



USER MANUAL

EN*

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Supersedes edition:

HPSDCSEP-12V4x1A

v1.0

HPSDCSEP 12V/4A/4x1A power supply with 4 separated outputs



Features:

- Supply voltage ~100 - 240 V
- Power supply output 4x 12VDC/1A
- high efficiency (up to 82%)
- 4 independent, **galvanic isolated outputs**
- independent output voltage adjustment 12 – 15 V DC
- 4 **independent** outputs **protected by 1A fuses**
- LED optical indication
- protections:
 - SCP short circuit protection
 - OVP overvoltage protection
 - surge protection
 - OLP overload protection
 - antisabotage protection: unwanted enclosure opening
- warranty – 2 years from production date

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1. Technical description.

1.1. General description.

The **HPSDCSEP-12V4x1A** stabilised power supply is intended for supplying power to cameras or other devices that require stabilised voltage of **12 V DC**. The PSU has **4 independent** outputs with voltage adjustment within the range of 12-15V DC/4x1A, ensuring compensation of voltage drops in CCTV installations. The outputs of the PSU are galvanic separated and protected with fuses. A failure (a short circuit) in the output circuit makes a fuse blow and disconnects the circuit from the DC power supply (+U). The PSU is mounted inside a metal enclosure equipped with a microswitch indicating unwanted opening of the door (lid).

Table 1. Displaying parameters of the power supply:

Model	Number of outputs	Output voltage AUX	Output current
HPSDCSEP-12V4x1A	4	12 V (12 – 15 V)	4x 1 A

1.2. Block diagram

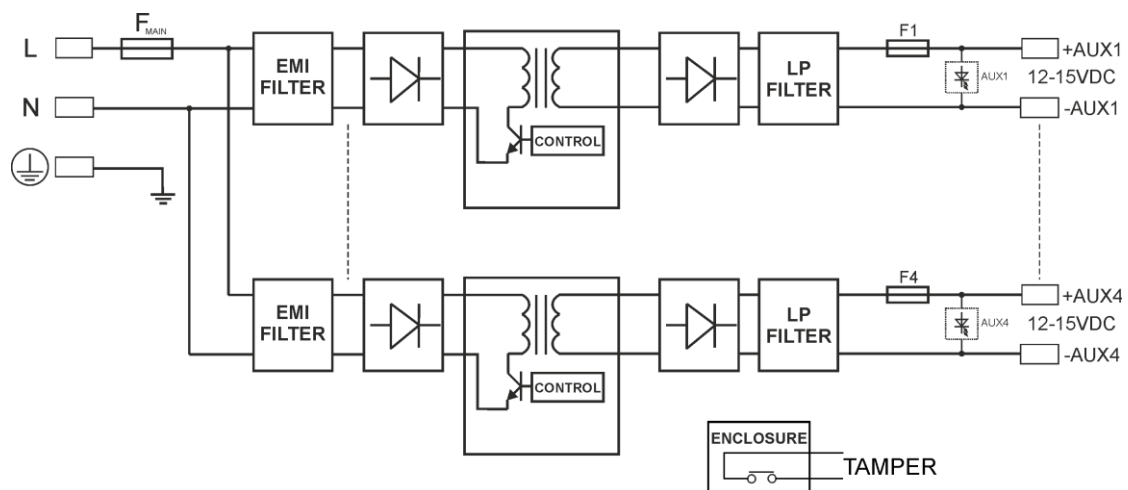


Fig. 1. Block diagram of PSU.

1.3. Description of PSU components and connectors

Table 2. Elements and connector of PSU (see Fig. 2)

Element no.	Description
[1]	Main fuse
[2]	L-N power supply connector 230 V AC, PE protection connector
[3]	V _{ADJ} potentiometer, output voltage adjustment 12 - 15 V DC
[4]	LED (green) indicating presence of voltage at output of the PSU
[5]	Fuse in AUX circuits
[6]	AUX2 output
[7]	AUX3 output
[8]	AUX4 output

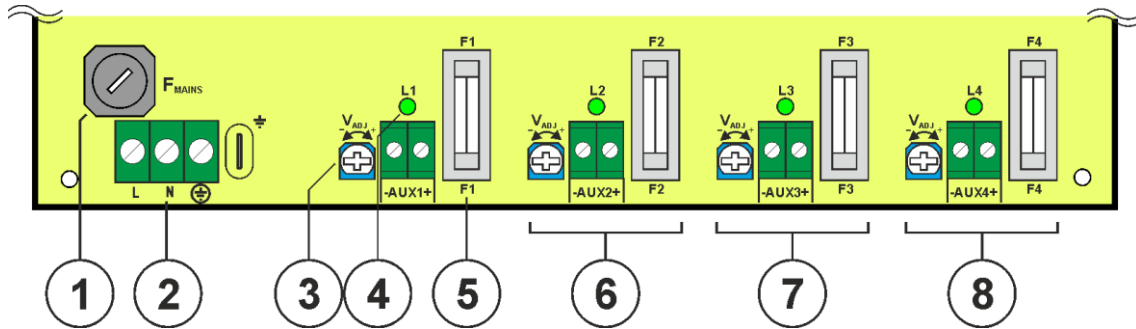


Fig. 2. View of power supply module

Table 3. View of PSU (see Fig. 3).

Element no.	Description
[1]	PSU module
[2]	Cable ellipse opening
[3]	TAMPER; microswitch of antisabotage protection (NC)

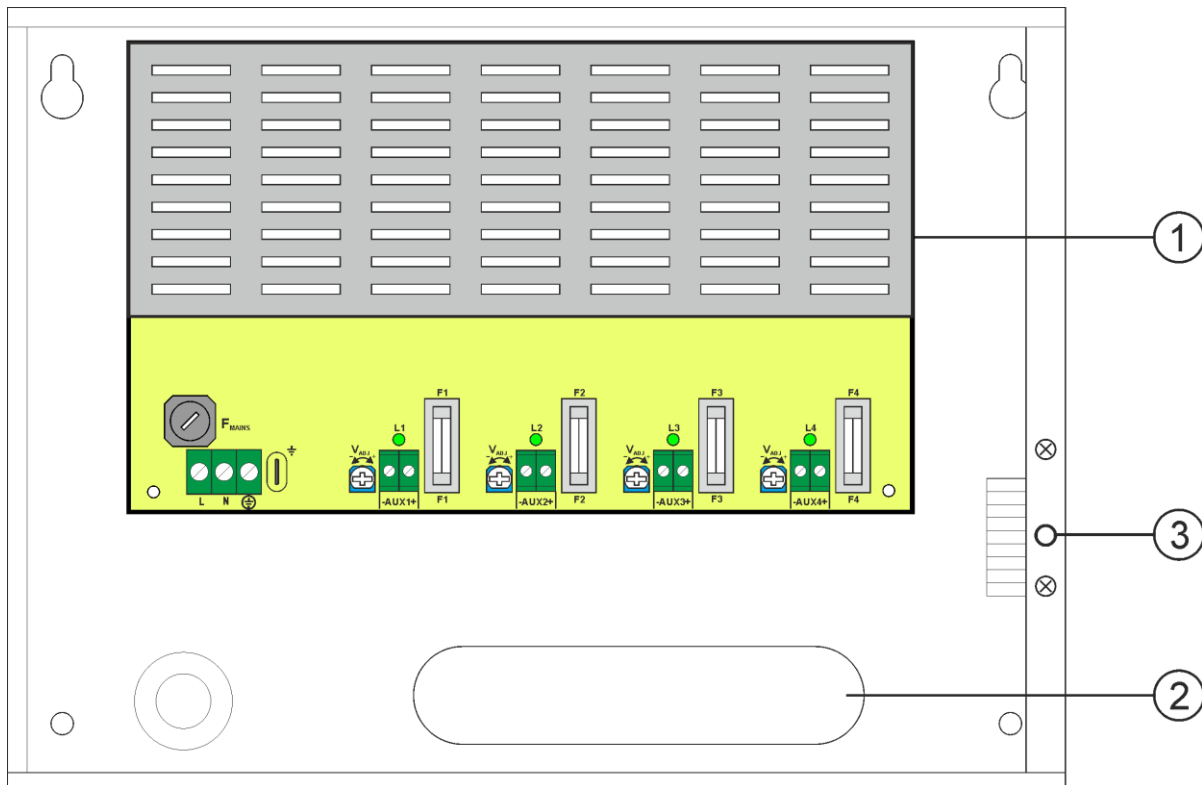


Fig. 3. View of PSU

1.4. Specifications.

- PSU parameters (tab. 4)
- operation safety (tab. 5)
- operating parameters (tab. 6)

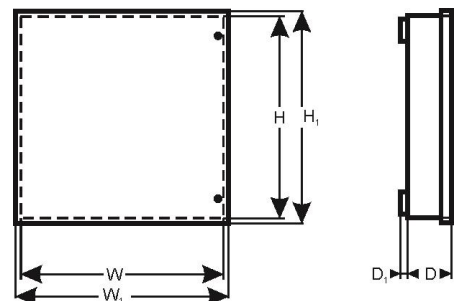


Table 4. PSU parameters.

Model	HPSDC-12V4x1A
Power supply	~ 100 – 240 V; 1A; 50/60 Hz
Inrush current	40 A
PSU power	48 W max.
Output current	4x 1 A
Efficiency	82%
Output voltage (factory settings)	12 V DC
Adjustment range U_{AUX}	independent for each output: 12 – 15 V DC
Ripple voltage	50mV p-p max.
Short circuit protection SCP	4x F 1A glass fuse fast blow
Overload protection OLP	105 – 150% PSU power, automatically recovered
Surge protection	varistors
Over voltage protection OVP	>19V (triggering automatic return)
Protection in 230 V circuit	glass fuse T5A
LED operation indication	- LEDs on PCB of power supply unit: The green L1...Ln LEDs indicate the power supply status on the outputs: AUX1...AUX4
Enclosure dimensions (WxH) [±2mm]	270x200
Enclosure dimensions (W₁xH₁xD₁+D) [±2mm]	275x205x67+8
Fixing (WxH)	237x170
Net/gross weight	1,8/1,9 [kg]
Connectors	Power supply: 0,5 – 1,5 mm ² (AWG 26 – 16)
Notes	Convectional cooling

Table 5. Operation safety.

Protection class EN 62368-1	I (first)
Electrical strength of insulation: - between input and output circuits of the PSU - between input circuits of the PSU - between input circuit and protection circuit - between output circuit and protection circuit	2500 V AC min. 2500 V AC min. 1500 V AC min. 500 V AC min.
Insulation resistance: - between input circuit and output or protection circuit	100 MΩ, 500 V DC

Table 6. Operating parameters.

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	According to PN-83/T-42106

2. Installation.

2.1. Requirements.

PSU is to be mounted by a qualified installer, holding relevant permits and licenses (applicable and required for a given country) for 230 V in and low-voltage installations. Unit should be mounted in confined spaces, in accordance, with normal relative humidity (RH=90% maximum, without condensing) 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.

As power supply is designed for a continuous operation and is not equipped with a power-switch, therefore, an appropriate overload protection in power supply circuit should be provided. Moreover, the user shall be informed about the method of unplugging (most frequently through separating and assigning an appropriate fuse in the fuse-box). The electrical system shall follow valid standards and regulations.

2.2. Installation procedure.



Before installation, cut off voltage in 230 V power-supply circuit. To switch power off, use an external switch, in which distance between contacts of all poles in disconnection state is not less than 3mm.

It is required to install an installation switch with a nominal current of 6 A in power supply circuits outside power supply unit.

1. Mount the PSU in a selected location and connect the wires.
2. Connect power cables (~230 V) to L-N clips of PSU. Connect ground wire to clip marked by earth symbol (⊥). Use a three-core cable (with a yellow and green protection wire) to make connection (⊥). Lead the cables to the appropriate clips through the insulating bushing of the PSU.



Shock protection circuit shall be done with a particular care: yellow and green wire coat of power cable should be connected to terminal marked with the grounding symbol on PSU enclosure. Operation of PSU without the properly made and fully operational shock protection circuit is UNACCEPTABLE! It can cause damage to equipment or an electric shock.

3. Switch on 230 V supply. LEDs on power supply PCB should be ON.
4. Check output voltage and adjust if necessary using right potentiometer.
5. Disconnect the PSU from the mains and make the rest of the connections - connect wires to the AUX1...AUX4 connectors.
6. Once the tests and control operation have been completed, close the enclosure/cabinet.

3. Operating status indication.

The power supply unit features LED status indication. Presence of voltage at each output of the PSU is indicated by the green LED nearby each outputs fuse. Failure (fuse damage) is indicated by shutting down green LED nearby appropriate outputs fuse on the PSU module

4. Operation and use.

4.1. Overload or short circuit of the PSU module output.

The AUX1÷AUX4 PSU outputs are protected against short circuit by glass fuses. Activation of the protection (glass fuse blowing) is indicated by shutting down green LED nearby appropriate outputs fuse on the PSU module. In case of damage, replace the fuse (compatible with the original).

4.2. Operation of the PSU OVP system.

If the OVP system is activated, the output voltage is automatically cut off. Operation is resumed automatically.

5. 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 the case of significant dust rate, its interior is recommended to be cleaned with compressed air.



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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