

Qi-SUB/QiCSA-SUB

Manual (1.2 EN)

Symbols on the equipment



Please refer to the information in the operating manual.



WARNING!
Dangerous voltage!

Contents

Safety precautions	3
Information regarding use of loudspeakers.....	3
Qi-SUB/QiCSA-SUB	4
Qi-SUB.....	4
QiCSA-SUB.....	4
Connections.....	5
Operation with D6 or D12.....	6
Operation with E-PAC (Qi-SUB only).....	6
Technical specifications Qi-SUB/QiCSA-SUB.....	7
Manufacturer's declarations	8
EU conformity of loudspeakers (CE symbol).....	8
WEEE Declaration (Disposal).....	8

General Information

Qi-SUB/QiCSA-SUB Manual

Version 1.2 EN, 03/2008, D2047.E.01

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

When reselling this product, hand over this manual to the new customer.

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

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Safety precautions



WARNING!

Information regarding use of loudspeakers

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.

Qi-SUB/QiCSA-SUB

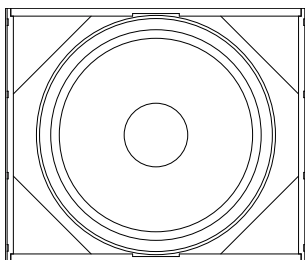


Fig. 1: Qi-SUB

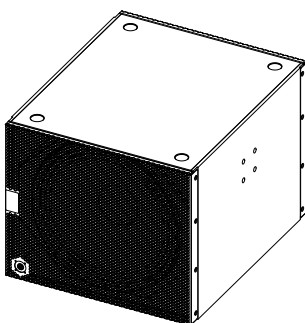
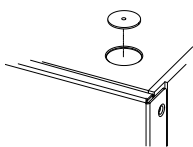


Fig. 2: QiCSA-SUB



Qi-SUB

The Qi-SUB (d&b code Z0530) is the installation version of the Q subwoofer. It is acoustically compatible with the standard road version differing only in cabinet construction and mounting hardware.

The Qi-SUB cabinet is an actively driven bass-reflex design housing a long excursion 18" driver, its frequency response extending from 40 Hz to 130 Hz.

The Qi-SUB cabinet is constructed from marine plywood and has an impact resistant paint finish. The front of the loudspeaker cabinet is covered with a replaceable acoustically transparent foam that is then protected by a rigid metal grill. Four M10 threaded inserts on each side panel of the cabinet enclosure are provided for attaching installation hardware.

QiCSA-SUB

The QiCSA-SUB (d&b code Z0531) is a specifically designed installation version of the Qi subwoofer for use as the rear facing element in Cardioid Subwoofer Arrays (CSA) only. It is acoustically compatible with the standard road version differing only in cabinet construction and mounting hardware. The cabinet has replaceable acoustically transparent foams fitted to both the front and rear sides of the cabinet, which are then protected by rigid metal grills.

Note: Four rubber washers are supplied with the Qi-SUB that can be used to prevent movement of the cabinets when two or more subwoofers are to be stacked. The rubber washers should be placed into the four recesses located on the top of the cabinet before placing another cabinet on top.

Weather resistant (WR) option

NOTICE: The WR option enables operation of loudspeakers in changing ambient conditions, however it is not intended to enable permanent, unprotected operation of loudspeakers outdoors.

- Provide an additional cover over the loudspeakers.
- Aim the cabinets either horizontally or with a downward tilt.

Cabinet design

Component	Description
Cabinet	Plywood to DIN 68705 Part III. Equivalent to flame spread class 3. Temperature range from -200° C to +100° C.
Wood joints	Bonded waterproof to stress class D4
Cabinet paint	Two component PU paint (seaworthy, chemical resistant and temperature resistant to 110° C).
Screws	Stainless steel (VA).
Driver cones	Impregnated with silicone spray or coated.
Driver components/ Crossover network	The coil and pole plate are also treated with silicone. The crossovers are sprayed with silicone on both the solder and component sides.

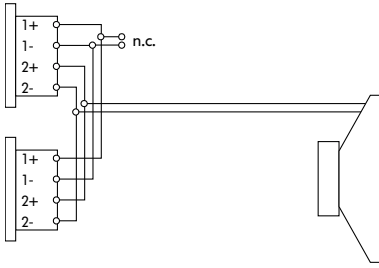


Fig. 3: Connector wiring

Connections

The **Qi-SUB** is supplied with two NL4 connectors. All pins of both connectors are wired in parallel. The Qi-SUB uses the pin assignments 2+/2-. Pins 1+/1- are designated to Qi-Series full range systems. Using one connector as the input, the second connector allows for direct connection to additional loudspeakers.

In case of the **QiCSA-SUB** the front grill of the cabinet baffle is fitted with a single NL4 connector located at the bottom left hand side of the grill.

Installation loudspeakers with the weather resistant option are supplied with a fixed cable (PG).

Cable type: H-07-RN-F 2 x 2.5 mm²/AWG 13
Standard length: 5.5 m (18 ft)

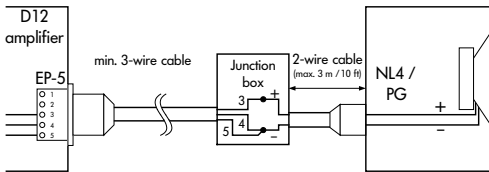
Pin equivalents of NL4 connectors and the fixed cable option (PG) are listed in the table below.

NL4	1+	1-	2+	2-
PG	n.a.	n.a.	Brown (+)	Blue (-)

Connecting D12 EP5 outputs to installed loudspeaker cabinets (SenseDrive)

To apply SenseDrive for the subwoofer, D12 amplifiers with EP5 connectors have to be used.

When the D12 is operated in "Mix TOP/SUB mode", the SenseDrive function is available on the output B connector only.



In permanent installations SenseDrive can also be applied to cabinets with NL4 connectors or fixed cable option (PG). The connection of the negative signal wire (EP5 pin 4 of the respective D12 output) to the SenseDrive wire (EP5 pin 5 of respective D12 output) is made in a junction box close to the loudspeaker cabinet. For an uncompromising SenseDrive performance the connection should be done not more than 3 m (10 ft) away from the loudspeaker.

Operation with D6 or D12

NOTICE: Only operate Qi-SUB/QiCSA-SUB loudspeakers with a correctly configured d&b amplifier, otherwise there is a risk of damaging the loudspeaker components.

Select the controller setup Q-SUB.

Within the D12 amplifier this is available in "Dual Channel" and "Mix TOP/SUB" mode.

Selecting Q-SUB mode in the D6 or D12 enables up to two Qi-SUB cabinets to be driven by the respective channel.

Selecting the Q-SUB configuration along with the CSA mode enables up to two QiCSA-SUB cabinets to be driven by the respective channel.

In applications with low continuous levels and low ambient temperatures up to three cabinets can be connected to a D12 channel.

Controller settings

100 Hz circuit

If the 100 Hz circuit is selected, the upper operating frequency of the system is reduced from 130 Hz to 100 Hz.

CSA (QiCSA-SUB)

CSA (Cardioid Subwoofer Array) is a method to combine three or multiples of three subwoofer cabinets to form an array with exceptional directivity at low frequencies.

A QiCSA-SUB cabinet driven in CSA mode eliminates the energy radiated to the rear of the two front radiating Qi-SUB cabinets (CSA not selected).

CSA decreases the low end diffuse sound field, significantly improving the direct-to-diffuse energy ratio in the audience areas.

Please note that all other settings of the amplifiers driving a CSA have to be identical (input signal, level, 100 Hz, EQ, delay).

Please refer to d&b TI 330 (d&b code D5330.E), which describes the setup in detail. The TI can be downloaded from the d&b website at www.dbaudio.com.

Operation with E-PAC (Qi-SUB only)

Selecting Q-SUB mode enables the E-PAC to drive one Qi-SUB loudspeaker.

The 100 Hz setting is available. The characteristics of the 100 Hz setting are explained in the previous section "Operation with D6 or D12 - Controller settings".

Note: Please note that the E-PAC does not support the Cardioid Subwoofer Array configuration (CSA).

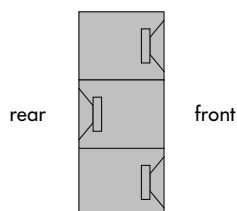


Fig. 4: CSA (Example)

Technical specifications Qi-SUB/QiCSA-SUB

System data

Frequency response (-5 dB standard).....	40 Hz ... 130 Hz
Frequency response (-5 dB 100 Hz mode).....	40 Hz ... 100 Hz
Max. sound pressure (single cabinet, 1 m, free field) with D12	133 dB
Max. sound pressure (Qi-SUB, single cabinet, 1 m, free field) with D6.....	129 dB
(SPLmax peak, pink noise test signal with crest factor of 4)	
Input level (100 dB-SPL/1 m).....	-13 dBu

Subwoofer

Nominal impedance.....	8 ohms
Power handling capacity (RMS / peak 10 ms).....	400/1600 W
Components.....	18" driver
Connections (Qi-SUB/QiCSA-SUB).....	2 x NL4 / 1 x NL4
.....	optional fixed cable (H-07-RN-F 2 x 2.5 qmm/AWG 13)
Pin assignments.....	NL4: 2+/2-
.....	Fixed cable: Brown + / Blue -
Weight (Qi-SUB/QiCSA-SUB).....	37 kg (82 lb) / 40 kg (88 lb)

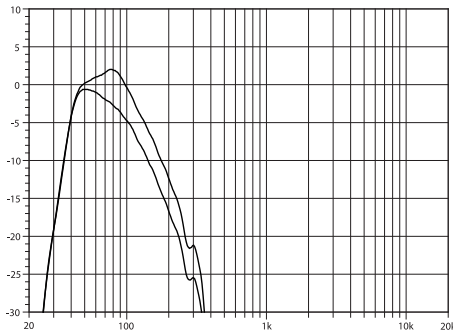


Fig. 5: Qi-SUB/QiCSA-SUB frequency response, standard and 100 Hz settings

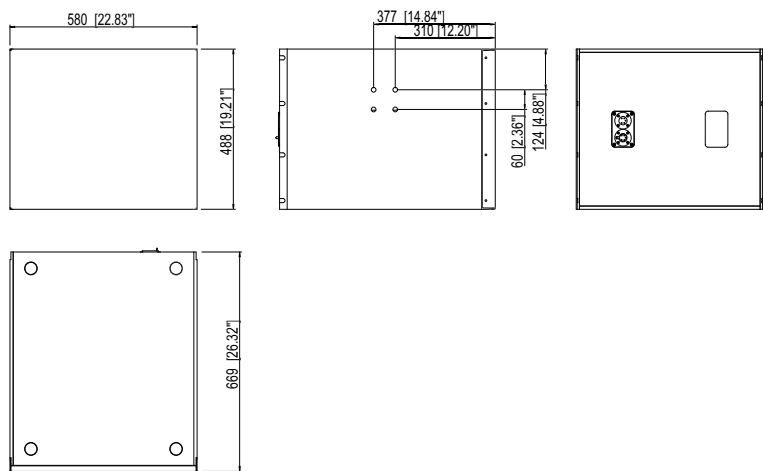


Fig. 6: Qi-SUB cabinet dimensions in mm [inch]

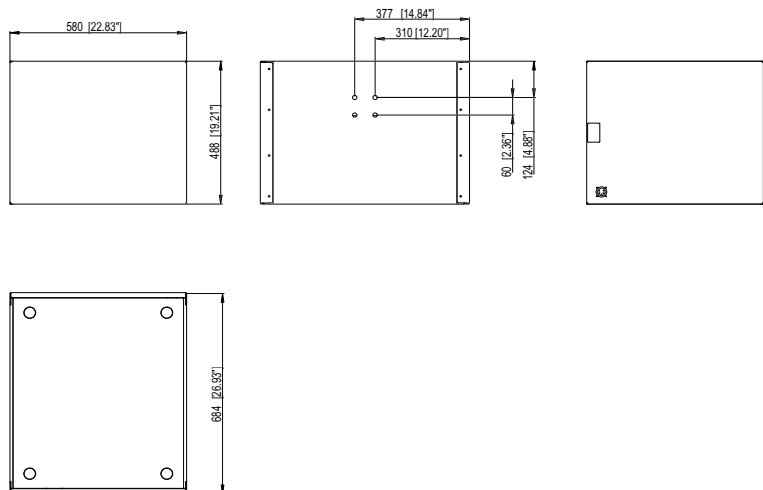


Fig. 7: QiCSA-SUB cabinet dimensions in mm [inch]

Manufacturer's declarations



EU conformity of loudspeakers (CE symbol)

This declaration applies to

- **Qi-SUB Z0530**
- **QiCSA-SUB Z0531**

manufactured by d&b audiotechnik GmbH.

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 respective EC directives including all applicable amendments.

A detailed declaration is available on request and can be ordered from d&b or downloaded from the d&b website at www.dbaudio.com.

WEEE Declaration (Disposal)

Electrical and electronic equipment must be disposed of separately from normal waste at the end of its operational lifetime.

Please dispose of this product according to the respective national regulations or contractual agreements. If there are any further questions concerning the disposal of this product please contact d&b audiotechnik.

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