



## RF-54/A Control unit for electric locks, lights and Air-conditioners which cooperates with RF-52/A and RF-53/A RFID card holders



### TECHNICAL CHARACTERISTICS

Operation voltage	170 - 265VAC/50-60Hz
Power consumption	32VA (full load and active electromagnetic lock 15W)
Output for Light circuit	Relay contact 230VAC 12A (resistive load)
Output for A/C circuit	Relay contact 230VAC 12A (resistive load)
Degrees of cover protection	IP 20
Produced in accordance with	EN 60335-1
Operation temperature range	0 to 50 °C
Relative humidity	Up to 95% without condensation
Construction material	Baybled FR3010
External dimensions	90 x 70 x 60 χλ.
Typical weight	220 gr.
Guarantee	2 years

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#### GENERAL

The RF-54/A unit is used in hotel and rented room installation to control the electro-magnetic door lock, the light and A/C circuits of a room. It operates in cooperation with 1 or 2 RFID (RF-52/A, RF-53/A) card holders and optionally with one power expansion unit (RF-55) and also with one or more magnetic window contacts which are also optional.

The unit can programme RF-50 cards and activate the loads that are connected to it according to the programming process. It can program up-to 20 personnel cards with full access and up-to 20 customer cards with access only to the light circuit or to the light circuit and the A/C circuit.

#### MOUNTING

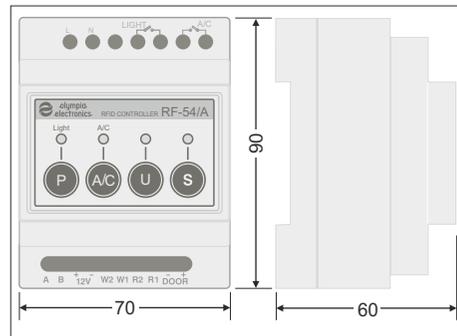
The unit is designed to be mounted in a normal electric panel and mounts directly on the rails of the panel.

#### CONNECTIONS

The connections must be done as shown in figures 3, 4 or 5 depending on the installation requirements. The type of cables and the cross section of each type are also shown in these diagrams.

The installer is obliged to follow the

instructions that are shown in these diagrams. The connection of the RF-52/A, RF-53/A card holders must be done according to the diagrams. For example, if a full system is required then the connection shown on figure 3 must be adhered to. In this case the communication and power cable of the RF-52/A, RF-53/A (twisted pair UTP5) starts from the terminal block of the RF-54/A and goes to the terminal block of the internal card holder. From there it goes to the terminal block of the external card holder.



#### LOAD CONNECTIONS

Great care must be given to the cable cross section when connecting the light and A/C circuits to the RF-54/A unit. The maximum permissible cable cross section that can be connected to the RF-54/A is 6mm. If the total power of the loads exceeds 5,7KVA (12A at 230V AC), then the RF-55 power unit must be used. The RF-55 offers one more controlled output for a second independent A/C circuit. This output is also controlled by the magnetic contacts, connected to W1 terminal of the RF-54/A.

#### SYSTEM ADJUSTMENTS

Figure 3 shows a full system. If desired, a system with degraded capabilities can also be designed. (i.e. When we want to upgrade later). In this case we can have the following systems:

- 1) A system that is capable of controlling the electromagnetic door lock, the light and A/C circuits of a room is shown on figure 3 along with all the adjustments and connections.
- 2) A system that is capable of controlling only the electromagnetic door lock of a room is shown on figure 4 along with all the adjustments and connections.
- 3) A system that is capable of controlling only the light and A/C circuit of a room is shown on figure 5 along with all the adjustments and connections. **The window magnetic contacts must be connected to W2 terminal.**

If the magnetic window contacts are not required, then permanently short circuit the terminal block -12V with the contacts "W1" and "W2" of the RF-54/A with a small piece of wire.

The RF-52/A and RF-53/A and RF-54/A units are connected in a network RS-485, so it is mandatory that the terminal resistor of the last unit of the network is activated. (**TERMINAL**). In cases of the systems shown on Figure 3 and Figure 4, the last unit in the network is considered to be the external card holder RF-52/A and RF-53/A, while in the system of Figure 5, the last unit in the network is considered to be the internal card holder RF-52/A or RF-53/A. The RF-52/A and RF-53/A devices have a jumper (DOOR), which short-circuits only in RF-52/A device and RF-53/A, which activates the room door (external card holder).

#### CONTROLLING THE ELECTROMAGNETIC DOOR LOCK

Each time that a valid card is inserted in the slot of the external RF-52/A, RF-53/A card holders, then a short beep is heard and the green LED light while simultaneously unlocking the door of the room. From the time that the card is removed from the card holders the lock remains activated

for 8 seconds. Each time that the door is unlocked there is an audio-visual indication also in the internal card holder unit that informs the person in the room that someone has opened the door, or for the case that the card is forgotten in the external card holder. If the card that is inserted in the external card holder is not valid then the red LED lights and the buzzer is sounded (beep). In case the inserted card is not readable from the system (i.e. RFID CARD from another supplier), then there is not any indication and of course the door remains locked.

#### CONTROLLING THE LIGHTING AND THE AIR-CONDITIONING (A/C)

Each time a valid card is inserted in the internal card holder the room lighting circuit is activated and remains activated as long as the card is in the slot. If the card also has A/C (air-conditioning) access and the windows are closed then the A/C circuit is also activated and will remain activated as long as the card is in the slot. During this time the Green LED on the internal card switch is ON and the red LED on the external card holder is ON to show that someone is in the room. If the card is removed from the internal card holder then the lighting and A/C circuits are deactivated after 60 seconds. If the A/C is active and the windows of the room are opened then after 60 seconds, the A/C will turn OFF.

#### CARD PROGRAMMING

The programming of the customers or personnel cards must be done, only in the internal card holder, following the procedure below:

1. Remove any card from the interior card holder.
2. Push and hold the **P** button of the RF-54/A for 3 seconds.
3. The indicator above the **P** button starts blinking, indicating that we are in programming mode and the indicator above the **U** button lights steadily, indicating that the client memory area is selected. Here we can program the client cards that will be licensed only for activation of the lighting or activation also for the air-conditioning, by pushing the A/C switch (the indicator above the button will light steadily). The alternation of air-conditioning activation either with or without license can be done at any time during the programming mode of clients cards. In case we want to program personnel cards will have to push the **S** button (the indicator above the button will be activated). Personnel cards programmed with full lighting and air-

conditioning license and for this reason the indicator A/C is turned on.

4. Insert a card in the interior card holder. The audio-visual signal indicates that the card was accepted. In each new card programming, the device adds the code of the new card without erasing the existing ones. If the client or personnel memory area covered (20 cards per area have be stored), in every introduction of a new card a triple audio-visual (with red indicator) indicates that the memory location is full. In this case, in order to program a new card, you must first delete the memory. The two memory regions are independent and deleting a memory location in one area does not affect the memory location in the other area. Personnel cards can be programmed for all RF-54/A devices is desirable that will permit the holder of the card to have access to any room in the installation. The cards can be registered only in one of the two memory locations and not in both simultaneously. Exit from the programming mode is succeeded, if P button is pressed, once again, briefly.

#### DELETING A MEMORY AREA

We can delete the cards of the customer memory or the personnel memory of the RF-54/A unit. This can be done be following the procedure mentioned below:

1. Remove all cards from the internal card switches.
2. Press and hold for 3 seconds the P button in order to get in to the programming mode (the indication above the button blinks).
3. In order to delete the client memory location press continuously for 3 seconds the U button. The deletion is confirmed with 3 blinks of the indicator above the button. The same goes for the deletion of personnel memory location, but by pressing the button S instead. After deleting the memory, no card is recognized as valid and the device remains in programming mode, so the new cards can be now programmed.

*As a precaution, it would be good, the process for deleting the memory locations to be done anyway, when it is first time to program the available customers and personnel cards.*

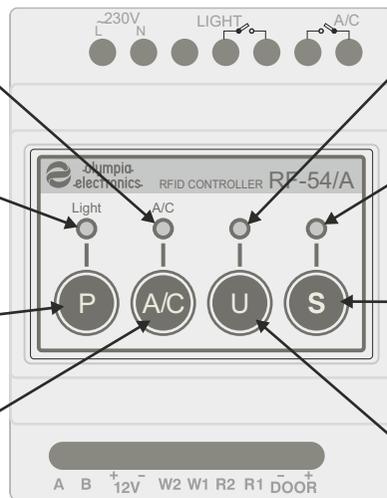
#### Control and indications of the device

Selection of activation license A/C indicator. In normal operation shows the activation of A/C relay, when it is activated.

Programming selection indicator. In normal operation shows the activation of light relay, when it is activated.

Programming selection button (with constant pressure at 3 sec.)

Selection button activation license of A/C, in programming mode



Customer memory location indicator

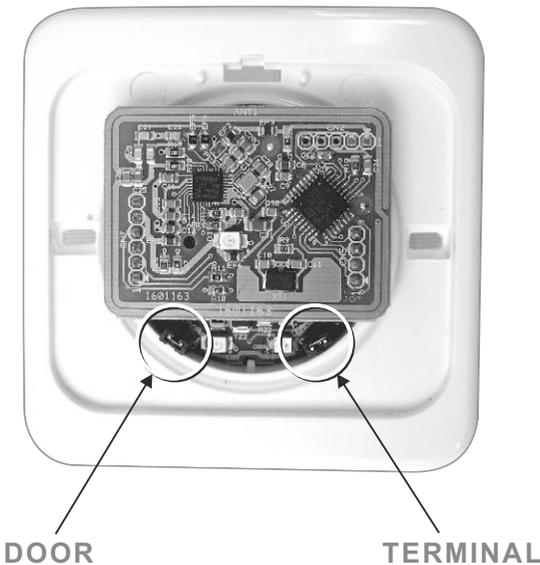
Personnel memory location indicator

Personnel memory location button, in programming mode

Customer memory location button, in programming mode

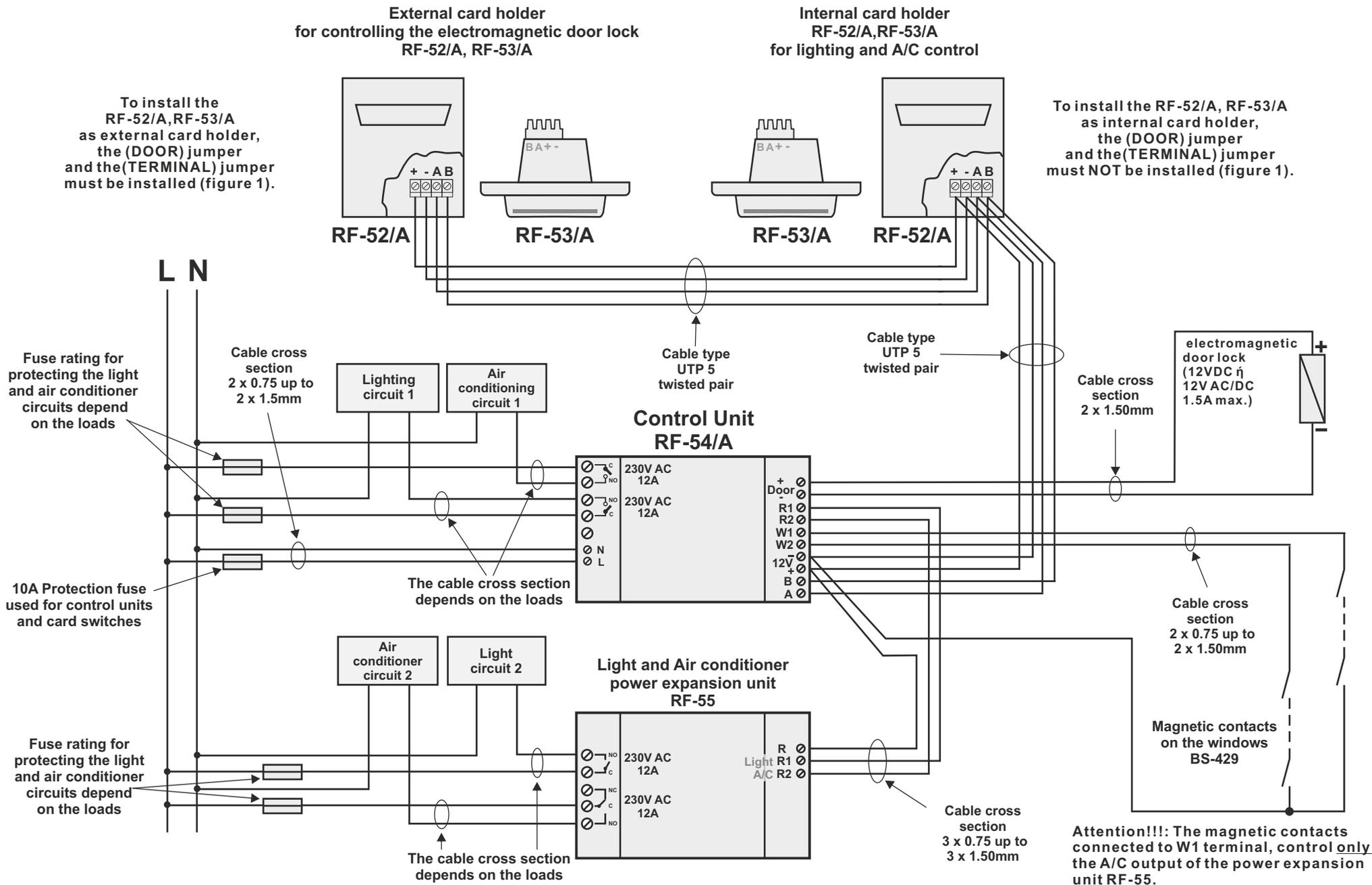


RF-52/A



RF-53/A

Figure 1



**Figure 3. System connection diagram for controlling the electromagnetic door lock, the lighting and A/C circuits.**

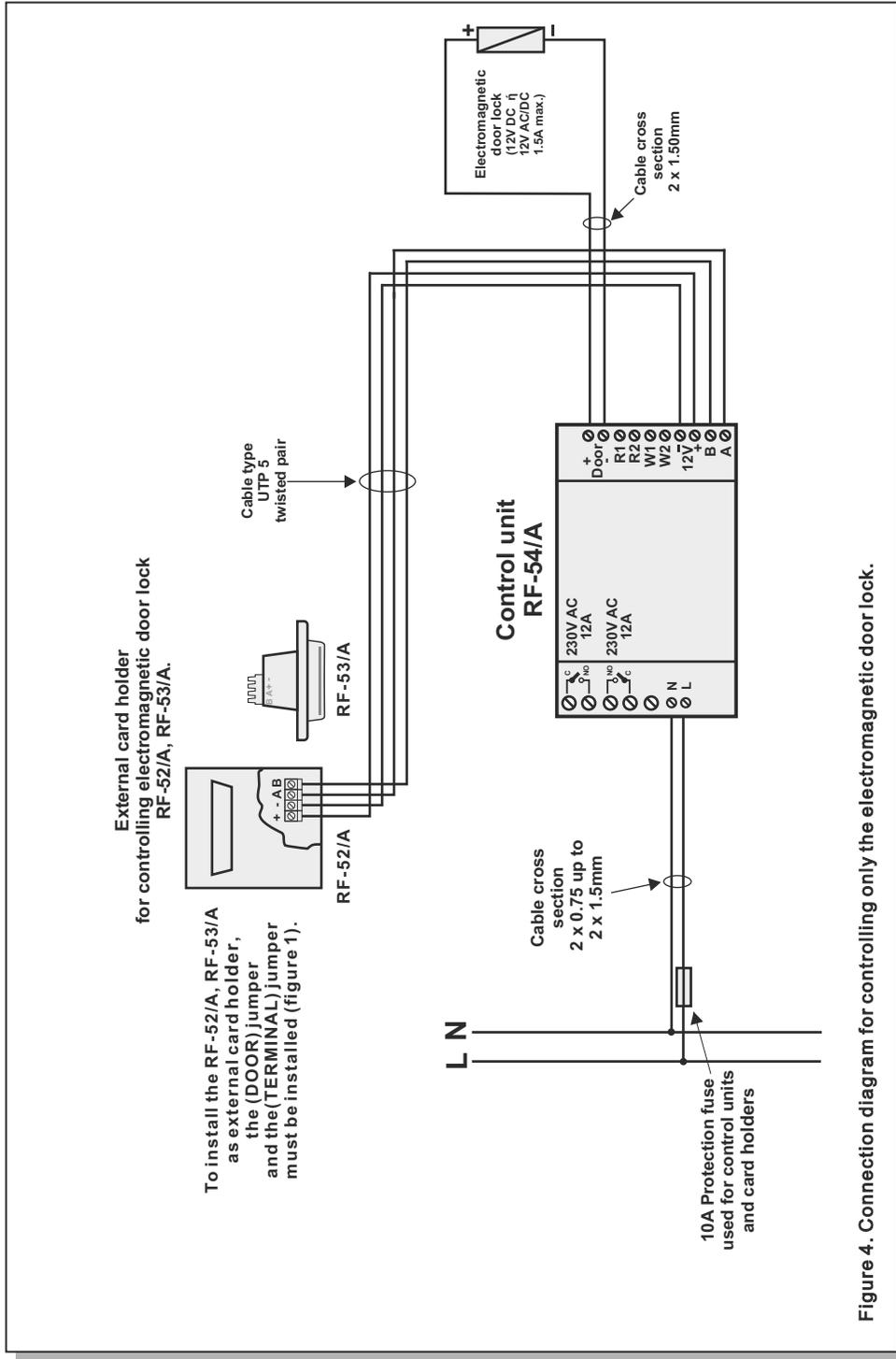


Figure 4. Connection diagram for controlling only the electromagnetic door lock.

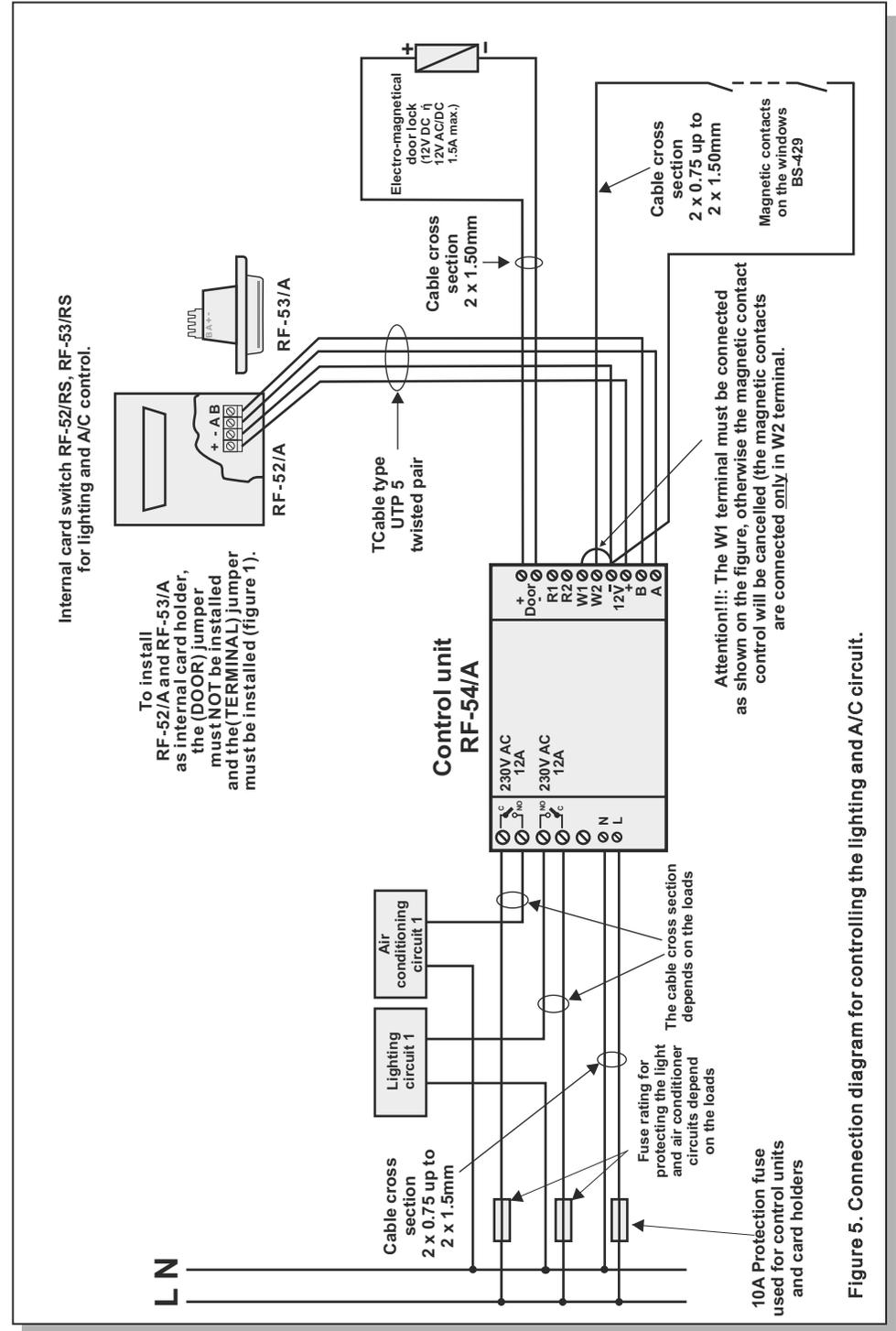


Figure 5. Connection diagram for controlling the lighting and A/C circuit.