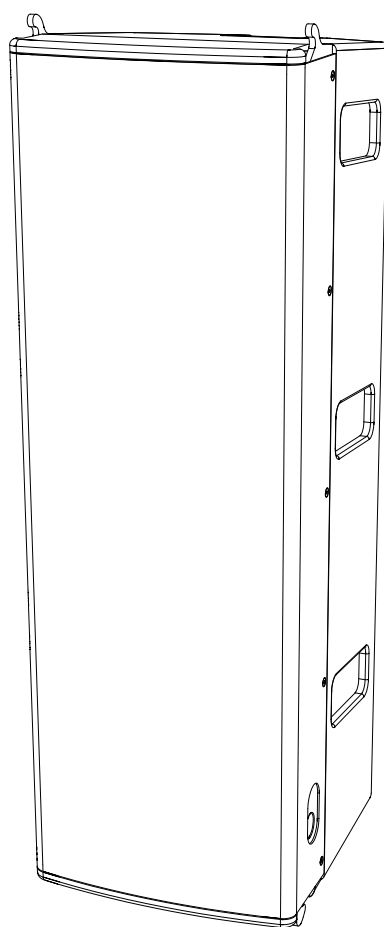


ELLAL18

Operation manual



Introduction

Thank you for choosing a high-quality product “MADE IN GERMANY” from TWAUDIO.

ELLAL18 is a low-mid extension unit for the ELLA6 ELEGANT Line Array System. Especially in ELLA6 arrays of only two to six elements ELLAL18 significantly enhances the low-mid performance in terms of SPL and directivity control in the frequency range from 90 to 1000Hz.

The ELLAL18 enclosure has the size of three coupled ELLA6 modules and is equipped with three of the same 6.5“ low-mid drivers used in ELLA6. Due to the special acoustical resistors in the back of the enclosure, ELLAL18 creates the same cardioid dispersion pattern like ELLA6 with greatly reduced low-mid emissions at the back of the system. As ELLAL18 also has the fully integrated ELLA6 rigging system, it can be simply stacked or flown below and above ELLA6 elements without additional parts.

Due to its internal passive lowpass filter, the ELLAL18 frequency response smoothly rolls off above 1000Hz and exactly matches to ELLA6 phase and frequency response in its working range. Therefore ELLAL18 and ELLA6 can be connected to the same amplifier channel and generally use the same ELLA6 preset. The low-mid built-up generated by the coupling effect within the array will be simply compensated by dedicated low shelf EQ.

Thanks to the ELLA6' high-impedance concept, there can be coupled and driven up to three ELLAL18 or the combination of one ELLAL18 plus up to seven ELLA6 in parallel on one amplifier channel (2 Ohms operation).

If you lend your product to another party, inform that party of the safety-related operating procedures and hand over this assembly guide. If you require additional copies of this manual, you can obtain them free of charge from TWAUDIO or download them from www.twaudio.de

Instructions in this user manual

Strictly adhere to the instructions contained in this operating manual that are marked as follows:



This symbol in combination with the signal word “Warning” identifies a potentially hazardous situation. Failure to comply with this safety instruction can lead to serious injury or even death.



This symbol in combination with the signal word “Warning” identifies a potentially hazardous situation for persons with a pacemaker. Failure to comply with this safety instruction can lead to serious injury or even death.



This symbol in combination with the signal word “Caution” identifies a potentially hazardous situation. Failure to comply with this safety instruction can lead to light or moderate injury.



This symbol in combination with the signal word “Note” identifies a potentially hazardous situation. Failure to comply with this safety instruction can lead to product damage.



This symbol in combination with the signal word “Tip” identifies additional information or notes that will simplify working with TW AUDiO products on the basis of practical experience.

Notes on the products

Read manual before use!

Before using the device, carefully read the operating manual and keep it with the ELLAL18 loudspeaker.

General information

Operation manual: OM-ELLAL18

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All information contained in this operating manual was correct to the best of our knowledge at the time of printing.

Quality warranties or assurance of suitability for a certain type of use based on the technical specifications, dimensions and weights are not granted by TWAUDIÖ.

TWAUDIÖ also shall not assume liability for any secondary damage (property damage and/or personal injury) nor for the failure to comply with this operating manual!

TWAUDIÖ reserves the right to update this document based on recent developments.

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1. Safety | Intended use

Please adhere to the following safety instructions to avoid risks when operating loudspeakers.

The ELLAL18 loudspeaker was developed for use in professional sound systems. The loudspeaker may only be used by trained and qualified personnel.

Note the operating modes described in this operating manual. Other uses are not permissible.

Damage caused by improper use is not covered by TWAUDIÖ.



Loudspeakers generate an electromagnetic field. Persons with pacemakers are not permitted to remain in the immediate vicinity of loudspeakers as the electromagnetic fields can cause pacemakers to malfunction.



Ensure that the units are in a stable position and are firmly attached. A falling loudspeaker can result in serious personal injury and property damage.

When using and assembling TWAUDIÖ loudspeakers, only use materials specified by TWAUDIÖ. These tasks must be performed by qualified personnel. Adhere to the applicable safety regulations.



When setting up loudspeakers, ensure that they are not exposed to the following ambient conditions:

- Direct sunlight
- Humidity
- Jolting
- Dust



Keep away from the immediate vicinity of loudspeakers that are operated at high sound pressure levels. These loudspeaker systems are capable of endangering your health. Sound levels beginning as low as approximately 90dB SPL can lead to long-term hearing impairment.



Avoid:

- Feedback
- Distorted signals (clipping) and
- Peaks resulting from switching on devices, plugging in devices or unplugging devices during operation.

Such signals can lead to loudspeaker overload and ultimately to loudspeaker failure.



Ensure that the loudspeaker is not exposed to permanent thermal overloads. Thermal overloads may cause a fire and result in serious personal injury and property damage.



A permanent magnetic field is present in the immediate vicinity of loudspeakers. Ensure that objects which react sensitively to magnetic fields are not located in the immediate vicinity of the loudspeaker. In particular, this applies to magnetic storage media, magnetic stripe cards such as debit cards and CRT displays. A distance of approximately one meter is sufficient to avoid damage.



Check loudspeakers and accessory parts regularly for visible wear. This is essential to ensure continuing fault-free operation. Worn parts should be replaced immediately. Spare parts are available from TWAUDIO.

2. Overview

2.1 Components

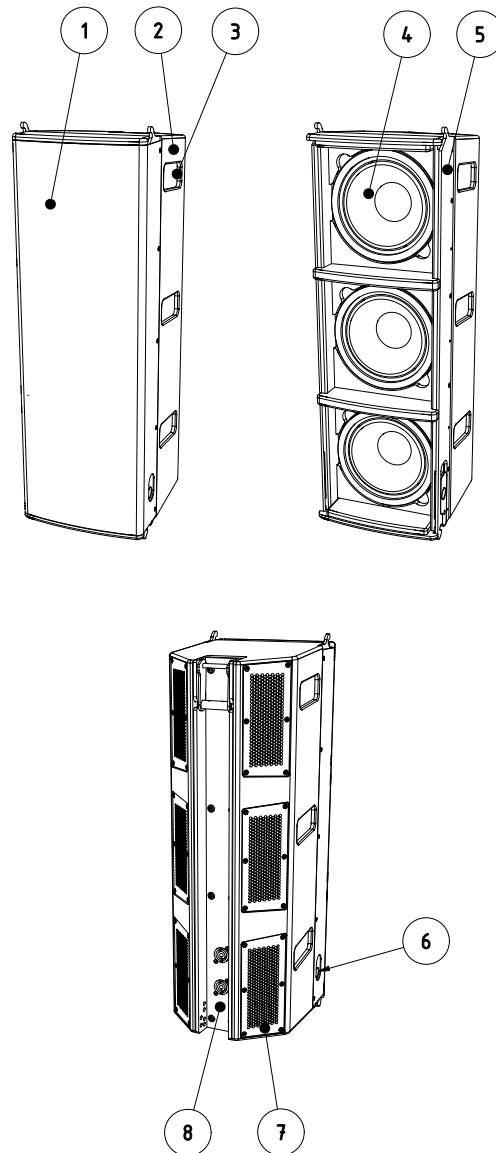


Figure 2.1 - Overview

1. Front grill
2. 15 mm Multiplex enclosure - Warnex surface finish
3. Carrying handle (6 pieces)
4. 6,5" cone driver
5. Rigging track (2 pieces)
6. Front lock (left and right)
7. Cardio grill (6 pieces)
8. Rear rigging ELLA6 with type labeling and splay angles

2.2 Rear rigging ELLA6

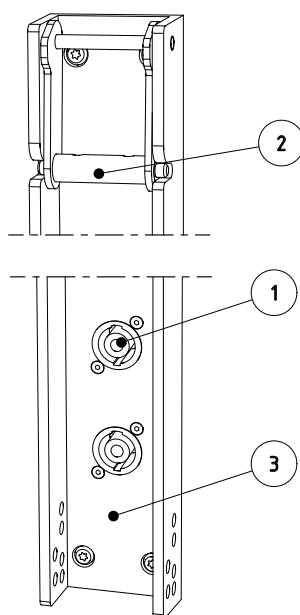


Figure 2.2.1 - Rear rigging

1. SpeakON® socket (2 pieces)
2. Latch
3. Rear rigging profile



Figure 2.2.2 - Rear rigging with logo, product data and splay angles



Please note that the rear rigging profile is only available in the color black and the latch only in the color silver.

3. Technical specifications

3.1 Data sheet

Drivers	3x 6,5" LF
Frequency response	90-1000Hz
Power handling (program/Peak)	1200W / 2400W
Impedance	8 Ω
Max. SPL / 1m	129dB
Dimensions (h x w x d)	604 x 200 x 260 mm [23,8 x 7,9 x 10,2 in]
Weight	14,2 kg [31,3 lbs]
Surface	Warnex textured paint

3.2 Connection diagram

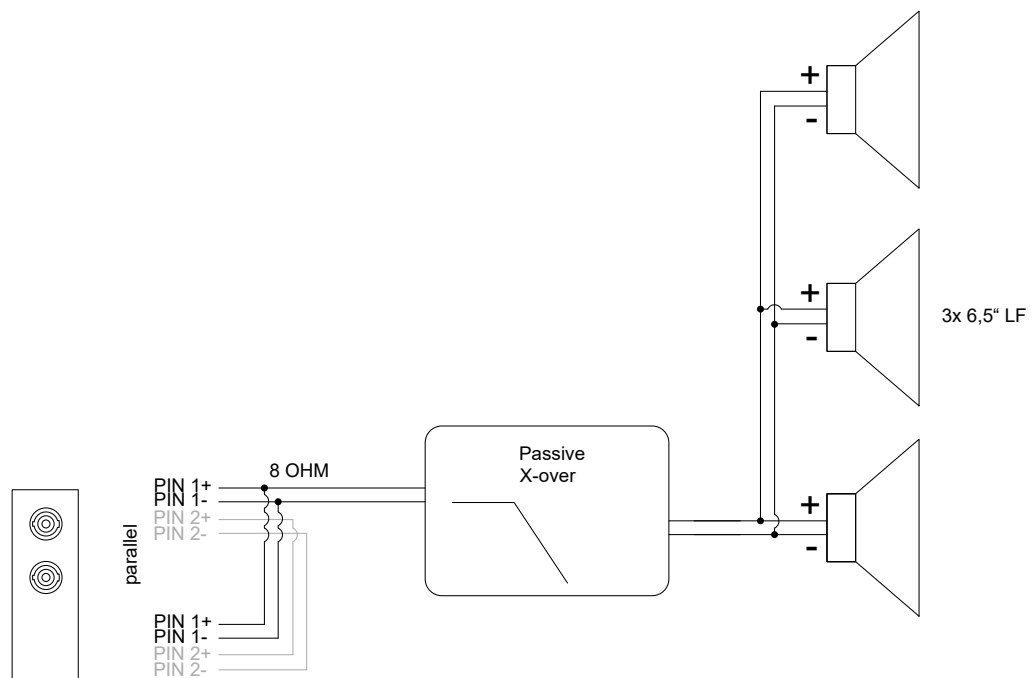


Figure 3.2 - Connection diagram

4. Commissioning

4.1 Setup

The ELLAL18 loudspeaker has been designed for horizontal operation in stacked and flown vertical arrays. TWAUDIÖ provides a wide range of accessories to securely attach the loudspeaker.



Make sure that all system structures are located on a firm, level surface and that the surface can bear the total weight!



Make sure the speakers are securely fastened to prevent personal injury and property damage.



TWAUDIÖ recommends using only the accessories specified by TWAUDIÖ for securing and mounting loudspeakers.



Using the ELLAL18 loudspeaker in bad weather conditions is not recommended. Although the speaker grilles are covered with water-repellent materials, moisture can penetrate the speaker in heavy and prolonged rain. This may affect the proper operation of the speakers.

Ensure that the ELLAL18 speakers can dry out after each use in damp conditions in a dry, well-ventilated place. When doing so, the speakers must be removed from the case to provide adequate ventilation.

4.2 Rigging ELLAL18

ELLA6-system linearrays include ELLA6 and ELLAL18 loudspeakers.



Note that the ELLA6 and ELLAL18 loudspeakers are mechanically connected. This can be done quite easily by the fully integrated three point rigging.



Please refer to the ELLA6-system rigging manual for operating modes and set-up options.



EASEFocus simulation software can be used to plan ELLA6 line arrays. EASEFocus is available as a free download from the TWAUDI website at www.twaudio.com.

4.3 Operation

Operation of the ELLAL18 loudspeaker requires a DSP-Controller. For this purpose, only presets developed by TWAUDI are recommended. The TWAUDI system racks are ideally suited for this purpose.



Before connecting the loudspeaker to the amplifier, ensure that the right preset has been loaded.

Using a wrong, out dated or a preset not provided by TWAUDI can lead to destruction of the speaker.



Make sure that the amplifier's specifications meet the requirements. Using an amplifier that doesn't meet the specifications can destroy the loudspeaker.

Please note the technical data in section 3.1 on page 9.

4.4 Connecting the cable

To create a cable connection with an amplifier rack from TWAUDIO, proceed as follows.



NOTE

Ensure that the cable cross sectional area is sufficient (at least 1.5 mm²) to avoid power losses. TWAUDIO recommends using the loudspeaker cables available from TWAUDIO.

When connecting the cables to the loudspeaker, ensure that polarity (+/-) and pin assignment (1/2) are correct. Incorrect connection can lead to a significant change in the loudspeaker's sound characteristics and may damage the driver.

The pin connections of the ELLAL18 loudspeaker can be found in section 3.2 ("Connection diagram") on page 9.

The internal wiring of the ELLAL18 loudspeaker allows for parallel connection of multiple loudspeaker units.

Please note that parallel connections will decrease the total impedance of your loudspeaker configuration.

The total impedance and the resulting power of the speaker configuration must match the output power of the amplifier.

5. Transport and Storage



NOTE

To enable a single person to transport up to four ELLAL18 loudspeakers, TWAUDIÖ recommends using the CaseE6.

When transporting and storing the unit, it is important to ensure that the surface and front grill of the loudspeaker are not damaged. Moisture can penetrate through exposed wood surfaces and cause the wood to swell. A bent or broken front grill will no longer adequately protect the sensitive speaker membranes.

In addition, appreciable dust deposits may considerably impair the functionality of a loudspeaker membrane. For this reason, the loudspeakers should be transported and stored in a safe, careful, dry and largely dust-free manner.

The following accessory parts for transport and storage are available from TWAUDIÖ:

- CaseE6 (case)
- Bag3E6 (bag)

The original packaging is unsuitable as permanent storage and transport packaging.

6. CE Conformity Declaration

Copy and translation of the original CE Conformity Declaration:



We hereby declare that the below-referenced components by virtue of their design and construction, and in the configuration placed on the market by us, satisfy the safety and health requirements of the applicable EC directives. This declaration becomes invalid in case of modifications that have not been approved by us.

This declaration applies to the following components

- ELLAL18

as well as all model variants based on these, provided that they correspond to the original factory models and have not been technically modified in any way.

Applicable directives:

- 2001/95/EG
- 2011/65/EU

Applicable national standards and technical specifications:

- DIN EN 18800
- DIN EN ISO 12100
- DGUV Vorschrift 17 und 18
- EN 50581: 2013-02

Ludwigburg, Germany, July 1st, 2020

A handwritten signature in black ink, appearing to read 'T. Wüstner'.

Tobias Wüstner

7. Disposal

It is prohibited to dispose of used electrical equipment with household refuse.



All TWAUDIÖ GmbH products are so-called B2B-products. This means that they are sold by a commercial business to a commercial business. TWAUDIÖ products that bear the trash can symbol shown here may only be disposed of by TWAUDIÖ.

The loudspeaker owner is legally responsible for proper disposal of used devices that do not bear this symbol. This pertains to all products delivered prior to March 29, 2010. Nevertheless, TWAUDIÖ will also be happy to assist you in this case.

If you have any question regarding the disposal of used devices, please contact us under the following telephone number:

+49 (0) 71 41 - 48 89 89 0

Thus, TWAUDIÖ is in strict compliance with the Waste Electrical and Electronic Equipment Directive (2012/19/EU) for the protection of our environment.

TWAUDIÖ is registered under the following WEEE-reg.-no. with the German National Register EAR as a B2B-manufacturer and distributor of electrical devices:

DE54488702

In countries outside of the European Union, comply with local regulations.

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