While thanking you for having chosen a PASO product, we would like to remind you that our company works according to a certified Quality System. This means that all our products are checked during every phase of manufacturing in order to ensure that you will be fully satisfied with your purchase. In any case, the guarantee will cover any manufacturing flaws during the guarantee period. We recommend that you read the following instructions for use and follow them carefully in order to exploit in full the performance of this product and use it correctly.

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1. NUMBERED REFERENCES

P8236 slave control panel
1. Music/programming switching keys.
2. Mains switch with ON/OFF signalling lamp.
3. Mains plug with built-in fuse.
4. Frame socket.
5. Terminals for 24 VDC external power supply.
6. Override control terminal strip.
7. Override control socket.
8. Voice input terminal strip, zones 1 to 3.
9. Music input terminal strip, zones 1 to 3.
10. Output terminal strip, zones 1 to 3.
14. Local music source input.
15. Music output volume control.
17. Music output.
18. Voice/music output volume control.
19. Connector to local units.
20. Chime level control (accessible from the bottom of the unit).
21. Connectors suitable to connect slaves together.

ACIO8136 I/O expansion board
1. Relay contact output.
2. Input/output connectors to the system.
3. Input sensitivity control.
4. Balanced audio input.
5. Service power supply with protection.
6. Common input negative.
7. Optoinsulated inputs.
8. Local power-supply socket.
2. GENERAL PRECAUTIONS

2.1 Installation

All PASO equipment is manufactured in accordance with the most stringent international safety standards and in compliance with European Community requisites. In order to use the equipment correctly and effectively, it is important to be aware of all its characteristics by reading these instructions and in particular the safety notes carefully.

While the equipment is working, it is necessary to provide adequate ventilation. The equipment must not be closed inside cabinets without ventilation or kept in the vicinity of sources of heat.

2.2 Power supply and earthing

This equipment is designed for use with a mains voltage of 230 V ± 10% 50/60 Hz. The ON/OFF switch (2) controls the mains voltage. The equipment is supplied with its own powersupply cable, which is equipped with an earthing wire. The earth terminal of the mains plug should never be removed under any circumstances. Connect the mains plug (3) of the equipment to the power mains using the cable included in the supply. Make sure that the power outlet is equipped with a connection to earth in accordance with the law. The power-supply circuit of the P8236 is protected by a fuse installed on the mains plug of the equipment.

2.3 Safety notes

Any activities inside the equipment such as maintenance and so on may only be carried out by specialised personnel: when the cover is removed, parts liable to cause electric shocks are exposed. Before removing the cover, always make sure that the power cord has been disconnected. In the event that liquid is accidentally spilt onto the apparatus, disconnect the mains plug immediately and contact the nearest PASO Service Centre. The chassis connection may be used to connect other equipment only for the purpose of shielding the low signals: this socket may not be used to connect the chassis to earth for safety purposes.

3. INTRODUCTION

The P8236 slave control panel provides an advanced solution for all sorts of systems for calling from a minimum of 6 zones up to a maximum of 36 zones, using from 1 up to a maximum of 6 sets. It is possible, in a simple and flexible manner, to create both small and powerful systems. In the case of a system with more than one slave unit, the control element consists of the slave for which the address 0 has been set, which takes care of addressing the calls from the stations connected to it to the selected zones. It is also possible to have local stations connected to the other slave units for calls to zones belonging to a pre-set group of slave units.

The following Paso microphone units of the PMB range are compatible with this equipment:
- PMB106: 6-zone calling stations
- PMB112: 12-zone calling stations
- PMB112-E: 12-zone expansion for PMB112

In addition to using the microphone stations, it is also possible to use ACIO8136 cards. These support various different operating modes, with activation of zones by means of contacts or with automatic voice detection (VOX).

All Paso amplifiers with constant-voltage outputs can be used with these systems. The information contained in this manual also applies when the slave units are used connected to the P8136 master control panel (which replaces the slave unit with the address 0, since it is built-in); for instructions on use of the master panel, refer to appropriate manual.

4. SOUND-BROADCASTING SYSTEMS

This chapter will propose 5 different prototypes of systems of a general nature, on which it is possible to base the desired configuration.

Following is a list of definitions for some of the terms used in this manual:

Address: Value that increases progressively from 0 to 5 identifying univocally the single slave units; two slave units with the same address cannot co-exist in the same system.

Group: set of one or more slave units connected to the outputs of a single amplifier; these sets are identified by group numbers that increase progressively from 0 to 5; obviously, the slave units belonging to one and the same group must all have the same group number.

Group leader: slave unit with the lowest address within a group; a special case is that of the slave having the address 0 which is always the group leader of group 0; another special case is that of a group consisting of a single slave unit, so that that slave will be the group leader; the importance of the group leader consists of the possibility of connecting and managing stations and of driving the voice (or voice/music) amplifier. The system recognises the group leader automatically; this function cannot be set manually.

Main stations: stations connected to the slave having the address 0 that can select any of the existing slave units.

Local stations: stations connected to the slave group leader and having addresses other than 0, which can access all the zones of the group.

Main-station zone numbering: The zones are numbered automatically on the basis of the slave units’ addresses; zone 1 corresponds to zone 1 of the slave unit having the address 0, zone 7 corresponds to zone 1 of the slave unit having the address 1, and so on.

Local-station zone numbering: The zones are numbered automatically on the basis of the addresses of the group leaders; zone 1 corresponds to zone 1 of the group leader, zone 7 corresponds to zone 1 of the slave unit having the address immediately above that of the group leader and belonging to the same group, and so on.
4.1 Voice/music with a single amplifier

In this configuration (Fig. 4.1.1), it is possible to select zones in which to broadcast music; in the event of a call, these zones will be de-activated (and, if appropriate, activated for the call), only to be automatically returned to music at the end of the call.

The configuration calls for a single amplifier for broadcasting both voice (call) and background music, if available. The amplifier is connected to the **MIX OUT** output (16) of the slave unit having the address 0, while its output is connected in parallel to terminals **SP** (8) and (12) and **M.** (9) and (13) of all the slave units envisaged. The calling stations (and/or the **ACIO8136** cards) are connected to one another in cascade fashion and, lastly, to the **LOCAL UNIT** socket (19) of the slave unit having the address 0. If available, the music source is connected to the **MUSIC IN** input (14) of the slave unit having the address 0. Lastly, the slave units are placed in communication with one another by means of cat. **5 SF/UTP** cables to be connected to the **LINK IN/OUT** sockets (21).

Conflicts between calls pertaining to **PMB** stations and **ACIO8136** cards are managed according to call priority criteria: a call in progress can only be interrupted by another call with a clearly higher priority.

**Fig. 4.1.1**

Following are the criteria for sizing the system and the procedure for the initial setting.

**Sizing**
- Number of slave units = (number of zones)/6, rounded off to the next highest whole number.
- Maximum number of **ACIO8136** cards = 6.
- Maximum number of **PMB** stations = 16 – (number of **ACIO8136** cards)
- Sizes of **PMB** stations:
  - a. System of up to 6 zones: **PMB106**.
  - b. System of up to 12 zones: **PMB112**.
  - c. System of up to 24 zones: **PMB112 + 1xPMB112-E**.
  - d. System of up to 36 zones: **PMB112 + 2xPMB112-E**.

Maximum distance between the first slave unit and the last: 1 km
Maximum distance between the slave unit and the last station: 1 km.
System settings
1. Select the addresses of the slave units starting from 0.
2. Set the group number as 0 for all the slave units.
3. Set the operating mode of all the slave units as single (see Settings, "Music Mode", on page 16).
4. Activate/de-activate the CHIME function on the slave unit having the address 0, as desired.
5. Set the addresses of the ACIO8136 cards, if any, progressively, starting from 1.
6. Set the desired operating mode for the cards.
7. On the PMB stations, set the addresses continuing in the progressive order from point 5; naturally, if there are no ACIO8136 cards start with the address 1.
8. Set the priorities of the various different PMB stations as required (N.B.: Keep in mind that the ACIO8136 cards have a fixed priority level of 5).
9. Set the MIX OUT (16), MUSIC OUT (17) and CHIME (20) controls to their lowest levels. First of all adjust the MIX OUT control (16) to obtain the desired sound level for calls, then set the CHIME control (20) (if this function is not activated, the level should be set to the minimum).
10. Lastly, set the level of the background music using the MUSIC OUT control (17) (if no background music will be provided, the level should be set to the minimum).

Tips
- If it is necessary to have at disposal an overall output power exceeding that of a 500 W amplifier (the most powerful available in the PASO range), it is possible to use more than one amplifier; the inputs, in parallel, will be connected to the MIX OUT output (16) of the slave unit having the address 0; the output of each amplifier will drive one sub-group of zones, the overall power of which must be compatible with the rated output of the amplifier (to make it easier to meet this need, the 6 output zones of the slave unit are split up into two groups of 3, insulated electrically from one another, and each with its own voice and music inputs; this makes it possible to use up to two amplifiers for each slave).

An example is shown in the figure (Fig. 4.1.2).

If no background music is to be provided, it is not necessary to cable the M. terminals (9) and (13) of the slave units.
4.2 Voice with single amplifier and separate music

This configuration (Fig. 4.2.1) copies the previous one, with the addition of one dedicated amplifier for broadcasting background music. The specific feature of this configuration is that the music is maintained in those zones not affected by the call.

In this case, the voice amplifier, driven by the MIX OUT output (16) of the slave unit having the address 0, will have its outputs connected in parallel only to the SP terminals (8) and (12) of all the slave units provided. The music amplifier will be driven by the MUSIC OUT output (17) of the slave unit having the address 0 and its outputs will be connected in parallel to M. terminals (9) and (13) of all the slave units present.

The criteria for sizing the system and the procedure for making the initial setting are provided below.

**Sizing**

This is similar to section 4.1 above.

**System settings**

The settings are identical to those of section 4.1, with the exception of point 3:

3. Set the operating mode of all the slave units as dual (see Settings, "Music Mode", on page 16).

**Tips**

- Again in this case, should it be necessary to have at disposal an overall power exceeding that of a 500 W amplifier (the most powerful in the PASO range) it is possible to use several amplifiers as explained in the tips in section 4.1.

- For those slave units with zones in which no background music is planned, it will not be necessary to m. cable terminals (9) and (13).

- Generally speaking, the background music is distributed at a low level, requiring less power than for calls; in these cases, to make the system more economical, it is possible to use an amplifier for the music with a rated output equal to half that of the voice amplifier and to use the 70 V output versus the 100 V of the voice amplifier.

- If the music amplifier has its own volume control, the source of music can be connected directly to the input of the amplifier rather than to the MUSIC IN input (14), so as to save on the cabling.
4.3 Voice/music with multiple amplifiers

This type of system can be used to meet two different needs in concrete terms:

- the need to separate the installation physically into several sub-systems located in positions distant from one another;
- the need to create subsystems with local call stations.

In the diagram provided by way of example, a system has been configured split up into three subsystems. The first, which has 12 zones, consists of the slave units having the addresses 0 and 1, the second, with 6 zones, consists of the slave unit having the address 2 and the last, with 18 zones, consists of the slave units having the address 3, 4 and 5. The amplifiers (3, one for each of the groups formed) are driven by the MUSIC IN/OUT sockets (19) of the slave unit having the address 0; the local call stations (and/or the ACIO8136 cards) are connected to one another in cascade fashion and, lastly, to the LOCAL UNIT socket (19) of the group leader slave units (in our case those having the addresses 0, 2 and 3). If provided, the source of music will be connected to the MUSIC IN input (14) of the slave unit having the address 0 and of the group leader slave units. Lastly, the slave units are placed in communication with one another by means of cat. 5 SF/UTP cables to be connected to the LINK IN/OUT sockets (21). In this configuration, it is possible to select zones in which to broadcast music; in the event of a call within one group, the zones with music in this group will be de-activated (and, if appropriate, activated for the call), to be automatically returned to the music at the end of the call. The advantage of this solution is that the background music is kept active in all those zones belonging to groups not affected by a call. Again with reference to the example, the main stations will be able to place calls for each of the 36 zones in the system, while the local stations connected to the slave unit having the address 2 will have access to zones 13 to 18 (corresponding to the selection 1 to 6 on the keypads of the local stations); lastly, the local stations connected to the slave unit having the address 3 will have access to zones 19 to 36 (corresponding to the selection 1 to 24 on the keypads of the local stations).

Calls made from the main stations (or ACIO8136 cards) have priority over those from the local stations (or ACIO8136 cards); this takes the groups affected by the calls into account:

- **Example A**: If a local station connected to slave unit 2 is occupying zone 1 of its group (that is to say referred to the system as a whole) and a main station starts a call to zone 30 of the system (which does not belong to the same group as the slave unit having the address 2), then the local station can continue its call.
- **Example B**: If a local station connected to slave unit 2 is occupying zone 1 of its group (that is to say referred to the system as a whole) and a main station starts a call to zone 15 of the system (belonging to the same group as the slave unit having the address 2), then the local station will be disabled and likewise the zones occupied by it.

Conflicts between calls from the PMB stations and ACIO8136 cards connected to the same slave unit are managed on the basis of the caller priority criteria: a call in progress can only be interrupted by another call with a higher priority.

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**Example of a 36-zone system split up into three groups of amplifiers.**

*Fig. 4.3.1*
The criteria for sizing the system and the procedure for making the initial setting are provided below.

**Sizing**

- Identify the number of groups needed and the number of zones per group;
- Number of slave units per group = \((\text{number of zones per group})/6\), rounded off to the next highest whole number;
- Total number of slave units = sum (number of slave units per group);
- For group 0: maximum number of main ACIO8136's = 6;
- For group 0: maximum number of main PMB stations = 16 – (number of main ACIO8136's);
- For each additional group: maximum number of local ACIO8136's = 6;
- For each additional group: maximum number of local PMB stations = 16 – (number of local ACIO8136's);
- Sizes of the main PMB stations:
  - e. System of up to 6 zones: PMB106;
  - f. System of up to 12 zones: PMB112;
  - g. System of up to 24 zones: PMB112 + 1xPMB112-E;
  - h. System of up to 36 zones: PMB112 + 2xPMB112-E;
- Sizes of the local stations (to be considered for each group apart from group 0):
  - i. Group of up to 6 zones: PMB106;
  - j. Group of up to 12 zones: PMB112;
  - k. Group of up to 24 zones: PMB112 + 1xPMB112-E;
  - l. Group of up to 36 zones: PMB112 + 2xPMB112-E;
- Maximum distance between the first slave unit and the last: 1 km
- Maximum distance between the slave unit and the last station: 1 km.

**System settings**

1. In the slave unit having the address 0, insert the two jumpers for sending the audio signal of the stations to the LINK connection (see Settings, "Audio selection of stations on slave with address 0", page 16).
2. Select the addresses of the slave stations starting from 0.
3. Set the group number as 0 for the slave unit having the address 0 and for the slave units of the same group.
4. Set the group number as 1 for the next group leader and for the slave units of the same group; continue with group 2 and so on.
5. Set the operating mode of all the slave units as single (see Settings, "Music Mode", on page 16).
6. Activate/de-activate the chime function on the slave unit having the address 0 and on the other group leader slave units, as desired.
7. Set the addresses of the main ACIO8136 cards, if any, in numerical progression starting from 1.
8. Set the desired operating mode for the cards.
9. Set the addresses on the main PMB stations, continuing the progression from point 7; of course, if there are no ACIO8136 cards, start from address 1.
10. For each group other than 0, set the addresses of the local ACIO8136 cards, if any, in progressive order starting from 1.
11. Set the desired operating mode for the cards.
12. Again for each group other than 0, set the addresses on the local PMB stations, continuing the progression from point 10; of course, if there are no ACIO8136 cards, start from address 1.
13. Set the priority levels of the various different main PMB stations as required (N.B.: Keep in mind that the ACIO8136 cards have a fixed priority level of 5).
14. Set the priorities of the various local PMB stations as required (N.B.: Keep in mind that the ACIO8136 cards have a fixed priority level of 5).
15. Set the MIX OUT (16), MUSIC OUT (17) and CHIME (20) controls of the group leader slave units to their lowest levels. First of all adjust the MIX OUT controls (16) of the group leader slave units to obtain the desired sound level for calls, then set the CHIME controls (20) of the group leader slave units. N.B.: If the chime function is activated on the slave unit having the address 0, it is necessary to adjust the CHIME (20) level of each group leader, even if it is not activated locally (if the function is not activated on any group leader, the level should be set to the minimum).
16. Lastly, set the level of the background music using the MUSIC OUT control (17) on each group leader slave unit (if no background music will be provided, the level should be set to the minimum).

**Tips**

- Again in this case, should it be necessary to have at disposal an overall output power exceeding that of a 500 W amplifier (the most powerful in the PASO range) it is possible to use several amplifiers as explained in the tips in section 4.1.
- For those groups for which no background music is planned, it will not be necessary to cable the M. terminals (9) and (13) for the slave units of those groups.
- To create local stations also for the slave unit having the address 0 (that is to say that can select only zones in group 0), it is possible to use stations with a smaller number of keys than on the main stations (in the example, the main stations have 36 keys– 1xPMB112 + 2xPMB112-E; to have local stations only able to select zones 1 to 12, use PMB112's without expansions).
4.4 Voice with multiple amplifiers and separate music
This configuration (Fig. 4.2.1) copies the previous one, with the addition of dedicated amplifiers for broadcasting background music. In this case, the voice amplifiers, driven by the MIX OUT outputs (16) of the group leader slave unit will have their outputs connected in parallel only to the SP terminals (8) and (12) of the slave units provided. The music amplifiers will be driven by the MUSIC OUT outputs (17) of the slave units and the outputs will be connected in parallel to the M. terminals (9) and (13) of all the slave units present. The specific feature of this configuration is that the music will be maintained in the zones not affected by the call, regardless of the groups.

Following are the criteria for sizing the system and the procedure for the initial setting.

Sizing
This is similar to section 4.3 above.

System settings
The settings are identical to those illustrated in section 4.3 above, with the exception of point 5:
5. Set the operating mode as dual for all the slave units (see Settings, "Music Mode", on page 16).

Tips
- Again in this case, should it be necessary to have at disposal an overall output power exceeding that of a 500 W amplifier (the most powerful in the PASO range) it is possible to use several amplifiers as explained in the tips in section 4.1.
- For slave units with zones in which no background music is planned, it will not be necessary to cable M. terminals (9) and (13).
- Generally speaking, the background music is distributed at a low level, requiring less power than for calls; in these cases, to make the system more economical, it is possible to use amplifiers for the music with a rated output power half that of the respective voice amplifiers and to use the 70 V output versus the 100 V of the voice amplifiers.
- If the music amplifier has its own volume control, a more immediate method could be to connect the source of music directly to the amplifier rather than to the MUSIC IN input (14), so as to save on the cabling.
4.5 Systems with zone amplifiers

This type of system is used to drive very powerful zones each requiring its own amplifier. In this case, the input signal to the amplifiers is switched instead of the power output. The diagram shown above is also completed by the cabling of the signal for background music. It can be noted that this diagram is very similar to that associated with section 4.2, with the voice and music amplifiers “transported and combined” downstream from the zone switchings.

Similarly, it is possible to apply the criteria of the general diagram of section 4.4, “transporting and combining” the voice and music amplifiers downstream from the zone switchings, so as to create groups of zones and insert local stations.

As far as concerns sizing and setting of the system according to Figure 4.5.1, refer to section 4.2. For a group-based system refer, on the other hand, to section 4.4.
5 CONNECTIONS

5.1 Amplifiers

For the connection on the amplifier side, refer to the relevant manual, taking into account that the connection relays signals of the unbalanced type at line level.

a. Installations as in sections 4.1, 4.2, 4.3 and 4.4

- Input connections

The connections are of the unbalanced type, using phono plugs. The signals of the plugs are shown in Figures 5.1.1 and 5.1.2.

The amplifiers are connected only to the MIX OUT sockets (16) in the case of voice/music amplifiers (sections 4.1 and 4.3); in cases 4.2 and 4.4 the voice amplifiers are connected to the MIX OUT socket (16), while the music amplifiers are connected either to the MUSIC OUT socket (17) or directly to the source of sound.

- Output connections

Only the constant voltage outputs of the amplifiers (100V, 70V or 50V) are used; for correct sizing of the system in terms of power, refer to the manuals of the amplifiers and to the specifications of the speaker units used.

For connecting the amplifiers to the slave unit, it is possible to distinguish between two different cases:

- Voice/music amplifiers (sections 4.1 and 4.3)

The output of the amplifier must be connected in parallel to the SP terminals (8) and (12) and to the M. terminals (9) and (13) of the slave unit, as illustrated by way of example in Fig.5.1.3; if no background music is planned, it is possible not to make the connection to the M. terminals (9) and (13).

- Separate voice and music amplifiers (sections 4.2 and 4.4)

The output of the voice amplifier must be connected in parallel to the SP terminals (8) (12) of the slave unit, while the output of the amplifier music is connected in parallel to the M. terminals (9) and (13) as illustrated by way of example in the figure; if no background music is planned, it is possible not make the connection to the M. terminals (9) and (13).

NOTE: Take care at all times to observe the polarity between the amplifier outputs and the SP terminal strips (8), (12) and M. terminal strips (9) and (13): 0V line of the amplifier on the 0 terminal of the slave unit and 100V (or 70V or 50V) line of the amplifier on the L terminals of the slave unit. In the event of an error, a short circuit on the output of the amplifier could occur.
b. Installation according to section 4.5

The MIX OUT (16) and MUSIC OUT (17) outputs must be connected to the SP terminals (8) and (12) and to the M. terminals (9) and (13) respectively of inputs IN 1 to 3 and IN 4 to 6 , observing the polarity of the signals:

- The signal on terminal L
- The shield on terminal 0

The signals for driving the amplifiers are taken from the output terminals of zones (10) and (11) , with the following polarities:

- The signal on terminal L
- The shield on terminal 0
5.2. Speaker units and override controls
The speaker units are connected to output terminal strips Z1 to Z6 (10) and (11); pay attention to connecting the line correctly, observing the polarities for 0 (0V) and L (100V 0 70V or 50V) in order to maintain the correct phase of the speaker units (Fig. 5.2.1). For the connection, refer also to the instructions of the speaker units used.

There are controls on the OVERRIDE terminal strip (6) for activating the 24V relays of the volume controls for the speaker units. These controls are active for the zones liable to receive calls to enable broadcasting of messages always at the highest level. By way of example, Figure 5.2.2 shows the diagram referred to connection of a control over zone 1. The output voltages are protected by resettable fuses.
The microphone stations and ACIO8136 cards are connected to one another in cascade fashion with **cat.5 SF/UTP** cable starting out from the **LOCAL UNITS** socket (19) of the slave unit (see Fig. 5.3.2). The signals and the pinouts of the connectors are illustrated in Figure 5.3.1 and in the table.

It is pointed out that the sequence of connection is completely independent of the addresses of the stations and/or of the cards.

### 5.3. Microphone stations and ACIO8136 cards

The microphone stations and ACIO8136 cards are connected to one another in cascade fashion with **cat.5 SF/UTP** cable starting out from the **LOCAL UNITS** socket (19) of the slave unit (see Fig. 5.3.2). The signals and the pinouts of the connectors are illustrated in Figure 5.3.1 and in the table.

It is pointed out that the sequence of connection is completely independent of the addresses of the stations and/or of the cards.

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<th>Signal</th>
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<td>2</td>
<td>orange</td>
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<tr>
<td>5</td>
<td>OVR4</td>
<td>5</td>
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<tr>
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**STANDARD T568A**

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</tr>
<tr>
<td>8</td>
<td>brown</td>
</tr>
</tbody>
</table>

**STANDARD T568B**

<table>
<thead>
<tr>
<th>Pin</th>
<th>Colour</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>white/orange</td>
</tr>
<tr>
<td>2</td>
<td>orange</td>
</tr>
<tr>
<td>3</td>
<td>white/green</td>
</tr>
<tr>
<td>4</td>
<td>blue</td>
</tr>
<tr>
<td>5</td>
<td>white/blue</td>
</tr>
<tr>
<td>6</td>
<td>green</td>
</tr>
<tr>
<td>7</td>
<td>white/brown</td>
</tr>
<tr>
<td>8</td>
<td>brown</td>
</tr>
</tbody>
</table>

**Shield**

<table>
<thead>
<tr>
<th>Pin</th>
<th>IN/ OUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Audio +</td>
</tr>
<tr>
<td>2</td>
<td>Audio -</td>
</tr>
<tr>
<td>3</td>
<td>GND</td>
</tr>
<tr>
<td>4</td>
<td>n.c.*</td>
</tr>
<tr>
<td>5</td>
<td>n.c.*</td>
</tr>
<tr>
<td>6</td>
<td>+Voc</td>
</tr>
<tr>
<td>7</td>
<td>Serial +</td>
</tr>
<tr>
<td>8</td>
<td>Serial -</td>
</tr>
</tbody>
</table>

* = not connected
5.4 Sources of sound
The sound sources must be connected to the MUSIC IN stereo input (14) for systems with voice/music amplifiers. For systems with separate music amplifiers, the source can be connected to the MUSIC IN stereo socket (14) and taken from the MUSIC OUT socket (17) for the music amplifier or, as an alternative, directly from the music amplifier.

The MUSIC IN stereo socket (14) takes care automatically of mixing the two stereo channels; if the source is a mono source, it can be connected to either of the two MUSIC IN sockets indifferently (14).

5.5 Link
The slave units are connected to one another by means of the LINK IN/OUT (21) connection; this enables an exchange of data between the slave units and places the audio signals of the main stations connected to the slave unit having the address 0 in common. In systems using P8136 master card cage, LINK IN/OUT (21) carries both the audio signal of the master stations and the music signal from the source selected on the P8136. In the event of systems consisting of a single slave unit, the LINK IN/OUT (21) connection is not used.
6. SETTINGS
6.1 P8236 Control Panel
To make the settings, it is necessary to press simultaneously key 1 and one of the keys from 2 to 5, depending on the parameter to be selected, on the PROGRAm (1) keypad. In this way, the slave unit enters the programming mode and LED 6 will start to flash. During programming, the slave unit will not carry out any operations on the data line. After changing the setting, press key 6 to save the selection and return to normal operation.

The possible settings are:

- **Address**
  Press simultaneously keys 1 and 2; LEDs 1 to 5 will indicate the current address of the slave unit; if all the LEDs are extinguished, the address is 0. To change your selection press the key corresponding to the address to be set (from 1 to 5); to select the address 0 press the key corresponding to the illuminated LED.

- **Group**
  Press simultaneously keys 1 and 5; LED’s 1 to 5 will indicate the current group number of the slave unit; if all the LED’s are extinguished, the group is 0. To change your selection press the key corresponding to the group number to be set (from 1 to 5); to select group number 0 press the key corresponding to the illuminated LED.

- **Music Mode (single/dual)**
  Press simultaneously keys 1 and 4; LED 1 will indicate the current mode of the slave unit:
  - **LED off**: single mode (voice/music amplifier)
  - **LED on**: dual mode (separate music amplifier)
  To change your selection press key 1.

- **Chime**
  Press keys 1 and 3 simultaneously; LED 1 will indicate the current chime mode of the slave unit:
  - **LED off**: chime de-activated
  - **LED on**: chime activated
  To change your selection press key 1.

**IMPORTANT!**
In order to carry out the following operations it is necessary to remove the cover of the equipment. Make sure that the equipment has been unplugged from the mains before removing the cover since parts entailing a DANGER OF ELECTRIC SHOCKS will be accessible inside the equipment. These operations must be carried out BY SPECIALISED PERSONNEL ONLY. To remove the cover, unscrew the four lateral fixing screws. After the operations put the cover back into place, securing it with the original screws.

- **Audio selection of stations on slave with address 0**
  In the diagrams 4.2, 4.4 and 4.5 provided as examples, in the group configuration it is necessary to insert the jumpers **CN125** and **CN126** as indicated in Fig. 6.1.1. **NB:** This operation must be carried out **ONLY** on the slave with the address 0.

- ** Interruption of the music signal**
  If local music only is required on a slave rather than that available on the LINK connection (from the P8136 Master Unit), the jumper **CN127** must be removed from inside the equipment (see Figure 6.1.1).

6.2 Microphone stations
The microphone stations of the **PMB** range can set the following:

- **Address**
- **Priority level**
- **Output signal level**
- **Speech filter (low-cut filter)**
To set the above parameters and to programme the keypad, if required, refer to the manual in the package containing the stations.
6.3 Expansion board ACIO8136
The settings on the ACIO8136 card are made by means of jumpers accessible under the top lid, which can be removed by unscrewing the four lateral fixing screws.

It is possible to make the following settings (with reference to Figure 6.3.1):

**NOTE** • = jumper inserted;    " = jumper not inserted.

- **Master/Slave Mode**
  Jumper ~S/M (J2) selects the operating mode of the card, depending on whether it is connected to a P8136 master or to a P8236 slave unit:

<table>
<thead>
<tr>
<th>Mode</th>
<th>-S/M</th>
</tr>
</thead>
<tbody>
<tr>
<td>P8136</td>
<td>●</td>
</tr>
<tr>
<td>P8236</td>
<td>-</td>
</tr>
</tbody>
</table>

In our case the jumper must be eliminated.

- **Address**
  The three jumpers ADDR2 to ADDR0 (J1) define the address of the card; the address must be between 1 and 6. The table shows the selection of addresses:

<table>
<thead>
<tr>
<th>Address</th>
<th>ADDR2</th>
<th>ADDR1</th>
<th>ADDR0</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>-</td>
<td>-</td>
<td>●</td>
</tr>
<tr>
<td>2</td>
<td>-</td>
<td>●</td>
<td>-</td>
</tr>
<tr>
<td>3</td>
<td>-</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>4</td>
<td>●</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>5</td>
<td>●</td>
<td>-</td>
<td>●</td>
</tr>
<tr>
<td>6</td>
<td>●</td>
<td>●</td>
<td>-</td>
</tr>
</tbody>
</table>

- **Operating mode**
  The two jumpers VOXA (J6) and VOXB (J7) define the operating mode of the card as far as concerns the activation and calling criteria:

<table>
<thead>
<tr>
<th>Operating modes</th>
<th>VOXB</th>
<th>VOXA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activation by means of input contacts</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>All Call VOX activation</td>
<td>●</td>
<td>-</td>
</tr>
<tr>
<td>VOX activation with zone selection</td>
<td>-</td>
<td>●</td>
</tr>
<tr>
<td>VOX activation with slave unit selection</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

The descriptions of the various different operating modes are provided in section 6.3.1.
When there is a signal present on the input, the card generates automatically a request for a call on the zones of the slave units corresponding to the input contacts closed at the time of activating VOX (contact 1 – zone 1, contact 2 – zone 2 and so on); the card accepts the contacts that close within 500 msec starting from the first contact that closes. Any closing after this will be ignored. If the slave unit enables the call, the card activates the audio line, otherwise it waits to be enabled. The call ends when all the contacts open again.

- **Common negative of the optoinsulated input contacts**
  The ports of the optoinsulated input contacts have one end in common (to which the negative pole of the driving voltage refers), while the other end is connected directly to the 6-pole terminal strip; the end in common can be connected directly to the earth of the card by means of jumper CN101 (35) in position A or it may be made available on the terminal of the card with the jumper in position B. This option enables the inputs to be driven using the +24V service voltage (jumper in pos. A) or by means of a voltage originating from another circuit (jumper in pos. B), keeping the card galvanically insulated from the equipment driving the inputs.

- **Speech filter (low cut filter)**
  Jumper CN107 (33) in position A enables the low frequencies to be cut off in order to improve intelligibility of speech; with the jumper in position B reproduction covers the whole band.

### 6.3.1 Operating modes

#### Activation by means of input contacts

Closing of one or more input contacts (7) generates a request for a call to the slave unit; the call is referred to the zones corresponding to the closed contacts (contact 1 – zone 1, contact 2 – zone 2 and so on); the card accepts the contacts that close within 500 msec starting from the first contact that closes. Any closing after this will be ignored. If the slave unit enables the call, the card activates the audio line, otherwise it waits to be enabled. The call ends when all the contacts open again.

- **All Call VOX activation**
  When a signal is present on the input, the card automatically generates a request for a call to 36 zones; the slave unit to which it is connected will activate all the available zones of the system (main cards) or of the group (local cards). If the slave unit enables the call, the card activates the audio line, otherwise it waits to be enabled. The call ends when the input signal is absent for more than about four seconds.

- **VOX activation with zone selection**
  When there is a signal on the input, the card automatically generates a request for a call to the zones corresponding to the input contacts closed at the time of activating VOX (contact 1 – zone 1, contact 2 – zone 2 and so on); any subsequent closing and/or opening of contacts will be ignored as long as VOX is active. If the slave unit enables the call, the card will activate the audio line, otherwise it waits to be enabled. The call ends when the input signal is absent for more than about four seconds.

- **VOX activation with slave unit selection**
  When there is a signal present on the input, the card generates automatically a request for a call on the zones of the slave units corresponding to the input contacts that are closed at the time of VOX activation (contact 1 – slave unit group leader – zones 1 to 6, contact 2 – slave unit group leader +1 – zones 7 to 12, and so on); subsequent closing and/or opening of contacts will be ignored throughout the period for which VOX is active. If the slave unit enables the call, the card will activate the audio line, otherwise it waits to be enabled. The call ends when the input signal is absent for more than about four seconds.

### 6.3.2 Relay modes

#### Repeating of contacts

The relay contacts simply repeat closing of the input contacts in an orderly manner (input 1 – relay contact 1, input 2 – relay contact 2 and so on).

- **Card status**
  The relay contacts are used to relay the card status information to outside:
  - RL1 speech enable: the contact is kept closed while the call from the card is enabled;
  - RL2 speech enable denied: the contact is kept open while the call from the card is enabled;
  - RL3 busy: the contact is kept closed while a call is in progress by another unit;
  - RL4 active input: the contact is closed to signal closing of one or more input contacts;
  - RL5 not used;
  - RL6 VOX gate: the contact closes to indicate the presence of a signal on the card input, regardless of whether it is enabled or not; the contact opens again when there has been no signal on the input for about 4 seconds.

### 6.3.3 Audio input

It is possible to connect a balanced audio source at line level to the terminal strip (4). Adjustment of the signal level is of the semi-fixed type by means of a screwdriver (3).

### 6.3.4 Power supply

The card can be powered directly from the slave unit by means of the connecting cable, or locally by means of the socket provided for this purpose (8).
7. USE
7.1 Selection of music
To include background music in a zone, it is sufficient to press the relevant PROGRAM INSERTION push-button (1) on the front panel of the device. To exclude the music from a zone press the relevant PROGRAM INSERTION push-button (1) again; The signalling lamps associated with the push-buttons will light up to indicate the zones that are selected with the inclusion of music.

7.2 Call from station or from ACIO8136 card
For the procedure for making calls, refer to the manual of the PMB station and to section 6.3 hereof as far as concerns the ACIO8136 card. The zones busy with calls will be indicated by their respective front-panel PROGRAM INSERTION signalling lamps (1) starting to flash.

8. RACK MOUNTING
8.1 Mounting instructions
Use the specific screws (A) and washers (B) to mount in a rack, as shown in Figure 8.1.1.

![Fig. 8.1.1](image)

<table>
<thead>
<tr>
<th>TECHNICAL SPECIFICATIONS</th>
<th>P8236</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mains power supply</td>
<td>230 Vca - 50/60 Hz</td>
</tr>
<tr>
<td>Mains consumption</td>
<td>30 VA</td>
</tr>
<tr>
<td>DC external power supply</td>
<td>24 V</td>
</tr>
<tr>
<td>DC consumption</td>
<td>1,5 A</td>
</tr>
<tr>
<td>Dimensions</td>
<td>482 x 44 x 143 mm</td>
</tr>
<tr>
<td>Package dimensions</td>
<td>522 x 155 x 292 mm</td>
</tr>
<tr>
<td>Weight (net)</td>
<td>2,08 Kg</td>
</tr>
<tr>
<td>Weight (incl. packaging)</td>
<td>3,05 Kg</td>
</tr>
</tbody>
</table>
WARRANTY

This product is warranted to be free from defects in raw materials and assembly. The warranty period is governed by the applicable provisions of law. PASO will repair the product covered by this warranty free of charge if it is faulty, provided the defect has occurred during normal use. The warranty does not cover products that are improperly used or installed, mechanically damaged or damaged by liquids or the weather. If the product is found to be faulty, it must be sent to Paso free of charges for shipment and return. This warranty does not include any others, either explicit or implicit, and does not cover consequential damage to property or personal injury. For further information concerning the warranty contact your local PASO distributor.

Important! Should the user wish to avail himself of servicing under the warranty, he must provide evidence of the purchase (invoice or receipt). The user shall also indicate the date of purchase, model and serial number indicated on the equipment. For this reason, you should complete the box below as a reminder of the data required.

| MODEL: | ................................................................................................................................................................................................... |
| SERIAL NUMBER: | ................................................................................................................................................................................................... |
| PURCHASE DATE: | ................................................................................................................................................................................................... |

This product is in keeping with the relevant European Community Directives.

All PASO equipment is manufactured in accordance with the most stringent international safety standards and in compliance with European Community requisites. In order to use the equipment correctly and effectively, it is important to be aware of all its characteristics by reading these instructions and in particular the safety notes carefully.

Important information for correct disposal of the product in accordance with EC Directive 2002/96/EC

This product must not be disposed of as urban waste at the end of its working life. It must be taken to a special waste collection centre licensed by the local authorities or to a dealer providing this service. Separate disposal of electric and/or electronic equipment (WEEE) will avoid possible negative consequences for the environment and for health resulting from inappropriate disposal, and will enable the constituent materials to be recovered, with significant savings in energy and resources. As a reminder of the need to dispose of this equipment separately, the product is marked with a crossed-out wheeled dustbin.

Note PASO S.p.A will not accept any liability for damage to property and/or persons arising out of incorrect use of the equipment or of procedures that do not comply with the instructions provided in this booklet. PASO S.p.A. strive to improve their products continuously, and therefore reserve the right to make changes to the drawings and technical specifications at any time and without notice.

Important!