E9

Manual (3.0E)

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 damage to the equipment.**

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

Symbols on the equipment



Please refer to the information in the operating manual.



WARNING!
Dangerous voltage!

General Information

E9 Manual

Version 3.0E, 10/2003, D2071.E.03

© by d&b audiotechnik AG 2003; 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.

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.

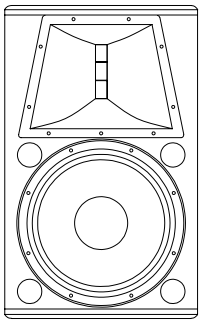
Regularly check the loudspeaker housings and accessories for visible signs of wear and tear, and replace them when necessary.

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.

E9



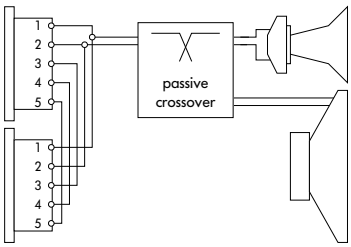
The E9 loudspeaker is a full range, two way bass-reflex enclosure fitted with a single 12" LF driver passively connected to a 2" HF compression driver coupled to a vertically asymmetrical 90° x 50° CD horn. The asymmetry of the HF horn means that the E9 has a vertical coverage pattern with a downward tilt. The actual vertical dispersion is 20° above and 30° below the cabinet axis.

The E9 cabinet is constructed from marine plywood and has an impact resistant paint finish. The front of the loudspeaker cabinet is fitted with a rigid metal grill covered with a replaceable acoustically transparent foam. The cabinet top plate has an integral handle and four M10 threaded inserts for mounting brackets and rigging. The L shaped metal plate at the bottom of the cabinet also incorporates a handle, four M10 threaded inserts and a socket to accept a loudspeaker stand.

CAUTION!

Only operate E9 cabinets with a d&b D12 or E-PAC amplifier in E9 mode or a P1200A mainframe fitted with E9 controller modules, otherwise there is a risk of damaging the loudspeaker components.

Connections



Connector wiring

The E9 cabinet is fitted with a pair of EP5 connectors. All pins of both connectors are wired in parallel. The E9 uses the pin assignments 1/2. Pins 3/4 and 5 are designated to d&b active subwoofers.

Using one connector as the input, the second connector allows for direct connection to additional cabinets.

The E9 can be supplied with NL4 output connectors as an option using the pin assignment 1+/1–. Pins 2+/2– are designated to d&b active subwoofers.

Pin equivalents of EP5 and NL4 connectors are listed in the table below.

EP5	1	2	3	4	5 (SenseDrive SUB)
NL4	1+	1–	2+	2–	n.c.

EP5 and NL4 pin assignments

Operation with D12

Selecting E9 mode in the D12 enables up to two E9 cabinets to be driven by each channel. In applications with low continuous levels and low ambient temperatures up to three loudspeakers per channel may be connected.

When the D12 is operated in "Mix TOP/SUB" mode the E9 cabinet and a respective active subwoofer can be linked together locally and fed by a single 4-wire cable from either amplifier output connector.

IMPORTANT!

To apply SenseDrive for the subwoofer EP5 connectors and 5-wire cables have to be used. In "Mix TOP/SUB" mode the subwoofers have to be connected to the output B connector of the D12 amplifier.

Controller settings

For acoustic adjustment the settings CUT and HFA can be selected.

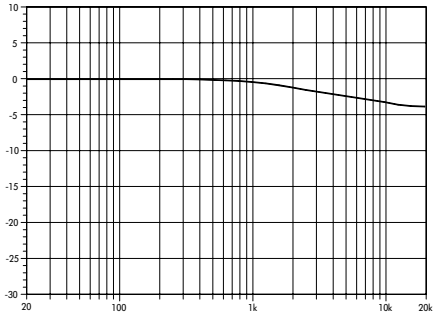
CUT circuit

Set to CUT, a high pass filter with a 110 Hz cut off frequency is inserted in the controller signal path. The E9 is now configured for use with d&b active subwoofers.

HFA circuit

In HFA mode (High Frequency Attenuation), the HF response of the E9 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.



Frequency response of HFA circuit

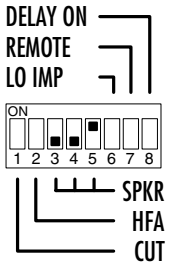
Operation with E-PAC

To drive E9 cabinets the E-PAC has to be configured to E9 mode.

For an E-PAC version 2, the configuration is selected by setting the appropriate DIP switches on the rear panel.

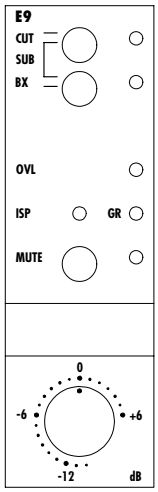
For an E-PAC version 3, the configuration is set via the encoder in conjunction with an LCD. Selecting E9 mode enables one E9 cabinet to be driven at an output power of 300 Watts. LO IMP mode allows the E-PAC to drive two E9 cabinets with a 6 dB reduction of input level to the loudspeakers.

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".



E-PAC Configuration for E9 (E-PAC version 2)

Operation with P1200A



Controls on E9 controller module

Up to two E9 cabinets can be driven by each P1200A power amplifier channel fitted with an E9 controller module.
Fitting one E9 and one subwoofer controller module allows a single mainframe to drive two E9 cabinets and two active subwoofer cabinets. All cabinets can be linked together locally and fed by a single 4-wire cable from either mainframe output connector.

The CUT setting is available. The characteristics of the CUT setting is explained under the previous section "Operation with D12 - Controller settings".

Standard setting

If the CUT switch and BX switch are not selected the module is configured for use with E9 cabinets when used as a stand alone system without subwoofers.

BX switch and indicator

When the E9 is used with the passive E15-BX subwoofer, i.e. E9 and E15-BX are linked to the same amplifier output, the BX switch should be selected. The LF level - boosted by the bass extension cabinet - is then attenuated by 3 dB, thereby increasing headroom at bass frequencies.

SUB (CUT and BX both selected)

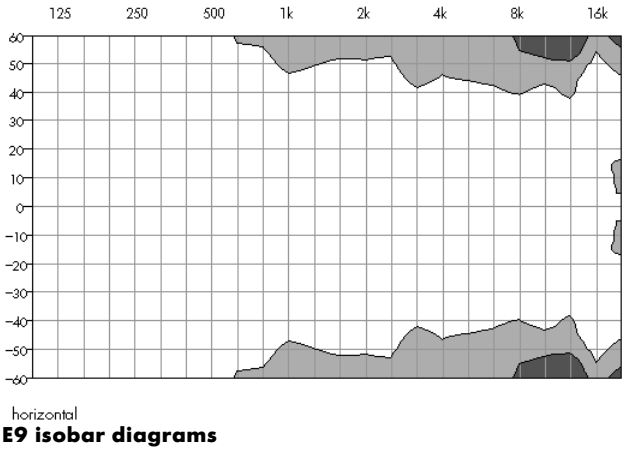
Selecting the CUT and BX switches activates a lowpass filter. The module now transmits frequencies from 50 to 110 Hz only, allowing the d&b E15-BX to be driven as an active subwoofer.

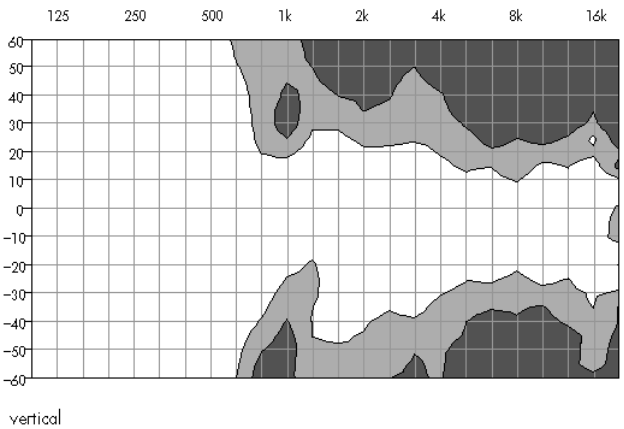
IMPORTANT!

The E9 controller module drives EP5 pins 1/2 (NL4: pins 1+/1–). Therefore the SUB setting is not suitable to drive d&b active subwoofer cabinets.

Dispersion characteristics

The diagrams below show dispersion angle vs frequency plotted using lines of equal sound pressure (isobars) at –6 dB and –12 dB. The nominal 90° horizontal dispersion is maintained from 20 kHz down to 900 Hz.





E9 isobar diagrams

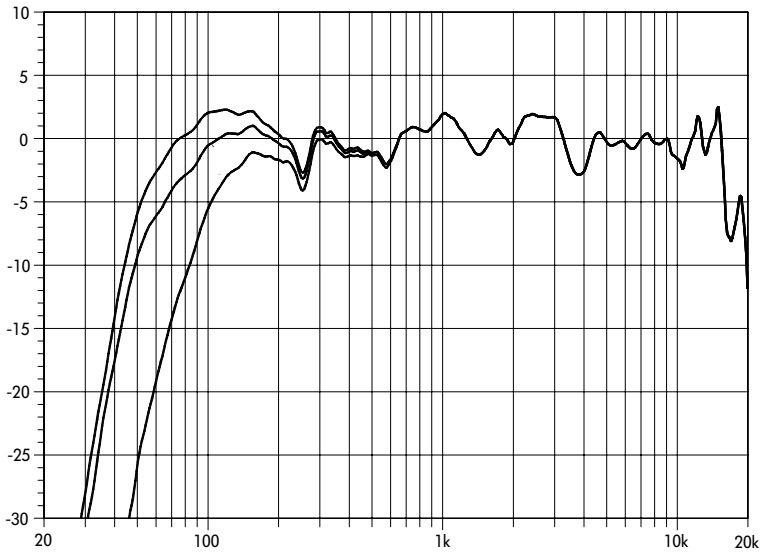
Technical specifications

E9 system data

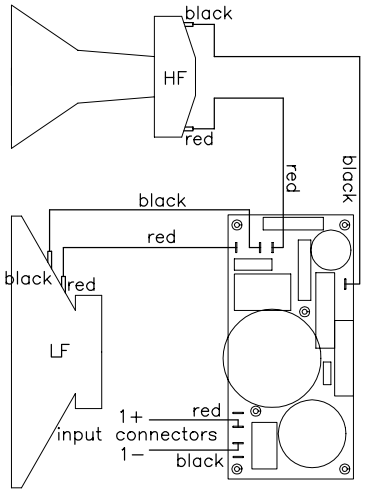
Frequency response (–5 dB)	50 Hz - 17 kHz
Max. sound pressure (1 m, free field) with D12	129 dB
Max. sound pressure (1 m, free field) with E-PAC	126 dB
Max. sound pressure (1 m, free field) with P1200A	128 dB
	(SPLmax peak, pink noise test signal with crest factor of 4)
Input level (100 dB SPL / 1 m)	–13 dBu
Polarity to controller INPUT (XLR pin 2: + / 3: –)	LF: + / HF: –

E9 loudspeaker

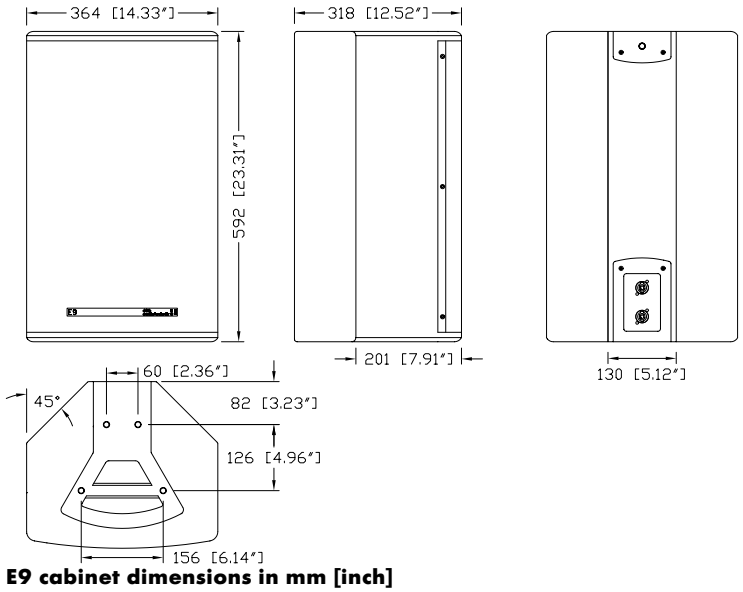
Nominal impedance	8 ohms
Power handling capacity (RMS / peak 10 ms)	200 / 800 W
Nominal dispersion angle	horizontal 90°, vertical +20° / –30°
Connections	2 x EP5
Pin assignments	1/2
optional	2 x NL4
Pin assignments	1+ / 1–
Weight	26 kg (57 lb)



E9 frequency response standard, BX and CUT switch settings



E9 wiring diagram



E9 cabinet dimensions in mm [inch]

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:

– **E9 Z2250**

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