USER MANUAL

UP 9501
UP 9502
UP 9504

- DXT 9000
  SYSTEM AMPLIFIERS

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SAFETY PRECAUTIONS

IMPORTANT
Before connecting and using this product, please read this instruction manual carefully and keep it on hand for future reference.
The 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 in series several batteries having a lower nominal voltage, example: 4 x 12 V, 2 x 24 V).
- 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 48 V dc plug is 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 subject 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 odours or smoke, **switch it off immediately and disconnect its power cord and batteries.**

IMPORTANT

WARNING

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.

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 instruction 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 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 cabinet and wiring) may invalidate the CE marking (certification EN54-16: 2008) and also the product warranty.

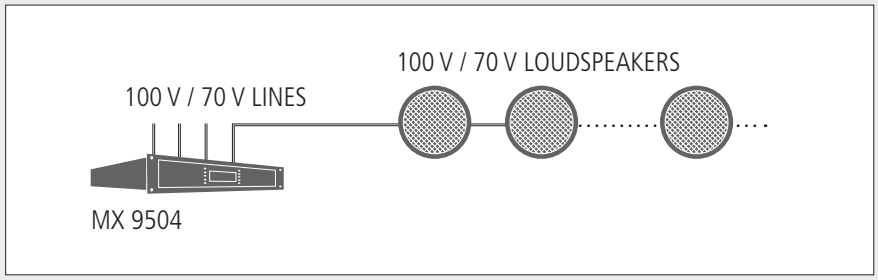
NOTES ABOUT AUDIO SIGNAL CABLES

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.

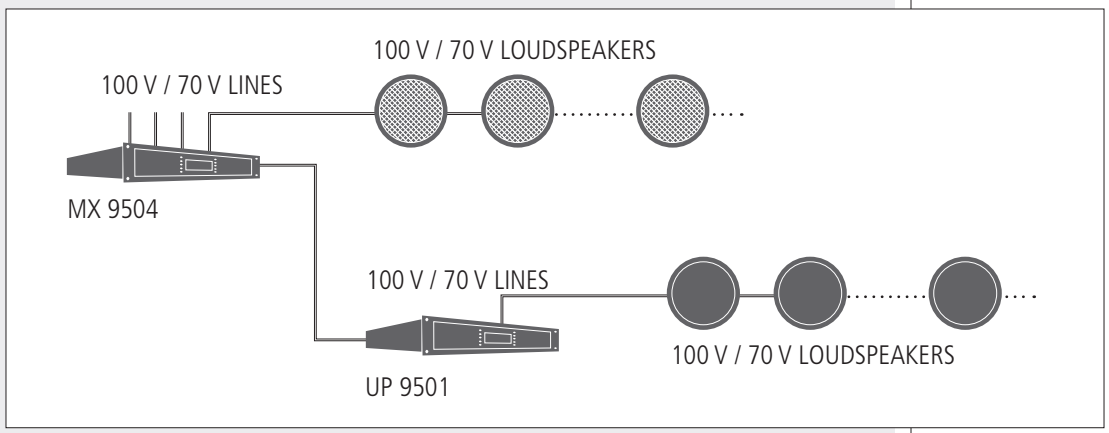
RCF S.P.A. THANKS YOU FOR PURCHASING THIS PRODUCT, WHICH HAS BEEN MADE TO GUARANTEE RELIABILITY AND HIGH PERFORMANCE.

DXT 9000 SYSTEM DESCRIPTION

DXT 9000 is a monitored digital paging / evacuation system in compliance with EN 54-16 and ISO 7240-19 that allows a completely scalable and versatile range of configurations and solutions.
It features a double-ring topology approach: a first simple ring for the small and medium size systems and a second larger ring supported by main units with router (MU 9186/R) for large and extra-large applications, always plug & play and easy-configurable.
For instance, a small system can be designed by using only one MX 9502 / MX 9504 main unit, which already includes all the necessary controls and two 250 W (MX 9502) / four 125 W (MX 9504) class D power amplifiers (having 100 V / 70 V constant voltage loudspeaker lines).



A system that requires a higher output power or a larger number of zones can be obtained by adding one or more system amplifiers model UP 9501 (1 x 500 W), UP 9502 (2 x 250 W) or UP 9504 (4 x 125 W) to the MX 9502 / MX 9504, connected through the dedicated RCF FLEXCOM data-link port.



MU 9186 is another main unit model similar to MX 9502 / MX 9504, but without internal power amplifiers.

Since data wiring may have critical connections, for instance due to cable type and length, RCF FLEXCOM bus can adapt the data communication speed to the wiring characteristics and available data band.

Only a few devices are necessary to design the simplest and the most complex projects, centralized or distributed: no matter if a supermarket or a theatre, an airport or a shopping centre, a fast-food or an underground, a school or a hospital.

Diagnostic functions and fault reporting meet all evacuation system requirements.

Wiring is limited to a twin pair J-type fire-rated cable for most of connections and to a four-pair J-type fire-rated cable to link paging microphones.

The system configuration can be edited on the main unit front panel (for small systems), but it can also be made through a local or remote PC, by using a dedicated graphic user interface software.

The dual power supply allows both AC and DC operation.

The 'RCF D+ Class' power amplifier technology and recover-fall-back built-in facility make the DXT 9000 a highly secure, reliable and safe system.

Each DXT 9000 unit is equipped with an RS 485 serial port to be used for the dedicated system programmable remote controls. Noise detection devices work on RS 485 port as well.

Two pre-recorded messages can be simultaneously played and sent to the DXT 9000 network from main units, which can store both emergency messages (to a checked dedicated memory) and routine messages (on separated SD cards).
Another SD/USB support is used as MP3 player (to play background music).

The Ethernet port (on main units) allows to get the complete remote control of the entire system.

The Ethernet port (on main units) allows to get the complete remote control of the entire system.
DXT 9000 devices have programmable logic inputs and outputs, checked by the system itself or by the connected security/emergency devices, such as fire alarm systems.

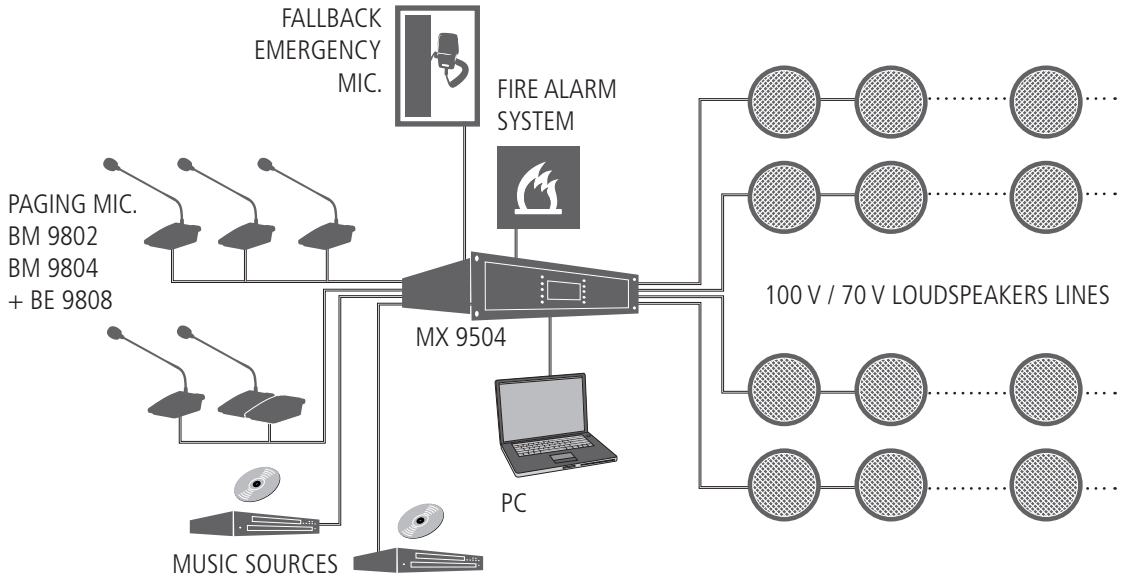
Each component has its own digital address.

DXT 9000 includes high quality digital components already in use for RCF professional audio systems, obtaining high performances and qualifying the DXT 9000 system for installations in places that require a very good sound reproduction, such as theatres and auditoriums.

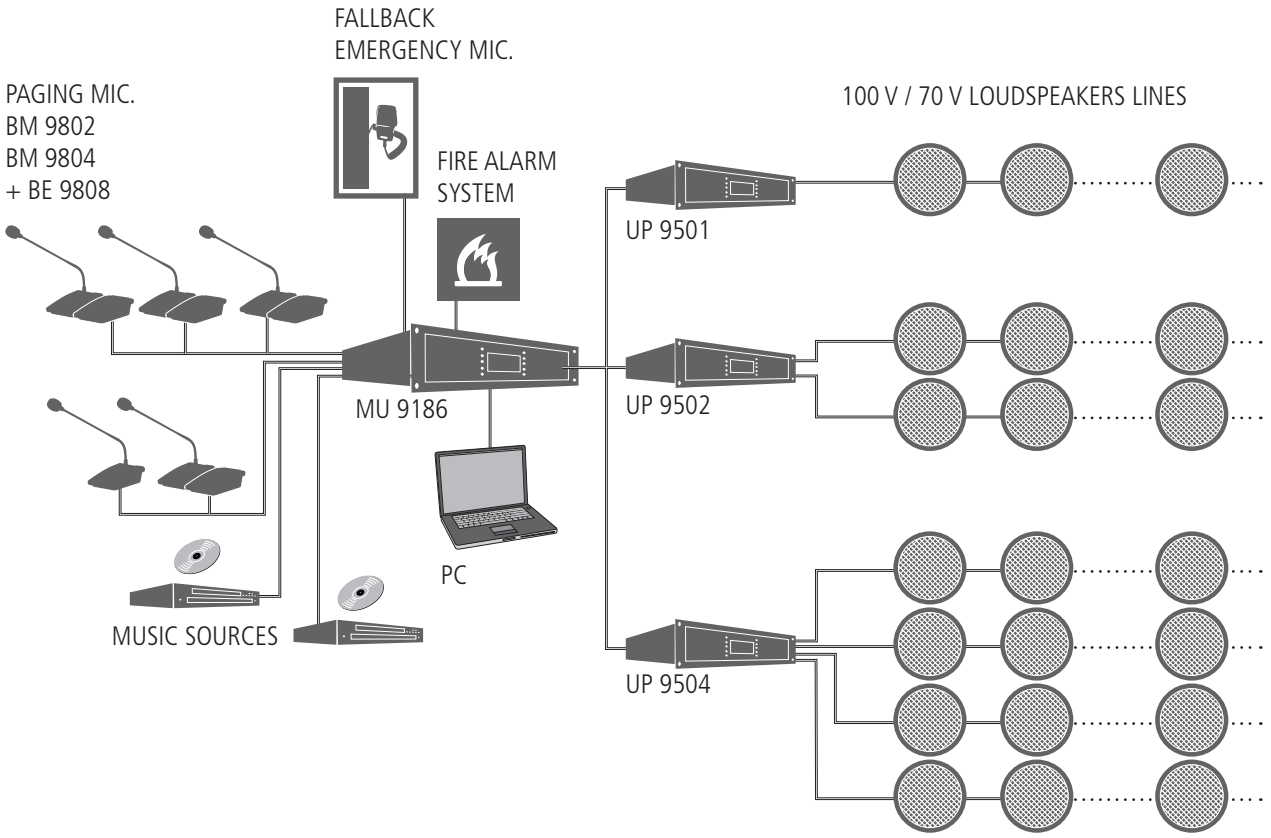
DXT 9000 SYSTEM COMPONENTS

- MX 9502 Main unit including two 250 W class D amplifiers inside
- MX 9504 Main unit including four 125 W class D amplifiers inside
- MU 9186 Main unit (no power amplifiers inside)
- MU 9186/R Main unit with router (no power amplifiers inside)
- UP 9501 Unit with a single 500 W class D amplifier
- UP 9502 Unit with two 250 W class D amplifiers
- UP 9504 Unit with four 125 W 500 W class D amplifiers
- BM 9804 Paging microphone with zone selection
- BM 9802 Paging microphone with zone selection through numeric keyboard
- BE 9808 Additional 8-zone keyboard for paging microphones
- TS 9918 Remote level control and programme selector

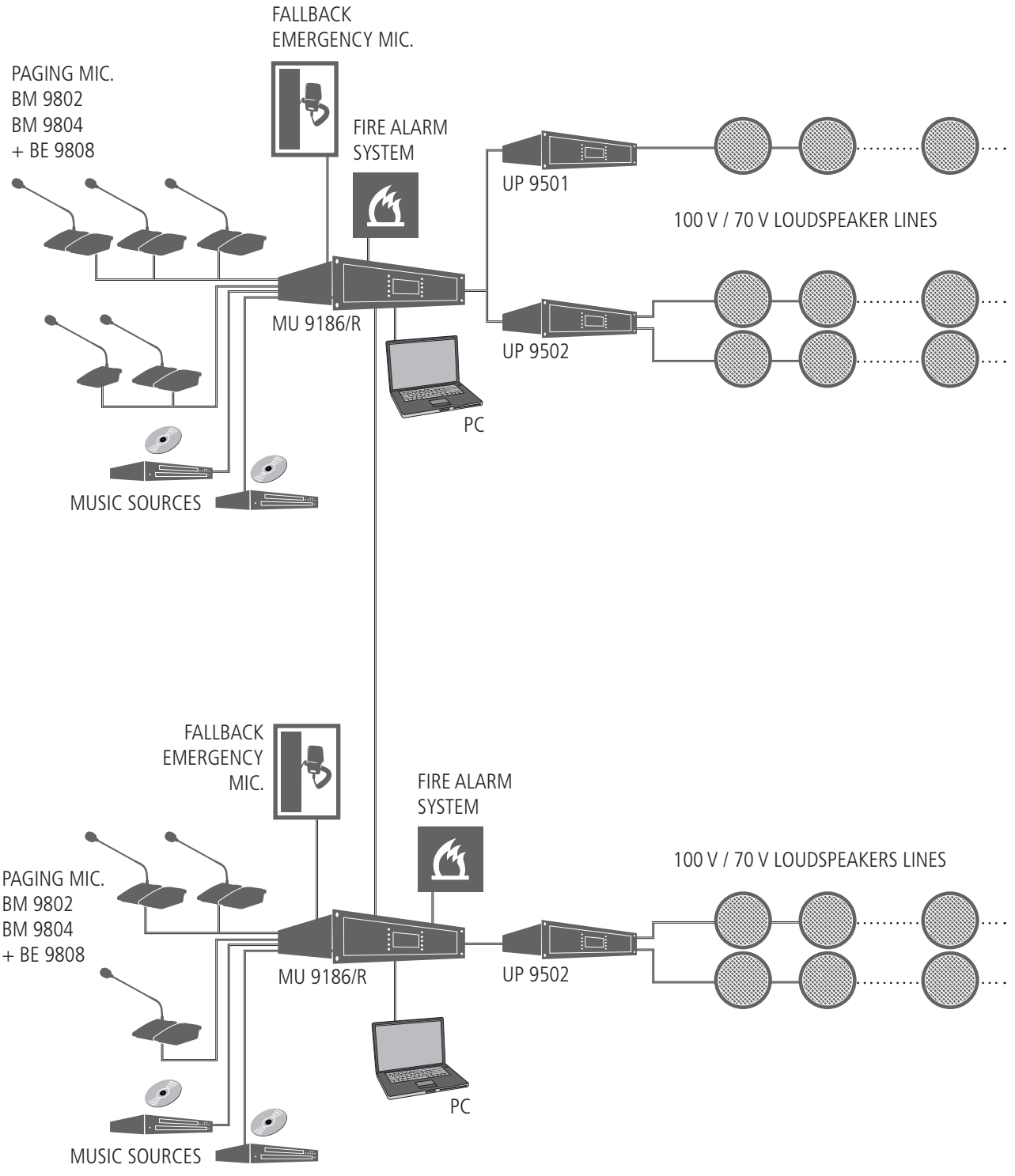
EXAMPLE: SYSTEM WITH MX 9504 MAIN UNIT



EXAMPLE: SYSTEM WITH MU 9186 MAIN UNIT



EXAMPLE: SYSTEM WITH NETWORK



UP 9500 SERIES AMPLIFIER MAIN FEATURES

UP 9500 series amplifiers are based on RCF 'Class D+' technology and have a FALL BACK emergency audio input, making the DXT 9000 system highly safe and reliable.
These can operate as either DXT 9000 system components (linked to MU 9186 / MX 9502 / MX 9504 main units) or generic amplifiers (with limited functionality) for other audio systems.

The three models differ in the number of channels, the power per channel and the number of amplified outputs.
UP 9501 has a single 500 W internal amplifier, UP 9502 has two 250 W internal amplifiers, UP 9504 has four 125 W internal amplifiers.
The UP 9501 model has 2 amplified outputs (1 channel only), the UP 9502 model has 2 amplified outputs for both channels, the UP 9504 model has a single amplified output per each channel.
Every amplified output is a monitored 100 V / 70 V loudspeaker line.

The only model UP 9501 (1 x 500 W) can be set as the spare amplifier (for one or more amplifiers) that automatically replaces the faulty one.

The spare amplifier (of a system / system part) shall be necessarily installed into the same rack cabinet where amplifiers to be replaced (in case of fault) are already placed.

A local FALL BACK input is available to link a dedicated and independent paging microphone (or another audio source) for emergency announcements.

Another local input is available to link a device for background music (e.g. CD / MP3 player).

Diagnosis is in compliance with EN 54-16 and ISO 7240-19.

Front panel control with LCD display.

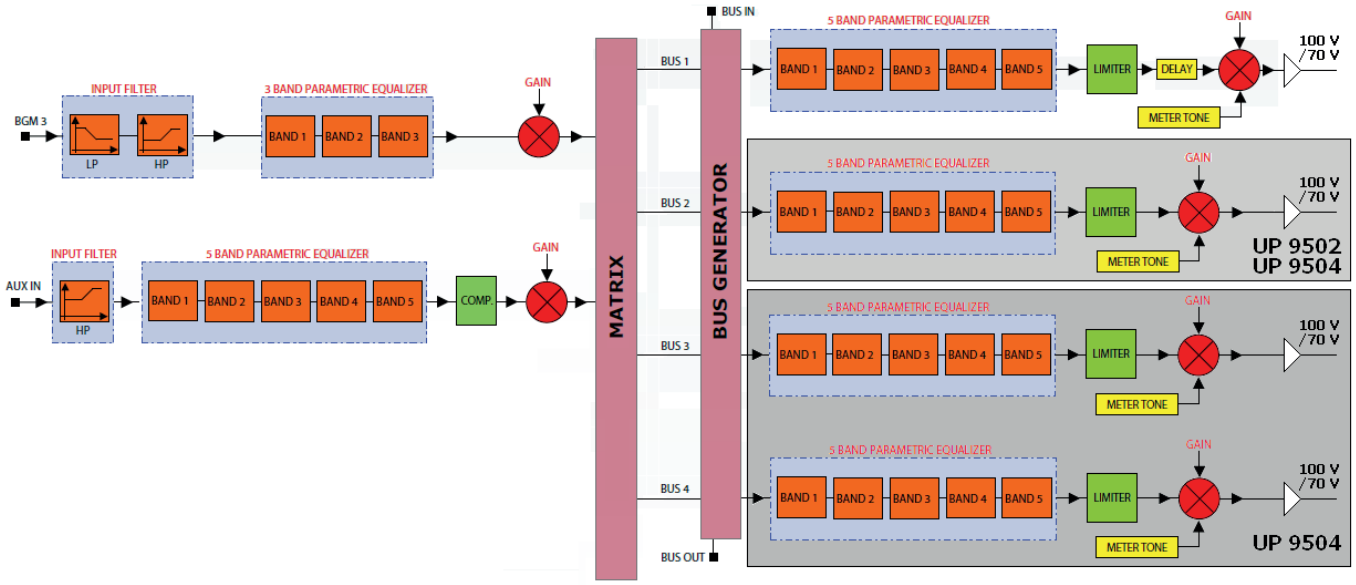
RCF-FLEXCOM digital audio bus.

12 GPI logic inputs (8 monitored and 4 optical) and 8 GPO logic outputs (relays).

RS 485 serial port (screw terminals) for interfacing and monitoring.

AC and DC power supply.

BLOCK DIAGRAM



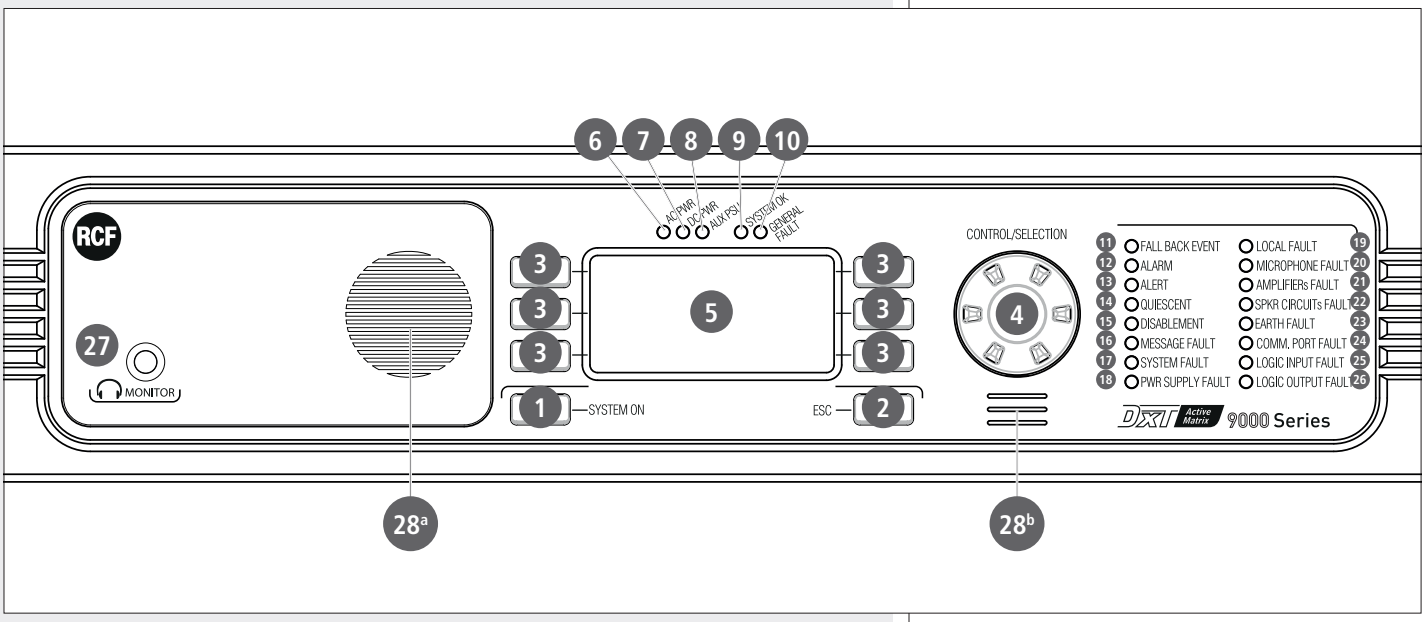
INSTALLATION INTO A 19" RACK CABINET

Fix every amplifier to the front side of a 19" rack cabinet through 4 screws.
UP 9500 series amplifiers have forced ventilation controlled by a thermostat and can be stacked without spaces or ventilation panels.
Air ventilation is horizontal, so it is necessary to keep open the lateral sides.

Rack cabinets shall have:

- At least an IP 30 rating.
- A door with glass (or a thin metal mesh), through which the warning and emergency light indications are clearly visible (according to regulations).

FRONT PANEL



1 **SYSTEM ON** button: press and hold to turn amplifier on (when off).
This button also works as fault acknowledge: press it to remove the displayed fault indication.

THE **SYSTEM ON** BUTTON DOES NOT TURN THE UNIT OFF. TO SWITCH THE UNIT OFF, MAKE SURE THE 48 V DC POWER SUPPLY (BATTERIES) IS NOT PRESENT AND USE EITHER THE PROPER SOFTWARE FUNCTION OR THE MAIN POWER **41** SWITCH ON THE REAR PANEL.

2 **ESC** ('Escape') button: press to quit the displayed menu.

3 Six buttons to select the respective functions shown on the display.

4 **CONTROL / SELECTION:** rotary encoder and push-button to select.
Turn the control clockwise to scroll the displayed downwards or increase the selected parameter value.
Turn it counterclockwise to scroll the menu upwards or decrease the selected parameter value.
Press to select.

5 Display (LCD)

6 ÷ 26 LEDs

Nr.	SILK SCREEN	COLOUR	IT WORKS AS GENERIC AMPLIFIER	INDICATION (WHEN LIT)	FURTHER INFORMATION
6	**AC PWR**	Green	Yes	The mains power (AC) is present and the respective fuse is intact.	If the LED is off, the mains power is not available (or out of range).
7	**DC PWR**	Green	Yes	48 V dc power supply is present and the respective fuse is intact.	If the LED is off, 48 V dc is not available (or out of range).
8	**AUX PSU**	Green	Yes	The main unit is turned on and its stand-by power supply unit operates properly.	
9	**SYSTEM OK**	Green	Yes	No detected faults: the entire system is operating properly.	The LED is lit when no faults are detected on any system device.
10	**GENERAL FAULT**	Yellow	**No**	One or more faults have been detected, including problems on power supply, so it can be lit even if the AC PWR 6 and DC PWR 7 green LEDs are off. The LED gets lit even in case of failure of any peripheral unit.	If a logic input (GPI) is set to obtain a fault remote indication of an external device, a possible problem is indicated by the GENERAL FAULT LED.
11	**FALL BACK EVENT**	Red	**No**	An emergency announcement (with highest priority) is in progress through the FALL BACK INPUT 29.	
12	**ALARM**	Red	**No**	The evacuation message is currently played. This LED also indicates the play of a message from a microphone or an external source activated as EMERGENCY (e.g. GPI set to EMERG).	

Nr.	SILK SCREEN	COLOUR	IT WORKS AS GENERIC AMPLIFIER	INDICATION (WHEN LIT)	FURTHER INFORMATION
13	**ALERT**	Yellow	**No**	The alert message is currently played. This LED also indicates the play of a message from a microphone or an external source activated as ALERT (GPI set to ALERT).	
14	**QUIESCENT**	Green	**No**	The device is switched on but not playing any audio signal.	It simply indicates an idle state, as there is no audio signal.
15	**DISABLEMENT**	Yellow	Yes	One or more device inputs, outputs or peripherals are disabled.	This LED is lit only in case of one or more circuits and/or devices used for evacuation/emergency are disabled. In the case, for example, of a non-monitored paging microphone, its disabling will not make the LED get lit.
16	**MESSAGE FAULT**	Yellow	**No**	Main unit emergency message player fault.	Faulty memory or problems on the audio path (the internal message player is not properly linked to the system audio outputs).
17	**SYSTEM FAULT**	Yellow	**No**	Internal microprocessor reset.	After rebooting, the LED will be off, but the reset event will remain in the SYSTEM / FAULT LOG.
18	**PWR SUPPLY FAULT**	Yellow	Yes	Power supply fault (internal power supply, internal boards or external power supply).	A logic input (GPI) needs to be linked to the logic output of the external power supply unit and set to EXTERNAL EVENT FAULT. A possible external power supply unit fault is displayed as EXTERNAL PSU FAULT.
19	**LOCAL FAULT**	Yellow	Yes	Amplifier fault. This LED gets lit even in case of mains power fault. This LED is lit in the fault device only. For instance, if an amplifier is faulty and the MASTER unit is properly operating, this LED is lit on the amplifier only, while the SYSTEM FAULT 17 LED is lit on both MASTER and amplifiers.	If a logic input (GPI) is set to signal a possible fault of an external system, this will be indicated by the LOCAL FAULT LED (only in the unit where the logic input has been activated).
20	**MICROPHONE FAULT**	Yellow	**No**	An emergency paging microphone (among those connected to the FALL BACK INPUT 29 is faulty.	
21	**AMPLIFIERs FAULT**	Yellow	Yes	One or more amplifiers are faulty.	
22	**SPKR CIRCUITs FAULT**	Yellow	Yes	One or more loudspeaker lines are faulty.	
23	**EARTH FAULT**	Yellow	Yes	Loudspeaker line earth leakage.	

Nr.	SILK SCREEN	COLOUR	IT WORKS AS GENERIC AMPLIFIER	INDICATION (WHEN LIT)	FURTHER INFORMATION
24	COMM. PORT FAULT	Yellow	**No**	Hardware / RS 485 serial port (for linking to a fire alarm system) fault.	This indication depends on either a broken / short-circuited cable or no data transmission (for example, due to a damaged serial port) or remote device unavailable.
25	LOGIC INPUT FAULT	Yellow	**No**	GPI fault. The LED gets lit when the logic input is monitored and its respective line is open or shorted.	A logic input (GPI) needs to be monitored when linked to a fire alarm system (to activate pre-recorded messages remotely).
26	LOGIC OUTPUT FAULT	Yellow	**No**	GPO fault. The LED gets lit when the logic output is monitored and its respective line is open or shorted.	A logic output (GPO) needs to be monitored when linked to a fire alarm system (for example, to signal an audio system fault to the fire alarm system).

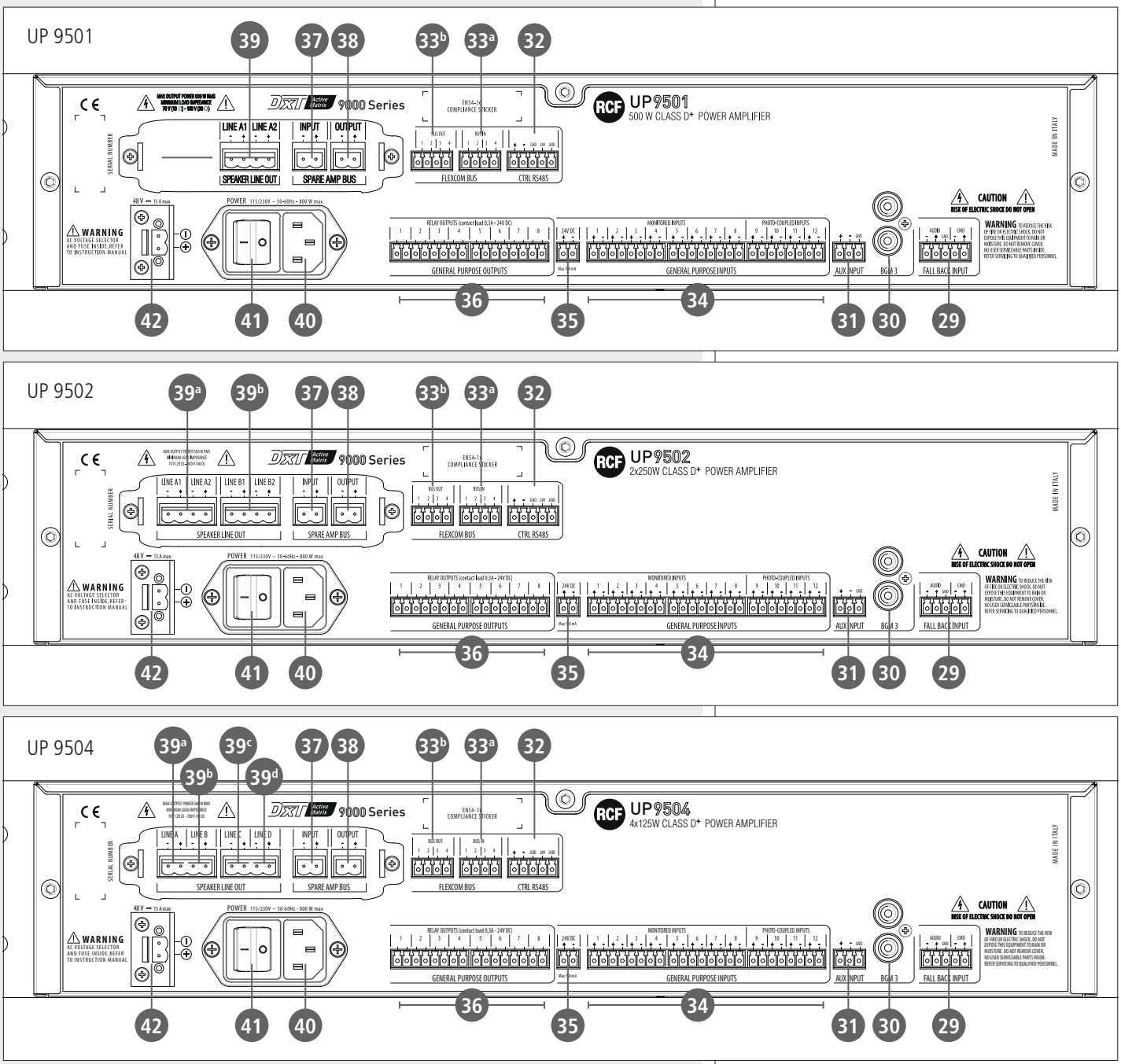
27 **MONITOR:** 6.3 mm jack input (TRS) for headphones.

28a Internal loudspeaker (monitor).

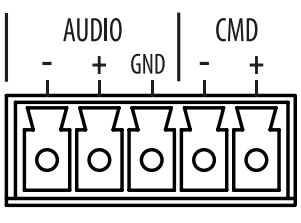
28b Internal buzzer for fault alert (or evacuation message in progress).
It can be muted by pressing the SYSTEM ON 1 button.

WHEN USED AS GENERIC AMPLIFIERS (NOT LINKED TO A DXT 9000 SYSTEM MAIN UNIT), ONLY A FEW LEDS ARE ENABLED.

REAR PANEL



29 **FALL BACK INPUT:** monitored audio input (balanced, 'line' level, for removable connector) to be used for emergency announcements. This input can be used even in case of software crash.



FALL BACK INPUT

AUDIO	–	Audio signal (cold)
	+	Audio signal (hot)
	GND	Audio signal ground
CMD	–	Activation and monitoring contacts of the FALL BACK audio input.
	+	

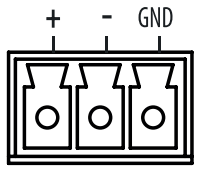
For monitoring purposes, the two CMD contacts should normally be powered by 24 V dc (voltage available from the **24 V DC** 35. FALL BACK input state depends on presence and polarity of the voltage at the two CMD contacts.

STATE	VOLTAGE AT THE CMD CONTACTS	DESCRIPTION
COMMAND KO	No voltage	The FALL BACK INPUT is not connected
IDLE	24 V dc, direct polarity	The FALL BACK INPUT is connected, but inactive
ACTIVE	24 V dc, reverse polarity	The FALL BACK INPUT is activated

30 **BGM 3** audio input (dual RCA connector) for a 'line' level signal (i.e. CD / MP3 player, tuner).

THE TWO CHANNELS (LEFT / RIGHT) OF THE **BGM 3** STEREO SIGNAL ARE MIXED IN MONO INSIDE THE DEVICE.

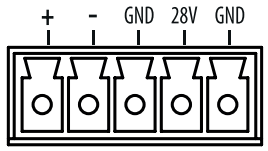
31 **AUX INPUT** balanced audio input (removable connector).



AUX INPUT

+	Hot
–	Cold
GND	Ground

32 **CTRL RS485:** RS 485 serial port (removable connector).

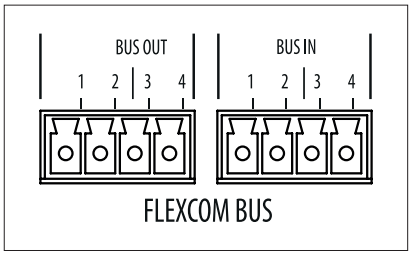


CTRL RS485

+	RS 485 B (non-inverting)
–	RS 485 A (inverting)
GND	RS 485 (reference ground)
28V	Power supply + 28 V dc
GND	Power supply ground

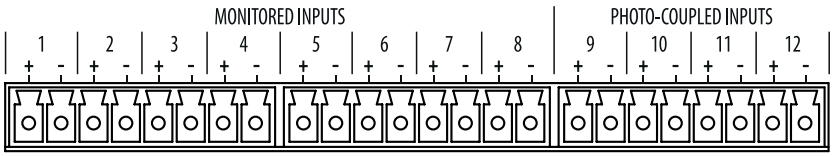
33a **FLEXCOM BUS IN:** data bus input (removable connector).

33b **FLEXCOM BUS OUT:** data bus output (removable connector).



FLEXCOM BUS

34 **GENERAL PURPOSE INPUTS**
12 logic inputs (removable connectors), of which the first 8 are monitored and the last 4 with opto-isolators.



GENERAL PURPOSE INPUTS

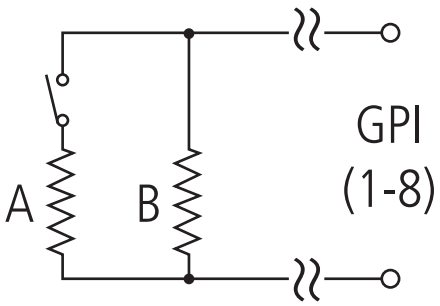
THE LOGIC INPUTS ARE ENABLED ONLY IF THE DEVICE IS LINKED TO A DXT 9000 SYSTEM MAIN UNIT.

THE LOGICAL INPUTS 9 TO 12 CAN BE ACTIVATED BY CONNECTING THE 24 V DC 35 OUTPUT TO EACH LOGIC INPUT. POSSIBLE LOGIC STATES: INACTIVE / ACTIVE.

LOGIC INPUT 1 ÷ 8 STATES:

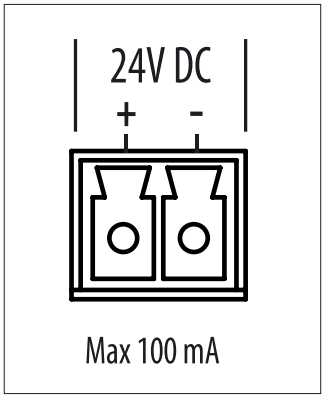
STATE		DETECTED RESISTANCE VALUE (R)
OPEN	Open line or too high resistance	R > 15 kΩ
SHORT	Short-circuit or too low resistance	R < 390 Ω
IDLE	Used logic input, but inactive	3.4 kΩ < R < 15 kΩ
ACTIVE	Activated logic input	390 Ω < R < 1.17 kΩ

SUGGESTED RESISTORS TO BE ADDED TO GET LINE MONITORING:

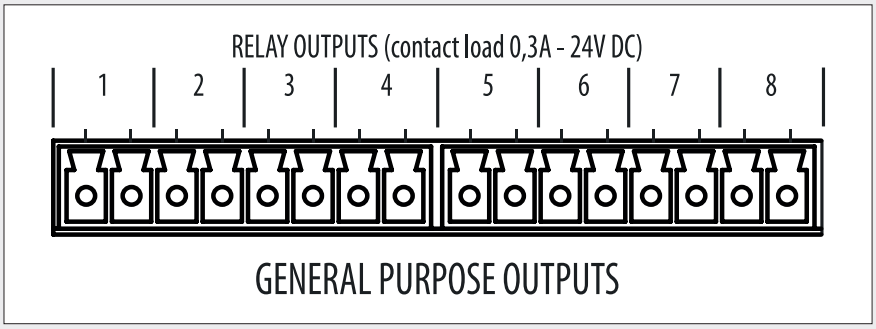


A	B
470 Ω	10 kΩ

35 **24 V DC:** 24 V dc output, max. 100 mA.

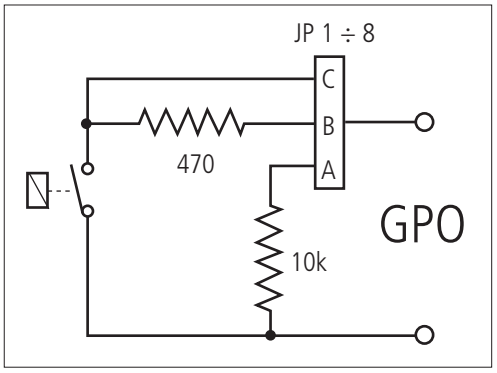


36 **GENERAL PURPOSE OUTPUTS**
8 logic outputs (relay dry contacts, removable connectors).



Each logic output has two resistors that can be inserted by setting the respective jumper (JP1 to JP8) to the **AB** position. These two resistors are necessary when the logic output (**GPO**) is linked to a logic input (**GPI**) of another device and the line monitoring is required.
The first resistor (470 Ω) is used to get the **ACTIVE** state, the second (10 kΩ) to get the **IDLE** state.

If a jumper is set to the **BC** position, the two resistors are overridden (the internal relay contact is directly connected).



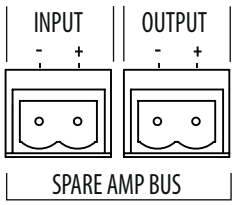
THE LOGIC OUTPUTS ARE ENABLED ONLY IF THE DEVICE IS LINKED TO A DXT 9000 SYSTEM MAIN UNIT.

INTERNAL JUMPER SETTING NEEDS TO BE CARRIED OUT DIRECTLY BY EITHER RCF OR AN AUTHORISED SERVICE CENTRE.

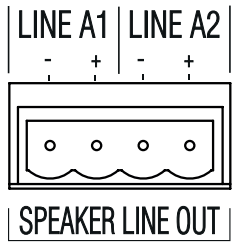
WARNING: DO NOT DIRECTLY POWER A LOGIC OUTPUT (**GPO**) WHEN THE RESPECTIVE INTERNAL JUMPER IS SET TO THE **AB** POSITION (INSERTED RESISTORS), AS THE MAX. CURRENT IS ONLY 25 mA. IF THE JUMPER IS SET TO THE **BC** POSITION, THE MAX. CURRENT IS 1 A.

37 SPARE AMP BUS – INPUT
Input to link the spare amplifier 100 V / 70 V output.

38 SPARE AMP BUS – OUTPUT
If the amplifier is not faulty (and so the spare amplifier is not inserted), this 100 V / 70 V output is directly linked to the **SPARE AMP BUS – INPUT** 37 and can be used to connect a dummy load.

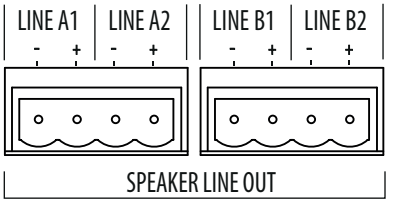


39 (UP 9501) SPEAKER LINE OUT
Two 100 V / 70 V loudspeaker line outputs (**LINE A1** and **LINE A2**) of the internal 500 W amplifier.



39a (UP 9502) SPEAKER LINE OUT
Two 100 V / 70 V loudspeaker line outputs (**LINE A1** and **LINE A2**) of the internal amplifier channel A (250 W).

39b (UP 9502) SPEAKER LINE OUT
Two 100 V / 70 V loudspeaker line outputs (**LINE B1** and **LINE B2**) of the internal amplifier channel B (250 W).

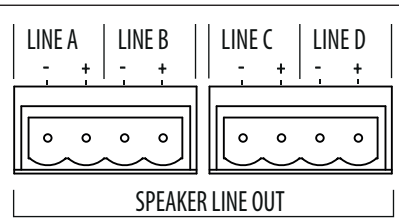


39a (UP 9504) SPEAKER LINE OUT
100 V / 70 V loudspeaker **LINE A** output of the internal amplifier channel A (125 W).

39b (UP 9504) SPEAKER LINE OUT
100 V / 70 V loudspeaker **LINE B** output of the internal amplifier channel B (125 W).

39c (UP 9504) SPEAKER LINE OUT
100 V / 70 V loudspeaker **LINE C** output of the internal amplifier channel C (125 W).

39d (UP 9504) SPEAKER LINE OUT
100 V / 70 V loudspeaker **LINE D** output of the internal amplifier channel D (125 W).



40 Power cord input (to be connected to a mains earthed socket only).

41 **POWER** switch (0 = OFF, I = ON).

42 Input for 48 V dc power supply (removable screw terminals) through batteries.

NOTE: ACCORDING TO EN 54-16 STANDARD, THE BACKUP POWER SUPPLY UNIT SHALL BE INSTALLED INTO THE SAME RACK CABINET WHERE THERE IS THE AUDIO SYSTEM WITH EMERGENCY PURPOSES (OR A SYSTEM PART) TO WHICH IT IS CONNECTED.

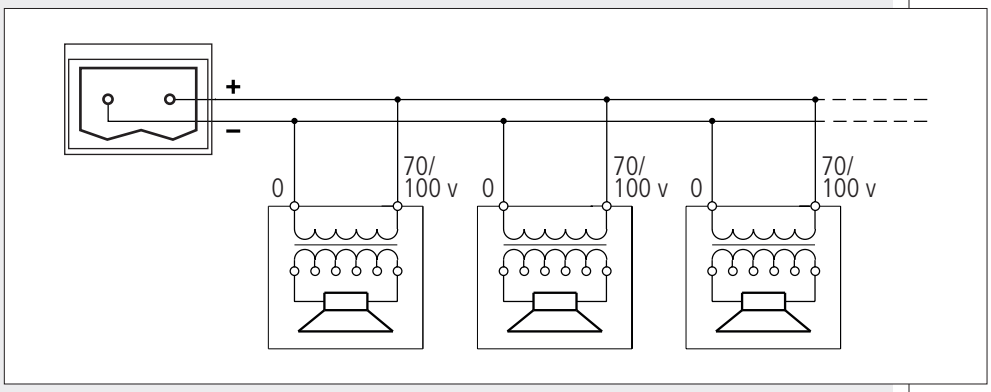
THE DETECTION OF 48 V DC POWER SUPPLY INVOLVES THE IMPLICIT CONDITION THAT THE SYSTEM IS ALWAYS TURNED ON, THUS NOT ALLOWING SHUTDOWN OF THE MAIN UNIT THROUGH THE RESPECTIVE FUNCTION IN THE MENU, NOR THROUGH THE **POWER** SWITCH 41.

LOUDSPEAKER CONNECTION

Connect all loudspeaker respecting the phase.
Every loudspeaker shall have a matching transformer, which input is suitable for the line voltage (70 / 100 V).

The output voltage setting (either 100 V or 70 V) can only be made by an authorised RCF service centre.

UP 9501
Connect the positive wire of the loudspeaker line to the '+' contact to one of the two amplifier outputs (either LINE A1 or LINE A2) 39 and the negative wire to the respective '–' contact.
The total power of all connected loudspeakers shall not exceed (500 W).



UP 9502
This model has 2 independent channels (**A** and **B**), each with 2 outputs (**1** and **2**):

LINE A1 and **LINE A2** 39ª;

LINE B1 and **LINE B2** 39ᵇ].

The total power of all connected loudspeakers of a single channel shall not exceed 250 W.
See the UP 9501 model for loudspeaker connection.

UP 9504
This model has 4 independent channels (**A**, **B**, **C**, **D**):

LINE A 39ª;

LINE B 39ᵇ;

LINE C 39ᶜ;

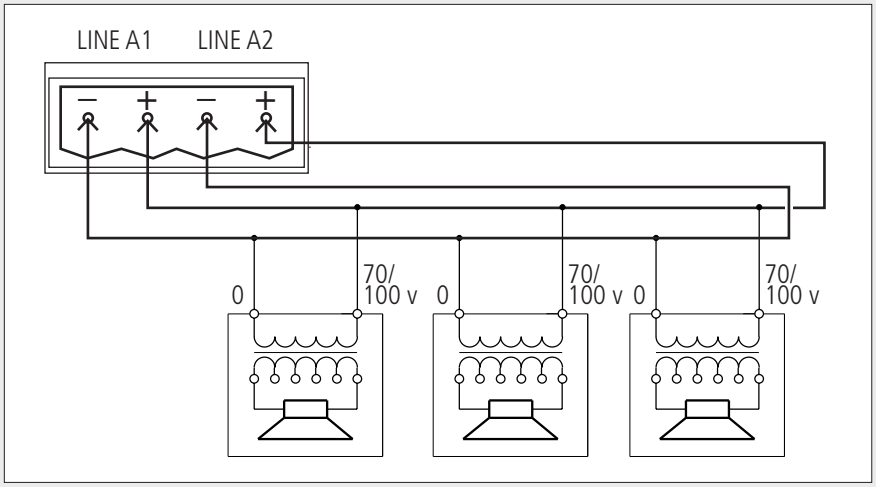
LINE D 39ᵈ.

The total power of all connected loudspeakers of a single channel shall not exceed 125 W.
See the UP 9501 model for loudspeaker connection (note: only one output per channel).

LOUDSPEAKER LOOPED LINE ('RING MODE')

If amplifiers are linked to a DXT 9000 system main unit (i.e. MU 9186, MX 9502, MX 9504), in the (only) UP 9501 and UP 9502 models the loudspeaker line can wired as a loop (by using both channel outputs, to ensure continuity of service even in case of interruption of the line in a point).

In the DXT 9000 system main unit DXT 9000 (MU 9186, MX 9502, MX 9504), the **SET RING** parameter (**DISABL-SURV** > **CALIBRAT** > amplifier > **SET RING**) of every amplifier with looped loudspeaker lines shall be set to '**A Ring B Out**'.

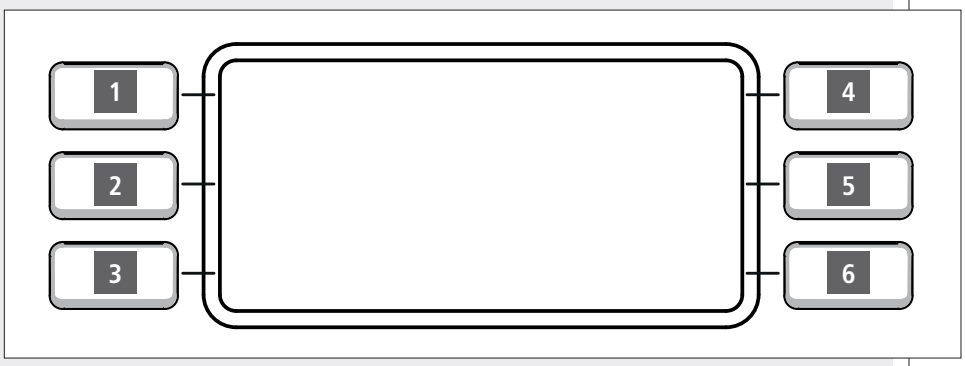


OPERATING AS DXT 9000 SYSTEM COMPONENTS

If used as DXT 9000 system components, UP 9501, UP 9502 and UP 9504 amplifiers are controlled by the main unit (MU 9186, MX 9502, MX 9504) to which they are linked and their displays indicate **REMOTE CONTROLLED.**
All settings regarding their use as generic independent amplifiers (see the next manual section) are disabled.

USE AS GENERIC AMPLIFIER (NOT LINKED TO DXT 9000 SYSTEM)

Beside the display, there are 6 buttons 3 (3 on the left, 3 on the right) to select the correspondent displayed options.
The **ESC** 2 button (below the display, on the right) allows to quit the displayed menu.



Turn and press the **CONTROL SELECTION** 4 encoder to select parameters and change their values.

The software initial main menu is shown as MAIN in the top left-hand corner of the display.
The complete menu path is indicated in the top of the display.

UP 9501 MODEL: THE SELECTIONS **OUT 2**, **OUT 3** AND **OUT 4** ARE DISABLED.
UP 9502 MODEL: THE SELECTIONS **OUT 3** AND **OUT 4** ARE DISABLED.

Functions managed by each menu are briefly described in the following table:

	MENU	DESCRIPTION
1	**AUDIO SET**	Input / output / monitor settings.
2	**CALIBRAT**	Amplifier calibration.
3	**---**	------
4	**ROUTING**	Audio matrix.
5	**SYSTEM**	LED test, system reset and shutting down.
6	**INFO**	Information about the device, its internal amplifiers and its firmware.

AUDIO SET MENU

Menu that allows to set input / output parameters and audio monitoring.

	SOTTOMENU	DESCRIPTION
1	**INPUT**	Audio input settings.
2	**OUTPUT**	Audio output settings.
3	**MONITOR**	Audio monitoring level.

AUDIO SET > INPUT SUBMENU

AUDIO SET > INPUT SUBMENU

The **INPUT** submenu allows to edit audio inputs.
Select either **BGM 3** or **AUX IN** to access audio input parameters.

	HPL/LPF	3-BAND EQ	LO CUT	5-BAND EQ	COMPRESSOR	LEVEL
BGM 3	√	√				√
AUX IN			√	√	√	√

HPF / LPF (hi-pass filter, low-pass filter)

The hi-pass filter (HPF) cuts low frequencies (below its cutoff frequency), the low-pass filter (LPF) cuts high frequencies (above its cutoff frequency).

PARAMETERS

FREQ HPF	Setting of the hi-pass filter cutoff frequency.
FREQ LPF	Setting of the low-pass filter cutoff frequency.
BYPASS	Select either ON (filters bypassed) or OFF (filter inserted).

3-BAND EQ

The three bands are semi-parametric equalizers that allow to choose the centre frequency and adjust its level.

PARAMETERS

BAND n (I, II, III)	FREQ	Centre frequency setting.
	GAIN	Gain setting.
BYPASS EQ	Select either ON (equalizer bypassed) or OFF (equalizer inserted).	

LO CUT (hi-pass filter)

Filter that cuts low frequencies below the cutoff frequency.
It has a single parameter: the cutoff frequency.

5-BAND EQ

The five bands are semi-parametric equalizers that allow to choose the centre frequency and adjust its level.

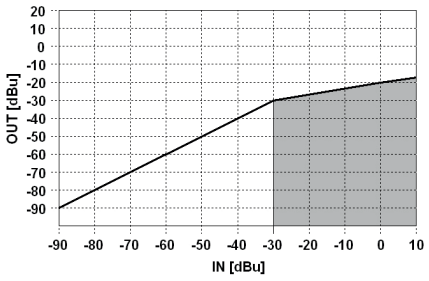
PARAMETERS

BAND n (I, II, III, IV, V)	FREQ	Centre frequency setting.
	GAIN	Gain setting.
BYPASS EQ	Select either ON (equalizer bypassed) or OFF (equalizer inserted).	

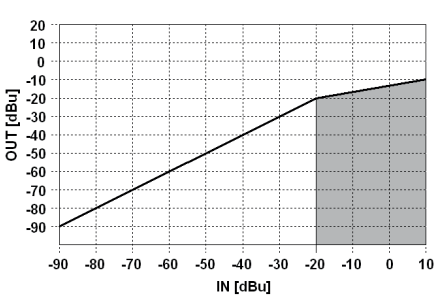
COMPRESSOR

The compressor does not modify a signal having a level lower than the predetermined threshold and compresses a signal (ratio 3:1) with a higher level.

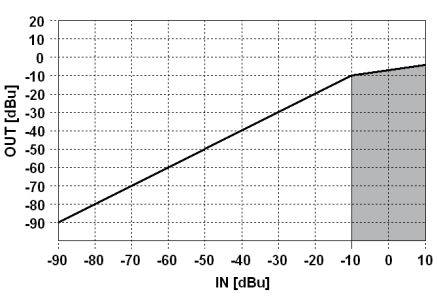
The threshold can be set to three different levels:
–30 dBu (curve 1), –20 dBu (curve 2), –10 dBu (curve 3).



CURVE 1



CURVE 2



CURVE 3

PARAMETERS

ATTACK	Adjusts the compressor attack time.
POST GAIN	Adjusts the output gain (useful to minimize the signal attenuation due to compression).
HOLD	Adjust how long the compression is held after the audio signal returns below the predetermined threshold.
DECAY	Adjusts the compressor release rate.
CURVE	Curve selection: - **Curve 1** - **Curve 2** - **Curve 3**
BYPASS	Select either **On** (compressor bypassed) or **Off** (compressor inserted).

LEVEL
Audio input level setting.

AUDIO SET > OUTPUT SUBMENU

AUDIO SET > OUTPUT SUBMENU

Audio output parameter settings.
Select an audio output among **OUT 1**, **2**, **3**, **4**, to access its parameter list.

Select **MUTE ALL** to mute or **UNMUTE ALL** to unmute all audio outputs.

5-BAND EQ
The five bands are semi-parametric equalizers that allow to choose the centre frequency and adjust its level.

PARAMETERS

BAND n (I, II, III, IV, V)	FREQ	Centre frequency setting.
	GAIN	Gain setting.
BYPASS EQ	Select either ON (equalizer bypassed) or OFF (equalizer inserted).	

LIMITER
The limiter limits a signal having a higher level than the predetermined threshold.
It is in fact a compressor having a high compression ratio.
It can be really useful to avoid signal distortion due to too high levels.

PARAMETERS

DECAY	Adjusts the limiter release rate.
BYPASS	Select either ON (limiter bypassed) or OFF (limiter inserted).

DELAY (OUT 1 only)
Audio output delay time setting.

LEVEL
Audio output level setting.

AUDIO SET > MONITOR SUBMENU

AUDIO SET > MONITOR SUBMENU

LEVEL setting of the internal loudspeaker (MONITOR) 28ª , which allows to listen to the audio channel (chosen by the **MONITOR** parameter in the **ROUTING** menu) among: **OUT 1/2/3/4** (audio outputs), **INT.SINE** (internal sine wave), **BUS 1/2/3/4** (internal buses), **BGM3** or **AUX IN** (audio inputs), **ZERO** (no selection).

CALIBRAT MENU

Calibration of each audio output (necessary for detecting line faults).

Select one of the audio output **OUT 1/2/3/4** (that correspond to its respective internal amplifier) to carry out its calibration.

ROUTING MENU

Menu concerning the audio matrix, where to match sources and destinations.

After selecting an audio output (**OUT 1, OUT 2, OUT 3, OUT 4**), use the **CONTROL SELECTION** 4 encoder to choose an audio channel (to be sent to the selected output) among: **BGM 3**, **AUX IN, BUS 1**, **BUS 2**, **BUS 3**, **BUS 4** or **ZERO** (no selection).

Choose **MONITOR** to select (by using the **CONTROL SELECTION** 4 encoder) the audio channel sent to the internal loudspeaker 28ª (MONITOR).
The choice is made among: **OUT 1/2/3/4** (audio outputs), **INT.SINE** (internal sine wave), **BUS 1/2/3/4** (internal buses), **BGM3** or **AUX IN** (audio inputs), **ZERO** (no selection).

SYSTEM MENU

LED test, system reset and shutting down.

	FUNCTION	DESCRIPTION
1	**LED TEST**	Check of all LEDs, which light up for a few seconds (a text message will be displayed).
2	**SYSTEM RESET**	Reset / re-initialization of the device.
3	**SYSTEM OFF**	Device shut-down command.

INFO MENU

Information about the device.

	FUNCTION	DESCRIPTION
1	**BOARD**	Hardware notes.
2	**AMPL**	Information about the proper operation of internal amplifiers.
3	**ACCESSORY**	Information about the **A**, **B** ports for accessories (i.e. TS 9918 remote controls).
4	**ABOUT**	Firmware notes.

DISPLAY TEXT MESSAGES

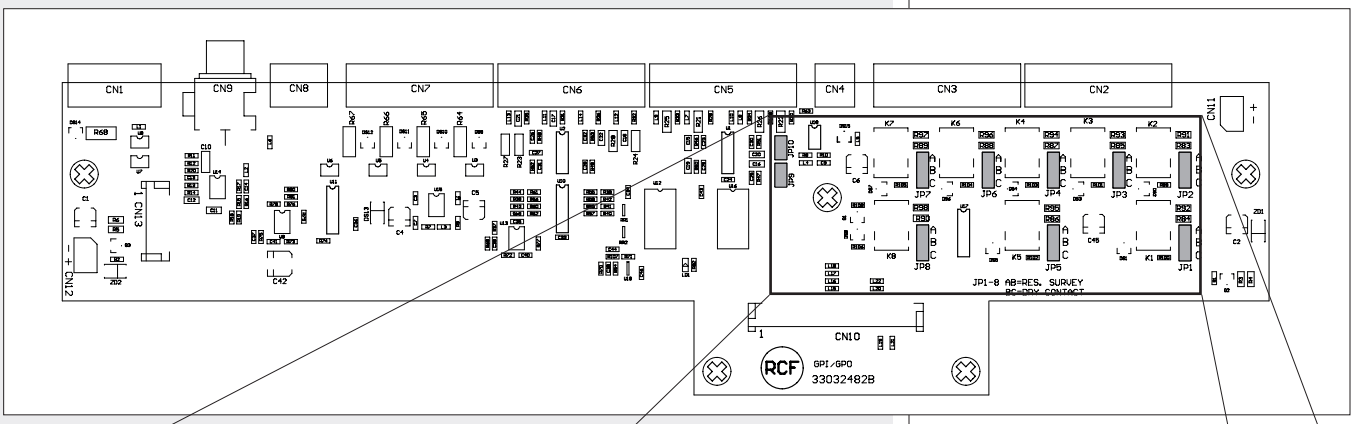
DISPLAY TEXT MESSAGES	DESCRIPTION
REMOTE CONTROLLED	Device controlled by a DXT 9000 system main unit.
AC NOT AVAILABLE	Mains AC power supply not available.
AC HIGH	Mains AC power supply: too high voltage.
AC LOW	Mains AC power supply: too low voltage.
AC FUSE FLT	Mains AC power supply: blown or not present fuse.
DC NOT PRESENT	48 V DC (batteries) power supply not available.
DC HIGH	48 V DC (batteries) power supply: too high voltage.
DC LOW	48 V DC (batteries) power supply: too low voltage.
DC FUSE FLT	48 V DC (batteries) power supply: blown or not present fuse.
STND-BY PSU VOLTAGE NOT AVAILABLE	Faulty internal 'stand-by' power supply unit.
STND-BY PSU VOLTAGE HIGH	Internal 'stand-by' power supply unit: too high voltage.
STND-BY PSU VOLTAGE LOW	Internal 'stand-by' power supply unit: too low voltage.
STND-BY PSU VOLTAGE FUSE FLT	Internal 'stand-by' power supply unit: blown or not present fuse.
SYS OK	System operating properly.
SPEAKER LINE xx DISABLED	Loudspeaker line disabled.
AMPLIFIER xx DISABLED	Amplifier disabled.
MICROPROCESSOR xx FLT	Microprocessor fault.
MAIN POWER SUPPLY FAULT	Internal main power supply unit fault.
MAIN POWER SUPPLY OVERHEAT	Internal main power supply unit overheat.
MAIN POWER SUPPLY OVERLOAD	Internal main power supply unit overload.
LOCAL FAULT	Local fault.
AMPLIFIER xx OVERLOAD	Amplifier overload.
AMPLIFIER xx OVERHEAT	Amplifier overheat.
FANs FLT	Amplifier cooling fan failure.
IMPEDANCE HIGH	Loudspeaker line: too high impedance.
IMPEDANCE LOW	Loudspeaker line: too low impedance.
LINE OPEN	Loudspeaker line: open circuit.
LINE SHORTED	Loudspeaker line: short circuit.
SPKR LINE GND LEAKAGE	Loudspeaker line: earth leakage.

All displayed texts (but REMOTE CONTROLLED) are possible only when amplifiers are not linked to a DXT 9000 system main unit.

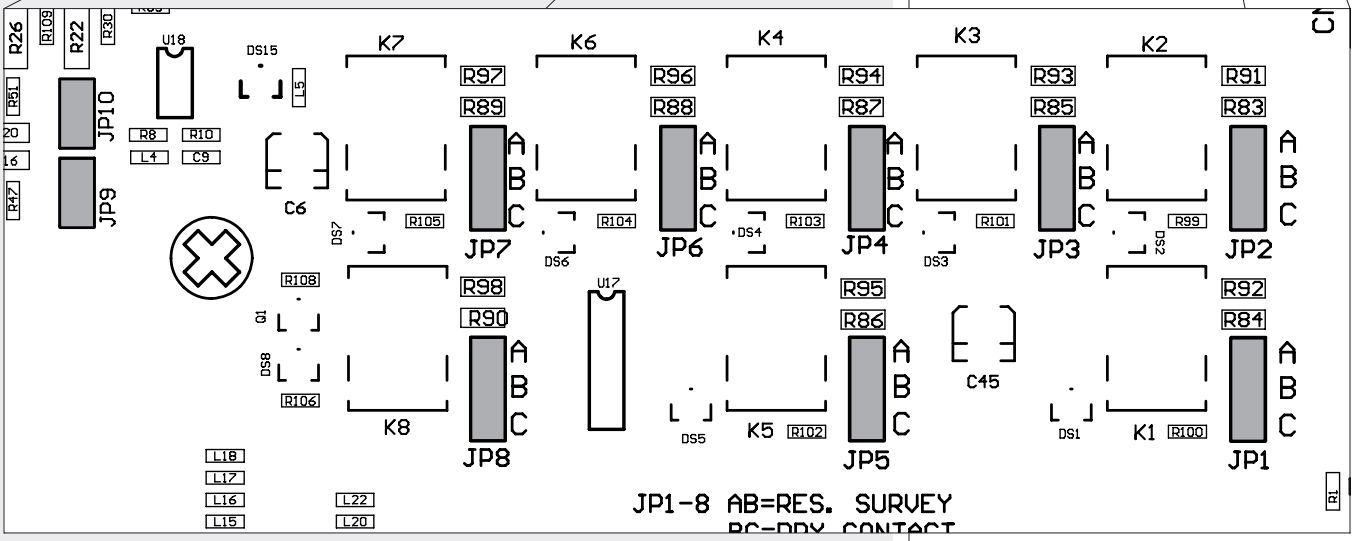
INTERNAL JUMPER SETTINGS

IMPORTANT: INTERNAL JUMPER SETTING SHALL BE CARRIED OUT ONLY BY EITHER RCF OR AN AUTHORISED SERVICE CENTRE.

Remove the lid and look at the back GPI / GPO board (in this drawing, the 10 jumpers are marked in grey inside the rectangle):

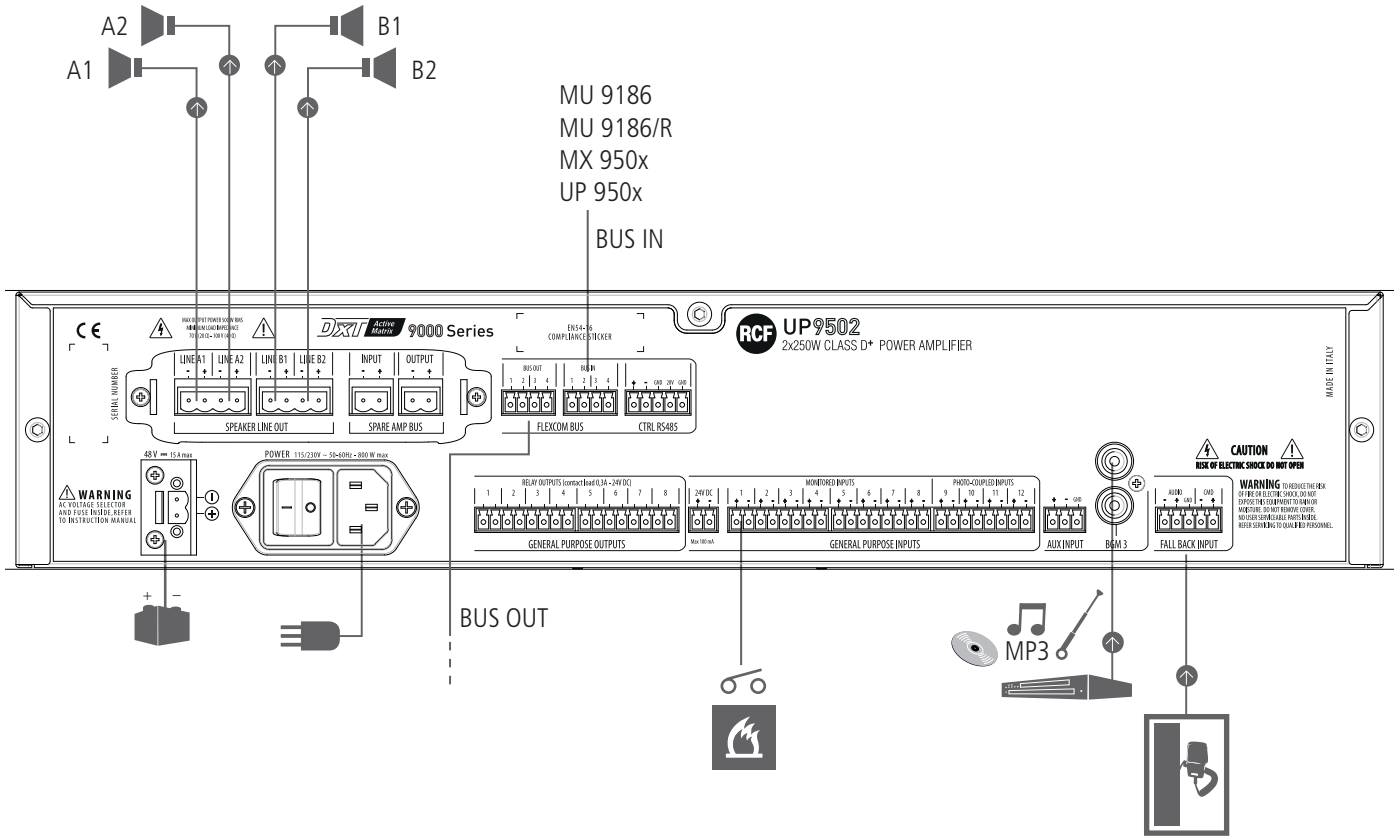


ZOOM:

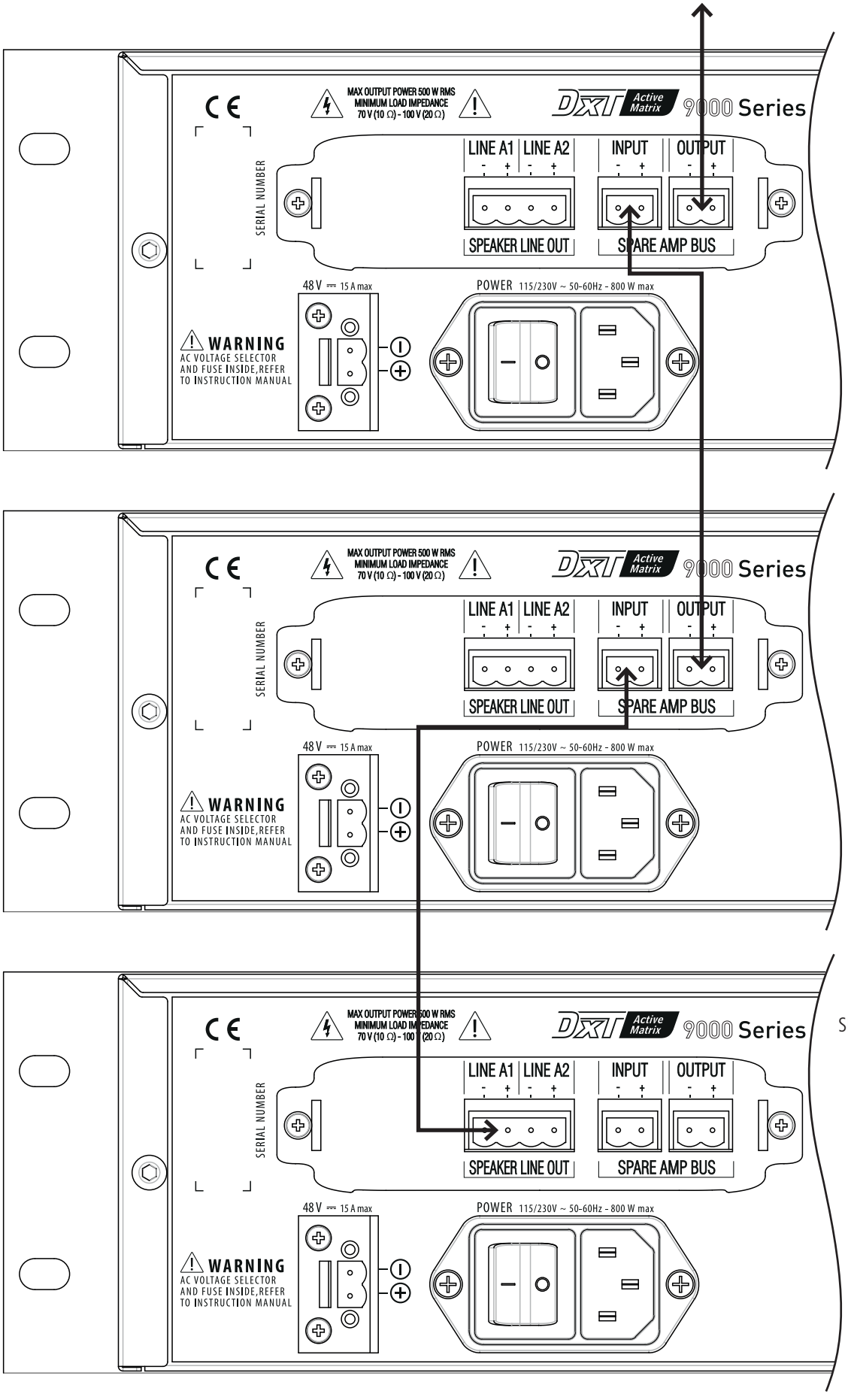


JP1 to JP8	**AB** position: the two resistors for monitoring are inserted in the respective logic output (GPO).	**BC** position: the two resistors for monitoring are not inserted ('dry contact') in the respective logic output (GPO).
JP 9	Jumper inserted (ON): normal operation of the first logic input (GPI 1), which can be connected to a dry closing contact.	Jumper removed (OFF): the first logic input (GPI 1) can be linked to an external device having its own output voltage.
JP 10	Jumper inserted (ON): normal operation of the second logic input (GPI 2), which can be connected to a dry closing contact.	Jumper removed (OFF): the second logic input (GPI 2) can be linked to an external device having its own output voltage.

CONNECTION EXAMPLE



SPARE AMPLIFIER (UP 9501) CONNECTION EXAMPLE



GUIDANCE ON THE MEASUREMENT OF THE SPEAKER LINE IMPEDANCE

In the DXT 9000 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 supersonic frequencies, but more prone to interferences and errors.

To use the DXT 9000 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

MEASURABLE IMPEDANCE RANGE

There are three amplifier models that differ in their power, so each has its own measurable impedance range:
- Single channel amplifier (max. power: 500 W).
- Dual channel amplifier (max. power: 250 W per channel).
- Four-channel amplifier (max. power: 125 W per channel).

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** 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).

$$\mathbf{Zmin}_{100V} = \frac{(100\ V)^2}{2\ Pmax} \quad \text{or} \quad \mathbf{Zmin}_{70V} = \frac{(70.7\ V)^2}{2\ Pmax}$$

The results are:
1 x 500 W → **Zmin** = 10 Ω (at 100 V), **Zmin** = 5 Ω (at 70 V)
2 x 250 W → **Zmin** = 20 Ω (at 100 V), **Zmin** = 10 Ω (at 70 V)
4 x 125 W → **Zmin** = 40 Ω (at 100 V), **Zmin** = 20 Ω (at 70 V)

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

$$\mathbf{Zmax}_{100V} = \frac{(100\ V)^2}{0.25\ Pmax} \quad \text{or} \quad \mathbf{Zmax}_{70V} = \frac{(70.7\ V)^2}{0.25\ Pmax}$$

The results are:
1 x 500W → **Zmax** = 80 Ω (at 100 V), **Zmax** = 40 Ω (at 70 V)
2 x 250W → **Zmax** = 160 Ω (at 100 V), **Zmax** = 80 Ω (at 70 V)
4 x 125W → **Zmax** = 320 Ω (at 100 V), **Zmax** = 160 Ω (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.

With 100 V lines:
1 x 500 W → 20 Ω ≤ **Zmon** ≤ 40 Ω
2 x 250 W → 40 Ω ≤ **Zmon** ≤ 80 Ω
4 x 125 W → 80 Ω ≤ **Zmon** ≤ 160 Ω

With 70 V lines:
1 x 500 W → 10 Ω ≤ **Zmon** ≤ 20 Ω
2 x 250 W → 20 Ω ≤ **Zmon** ≤ 40 Ω
4 x 125 W → 40 Ω ≤ **Zmon** ≤ 80 Ω

Note that (depending on amplifiers and 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

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 (five options: 5%, 10%, 15%, 20%, 25%) 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."

A COUPLE OF EXAMPLES:

1. Two speaker lines are linked in parallel and connected to a 250 W amplifier output.
The total impedance is 40 Ω (**Ztot**).
The line 1 ends with a speaker having an impedance 600 Ω (**Zmaxend**).
The line 2 ends with a speaker having an impedance 200 Ω.
Since all speakers are linked in parallel, in case of **disconnection of the 600 Ω speaker**, the line total impedance will change from **40 Ω (Ztot)** to **42.8 Ω (Znoend)**.

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

$$\mathbf{Znoend} = \frac{\mathbf{Zmaxend} \times \mathbf{Ztot}}{\mathbf{Zmaxend} - \mathbf{Ztot}}$$

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 **7.14%**, so it is necessary to set the tolerance to the **5%** option.

2. Three speaker lines are linked in parallel and connected to a 500 W amplifier output.
The total impedance is 50 Ω (**Ztot**).
The line 1 ends with a speaker having an impedance 140 Ω.
The line 2 ends with a speaker having an impedance 220 Ω.
The line 3 ends with a speaker having an impedance 350 Ω.
Since all speakers are linked in parallel, in case of **disconnection of the 350 Ω speaker**, the line total impedance will change from 50 Ω to 58.3 Ω.
The percentage difference between the two impedances is **16.6%**, so it is necessary to set the tolerance to the **15%** option.

However, there are many cases where the weight percentage of the last speaker is less than 5%, 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 Ω 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.

For each amplifier model, there is a maximum number of EOL (and line branches) that can be added to a single line. 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).

- Max. 5 EOL for each line linked to a **500 W** amplifier output.
- Max. 4 EOL for each line linked to a **250 W** amplifier output.
- Max. 2 EOL for each line linked to a **125 W** amplifier output.

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

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

$$\mathbf{Ztot} = \frac{\mathbf{Zline} \times \mathbf{Zeol}}{\mathbf{Zline} - \mathbf{Zeol}}$$

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:

$$\mathbf{Neol} >= \frac{\mathbf{200\ \Omega}}{\mathbf{Ztot\ (21 - Nbranch)}}$$

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

Within the system operation limits, the result is equal to 1 in almost all cases.
The only exception is given by a line with two branches including horn speakers only and connected to a 500 W amplifier. In this case, it is advisable to add two EOL (in parallel) to the end of each line branch (to fall within the correct measurement range).

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)**:

$$\mathbf{Ztot} = \frac{\mathbf{Zline} \times \frac{\mathbf{200\ \Omega}}{\mathbf{Neol}}}{\mathbf{Zline} + \frac{\mathbf{200\ \Omega}}{\mathbf{Neol}}}$$

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.
EOL number shall not exceed the maximum amount (as indicated previously).

SPECIFICATIONS

FALL BACK INPUT audio input	
- Input sensitivity:	–50 ÷ +6 dBu
- Frequency response (±3 dB):	20 Hz ÷ 20 kHz
- Input impedance (1 kHz):	25 kΩ
- Signal / noise ratio:	104 dB
- FALL BACK command voltage:	24 V dc
AUX INPUT	
- Input sensitivity:	–50 ÷ +6 dBu
- Frequency response (±3 dB):	20 Hz ÷ 20 kHz
- Input impedance (1 kHz):	25 kΩ
- Signal / noise ratio:	94 dB
BGM 3 audio input	
- Input sensitivity:	–50 ÷ +6 dBu
- Frequency response (±3 dB):	20 Hz ÷ 20 kHz
- Input impedance (1 kHz):	25 kΩ
Loudspeaker line outputs	
- Output voltage:	100 V / 70 V (selectable by RCF only)
- Number of internal amplifiers:	1 (UP 9501), 2 (UP 9502), 4 (UP 9504)
- Max. power of each amplifier:	500 W (UP 9501), 250 W (UP 9502), 125 W (UP 9504)
- Load minimum impedance for each amplifier:	[100 V] 20 Ω (UP 9501), 40 Ω (UP 9502), 80 Ω (UP 9504) [70 V] 10 Ω (UP 9501), 20 Ω (UP 9502), 40 Ω (UP 9504)
- Loudspeaker line outputs:	A1 - A2 (UP 9501) A1 - A2 - B1 - B2 (UP 9502) A - B - C - D (UP 9504)
- Frequency response (±3 dB):	20 Hz ÷ 20 kHz
- Distortion (THD+N @1W, 1kHz):	≤ 0.1%
GPI (logic inputs)	
- Monitored GPI number:	8
- Photo-coupled GPI number:	4
GPO (logic outputs)	
- Max. applicable voltage:	24 V dc
- Max. current:	0.3 A
RCF FLEXCOM BUS	
- Channels:	4
- Resolution:	24 bits
- Sampling frequency:	44.1 kHz
24 V DC output	
- Max. output current:	100 mA

DATA LINK
- 1 RS485 EUROBLOCK connector
- 2 RCF FLEXCOM BUS EUROBLOCK connectors

ELECTRICAL SPECS.

- Operating voltage:	115/230 V ac (50-60 Hz), 48 V dc
- Max. consumption (power):	800 W
- Operating temperature:	–5 ÷ +50 °C (23 ÷ 122 °F)
- Relative humidity:	20 ÷ 90% (non-condensing)

MECHANICAL SPECS.

- Dimensions (w, h, d):	485 mm, 88 mm, 365 mm (19" rack - 2 units)
- Net weight:	7.8 kg (UP 9501), 8.0 kg (UP 9502), 8.3 kg (UP 9504)

APPENDIX

DXT 9000 - COMPLIANCE OPTION LIST WITH EN 54-16 REQUIREMENTS

7.3	Audible warning
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
8.3	Indication of faults related to the transmission path to CIE
9.	Disablement condition
10.	Voice alarm manual control
11.	Interface to external control device(s)
12.	Emergency microphone(s)
13.14	Redundant power amplifiers

CE

0068

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

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0068-CPR-002/2014

EN 54-16:2008

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

DXT 9000

Provided options

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
9	Disablement condition
10	Voice alarm manual control
11	Interface to external control device(s)
12	Emergency microphone(s)
13, 14	Redundant power amplifiers

DoP: 008_17

Other technical data: see operational manual.

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

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