



RCF MF 33EN Two Way Passive Ceiling Speaker User Manual

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USER MANUAL
MANUALE D'USO
MF 33EN
WMF 33EN

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MF 33EN Two Way Passive Ceiling Speaker

– Speakers in compliance with EN 54-24 standard



54-24:2008

Loudspeaker for voice alarm systems for fire detection and fire alarm systems for buildings

MF 33EN / WMF 33EN

Type A

DoP: 001_19

Other technical data: see operational manual.

All EN54-24:2008 standard requirements are verified in the RCF S.p.A.

manufacturing plant site in Via Raffaello Sanzio 13, 42124 Reggio Emilia, ITALY.



WARNINGS FOR SECURITY



IMPORTANT NOTES

SAFETY AND OPERATING PRECAUTIONS

IMPORTANT NOTES

Before connecting and using this product, please read this user 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. Speaker lines (amplifier outputs) can have a sufficiently high voltage (i.e. 100-70 V) to involve a risk of electrocution: never install or connect speakers when the line is alive.
3. Make sure all connections have been made correctly and the input voltage of every speaker is suitable for the amplifier output.
4. Protect speaker 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 inside speakers, 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:

- A speaker does not function (or works in an anomalous way).
 - A cable has been damaged.
 - Objects or liquids have got inside a speaker.
 - A speaker has been damaged due to heavy impacts or fire.
7. Should a speaker emit any strange smell or smoke, remove it from the line after having immediately switched the amplifier off.
 8. Do not connect speakers to any equipment or accessories not foreseen.

For suspended installation, only use the dedicated anchoring points and do not try to hang speakers 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 (wall plugs, 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.

9. RCF S.p.A. strongly recommends that speakers are 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 professional audio systems (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 this user manual to know the maximum sound pressure of each speaker.

12. To ensure a correct sound reproduction, speaker phase is to be respected (speakers are connected respecting the amplifier polarity).

This is important when speakers are installed adjacent one another, for instance, in the same room.

Make sure speaker lines are not shorted before turning the amplifier on.

13. To prevent inductive effects from causing hum, noise and a bad system working, speaker lines should not be laid together with other electric cables (mains), microphone or line level signal cables connected to amplifier inputs.

14. Speaker cables 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 since there may be additional requirements about cable characteristics.

15. Install every speaker far away from any heat source.

16. Do not use solvents, alcohol, benzene or other volatile substances for cleaning the external parts. Use a dry cloth instead.

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



DESCRIPTION

MF 33EN and WMF 33EN are two-way speakers in compliance with EN 54-24 standard.

MF 33EN is the model for flush mounting, WMF 33EN for surface wall mounting.

Main features:

- Two 3" fullbring loudspeakers, 1" dome tweeter
- ABS housing
- Equipped with internal transformer for 100 / 70 V constant voltage lines, their input can also be set to '8 Ω ' for low impedance connections
- Power selection is carried out by rotating the front selector (with a screwdriver), power taps: 40-20-10-5 W at 100 V, 40-20-10-5-2.5 W at 70V, 40 W at 8 Ω
- Ceramic terminal strip for the cable connection
- Thermal fuse (placed in the ceramic terminal strip) that prevents damages to the audio line due to heat on the

speaker

- The front protection grille is fixed to the speaker thanks to 4 magnets
- Colour: black.



CONNECTION



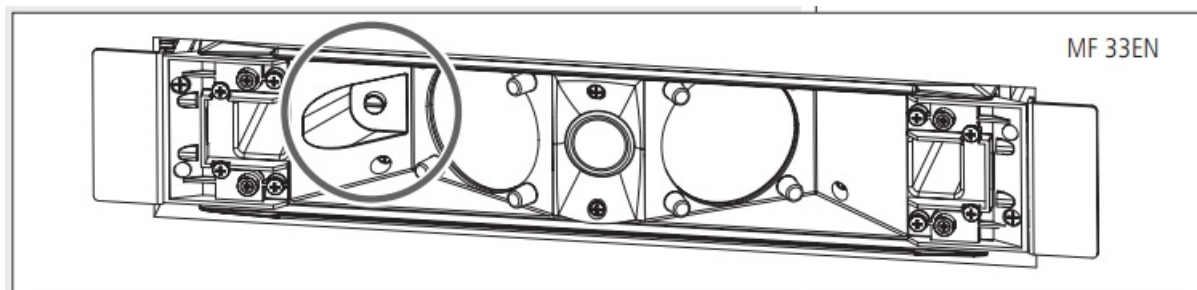
Warning: speaker connections should be only made by qualified and experienced personnel having the technical know-how or sufficient specific instructions to ensure that connections are made correctly and prevent any electrical danger.

to prevent any risk of electric shock, do not connect speakers when the amplifier is switched on. before turning the system on, check all connections and make sure there are no accidental short circuits.

the entire sound system shall be designed and installed in compliance with the current local laws and regulations regarding electrical systems.

make sure all speakers are connected in phase to ensure a correct sound reproduction.

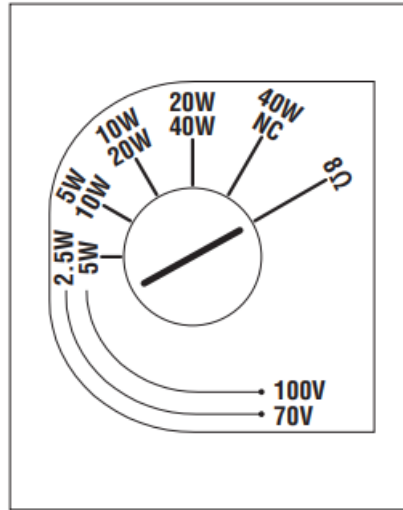
Remove the front protective grille to have access to the power selector (a rotary switch).



LOW IMPEDANCE CONNECTION (8 Ω)

Set the power selector to 8 Ω .

- The total speaker impedance must not be lower than the amplifier output impedance.
- A speaker total impedance equal to the amplifier output one permits to get the maximum deliverable power (but a higher impedance entails less power).
- The total speaker power shall be adequate for the amplifier maximum deliverable power.
- Speaker lines shall be as short as possible (for long distances, it may be necessary to use cables with large cross-section wires).
- The impedance of a single speaker is 8 Ω . For example, the total impedance of the parallel of two speakers is 4 Ω (impedance = 8 / speaker number).



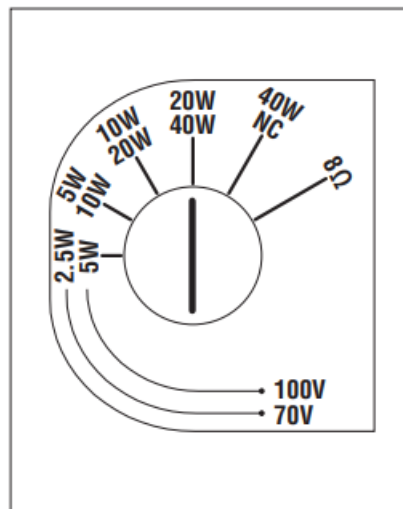
POWER SELECTION WHEN LINKED TO 70 / 100 V CONSTANT VOLTAGE LINE

If this speaker is connected to a 70 / 100 V constant voltage line, select its proper power rate by turning its power selector (with a screw-driver) among the values 40 – 20 – 10 – 5 W (100 V) or 40 – 20 – 10 – 5 – 2.5 W (70 V).



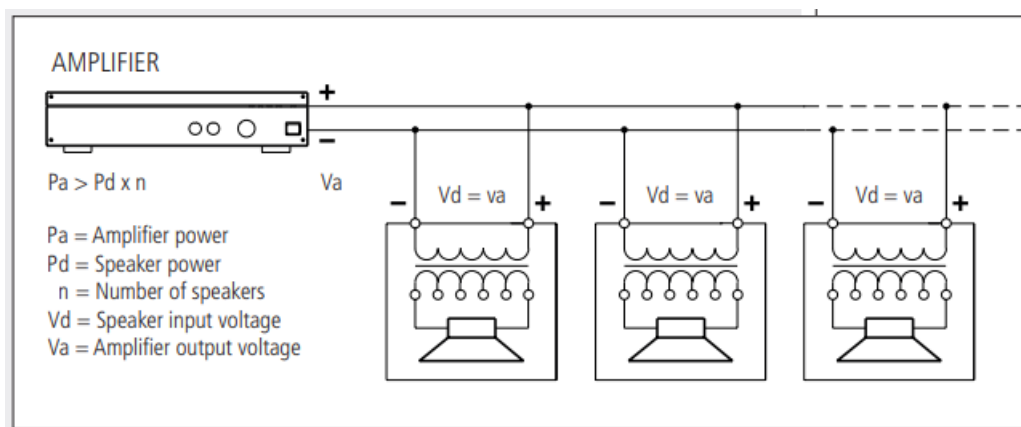
WARNING:

- Do NOT select the 8 Ω position (as this may damage the speaker and the amplifier)!
- Do NOT select the 40 W – 70 V position when linked to a 100 V line!



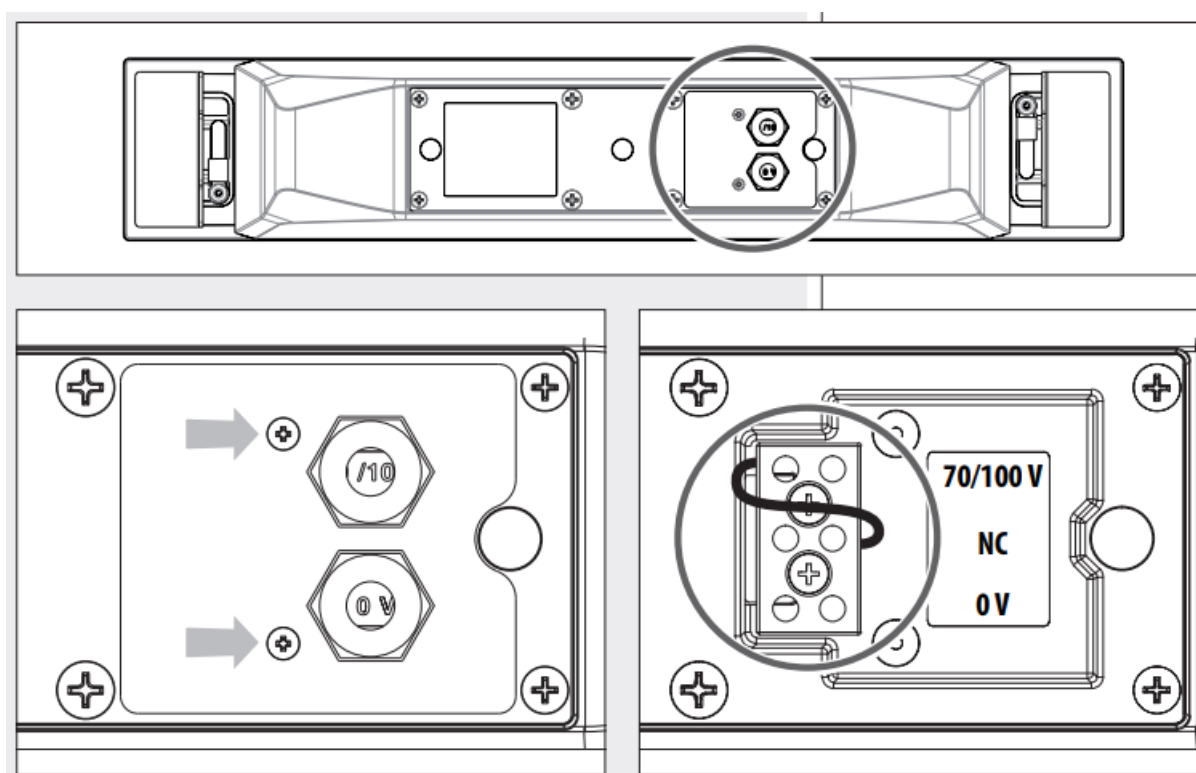
NOTES ABOUT 70 / 100 V CONSTANT VOLTAGE LINES

- The speaker 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 speakers connected to the line shall not exceed the amplifier power (P_a).



Terminal strip connection (MF 33EN only)

Remove the rear protective cover having the two cable guides (by unscrewing its two screws) to access the ceramic terminal strip.



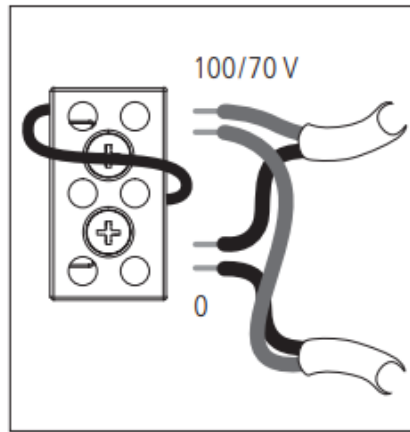
The two terminals ('70/100V' and '0') allow to connect both input and output cables (to link other speakers in parallel).

Applicable wire section: from 1 mm² to 4 mm².

Insert the input cable through one of the two cable guides of the rear protective cover.

Connect the positive wire to the '70/100 V' input and the negative wire to the '0 V' input.

If necessary, connect in the same way the output cable (passing it through the other cable guide of the rear protective cover) to link other speakers in parallel.



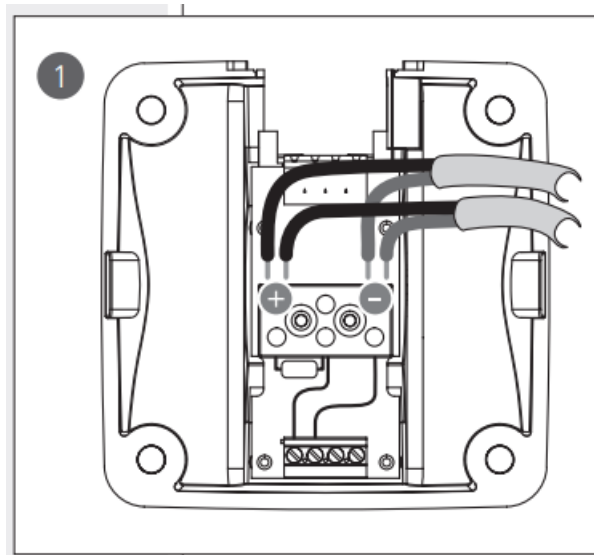
Terminal strip connection (WMF 33EN only)

The ceramic terminal strip is on the back of the wall-mount support bracket.

The two terminals allow to connect both input and output cables (to link other speakers in parallel).

Applicable wire section: from 1 mm² to 4 mm².

Connect both the positive + wires and the negative – wires as shown in the figure.



INSTALLATION



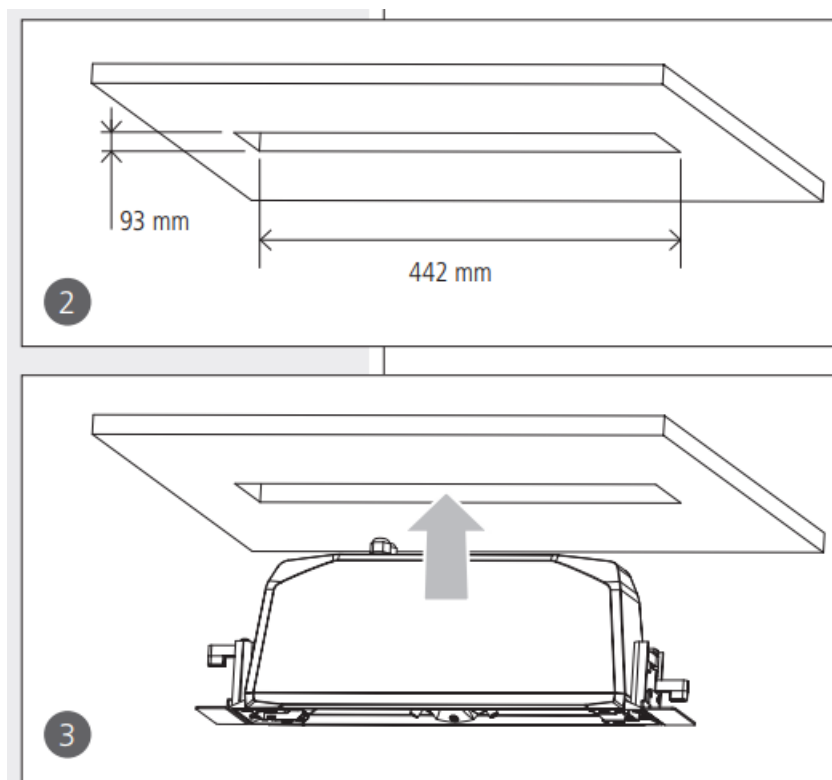
WARNING: MAKE SURE ALL SPEAKERS ARE INSTALLED IN A STABLE AND SECURE WAY IN ORDER TO AVOID ANY CONDITIONS THAT MAY BE DANGEROUS FOR PERSONS OR STRUCTURES.

ENSURE THE SUPPORT SURFACE (WALLS, CEILINGS, ETC.) HAS THE NECESSARY MECHANICAL CHARACTERISTICS TO SUPPORT THE SPEAKER WEIGHT.

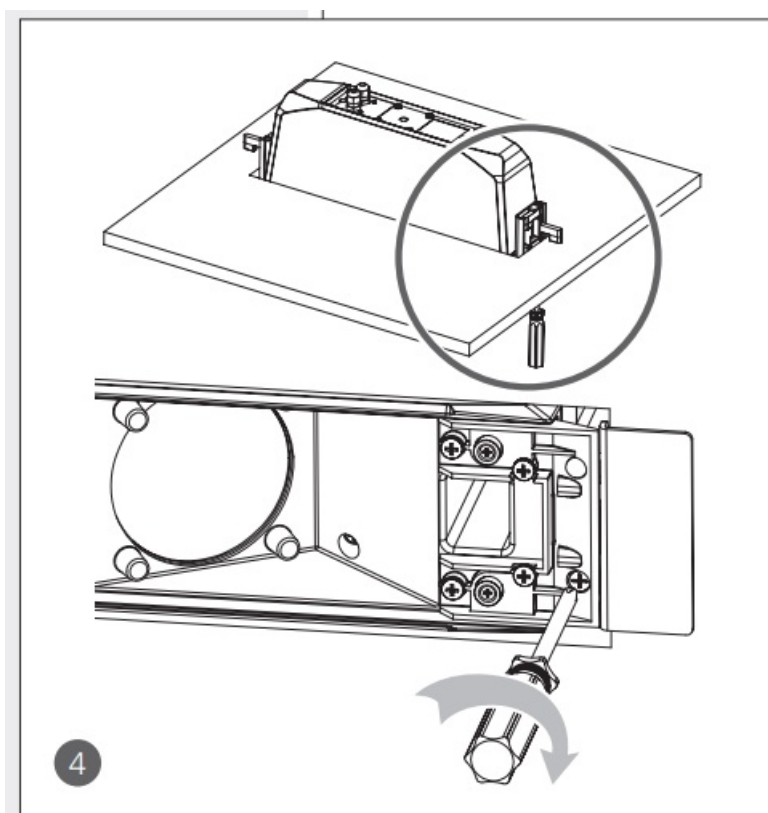
BEFORE INSTALLING EVERY SPEAKER, CAREFULLY CHECK ALL COMPONENTS TO BE USED AND MAKE SURE THERE IS NO DAMAGE, DEFORMATION, CORROSION AND/OR MISSING OR DAMAGED PARTS THAT COULD REDUCE THE SAFETY OF THE INSTALLATION.

MF 33EN

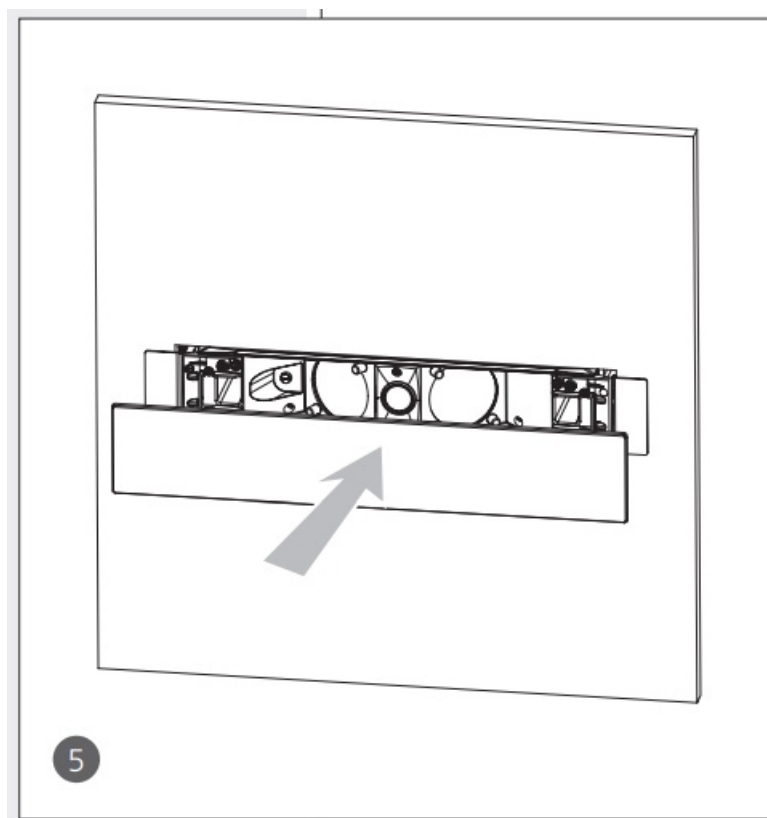
1. Connect the speaker as previously described in the 'Connection' manual section.
2. Make a 442 mm x 93 mm hole in the false ceiling tile.
3. Fully insert the speaker into the hole.



4. Fix the speaker to the false ceiling tile by screwing the two screws (one per side, see the figures) to tighten the two clamps.

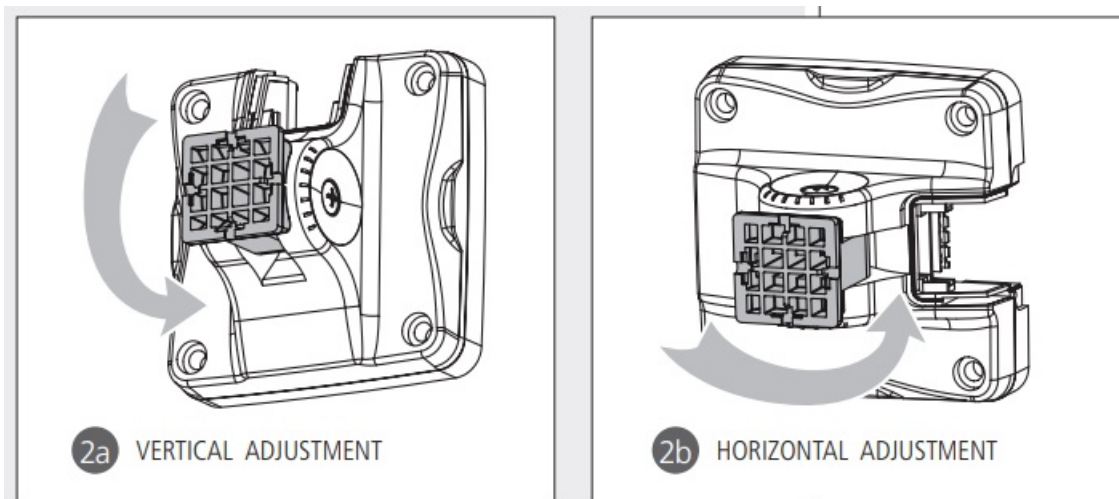


5. Refit the front protective grille, which is fixed to the speaker thanks to 4 magnets.

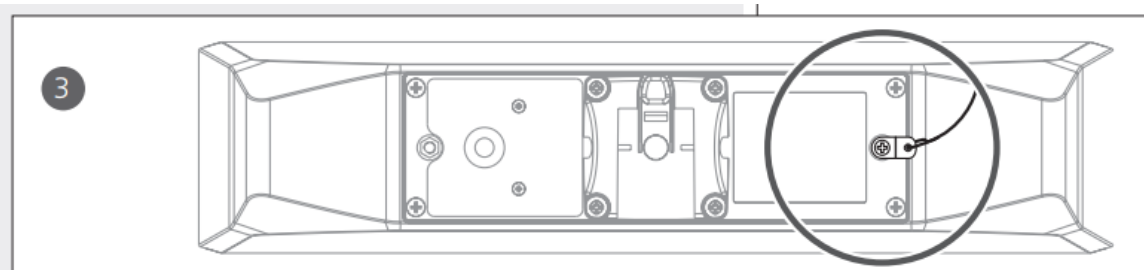


WMF 33EN

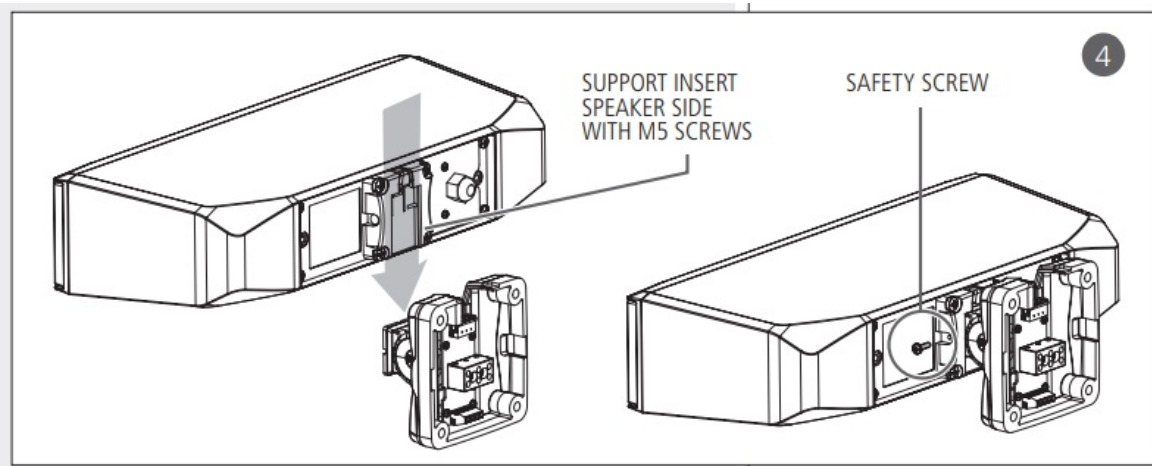
1. Electrically connect the ceramic terminal (on the back of the wall-mount support bracket) as previously described in the 'Connection' manual section.
2. Choose how to fix the wall-mount support bracket: either for vertical or horizontal orientation.
Fix the bracket to the wall through four M6 wall plugs.



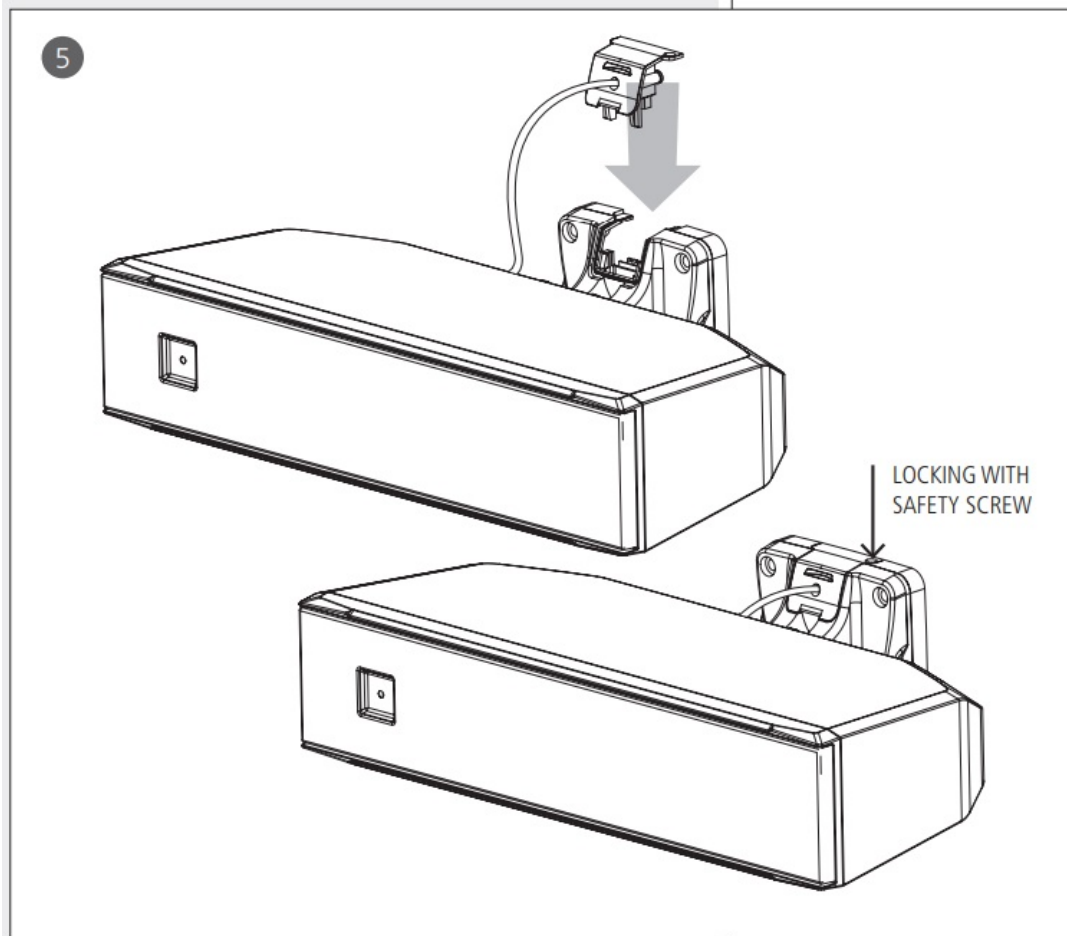
3. Connect one end of the safety wire to the back of the speaker with the supplied screw.



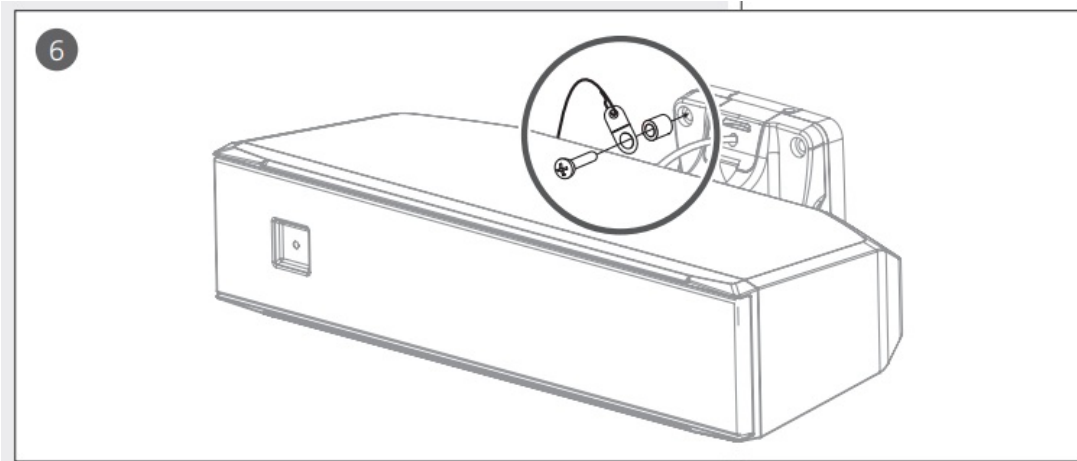
4. Insert the speaker on the wall-mount support bracket and then tighten the safety screw. Adjust the speaker to the desired angle before tightening the bracket screw as well.



5. Electrically connect the speaker to the wall-mount support bracket by inserting its cable connector from the top (as shown in the figures), then lock it by tightening its safety screw.



6. Connect the other end of the safety wire to the wall support by using the supplied spacer. The screws for fixing the wall support are not included.





SPECIFICATIONS

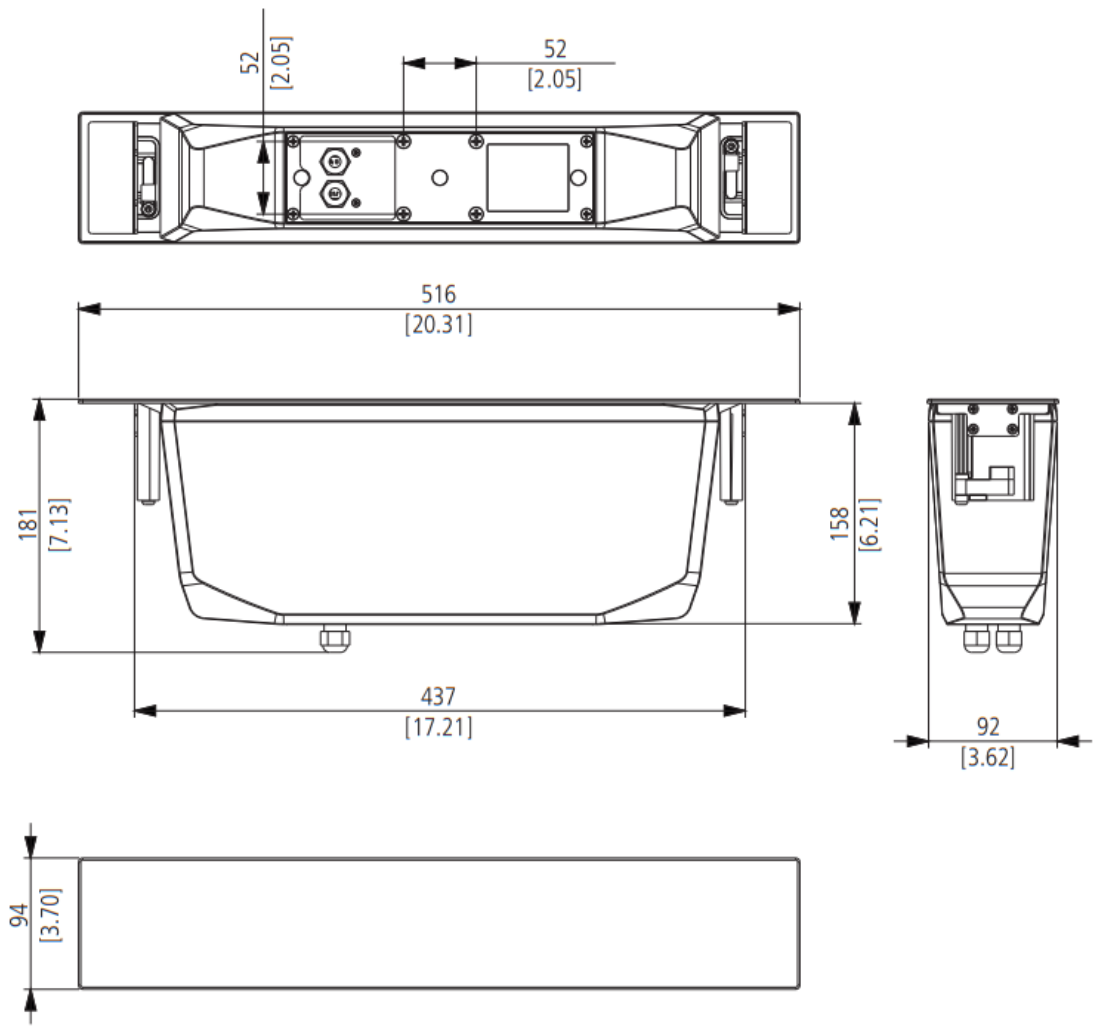
	MF 33EN	WMF 33EN
ACOUSTICAL / ELECTRICAL S.		
Transducers:	– 2 x 3" fullbring" – 1" dome tweeter	
Frequency response (–10 dB):	100 Hz ÷ 18 kHz	
Horizontal coverage angle:	120°	
Vertical coverage angle:	90°	
Sensitivity:	91 dB (1 W, 1 m); 79 dB (1 W, 4 m)	
Max. sound pressure level:	107 dB (40 W, 1 m); 95 dB (40 W, 4 m)	
Power handling:	100 V: 40 – 20 – 10 – 5 W 70 V: 40 – 20 – 10 – 5 – 2.5 W 8 Ω: 40 W (RMS)	
Nominal input impedance:	8 – 250 – 500 Ω 1 – 2 – 4 kΩ	
Input / output connector:	ceramic terminal strip	
PHYSICAL SPECIFICATIONS		
Cabinet material:	ABS	
Front protective grille:	steel	
Colour:	black	
Net weight:	5 kg (11 lbs.)	
Width:	516 mm (20.31")	399 mm (15.71")
Height:	94 mm (3.70")	92 mm (3.62")
Depth:	181 mm (7.13")	236 mm (9.29") (with bracket)
Recessed depth:	178 mm (7.01")	—



TECHNICAL DRAWINGS

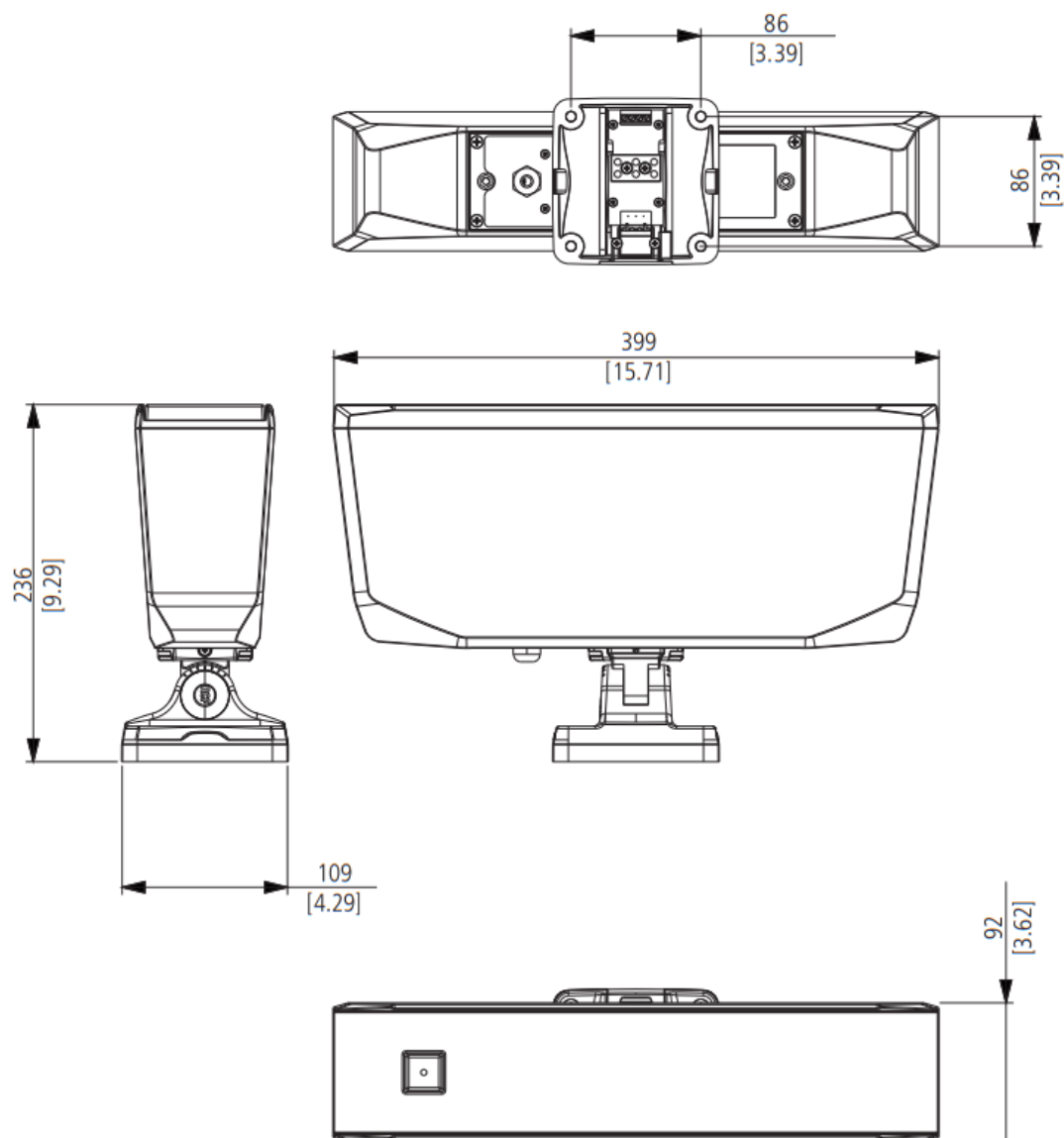
MF 33EN

mm
[inches]



WMF 33EN

mm
[inches]



Except possible errors and omissions.

RCF S.p.A. reserves the right to make modifications without prior notice.



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Documents / Resources

	<p>RCF MF 33EN Two Way Passive Ceiling Speaker [pdf] User Manual MF 33EN Two Way Passive Ceiling Speaker, MF 33EN, Two Way Passive Ceiling Speaker, Ceiling Speaker, Speaker</p>
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