Ch4

Manual (2.0E)

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

Ch4 Manual

Version 2.0E, 10/2003, D2055.E.02

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.

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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.

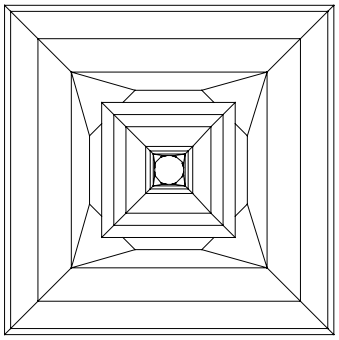
Regularly check the loudspeaker housings and accessories for visible signs of wear and tear, and replace them when necessary.

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.

Ch4



The Ch4 loudspeaker is the skeletal version of the Ci4-TOP (C4-TOP) loudspeaker. It is acoustically compatible with the respective Ci4-TOP (C4-TOP) differing only in the mechanical construction.

The Ch4 loudspeaker is a mid to high range loudspeaker which uses a coaxial array of two constant directivity horns. Two passively coupled drivers are used a 12" low frequency driver with a 4" voice coil and a specially treated diaphragm and a 2" exit compression driver with a titanium diaphragm. The nominal 35° x 35° dispersion is maintained down to 700 Hz.

The Ch4 is constructed from paint finished fibreglass reinforced plastic (GRP). The Ch4 weighs approximately 31 kg /68 lb.

CAUTION!

Only operate Ch4 cabinets with a d&b D12 or E-PAC amplifier in C4-TOP configuration or a P1200A mainframe fitted with a C4-TOP controller module, otherwise there is a risk of damaging the loudspeaker components.

Connections

Ch4 cabinets are fitted with two NL4 connectors wired in parallel and are driven using pins 1+/1–.

Operation with D12

Selecting C4-TOP mode in the D12 enables up to two Ch4 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.

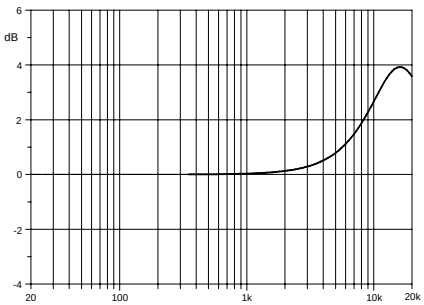
Controller settings

For acoustic adjustment the functions HFC and CPL can be selected.

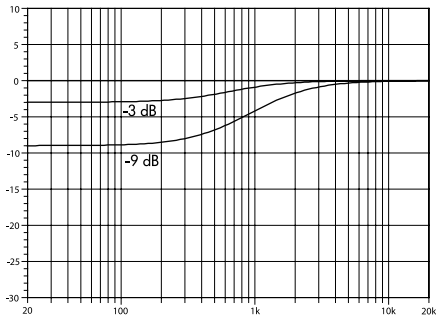
HFC circuit

In HFC mode (High Frequency Compensation), the response of the system is tailored for remote listening positions. The characteristics of HFC mode are detailed in the graph opposite.

Selecting HFC compensates for loss of high frequency energy due to absorption in air when loudspeakers are used to cover far field listening postions. The HFC correction equates to the HF loss which occurs at a distance of 30 m (100 ft) at 20°C (68°F) in 50 % relative humidity.



Frequency response of HFC circuit



Frequency response of CPL circuit

CPL circuit

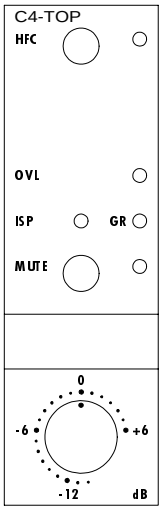
The CPL (Coupling) circuit compensates for coupling effects between the cabinets when building closely coupled arrays. CPL begins gradually at 1 kHz, with maximum attenuation below 250 Hz, providing a balanced frequency response when Ch4 cabinets are used in arrays of two or more. The function of the CPL circuit in the D12 amplifier is shown in the diagram opposite and can be set in dB attenuation values between –9 and 0.

Operation with E-PAC (Version 3 with display only)

Selecting C4-TOP mode in the E-PAC enables one Ch4 cabinet to be driven at an output power of 300 Watts. LO IMP mode allows the E-PAC to drive two Ch4 cabinets with a 6 dB reduction of input level to the speakers.

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

Operation with P1200A



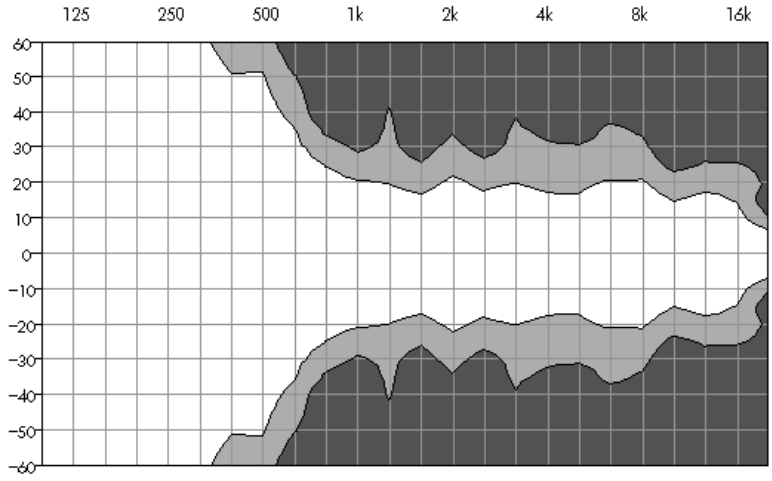
Controls on C4-TOP controller module

Up to two Ch4 cabinets can be driven by each P1200A power amplifier channel fitted with a C4-TOP controller module. Fitting one C4-TOP and one subwoofer controller module allows a single mainframe to drive two Ch4 and two active subwoofer cabinets.

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

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 35° dispersion is maintained from 16 kHz down to 700 Hz. Horizontal and vertical characteristics are identical.



Ch4 isobar diagram

Technical specifications

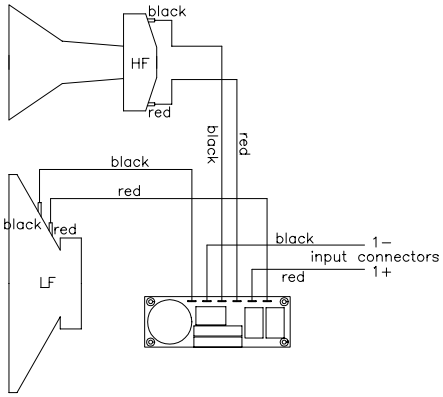
Ch4 system data

Frequency response (–5 dB)	150 Hz - 18 kHz
Max. sound pressure (1 m, free field) with D12	140 dB
Max. sound pressure (1 m, free field) with E-PAC	136 dB
Max. sound pressure (1 m, free field) with P1200A	138 dB
	(SPLmax peak, pink noise test signal with crest factor of 4)
Input level (SPLmax)	+14 dBu
Input level (100 dB SPL / 1 m)	–21 dBu
Polarity to controller INPUT (XLR pin 2: + / 3: –)	LF: + / HF: +

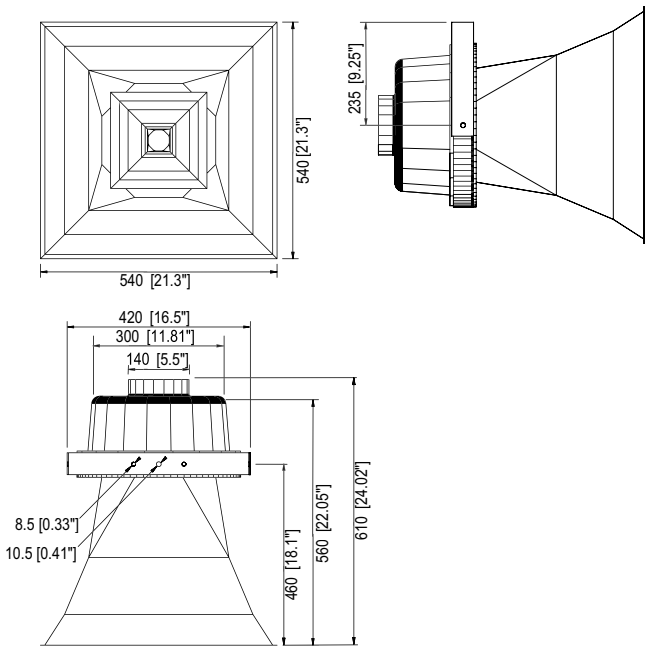
Ch4 loudspeaker

Nominal impedance	8 ohms
Power handling capacity (RMS / peak 10 ms)	200 / 800 W
Nominal dispersion angle (hor. x vert.)	35° x 35°
Connections	2x NL4
Pin assignments	1+ / 1–
Weight	31 kg (68 lb)

Ch4 frequency response



Ch4 wiring diagram



Ch4 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:

– **Ch4 Z2265**

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**

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