insolation	unacceptable
Vibrations and surges during transport	According to the PN-83/T-42106 standard

2. Installation.

2.1 Requirements.

The power supply unit should be mounted by a qualified installer, holding relevant permits and licenses (applicable and required for a given country) for 230V/AC and low-voltage installations. The unit should be mounted in confined spaces, in accordance with the 2nd environmental class, with normal relative humidity (RH=90% maximum, no condensation) and temperature range from -10°C up to +40°C. The power supply should operate in a vertical position in order to provide free and convectional air flow through ventilating holes of the enclosure.

The power supply load balance should be done before installation. During normal operation, the total current of the receivers should be below I=8x1A@30V DC.

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 should be provided. Moreover, the user should be informed how to disconnect the power supply unit from the mains supply (usually by assigning an appropriate fuse in the fuse box). The electrical system shall be made in accordance with applicable standards and regulations.

2.2 Installation procedure.

1. Before installation, make sure that the voltage in the 230V power-supply circuit is cut off.
2. Mount the PSU in a selected location and lead the connection cables.
3. Connect the power cables (230V AC) to the L-N terminals of the PSU. Connect the ground wire to the terminal marked with the PE symbol (power supply module connector). Use a three-core cable (with a yellow and green PE protection wire) to make the connection. The power cables should be connected to the appropriate terminals on the connection board through the bushing.

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 PE symbol. 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.

4. Connect the receiver (DC/DC converters) cables to the AUX1÷AUX4 terminals at the terminal blocks of the LP4/SEP strips.
5. Switch on the 230V AC supply (~230V).
6. Check the optical indication of the PSU operation: LED lights L1 ÷ L4 (green) should light permanently on both plates.
7. Close the cover after installing and checking the operation of the power supply.

A typical application of the PSCU08348SEP power supply is supplying four CCTV cameras using 8-pair twisted pair cable, where three pairs are used for power distribution and one pair for transmitting video signal. Schematic example of the installation is shown in Figure 1. The distance between the PSCU08348SEP power supply unit and the DC/DC converters depends on the type of cable used and the current drawn by the camera. The typical distances are shown in Table 7.

Typical distances between the power supply and the DC/DC converter (Table 7):

Cable type:	Cross-section [mm^2]	According to AWG	The distance between the PSCU08348 power supply unit and the DC/DC converter:	
			Current consumption of the camera: 0,8A/12VDC	Current consumption of the camera: 1,2A/12VDC
UTP5e twisted pair cable, one pc	0,2mm^2	24AWG	100 m	60 m
UTP5e twisted pair cable, 2 pcs	0,4mm^2	21AWG	200 m	120 m
UTP5e twisted pair cable, 3 pcs	0,6mm^2	19AWG	300 m	180 m
Stranded cable	0,25mm^2	23AWG	100 m	75m
Stranded cable	0,5mm^2	20AWG	250 m	150m
Stranded cable	0,75mm^2	18AWG	400 m	240m
Stranded cable	1,0mm^2	17AWG	500 m	300m
Stranded cable	1,5mm^2	15AWG	700 m	400m

The distances are given for the rated voltage of Un=230Vac and Ta=20°C.

3. Optical indication.

The PSU is fitted with 8 green at the PCB, indicating DC voltage at the AUX1÷AUX4 outputs. During normal operation, the LED is permanently illuminated. In case of short-circuit or output overload, the LED is off.

4. Service and operation.

4.1 Overload or short-circuit of the power supply output (SCP activation).

The AUX1÷AUX4 outputs in both power supply boards are short-circuit protected by fuse inserts. In case of fuse replacement, use only compatible replacement parts. If the output load current exceeds Σ8,0A@30V DC (110% ÷ 150% of the S power), the F fuse in the 230V AC circuit and/or F1÷F4 fuses become permanently damaged. In case of failure, replace the fuse with the same type.

4.2 Maintenance.

All maintenance procedures can be performed after disconnecting the power supply from the power network. The PSU does not require any specific maintenance; however, its interior should be cleaned with compressed air if used in dusty conditions. In case of fuse replacement, use only compatible replacement parts.

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.

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