

# MANUALE D'USO OWNER MANUAL

## **EOL DXT SYSTEMS**

- TERMINATORE DI FINE LINEA PER SISTEMI DXT
- END OF LINE EQUIPMENT FOR DXT SYSTEMS



**IMPORTANT NOTES**

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.

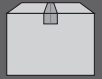
**SAFETY AND OPERATING PRECAUTIONS**

1. All the precautions, in particular the safety ones, must be read with special attention, as they provide important information.
2. Loudspeaker lines (amplifier outputs) can have a sufficiently high voltage (i.e. 100-70 V) to involve a risk of electrocution: never install or connect this loudspeaker when the line is alive.
3. Make sure all connections have been made correctly.
4. Protect loudspeaker lines from damage. Make sure they are positioned in a way that they cannot be stepped on or crushed by objects.
5. Make sure that no objects or liquids can get into this product, as this may cause a short circuit.
6. 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: 1) the product does not function (or works in an anomalous way), 2) the cable has been damaged, 3) objects or liquids have got into the product, 4) the product has been damaged due to heavy impacts or fire.
7. Should the loudspeaker emit any strange odours or smoke, remove it from the line after having immediately switched the amplifier off.
8. Do not connect this product to any equipment or accessories not foreseen. Also check the suitability of the support surface to which the product is anchored (wall, ceiling, structure, etc.) and the components used for attachment (i.e. wall plugs, screws, brackets not supplied by RCF, etc.), which must guarantee the security of the system / installation over time.
9. RCF S.P.A. strongly recommends this product is only installed by professional qualified installers (or specialised firms) who can ensure a 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. 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.).
11. 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 necessary to wear ear plugs or protective earphones. See the technical specifications in the instruction manual for the maximum sound pressure the loudspeaker is capable of producing.
12. Make sure loudspeaker lines are not shorted before turning the amplifier on.
14. The loudspeaker cable shall have wires with a suitable section (twisted, if possible, to reduce inductive effects due to surrounding electro-magnetic fields) and a sufficient electrical insulation. Refer to local regulations, as there may be additional requirements about cable characteristics.
15. Install far from any heat source.
16. Do not use solvents, alcohol, benzene or other volatile substances for cleaning the external parts of this product.

**IMPORTANT****ATTENTION**

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

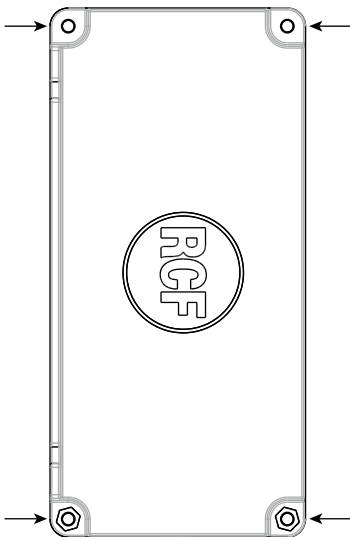
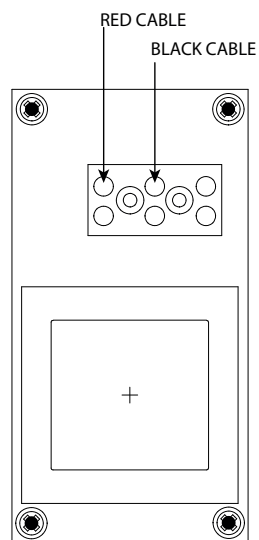
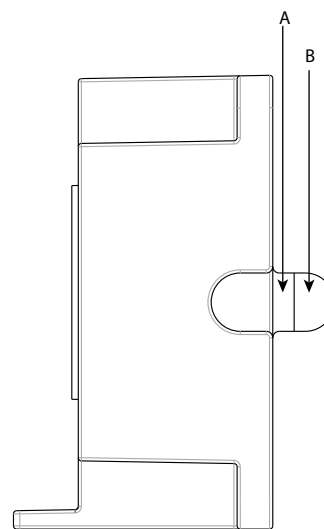
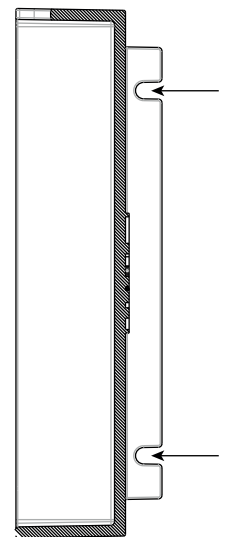
## DESCRIPTION



The end of line terminator is a product that allow to accurately monitor speakers- lines integrity, and it is suitable for DXT systems.

## INSTALLATION

1. Remove the 4 screws that close the shells.
2. Connect the cable to the ceramic terminal.
3. Brake the tab at length A or B depending on cable's section.
4. Use the slots on the shell for fixing the product.

**1****2****3****4**

End of Line (EoL) equipments for DXT systems are 20 Hz resonators, with an impedance of  $200\Omega$  at the resonance frequency.

Absorbing reactive power only, users can install EoL on a speakers line without affecting the rated power of the amplifier it is connected to; however, this is valid considering the impedance measurement dynamic, which allows to perform this calculation up to a maximum of 150% of the amplifier rated power.

To ensure proper lines monitoring in those cases where the constraint on the last branch speaker is not satisfied (the percentage weight of the last speaker is less than 5% of the line impedance), at the end of each branch line, an EoL must be connected.

For each amplifier model a maximum number of EoL is defined (so of the line branches) installable on a single line; this is due to limits of the impedance measuring circuit dynamic and the amplifier (even if the power is reactive, losses of the parasitic parameters have to be considered, that can overload the amplifier). For each type of amplifier, this number is:

- 1x500W: max 5 EoL
- 1x250W: max 4 EoL
- 1x125W: max 2 EoL

The resulting impedance of the lines parallel and EoL is easily obtainable from the formula of parallel impedances ( $Z_{eol}=200\Omega$ ):

$$Z_{tot}=(Z_{line} \times Z_{eol})/(Z_{line} + Z_{eol})$$

WARNING:  $Z_{line}$  is NECESSARILY the line impedance at 20Hz!!!

(it is not equal to the impedance measured with an impedance meter at 1kHz)

In case of single line with very low impedance load, or in the case of lines loaded with horns or similar (open at 20Hz), more EoL must install in parallel.

If the line is split over multiple branches, the number of EoL on each branch MUST BE EQUAL to ensure proper monitoring and comply with the constraint given by the formula:

$$N_{eol} > (200\Omega) / Z_{tot} \text{ (21-Nbranches)}$$

that, within system's operational limits it is 1 in most cases.

The only exception is represented by a line with two branches of horns on a 1x500W amplifier; in this case, at the end of each branch, 2 EoL in parallel should be installed to be in the range of measuring.

In any case, to calculate how many EoL are needed in a specific line ( $Z_{eol} = 200\Omega$ ), the formula of parallel impedances must be applied, correct with the number of EoL ( $N_{eol}$ ):

$$Z_{tot} = (x Z_{line} (Z_{eol} / N_{eol})) / (Z_{line} + (Z_{eol} / N_{eol}))$$

WARNING:  $Z_{line}$  is NECESSARILY the line impedance at 20Hz!!!

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The total impedance must respect the constraints described above, and the number of EoL can not exceed the maximum number indicated above.



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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.



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