



PSCU 04343SEP

v.1.0

PSCU 34VDC/3A/4x1A/SEP

Power supply for 4 cameras, 3A, for transmission lines.

EN*

Edition: 3 from 25.05.2015

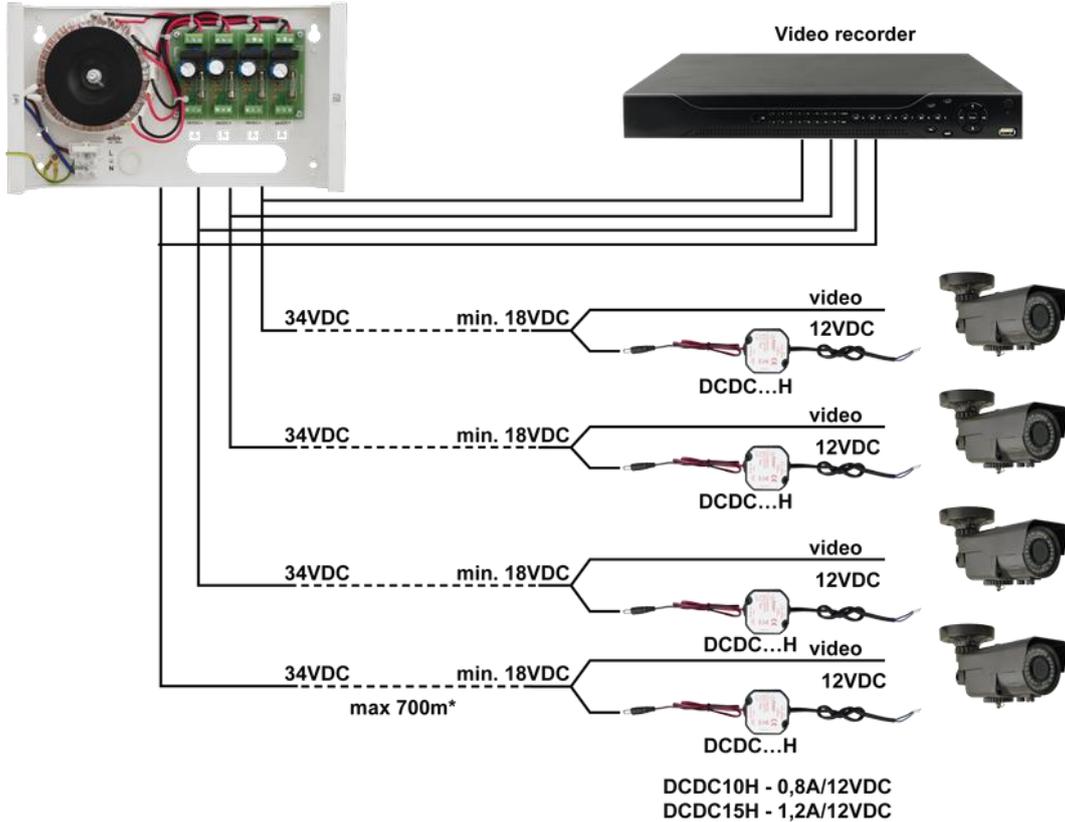
Supersedes the edition: 2 from 07.10.2014



PSU features:

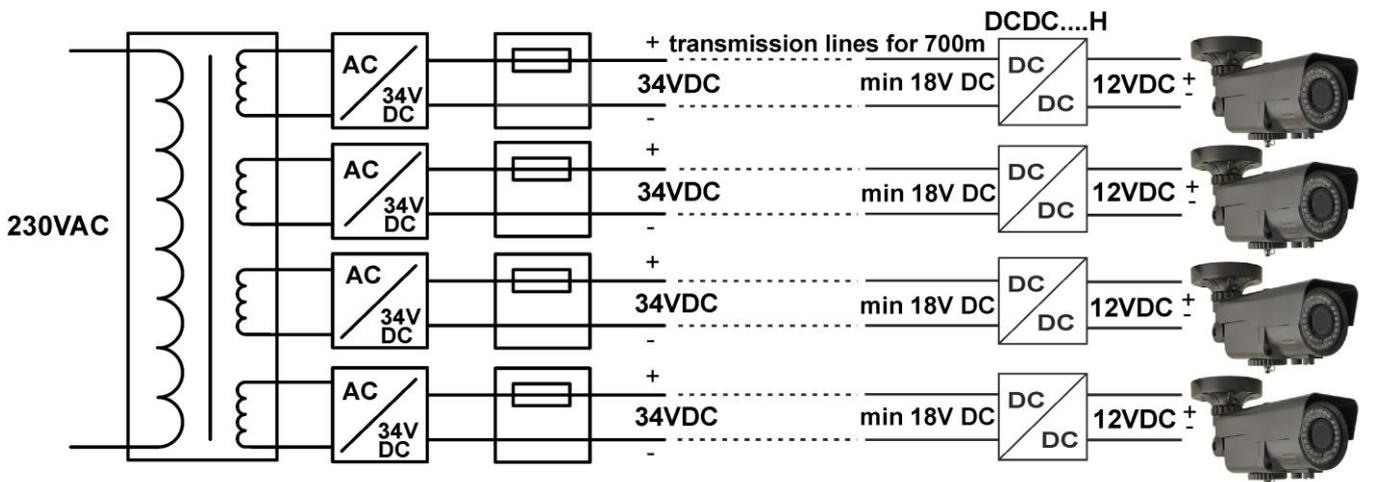
- DC 34V/4x0,6A unregulated power output
- Supply voltage 230V AC
- 4 independent, galvanically isolated outputs
- 4 outputs independently protected by 1A fuses
- LED optical indication
- Protections:
 - Short-circuit protection SCP
 - overload protection OLP
 - transformer overheat protection OHP
 - surge protection
- warranty – 5 years from the production date

Example of application of the PSCU04343SEP power supply for 4 cameras, 3A for long lines.



4 x 0,6A / 34V DC

Schematic diagram of the PSCU04343SEP power supply application.



4 independently galvanically isolated outputs

CAMERAS 1+4

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1. Technical description.

1.1 General description.

The **PSCU04343SEP** 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=4x0,6A**, by a supply line to the **DCDC10H** 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/12VDC max**. The converters' voltage is regulated to **12VDC**, enabling power supply of the cameras. The PSU is fitted with 4 independent, galvanically isolated outputs protected by melting fuses.

1.2 Block diagram (Fig.1).

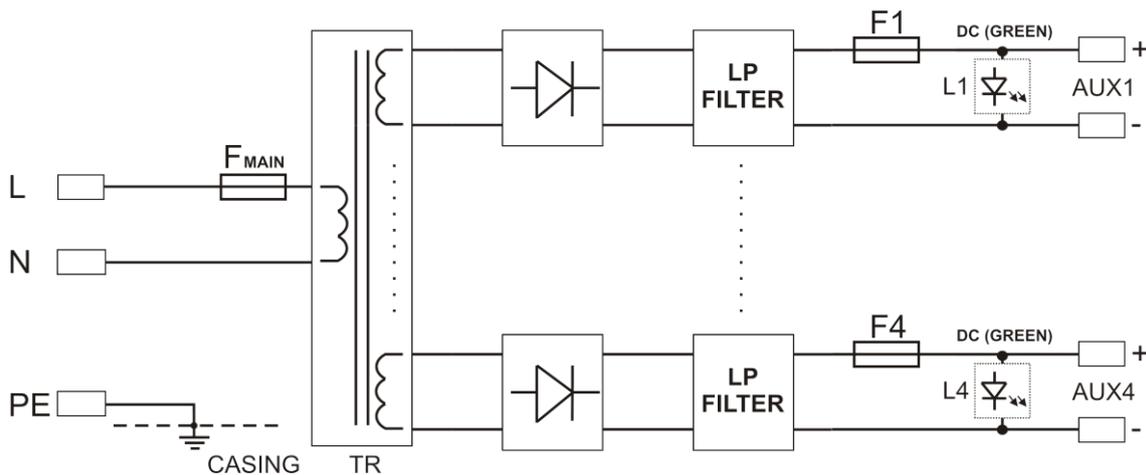


Fig.1. Block diagram of the PSU.

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).

Element nr	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

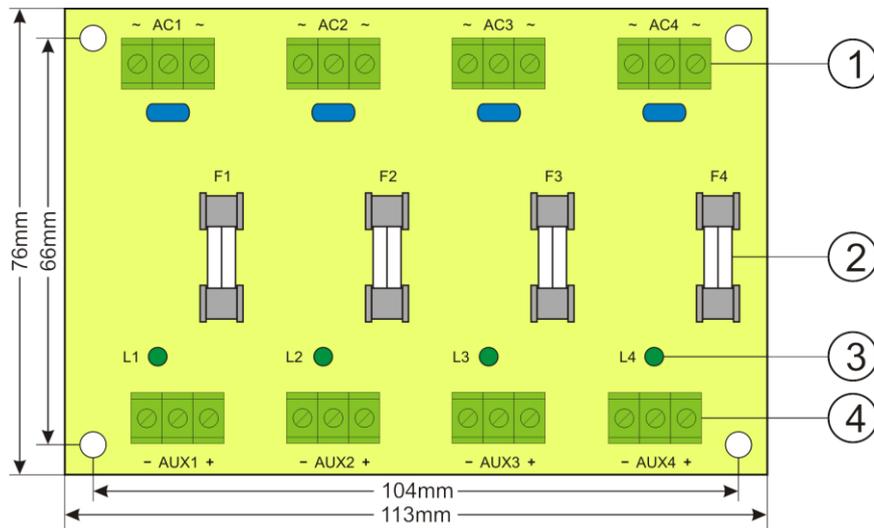


Fig. 2. The view of the LP4/SEP strip.

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

Element [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.

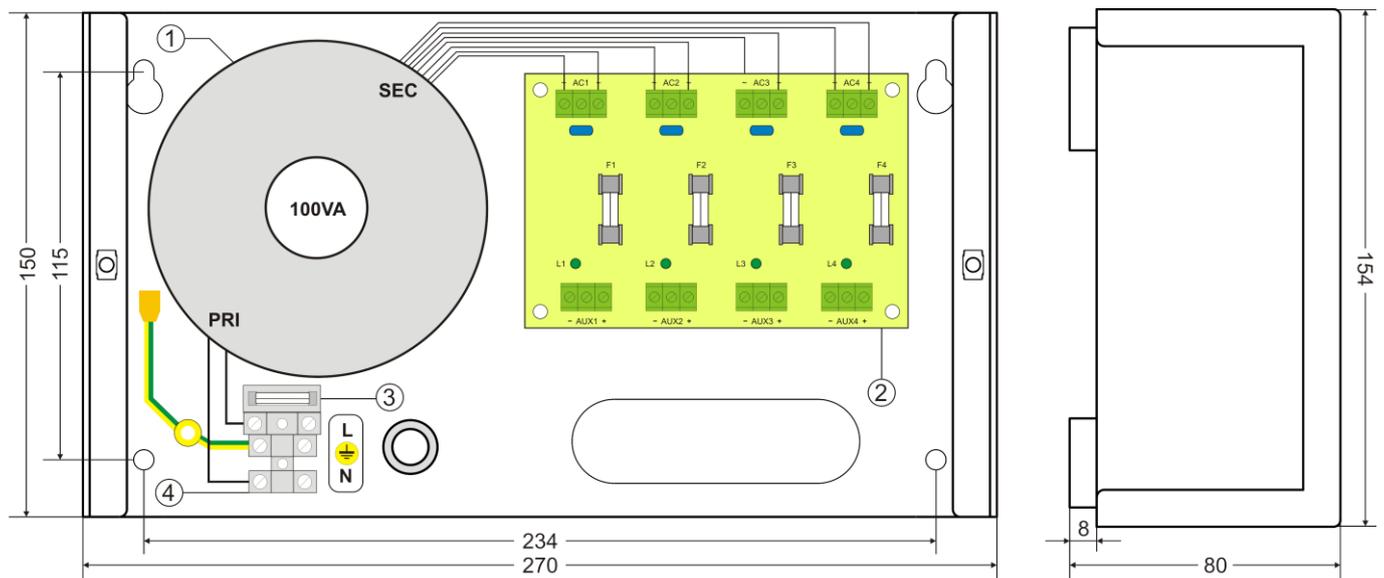


Fig.3. The view of the PSU.

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	0,5A@230V AC max.
PSU's power	72W max.
Output voltage	30V± 35V DC (100% load ÷ 0% load)
Output current	4x0,6A@30V DC max.
Short-circuit protection SCP	4x T 1A melting fuse (failure requires fuse replacement)
Overload protection OLP	DC 30 V: 4x T 1A circuit AC 230V: T 1A circuit
Surge protection	varistors

Mechanical parameters (Table 4)

Enclosure dimensions	270 x 154 x 80+8 [mm] (WxHxD)
Mounting	see Fig. 3
Net/gross weight	3kg / 3,15kg
Enclosure	Steel plate, DC01 1,0mm color RAL 9003
Closing	Cylindrical screw x 2 (at the front)
Terminals	Mains supply: Φ 0,63-2,50 (AWG 22-10) Outputs: Φ 0,51-2,05 (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 M Ω , 500V/DC

Operation parameters (Table 6)

Environmental class	II
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 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 $I=4x0,6A@30V$ 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 block of the LP4/SEP strip.
5. Switch on the 230V AC supply (~230V).
6. Check the optical indication of the PSU operation: L1÷L4 green LEDs should be ON.
7. Close the cover after installing and checking the operation of the power supply.

Example of use of power supply in the CCTV installation:

A typical application of the PSCU04343SEP power supply is supplying four CCTV cameras using four-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 PSCU04343SEP 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 DCDC converter (Table 7):

Cable type:	Cross-section [mm ²]	According to AWG	The distance between the PSCU04343SEP power supply unit and the DC/DC converter:
			Current consumption of the camera: 0,8A/12VDC
UTP5e twisted pair cable, one pc	0,2mm ²	24AWG	75 m
UTP5e twisted pair cable, 2 pcs	0,4mm ²	21AWG	150 m
UTP5e twisted pair cable, 3 pcs	0,6mm ²	19AWG	225 m
Stranded cable	0,25mm ²	23AWG	75 m
Stranded cable	0,5mm ²	20AWG	225 m
Stranded cable	0,75mm ²	18AWG	350 m
Stranded cable	1,0mm ²	17AWG	450 m
Stranded cable	1,5mm ²	15AWG	700 m

The distances are given for the rated voltage of $U_n=230V_{ac}$ and $T_a=20^{\circ}C$.

3. Optical indication.

The PSU is fitted with 4 green L1÷L4 LEDs 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 of the PSU are individually protected against short-circuit by melting fuses. In case of fuse replacement, use only compatible replacement parts. If the output load current exceeds $\Sigma 2,4A@30V$ 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.

THE GENERAL WARRANTY CONDITIONS

1. Pulsar (the manufacturer) grants a five-years 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.

Pulsar

Siedlec 150, 32-744 Łączycza, Poland
Phone (+48) 14-610-19-40, Fax (+48) 14-610-19-50
E-mail: biuro@pulsar.pl, sales@pulsar.pl
http:// www.pulsar.pl, www.zasilacze.pl