

# USER MANUAL

**DXT 3000**

- PAGING SYSTEM FOR EMERGENCY PURPOSES ('VOICE ALARM SYSTEM')

**MX 3500**

- MAIN UNIT WITH AMPLIFIERS





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Before connecting and using this product, please read this instruction manual carefully and keep it on hand for future reference. This manual is to be considered an integral part of this product and must accompany it when it changes ownership as a reference for correct installation and use as well as for the safety precautions.

RCF S.p.A. will not assume any responsibility for the incorrect installation and / or use of this product.

**WARNING:** To prevent the risk of fire or electric shock, never expose this product to rain or humidity. This device is intended for indoor use only.

### SAFETY PRECAUTIONS

1. All the precautions, in particular the safety ones, must be read with special attention, as they provide important information.

#### 2.1 PRIMARY POWER SUPPLY FROM MAINS

- The mains voltage is sufficiently high to involve a risk of electrocution: never install or connect this product when its power cord is plugged in.
- Before powering up, make sure that all the connections have been made correctly and the voltage of your mains corresponds to the voltage shown on the rating plate on the unit, if not, please contact your RCF dealer.
- This apparatus can be connected to either TT or TN earthing arrangements only.
- The metallic parts of the unit are earthed by means of the power cord.
- An apparatus with CLASS I construction shall be connected to a mains socket outlet with a protective earthing connection.
- This apparatus shall be connected to a facility equipped device to protect against earth faults, appropriately sized for the type and power of the installed line (RCD).
- Protect the power cord from damage. Make sure it is positioned in a way that it cannot be stepped on or crushed by objects.
- To prevent the risk of electric shock, never open this product: there are no parts inside that the user needs to access.
- The mains plug is used to disconnect the device and it shall remain readily operable.

#### 2.2 SECONDARY (/ EMERGENCY) POWER SUPPLY THROUGH BATTERIES

- The apparatus operating voltage is 48 V dc (therefore, it is necessary to connect four 18 Ah 12 V batteries in series).
- Always use rechargeable batteries, which need to be chosen according to the maximum possible load.
- Verify the polarity of batteries is correct.
- Do NOT short-circuit batteries (i.e. connecting the 2 opposite poles together with metallic wires).
- The internal 48 V dc input is also used to disconnect the device and it shall remain readily operable.
- The 48 V dc power supply does not go beyond the fact that there are dangerous voltages inside the unit.
- Throw empty batteries away according to your country laws about ecology and environment protection.

3. Make sure that no objects or liquids can get into this product, as this may cause a short circuit. This apparatus shall not be exposed to dripping or splashing. No objects filled with liquid (such as vases) and no naked sources (such as lighted candles) shall be placed on this apparatus.

4. Never attempt to carry out any operations, modifications or repairs that are not expressly described in this manual.

Contact your authorized service centre or qualified personnel should any of the following occur:

- The product does not function (or functions in an anomalous way).
- The power cord has been damaged.
- Objects or liquids have got into the product.
- The product has been subjected to a heavy impact.

5. If this product is not used for a long period, disconnect its power cord and batteries.

6. If this product begins emitting any strange smell or smoke, switch it off immediately and disconnect its power cord and batteries.

7. The terminals marked with the symbol  are HAZARDOUS LIVE and their connection is to be made by an INSTRUCTED PERSON or the use of ready-made cables is required.

### IMPORTANT



### WARNING



**8.** Do not connect this product to any equipment or accessories not foreseen.

For suspended installation, only use the dedicated anchoring points and do not try to hang this product by using elements that are unsuitable or not specific for this purpose.

Also check the suitability of the support surface to which the product is anchored (wall, ceiling, structure, etc.), and the components used for attachment (screw anchors, screws, brackets not supplied by RCF etc.), which must guarantee the security of the system / installation over time, also considering, for example, the mechanical vibrations normally generated by transducers.

To prevent the risk of falling equipment, do not stack multiple units of this product unless this possibility is specified in this user manual.

**9. RCF S.p.A. strongly recommends this product is only installed by professional qualified installers (or specialised firms) who can ensure correct installation and certify it according to the regulations in force.**

**The entire audio system must comply with the current standards and regulations regarding electrical systems.**

#### **10. SUPPORTS AND TROLLEYS**

The equipment should be only used on trolleys or supports, where necessary, that are recommended by the manufacturer. The equipment / support / trolley assembly must be moved with extreme caution. Sudden stops, excessive pushing force and uneven floors may cause the assembly to overturn.

**11.** Mechanical and electrical factors need to be considered when installing a professional audio system (in addition to those which are strictly acoustic, such as sound pressure, angles of coverage, frequency response, etc.).

#### **12. HEARING LOSS**

Exposure to high sound levels can cause permanent hearing loss. The acoustic pressure level that leads to hearing loss is different from person to person and depends on the duration of exposure. To prevent potentially dangerous exposure to high levels of acoustic pressure, anyone who is exposed to these levels should use adequate protection devices.

When a transducer capable of producing high sound levels is being used, it is therefore necessary to wear ear plugs or protective earphones.

See the technical specifications in loudspeaker user manuals to know their maximum sound pressure levels.

**13.** Do not obstruct the ventilation grilles of the unit. Situate this product far from any heat sources and always ensure adequate air circulation around the ventilation grilles.

**14.** Do not overload amplifiers. Check that amplifier speaker outputs are not shorted.

**15.** Never force the control elements (keys, knobs, etc. ).

**16.** Do not use solvents, alcohol, benzene or other volatile substances for cleaning the external parts of this product.

Use a dry cloth.

#### **WARNING:**

**Any change made by unauthorized personnel to the product and / or the system (in which it is installed and configured, including rack cabinets and wiring) may invalidate the CE marking (certification EN 54-16:2008 and EN 54-4:2007) and also the product warranty.**



## NOTES ABOUT AUDIO SIGNAL CABLES



To prevent the occurrence of noise on microphone / line signal cables, use screened cables only and avoid putting them close to:

- Equipment that produces high-intensity electromagnetic fields.
- Mains cables.
- Loudspeaker lines.

RCF S.p.A. thanks you for purchasing this product, which has been made to guarantee reliability and high performance.

## DXT 3000 SYSTEM DESCRIPTION



DXT 3000 is a voice alarm system in compliance with EN 54-16 ('Fire detection and fire alarm systems', part 16: 'Voice alarm control and indicating equipment') and EN 54-4 (Part 4: 'Power supply equipment').

It is suitable for emergency announcements, paging and background music, in small-size environments.

Connections are simple and its use is easy and immediate.

Its settings are user definable, but its emergency functions, which shall meet all system requirements and its installation (UNI ISO 7240-19).

MX 3500 is the main unit with a metallic enclosure for wall-mounting and can be alternatively fitted into a 19" rack cabinet (14 units) by adding its included rack ears.

MX 3500 has all necessary components inside for the system operating, batteries included.

It features a digital sound processor (DSP) that allows a proper equalization.

Every MX 3500 main unit has:

- An audio input for a line made of up to four monitored BM 3804 paging microphones for selective announcements (linked in 'daisy-chain', with or without additional BE 3806 keyboards, according to the max. number of zones).
- An AUX audio input mainly used for a line made of one or more BM 3022 paging microphones (not monitored and linked in 'daisy-chain') for general calls only. This input has also the VOX automatic priority (if enabled in the display menu) when an audio signal is detected.
- An audio input for a background music source (i.e. MP3 / CD players, tuners, etc.).
- Logic inputs and outputs to interface to the fire alarm system (or others).
- An internal player of pre-recorded messages stored on monitored SD CARD.
- A simple MP3 player on its front panel, with an additional AUX IN (1/8" jack) for external audio sources.
- An internal slot for the INTERLINK board (optional), necessary to link more main units one another.

Each MX 3500 main unit can be delivered with either two or (on request) four / six built-in RCF class D+ power amplifiers (according to the needs), in order to have either two or four / six zones.

Thanks to its internal digital matrix, each power amplifier can send to its zone a different signal (among all the available, e.g. emergency / routine announcements, pre-recorded messages, background music).

The last available amplifier (the second or the fourth or the sixth) can be alternatively used as spare (with automatic change-over).

**The total maximum output power (sum of all zones) is 500 W and freely assignable within the limit of 250 W per each zone (power that corresponds to either a 40 Ω load at 100 V or a 20 Ω load at 70 V).**

Amplifier outputs are for 100 V / 70 V constant voltage speaker lines.

Each zone has two outputs (to get redundant lines).

MX 3500 main unit has a backup power supply that meets the EN 54-4 standard, with recharging unit and check of batteries (18 Ah).

**To ensure a full system efficiency, it is strongly advised to check batteries every two years and replace them if necessary.**

Electronically, the system is composed of:

- Main board
- Power supply board (EN 54-4:2007 compliant)
- 1, 2 or 3 amplifier boards, each having 2 amplifiers (total max. output power: 500 W)
- MP3 audio player
- Message player board with monitored SD CARD

## **DXT 3000 SYSTEM PAGING MICROPHONES**

### **BM 3804**

Monitored and preamplified desk-top paging microphone, with gooseneck and electret capsule, for selective calls on different zones selected through its keyboard.

Up to four BM 3500 paging microphones (interlocked one another) can be linked in 'daisy-chain' (and directly connected to the MX 3500 main unit).

The total cable length (CAT 6 FTP or J-type) cannot exceed 1 km.

### **BE 3806**

Additional keyboard for BM 3804 paging microphones, with six pre-configured keys.

A single BM 3804 paging microphone can be expanded with maximum six BE 3806 additional keyboards (up to total maximum of 67 keys in the system).

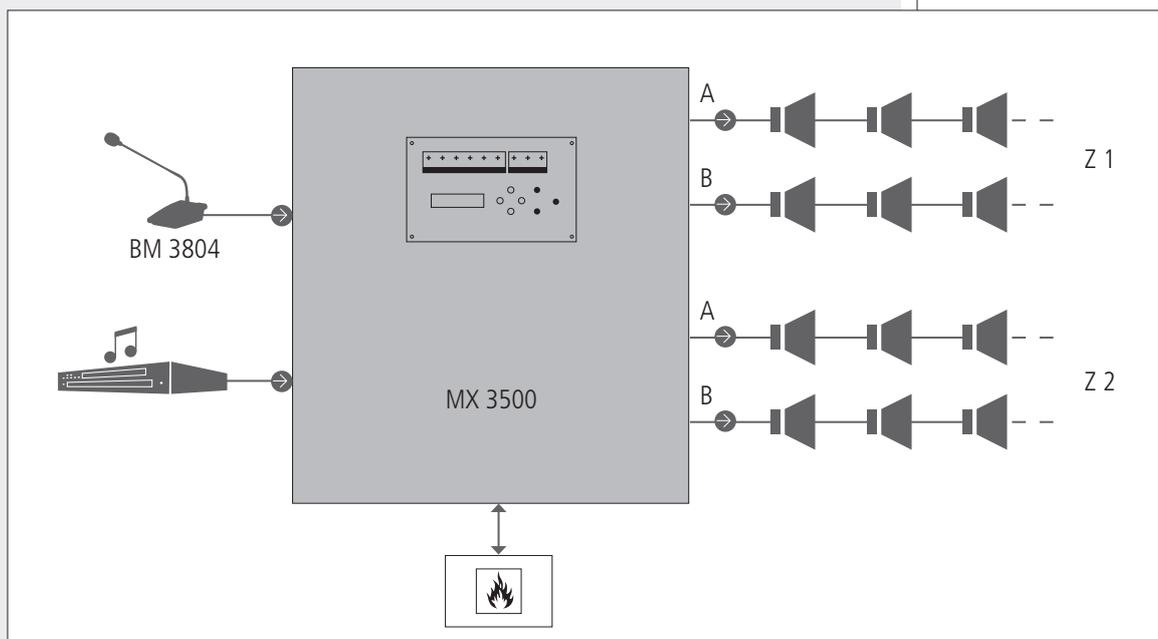
### **BM 3022**

Preamplified desk-top paging microphone, with gooseneck and electret capsule, for general calls only. Up to thirty BM 3022 paging microphones can be linked in 'daisy-chain' (in a single line) and used either in mixing (more microphones turned on simultaneously) or in lock mode (only a microphone activated at a time).



A basic configuration (for instance, including a MX 3500/2 main unit, a BM 3804 paging microphone and, eventually, an additional optional external music source) is suitable for a system with either a single zone or two, in which the total speaker power does not exceed 500 W (max. 250 W per zone, in any proportion on the two speaker lines A, B). Several logic inputs / outputs are available to get DXT 3000 interfaced to the fire alarm system (or others).

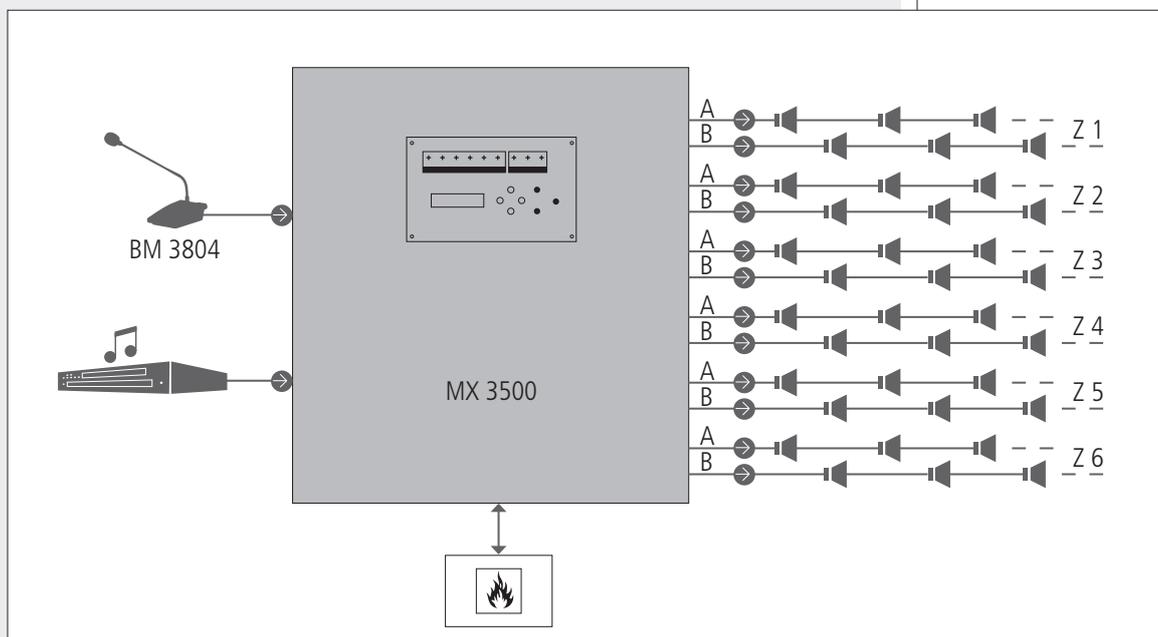
In case of a single-zone system, the second amplifier is used as spare (with automatic change-over).



On request, the main unit can be delivered with four (MX 3500/4) / six (MX 3500/6) built-in power amplifiers.

The overall power is always 500 W and it can be freely shared among the four / six zones (within the limit of max. 250 W per zone, power that corresponds to either a 40  $\Omega$  load at 100 V or a 20  $\Omega$  load at 70 V).

The last amplifier (the fourth or the sixth) can be alternatively used as spare (with automatic change-over).





**IMPORTANT:** this manual section is for only trained and qualified personnel for installation and maintenance of the system.

## MX 3500 WALL-MOUNTING / 19" RACK MOUNTING

The main unit shall be placed in a closed environment, within a protected area not subjected to conditions that may affect its operation, for example: moisture, salt, water infiltration, extreme temperatures, shocks, etc. .

It can be:

- Wall surface mounted
- Semi-flush mounted  
(the recess shall be 140-145 mm / 5½" - 5¾" deep)
- Rack mounted (19" – 14 units).

The main unit should be placed at a height that makes it easily accessible.  
The front panel display should be at eye level.

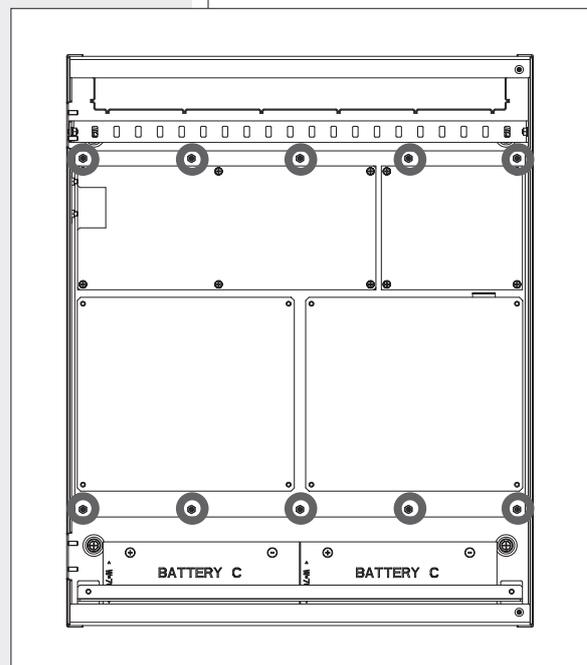
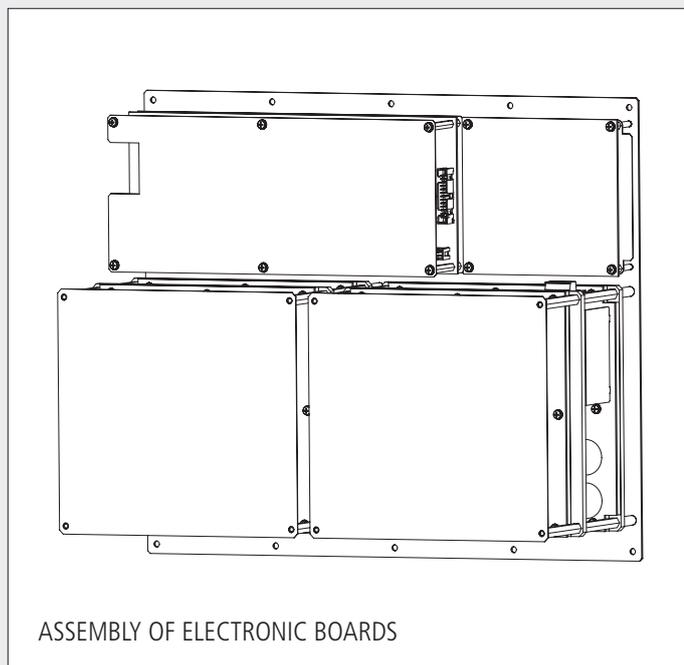
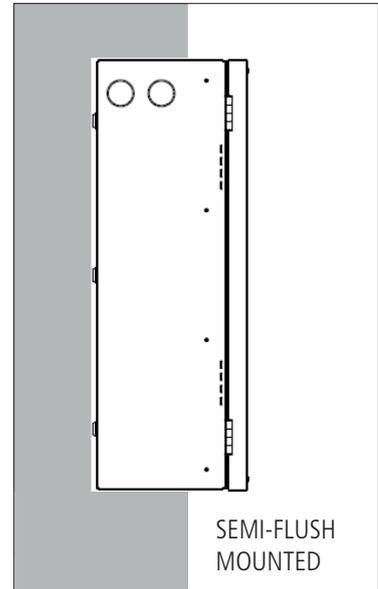
If mounted into a 19" rack cabinet through its included rack ears, there must be at least a 14-unit free room.

Enclosure knockouts should be removed with a sharp tap in their rim by using a flat screwdriver.

Audio signal cables, speaker lines and power cords shall be kept separate from one another.

Enclosure wall surface mounting:

1. Make sure the MX 3500 main unit is not plugged to the mains (otherwise, unplugged the power cord).
2. Unscrew the two screws at the corners on the right side of the front panel to open the main unit and be careful NOT to touch the components of the electronic boards (to avoid any possible damage caused by electrostatic discharge).
3. Disconnect and remove batteries (if present).
4. Unscrew the ten bolts (five upper and five lower, shown in the figure) and remove the assembly of electronic boards from its frame.

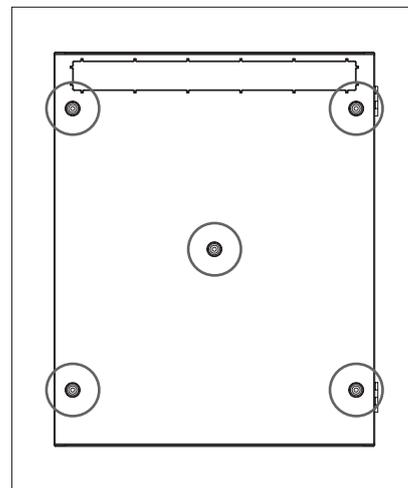


5. Fix the enclosure to the wall by using five suitable wall plugs having M5 screws passing through its holes (diameter: 5.5 mm) shown in the figure.

6. Re-mount the assembly of electronic boards.

After mounting the enclosure, set the internal SWITCH OFF/ON dip-switch 17 to OFF and then proceed with the connection of all external devices (e.g. paging microphones, music sources, logic inputs and outputs), speaker lines and, finally, the batteries.

At the end, connect the mains power supply and turn the system on by setting the SWITCH OFF/ON dip-switch to ON.



## STARTUP PROCEDURE

To turn the system on correctly, avoiding any risk for installers, it is necessary proceed as follows:

1. Ensure the main unit is not powered from mains and batteries are disconnected.
2. Make sure the main board dip-switch no. 6 (SWITCH ON/OFF) 17 is set to OFF.
3. Connect the batteries.
4. Connect the MX 3500 main unit to the mains power supply.
5. Set the main board dip-switch no. 6 (SWITCH ON/OFF) 17 to ON.

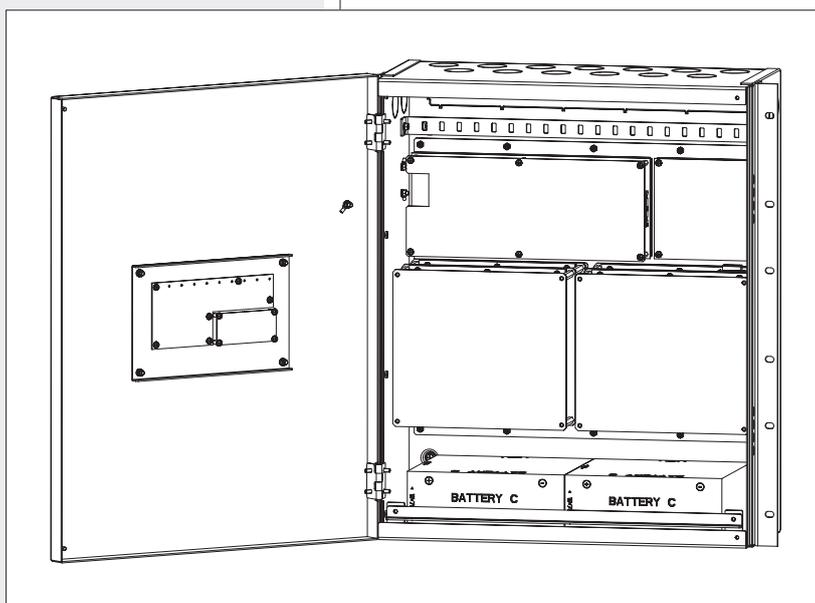
To turn the system off, follow these steps in reverse order.

## OPENING THE MAIN UNIT AND ARRANGEMENT OF THE INTERNAL BOARDS



### IMPORTANT NOTES

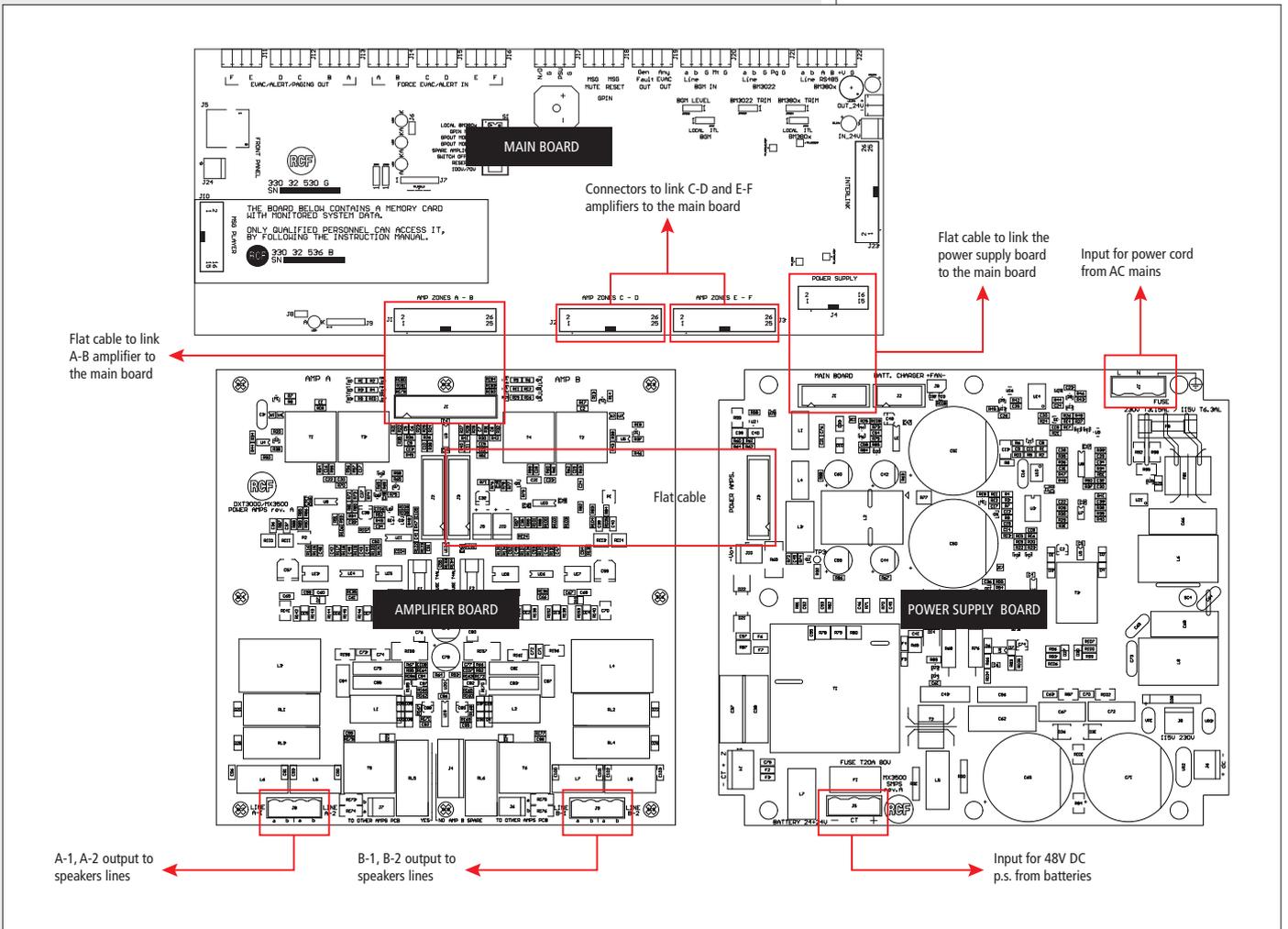
- **IF THE MAIN UNIT IS CONNECTED TO THE MAINS, THERE IS A DANGEROUS VOLTAGE ON THE POWER SUPPLY BOARD: BE CAREFUL!**
- **BEFORE TOUCHING ANY INTERNAL COMPONENT, GET RID OF ANY STATIC ELECTRICITY BY TOUCHING AN EARTHED METAL PART (FOR A SECOND).**



Unscrew the two screws at the corners on the right side of the front panel to open the main unit and access its electronic boards.

The four batteries shall be fitted on the enclosure bottom and fixed with the included accessory.

Always dispose exhausted batteries according to local regulations.



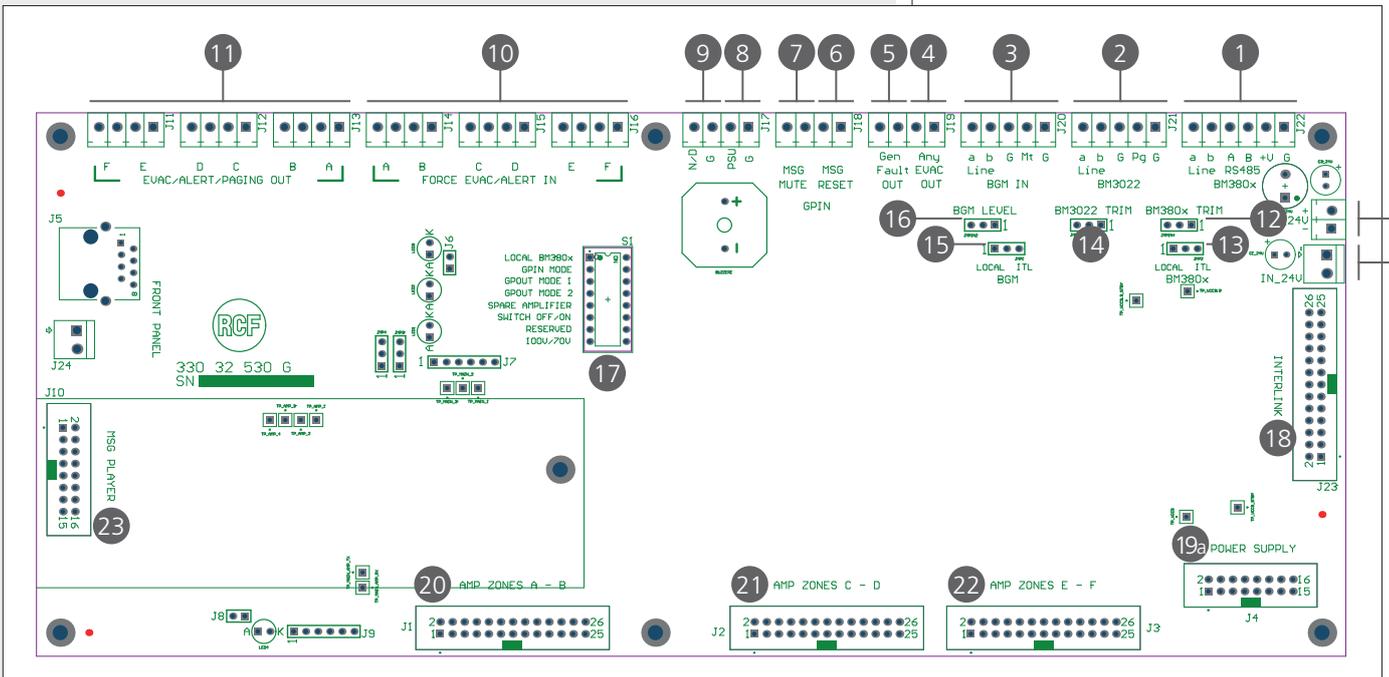
**NOTES**

- AMPLIFIER BOARDS AND THE POWER SUPPLY BOARD HAVE METAL SCREENS.
- THE FIRST ADDITIONAL AMPLIFIER BOARD (C-D) CAN BE MOUNTED ON THE PREVIOUS ONE (A-B).
- THE SECOND ADDITIONAL AMPLIFIER BOARD (E-F) CAN BE MOUNTED ON THE POWER SUPPLY BOARD.



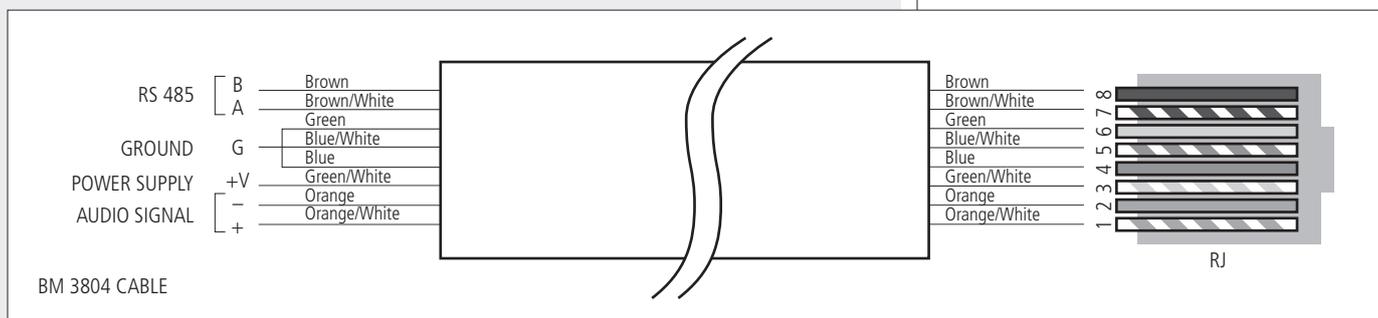
**MAIN BOARD**

The main board is the system control unit and linked to all the other boards.



1 Input for monitored paging microphones with emergency purposes (i.e. **BM 3804**).

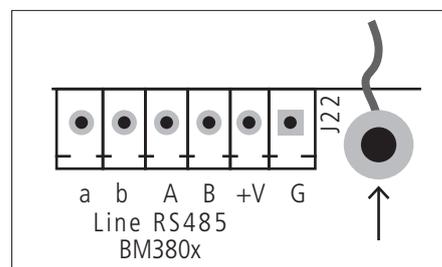
PIN	DESCRIPTION	BM 3804 CABLE – WIRE COLOUR
+	Audio signal (+, hot)	Orange/White (RJ pin 1)
-	Audio signal (-, cold)	Orange (RJ pin 2)
A	Serial port RS 485 A (+)	Brown/White (RJ pin 7)
B	Serial port RS 485 B (-)	Brown (RJ pin 8)
+V	+ 24 V dc power supply	Green/White (RJ pin 3)
G	Ground	Blue, White/Blue, Green (RJ pins 4-5-6)



Correspondence of wires between **CAT 6** and **CJ 428e** cables:

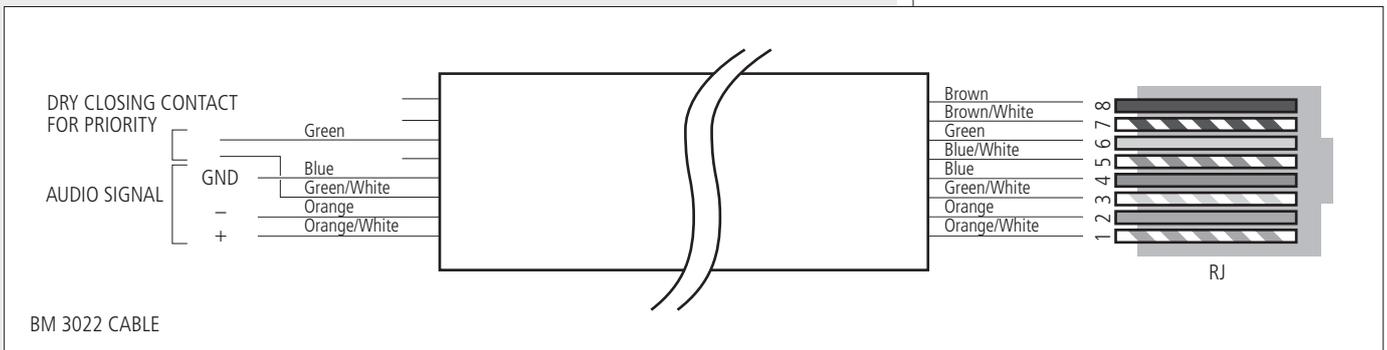
PIN	DESCRIPTION	CAT 6 WIRE COLOUR	CJ 428e WIRE COLOUR
1	Audio signal (+, hot)	Orange/White	Red
2	Audio signal (-, cold)	Orange	Blue
3	Power supply	Green/White	Yellow
4	Ground	Blue	Brown
5	Ground	Blue/White	Green
6	Ground	Green	Grey
7	RS 485 A (+)	Brown/White	White
8	RS 485 B (-)	Brown	Black

NOTE: IN CASE OF EXCESSIVE BACKGROUND NOISE (ON BM 3804 AUDIO SIGNAL), LINK THE CABLE SHIELD TO THE EARTH BY FIXING IT TO THE HOLE ON THE MOTHERBOARD NEXT TO THE BM 3804 INPUT, BETWEEN TWO WASHERS (A FLAT AND A GROWER).



2 AUX input, mainly for BM 3022 paging microphones (not monitored).

PIN	DESCRIPTION	BM 3022 CABLE – WIRE COLOUR
+	Audio signal (+, hot)	Orange/White (RJ pin 1)
–	Audio signal (–, cold)	Orange (RJ pin 2)
G	Ground (audio)	Blue (RJ pin 4)
Pg	Priority and activation command	Green (RJ pin 6)
G	Priority and activation command ground	Green/White (RJ pin 3)



3 BGM IN balanced audio input normally linked to the internal MP3 player, but also assignable to an external background music source (e.g. CD / MP3 player, tuner, etc.).

PIN	DESCRIPTION
+	Audio signal (+, hot)
–	Audio signal (–, cold)
G	Ground (audio)
Mt	MUTE command
G	MUTE command ground

4 ANY EVAC OUT logic output (relay normally open dry contact), activated (relay contact shorted) when evacuation is in progress.\*

5 GENERAL FAULT logic output: relay normally closed dry contact (when MX 3500 is turned on) that opens when either a fault is detected or MX 3500 is off.

6 GPIN MSG RESET Opto-isolated logic input (enabled when 5 ÷ 48 V dc voltage is applied to its two contacts): when activated, it stops the evacuation / alert message playback.

7 GPIN MSG MUTE Opto-isolated logic input (enabled when 5 ÷ 48 V dc voltage is applied to its two contacts): when activated, it mutes the audio signal of the evacuation / alert message in progress, but its playback is not stopped.

8 Logic input for the external power supply fault. The two contacts (PSU and G) need to be kept open when the external power supply is normal. Shorting the two contacts entails the fault indication.

9 Logic input to toggle the 'day / night' operating mode:  
 - 'DAY', the two contacts (N/D and G) are open  
 - 'NIGHT', the two contacts (N/D and G) are shorted.  
 The 'NIGHT' mode attenuates the background music volume (BGM IN 3 level).

10 FORCE EVAC/ALERT IN Six opto-isolated logic inputs (one for each of the six possible zones) to force the evacuation / alert message playback with the mode defined by setting the GPIN MODE dip-switch 17. The activation of the message playback in one or more zones is carried out by applying 5 ÷ 48 V dc voltage to their respective + and – contacts.  
 See page 33 'Fire Alarm System Monitoring'.

ALL OPTO-ISOLATED LOGIC INPUTS ALLOW THE LINE MONITORING (BY THE LINKED DEVICE) THROUGH TWO INTERNAL RESISTORS: 1 kΩ IN SERIES AND 6.8 kΩ IN PARALLEL.

11 EVAC/ALERT/PAGING OUT Six logic outputs (one for each of the six possible zones). Each is activated (the two contacts are shorted) during an announcement from a paging console or the playback of the evacuation / alert message, with the mode defined by setting the GPO MODE dip-switches 17.\*

\* All logic output relays have the followings specs.:

- Max. current: 2 A
- Max. switching voltage: 100 V
- Max. switching power: 30 W

12 BM 3804 TRIM jumper: BM 3804 1 audio input gain setting, useful to compensate for possible signal attenuation along the line.



JUMPER SETTING	INPUT GAIN
not inserted	no gain
pins 1 – 2	+ 3 dB
pins 2 – 3	+ 6 dB

13 **BM 3804** jumper to select the BM 3804 paging microphone input between the two options, either LOCAL (default setting) or INTERLINK (only when the optional INTERLINK board is present).

JUMPER SETTING	FUNCTION
LOCAL	(default setting): the BM 3804 ① input is used for the connection of the BM 3804 paging microphone line.
ITL	INTERLINK (only with the optional INTERLINK board): the BM 3804 paging microphone line is connected to the INTERLINK board and the direct BM 3804 ① input is disabled.

14 **BM 3022 TRIM** jumper: BM 3022 ② audio input gain setting, useful to compensate for possible signal attenuation along the line.

JUMPER SETTING	INPUT GAIN
not inserted	no gain
pins 1 – 2	+ 3 dB
pins 2 – 3	+ 6 dB

15 **BGM** jumper to define the use of the local background music source (connected to the BGM IN ③ input) that can be set to either LOCAL or INTERLINK (only when the optional INTERLINK board is present).

JUMPER SETTING	FUNCTION
LOCAL	(default setting): the audio signal of the music source linked to the BGM IN ③ input is only available for the MX 3500 main unit to which it is connected.
ITL	INTERLINK (only with the optional INTERLINK board): the audio signal of the music source linked to the BGM IN ③ input is shared by all devices connected through the INTERLINK board.

16 **BGM LEVEL** jumper: BGM IN ③ audio input gain setting.

JUMPER SETTING	INPUT GAIN
not inserted	no gain
pins 1 – 2	+ 6 dB
pins 2 – 3	+ 12 dB

## 17 DIP-SWITCHES

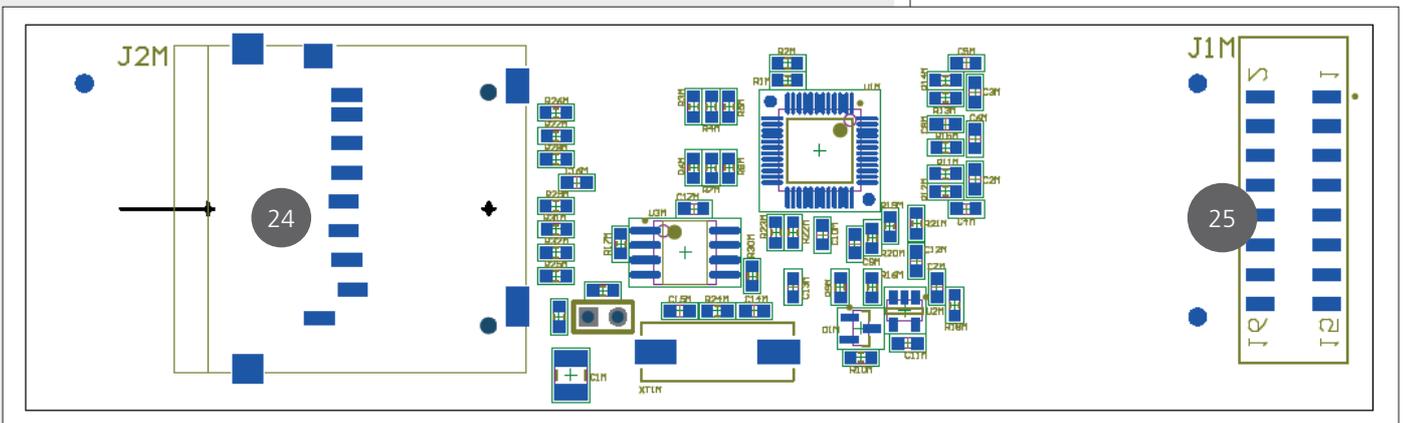
DIP-SWITCH	SETTING	FUNCTION
<b>LOCAL BM 3804</b>	OFF	BM 3804 paging microphones linked to the INTERLINK board (when available).
	<b>ON</b>	BM 3804 paging microphones are connected to the BM 3804 ① input and directly control the zone selection.
<b>GPIN MODE</b>	OFF	SINGLE – EVACUATION mode: the activation of each logic input ⑩ entails the playback of the evacuation message in its zone (A = zone 1, B = zone 2, C = zone 3, D = zone 4, E = zone 5, F = zone 6).
	<b>ON</b>	DUAL – EVACUATION / ALERT mode: the activation of the first three logic inputs A, B, C ⑩ entails the playback of the evacuation message in zone pairs (A = zones 1-2, B = zones 3-4, C = zones 5-6); the activation of the second three logic inputs D, E, F ⑩ entails the playback of the alert message in zone pairs (D = zones 1-2, E = zones 3-4, F = zones 5-6). Note: the evacuation message has the priority.
<b>GPOUT MODE</b> (two dip-switches)	1: OFF, 2: OFF	SINGLE – EVACUATION / ALERT mode: each logic output ⑪ (when activated) indicates the playback of the evacuation / alert message in its zone (A = zone 1, B = zone 2, C = zone 3, D = zone 4, E = zone 5, F = zone 6).
	1: <b>ON</b> , 2: OFF	SINGLE – EVACUATION / PAGING mode: each logic output ⑪ (when activated) indicates the playback of the evacuation message or paging in its zone (A = zone 1, B = zone 2, C = zone 3, D = zone 4, E = zone 5, F = zone 6).
	1: OFF, 2: <b>ON</b>	DUAL – EVACUATION / ALERT / PAGING mode: the first three logic outputs A, B, C ⑪ (when activated) indicate the playback of the evacuation / alert message in zone pairs (A = zone 1-2, B = zone 3-4, C = zone 5-6); the second three logic outputs D, E, F ⑪ (when activated) indicate paging in zone pairs (D = zone 1-2, E = zone 3-4, F = zone 5-6).
	1: <b>ON</b> , 2: <b>ON</b>	Not used.
<b>SPARE AMPLIFIER</b>	OFF	No spare amplifier.
	<b>ON</b>	The last available amplifier is assigned as spare. NOTE: to activate the spare amplifier, it is necessary to set the jumper ③5 to YES on the last amplifier board.
<b>SWITCH OFF/ON</b>	OFF	Since the system is designed to be left switched on, this setting forces its shutdown to allow the connection of batteries (in order to avoid possible sparks).
	<b>ON</b>	The system is turned on and operating (default setting).
<b>DIP-SWITCH nr.7</b>	Not used.	
<b>DIP-SWITCH nr.8</b>	OFF	Speaker line voltage: 100 V.
	<b>ON</b>	Speaker line voltage: 70 V.

- 18 INTERLINK connector for INTERLINK board (optional).
- 19<sub>a</sub> POWER SUPPLY connector for the internal power supply board.
- 19<sub>b</sub> OUT\_24V: 24 V dc output.
- 19<sub>c</sub> IN\_24V: 24 V dc input.
- 20 AMP ZONE A – B connector for the first amplifier board (zones 1 and 2).
- 21 AMP ZONE C – D connector for the second amplifier board (zones 3 and 4).
- 22 AMP ZONE E – F connector for the third amplifier board (zones 5 and 6).
- 23 MSG PLAYER connector for the message player board.

## MESSAGE PLAYER BOARD

The message player board is directly fitted to the main board.  
Messages are stored to an SD CARD, which can also be used to update the firmware.

The SD CARD is blocked from the spacer for the mounting to the main board, so that its removal is not possible, except by authorized personnel to access and maintain the system.



- 24 SD CARD slot
- 25 Connector for the link to the main board (MSG PLAYER 23).

Audio format: **Ogg Vorbis, min. bitrate: 64 kbit/s.**

Max. message number: 16, plus the chime.

Sampling frequency: 16 kHz or higher (suggested 44.1 kHz), mono.

Resolution: 16-bit.

The max. message time is only limited by the SD CARD free memory.

Messages shall be converted before being stored to the SD CARD, by using a (free) software as, for instance, <http://www.ogg-converter.com>.

Messages shall be named as follows:

Nome	Dimensione	Tipo
<b>File OGG</b>		
 a0.ogg	59 KB	File OGG
 a1.ogg	70 KB	File OGG
 a2.ogg	120 KB	File OGG
 c0.ogg	59 KB	File OGG
 c1.ogg	59 KB	File OGG
 c2.ogg	171 KB	File OGG
 e0.ogg	89 KB	File OGG
 h0.ogg	10 KB	File OGG
 e1.ogg	100 KB	File OGG
 e2.ogg	189 KB	File OGG
 e3.ogg	89 KB	File OGG
 t0.ogg	74 KB	File OGG
 t1.ogg	89 KB	File OGG
 t2.ogg	58 KB	File OGG
 t3.ogg	74 KB	File OGG
 t4.ogg	100 KB	File OGG
 t5.ogg	62 KB	File OGG

#### EMERGENCY MESSAGES

##### **a0, a1, a2:**

'Alert' messages (max. 3)

##### **c0, c1, c2:**

'All clear' messages (max. 3)

##### **e0, e1, e2, e3:**

'Evacuation' messages (max. 4)

##### **h0, h1, h2:**

chime sent before an announcement

#### SYSTEM TEST

**t0:** pre-test (main menu)

**t1:** test (main menu)

**t2:** end-test (main menu)

**t3:** pre-test (service menu)

**t4:** test (service menu)

**t5:** end-test (service menu)

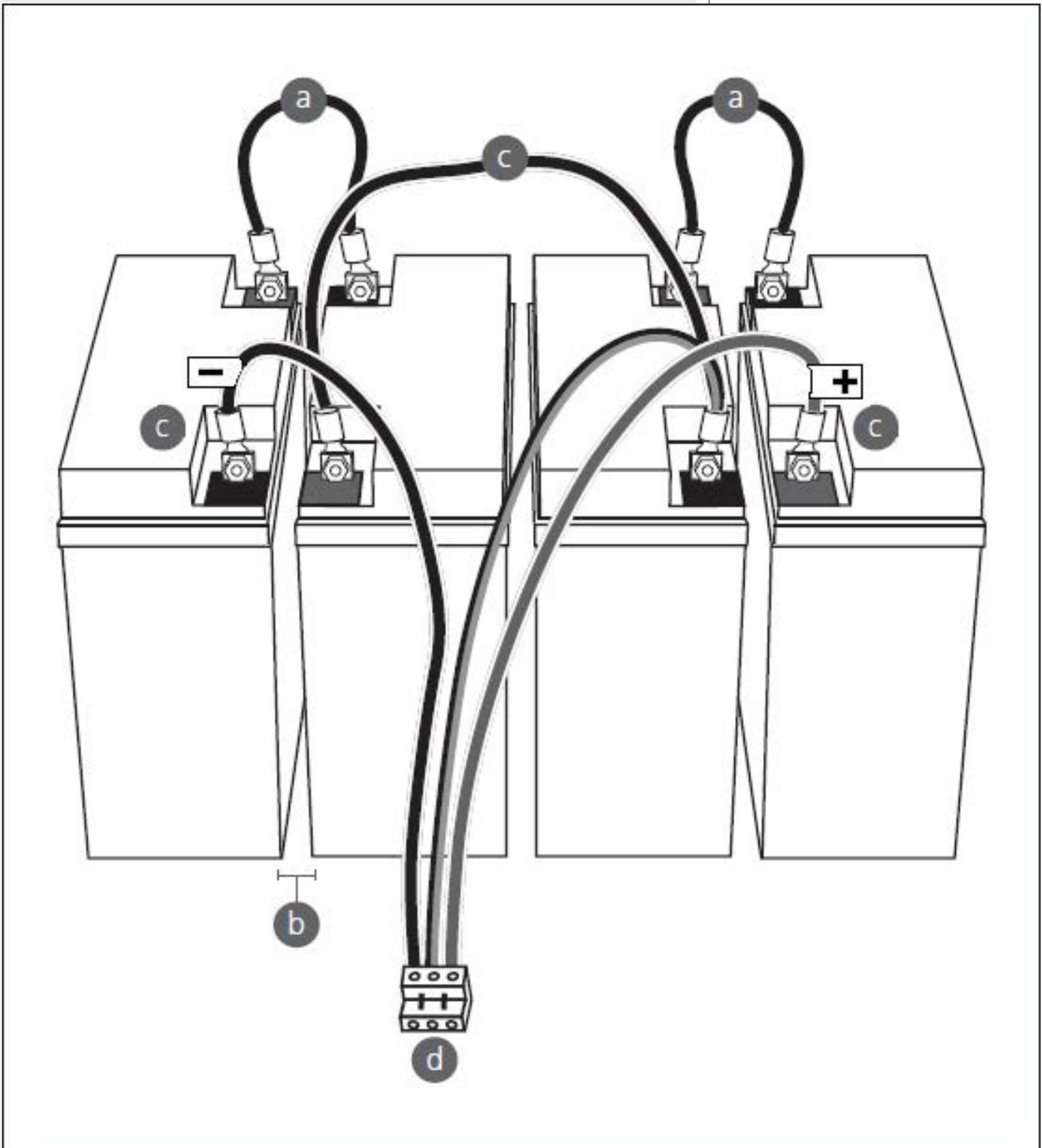


**BATTERY CONNECTION**

**NOTA:** LINK THE BATTERIES TO THE SYSTEM BEFORE CONNECTING THE MAINS POWER SUPPLY.



- a Connect the first two short wires to link the four batteries (18 Ah) in series.
- b Place the batteries into the cabinet, leaving at least 2 cm (3/4") of free space between a battery and another other.
- c Connect the other wires (to link the four batteries in series) and also the one for the charge control (connector central pin) as shown in the figure.
- d Connect the connector to the power supply board battery input.



### AMPLIFIER BOARD

- 31 Connector for the flat-cable to the main board.
- 32 Connectors for the flat-cables from the power supply board and to the next amplifier board (if present).
- 33 Speaker outputs A-1 and A-2 (constant voltage).
- 34 Speaker outputs B-1 and B-2 (constant voltage).

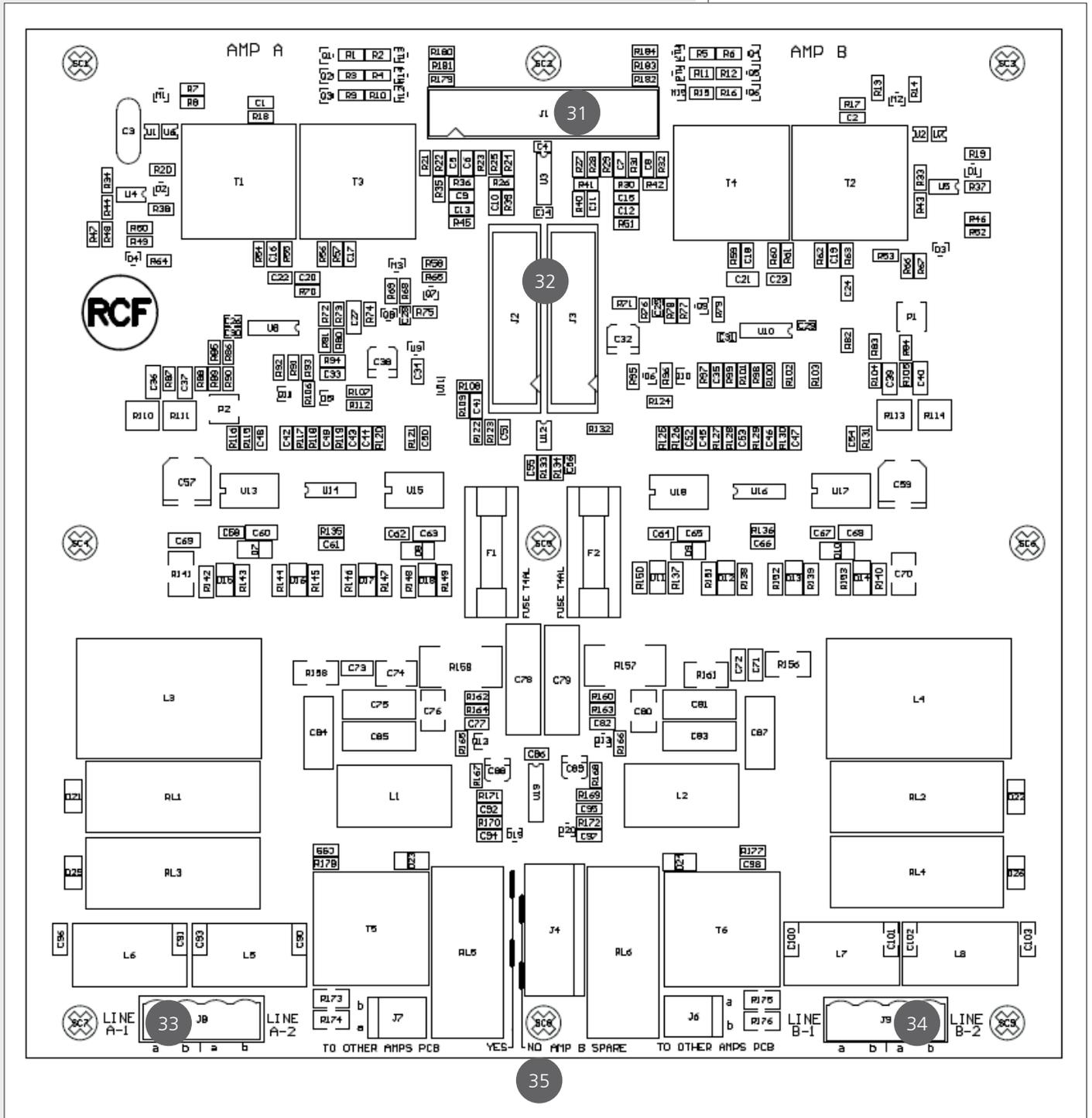
#### NOTE:

USE THE EIGHTH DIP-SWITCH 17 ON THE MAIN BOARD TO SELECT THE SPEAKER LINE VOLTAGE: 100 V OR 70 V.



#### 35 AMP B SPARE JUMPERS

SET BOTH JUMPERS EITHER TO NO FOR NORMAL USE OR YES IF THE AMP B IS THE SPARE.



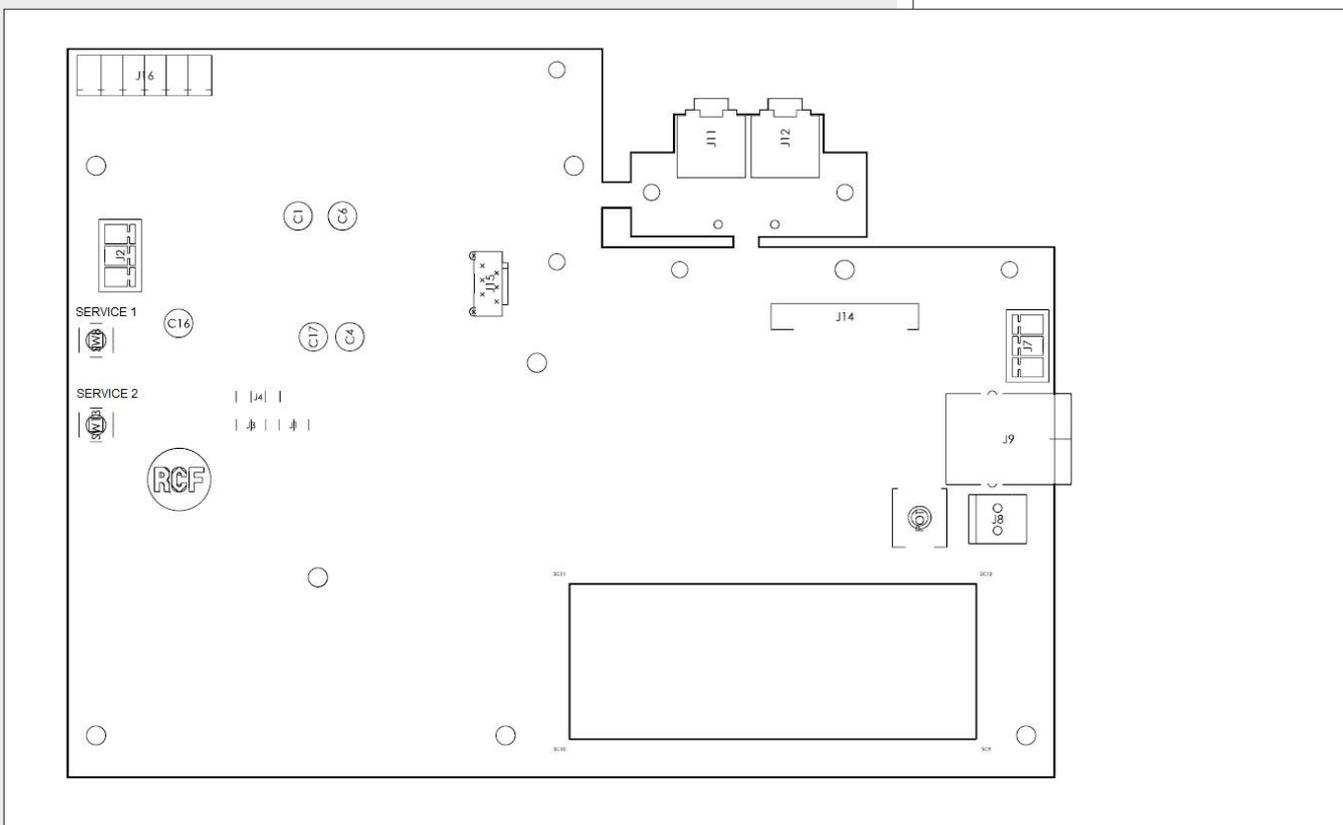
## FRONT PANEL BOARD

The front panel board has indicator lights (LEDs) for all signs required and all system commands.

On the back there are two SERVICE buttons (accessible from the inside by authorized personnel and specialized only): **to enter the maintenance mode, press and hold the SERVICE 1 button (only) until the SERVICE MENU is displayed.**

The SERVICE 2 button is not used.

The access to the other menus is regulated by password levels.



## PASSWORD CHANGE

MX 3500 has 4 access levels, which correspond to operating rights, as required by EN 54-16:2008.

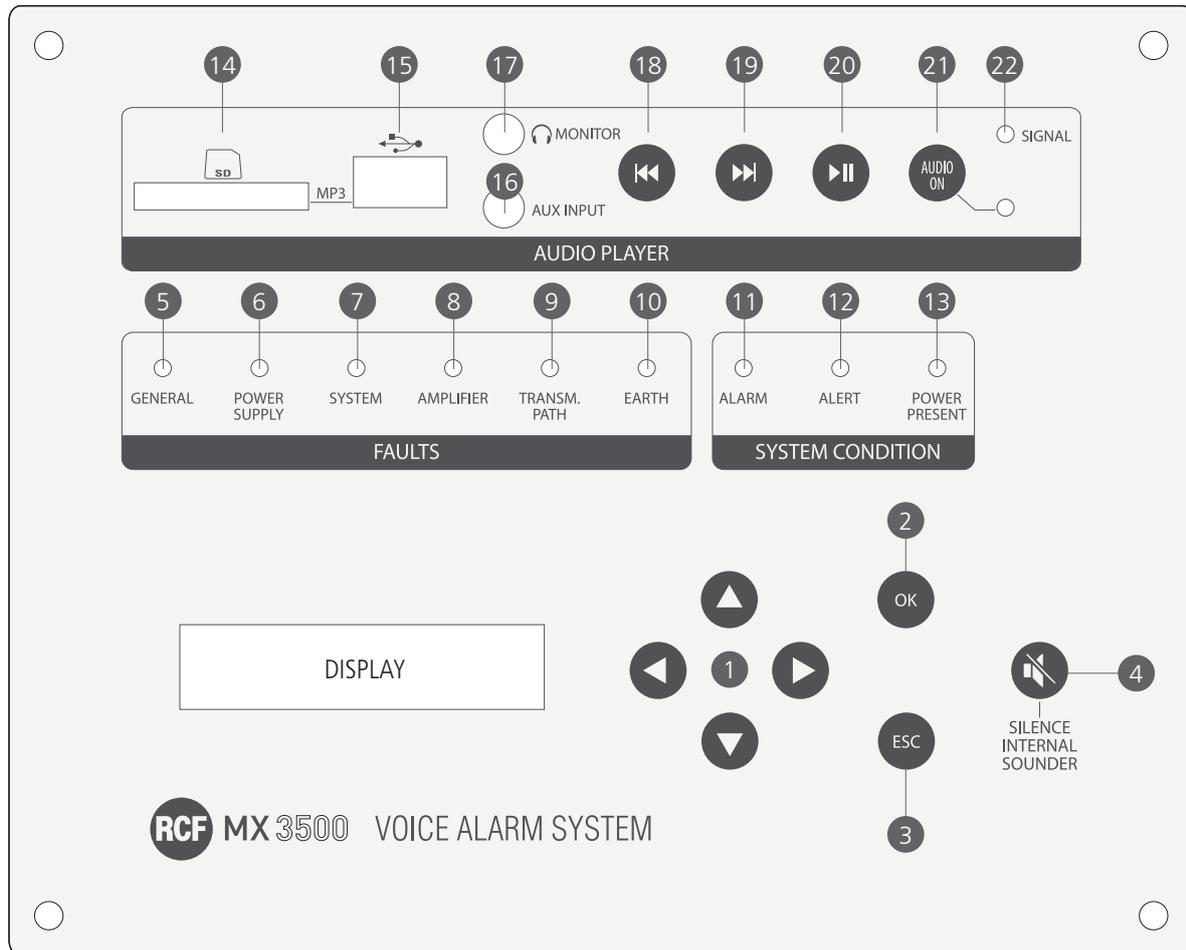
The first level (0) does not require any password.

About the other levels, their initial default passwords are:

- Level 1           111
- Level 2           222
- Level 3           333

To change a password, it is necessary to proceed as follows:

1. Turn the system off.
2. Remove the SD CARD (with prerecorded messages).
3. Add the file 'PASS.TXT' onto the SD card, file previously edited by a PC (Windows o.s.) with the following lines:
  - XXX   Level 1 new password with 3 digits (0 – 9).
  - YYY   Level 2 new password with 3 digits (0 – 9).
  - ZZZ   Level 3 new password with 3 digits (0 – 9).
4. Insert the SD card into the message player board.
5. Turn the system on and await the password updating.
6. Turn the system off again.
7. Remove the SD CARD (with prerecorded messages).
8. Delete the file 'PASS.TXT' on the SD CARD.
9. Insert the SD card into the message player board.
10. Turn the system on.



- 1 Four key-cursor (▲: up, ▼: down, ◀: left, ▶: right)
- 2 **OK** button: press to select.
- 3 **ESC** button: press to quit the displayed menu.
- 4 **SILENCE INTERNAL SOUNDER** button: press to mute the internal sounder (fault acknowledge).
- 5 – 10 **FAULT LEDs**:

Nr.		COLOUR	INDICATION (WHEN LIT)
5	<b>GENERAL</b>	Yellow	One or more faults have been detected.
6	<b>POWER SUPPLY</b>	Yellow	Power supply fault.
7	<b>SYSTEM</b>	Yellow	Internal microprocessor reset.
8	<b>AMPLIFIER</b>	Yellow	One or more amplifiers are faulty (see the display).
9	<b>TRANSM. PATH</b>	Yellow	Faults are detected in the signal path, e.g. in paging microphones and/or speaker lines and/or the INTERLINK board.
10	<b>EARTH</b>	Yellow	Speaker line earth leakage.

## 11 – 13 SYSTEM CONDITION LEDs:

Nr.		COLOUR	INDICATION (WHEN LIT)
11	ALARM	Red	The evacuation message is currently played.
12	ALERT	Yellow	The alert message is currently played.
13	POWER PRESENT	Green	Either the mains (230 – 115 V ac) or the 24 V dc power supply is present.

### MP3 AUDIO PLAYER

14 SD card port ("Secure Digital", max. 16 GB).

Do NOT use it if a USB flash drive is inserted into its respective port 15.

15 USB flash drive port (max. 16 GB).

Do NOT use it if a SD card is inserted into its respective port 14.

THE FILE EXTENSION MUST BE .MP3 (MPEG AUDIO LAYER 3: REFERS TO A COMPRESSED AUDIO CODING FORMAT).

ALL FOLDERS OF THE SD CARD / USB DRIVE ARE AUTOMATICALLY SCANNED.

MP3 FILE PLAYBACK IS IN ALPHABETICAL ORDER.

### 16 AUX INPUT

Auxiliary unbalanced audio input (for 1/8" stereo / TRS jack) to connect an external audio source. This input is stereo, but its signal is internally summed to mono and sent to the system only when:

- The front panel MP3 player is paused.
- The **AUDIO ON** 21 button has been pressed and its LED is lit (audio enabled).

### 17 MONITOR

Audio output (for 1/8" stereo / TRS jack) mainly for headphones, but it can also be used as LINE OUT. This audio output is always open (even if the AUDIO ON button is off), then allows pre-listening music (before sending it to the system).

18 Press this button to select the previous MP3 file.

19 Press this button to select the next MP3 file.

20 Press this button to toggle PLAY / PAUSE (MP3 player playback).

Volume levels can be adjusted in the system settings.

21 **AUDIO ON** button with blue LED

When pressed, it toggles on (LED lit) / off the sending of the internal MP3 audio player signal (and also AUX IN 16) to the system.

### 22 SIGNAL LED

Blue LED indicating the audio signal presence, with light intensity variation as a function of the signal level.



# PARAMETER LIST



LEVEL 1	LEVEL 2	LEVEL 3	DESCRIPTION
INFO			
	FIRMWARE VER		Microprocessor current firmware release.
	AMP VER		Current firmware release of the microprocessor for line monitoring.
	DSP VER		DSP current firmware release.
	ZONES NUMBER		System zone number.
		ACTIVE EVC/ALRT	Zones with evacuation or alert in progress.
		GPI MASK	[DEBUG] Logic input (GPI) bit mask (from the amplifier board).
		RELAYS MASK	[DEBUG] Relay bit mask (from the amplifier board).
		FAULT MASK	[DEBUG] Fault bit mask (from the amplifier board).
		ACK MASK	[DEBUG] Fault acknowledge bit mask.
		CONSOLES NUM	Number of paging microphones connected to the system.
		CONSOLES MASK	[DEBUG] Connected paging microphone bit mask.

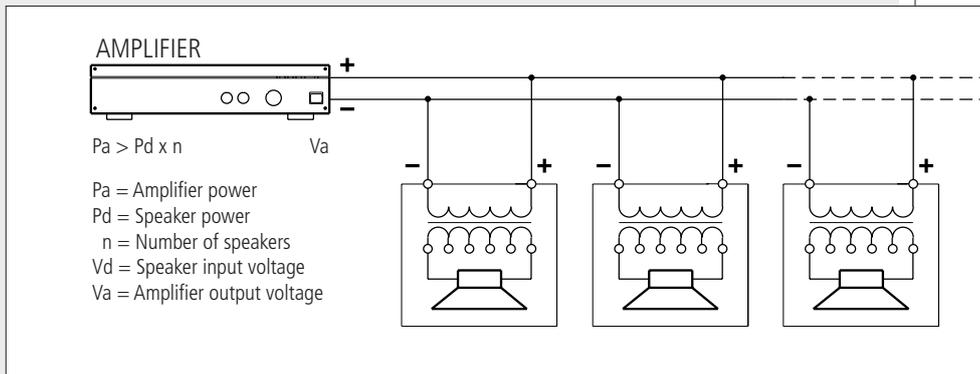
LEVEL 1		LEVEL 2		LEVEL 3		DESCRIPTION
AUDIO SET						
BGM						BGM IN ③ (music) audio settings.
└	INPUT LEVEL					Input level (- 40 ÷ + 6 dBu).
└	EQUALIZER					2-band equalizer (HI/LO) (-10 ÷ + 12 dB).
└	ASSIGN (for each zone)					It assigns the BGM IN to the selected zones.
└	EVENT LEVEL (for each zone)					Zone output level (- 40 ÷ + 6 dBu).
				MESSAGES		Audio setting of pre-recorded messages.
				└	INPUT LEVEL	Input level (- 40 ÷ + 6 dBu).
				└	EQUALIZER	2-band equalizer (HI/LO) (-10 ÷ + 12 dB).
				└	ASSIGN (for each zone)	It assigns the message playback to the selected zones.
				└	EVENT LEVEL (for each zone)	Zone output level (- 40 ÷ + 6 dBu).
				BM 3804		BM 3804 input audio settings.
				└	INPUT LEVEL	Input level (- 40 ÷ + 6 dBu).
				└	EQUALIZER	2-band equalizer (HI/LO) (-10 ÷ + 12 dB).
				└	ASSIGN (for each zone)	It enables BM 3804 paging microphones in the selected zones.
				└	EVENT LEVEL (for each zone)	Zone output level (- 40 ÷ + 6 dBu).
AUX INPUT						BM 3022 input audio settings.
└	INPUT LEVEL					Input level (- 40 ÷ + 6 dBu).
└	EQUALIZER					2-band equalizer (HI/LO) (-10 ÷ + 12 dB).
└	ASSIGN (for each zone)					It enables BM 3022 paging microphones in the selected zones.
└	EVENT LEVEL (for each zone)					Zone output level (- 40 ÷ + 6 dBu).
└	VOX ENABLE					Set to ON to enable the VOX automatic priority when a signal is detected at the AUX INPUT (OFF: disabled).
└	VOX LEVEL					VOX function level setting from 0 (highest sensitivity) to 15 (lower sensitivity), default value: 8.

LEVEL 1	LEVEL 2	LEVEL 3		DESCRIPTION
		ZONE n (for each zone; n: selected zone)		Selected zone audio settings.
		L	LEVEL	Output level (NOTE: to be used only for temporary changes, as it is overwritten by the parameter EVENT LEVEL).
		L	EQUALIZER	2-band equalizer (HI/LO) (-10 ÷ + 12 dB).
		L	HI-PASS	Hi-pass filter (20 / 500 Hz).
FAULTS				
	[EVC/ALRT ZONE LIST]			Evacuation / alert zone list.
	[FAULT LIST] FAULT_GENERAL FAULT_MAINS FAULT_BATTERY FAULT_AMP FAULT_SDCARD FAULT_VS1000 FAULT_BM380X FAULT_BM3022 FAULT_FP FAULT_DSPA FAULT_DSPB FAULT_FLASH FAULT_EEPROM EXT. FAULT FAULT_LINE1 FAULT_LINE2 FAULT_LINE3 FAULT_LINE4 FAULT_LINE5 FAULT_LINE6 FAULT_AUDIO_PATH FAULT_OVER_POWER FAULT_LINE1_IMP FAULT_LINE2_IMP FAULT_LINE3_IMP FAULT_LINE4_IMP FAULT_LINE5_IMP FAULT_LINE6_IMP FAULT_LINE_EARTHED FAULT_SPARE_ON			- general fault - mains (ac) fault - battery (dc) fault - amplifier board - SD card - message board fault - BM 3804 paging microphone - BM 3022 paging microphone - front panel board fault - DSP A - DSP B - FLASH memory - EEPROM - external fault - line 1 - line 2 - line 3 - line 4 - line 5 - line 6 - monitored audio path - excessive power - line 1 impedance - line 2 impedance - line 3 impedance - line 4 impedance - line 5 impedance - line 6 impedance - line with earth leakage - spare amplifier
	(dynamic lists)			
UTILITY				
	LEDS BUZZER TEST			LED and buzzer test.
			ESC TIMEOUT	Automatic quit from menus after a certain time [ON/OFF].
			LCD BACKLIGHT	Display backlight adjustment.
			DISCOVERY CONS.	Search for connected paging microphones.
			LINE TEST	It enables / disables line monitoring [ON/OFF].

LEVEL 1	LEVEL 2	LEVEL 3	DESCRIPTION
MESSAGES (note: confirmation required)			
	EMERGENCY		
	└	PLAY EVACUATION	It starts the playback of the 'evacuation' message chosen in the SERVICE menu (the 'evacuation' event is in progress).
	└	PLAY ALERT	It starts the playback of the 'alert' message chosen in the SERVICE menu (the 'alert' event is in progress).
	└	PLAY CLEAR	It starts the playback of the 'all clear' message chosen in the SERVICE menu (note: if an emergency event is in progress, RESET is the only way to cancel it and PLAY CLEAR is disabled).
	└	MESSAGE SILENCE	It mutes the message currently played, but it does not cancel the event in progress.
	└	MESSAGE RESET	It stops the message playback and cancels the current event.
	USER MESSAGES		Main menu user messages
	└	PLAY PRE-TEST	It plays the pre-test message.
	└	PLAY TEST	It plays the test message.
	└	PLAY END-TEST	It plays the end-test message.
	└	STOP	It stops the current message.
LOGIN (access to the security levels by entering the 3-digit password)			
LOGOUT (quit and return to the lowest security level '0')			
SERVICE MENU			
		LINE CALIBR.	Calibration of each line.
		IMPEDANCE VALUES	It displays the current impedance value of each line.
		IMP THRESHOLD	Choice of the max. tolerance variation of impedance as fault threshold among 20-30-40-50-60 %.
		DIAGNOSTIC	Internal diagnostic (device communication check) [OK/FAULT].
		BATTERY STATUS	FAULT / GOOD.
		SYSTEM REBOOT	
		CONFIGURATION	
	└	LOAD	It loads a configuration from the FLASH memory.
	└	SAVE	It stores the configuration to the FLASH memory.
		SELECT MSG	Message selection and service test
	└	EVACUATION	Preferred 'evacuation' message selection (chosen among 4).
	└	ALERT	Preferred 'alert' message selection (chosen among 3).
	└	CLEAR	Preferred 'all clear' message selection (chosen among 3).
	└	PRE-TEST	It plays the pre-test message.
	└	TEST	It plays the test message.
	└	END-TEST	It plays the end-test message.
		CHIME MESSAGE	Preferred chime selection among no.1, 2, 3.
		EVAC GPI N. S.	GPI normal status selection: OPEN (default) or CLOSED.
		EVAC GPO N. S.	GPO normal status selection: OPEN (default) or CLOSED.
		RESET GPI N. S.	MSG RESET GPI normal status selection: OPEN (default) or CLOSED.
		SIL. GPI N. S.	MSG MUTE GPI normal status selection: OPEN (default) or CLOSED.
		EXIT	It quits the menu.



- The loudspeaker input voltage ( $V_d$ ) shall correspond to the amplifier output voltage ( $V_a$ ).
- The sum of nominal power values ( $P_d \times n$ ) of all loudspeakers connected to the line shall not exceed the amplifier power ( $P_a$ ).
- Make sure all loudspeakers are connected in phase to ensure a correct sound reproduction.



- Always use cables having wires with an adequate cross-section, considering the cable length and the total loudspeaker power.
- Loudspeaker lines must be kept separated from mains cable, microphone cables or others, in order to avoid inductive phenomena may cause hum or noises.
- Use loudspeaker cables having twisted wires to reduce hum caused by inductive effects due to coupling with electromagnetic fields.

In sound systems for emergency purposes, it is necessary to use fire-resistant cables.

Suitable RCF cables are:

- CV 210 - 2 x 1 mm<sup>2</sup> (p.n. 143 80 030)
- CV 215 - 2 x 1.5 mm<sup>2</sup> (p.n. 143 80 031)
- CV 225 - 2 x 2.5 mm<sup>2</sup> (p.n. 143 80 032).

## GUIDANCE ON THE MEASUREMENT OF THE SPEAKER LINE IMPEDANCE



In the DXT 3000 system, monitoring of the integrity of speaker lines is made through impedance measurement at subsonic frequency (20 Hz).

This method was chosen because of its good stability and accuracy of calculated values, which avoids false line fault reports that often occur with impedance measurements faster at ultrasonic frequencies, but more prone to interferences and errors.

To use the DXT 3000 line monitoring properly, so that it fully complies with the European Safety Standard EN 54-16, it is strictly necessary to consider the functional limitations of all devices.

The two main limitations are:

- Measurable impedance range.
- The minimum / maximum tolerance compared to the calibration value of the measurement for the line fault detection.

Let us now analyse in detail these two limitations.

## MEASURABLE IMPEDANCE RANGE

The impedance range is calibrated on the max. amplifier output power.

The amplifier board has two outputs (two zones) and the max. overall total power is 500 W (max. 250 W per each zone). The zone number can be increased to 4 or 6 (by adding one or two amplifier boards), but the max. total output power is always 500 W.

In a 100 V (or 70 V) constant voltage line, the minimum measurable impedance **Zmin** can be estimated (in all the three cases) considering a load having double the maximum output power **Pmax** (250 W) on a single line (and ignoring the efficiency of speakers and approximating the impedance at 20 Hz with the real one; the phasor impedance at 20 Hz is only 9 degrees out of phase with the real axis).

$$Z_{min_{100V}} = \frac{(100 \text{ V})^2}{2 P_{max}}$$

or

$$Z_{min_{70V}} = \frac{(70.7 \text{ V})^2}{2 P_{max}}$$

The result is:

$$Z_{min} = 20 \Omega \text{ (at 100 V)}, Z_{min} = 10 \Omega \text{ (at 70 V)}$$

The maximum measurable impedance **Zmax** can be estimated considering lines loaded to a quarter of the maximum output power **Pmax** on a single line.

$$Z_{max_{100V}} = \frac{(100 \text{ V})^2}{0.25 P_{max}}$$

or

$$Z_{max_{70V}} = \frac{(70.7 \text{ V})^2}{0.25 P_{max}}$$

The result is:

$$Z_{max} = 160 \Omega \text{ (at 100 V)}, Z_{max} = 80 \Omega \text{ (at 70 V)}$$

Amplifiers are protected and designed to operate at their maximum rated power.

**The best impedance range (Zmon)**, in which its measurement is more stable, immune to errors and repeatable, is **from 50% to 100% of the load corresponding to the maximum power** of the channel.

$$\text{With 100 V lines: } 40 \Omega \leq Z_{mon} \leq 80 \Omega$$

$$\text{With 70 V lines: } 20 \Omega \leq Z_{mon} \leq 40 \Omega$$

Note that (depending on tolerances of sensors) measures higher or lower than the indicated limits can be similarly accurate and valid.

These values shall be considered as 'confidence thresholds' of the line control.

In fact, sensors could measure impedances (at 20 Hz) in the 5 ÷ 400 Ω range.

Measuring of impedances out of that range may be prone to errors and interferences.

## TOLERANCE COMPARED TO THE CALIBRATION VALUE

The choice of the speaker line impedance tolerance is important in order to avoid these two cases:

- Too low tolerance: every little interference will cause a false line fault.
- Too high tolerance: the system will not report any fault even with a line damage that excludes most speakers.

EN54-16 standard requires the system to indicate speaker line faults (short or open circuits) and not a single speaker fault. Therefore, a single speaker fault is tolerable, but not the loss of a line section.

In a 100 / 70 V line all speakers are linked in parallel, so a short circuit (total impedance tends to zero) leads to the opening of the entire speaker line.

The choice of the tolerance (six options: 20-30-40-50-60 %) is important to get a proper speaker line monitoring.

Consider the following general rule:

**“The recommended tolerance value is the highest of the available options, but lower than the weight of the smallest percentage change in impedance, usually due to the disconnection of the speaker having the highest impedance and installed at the end of a line branch.”**

An example: a line has a total impedance 80 Ω (**Ztot**) and ends with a 400 Ω-speaker (**Zmaxend**).

In case of **disconnection of the 400 Ω-speaker**, the line total impedance will change from **80 Ω (Ztot)** to **100 Ω (Znoend)**.

The following formula is basically the calculation of the impedances in parallel:

$$Z_{noend} = \frac{Z_{maxend} \times Z_{tot}}{Z_{maxend} - Z_{tot}}$$

**NOTE:** THE LINE IMPEDANCE HERE IS CONSIDERED AT THE FREQUENCY OF 20 Hz (WHICH IS NOT EQUAL TO THE ONE MEASURED BY AN IMPEDANCE METER AT 1 kHz)!



The percentage difference between the two impedances is **25%**, so it is necessary to set the tolerance to the **20%** option.

However, there are many cases where the weight percentage of the last speaker is less than 20%, often making impossible to detect any damage to the line.

Moreover, there are speakers (e.g. horns) that are virtually open circuits at the frequency of 20 Hz, making it impossible to measure the line impedance.

In these cases, it is strictly necessary to connect (at the end of lines) devices having an impedance (at 20 Hz) that allows the calibration (in the proper range of each channel) and low enough to make it possible to detect the opening of the last line segment.

These devices are just named **‘End Of Line’**, hereafter abbreviated as EOL

## EOL ('END OF LINE'): FEATURES AND USE GUIDELINES

**EOL** are reactive loads having an impedance  $200 \Omega$  at the resonance frequency (20 Hz). Absorbing reactive power only, EOL can be added to a speaker line without affecting the rated power of its amplifier. However, this is valid if considering the dynamic of the impedance meter, which can properly measure up to a maximum load of twice the rated amplifier power.

To ensure proper line monitoring when the constrain of the last speaker of various line branches (explained in the previous paragraph) is not respected, it will be necessary to add an EOL at the end of each line branch.

### **The maximum number of EOL that can be added is six.**

This is due to problems of dynamics of the impedance measuring circuit and the amplifier (eddy currents need to be considered, as these can overload the amplifier). The EOL will be assigned to the available lines in order to allow impedance measurement.

The total impedance (**Ztot**) resulting from the parallel between the load impedance already present in the line (**Zline**) and EOL (**Zeol** =  $200 \Omega$ ) is easily obtainable by the following formula:

$$\mathbf{Z_{tot}} = \frac{\mathbf{Z_{line}} \times \mathbf{Z_{eol}}}{\mathbf{Z_{line}} - \mathbf{Z_{eol}}}$$

NOTE: THE LINE IMPEDANCE (**ZLINE**) HERE IS CONSIDERED AT THE FREQUENCY OF 20 Hz (WHICH IS NOT EQUAL TO THE ONE MEASURED BY AN IMPEDANCE METER AT 1 kHz)!

In case of a single line having a particularly low impedance load or lines including horn speakers (open circuits at 20 Hz), it will be necessary to add more EOL in parallel.

**In case the line is divided into more branches, in each branch the EOL number needs to be the same, in order to guarantee a proper monitoring and respect the following formula:**

$$\mathbf{Neol} > \frac{\mathbf{200 \Omega}}{\mathbf{Z_{tot} (21 - Nbranch)}}$$

**Neol** = EOL number  
**Ztot** = total impedance  
**Nbranch** = line branch number

Within the system operation limits, the result is equal to 1.

Anyway, to know how many EOL are needed in a line, it is necessary to calculate the total impedance (**Ztot**) by applying the following formula (parallel impedances), adjusted with the EOL number (**Neol**):

$$\mathbf{Z_{tot}} = \frac{\mathbf{Z_{line}} \times \frac{\mathbf{200 \Omega}}{\mathbf{Neol}}}{\mathbf{Z_{line}} + \frac{\mathbf{200 \Omega}}{\mathbf{Neol}}}$$

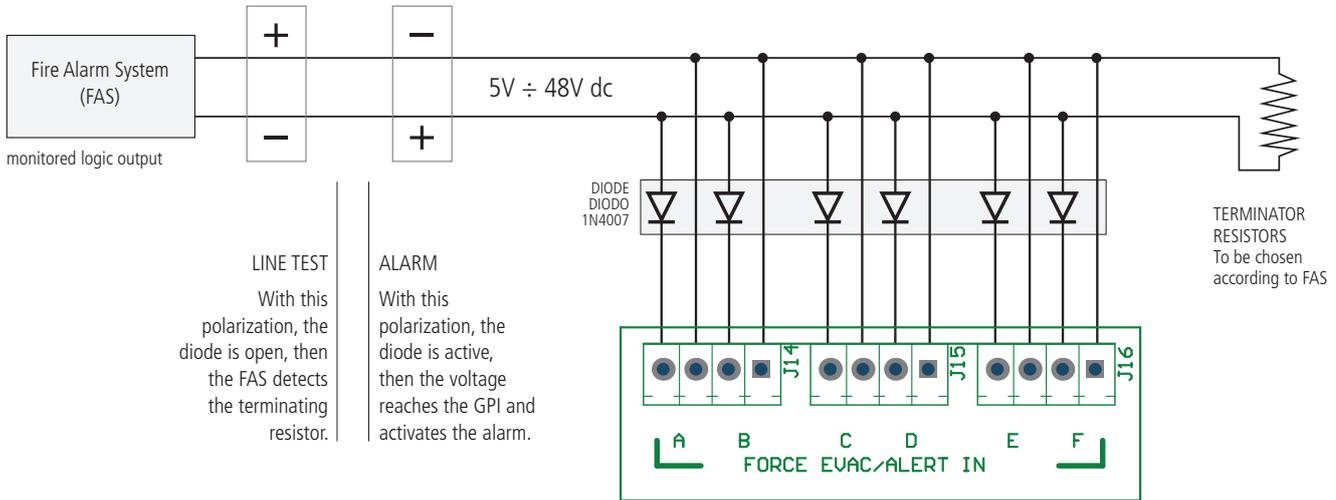
NOTE: THE LINE IMPEDANCE (**ZLINE**) HERE IS CONSIDERED AT THE FREQUENCY OF 20 Hz (WHICH IS NOT EQUAL TO THE ONE MEASURED BY AN IMPEDANCE METER AT 1 kHz)!

The total impedance must respect the constraints about EOL.  
Max. EOL number is six.

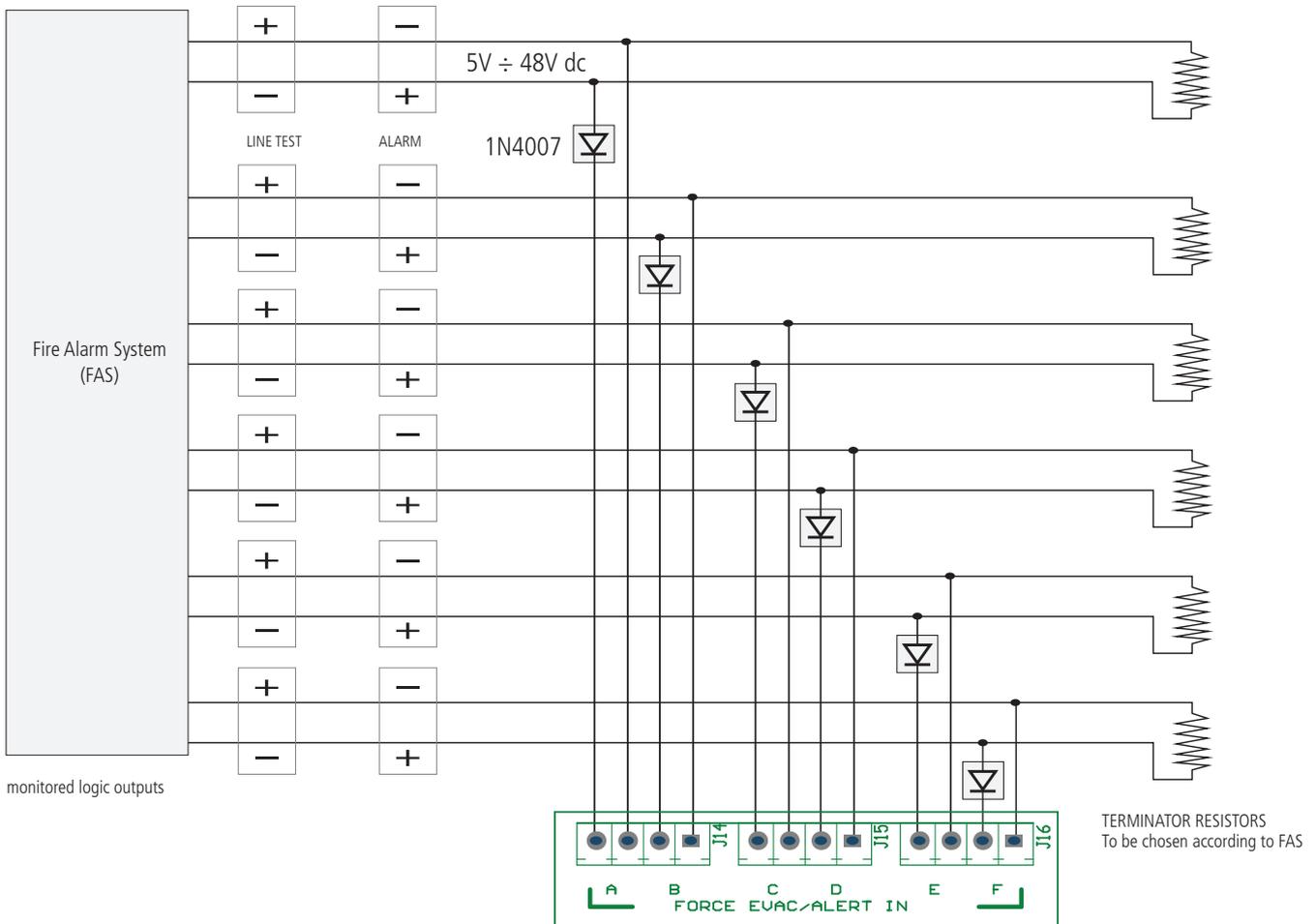




## SINGLE LINE MONITORING - GENERAL ALARM



## SEPARATE MONITORING OF EACH LOGIC INPUT - ZONE ALARM





Max. overall output power:	up to 500 W, freely assignable within the limit of 250 W per each zone (power that corresponds to either a 40 Ω load at 100 V or a 20 Ω load at 70 V)
Frequency response:	80 Hz ÷ 16 kHz (± 1 dB)
Distortion (THD + N):	0.3% typical (1% max., f: 1 kHz)
Output voltage to speaker lines:	100 V / 70 V
Signal / noise ratio:	> 80 dBA
Operating voltage (mains):	230 / 115 V ac +10/-15% 50/60 Hz, internal setting
Operating voltage (batteries):	48 V dc (4x 12 V)
Amplifier fuses:	F1 T4AL, F2 T4AL
Power supply fuse:	T3.15AL (230 V) / T6.3AL (115 V)
Nominal speaker load (Zmin):	40 Ω (100 V) / 20 Ω (70 V), CI= 5nF
Consumption (ac):	max. 700 W
Heat dissipation:	70 W (1/8 max. output power)
Battery (dc) current draw:	max. 15 A
<b>BATTERIES</b>	
- Capacity:	18 Ah
- I <sub>max a</sub> = I <sub>max b</sub> :	500 W / 8 = 62.5 W = 5.2 W x 12 outputs
- I <sub>min</sub> :	0
- Lowest voltage:	45.6 V
- Full charge voltage:	53.6 V
- R <sub>i</sub> max:	600 mΩ
- Operating condition with the heaviest load:	t = 1 min (EN 54-16:2008 paragraph 16.4.2.3)
Ambient operating temperature:	0 ÷ 40°C (32 ÷ 104 °F)
Input connectors:	removable screw terminals
Max. evacuation zone number:	6 (MX 3500/6)
Max. number of daisy-chained BM 3804 paging microphones:	4
Simultaneous audio channels:	3
Paging microphone cable:	CAT 6 FTP or J-type (RCF)
Logic output max. current:	2 A
Logic output max. switching voltage:	100 V
Logic output max. switching power:	30 W
Dimensions (w, h, d):	430 mm, 620 mm, 180 mm (19" rack – 14 units)



0068

RCF S.p.A. - Via Raffaello Sanzio 13, 42124 Reggio Emilia, ITALY

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0068-CPR-007/2015

EN 54-16:2008

Voice alarm control and indicating equipment for fire detection and fire alarm systems for buildings

EN 54-4:1997 + A1:2002 + A2:2006

Power supply equipment for fire detection and fire alarm systems for buildings

DXT 3000

Provided options (EN 54-16:2008)

- 7.3 Audible warnings
- 7.6.2 Manual silencing of the voice alarm condition
- 7.7.2 Manual reset of the voice alarm condition
- 7.8 Output to fire alarm devices
- 7.9 Voice alarm condition output
- 8.3 Indication of faults related to the transmission path to the CIE
- 8.4 Indication of faults related to voice alarm zones
- 10 Voice alarm manual control
- 12 Emergency microphone(s)
- 13.14 Redundant power amplifiers

DoP: 001\_18

Other technical data: see operational manual.

Except possible errors and omissions.  
RCF S.p.A. reserves the right to make modifications without prior notice.

[www.rcf.it](http://www.rcf.it)



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