

**USER MANUAL
MANUALE D'USO**

PL 82EN

FLUSH-MOUNT
TWO-WAY CEILING
LOUDSPEAKER IN
COMPLIANCE WITH EN
54-24 STANDARD

DIFFUSORE ACUSTICO
A DUE VIE PER
CONTROSOFFITTO
CONFORME ALLA
NORMA EN 54-24



**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 and the loudspeaker input voltage is suitable for the amplifier output.
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:
 - The loudspeaker does not function (or works in an anomalous way).
 - The cable has been damaged.
 - Objects or liquids have got into the unit.
 - The loudspeaker 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. For suspended installation, only use the dedicated anchoring points and do not try to hang this loudspeaker 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.

IMPORTANT NOTES

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. To ensure a correct sound reproduction, loudspeaker phase is to be respected (loudspeakers are connected respecting the amplifier polarity). This is important when loudspeakers are installed adjacent one another, for instance, in the same room.

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

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 since there may be additional requirements about cable characteristics.

15. Install this loudspeaker far from any heat source.

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

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

DESCRIPTION



The PL 82EN two-way ceiling loudspeaker is in compliance with EN 54-24 standard. It is equipped with a steel fire dome and can be installed flush-mounted in false ceilings or panels.

It is particularly suitable for reproducing alarm messages, as it provides particularly intelligible voice reproduction and it is resistant to the high temperatures that can be reached during a fire.

Main features:

- High quality voice reproduction.
- 8" coaxial loudspeaker.
- Transformer for connection to 100 V (/ 70V) constant voltage lines.
- Possibility to select the output power among several values.
- Steel construction with protection grille.
- Steel fire dome with an attachment system that ensures quick installation.
- Ceramic terminal strip for connection (with earth contact).
- Quick system to fix the loudspeaker to the fire dome through two springs.
- Fire protection internal cables.
- Thermal fuse that prevents damage to the audio line due to heat on the speaker.

INSTALLATION



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

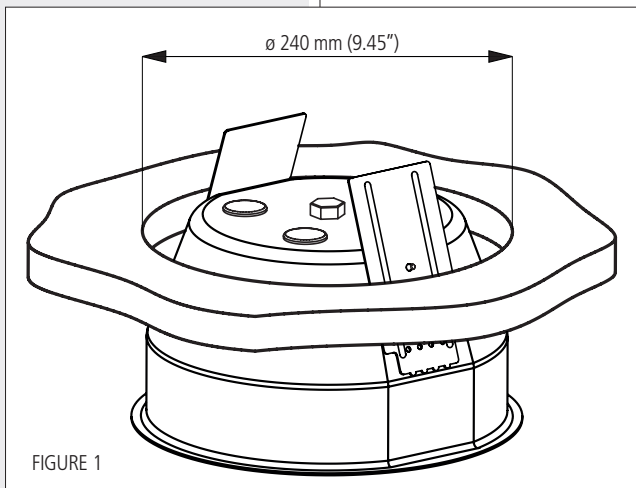
ENSURE THE SUPPORT SURFACE (E.G. WALL, ETC.) HAS THE NECESSARY MECHANICAL CHARACTERISTICS TO SUPPORT THE WEIGHT OF THE LOUDSPEAKER. BEFORE INSTALLING THE LOUDSPEAKER, CAREFULLY CHECK ALL COMPONENTS TO BE USED AND MAKE SURE THERE IS NO DAMAGE, DEFORMATION, CORROSION AND/OR MISSING OR DAMAGED PARTS THAT COULD REDUCE THE SAFETY OF THE INSTALLATION.

IN OUTDOOR USE, AVOID INSTALLING THE LOUDSPEAKER IN PLACES EXPOSED TO HARSH WEATHER CONDITIONS. THE PL 82EN IS DESIGNED FOR FLUSH-MOUNT INSTALLATION IN FALSE CEILINGS.

BEFORE INSTALLING THE LOUDSPEAKER, MAKE SURE THERE IS SUFFICIENT SPACE BEHIND THE FALSE CEILING PANEL TO HOLD THE SPEAKER: WITH RESPECT TO THE SUPPORT SURFACE OF THE FRONT FLANGE OF THE LOUDSPEAKER, A FREE SPACE 150 MM (C. 6") DEEP IS NECESSARY.

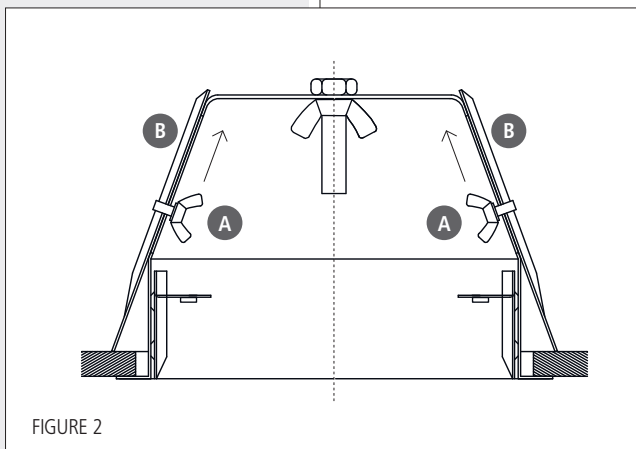


1. Drill a hole of diameter 240 mm (9.45") in the false ceiling panel, as shown in figure 1.

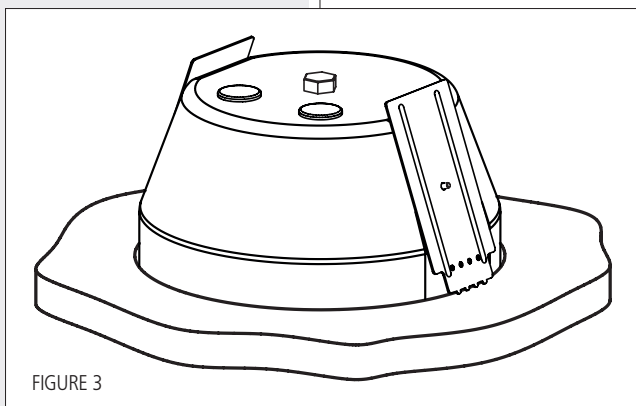


2. Loosen the two wing bolts **A** (figure 2) that secure the two attachment plates **B** and move the plates upwards, then secure the two plates **B** by re-tightening the two wing bolts **A**.

3. Insert the fire dome in the hole previously drilled (as shown in figure 1).



4. Loosen the two wing bolts **A** again and move the two attachment plates **B** downwards to secure the fire dome to the false ceiling (as shown in figure 3). When this operation is completed, re-tighten the two wing bolts **A**.



5. Hang the speaker into the fire dome, fitting the ends of one of the two support springs **C** on the speaker into one of the hooks **D** on the fire dome (as shown in figure 4).

6. Make the electrical connection as described in the next manual section.

7. Fit the ends of the other support spring **C** to the second hook **D** on the fire dome.

8. Push the speaker into the fire dome until the front flange lays against the false ceiling.

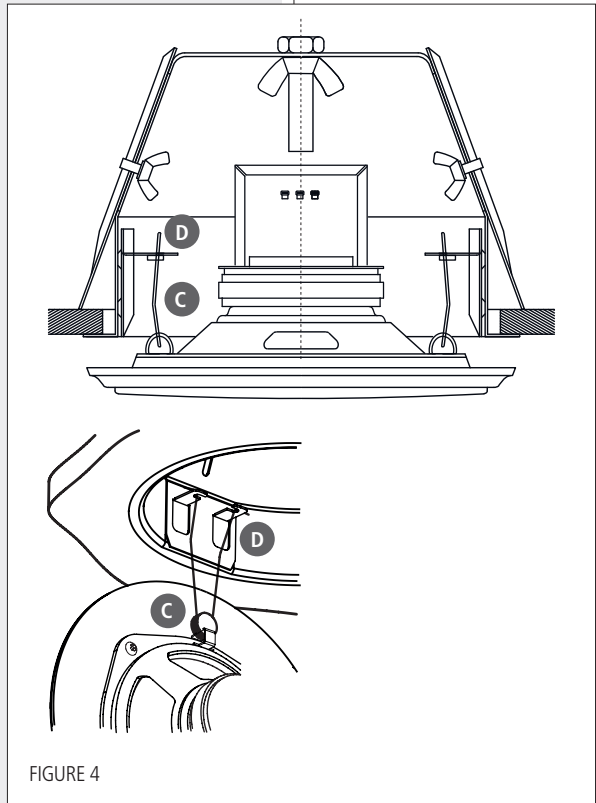


FIGURE 4

CONNECTION

WARNING: LOUSPEAKER 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 TO PREVENT ANY ELECTRICAL DANGER.

TO PREVENT ANY RISK OF ELECTRIC SHOCK, DO NOT CONNECT LOUSPEAKERS 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.



CERAMIC TERMINAL STRIP CONNECTION

The connection to the 100 V (/ 70 V) constant voltage line is made through the ceramic terminal strip, which includes a contact for earthing. Insert the cable through one of the two rubber cable guides of the fire dome. Connect the cable through one of the two rubber cable guides of the fire dome. Connect the positive wire to the speaker input **IN 100 V (+)** and the negative wire to **IN 0 (-)**. Connect the earth wire (yellow-green) to the respective terminal strip contact.

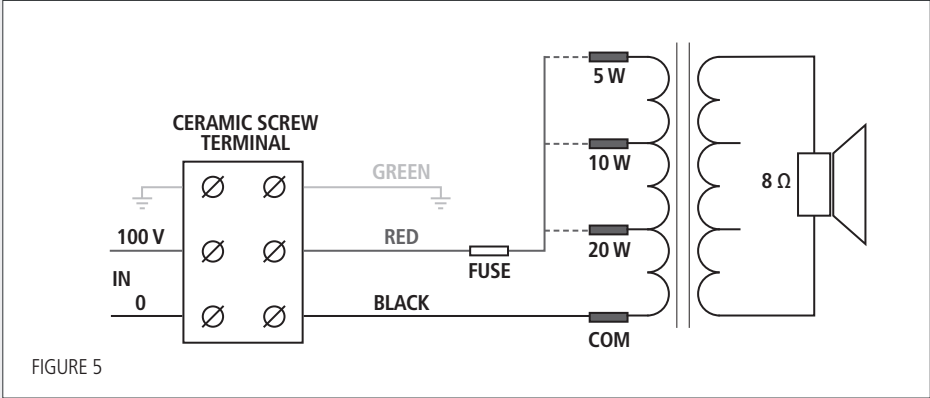


FIGURE 5

TRANSFORMER POWER SELECTION

Link the 'TAP' connector (red wire) to the transformer contact having the desired power value (see the next table and the figure 6).

TAP (pins)	POWER (100 V)	POWER (70 V)
1	5 W	2.5 W
2	10 W	5 W
3	20 W	10 W

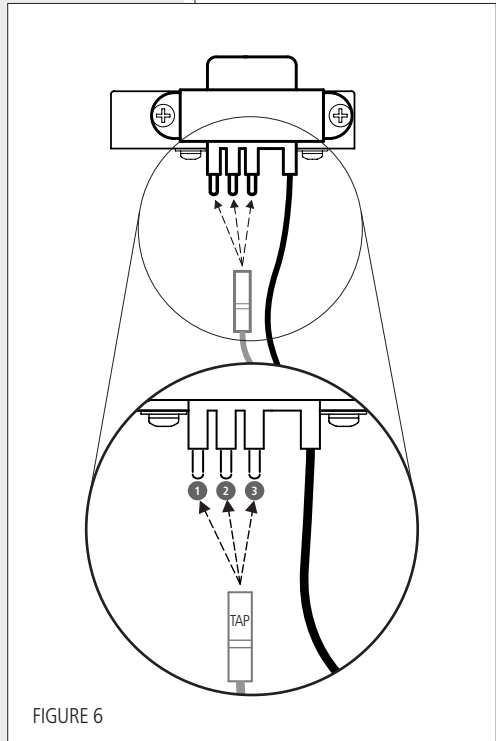
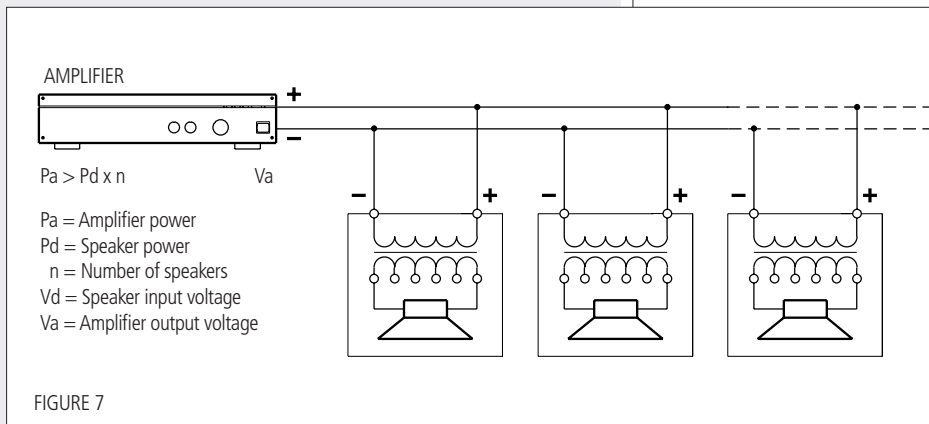


FIGURE 6

NOTES ABOUT CONSTANT VOLTAGE SYSTEMS



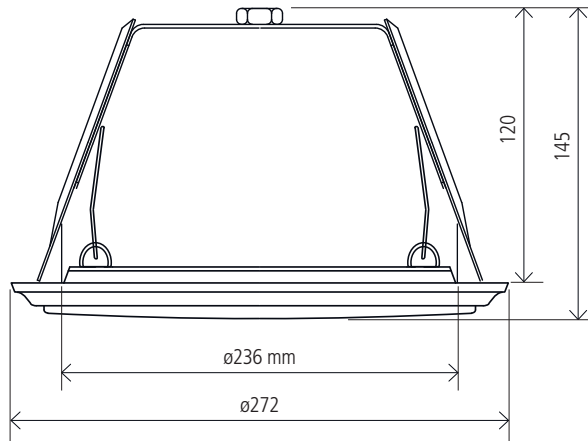
- The loudspeaker input voltage (V_d) shall correspond to the amplifier output voltage (V_a).
- The sum of nominal power values ($P_d \times n$) of all loudspeakers connected to the line shall not exceed the amplifier power (P_a).
- Make sure all loudspeakers are connected in phase to ensure a correct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



Input voltage:	100 V (/ 70 V)
Power (selectable) at 100V:	20 W – 10 W – 5 W (power values are halved at 70 V)
Input impedance (1):	500 Ω – 1 kΩ – 2 kΩ
Frequency response:	130 Hz ÷ 20 kHz (–10 dB)
Sensitivity:	94 dB (1 W, 1 m), 82 dB (1 W, 4 m)
Max. sound pressure level:	106 dB (20 W, 1 m), 94 dB (20 W, 4 m)
Coverage angle (-6dB) (2):	180° (500 Hz), 170° (1 kHz), 100° (2 kHz), 60° (4 kHz)
Transducer:	8" coaxial
Applicable wire section:	0.8 ÷ 4 mm ²
Body and grille material:	steel
Body and grille colour:	white
Fire dome material:	steel
Fire dome colour:	red
IP protection grade:	IP 40
Connector:	ceramic terminal strip
False ceiling cutout size:	ø 240 mm (9.45")
Net weight:	3.7 kg (7.65 lbs)
Operating temperature:	–30 ÷ +60 °C (–22 ÷ +140 °F)
Dimensions:	ø 272 mm (10.71"), h: 145 mm (5.71")



(1) Minimum value in between the two measured impedance peaks.

(2) Measures made with speaker mounted on a baffle and measurement microphone on the same axis (angle 0°).



Salvo eventuali errori ed omissioni.

RCF S.p.A. si riserva il diritto di apportare modifiche senza preavviso.

Except possible errors and omissions.

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

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