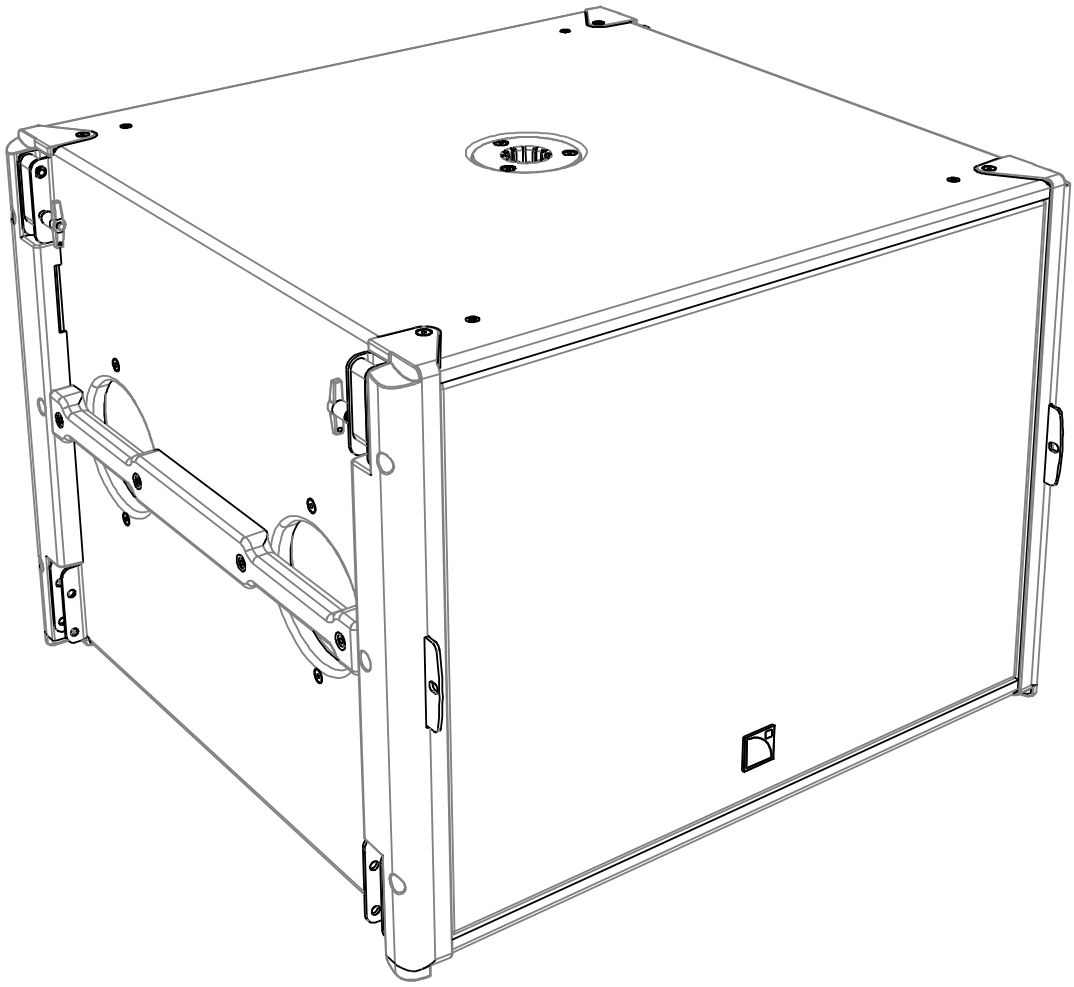
# SB18 COMPACT HIGH POWER SUBWOOFER

USER MANUAL

VERSION 1.0



# 1 SAFETY WARNINGS

All information hereafter detailed applies for the **L-ACOUSTICS® SB18 Compact High Power Subwoofer**, designated in this section as **"the product"**.

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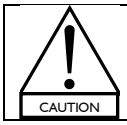
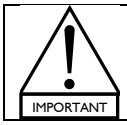
## 1.1 Symbol description

Throughout this manual the potential risks are indicated by the following symbols:


The WARNING symbol indicates a potential risk of physical harm to the user or people within close proximity to the product.
In addition, the product may also be damaged.




The CAUTION symbol notifies the user about information to prevent possible product damage.

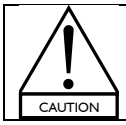



The IMPORTANT symbol is a notification of an important recommendation of use.

## 1.2 Important safety instructions

1. **Read this manual**
2. **Heed all safety warnings**
3. **Follow all instructions**
4. **The user should never incorporate equipment or accessories not approved by L-ACOUSTICS®**


**5. Sound Levels**
Sound systems are capable of producing high Sound Pressure Levels which can be dangerous and potentially cause hearing damage especially when exposed to them over a long period of time.
Do not stay within close proximity of the loudspeakers when operating.




**6. Heat**
Do not operate the product near any heat source, such as radiators or other devices.


**7. Water and moisture**
Even if the product is weather-resistant, it can not be exposed to moisture (rain, sea spray, shower, steam) for a long period of time, nor put in direct contact or partially immersed in water. This would cause irreversible damage to exposed components.


**8. System parts and rigging inspection**
All system components must be inspected before use, in order to detect any possible defects.
Please refer to the **Care and Maintenance** section of this manual as well as any other manuals pertaining to the system for a detailed description of the inspection procedure.
Any part showing any sign of defect must immediately be put aside and withdrawn from use to be inspected by qualified service personnel.


**9. Mounting instructions**

Do not place the product on an unstable cart, stand, tripod, bracket, or table. The product may fall and be seriously damaged, and may cause serious human injury. Any mounting of the product should follow the manufacturer's instructions given in this manual, and should use a mounting accessory recommended by the manufacturer.


**10. Conditions which require immediate service**

Servicing is required when the product has been damaged in any way such as:

- The product has been exposed to rain or moisture.
- The product was dropped or the enclosure is damaged.
- The product does not operate normally.


**11. Manual**

Keep this manual in a safe place during the product lifetime. This manual forms an integral part of the product. Reselling of the product is only possible if the user manual is available. Any changes made to the product have to be documented in writing and passed on to the buyer in the event of resale.

## 1.3 EC declaration of conformity

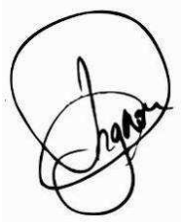
L-ACOUSTICS®
13 rue Levacher Cintrat
Parc de la Fontaine de Jouvence
91462 Marcoussis Cedex
France

States that the following product:
Loudspeaker enclosure, SB18

Is in conformity with the provisions of:
Low Voltage Directive 2006/95/EC

Applied rules and standards:
EN60065 (Electrical Safety)

Established at Marcoussis, France
March 1st, 2010



Christophe Pignon
Head of Research & Development dept.

# 2 CONTENTS

# 3 INTRODUCTION

## 3.1 Welcome to L-ACOUSTICS®

Thank you for purchasing the **L-ACOUSTICS® SB18 Compact High Power Subwoofer**.

This manual contains essential information on installing and operating the product correctly and safely. Read this manual carefully in order to become familiar with these procedures.

**As part of a continuous evolution of techniques and standards, L-ACOUSTICS® reserves the right to change the specifications of the product and the content of this manual without prior notice.**

Should the product requires repair or if information about the warranty is needed, please contact an approved L-ACOUSTICS® distributor. The address of the nearest distributor is available on the L-ACOUSTICS® web site.

## 3.2 Symbol description

All along the manual, a bracketed number refers to a section. For example, [3.2] stands for the present **Symbol description** section.

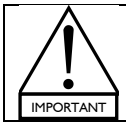
## 3.3 Unpacking

Carefully open the shipping carton and check the product for any noticeable damage. Each L-ACOUSTICS® product is tested and inspected before leaving the factory and should arrive in perfect condition.

If found to be damaged, notify the shipping company or the distributor immediately. Only the consignee may initiate a claim with the carrier for damage incurred during shipping. Be sure to save the carton and packing materials for the carrier's inspection.

## 3.4 Web links

Please check the L-ACOUSTICS® web site on a regular basis for latest document and software application updates. Table 1 provides links for all downloadable items mentioned in this manual.




ALWAYS refer to the latest document version.
ALWAYS use the latest software application version.

**Table 1: Links to documents and software applications**

| | |
|---|---|
| **Generic path for all products** | www.l-acoustics.com/+product name |
| **SB18 User manual** | www.l-acoustics.com/sb18 (USER MANUAL) |
| **SB18 Rigging manual** | www.l-acoustics.com/sb18 (RIGGING MANUAL) |
| **KARA User manual** | www.l-acoustics.com/kara (USER MANUAL) |
| **KARA Rigging manual** | www.l-acoustics.com/kara (RIGGING MANUAL) |
| **LA4 User manual** | www.l-acoustics.com/la4 (USER MANUAL) |
| **LA8 User manual** | www.l-acoustics.com/la8 (USER MANUAL) |
| **LA4 PRESET LIBRARY** | www.l-acoustics.com/la4 (LA4 PRESET LIBRARY) |
| **LA8 PRESET LIBRARY** | www.l-acoustics.com/la8 (LA8 PRESET LIBRARY) |
| **LA NETWORK MANAGER User manual** | www.l-acoustics.com/la-network-manager (USER MANUAL) |
| **SOUNDVISION Software** | www.l-acoustics.com/soundvision |
| **LA8 CACOM CABLES Technical bulletin** | www.l-acoustics.com/download (Technical publications) |

# 4 SYSTEM APPROACH

The **L-ACOUSTICS® SB18** is the universal subwoofer designed for modular or fixed angle WST® line sources (KUDO®, KIVA/KILO, KARA®, ARCS®) and coaxial systems (XT), lowering the combined system operating range down to 32 Hz. Its compact size and integrated rigging make it extremely well suited for flown coupled configurations with KARA® (refer to the **KARA Rigging manual** [3.4]).

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The system approach developed by L-ACOUSTICS® for SB18 consists of the elements needed to fully optimize the possible configurations. The main components of the system are (see also Figure 1 and Figure 2):

| | | |
|---|---|---|
| **SB18** | ⇨ | Compact high power subwoofer |
| **M-BUMP** | ⇨ | Structure for flying or stacking a vertical KARA and/or SB18 array |
| **M-BAR** | ⇨ | Extension bar for M-BUMP |
| **M-JACK** | ⇨ | Stacking bases (x4) for vertical KARA and/or SB18 arrays |
| **SB18PLA** | ⇨ | Removable front dolly board for SB18 |
| **SB18COV** | ⇨ | Protective cover for SB18 |
| **8XT, 12XT, 115XT HiQ** | ⇨ | XT coaxial range enclosures |
| **KIVA, ARCS®, KARA®** | ⇨ | 2-way WST® systems |
| **KUDO®** | ⇨ | 3-way WST® system |
| **KILO** | ⇨ | LF extension for KIVA |
| **LA4, LA8** | ⇨ | Amplified controllers |
| **LA-RAK** | ⇨ | Touring rack containing three LA8 amplified controllers |
| **LA NETWORK MANAGER** | ⇨ | Remote control software |
| **SOUNDVISION** | ⇨ | Acoustical and mechanical modeling software |

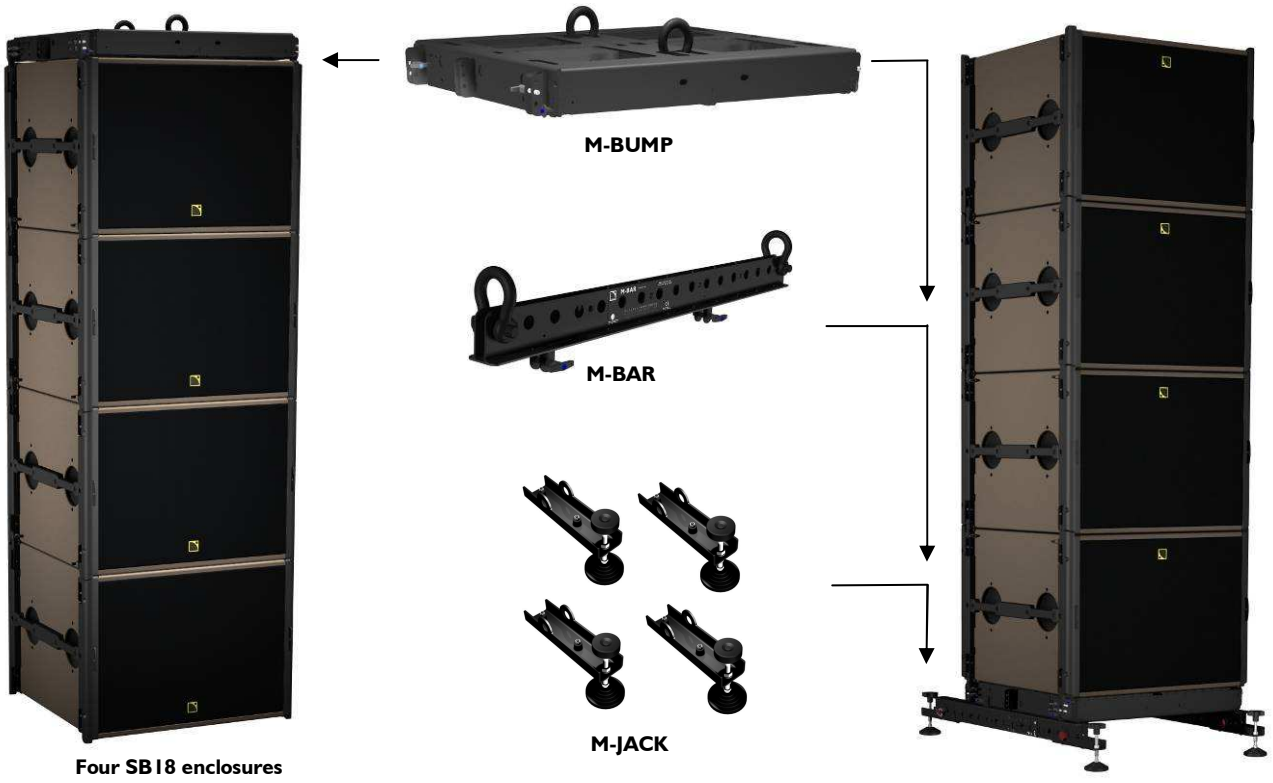
The SB18 subwoofer is compatible with standard L-ACOUSTICS® accessories. These accessories include the **L-ACOUSTICS® SP.7, SP10, and SP25 Loudspeaker cables** with respective lengths of 0.7 m/2.3 ft, 10 m/32.8 ft, and 25 m/82 ft. These cables allow connection of the SB18 enclosure to the LA4 amplified controller. Each cable is a 4-conductor cable with 4 $mm^2$ conductor cross-section (13 SWG, 11 AWG) and features 4-point SpeakON® connectors.

The combination of the **L-ACOUSTICS® DOSUB-LA8 Loudspeaker cable** with the **DO.7, DO10, or DO25 cable** allows connection to the LA8 amplified controller. These are 8-conductor cables with 4 $mm^2$ conductor cross-section and feature 8-point PA-COM® and/or 4-point SpeakON® connectors. **Note:** The PA-COM® standard is fully compatible with the CA-COM® standard.

The SB18 can be driven and powered by both **L-ACOUSTICS® LA4 and LA8 Amplified controllers** [3.4]. These ensure intelligent protection, filtering, and equalization of the enclosures. Four channels of amplification are provided along with the **factory LA4 or LA8 PRESET LIBRARY** [3.4], ensuring the optimization and performance of the system within the limits of the recommended configurations.

Each full range system configuration should first be modeled and studied using **L-ACOUSTICS® SOUNDVISION Software** [3.4]. Software predictions are based on the preset parameters stored in the amplified controllers. **Note:** The acoustic data are not available yet for subwoofers.

Up to 253 amplified controllers can be interconnected and monitored through the proprietary **L-ACOUSTICS® L-NET Network** using **LA NETWORK MANAGER Software** [3.4].





SOUNDVISION


LA4


LA8


SB18PLA


LA NETWORK MANAGER


LA-RAK

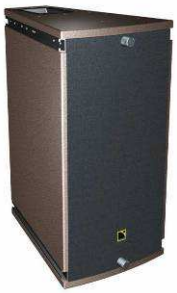
SB18COV

**Figure 1: Components associated with the SB18 subwoofer (part 1)**

8XT

12XT

115XT HiQ



ARCS®

KIVA

KARA®

KUDO

KILO

SB18

DOSUB-LA8

DO.7

DO10

DO25

SP.7

SP10

SP25

**Figure 2: Components associated with the SB18 subwoofer (part 2)**

# 5 SB18 SUBWOOFER

The **L-ACOUSTICS® SB18 Compact High Power Subwoofer** is composed of a single 18" LF transducer loaded in a dual-vented bandpass enclosure. The transducer contains a 4" coil, an aluminum die-cast basket, and a vented neodymium magnet. The enclosure provides maximum SPL output and extended low frequency response in a highly compact and very low profile design.

The association of a specifically designed 18" transducer with a dual bass-reflex tuned enclosure provides exceptional impact and high sensitivity, low thermal power compression and reduced distortion. The vents feature a progressive profile allowing laminar airflow and reduced turbulence noise even at the very highest operating levels. These combined properties contribute to the sonic qualities of the SB18 in terms of precision and musicality.

The nominal impedance of the SB18 subwoofer is 8 ohms.

A single SB18 subwoofer generates an omni-directional coverage pattern.

The SB18 cabinet is made of high grade Baltic birch plywood with remarkable mechanical and acoustical properties for improved long term durability.

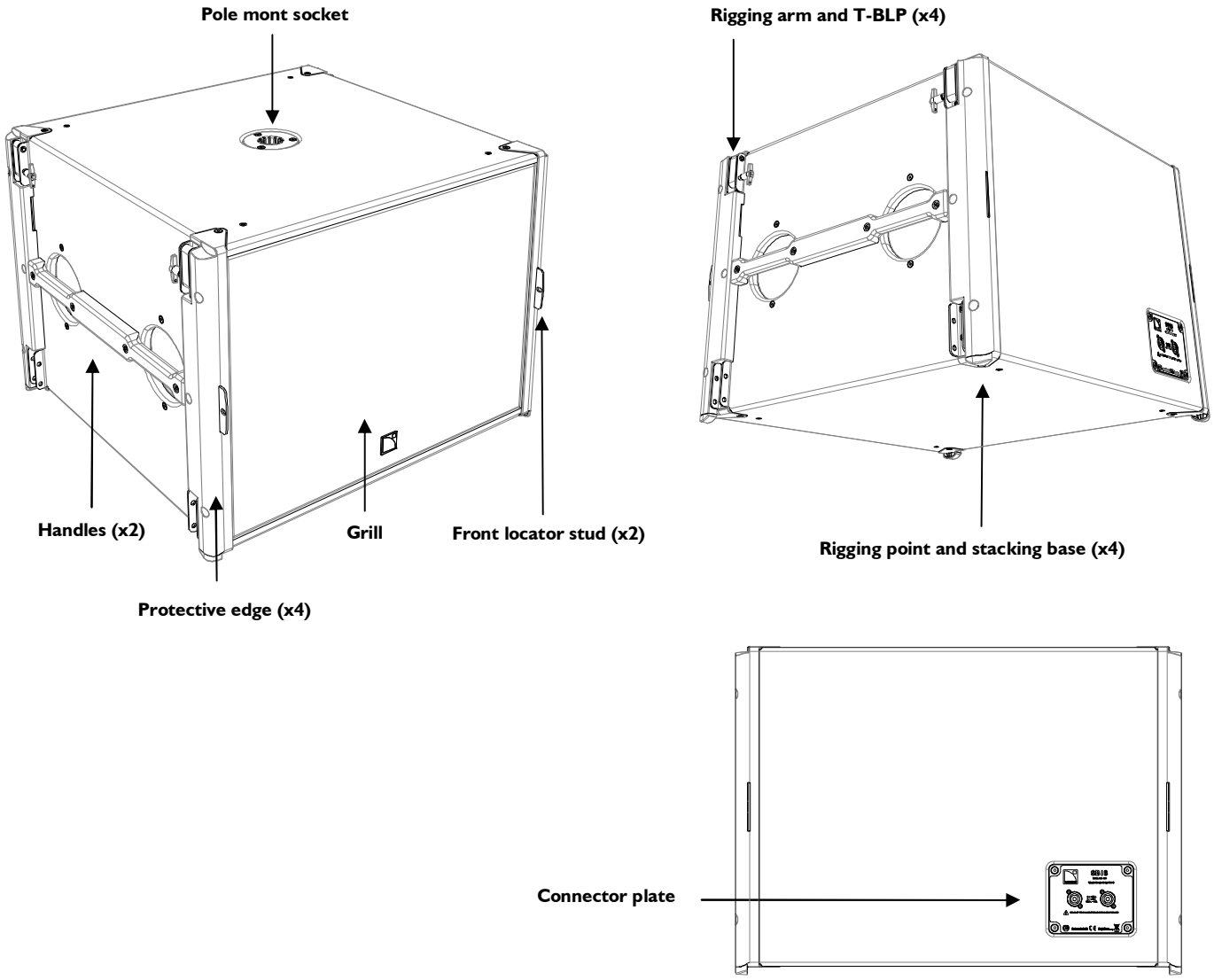



**Figure 3: The SB18 subwoofer**

# 6 INSTALLATION

## 6.1 SB18 transport

The optional **L-ACOUSTICS® SB18PLA** dolly board (see Figure 1) can be secured to the SB18 enclosure by inserting both captive pins in the front locator studs of the subwoofer (see Figure 3) thus allowing easy transportation and protection of the enclosure.



IMPORTANT

It is recommended to use the **L-ACOUSTICS® SB18COV** protective cover (see Figure 1) in conjunction with the **SB18PLA**.

## 6.2 SB18 flying or stacking

The SB18 fully integrated four-point rigging system allows the following setups (see also Figure 1 and Figure 3):

- Flying a vertical array of up to 16 SB18 using the **L-ACOUSTICS® M-BUMP** structure. The **M-BAR** element can also be added depending on the configuration.
- Stacking a vertical array of up to 8 SB18 using the **L-ACOUSTICS® M-BUMP, M-BAR, and M-JACK** elements.
- Stacking a vertical array of up to 8 SB18 directly on the ground (for perfectly horizontal and regular surfaces ONLY).
- Mounting one XT or two KIVA enclosures using the built-in 35 mm/1.4 inch pole mount socket to easily create a compact FOH system.

WARNING

Refer to the **SB18 Rigging manual** [3.4] to get acquainted with the SB18 system specific rigging procedures and mechanical limits.

## 6.3 SB18 connection

The SB18 subwoofer can be driven and powered by both dedicated **L-ACOUSTICS® LA4 and LA8** amplified controllers. The LA4 can drive up to four SB18 enclosures (one per channel) and the LA8 can drive up to eight SB18 enclosures (2 per channel in parallel). For further details please refer to the **LA4 or LA8 User manual** [3.4].

The SB18 is equipped with two 4-point SpeakON® connectors wired in parallel allowing connection with a second SB18 in parallel using an **L-ACOUSTICS® SP.7** link cable.

The SB18 connects to the LA4 using the **L-ACOUSTICS® SP10** or **SP25** cables (see Figure 2 and Figure 4), and to the LA8 using the **DOSUB-LA8** cable in conjunction with the **DO.7**, **DO10**, or **DO25** cable (see Figure 5).

CAUTION

A maximum of **one** SB18 enclosure can be connected per **LA4** output channel.

A maximum of **two** SB18 enclosures can be connected per **LA8** output channel.

IMPORTANT

ALWAYS connect the new **DOSUB-LA8** cable adaptor to the LA8 (refer to the **LA8 CACOM CABLES Technical bulletin** [3.4]). NEVER use the old DOSUB one.

The L-ACOUSTICS® wiring convention is as follows:

| SpeakON® connector labels | Connections to transducer |
|---|---|
| 1+ | IN + |
| 1- | IN - |
| 2+ | Not used |
| 2- | Not used |

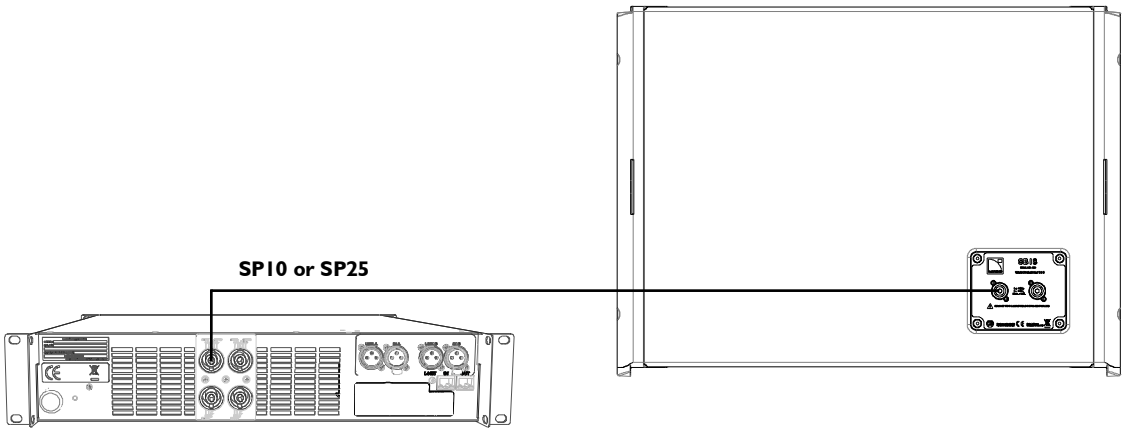



**Figure 4: Connecting one SB18 to an LA4 amplified controller**

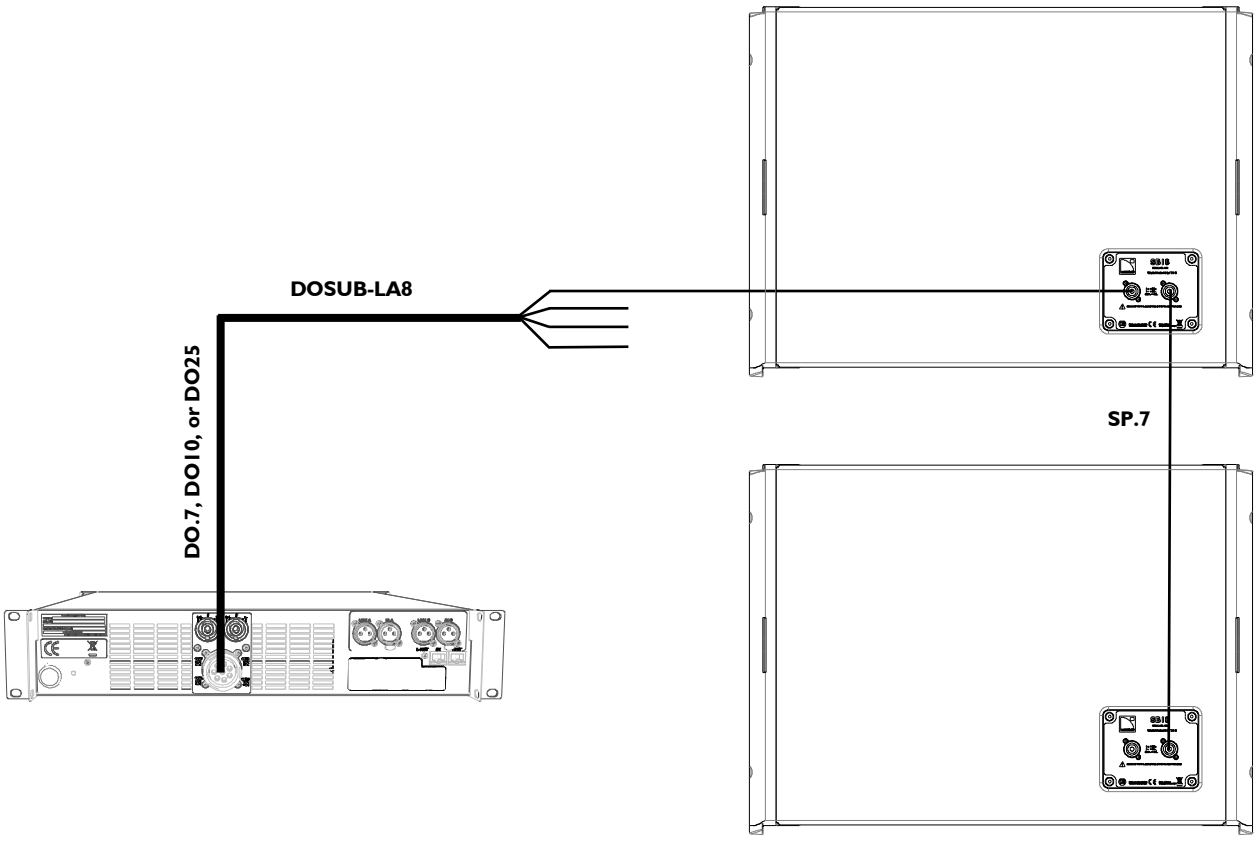



**Figure 5: Connecting two SB18 in parallel to an LA8 amplified controller**

IMPORTANT

To ensure both high performance and safety, L-ACOUSTICS® recommends the exclusive use of high-quality, fully insulated speaker cables made of stranded copper wire.

In order to preserve a high damping factor it is desirable to keep loudspeaker cables as short as possible and with a gauge offering low resistance per unit length.

The following table provides information regarding the recommended cable length versus conductor cross-section. Two cases are possible depending on the impedance load connected to the LA4 or LA8 (8 Ω for a single SB18 enclosure, 4 Ω for two SB18 enclosures in parallel):

**Table 2: Maximum cable length versus conductor cross-section for Damping Factor > 20**

| Cross-section | | | Length for 1 SB18 (8 Ω load) | | Length for 2 SB18 (4 Ω load) | |
|---|---|---|---|---|---|---|
| **$mm^2$** | **SWG** | **AWG** | **m** | **ft** | **m** | **ft** |
| 2.5 | 15 | 13 | 30 | 100 | 15 | 50 |
| **4** | **13** | **11** | **50** | **160** | **25** | **80** |
| 6 | 11 | 9 | 74 | 240 | 37 | 120 |
| 10 | 9 | 7 | 120 | 390 | 60 | 195 |

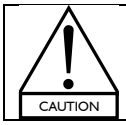
According to the calculation in Table 2, a DO25/DOSUB-LA8 cable combination can be used to power two SB18 in parallel (4 Ω load) with a damping factor still greater than 20.

# 7 OPERATION

## 7.1 System configuration

Two operation modes (STANDARD and CARDIOID) associated with a set of factory presets will allow building all the common configurations (C, LR, LCR, distributed, ARCSUB…).

The function of the SB18 is to extend the low frequency response of a main system down to 32 Hz. An SB18 array can be used in the **STANDARD** or **CARDIOID** mode whether the coverage pattern is intended to be omni-directional or to feature rear and/or side SPL rejection, respectively.




ALWAYS check that each SB18 enclosure is connected to the correct output channel before operating.

**Note:** The latest versions of the LA4 and LA8 PRESET LIBRARIES are downloadable from the L-ACOUSTICS® web site [3.4].

## 7.2 STANDARD mode

### 7.2.1 Description

The STANDARD mode consists in arraying all SB18 subwoofers with front grills facing the audience so as to obtain an omni-directional coverage pattern. The associated standard presets are available in both LA4 and LA8 PRESET LIBRARIES.

The basic arrays contain four enclosures. Several basic arrays can then be put together to form larger ones. The recommended basic standard arrays are the following (see also Figure 6):

- The “vertical” and “block” array provide omnidirectionnal coverage patterns in the horizontal plane.
- The “on-end” and “horizontal” arrays provide directive coverage patterns in the horizontal plane.


If two (or more) basic arrays are intended to be used in close proximity from each other it is recommended to set the distance at 0 (as shown in Figure 9).

If it is not possible, the maximum distance between two acoustic centers is 2.8 m in the 32-60 Hz frequency bandwidth and 1.7 m in the 32-100 Hz bandwidth.

**Note:** In the STANDARD mode the SB18 enclosures can also be used in stereo or distributed configurations.

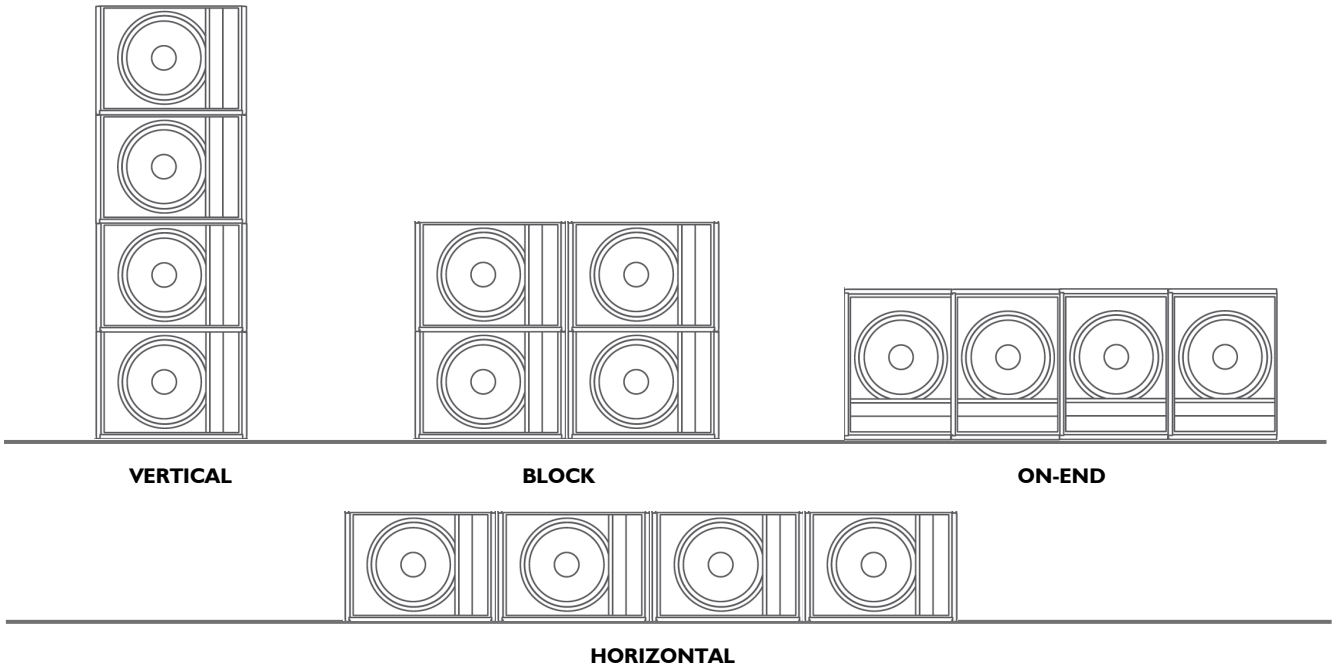



**Figure 6: SB18 basic standard arrays**

### 7.2.2 Connecting the SB18 to the LA4 or LA8

Each of the SB18 enclosures is connected to an LA4 or LA8 output channel ranging from channel 1 through 4. On the LA8 only, additional cabinets can be grouped in pairs in parallel with the first ones. Therefore a single LA4 amplified controller can drive up to four SB18 enclosures (Figure 7 and Figure 8), and a single LA8 amplified controller can drive up to eight SB18 enclosures (Figure 9).

**Note:** The system resources are optimized for a multiple of four SB18 enclosures.

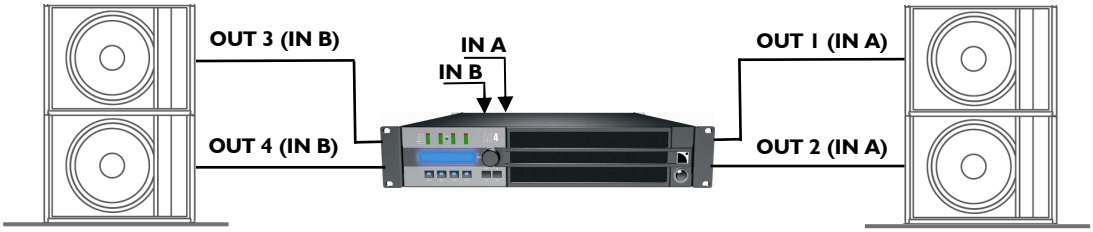
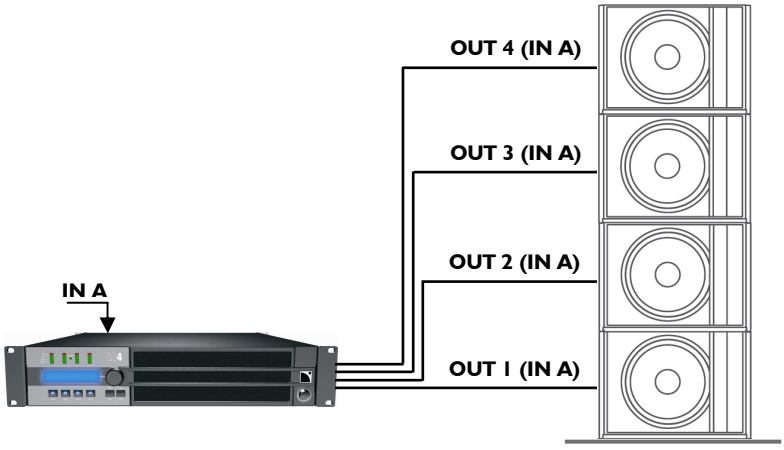


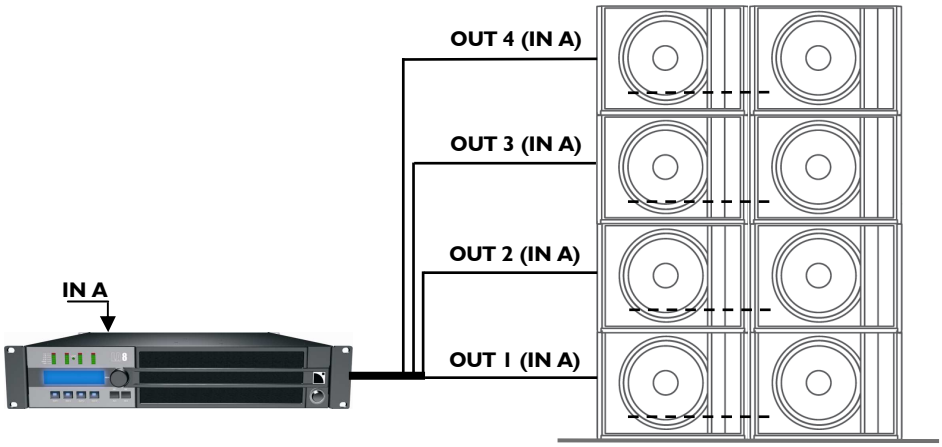

**Figure 7: Four SB18 connected to an LA4 (stereo configuration)**




**Note:** All output channels have been routed to IN A by using the INPUT MATRIX function on LA NETWORK MANAGER Software (refer to the **LA NETWORK MANAGER User manual** [3.4]).

**Alternative solution:** Plug an XLR cable from **LINK A** to **IN B** on the rear panel of the LA4 (refer to the **LA4 User manual** [3.4]).

**Figure 8: Four SB18 connected to an LA4 (mono configuration)**




**Notes:** Each enclosure on the right is linked to the enclosure on the left using a SpeakON® cable.

The stereo configuration is also available on the LA8.

**Figure 9: Eight SB18 connected in parallel to an LA8 (mono configuration)**

### 7.2.3 [SB18_60] and [SB18_100] presets

The [SB18_60] preset features a 60 Hz low-pass filter allowing the SB18 to be used as a subwoofer companion for KUDO®, KARA®, KIVA/KILO, and ARCS® systems.

The [SB18_100] preset features a 100 Hz low-pass filter allowing the SB18 to be used as a subwoofer companion for closely coupled KARA®, ARCS®, and XT systems.

The recommended ratios are 2 SB18 for each of the following: 3 KUDO®, 2 ARCS®, 6 KIVA/2 KILO, four 8XT, two 12XT, or two 115XT HiQ. The SB18:KARA ratio can be 1:3 or 2:3 depending on the configuration (refer to the **KARA User manual** [3.4]).

Activate the LOAD PRESET menu from the LA4 or LA8 amplified controller front panel and then select the desired preset. Refer to the **LA4 or LA8 User manual** [3.4] for additional instructions. The presets are also accessible using LA NETWORK MANAGER Software (refer to the **LA NETWORK MANAGER User manual** [3.4]). The following table shows the accessible parameters in STANDARD mode:

**Table 3: Accessible parameters in STANDARD mode**

| LA4 or LA8 Inputs/Outputs | Elements to connect | Preset assignments* | Accessible (O) and blocked (X) parameters | | | |
|---|---|---|---|---|---|---|
| | | | Mute | Gain | Delay | Polarity |
| IN A | Input signal A | IN_A | X | O | O | O |
| IN B | Input signal B | IN_B | X | O | O | O |
| OUT 1 | SB18 subwoofer | SB_A | O | O | O | O |
| OUT 2 | SB18 subwoofer | SB_A | O | O | O | O |
| OUT 3 | SB18 subwoofer | SB_B | O | O | O | O |
| OUT 4 | SB18 subwoofer | SB_B | O | O | O | O |

* IN: input signal. A: channel A. B: channel B. SB: subwoofer.

**Note:** The main system must be connected to additional amplified controllers. See instructions in the applicable **User manual** [3.4].

## 7.3 CARDIOID mode

### 7.3.1 Description

The CARDIOID mode consists in arraying four SB18 subwoofers with one of them facing the rear so as to obtain a rear and/or side SPL rejection in the coverage pattern. The associated cardioid presets are available in both LA4 and LA8 PRESET LIBRARIES.



The basic arrays contain four enclosures. Several basic arrays can then be put together to form bigger ones. The recommended basic cardioid arrays are the "vertical", "block", "on-end", and "horizontal" arrays (see also Figure 10):

- All arrays provide rear rejection.
- The "vertical" array provides symmetric coverage pattern in the horizontal plane.
- The "block", "on-end", and "horizontal" arrays provide asymmetric coverage pattern in the horizontal plane by generating additional rejection to the side of the reversed subwoofer.

IMPORTANT

If two (or more) basic arrays are intended to be used in close proximity from each other it is recommended to set the distance at 0 (as shown in Figure 12).

If it is not possible, the maximum distance between two acoustic centers is 2.8 m in the 32-60 Hz frequency bandwidth, and 1.7 m in the 32-100 Hz bandwidth.

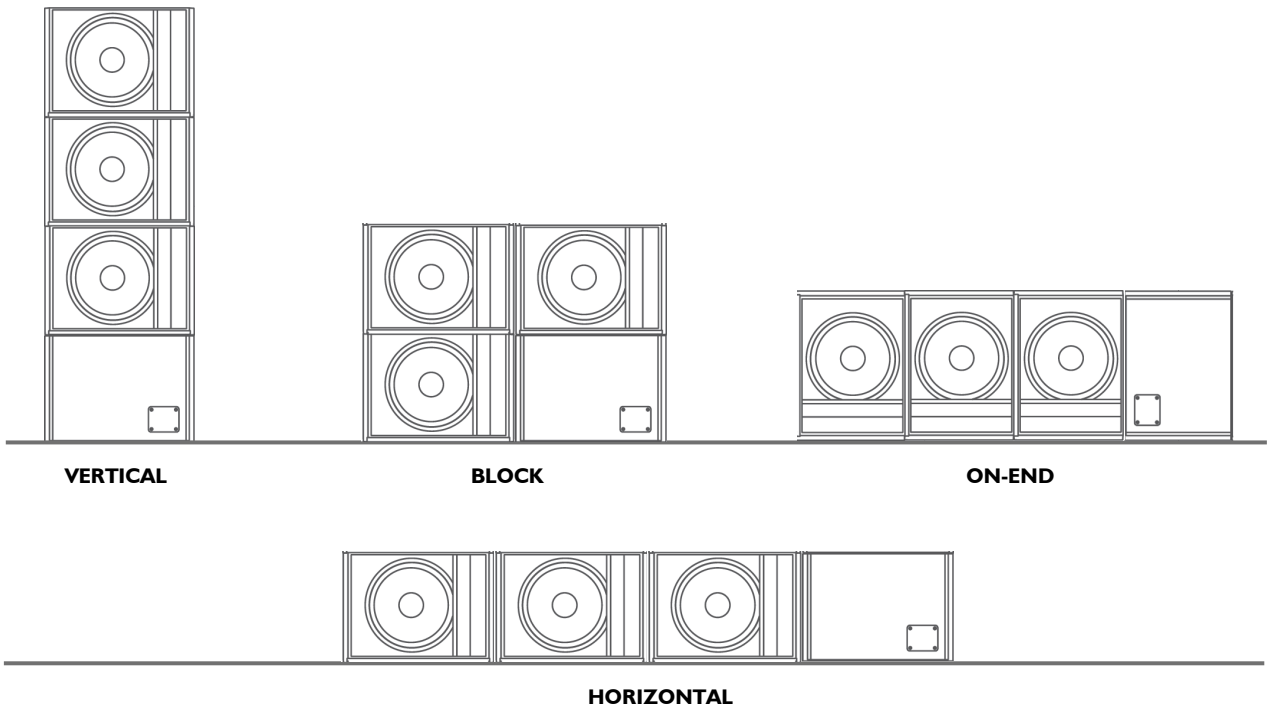



**Figure 10: SB18 basic cardioid arrays**

### 7.3.2 Connecting the SB18 to the LA4 or LA8

Each of the SB18 subwoofers is connected to an LA4 or LA8 output channel ranging from channel 1 through 4 where the channel 1 is feeding the reversed subwoofer. On the LA8 only, an additional subwoofer can be grouped in pair with each first one so as to build a second basic cardioid array. Therefore a single LA4 amplified controller can drive up to one basic cardioid array (Figure 11) and a single LA8 amplified controller can drive up to two basic cardioid arrays (Figure 12).

IMPORTANT

To achieve a cardioid coverage pattern ALWAYS check that the reversed SB18 is connected to the OUT 1 output channel.

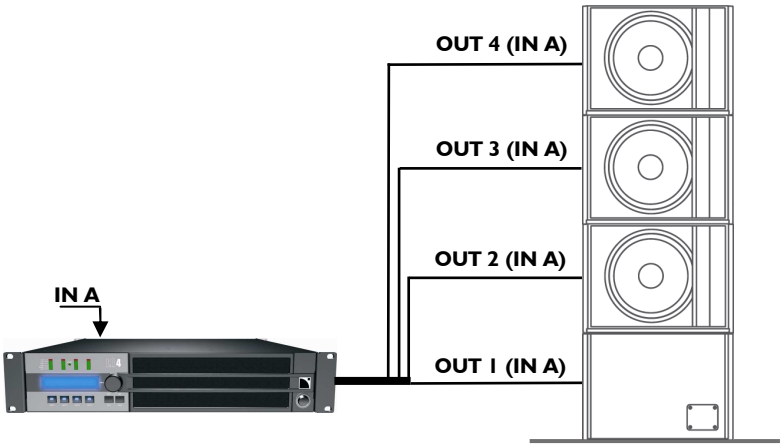
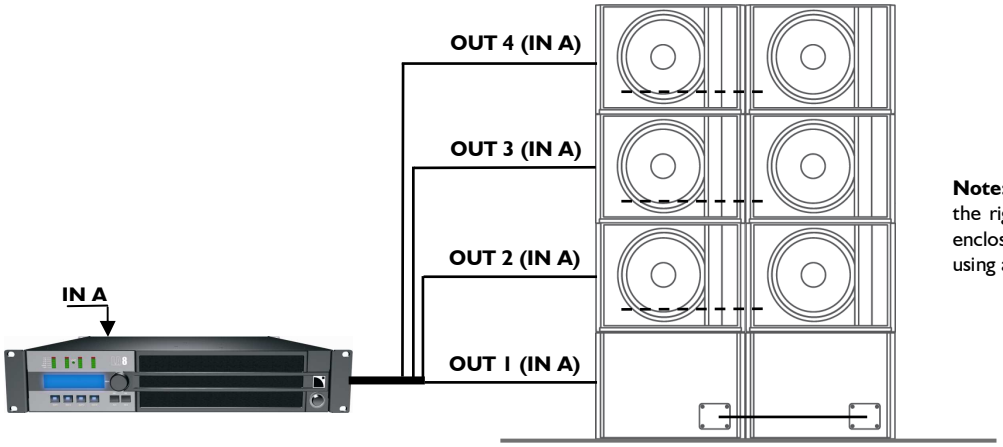



**Figure 11: One basic SB18 cardioid array connected to an LA4**




**Note:** Each enclosure on the right is linked to the enclosure on the left using a SpeakON® cable.

**Figure 12: Two basic SB18 cardioid arrays connected in parallel to an LA8**

### 7.3.3 [SB18_60_C] and [SB18_100_C] presets

The [SB18_60_C] preset features a 60 Hz low-pass filter allowing the SB18 to be used as a subwoofer companion for KUDO®, KARA®, KIVA/KILO, and ARCS® systems.

The [SB18_100_C] preset features a 100 Hz low-pass filter allowing the SB18 to be used as a subwoofer companion for closely coupled KARA®, ARCS®, and XT systems.

EN

The recommended ratios are 4 SB18 for each of the following: 6 KUDO®, 4 ARCS®, 12 KIVA/4 KILO, eight 8XT, four 12XT, or four 115XT HiQ. The SB18:KARA ratio can be 1:3 or 2:3 depending on the configuration (refer to the **KARA User manual** [3.4]).

Activate the LOAD PRESET menu from the LA4 or LA8 amplified controller front panel and then select the desired preset. Refer to the **LA4 or LA8 User manual** [3.4] for additional instructions. The presets are also accessible using LA NETWORK MANAGER Software (refer to the **LA NETWORK MANAGER User manual** [3.4]). The following table shows the accessible parameters in CARDIOID mode:

**Table 4: Accessible parameters in CARDIOID mode**

| LA4 or LA8 Inputs/Outputs | Elements to connect | Preset assignments* | Accessible (O) and blocked (X) parameters | | | |
|---|---|---|---|---|---|---|
| | | | Mute | Gain | Delay | Polarity |
| IN A | Input signal A | IN_A | X | O | O | O |
| IN B | Input signal B | IN_B | X | O | O | O |
| OUT 1 | Reversed SB18 subwoofer | SR_A | O | X | X | X |
| OUT 2 | SB18 subwoofer | SB_A | O | X | X | X |
| OUT 3 | SB18 subwoofer | SB_A | O | X | X | X |
| OUT 4 | SB18 subwoofer | SB_A | O | X | X | X |

* IN: input signal. A: channel A. SB: subwoofer. SR: reversed subwoofer.

**Note:** The main system must be connected to additional amplified controllers. See instructions in the applicable **User manual** [3.4].

# 8 CARE AND MAINTENANCE

## 8.1 Maintenance information

The **L-ACOUSTICS® SB18** enclosure has been designed for various, intensive indoor and outdoor sound reinforcement applications. To fulfill such demanding conditions SB18 contains high-grade and reliable components:

- Weather-resistant transducer.
- Baltic birch plywood cabinet.
- Polyester powder-coated steel grill.
- Airnet® high-resistant, non-biodegradable front grill fabric.
- Oxidation-resistant screws and rigging points.

However, in order to ensure product performance and safety, it is essential to frequently inspect the SB18 cabinet. These checks need to be done on a regular basis depending on the conditions of use. The testing procedure consists of three steps as described in [8.2].

## 8.2 Testing procedure

### 8.2.1 Acoustical check

Connect a sweep frequency generator to the active input of the amplified controller. Apply a sweep from 32 to 100 Hz with a **maximum voltage** of 0.5 volts (-4 dBu, -6 dBV): the sound should remain pure and free of unwanted noise.


0.5 volts is a maximum value that can generate very high sound levels at given frequencies.
Use ear protection to set the sound level before testing.

In case of acoustical trouble, apply the **Mechanical check** [8.2.2] to verify if it is due to a structural vibration. If the problem persists, replace the faulty electrical component [8.3.5-8.3.6].

### 8.2.2 Mechanical check

1. Inspect the general aspect of the enclosure and attached parts (no signs of deformation, fissure, or corrosion).
2. Check that all parts are well secured to the enclosure (grill, transducer, protective edges, handles, connector plate, and pole mount socket).
3. Check the quality of contact and locking action of the SpeakON® sockets.

In case of mechanical trouble, secure or replace the faulty component **IF it is authorized** [8.3]. Otherwise, contact an L-ACOUSTICS® authorized representative.

### 8.2.3 External aspect

1. Remove the dust from the front face with a vacuum device.

2. If necessary, repaint the cabinet (paint reference given in [8.3.1]).


If paint is applied, protect the mechanical parts.
Do not apply paint to the front grill fabric as it could fill the holes and deteriorate the acoustic transparency.

## 8.3 Authorized service procedures

### 8.3.1 Replacement kits and recommended tools

The replacement kits (KR) available for the customer are shown in Figure 13 and listed in Table 5 with reference to the corresponding service procedures. Table 6 is a list of all tools and material needed for SB18 service (not provided).



> **WARNING**
>
> Service and repair work for any other part must be carried out by an L-ACOUSTICS® authorized representative. Otherwise, the customer may be exposed to dangerous situations and the warranty will no longer apply.

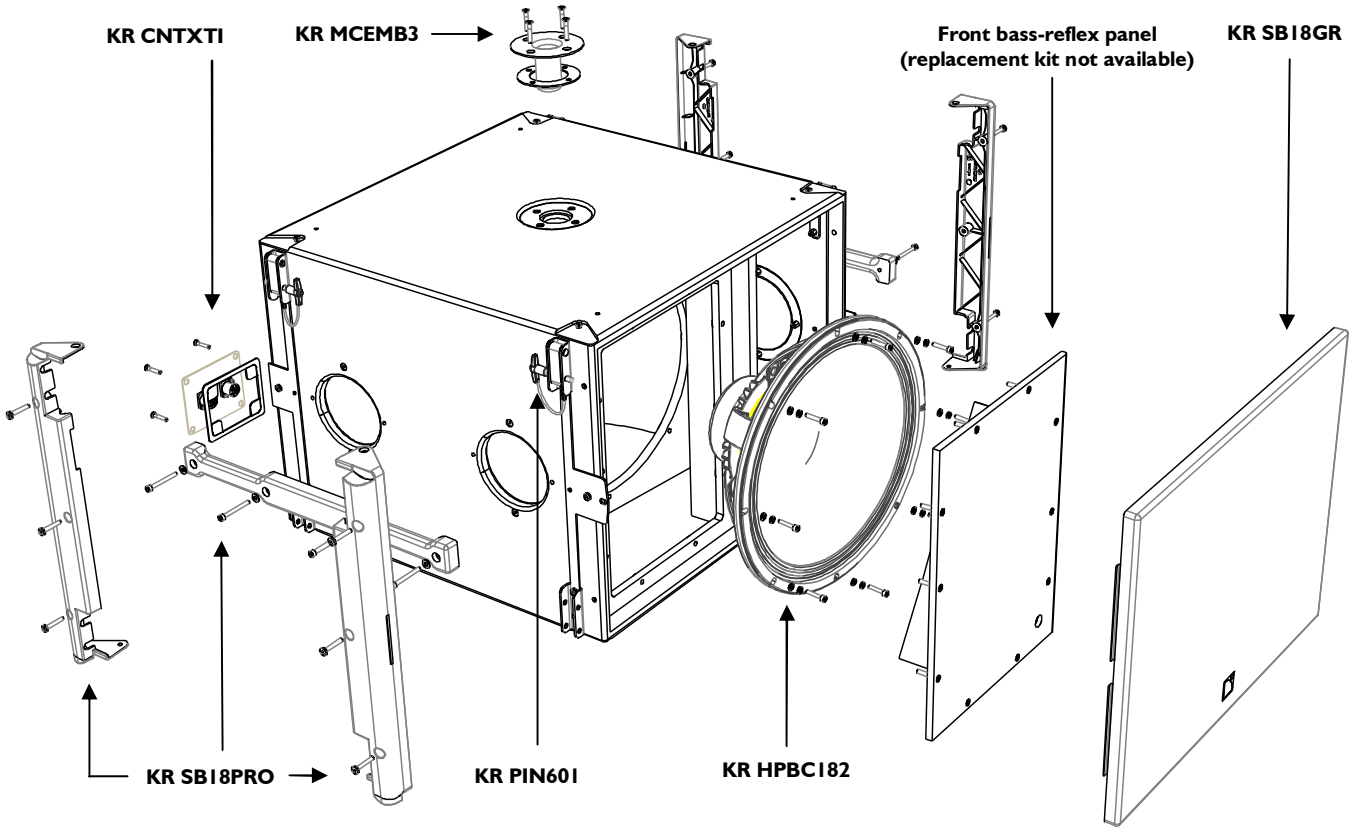



**Figure 13: SB18 exploded view**

**Table 5: Replacement kits and utilities**

| Reference | Description | Service procedure |
|---|---|---|
| KR SB18GR | Complete front face replacement kit | [8.3.2] |
| KR SB18PRO | Protective edges and handles replacement kit | [8.3.3] |
| KR MCEMB3 | Pole mount socket replacement kit | [8.3.4] |
| KR HPBC182 | Transducer replacement kit | [8.3.5] |
| KR CNTXTI | Connector plate replacement kit | [8.3.6] |
| KR PIN601 | Set of ten 5/16" T-BLPs with fixing material | — |
| KR LOCKBLUE | Medium-strength thread-locker (5 pipettes of 50 g) | — |
| KR PAINT8019 | Grey brown RAL 8019® paint (12 kg) | — |

**Table 6: Recommended tools and material**

| | | |
|---|---|---|
| Electric screwdriver with torque selector (N.m or $in.lb_f$) | T30 Torx® bit | 5 mm hex bit |

### 8.3.2 Front face

**Replacement kit and tools**

KR SB18GR, electric screwdriver with torque selector (N.m or $in.lb_f$), T30 Torx® bit, KR LOCKBLUE.

**Front face removal procedure**

1. Put the enclosure with front side facing the user and logo oriented downwards.
2. Remove both top and bottom Torx® screws (T30 bit) from the right front protective edge. **Note:** It is not necessary to remove the center screw.
3. Remove the front face by pulling its right edge out and then extracting its left studs from the enclosure.

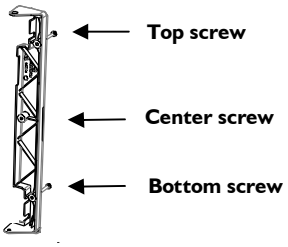



**Figure 14: Right protective edge**

**Front face mounting procedure**

1. Insert the studs of the front face into the left edge of the enclosure and push the right edge in place.
2. Screw in both 35 mm round head Torx® screws to the protective edge (thread-locker, T30 bit, 3 N.m/27 $in.lb_f$).

### 8.3.3 Protective edges and handles

**Replacement kit and tools**

KR SB18PRO, electric screwdriver with torque selector (N.m or $in.lb_f$), T30 Torx® bit, 5 mm hex bit, KR LOCKBLUE.

**Protective edge removal procedure (x4)**

1. Remove the 5 Torx® screws (T30 bit) from the protective edge.
2. Remove the protective edge.

**Protective edge mounting procedure (x4)**

1. Install the protective edge with stacking base oriented towards the bottom of the enclosure.
2. Screw in two 35 mm flat head Torx® screws to the extremities of the protective element located on the top and bottom faces of the enclosure (thread-locker, T30 bit, 3 N.m/27 $in.lb_f$).
3. Screw in three 35 mm round head Torx® screws to the side of the protective element located on the side face of the enclosure (thread-locker, T30 bit, 3 N.m/27 $in.lb_f$).

**Handle removal procedure (x2)**

1. Remove the 4 hex screws and flat washer (5 mm hex bit) from the handle.
2. Remove the handle.

**Handle mounting procedure (x2)**

1. Install the handle on the enclosure.
2. Screw in four 55 mm hex screws with flat washers (thread-locker, 5 mm hex bit, 3 N.m/27 $in.lb_f$).

### 8.3.4 Pole mount socket

**Replacement kit and tools**

KR MCEMB3, electric screwdriver with torque selector (N.m or $in.lb_f$), T30 Torx® bit, KR LOCKBLUE.

**Pole mount socket removal procedure**

1. Remove the 4 Torx® screws (T30 bit) from the pole mount socket.
2. Remove the pole mount socket and the joint.

**Pole mount socket mounting procedure**

1. Put a joint on the pole mount socket location on the enclosure.
2. Install the pole mount socket screw in four 35 mm flat head Torx® screws (thread-locker, T30 bit, 5 N.m/45 $in.lb_f$).

### 8.3.5 Transducer

**Replacement kit and tools**

KR HPBC182, electric screwdriver with torque selector (N.m or $in.lb_f$), T30 Torx® bit, 5 mm hex bit, KR LOCKBLUE.

**Transducer removal procedure**

1. Remove the front face [8.3.2, **Front face removal procedure**].
2. Remove the front bass-reflex panel by removing the 10 Torx® screws (T30 bit) and then remove the joint surrounding the panel location on the enclosure.
3. Remove the transducer by removing the 8 hex screws with split and flat washers (5 mm hex bit). **Pay attention no to bend the terminals**.
4. Disconnect both red and black cables from the transducer's electrical sockets (press the spring-loaded tab, slide the cable out, and release the tab).
5. Remove the joint surrounding the transducer location on the enclosure.

**Transducer mounting procedure**

1. Put joint around the transducer location on the enclosure.
2. **Connect the red cable to the transducer's red terminal and the black cable to the black terminal** (press the spring-loaded tab, slide the cable in, and release the tab).
3. Install the transducer in the enclosure (**pay attention no to bend the terminals**) and screw in eight 30 mm hex screws with split and flat washers (5 mm hex bit, 5 N.m/45 $in.lb_f$): into each hex screw insert a split washer and then a flat washer (**follow this sequence**) and screw in the assembly.
4. Put joint around the bass-reflex panel location on the enclosure.
5. Install the front bass-reflex panel in the enclosure and screw in ten 35 mm flat head Torx® screws (thread-locker, T30 bit, 7 N.m/63 $in.lb_f$).
6. Install the front face on the enclosure [8.3.2, **Front face mounting procedure**].

### 8.3.6 Connector plate

**Replacement kit and tools**

KR CNTXTI, electric screwdriver with torque selector (N.m or $in.lb_f$), T30 Torx® bit, 5 mm hex bit, KR LOCKBLUE.

**Connector plate removal procedure**

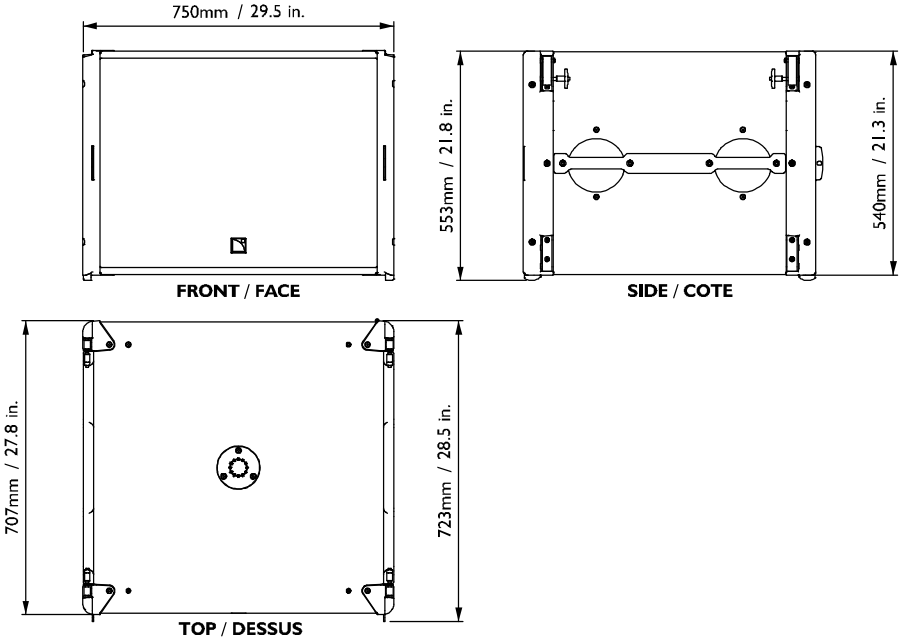
1. Remove the transducer [8.3.5, **Transducer removal procedure**].
2. Remove the 4 Torx® screws (T30 bit) from the connector plate and remove the connector plate.

**Connector plate mounting procedure**

1. Install the connector plate on the enclosure and screw in four 35 mm flat head Torx® screws (thread-locker, T30 bit, 3 N.m/27 $in.lb_f$).
2. Mount the transducer [8.3.5, **Transducer mounting procedure**].

# 9 SPECIFICATIONS

| | |
|---|---|
| **Reference** | **SB18** |
| **Frequency response** | |
| Low frequency limit (-10 dB) | 32 Hz ([SB18_100] preset) |
| **Maximum SPL** [1] | 136 dB ([SB18_100] preset) |
| **Nominal directivity** | **Single element** Omni-directional<br>**Cardioid array** Maximum rejection to the rear: 10 dB |
| **Transducer** | **1 x 18"** weather-resistant, 4" coil, aluminum die-cast basket, vented neodymium magnet, loaded in a dual-vented bandpass enclosure |
| **Nominal impedance** | 8 Ω |
| **Long term RMS handling** | 700 W ([SB18_100] preset) |
| **Connectors** | 2 x 4-point SpeakON® (wired in parallel) |
| **Dimensions (W x H x D)** | 750 x 540 x 707 mm / 29.5 x 21.3 x 27.8 inch |




| | |
|---|---|
| **Weight** | 52 kg / 115 lbs |
| **Vertical array rigging** [2] | ⇨ L-ACOUSTICS® M-BUMP rigging frame. Certified for flying up to 16 SB18 or stacking up to 8 SB18.<br>⇨ L-ACOUSTICS® M-BAR extension bar and M-JACK stacking bases (x4) for M-BUMP stacked configurations.<br>⇨ Integrated stacking bases. Certified for stacking up to 8 SB18 without M-BUMP (for perfectly horizontal and regular surfaces ONLY). |
| **Pole mounting** | ⇨ Integrated 35 mm/1.4 inch socket for single XT or dual KIVA pole mounting. |
| **Shipping** | ⇨ L-ACOUSTICS® SB18PLA front dolly board.<br>⇨ L-ACOUSTICS® SB18COV protective cover. |
| **External structure** | |
| Material | Baltic birch plywood. |
| Finish | Grey Brown, RAL 8019®. |
| Front | Polyester powder-coated steel grill, Airnet® acoustically neutral fabric. |
| Rigging components | Zinc and polyester powder dual-coated steel. |
| Handles/protective elements | High-density polyethylene/polyamide. |

[1] Peak level measured at 1m under half-space conditions using 10 dB crest factor pink noise with specified preset and corresponding EQ settings.

[2] Installation safety limits are specified in SOUNDVISION Software which is designed to help with L-ACOUSTICS® product implementation.

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