

AMBITROL 500

environmental controller

INSTALLATION MANUAL

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PRESENTATION

We wish to take this opportunity to thank you for the confidence in us which you have shown in expressing interest or acquiring the AMBITROL 500.

This confidence, for our part, stimulates our efforts to meet and surpass the expectations of our clients to justify the traditional quality of our products.

This manual will explain the specification of the equipment as well as its installation and use.

However, if after reading this you still have any doubts, contact us and we will happily answer them.

1. CENTRAL UNIT

The central unit, which contains the operation circuits, with the screen, keyboard and printer connector, is provided in a hermetically sealed box (IP 65) with a transparent front cover and an opaque cover for the connection housing.

For the wall-mounting of the unit, there are two holed pieces in the upper corners. There are also two more holes in the inside of the connection housing.

In some cases, this central unit is provided without box and ready to be installed in a large console which houses other elements.

1.1. PLACING THE CENTRAL UNIT

The central unit can be placed hundreds of metres from the satellite unit of inputs/outlets, they can be joined by a single co-axial cable.

Fix the unit with screws on a wall or similar, so that the screen is in your field of vision.

Avoid proximity to:

- High voltage devices.
- Transformers.
- Motors or sources of vibration.
- Or any other source of interference which could affect the correct working of the unit.

Also avoid temperatures in excess of 50°C, condensation, drips, vibrations, etc.

To maintain the isolation of the unit, it is essential to keep the transparent and opaque panels closed.

1.2. SUPPLY TO THE CENTRAL UNIT

The power supply should be 220 V. ac. It is recommendable to do this as directly as possible from the general switch, avoiding that the same cable supplies command lines (relays, switchers, etc).

For unstable or fluctuating voltages, use grid stabilisers.

It is important to connect the earth terminal, to discharge the fluctuations that could be in the supply.

If the equipment is placed on an electric switchboard, the earth terminals of the equipment should be joined in star, at the same point of the switchboard and from this one

to the earth terminal bar with a section equal to the supply cables of the switchboard.

The equipment is protected in the supply by a varistor between the phase and the neutral which will short circuit the fuse on detecting an overload on the line, and the two supply lines are filtered towards the earth terminal.

Do not increase the value of the fuse (0.4 A) as this would produce the destruction of components. On the backside of the cover for the connection housing, there are some spare fuses.

1.3. CONNECTION TO THE CENTRAL UNIT

To connect the unit, remove the lower cover to reach the terminals.

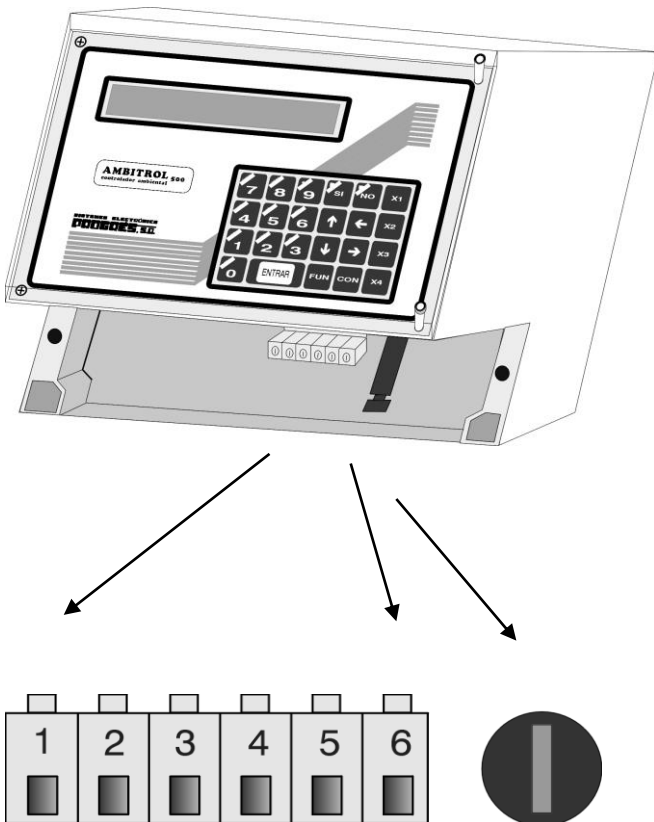
For the cable entries, it is necessary to remove the relevant dies (this should be done with the connection cover in place and screwed, to avoid possible breakage).

It is advisable to install the stuffing box in the open dies, which are included with the unit.

It is advisable to connect the cables to the terminals with terminal connections, which are also included with the unit.

DETAIL OF THE TERMINALS AND FUSE

D



FUSE:0,4 A.

GROUP OF TERMINALS "D".

TERMINAL 1: Outlet of earth terminal which is connected to the screen of the cables of the terminals 2 and 3 (communication cables) if they are screened.

TERMINAL 2: Outlet of communication with the base plate of the satellite unit. Connect to the terminal nº 2 of the group of terminals "A" of the above mentioned base plate.

TERMINAL 3: Outlet of communication with the base board of the satellite unit. Connect to the terminal nº 3 of the group of terminals "A" of the base board.

It is advisable that the cables that are connected to these terminals, 2 and 3, are screened if the distance between the base equipment and the satellite unit is considerable, in order to protect them from interferences.

TERMINAL 4: Input of earth terminal.

TERMINAL 5: Supply input at 220 V ac (phase).

TERMINAL 6: " " " " (neutral).

1.4. PRINTER CONNECTION

Under the keyboard and next to the connection cover, you can find the circular connector for the switch of the printer, which is delivered with the equipment. The printer must be of SERIE input and of 80 columns.

2. SATELLITE UNIT

The satellite unit or units are also provided in a hermetically sealed box with a transparent front cover.

Fix the unit with screws on a wall or similar.

Also avoid proximity to:

- High voltage devices.
- Transformers.
- Motors or sources of vibration.
- Or any other source of interference which could affect the correct working of the unit.

Also avoid temperatures in excess of 50°C, condensation, drips, vibrations, etc.

To maintain the isolation of the unit, it is essential to keep the panels closed.

2.1. SUPPLY TO THE SATELLITE UNIT

The power supply should be 220 V ac. It is recommendable to do this as directly as possible from the general switch, avoiding that the same cable supplies command lines (relays, switches, etc.).

For unstable or fluctuating voltages, use grid stabilizers.

It is important to connect the earth terminal, to discharge the fluctuations that could be in the supply.

If the equipment is placed on an electric switch board, the earth terminals of the equipment should be joined in star, at the same point of the switchboard and from this one to the earth terminal bar with a section equal to the supply cables of the switchboard.

The equipment is protected in the supply by a varistor between the phase and the neutral which will short circuit the fuse on detecting an overload on the line, and the two supply lines are filtered towards the earth terminal.

Do not increase the value of the fuse, as this would produce the destruction of components. On the backside of the cover for the connection housing, there are some spare fuses.

2.2. CONNECTION TO THE BASE PLATE

To connect the unit, remove the cover to reach the terminals.

For the cable entries, it is necessary to remove the relevant dies.

It is necessary to install the stuffing box (prensaestopas) in the open dies.

It is advisable to connect the cables to the terminals with connection terminals.

2.3. IMPORTANT NOTES

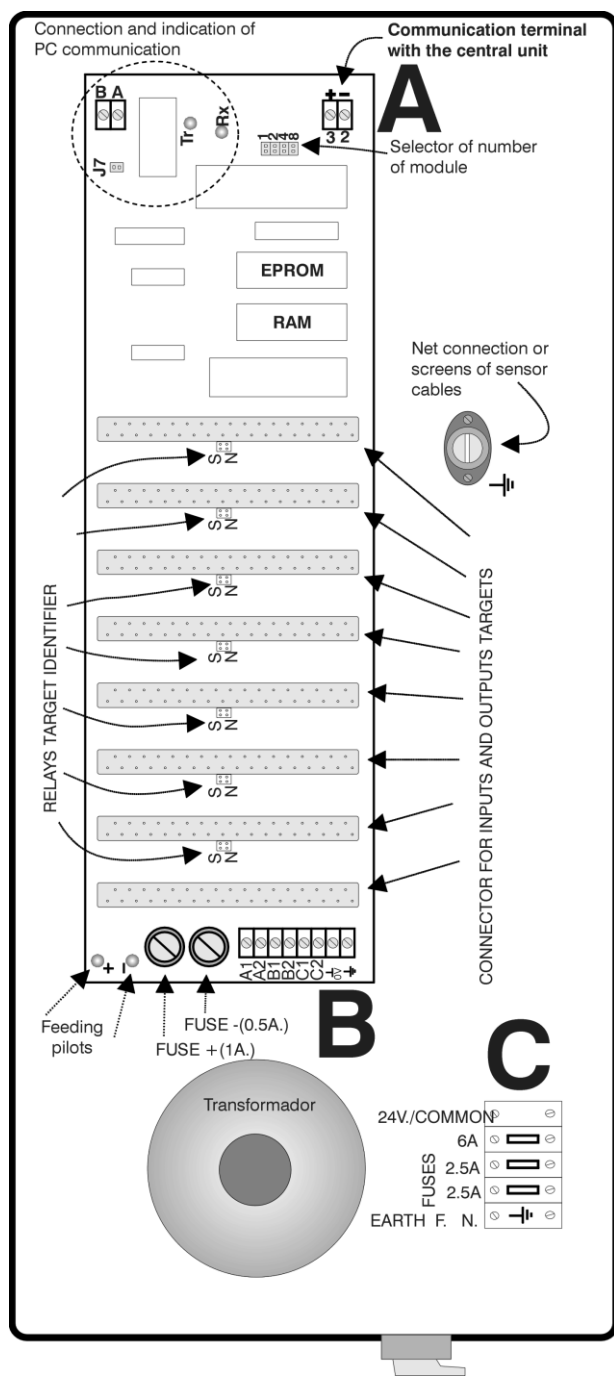
Do not connect or disconnect any card when the equipment is working.

When the equipment is working, it is necessary that, at least, one card of analogical inputs is connected.

The cables of the sensors must never be installed next to power lines, fluorescent lights, etc, to avoid interferences.

GROUP OF TERMINALS "A"

TERMINAL 2.- To the terminal 2 of the group "D".



GROUP OF TERMINALS "B"

INPUT TERMINALS 220 V ac.- Earth terminal, terminal with a 2.5A fuse for the phase and terminal with a 2.5A fuse for the neutral.

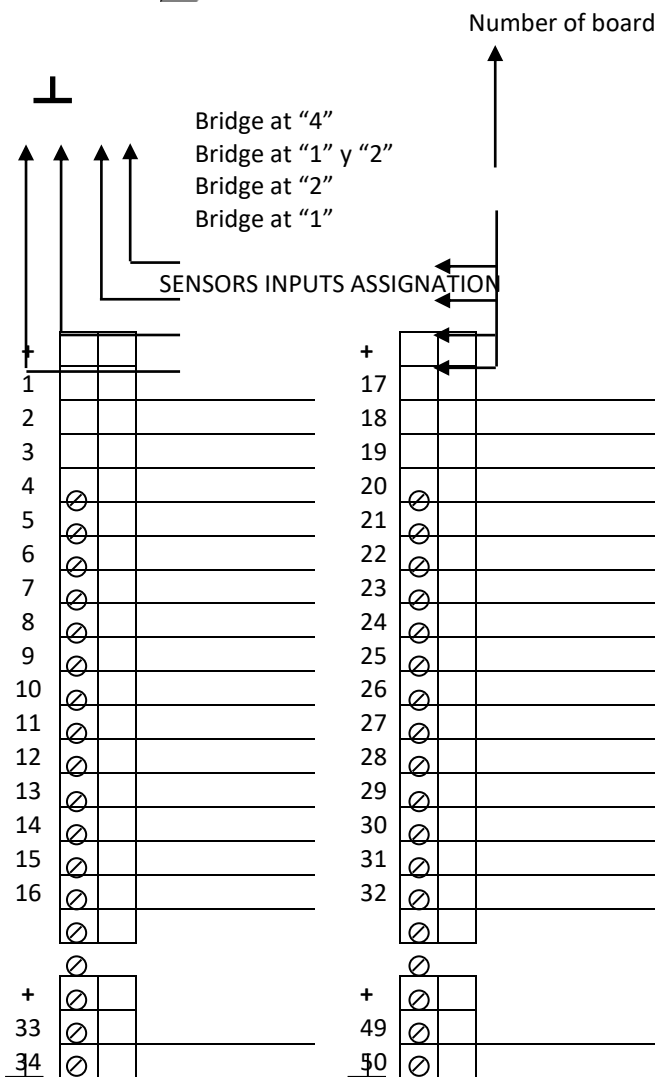
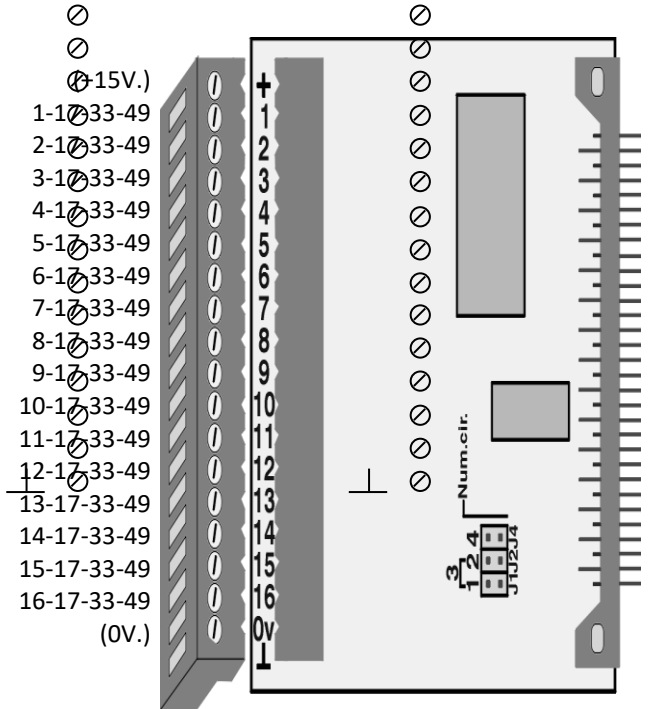
OUTLET TERMINALS OF 24 V ac.- One of these terminals has a 4 A fuse. Use it to supply the elements connected to the outlets of relay.

2.4. CONNECTION TO THE ANALOGICAL INPUTS

The maximum power supply of input should be, more or less, 10V.

Every input has been prepared at the factory according to the sensor we have to connect to it.

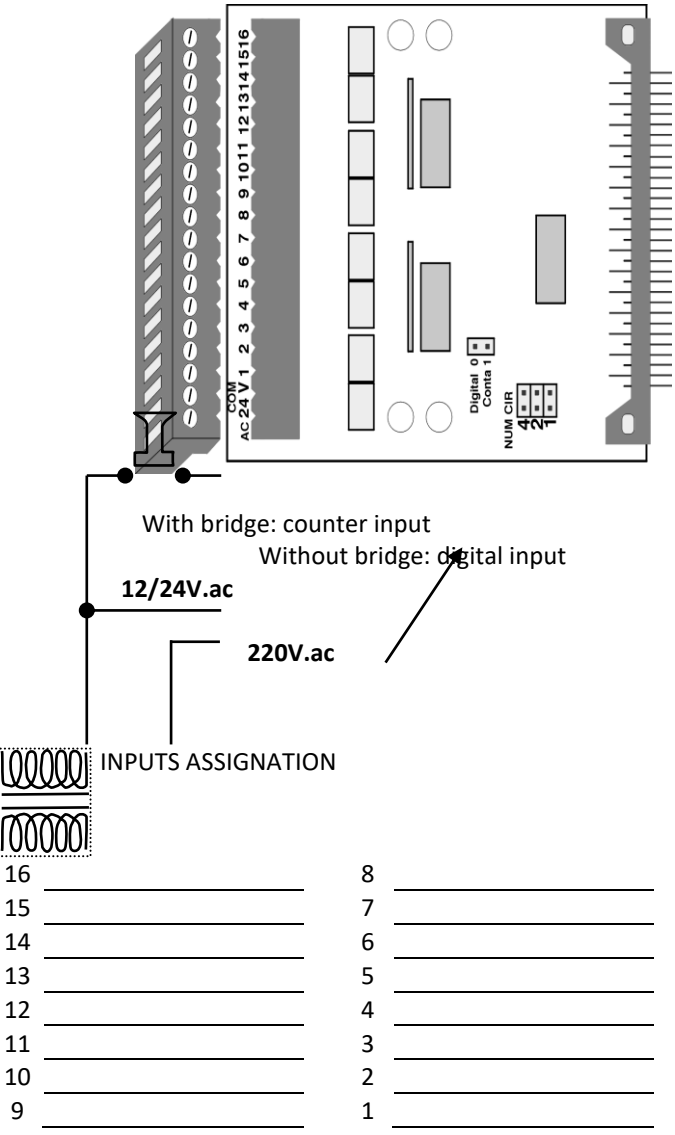
Modify, if necessary, the bridge of board number to change the numeration of input.



35				51			
36				52			
37				53			
38				54			
39				55			
40				56			
41				57			
42				58			
43				59			
44				60			
45				61			
46				62			
47				63			
48				64			

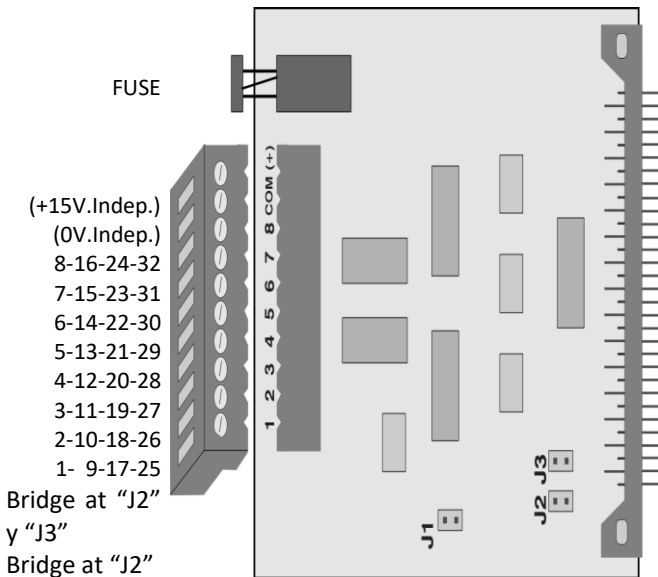
2.5. CONNECTION OF DIGITAL/COUNTING INPUTS

The board has to be supplied from 12 to 24 V ac or dc.



2.6. CONNECTION OF ANALOGICAL OUTPUTS

These outputs provide from 0 to 10 V.



Bridge at "J2"
y "J3"

Bridge at "J1" y "J3"
Bridge at "J1"

OUTPUTS ASSIGNATION

8	16
7	15
6	14
5	13
4	12
3	11
2	10
1	9
24	32
23	31
22	30
21	29
20	28
19	27
18	26
17	25

2.7. CONNECTION OF OUTLETS BY RELAY

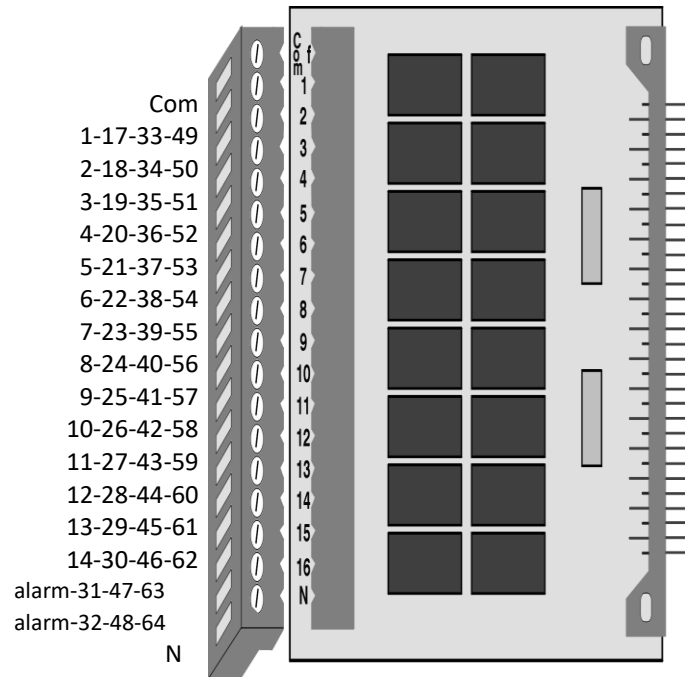
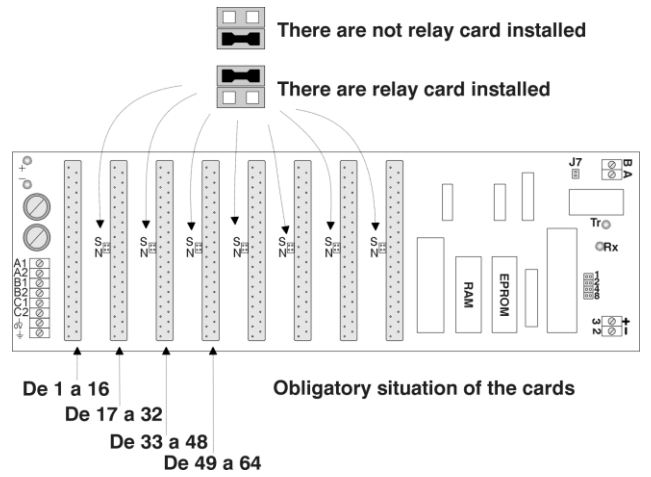
The relay board can only work with supplies inferior to 30 V and a maximum supply by output of 1A.

Each outlet is protected by a varister.

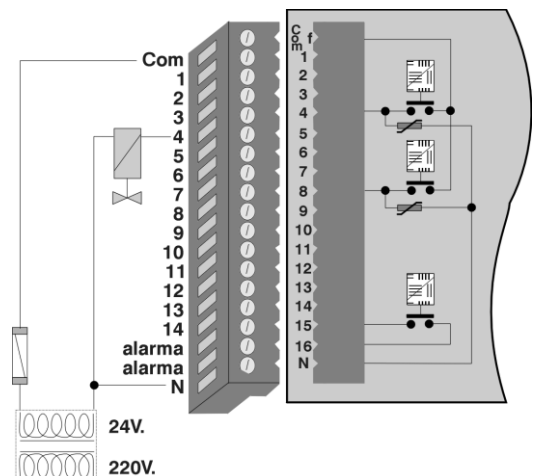
The board that contains the outputs from nº 1 to nº 16 normally has an alarm outlet, which is free of tension, placed at the outlets 15 and 16.

The order of numeration of the outlets depends on the situation of the boards of E/S on the base board, as it is shown in the following graphics.

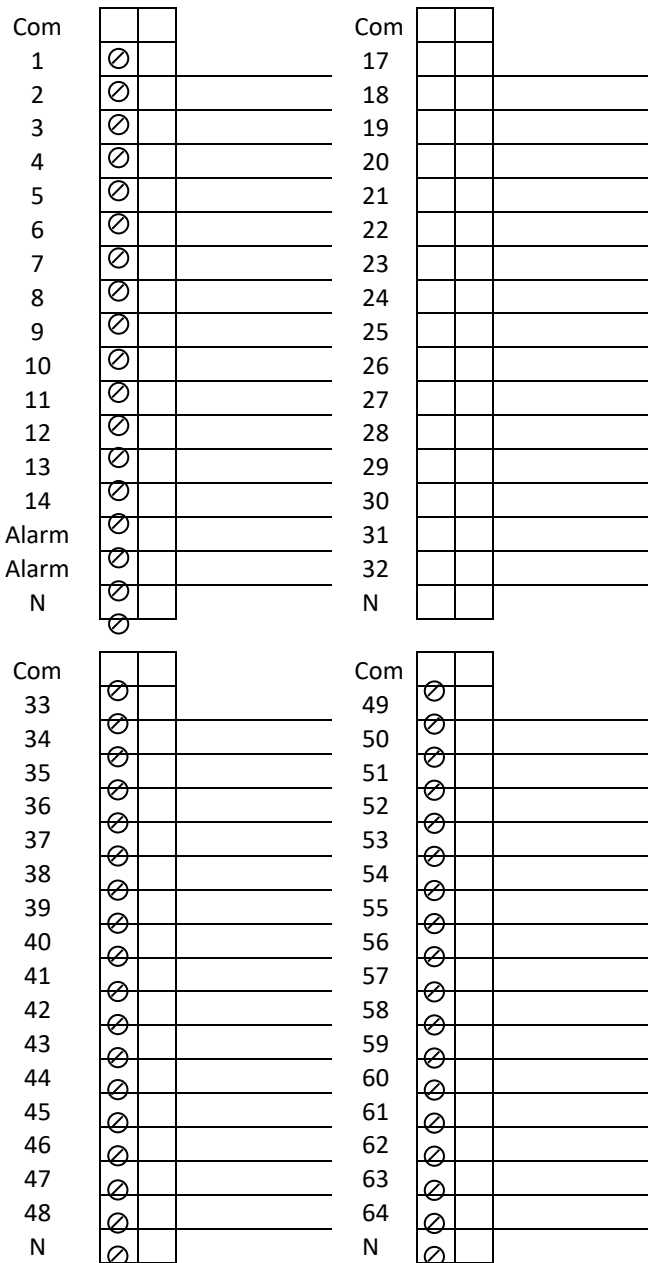
We have to take into account the bridges placed by the connectors of the base board, always placing the bridge at the position "yes" (si), when there is a board of relays at this connector.



The first 32 relays are the fastest to respond.
The outlets number 15 and 16, correspond to the alarm. Without the alarm, the contact remains closed between the terminals 15 and 16, being free of tension.



CONNECTION OF RELAY OUTLETS



BE CAREFUL WITH THE ANALOGICAL OUTLETS OF AMBITROLS!

In the Ambitrol sets with analogical outlets of 0 to 10 V, it is necessary to protect the outlets with screened cable. Also, these cables should never be installed next to power lines.

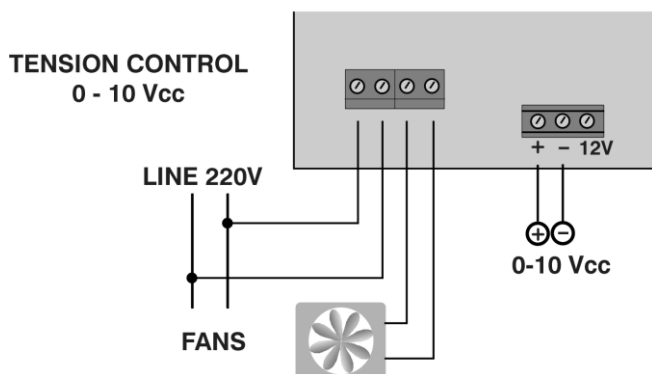
The cable screen should be connected by one end at the earth. If there is no earth, it should be connected to the common of the analogical outlets.

These outlets are usually connected to regulating sets, therefore we have to take into account that when one of these sets is disconnected from the power supply, an overload of these outlets could be produced. In this case, a device that disconnects the set from the power supply should be installed, which also disconnects the 0-10 V signal (this anomaly has been noticed in gas regulators).

It is also necessary to screen the analogical inputs of the sensors and also keep them away from power lines.

If, because it is unavoidable, the set is mounted next to contacts that have inductive charges, it would be necessary to install spark suppressors, to its contacts so that this would not affect the normal working of the set.

2.8. CONNECTION OF THE MONO-PHASE SPEED REGULATOR



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