

The APS-30 power supply is designed for alarm, intercom or CCTV systems. The power supply proposed by our company has been designed and manufactured for such purposes. Precision voltage regulation, microprocessor-based battery testing and automatic battery disconnection in case of excessive discharging – all these features ensure that a battery can be used for a longer period, without a risk of battery damage. Moreover the circuit of power supply has a fuse of 3,15 A capacity. The power supply has short-circuit and overload protection. It is provided with visual signaling of mains supply and battery conditions as well as battery charging process. The detected failures can be additionally indicated by audible signaling. Two additional OC outputs permit transferring information about failures to alarm system. Due to the use of switching mode power supply of high power efficiency, heat power losses are minimized, thus increasing reliability. The power supply should operate with a 12 V battery of 17 Ah capacity.

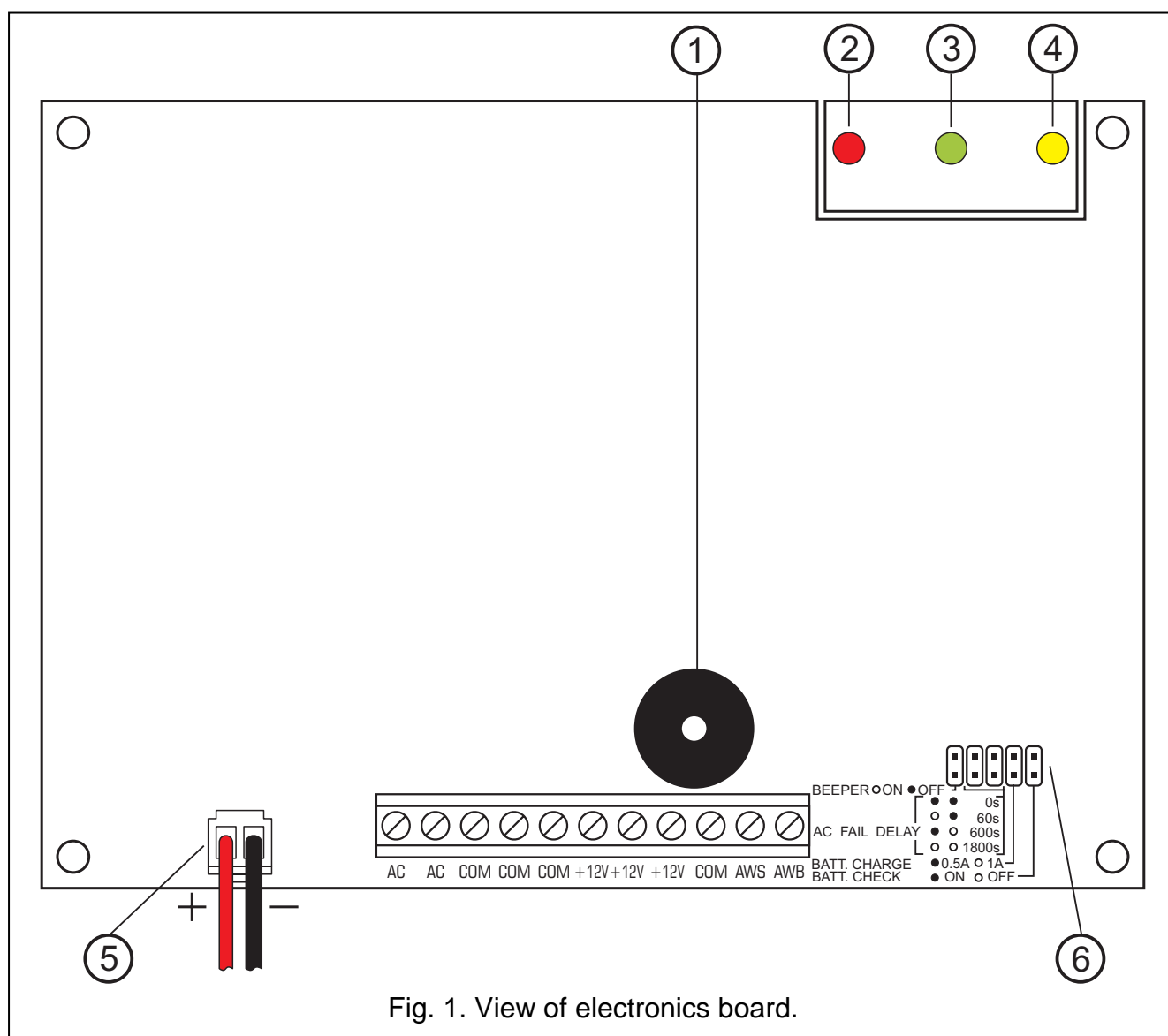


Fig. 1. View of electronics board.

Legend to Fig. 1:

- 1 – **buzzer**. Indicates troubles.
- 2 – **POWER LED (red)**. Indicates presence of alternating voltage on the AC terminals.
- 3 – **BATTERY LED (green)**. Indicates presence of battery.
- 4 – **CHARGING LED (yellow)**. The LED is on during battery charging or state-of-charge testing.
- 5 – **battery connecting leads** (red +; black -).
- 6 – **pins for setting operating parameters of power supply unit**. Symbol ● on the electronics board means that the jumper is on. Symbol ○ means that the jumper is off.
 - BEEPER** – switching the beeper on/off.
 - AC FAIL DELAY** – sets the time that must elapse after AC power supply failure until the failure is indicated on the AWS output (0, 60, 600 or 1800 seconds).
 - BATT. CHARGE** – sets the battery charging current: 0.5 A or 1 A.
 - BATT. CHECK** – switches the battery test on/off.

Description of terminals:

- AC** – power supply input (17...24 V AC). The AC terminals are used for connection the secondary winding of mains transformer.
- COM** – common ground.
- +12V** – outputs of power supply unit (13.6 – 13.8 V DC).
- AWS** – output indicating failure of 230 V power supply.
- AWB** – output indicating low battery or battery failure.


1. Installation

Before starting an installation, a balance of power supply loads should be made. Under normal service conditions, **the sum of the load currents plus the battery charging current can not exceed the power supply capacity (of 3 A)**.

The power supply should only operate while being permanently connected to mains supply. Hence, before making the connections it is necessary to familiarize with the electric system in the facility. For powering the device choose the circuit which is always live. The power supply circuit should be protected with a proper fuse.



Before connecting the device to its power supply circuit, make sure that the supply circuit is not alive.

1. Mount four distance plugs in the power supply back panel according to the spacing of the board openings. Plugs under the pressure can not slip out from installation spaces.
2. Mount the power supply enclosure in the selected location and lead all connecting wiring.
3. Connect 230 V AC power wiring to the 230 V AC transformer terminals, and the grounding wire to the terminal situated on the back of the metal housing and marked by the ground symbol .
4. Mount the board with electronics on the distance plugs, and, using screws, secure the board with LEDs to the housing cover (descriptions of LED indicators - see Legend to Fig. 1).
5. Using the installed cables, connect the transformer output voltage (rated at 20 V AC) to the AC terminals on the electronics board.
6. Connect the wiring from the loads to the terminals +12 V and COM at the terminal strip on the power supply board.

7. If necessary, connect the wiring from the alarm control panel to AWS output (output for signalling 230 V AC power loss) and (or) to AWB output (output for signalling battery low voltage or battery failure). During normal operation of the power supply unit, the signaling output is shorted to the ground (0 V), but when any of the above mentioned causes occurs, it becomes cut off from the ground.

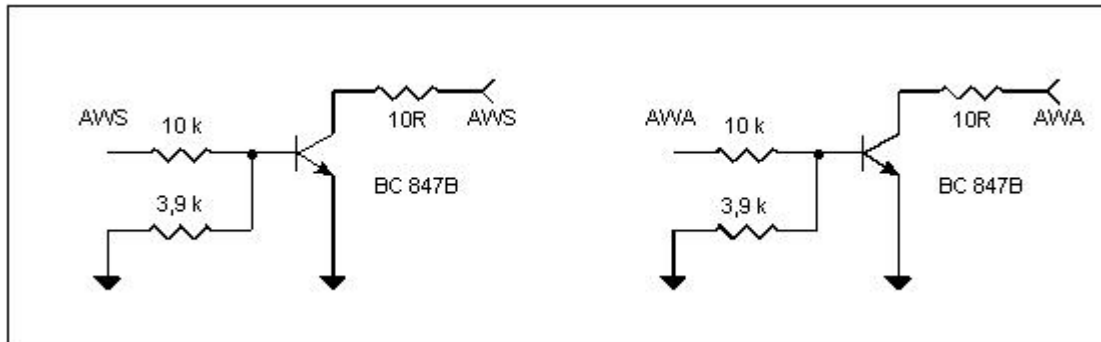


Figure 2. Schematic view of AWS and AWB outputs.

8. Using jumpers, set the time delay on the **AC FAIL DELAY** pins after which 230 V AC power failure shall be signaled. Possible time delay settings:

0 seconds	–	●	●	○	Pins open
60 seconds	–	○	●	●	Pins shorted
600 seconds	–	●	○		
1800 seconds	–	○	○		

9. Using the **BEEPER** pins, determine, whether the beeper is to be switched on (jumper on), or not (jumper off).
10. Using the **BATT. CHARGE** pins, determine the battery charging current (jumper on - 0.5 A; jumper off - 1 A)
11. Switch on 230 V AC mains supply (if all connections are properly made, LEDs marked as POWER and BATTERY should be ON).
12. After connecting the power supply, it is possible to measure the voltage across battery cables. The correct voltage should be approx. 13.7 V.
13. Connect the battery according to the colour marking. If the battery is discharged, green LED (BATTERY) will start flashing after approx. 4 minutes from switching on 230 V AC mains supply. In case that the battery is connected after this period (green LED is already flashing), the battery charging conditions shall be known after performing the next test by the power supply – after approx. 12 minutes. Charging the battery is signalled by a steady light of yellow LED, its brightness depends on charging current.

The second function of the yellow LED is signalling the test procedure for checking the battery voltage. Every 4 minutes this diode is ON for several seconds, during which the processor reduces the power supply voltage and the loads are powered from the battery.

The battery test function can be disabled by removing the jumper **BATT. CHECK**. Disabling the test will also deactivate the battery failure signaling on the AWB output, without, however, switching off the circuit which protects the battery from complete discharge.

14. Next, the proper operation of failure monitoring circuits can be checked (with the BATT. CHECK jumper set on):

Switch off AC power – the red LED (POWER) shall start flashing and the failure of AC power shall be acoustically signalled by the power supply. After the time delay, set on the pins, the status of AWS output shall change. When AC power is restored, LED will light permanently, audible signaling shall be switched off and AWS output shall stop signalling the AC power failure after the time delay set on the pins.

Disconnect the battery – after approx. 12 minutes the green LED (BATTERY) will start blinking and the power supply will generate audible signaling. The failure status shall appear at AWB output. The reconnection of the battery will result, after approx. 12 minutes, in ending the failure indication by LED and beeper.

After installing and checking the proper operation of the power supply, its housing can be closed.



As the power supply has no isolating switch to disconnect the mains supply, it is important to inform the user or the owner of this device about the way of disconnecting it from the mains (e.g. by indicating the fuse which protects the supply circuit).

2. Technical data

Power supply type.....	A
Transformer power voltage	AC 230 V
Electronics board supply voltage (from transformer).....	17..24 V AC
Rated output voltage	12 V DC
Current capacity	3 A
Battery charging current (selected)	0.5 A or 1 A
Recommended battery	12 V / 17 Ah
AWS output, (OC type)	50 mA
AWB output, (OC type)	50 mA
Operating temperature range (class I)	+5..45 °C
Electronics board dimensions	140 x 99 mm
Housing dimensions.....	296 x 330 x 90 mm
Weight (without battery)	3.28 kg

Latest EC declaration of conformity and product approval certificates can be downloaded from web site www.satel.pl



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