

TECHNICAL MANUAL



C10SW

Power supply units for
stand-alone service

090050600



IT08020000001624



FOREWORD

FOR INSTALLERS

Please follow carefully the specifications about electric and security systems realization further to the manufacturer's prescriptions indicated in the manual provided.

Provide the user the necessary indication for use and system's limitations, specifying that there exist precise specifications and different safety performance levels that should be proportioned to the user needs. Have the user read carefully the instructions provided in this document.

FOR USERS

Carefully check the system functionality at regular intervals making sure all enabling and disabling operations were made correctly.

Have skilled personnel make the periodic system's maintenance. Contact the installer to verify correct system operation in case its conditions have changed (e.g.: variations in the areas to protect due to extension, change of the access modes, etc.)

.....

This device has been designed, assembled and tested with the maximum care, adopting control procedures in accordance with the laws in force. The full correspondence to the functional characteristics is given exclusively when it is used for the purpose it was projected for, which is as follows:

Power supply units for stand-alone service

Any use other than the one mentioned above has not been forecasted and therefore it is not possible to guarantee the correct functioning of the device. Similarly, any other use of this technical manual other than the one it has been compiled for - that is: to illustrate the devices technical features and operating mode - is expressly prohibited.

The manufacturing process is carefully controlled in order to prevent defaults and bad functioning. Nevertheless, an extremely low percentage of the components used is subjected to faults just as any other electronic or mechanic product.

As this item is meant to protect both property and people, we invite the user to proportion the level of protection that the system offers to the actual risk (also taking into account the possibility that the system was operated in a degraded manner because of faults and the like), as well reminding that there are precise laws for the design and assemblage of the systems destined to these kind of applications.

The system's operator is hereby advised to see regularly to the periodic maintenance of the system, at least in accordance with the provisions of current legislation, as well as to carry out checks on the correct running of said system on as regular a basis as the risk involved requires, with particular reference to the control unit, sensors, sounders, dialler(s) and any other device connected. The user must let the installer know how well the system seems to be operating, based on the results of periodic checks, without delay.

Design, installation and servicing of systems which include this product, should be made by skilled staff with the necessary knowledge to operate in safe conditions in order to prevent accidents. These systems' installation must be made in accordance with the laws in force. Some equipment's inner parts are connected to electric main and therefore electrocution may occur if servicing was made before switching off the main and emergency power. Some products incorporate rechargeable or non rechargeable batteries as emergency power supply. Their wrong connection may damage the product, properties and the operator's safety (burst and fire).

EU DECLARATION OF CONFORMITY

The product complies with current European EMC and LVD directives. The full text of the EU declaration of conformity is available at the following Internet address: elmospa.com – registration is quick and easy.

DISPOSAL INSTRUCTIONS - USER INFORMATIONS



According to Directive 2012/19/EU on the Waste of Electric and Electronic Equipment (WEEE), it is here specified that this Electrical-Electromechanic Device started to be commercialized after 13th August 2005, and it shall be disposed of separately from ordinary waste products.

IT08020000001624



1. GENERALS

The C10SW power supply unit is a high quality device for intrusion detection systems. It contains a small size AL50LRS14V5 switching unit and it features sophisticated control elements to supply power to the devices and to recharge self-powered compatible sirens such as the models in the EL.MO. catalog.

The power distribution board is placed on the inside of the lid.

C10SW is equipped with Tamper protection against opening; the protection against removal shall be realized by the installer using the proper kit.

C10SW works with a backup battery with solid electrolyte (up to 18 Ah) connected to the electronic board with Faston terminals. **Do not use a liquid electrolyte battery, commonly used for automotive applications.**

2. FEATURES

2.1 Generals

- Power supply group in metal small size housing.
- AL50LRS14V5 switching unit (supplied).
- Maximum supplied current: 3 A.
- Battery management circuit, up to 18 Ah.
- Mains, battery voltage and output voltage presence control.
- Dedicated terminal output to charge the internal battery of a self-powered siren.
- Tamper output to connect the housing anti-tamper protection.
- Compliance with EN 50131-6 regulation, level 1 and 2, environmental class II.

2.2 Technical features

Model:	C10SW
Power supply unit:	A, protection class 1 ÷ 2, environmental class II
Mains input:	AC230V 50Hz (range: 100 ÷ AC240V 50 ÷ 60 Hz)
Mains absorption @AC230V:	0.51A with 3A load.
Primary power frequency:	50 ÷ 60Hz
Power:	51.8W
Efficiency:	70%
VOOUT output:	10.0 ÷ 14.0Vc.c. - with buffer battery
14V SIR output:	DC11V ÷ DV14V max 0.25A - only with main power.
Output power:	for security grade 1 ÷ 2 autonomy 12h: I _{out} = 1.48A with 18Ah buffer battery I _{out} = 0.56A with 7Ah buffer battery For general use: I _{out} = 2.5A + 0.2A for battery charging + 0.25A 14V SIR output I _{out} = 2.1A + 0.6A for battery charging + 0.25A 14V SIR output Total nominal supplied current: 3A.
Ripple:	25mV peak-to-peak (max 200mV peak-to-peak).



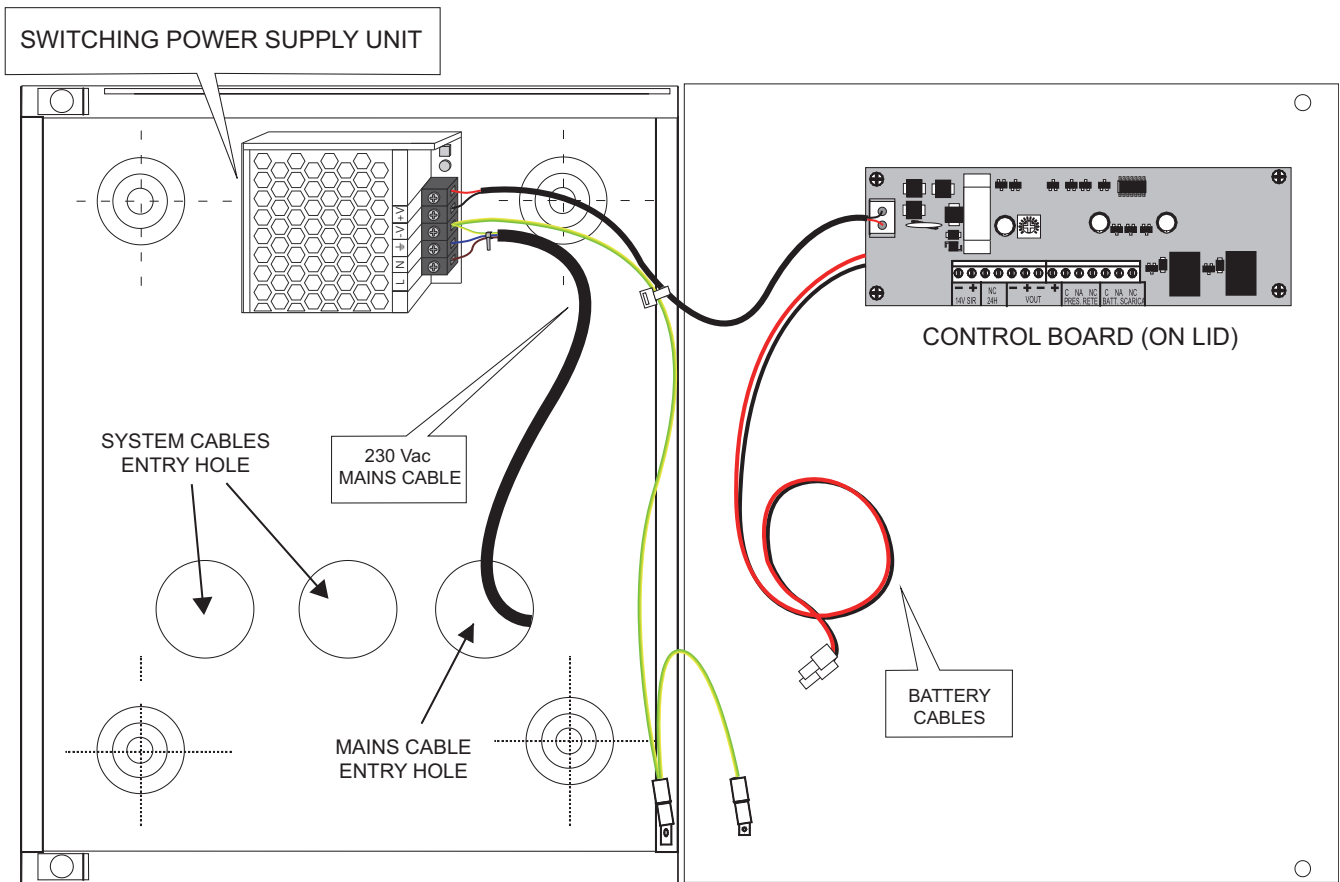
Control board current consumption:	30mA@12V - without main power.
Battery charge current:	250 mA - limited by PTC
Low battery indication:	Ubat < 10.5V - without mains, restore > 12V.
Protection from short-circuits/VOUT overloads:	150% ÷ 200% of the switching unit voltage - current limitation and/or T5A fuse fault (this requires fuse replacement), signalled by the TENSIONE DI USCITA (output voltage) LED switching off
Short circuit protection/battery inversion:	PTC current limitation, signalled by the CONTROLLO BATTERIA (battery control) LED switching on.
Short circuit protection/14V SIR output overload:	PTC current limitation, signalled by the flashing of TENSIONE DI USCITA (output voltage) LED.
Technical outputs:	
GUASTO ALIMENTAZIONE PRIMARIA (mains fault), the output signals power presence:	relay output, potential-free C-NC-NO contact (max 1A@DC24V), the total loss of power supply unit functions is recognized as fault condition. Intervention time delay: 45 s (+/- 10%) Instant reset at the end of the fault.
GUASTO BATTERIA (battery fault), the output signals the conditions of low battery, short-circuit or polarity inversion:	relay output, potential-free C-NC-NO contact (max 1A@DC24V), the total loss of power supply unit functions is recognized as fault condition. Intervention time delay: 45 s (+/- 10%) Instant reset at the end of the fault.
TAMPER, the output signals the opening or removal of the housing from the installation surface:	output contacts of the protection microswitch, potential-free NC contact (max 0.5A@DC50V) (closed housing fixed to the installation surface)
Front LED indications:	AC230V power. VOUT terminals voltage. 14V SIR terminals voltage. Battery voltage control. Note: for the meanings of the indications, see "LED INDICATIONS ON FRONT PANEL" on page 7.
Protections:	F1 fuse VOUT T5A / 250V
Battery charging time:	72h00m for battery 18Ah (charging time up to 0.8×C) 10h30m for battery 7Ah (charging time up to 0.8×C)
Dimensions:	W 260 x H 305 x D 125 mm
Usable battery:	minimum 7Ah / 12V - maximum 18Ah / 12V (SLA)
Weight:	3050 g
Operating temperature:	from -10°C to +55°C
Relative Humidity:	from 20% to 90% without condensation.
Supplied:	AL50LRS14V5 power supply unit, Tamper microswitch against opening, rubber grommet, technical manual.

C10SW has been designed to fulfill security grade 1 ÷ 2, environmental class II.



3. VIEW OF THE INTERNAL PARTS

Internal view of C10SW.





4. INSTALLATION

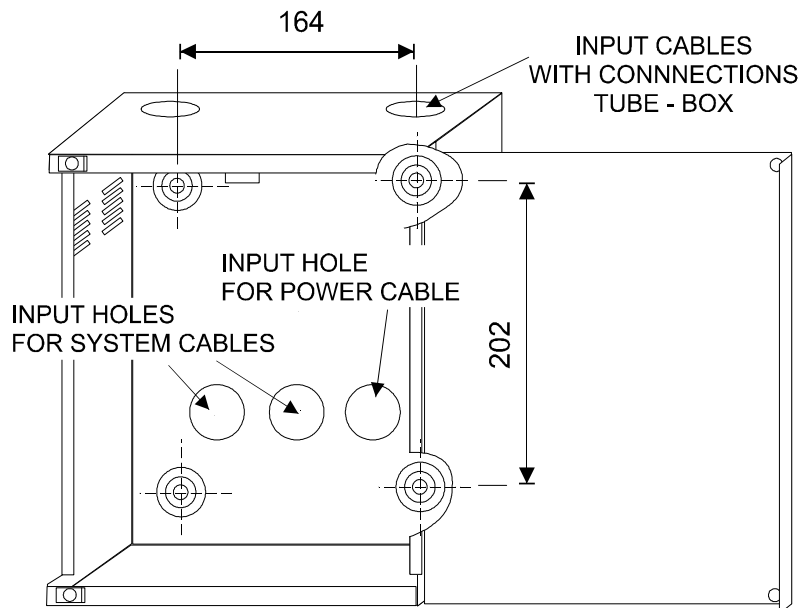
Before installing the PSU, familiarize yourself with the standards regarding the installation of intrusion detection system and low voltage devices applicable in your country.

Power down the mains cable before installing the control unit.

Note: do not weld the wires.

4.1 Installation, hole marking and drilling

1. Remove the screws that keep the lid shut and open the housing.
2. Fix the housing to a flat, stable wall that can withstand the weight of the PSU, battery included, by driving screws through the fixing holes. Use screws and plugs suitable to the material of the wall.



MILLIMETERS DIMENSIONS

3. Feed the cables through the indicated openings on the bottom or punch out the pre-cut holes on the upper and lower side of the box, feeding the cables through conduits made of materials with flammable rate UL94-HB or above.
4. Remove the plastic cover on top of AL50LRS14V5 terminal board. Connect the phase, neutral and ground wires to AL50LRS14V5 terminal board.

Note: another wire connects AL50LRS14V5 ground terminal to the metal housing. Pay attention not to pull it out while connecting the mains cable to this terminal.

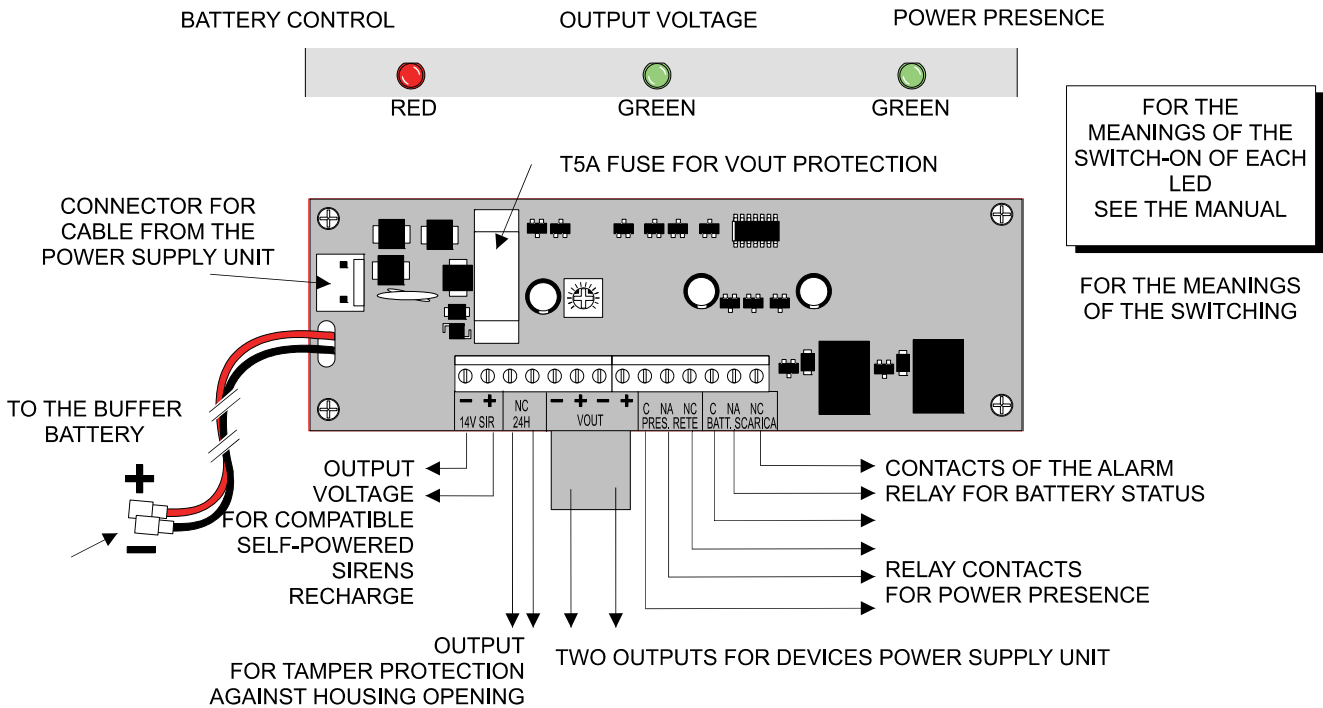
5. Use a cable tie to fasten the mains cable wires connected to AL50LRS14V5 terminals.
6. Set the dip switches as needed for the intended behaviour and connect all other wires, following the diagrams available in this manual. Use cable ties to prevent the low tension cables from touching the 230 V cables.
7. If using the RS-485 mode, select the address.
8. Check the polarity of all connections, then power the device.
9. Connect the battery cables to a battery whose housing has flammable rate UL94-HB or above. If the battery uses screw terminals instead of faston connectors, use a crimping tool to replace the faston connectors on the cable with spade contacts (not provided).
10. Test the system.
11. Screw the lid closed.



5. DESCRIPTION OF THE CONTROL MODULE

View of the control module and of the connection terminations.

VIEWING LED ON THE REAR OF THE BOARD



6. LED INDICATIONS ON FRONT PANEL

Meanings of the different light indications on the front panel.

NOTE: the label is available only in italian language.

AC230V power, green LED

On = powered with regular operation.

Flashing = without power for 45s.

Off = no power with PRES. RETE. relay intervention.

Intervention 1s.

VOUT presence, output voltage green LED

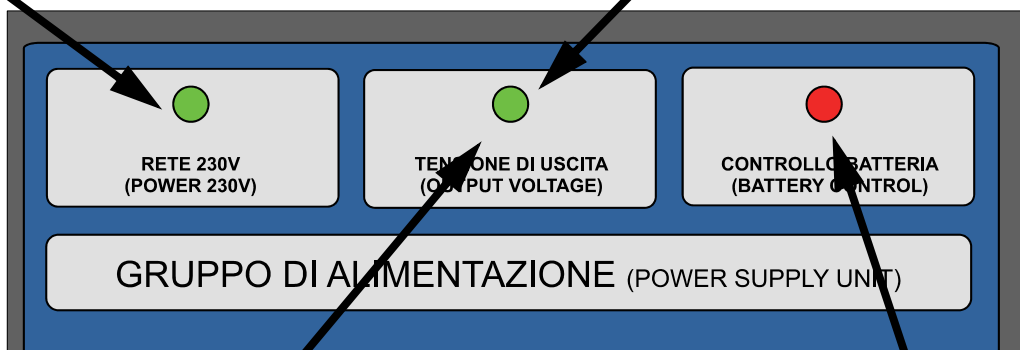
On = voltage present at the terminals.

Off = F1 T5A/250V fault.

Intervention 1s.

Flashing = in case of power failure and mains LED off.

Intervention 1s.



Output voltage 14V SIR, output voltage green LED

On = voltage present at the terminals.

Flashing = terminals voltage < DC7.0V or short-circuit/overloaded.

Intervento 1s.

Battery control, red LED

Off = regular operation,

On = low battery voltage.

Intervention 1s.

Relay intervention after 45s.

Power supply units for stand-alone service mod. C10SW - TECHNICAL MANUAL
March 2018 Edition

090050600

Products features as described above do not bind the manufacturer and may be modified without prior notice.

EL.MO. SpA Via Pontarola, 70 - 35011 Campodarsego (PD) - Italy
Tel. +390499203333 (R.A.) - Fax +390499200306 - Help desk +390499200426 - www.elmospa.com - info@elmospa.com