E0

Manual (3.0E)

(incl. Accessories)

d&b audiotechnik

References in the manual



WARNING! — **This refers to a potentially dangerous situation which may lead to personal injury.**

CAUTION! — **This refers to a potentially dangerous situation which may lead to personal injury.**

IMPORTANT! — **This refers to a situation which may cause the equipment to malfunction.**

Note: — **Additional informations and/or references**

Symbols on the equipment



Please refer to the information in the operating manual.



WARNING!
Dangerous voltage!

General Information

E0 Manual (incl. Accessories)

Version 3.0E, 09/2004, D2099.E.03

© by d&b audiotechnik AG 2004; all rights reserved.

The information contained in this manual has been carefully checked for accuracy, at the time of going to press, however no guarantee is given with respect to the correctness.

d&b audiotechnik AG accepts no responsibility for any errors or inaccuracies that may appear in this manual or the products and software described in it.

Technical specifications, dimensions, weights and properties do not represent guaranteed qualities.

As manufacterers we reserve the right to make alterations and modifications within the framework of legal provisions, as well as changes aimed at improving quality.

Those products which are named in the manual, which at the same time have registered trade-marks may not always be marked as such. The lack of the ® mark does not consequently mean that the product is freeware. Just as little can be placed on the basis of pending patents or protection of designs.

d&b audiotechnik AG
Eugen-Adolff-Strasse 134, D-71522 Backnang, Germany
Telephone +49-7191-9669-0, Fax +49-7191-95 00 00
E-mail: docadmin@dbaudio.com, Internet: www.dbaudio.com

Safety precautions

Before you use our products, read the manual carefully and observe all the safety precautions. They will protect you and help to avoid equipment failures.

Keep this manual in a safe place so that it is available for future reference.

If you supply d&b products, please draw the attention of your customers to these safety guidelines. Enclose the relevant manuals with the systems. If you require additional manuals for this purpose, you can order them from d&b.

Information regarding use of loudspeakers



WARNING!

Never stand in the immediate vicinity of loudspeakers driven at a high level. Professional loudspeaker systems are capable of causing a sound pressure level detrimental to human health. Seemingly non-critical sound levels (from approx. 95 dB SPL) can cause hearing damage if people are exposed to it over a long period.

In order to prevent accidents when deploying loudspeakers on the ground or when flown, please take note of the following:

When setting up the loudspeakers or loudspeaker stands, make sure they are standing on a firm surface. If you place several systems on top of one another, use straps to secure them against movement.

Only use accessories which have been tested and approved by d&b for assembly and mobile deployment. Pay attention to the correct application and maximum load capacity of the accessories as detailed in our specific “Mounting instructions” or in our "Flying system and Rigging manuals".

Ensure that all additional hardware, fixings and fasteners used for installation or mobile deployment are of an appropriate size and load safety factor. Pay attention to the manufacturers instructions and to the relevant safety guidelines.

Regularly check the loudspeaker housings and accessories for visible signs of wear and tear, and replace them when necessary.

Regularly check all load bearing bolts in the mounting devices.

CAUTION!

Loudspeakers produce a static magnetic field even if they are not connected or are not in use. Therefore make sure when erecting and transporting loudspeakers that they are nowhere near equipment and objects which may be impaired or damaged by an external magnetic field. Generally speaking, a distance of 0.5 m (1.5 ft) from magnetic data carriers (floppy disks, audio and video tapes, bank cards, etc.) is sufficient; a distance of more than 1 m (3 ft) may be necessary with computer and video monitors.

E0

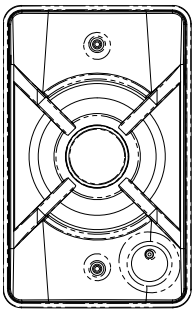


Fig. 1: E0 loudspeaker

The E0 is a compact, coaxial 2-way loudspeaker fitted with a 5" LF driver and 1" dome tweeter and has a maximum sound pressure level of 116 dB SPL.

The E0 is housed in a cleverly shaped strong polyamide cabinet containing magnetic shielding of the LF driver, and has a rigid metal grill that protects the front of the loudspeaker. Recessed into the rear is a quad push connector and self-locking ball joint with integrated mounting arm that incorporates an M10 female thread. Along with a selection of d&b rigging accessories the E0 can be deployed quickly and easily in a variety of configurations.

Whilst the loudspeaker components are shielded against magnetic radiation, we advise a minimum distance of 15 cm between the E0 and susceptible equipment (e.g. PC and video monitors).

CAUTION!

Only operate E0 loudspeakers with a d&b amplifier configured for the E0 otherwise there is a risk of damage to the loudspeaker components.

Connections

The E0 loudspeaker can be supplied with two connector options.

Push connector:

Two pairs of push connectors wired in parallel facilitating quick connection to additional loudspeakers and the D12 or E-PAC amplifiers.

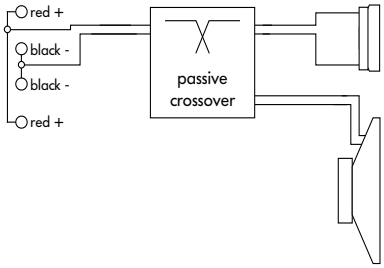


Fig. 2: Wiring of the push connector

NL4 connector:

Two NL4 connectors wired in parallel using pins 1+/1–. Pins 2+/2– are not connected – refer to the graphic opposite - Fig. 3
Using one connector as the input, the second connector allows for direct connection to additional loudspeakers.

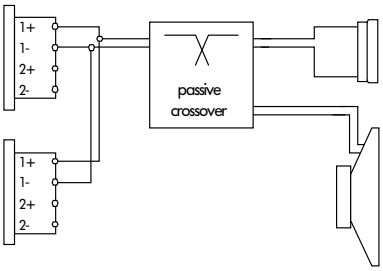


Fig. 3: Wiring of the NL4 connectors

Dimensioning of the loudspeaker cable:

We recommend a loudspeaker cable with minimum cross-section of 0.5 mm^2. The minimum cross-section required for a single cabinet can be calculated from:

$$cross-section(mm^2)=\frac{single\,length\,of\,cable(m)}{50}$$

Where multiple E0 loudspeakers are connected in parallel the minimum cross-section required is obtained by multiplying the above result by the number of cabinets.

NL4	1+	1–
Push connector	red (+)	black (–)

Tab. 1: NL4 and push connector pin assignments

Operation with D12

IMPORTANT!

Selecting E0 mode in the D12 enables up to four E0 cabinets to be driven by each channel.

Controller settings

For acoustic adjustment the functions CUT, HFA and CPL can be selected.

CUT circuit

Set to CUT, a high pass filter with a 120 Hz cut off frequency is inserted in the controller signal path. The E0 is now configured for use with d&b active subwoofers.

HFA circuit

In HFA mode (High Frequency Attenuation), the HF response of the E0 system is rolled off. The HFA provides a natural, balanced frequency response when a unit is placed close to listeners in near field or delay use.

High Frequency Attenuation begins gradually at 1 kHz, dropping by approximately 3 dB at 10 kHz. This roll-off mimics the decline in frequency response experienced when listening to a system from a distance in a typically reverberant room or auditorium.

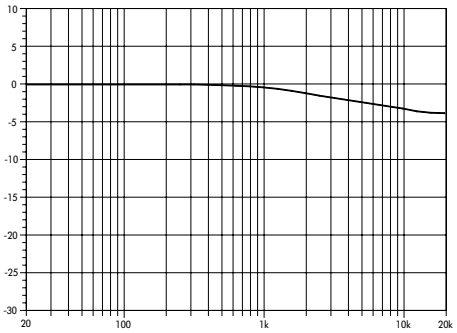


Fig. 4: Frequency response correction of HFA circuit

CPL circuit

The CPL (Coupling) circuit compensates for coupling effects between the cabinets when building closely coupled arrays. CPL begins gradually at 1 kHz, with maximum attenuation below 400 Hz, providing a balanced frequency response when Q7 cabinets are used in arrays of two or more. The function of the CPL circuit in the D12 amplifier is shown in the diagram opposite and can be set in dB attenuation values between –9 and 0, or a positive CPL value which creates an adjustable low frequency boost around 65 Hz (0 to +5 dB).

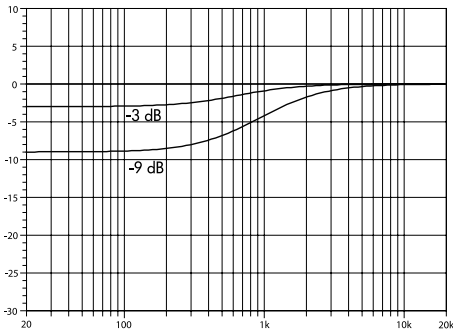


Fig. 5: Frequency response correction of CPL circuit

Operation with E-PAC

Selecting E0 mode in the E-PAC enables up to two E0 cabinets to be driven at full output power. LO IMP mode allows the E-PAC to drive a maximum of four E0 cabinets with a 6 dB reduction of input level to the loudspeakers.

The CUT and HFA settings are available. The characteristics of the CUT and HFA settings are explained under the previous section "Operation with D12 - Controller settings".

Dispersion characteristics

Due to the coaxial driver design, the horizontal and vertical dispersion characteristics of the E0 are identical. The diagram below shows dispersion angle vs frequency plotted using lines of equal sound pressure (isobars) at –6 dB and –12 dB.

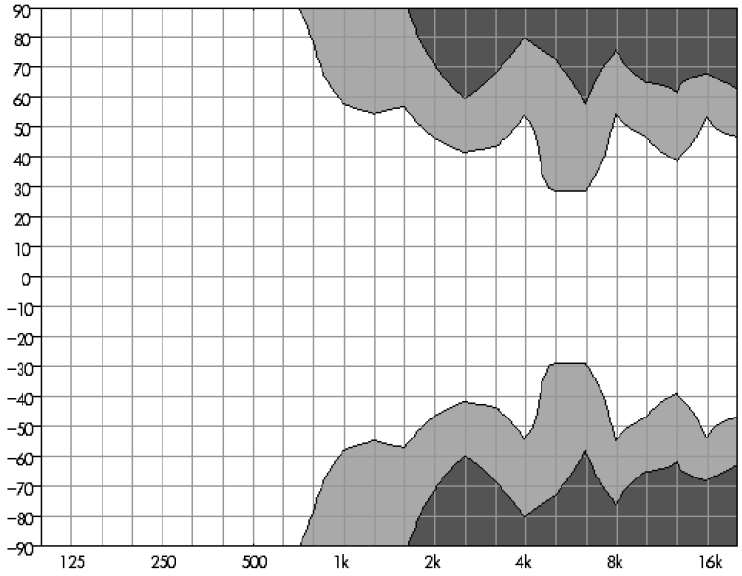


Fig. 6: E0 isobar diagram

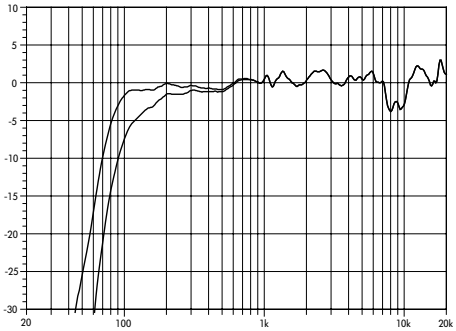


Fig. 7: E0 frequency response standard and CUT settings

Technical specifications

E0 system data

Frequency response (–5 dB).....80 Hz - 20 kHz
Max. sound pressure (1 m, free field) with D12.....117 dB
Max. sound pressure (1 m, free field) with E-PAC.....116 dB
(SPLmax peak, pink noise test signal with crest factor of 4)

Input level (100 dB SPL / 1 m).....–4 dBu
Polarity to controller INPUT (XLR pin 2: + / 3: –).....LF: + / HF: –

E0 loudspeaker

Nominal impedance.....16 ohms
Power handling capacity (RMS / peak 10 ms).....50 / 400 W
Nominal dispersion angle.....100° conical
Comonents.....5" driver/coaxially mounted 1" dome tweeter
.....Passive crossover network
Connections.....Push connector, two pairs wired in parallel
corss-section up to 6 mm^2

.....2 x NL4
Pin assignments.....Push connector red+/black–
.....NL4 1+/1–
Weight.....2.5 kg (5.5 lb)

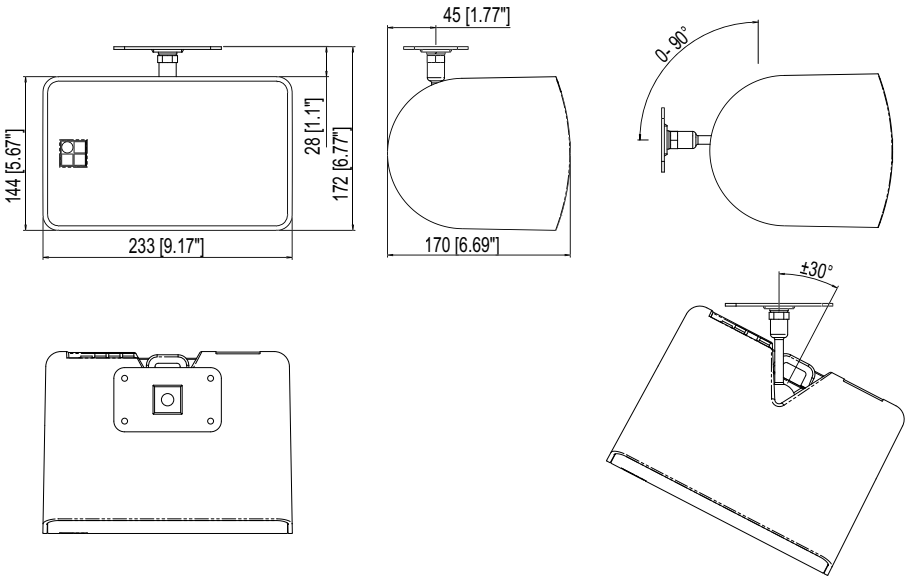


Fig. 8: E0 cabinet dimensions in mm [inch]

E0 Accessories

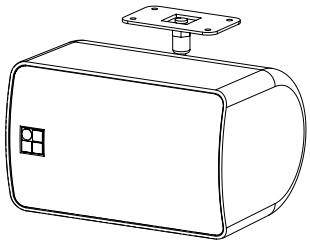


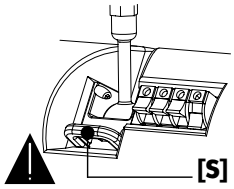
Fig. 9: E0 with B2123 Fixing plate

Recessed into the rear is a self-locking ball joint with integrated mounting arm that incorporates an M10 female thread. The E0 rigging accessories allow different mounting of the E0 loudspeaker as follows:

- The B2123 Fixing plate allows mounting to walls and ceilings or other surfaces.
- Single cabinets can be hung from a truss or bar using the E6532 Super Clamp together with the E6533 M10 adapter for the Super Clamp. The jaw of the Super Clamp can be adjusted to fit bars, or any other supporting structures with diameters from 13 to 55 mm (0.5" to 2.2").
- Alternatively the Z5029 TV spigot together with the Z5012 Pipe clamp can be used for tube diameters from 32 to 50 mm (1.25" to 1.97").
- The Z5035 M10 to 3/8" adapter enables the E0 to be mounted to a microphone stand, whilst the Z5034 Stand adapter allows the E0 to be mounted to a loudspeaker stand. The E0 is mounted horizontally when using either a microphone or loudspeaker stand.

Safety instructions

WARNUNG!



Under no circumstances should the safety hook [S] be used to support other loads.

When attaching the accessories as listed above to the mounting arm of the E0 loudspeaker the spring washer must always to be used.

When using the accessories as listed above, please refer to the accessory specific mounting instructions.

Secondary safeties should always be provided and used when flying or fixing loudspeaker loads overhead. In case of the E0 loudspeaker there is a safety hook [S] at the back of the loudspeaker to which a safety rope should be attached.

Part list E0 accessories

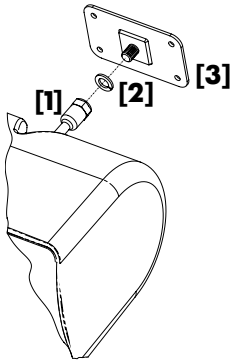


Fig. 10: E0 accessories

The following accessories are included as standard with the E0 loudspeaker:

E0 Loudspeaker black/white (Z0400.000/001):

- 1 x Ball joint with integrated mounting arm M10 **[1]**
- 1 x Spring washer M10 **[2]**
- 1 x Fixing plate M10 black/white (B2123.200/201) **[3]**

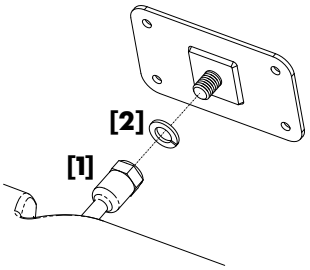


Fig. 11: Attaching accessories to the mounting arm [1] using the spring washer [2]

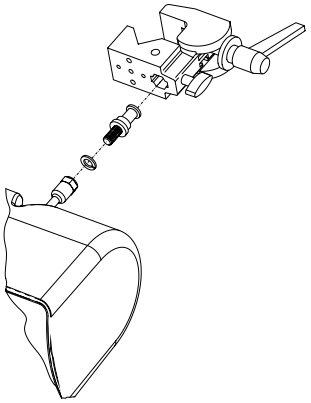


Fig. 12: E6532 Super Clamp with E6533 M10 adapter for Super Clamp

Assembly

The E0 ´s ball joint with integrated mounting arm incorporates an M10 female thread which enables the attachment of the accessory items as listed above.

The specific accessories are attached to the mounting arm **[1]** using the spring washer **[2]** and should be fixed using a wrench (SW: #17).

The E6533 M10 adapter allows the attachment of the E6532 Super Clamp to the E0 mounting arm (please refer to the specific mounting instructions provided with the Manfrotto Super Clamp).

Operation/Adjustments

The self-locking ball joint allows the angling of the loudspeaker in any direction (see diagram below).

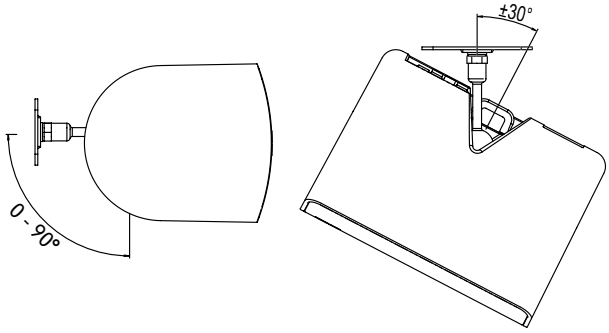


Fig. 13: Angle setting of the E0 loudspeaker

Rigging examples

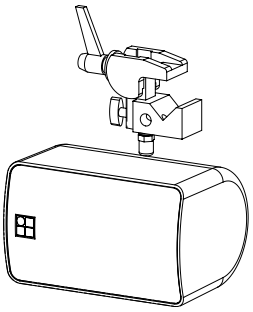


Fig. 14: E0 with E6532 Super Clamp

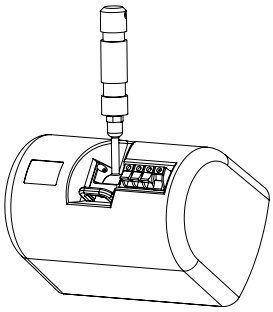


Fig. 15: E0 with Z5029 TV spigot

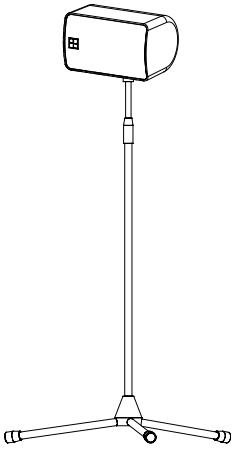


Fig. 16: E0 mounted on a mircorphone stand using the Z5035 M10 to 3/8" adapter

EU declaration of conformity (CE symbol)

CE

EU conformity of loudspeakers

This declaration applies to loudspeakers manufactured by d&b audiotechnik AG and includes the types listed in the table below:

- **E0 loudspeaker Z0400**

All production versions of these types are included, provided they correspond to the original technical version and have not been subject to any later design or electromechanical modifications.

We herewith declare that said products are in conformity with the provisions of the following EC directives including all applicable amendments:

- **89/336 Electromagnetic Compatibility**

The following standards have been applied:

- **DIN EN 55013:08-1991**
- **DIN EN 55020:05-1995**
- **DIN EN 50082-1:03-1993**

d&b audiotechnik

d&b audiotechnik AG, Eugen-Adolff-Str. 134, D-71522 Backnang, Germany, Phone +49-7191-9669-0, Fax +49-7191-95 00 00