



BNC08128

v.1.0

BNC 12V/8x1A
BNC power supply for up to 8 analog cameras.

EN**

Edition: 3 from 25.05.2015

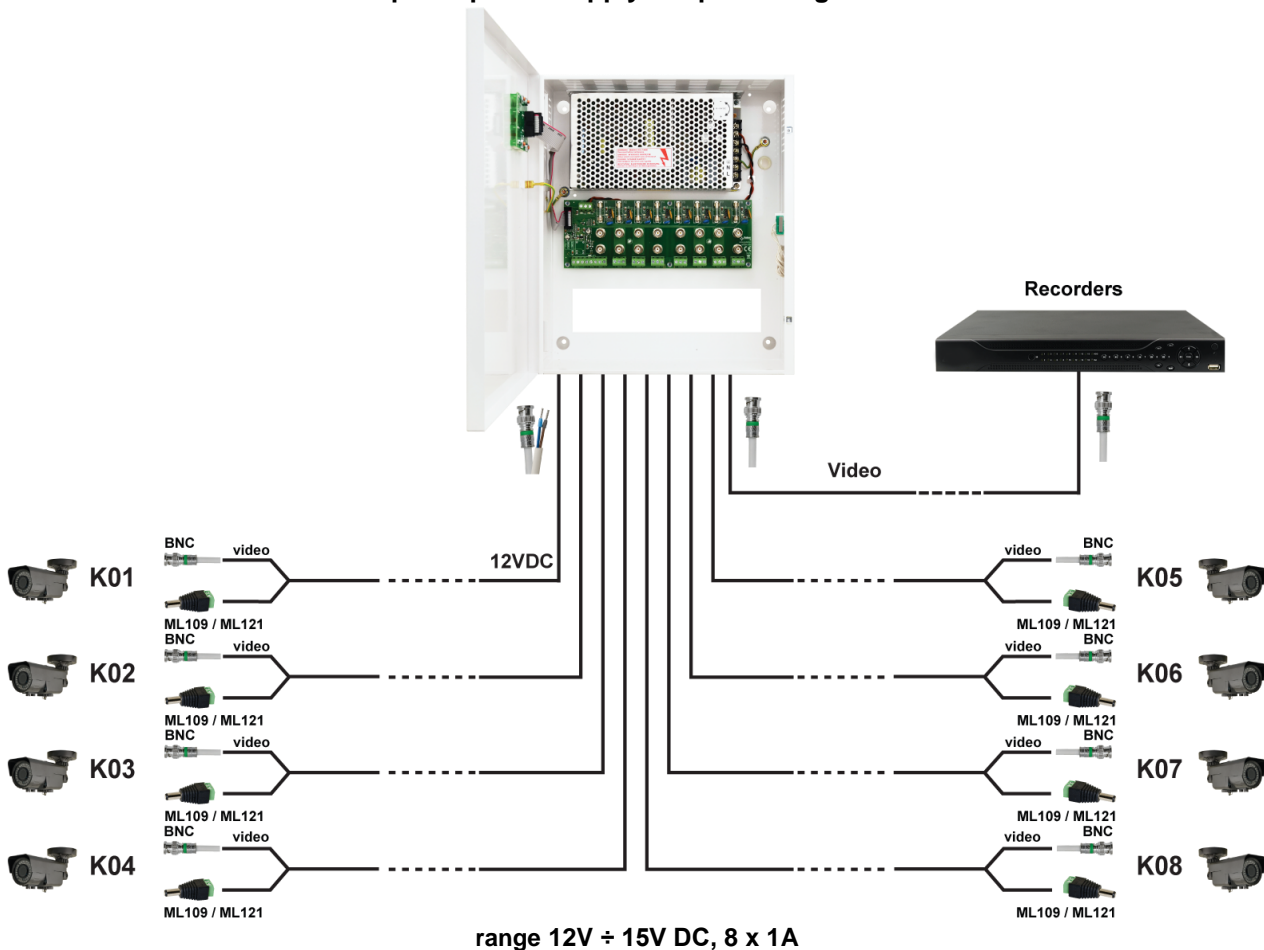
Supersedes the edition: 2 from 25.03.2014

GREEN POWER CCTV
BNC



PSU features:

- the 8x1A/12V DC power output for powering 8 analog cameras
- output voltage adjustment 12V÷15V DC
- wide range of supply voltage: 176÷264V AC
- high efficiency: 83%
- 8 outputs protected with 1A fuses
- jumper selectable fuse type: fuse or polymer fuse
- voltage control at the AUX1 ÷ AUX8 outputs
- BNC connectors for connecting the video signal
- LED optical indication
- FPS technical output – indication of the output fuse activation– relay and OC type
- protections:
 - SCP short-circuit protection
 - OVP overvoltage protection
 - Surge protection
 - Antisabotage protection
 - OLP overload protection
- warranty – 2 year from the production date

Example of power supply of up 8 analog cameras.**TABLE OF CONTENTS:****1. Technical description.****1.1. General description****1.2. Block diagram****1.3. Description of components and connectors of the PSU****1.4. Technical parameters****2. Installation.****2.1. Requirements****2.2. Installation procedure****3. Power supply operation indication.****3.1. Optical indication****3.2. Technical outputs****4. Service and operation.****4.1. Overload or short-circuit of the power supply output****4.2. Maintenance**

1. Technical description.

1.1. General description.

The PSU **BNC08128** stabilized power supply is designed to supply analog cameras or other devices requiring stabilized voltage of **12V DC**. The output voltage can be adjusted with a potentiometer between **12V ÷ 15V DC**. The power supply unit enables transmitting power and video using a 75 ohm coaxial cable integrated with two power wires (YAP type). Additionally, it is equipped with BNC sockets for connecting the video signal. The power supply outputs are independently protected by melting fuses or PTC polymer fuses. Failure (short circuit) in the output circuit will activate the melting fuse or PTC fuse and disconnect the circuit from DC power (+ U). Fuse failure is indicated by switching off the corresponding LEDs: L1 for AUX1, etc. In addition, the FPS output (hi-Z state) and LFPS LED are activated and the relay contacts change their position. The PSU is housed in a metal enclosure with signaling panel equipped with a microswitch indicating door opening (front cover).

1.2. Block diagram.

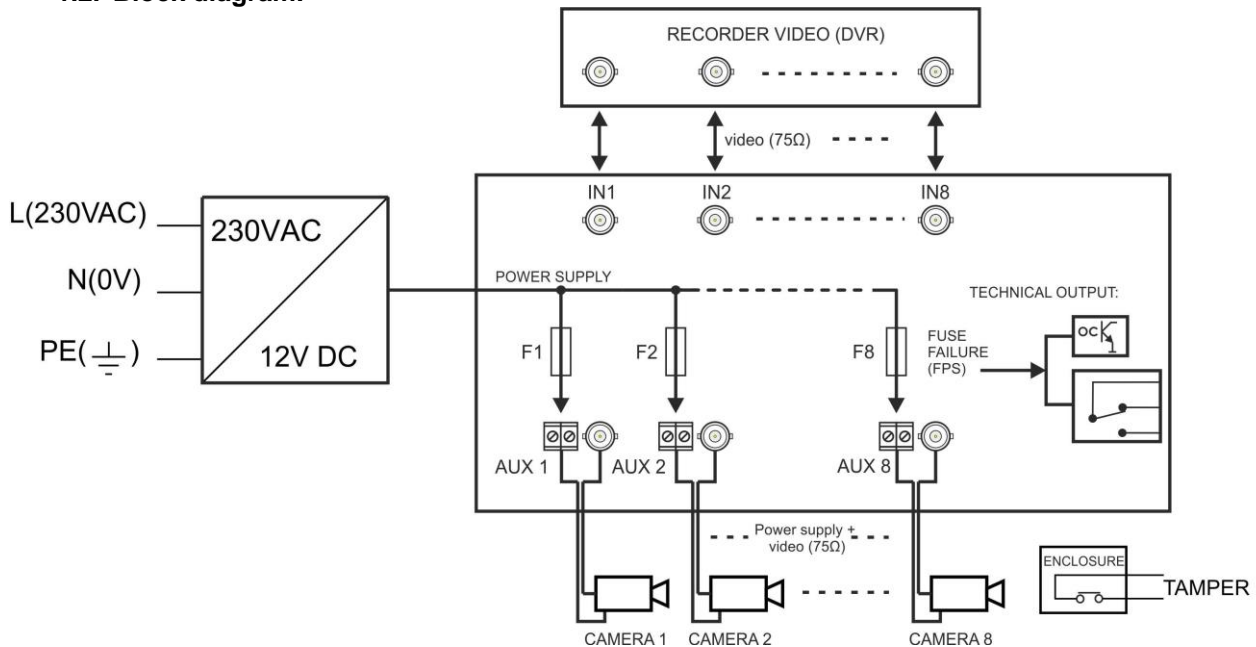


Figure 1. Block diagram of the PSU.

1.3. The description of components and connectors of the PSU.

Table 1.

Component No. [Figure 2]	Description
[1], [11]	LED optical indication: green L _{IN} – indication of voltage at the IN input red L _{FPS} – FPS failure indication
[2]	Connector: IN – power supply of the module (factory setting)
[3]	F1 ÷ F8 fuses in the AUX1 ÷ AUX8 (+), F1A circuits
[4]	Jumper to select melting fuse or PTC polymer fuse
[5]	Green LED L1 ÷ L8 – voltage indication at the AUX outputs (during normal operation, these LEDs are on)
[6]	BNC connector of the video output to the DVR
[7]	BNC connector of the video input from the cameras
[8]	AUX1÷AUX8 – camera power supply outputs (12÷15V)
[9]	FPS – technical output indicating failure – OC type
[10]	FPS – technical output indicating failure – relay type
[12]	Optional, external optical indication connector (factory setting)

Table 1. The description of components of the BNC module.

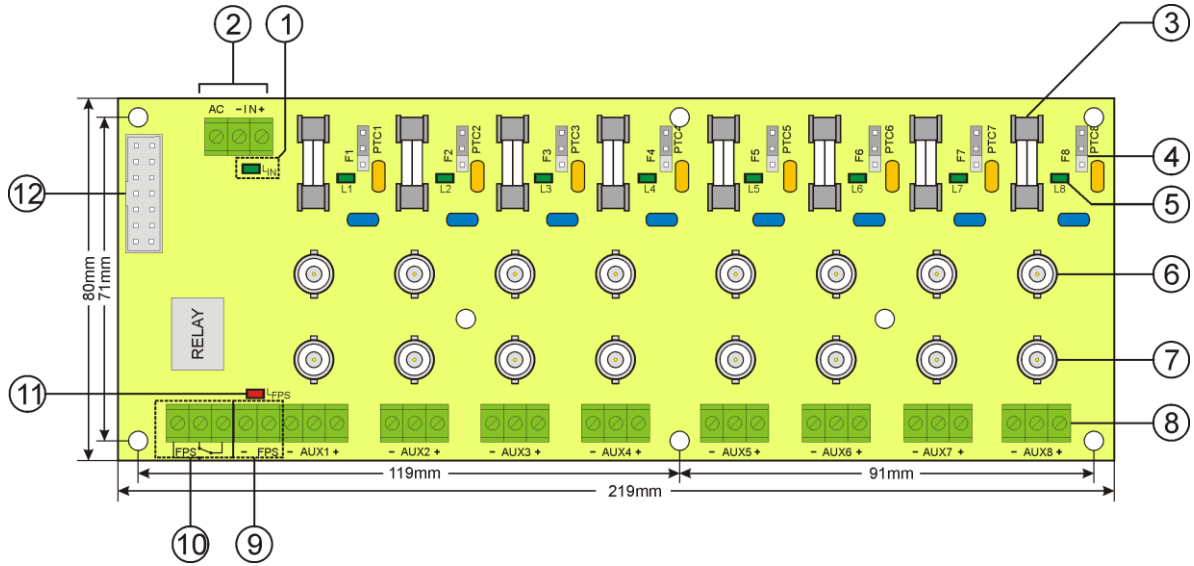


Figure 2. Components arrangement.

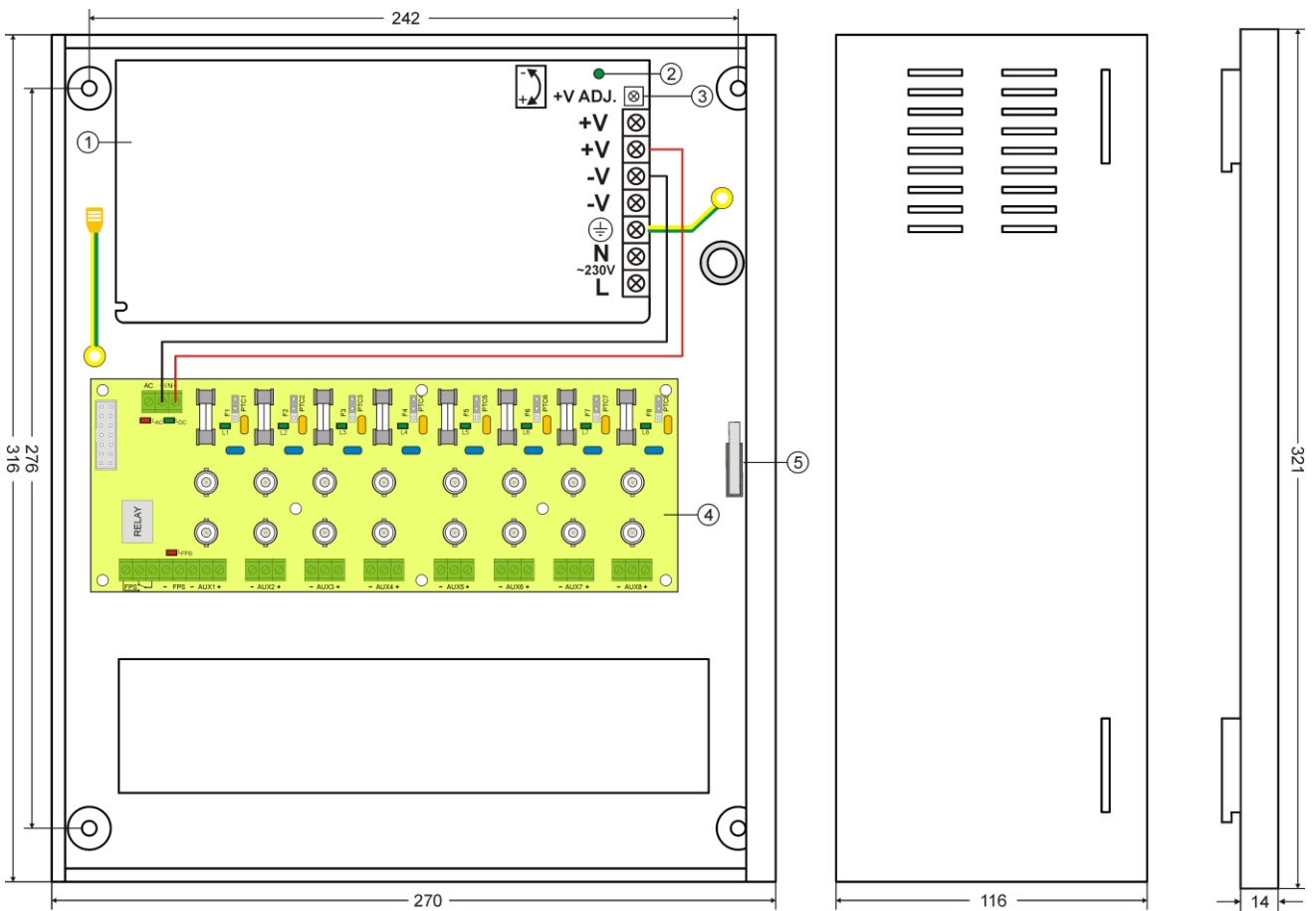


Figure 3. The view of the PSU.

Component No. [Figure 3]	Description
[1]	The module of the switch mode PSU
[2]	LED light indicating correct operation of the switch mode PSU
[3]	ADJ potentiometer - regulation of the power supply output voltage in the range of 12V÷15V DC
[4]	BNC module
[5]	TAMPER – microswitch (contacts) of antisabotage protection (NC)

Table 2. Components of the PSU (see Figure 3).

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).

Mains supply	176÷264V AC
Current consumption	1,1A@230V AC max.
PSU's power	120W max.
Efficiency	83%
Output voltage	12V DC
The adjustment range of the output voltage	12÷15V DC
Output current	8 x 1 A
Ripple voltage	100 mV p-p max.
Short-circuit protection SCP	BNC MODULE 8 x F 1A or 8 x PTC 1,1A (jumper selectable) PSU MODULE 105% ÷ 150% of PSU power, electronic current limiting
Overload protection OLP	105% ÷ 150% of PSU power, electronic current limiting
Over voltage protection OVP	<16V – automatic return
Surge protection	8 x varistor
Antisabotage protection: - TAMPER output indicating enclosure opening	- microswitch, NC contacts (enclosure closed), 0,5A@50V DC (max.)
Optical indication of operation:	YES – LED lights
Technical outputs: - FPS technical output indicating output fuse activation	- OC type, 50mA max. Normal operation: L state (0V), failure: H state (hi-Z), (automatic return once the normal operation is restored) - relay type: 1A@ 30VDC/50VAC, delay time: approximately 10 seconds
F1 ÷ F8 fuses	F 1A or PTC 1,1A

Mechanical parameters (Table 4).

Enclosure dimensions	270 x 316 x 116 mm (WxHxD)
Mounting	See Figure 3
Net weight	3,64kg / 3,87kg
Enclosure	DC01 steel plate, 1,0mm, RAL 9003
Closing	Cylindrical screw x 2 (at the front) lock assembly possible
Terminals	Switch mode power supply: Φ 0,63-2,5 (AWG 22-10) BNC module : Φ 0,5-2,1 (AWG 24-12) Input / output of the video signal: BNC TAMPER output: Φ 0,8.
Notes	The enclosure has a 15mm distance from the mounting surface so the cables can be led.

Safety of use (Table 5).

Protection class PN-EN 60950-1:2004	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 M Ω , 500V/DC

Operation parameters (Table 6).

Operating temperature	-10°C...+40°C
Storing temperature	-20°C...+60°C
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 PSU 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.




During normal operation, the total current drawn by the device should not exceed $I = 8 \times 1A$.


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, cut off the voltage in the 230V power-supply circuit.

2. Mount the PSU in a selected location and lead the connecting cables.
3. Connect the power cables (230V AC) to L-N terminals of the PSU. Connect the ground wire to the terminal marked with grounding symbol: . 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  symbol in the PSU enclosure. 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 power supply line and video signal to the BNC module (See Figure 4):
 - connect the supply voltage of the camera to the AUX1÷AUX8 outputs
 - connect the video signals from the cameras and the DVR to the BNC sockets

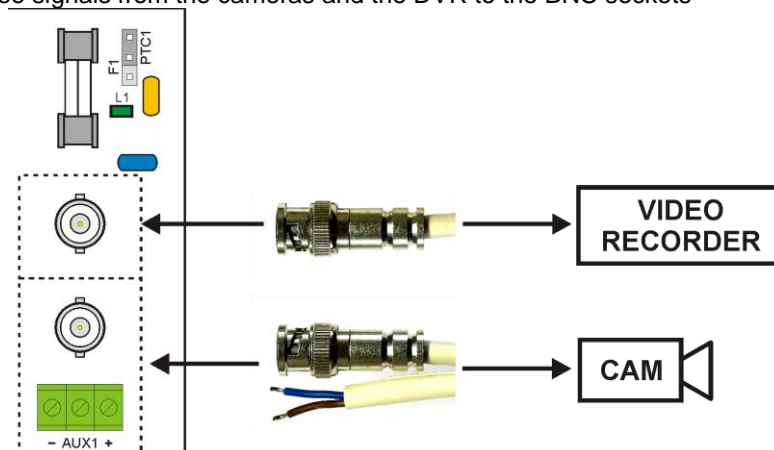


Figure 4. Connecting the camera and DVR to the BNC module.

5. Use the F1/PTC1 ÷ F8/PTC8 jumpers to select the type of short circuit / overload protection of individual circuits. Jumper in the Fx position – melting fuse activation, PTCx – PTC fuse activation.
6. Connect the technical outputs to the control panel or other device:
 - FPS technical output of the PSU status – indicates the voltage loss at any of the outputs (AUX1 ÷ AUX8).
 - **TAMPER** indicating enclosure opening.
7. Check the optical indication of the PSU status: green LED light on the BNC module.
8. In case of significant voltage drops on the receivers' power cables resistance, it is possible to adjust the voltage with the ADJ potentiometer (12÷15V DC).
9. Close the cover after installing and checking the operation of the power supply.

3. Power supply operation indication.

3.1. Optical indication.

The PSU has 6 LED lights at the front panel:



RED LED:

- on – DC voltage at the output of the switch mode PSU
- off – no DC voltage at the output of the switch mode PSU



RED LED:

- on – fuse failure at one of the AUX1...AUX8 outputs
- off – no failure



GREEN LED:

- on – DC voltage at the AUX1...AUX8 output
- off – no DC voltage at the AUX1...AUX8 output



Additionally, the PSU is fitted with LED lights inside the enclosure – see Figure 2 and 3:

- **L_{IN}** green LED (Figure 2, component 1) indicates DC voltage at the BNC module input. During normal operation (DC supply) the LED is permanently illuminated. No DC no DC voltage at the module input is indicated by turning off the **L_{IN}** LED.
- **L_{FPS}** red LED (Figure 2, component 11) is not illuminated during normal operation (no failure). In case of activation of the short circuit / overload protection at any output, the LED is permanently illuminated.
- **L1 ÷ L8** green LEDs (Figure 2, component 5) indicate voltage at the individual outputs of the module (L1 for AUX 1 etc.). Activation of the short circuit / overload protection of a given circuit is indicated by turning off one of the Lx LEDs.

3.2. Technical outputs.

The PSU has the following indication outputs:

- **FPS – technical output of the PSU status:**

- OC type output indicating failure (short-circuit, overload). During normal operation, shorted to ground – L state (0V). In case of power loss, the FPS technical output is switched into hi-Z state (high impedance) at least at one of the AUX outputs.

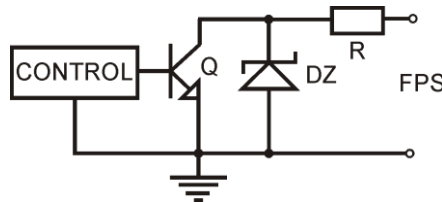


Figure 5. Electrical diagram of the OC output.

- relay output. In case of failure, relay contacts are switched automatically.

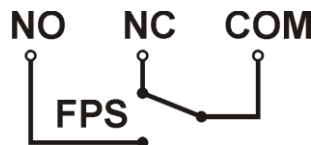


Figure 6. Electrical diagram of the relay output



CAUTION! The arrangement of contacts at the figure 6 shows a potential-free status of the relay, which is equivalent to a state with no voltage at any of the AUX1 ÷ AUX8 outputs.

- **TAMPER – output indicating enclosure opening:** - volt free contact input indicating the status of the power supply doors, PSU closed: contacts closed (NC), PSU open: contacts open (NO).

4. Service and operation.

4.1. Overload or short-circuit of the power supply output.

The AUX1+ AUX8 outputs of the PSU are protected against short-circuit by melting fuse inserts or PTC fuses. In case of melting fuse replacement, use only compatible replacement parts. If the PTC polymer fuses are used, then automatic disconnection of the output voltage, indicated by switching off the green LED, takes place. In such case, disconnect the load from the power supply output for approximately 1 minute.

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 LABEL

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

GENERAL WARRANTY CONDITIONS

1. Pulsar (manufacturer) grants a two-year quality warranty for the equipment, starting from the production date.
2. The warranty includes free-of-charge repair or replacement with an appropriate equivalent (selected by the manufacturer) if the malfunction is due to the manufacturer. It includes manufacturing or material defects, provided that such defects have been reported within the warranty period (point.1).
3. The equipment subjected to warranty should be brought to the place of purchase or directly to the main office of the manufacturer.
4. The warranty applies to complete equipment, accompanied by a properly filled warranty claim with a description of the defect.
5. Should the claim be accepted, the manufacturer is obliged to provide warranty repairs, at the earliest convenience, however not later than within 14 days from the delivery to the service centre of the manufacturer.
6. The repair period mentioned in point 5 may be prolonged, if there are no technical possibilities to carry out the repairs, or if the equipment has been conditionally accepted, due to the breaking warranty terms by the claimant.
7. All the services are carried out at the service centre of the manufacturer, exclusively.
8. The warranty does not cover the defects of the equipment, resulting from:
 - reasons beyond the manufacturer's control,
 - mechanical damage,
 - improper storage and transport,
 - use that violates the operation manual or equipment's intended use
 - fortuitous events, including lightning discharges, power failures, fire, flood, high temperatures and chemical agents,
 - improper installation and configuration (failure to follow instruction).
9. The warranty is void in case of construction changes and repairs carried out by any unauthorized service center or in case of damage or modifications to warranty stickers and serial numbers.
10. The liability of the manufacturer towards the buyer is limited to the value of the equipment determined according to the wholesale prices suggested by the manufacturer on the day of purchase.
11. The manufacturer takes no responsibility for the defects that result from the damaging, malfunctioning or inability to operate the equipment especially when resulting from failure to comply with the recommendations and requirements contained in the manual.

Pulsar

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