

RCF S p A BD 5EN Bidirectional Sound ProjectorRCF S p A BD 5EN Bidirectional Sound Projector



# RCF S p A BD 5EN Bidirectional Sound Projector User Manual

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**RCF S p A BD 5EN Bidirectional Sound Projector**



## **Product Information**

### **Specifications**

- Model: BD 5EN
- Type: Bidirectional Sound Projector
- Standard: EN 54-24

## **Product Usage Instructions**

### **Safety and Operating Precautions**

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.

1. All precautions, especially safety ones, must be read with special attention as they provide important information.
2. Ensure loudspeaker lines have a suitable voltage and never install or connect the loudspeaker when the line is live.
3. Check all connections are correct and that the loudspeaker input voltage matches the amplifier output.
4. Protect loudspeaker lines from damage by positioning them where they cannot be stepped on or crushed.
5. Avoid objects or liquids entering the product to prevent short circuits.
6. Do not perform any operations, modifications, or repairs not described in the manual. Contact the authorized service center if needed.
7. If the loudspeaker emits odors or smoke, remove it from the line after switching off the amplifier.
8. Professionally qualified installers are recommended for installation to ensure compliance with regulations.
9. Consider mechanical and electrical factors when installing a professional audio system.

10. Respect the loudspeaker phase for correct sound reproduction.

## **SAFETY AND OPERATING PRECAUTIONS**

### **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 (i.e. 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 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.

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

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 electromagnetic fields) and a sufficient electrical insulation. Refer to local regulations, as 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**

BD 5EN is a bidirectional 20 W weatherproof sound projector in compliance with EN 54-24 standard.

### **Main features:**

- – ABS cabinet with steel mesh grilles.
- – It can be installed both indoors and outdoors (IP 65 protection grade).
- – Equipped with transformer for 100 V (/ 70 V) constant voltage lines. – Internal power setting.
- – Ceramic screw terminal for connection.
- – Internal thermal fuse.
- – Colour: white.

## **CONNECTION**

**WARNING:** loudspeaker 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.

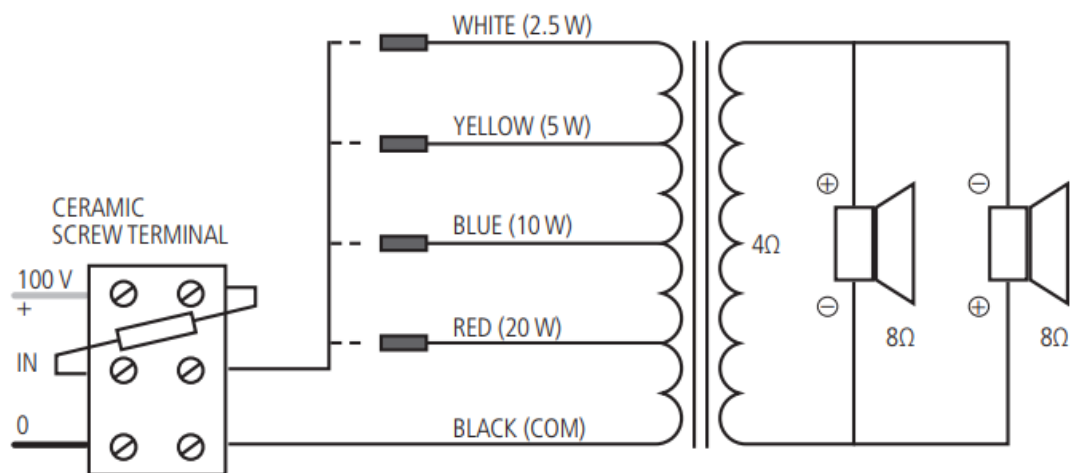
To prevent any risk of electric shock, do not connect loudspeakers when the amplifier is switched on. Before turning the system on, check all connections and make sure there are no accidental short circuits. The entire sound system shall be designed and installed in compliance with the current local laws and regulations regarding

electrical systems. Connect the 100 (/ 70) V line through the ceramic terminal block.

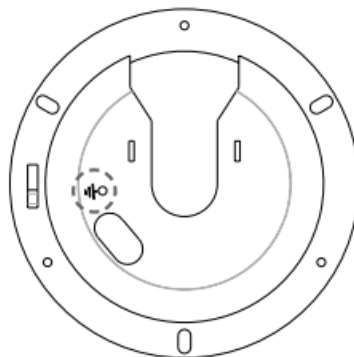
1. Select the power rate by connecting only one of the four wires (coming out from the transformer primary winding) to the central screw of the ceramic terminal strip:

- – 20 W, red wire
- – 10 W, blue wire
- – 5 W, yellow wire
- – 2.5 W, white wire

The 3 unused wires must be insulated (e.g. with tape). The black wire is common and is always linked to the transformer's primary winding. If connecting to a 70 V line, the power will be halved (red: 10 W, blue: 5 W, yellow: 2.5 W, white: 1.25 W).



2. Insert the connecting cable either (if used in wall) behind and through the mounting plate or (if external) through a hole on its cover.
3. After placing the ceramic terminal strip outside the mounting plate (see the next manual section 'Installation'), connect the positive wire of the 100 (/ 70 V) line to the loudspeaker + input.
4. Connect the negative wire of the 100 (/ 70 V) line to the loudspeaker 0 input.
5. Connect the earth wire to the screw of the mountig plate and the loudspeaker green wire.

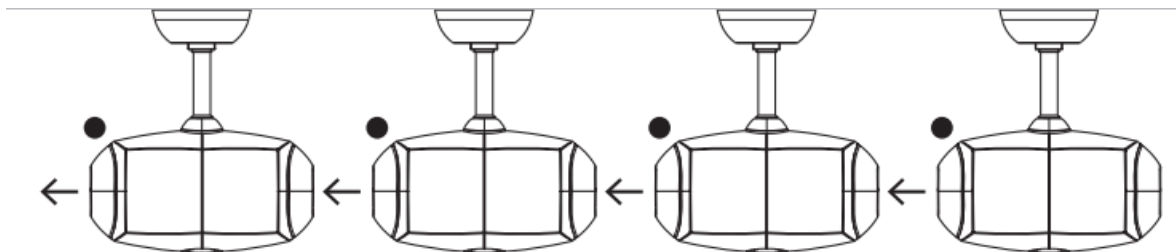


## INSTALLATION

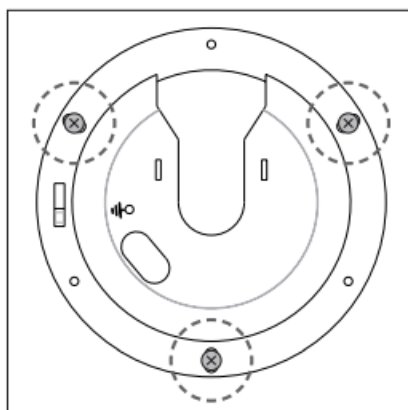
**WARNING:** MAKE SURE THAT THE LOUDSPEAKER IS INSTALLED IN A STABLE AND SECURE WAY IN ORDER TO AVOID ANY CONDITIONS THAT MAY BE DANGEROUS FOR PERSONS OR STRUCTURES. ENSURE THE SUPPORT SURFACE (THE WALL) HAS THE NECESSARY MECHANICAL CHARACTERISTICS TO SUPPORT THE LOUDSPEAKER WEIGHT.

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.

BD 5EN bidirectional sound projectors can be installed both indoors and outdoors. Bidirectional sound projectors have both front (indicated by an adhesive label / a sticker) and rear sides: always check the proper aiming of each speaker before installing it. All sound projectors installed in the same line shall have their front side pointed in the same direction.

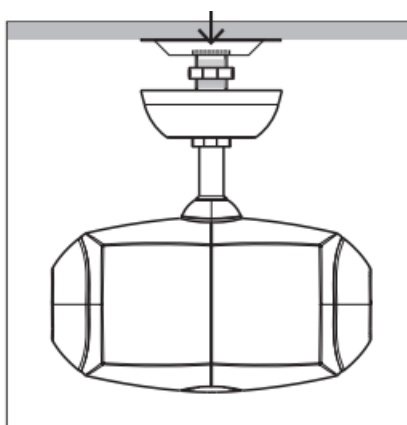


1. Fix the mounting plate to the wall (at a height of at least 1.5 m / 5 feet from the floor) with suitable wall plugs (with 4.5 mm screw).

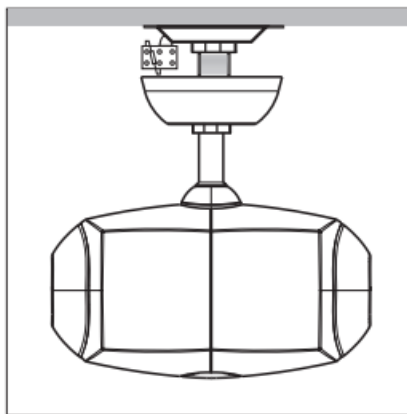


2. Insert the sound projector bracket into the mounting plate, so that it is positioned at its centre.

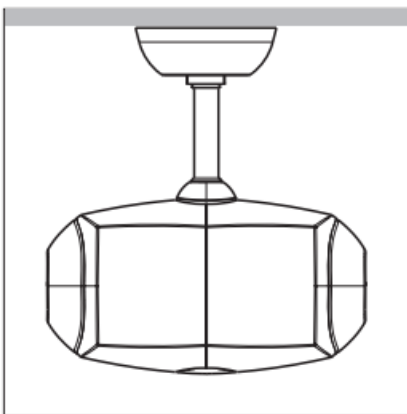
3.



4. Keep the ceramic terminal strip outside of the mounting plate and tighten the first nut of the bracket to fix the sound projector to the wall.

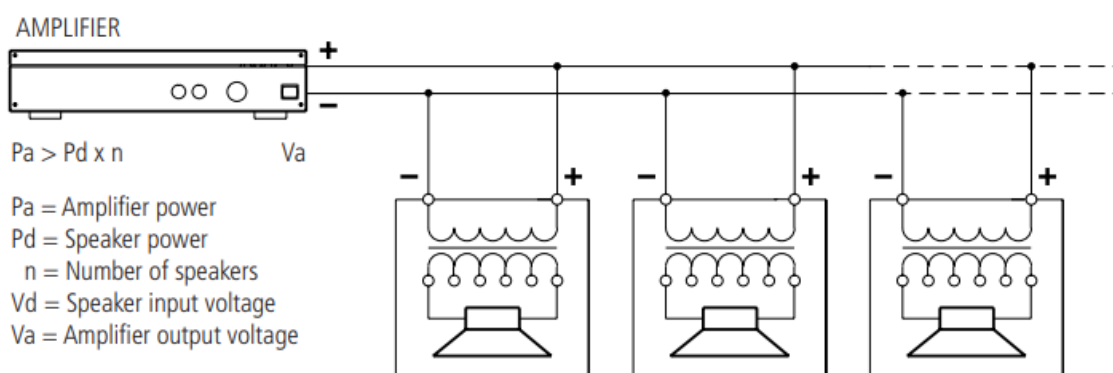


5. Connect the loudspeaker as described in the previous manual section 'Connection'. Move the cover to the wall (to hide the mounting plate) and fix it by tightening the second nut of the bracket.



## 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 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.

## SPECIFICATIONS

<b>Input voltage:</b>	100 V
<b>Power (selectable):</b>	20 W – 10 W – 5 W – 2.5 W (100 V)
<b>Input impedance:</b>	500 $\Omega$ (20 W) 1 k $\Omega$ (10 W) 2 k $\Omega$ (5 W) 4 k $\Omega$ (2.5 W)
<b>Frequency response (–10 dB):</b>	60 Hz ÷ 20 kHz
<b>Sensitivity (<math>\pm 3</math> dB, 1 kHz):</b>	86 dB (1 W, 1 m), 74 dB (1 W, 4 m)
<b>Max. sound pressure level:</b>	99 dB (20 W, 1 m), 87 dB (20 W, 4 m)
<b>Cabinet material:</b>	ABS
<b>Grilles:</b>	steel
<b>Colour:</b>	white
<b>Connection:</b>	ceramic screw terminals
<b>IP protection grade:</b>	IP 65
<b>Dimensions (without bracket):</b>	ø 180 mm, length: 340 mm

- 0068 RCF S.p.A. – Via Raffaello Sanzio 13, 42124 Reggio Emilia, ITALY 14 0068-CPR-058/2014
- Loudspeaker for voice alarm systems for fire detection and fire alarm systems for buildings
- BD 5EN
- Type B
- DoP: 007\_14
- Other technical data: see the 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. The Declaration of Performance is available on the RCF website ([www.rcf.it](http://www.rcf.it)), in the DOWNLOADS section of the product page.

Except possible errors and omissions. RCF S.p.A. reserves the right to make modifications without prior notice. Salvo eventuali errori ed omissioni. RCF S.p.A. si riserva il diritto di apportare modifiche senza preavviso.

#### **HEADQUARTERS:**

RCF S.p.A. Italy

tel. +39 0522 274 411  
e-mail: [info@rcf.it](mailto:info@rcf.it)

#### **RCF UK**

tel. 0844 745 1234  
Int. +44 870 626 3142  
e-mail: [info@rcfaudio.co.uk](mailto:info@rcfaudio.co.uk)

#### **France**

tel. +33 1 49 01 02 31  
e-mail: [france@rcf.it](mailto:france@rcf.it)

#### **RCF Germany**

tel. +49 2203 925370  
e-mail: [germany@rcf.it](mailto:germany@rcf.it)

#### **RCF Spain**

tel. +34 91 817 42 66  
e-mail: [info@rcfaudio.es](mailto:info@rcfaudio.es)

#### **RCF Belgium**

tel. +32 (0) 3 – 3268104  
e-mail: [belgium@rcf.it](mailto:belgium@rcf.it)

#### **RCF USA Inc.**

tel. +1 (603) 926-4604  
e-mail: [info@rcf-usa.com](mailto:info@rcf-usa.com)

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

#### **FAQ**

**Q: What should I do if the loudspeaker emits strange odors or smoke?**


**A:** Remove it from the line after switching off the amplifier immediately.

**Q: Can I perform modifications not described in the manual?**



**A:** No, contact your authorized service center for any modifications or repairs.

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## **Documents / Resources**

	<p><a href="#">RCF S p A BD 5EN Bidirectional Sound Projector</a> [pdf] User Manual BD 5EN Bidirectional Sound Projector, BD 5EN, Bidirectional Sound Projector, Sound Projector, Projector</p>
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## References

-  [USA Location information - USA.com](#)
-  [Audio Experience](#)
- [User Manual](#)

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