



**AWZ 05122**  
**v.1.1**

**AWZ 12V/2A/5x0,5A**  
**Linear power supply unit for CCTV**

EN\*\*

Edition: 4 from 10.12.2013

Supersedes the edition: 3 from 20.06.2012



## Features:

- supply output 12VDC/max.2A (5x0,5A)
- output voltage adjustment range 11V±15VDC
- mains supply of 230VAC
- linear voltage stabilization
- 5 outputs protected independently with 0,5A fuses
- jumper selectable fuse type: fuse or polymer fuse
- LED indication
- protections:
  - SCP short circuit protection
  - OLP overload protection
  - OHP overheat protection
  - surge protection
  - OVP over voltage protection
  - against tampering
- warranty – 5 year from the production date

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## 1. Technical description.

### 1.1. General description.

The linear PSU is intended for 230V AC mains supply to CCTV devices that require stabilised voltage of **12V DC** with current efficiency of **2A**. The outputs of the PSU are protected separately with either fuses or polymer fuse (**5x0,5A**). Fuse type selection is done by jumpers. The PSU design enables quick change of output voltage within the range of 11V to 15V DC. The unit is protected against a short circuit, an overload, overheat, a surge and tampering. The PSU is housed in a metallic enclosure that features a microswitch indicating unwanted opening of the front door (faceplate).



Before mounting the PSU module, perform a load balance. During normal operation, total current drawn by the receivers cannot exceed **2A (P=24W max.)**.

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

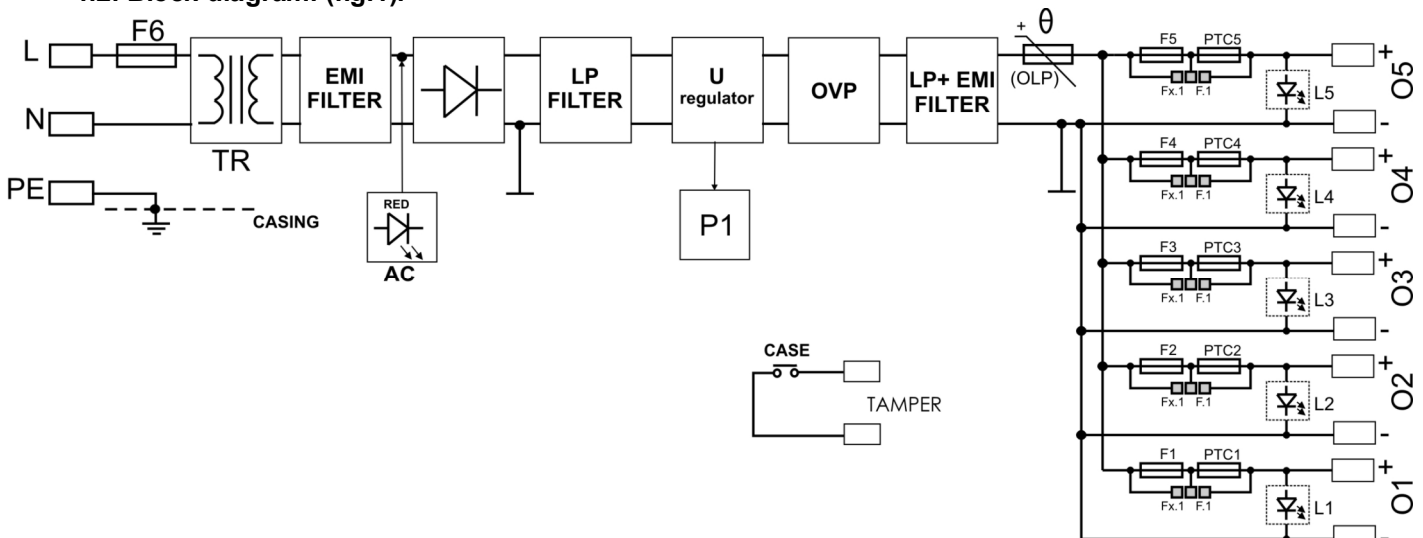




Fig.1. Block diagram of the PSU.

### 1.3. Description of PSU components and connectors.

Table 1. The components of the PSU's pcb (see fig. 2).

Element no.	Description
[1]	<b>LED indication:</b> L1, L2, L3, L4, L5: outputs status indication AC AC power indication (on the pcb)
[2]	F1, F2, F3, F4, F5: 0,5A fuses in the output circuit (DC)
[3]	P1 potentiometer, output voltage adjustment range 11V±15V DC
[4]	<b>Connectors:</b> +O1 ÷ O5 DC power outputs („+” = Vcc, „-” = GND)
[5]	<b>Fuse selection jumper</b> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>Fx.1...Fx.5</p>  <p>F.1...F5</p> </div> <div style="text-align: center;"> <p>fuse</p> </div> <div style="text-align: center;"> <p>Fx1...Fx5</p>  <p>F.1...F5</p> </div> <div style="text-align: center;"> <p>PTC fuse</p> </div> </div>
[6]	LED indicating activation of the over voltage protection OVP

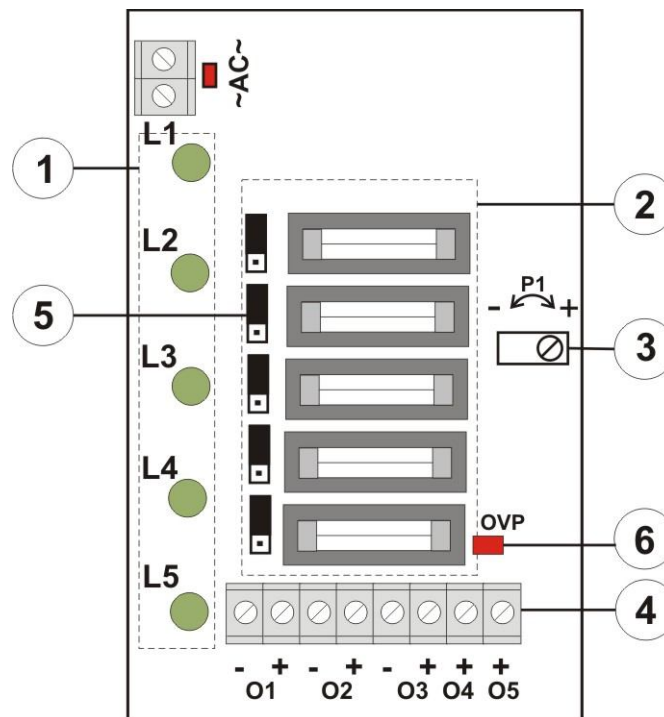



Fig.2. The view of the PSU's pcb.

Table 2. Elements of the PSU (see fig. 3).

Element no.	Description
[1]	Isolation transformer
[2]	Pcb of the PSU (Tab. 1, Fig. 2)
[3]	<b>TAMPER</b> ; microswitches (contacts) of tampering protection ( <b>NC</b> )
[4]	F <sub>MAIN</sub> fuse in the battery circuit (230V/AC)
[5]	L-N 230V/AC power supply connector,  PE protection connector

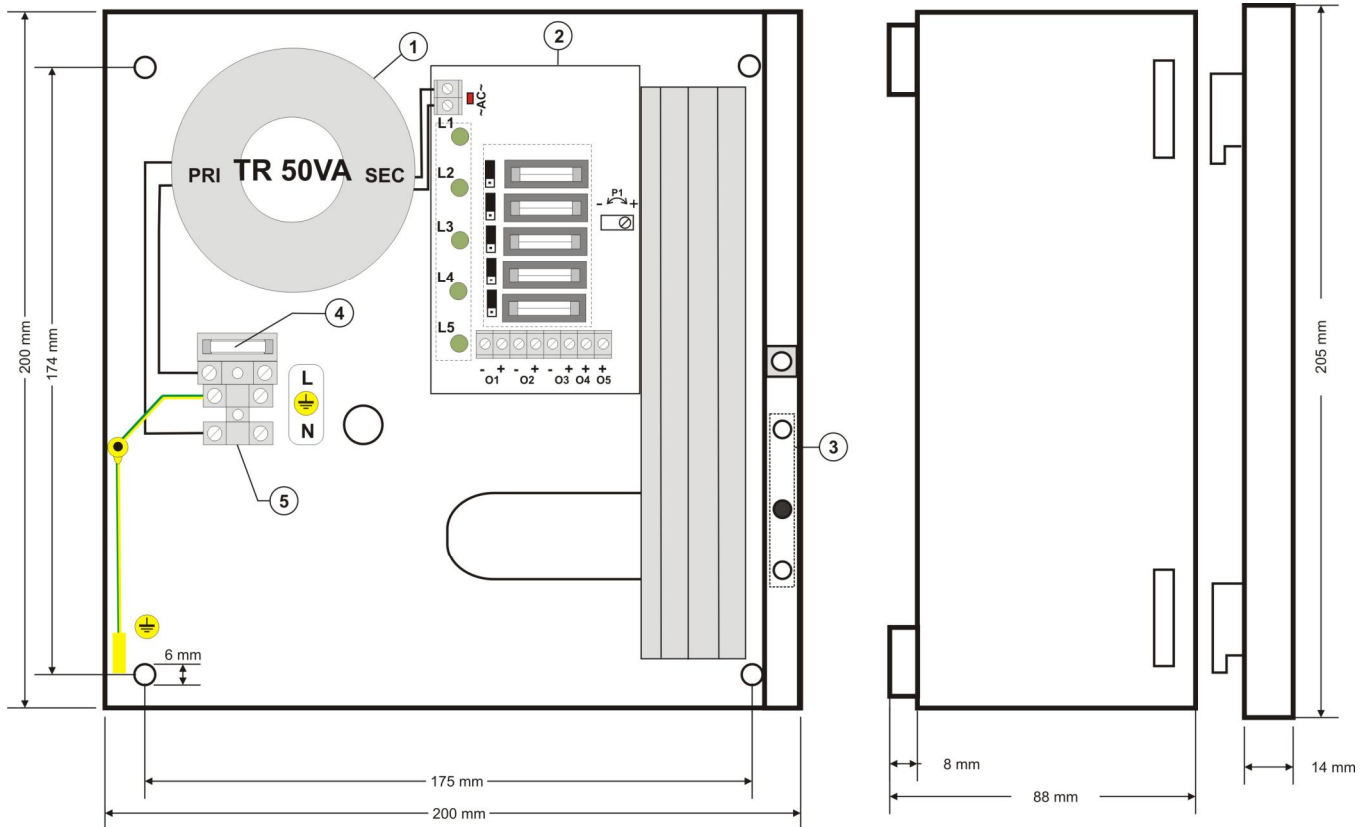


Fig. 3. The view of the PSU.

**1.4. Specifications:**

- electrical specifications (tab.3)
- mechanical specifications (tab.4)
- operation safety (tab.5)
- operating specifications (tab.6)

**Electrical specifications (tab. 3).**

Mains supply	230V AC (-15%/+10%)
Current consumption	0.29A
Power frequency	50Hz
PSU power	24W max.
Output voltage	12V DC
Output current	5 x 0,4A for F 500mA fuses Ic= 2A max (total, continuous) @12V DC
Output voltage adjustment range	11V÷15V DC
Output voltage escalation, decrease, and keeping time	40ms/50ms/20ms
Short-circuit protection SCP	5 x F 500mA fuse (damage requires fuse-element replacement or PTC 500mA – jumper selectable).
Overload protection OLP	110% ÷ 150% (@25°C) of PSU power - current limiting by the PTC resettable fuse, manual restart (failure demands cutting off the DC output circuit)
Over voltage protection OVP	U>17V (-/+ 5%) disconnection of the output voltage, automatic return
Surge protection	varistors
Overheat protection	electronic
Tampering protection system: - TAMPER – indicating unwanted opening of the PSU's enclosure	- a microswitch, NC contacts (enclosure closed) 0,5A@50V DC (max.)
LED indication: LEDs 1÷5 (green)	- status of outputs: +O1...+O5: normal status = on failure= off

LED AC (red, on the PSU's pcb)	- AC power status: normal status = on failure= off
F fuse F1÷F5 fuse	T 500mA/250V F 500mA/ 250V

**Mechanical specifications (tab. 4).**

Enclosure dimensions	200 x 200 x 80+8 [mm] (WxHxD)
Fixing	175 x 174 x $\Phi$ 6 WxH
Net/gross weight	2,34 / 2,45 kg
Enclosure colour	Steel plate DC01 0,7mm thick , colour RAL 9003
Closing	Cheese head screw (at the front)
Connectors	Mains power 230V AC: $\Phi$ 0,63-2,05 (AWG 22-12) DC outputs: $\Phi$ 0,51- 2,05 (AWG 24-12) TAMPER output: wires 25cm
Notes	The enclosure does not adjoin the assembly surface so that cables can be led. Convictional cooling.

**Operation safety (tab.5).**

Protection class PN-EN 60950-1:2007	I (first)
Degree of Protection PN-EN 60529: 2002 (U)	IP20
Electrical strength of insulation: - between input and 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)	3000V AC min. 1500V AC min. 500V AC min.
Insulation resistance: - between input circuit and output or protection circuit	100 M $\Omega$ , 500V DC

**Operating specifications (tab.6).**

Operating temperature	-10°C...+40°C
Storage temperature	-20°C...+60°C
Relative humidity	20%...90%, without condensation
Vibrations during operation	unacceptable
Impulse waves during operation	unacceptable
Direct insolation	unacceptable
Vibrations and impulse waves during transport	PN-83/T-42106

**2. Installation****2.1. Requirements.**

The stabilized PSU is to be mounted by a qualified installer, holding relevant permits and licenses (applicable and required for a given country) for 230V/AC interference 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, without condensation) and temperature from -10°C to +40°C. The PSU shall work in a vertical position that guarantees sufficient convectional air-flow through ventilating holes of the enclosure.



Before mounting the PSU module, perform a load balance. During normal operation, total current drawn by the receivers cannot exceed **I=2A (P=24W max.)**. **The change of the original fuse value is acceptable unless all power outputs are in use and Pmax is exceeded.**

As the PSU is designed for a continuous operation and is not equipped with a power-switch, therefore an appropriate overload protection shall be guaranteed in the power supply circuit. Moreover, the user shall be informed about the method of unplugging (usually through assigning an appropriate fuse in the fuse-box). The electrical system shall follow valid 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 connect the wires.
3. Remove the mains fuse that protects the primal circuit.
4. Connect the power cables to the L-N terminals. Connect the ground wire to the terminal marked by the earth symbol – “⊕”. Use a three-core cable (with a yellow and green PE protection wire) to make the connection. Lead the cables to the appropriate terminals of the connection board through the bushing.



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 marked with the '⊕' earth symbol in the PSU enclosure. Operation of the power supply without a properly made and fully operational shock protection circuit is **UNACCEPTABLE!** It can result in device damage or an electric shock.

5. Connect the receivers' cables to the connectors: **+O1.....+O5** (keeping the polarisation).
6. In case of installation where significant voltage drops occur in the resistance of the cables leading to the receivers, there is a possibility of voltage value correction by a potentiometer P1 (11V±15V DC).
7. Insert the fuse in the power circuit and switch on the power.
8. Check the LED indication for PSU operating status.
9. Once the installation and operation control have been completed, the enclosure can be locked.

## 3. Operating status indication.

The PSU is equipped with LED indication of operation status. The presence of power at the outputs of the PSU is indicated by the illumination of green LEDs on the faceplate of the device.

### 3.1 LED indication (fig. 4)

- **L1....L5** green LEDs indicate power at the outputs: +O1.....+O5.
- In case of a power loss at the output (fuse activation), an appropriate diode goes out (L1 for +O1, L2 for +O2 etc.).
- **LED AC** red diode power status at the PSU output. In case of a power loss at the output (absence of 230V AC power, F damage), the diode is off.

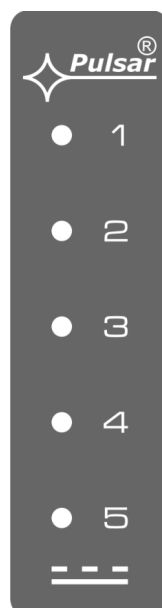
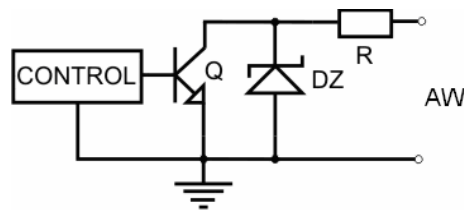


Fig. 4. The view of the PSU panel.

### 3.2 Technical outputs.

The PSU has indication output that allow transferring information about a tampering.



- **TAMPER** – output indicating unwanted opening of the PSU, contains volt-free (potential-free) contacts indicating the door status - unit closed: NC, unit opened: NO.

## 4. Operation and use.

### 4.1 Procedure in case of a short circuit (SCP activation) at the PSU output.

The O1÷ O5 PSU outputs are protected against a short circuit by fuses or polymer fuse.

In case of fuse damage, replace the fuse of the same parameters.

If the polymer fuse -assisted protection has been chosen, there will be an automatic disconnection of the output voltage indicated by the green diode going out. Then, cut off the main power or the load from the PSU output for approx. 1 minute.

**The change of the original fuses is acceptable unless all power outputs are in use and Pmax is exceeded.**

### 4.2 Procedure in case of an overload (OLP activation).

Main output of the PSU is protected against an overload by polymer fuse. If the PSU load exceeds 2A the output voltage is cut off automatically and indicated by all LEDs going off. Restoration of the voltage at the output requires disconnection of the outputs or cutting off the main power (230V AC) for approx. 1 minute.

### 4.3 Maintenance.

Any and all maintenance operations may be performed following the disconnection of the PSU from the power supply network. The PSU does not require performing any specific maintenance measures. However, in case of a significant level of dust, clean the interior with compressed air. In case of a fuse exchange, use a replacement of the same parameters.

**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.**

**GENERAL WARRANTY CONDITIONS**

1. Pulsar K. Bogusz Sp.j. (the manufacturer) grants a five-year warranty for the equipment, counted from the device's production date.
2. The warranty includes free-of-charge repair or replacement with an appropriate equivalent (the selection is at the manufacturer's discretion) if the malfunction is due to the manufacturer, includes manufacturing or material defects, unless such defects have been reported within the warranty period (item 1).
3. The equipment subject to warranty is to be brought to the place where it was purchased, 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 item 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 rendered by force of the warranty 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 (in defiance with the manual),
9. The warranty is void in any of the following circumstances:
  - construction changes
  - repairs carried out by any unauthorized service center
  - damage or removal of warranty labels
  - modifications of the serial number
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
  - defects that result from using the equipment outside its stated specifications and operating parameters failing to abide by the recommendations and requirements contained in the manual, or the use of the equipment.

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