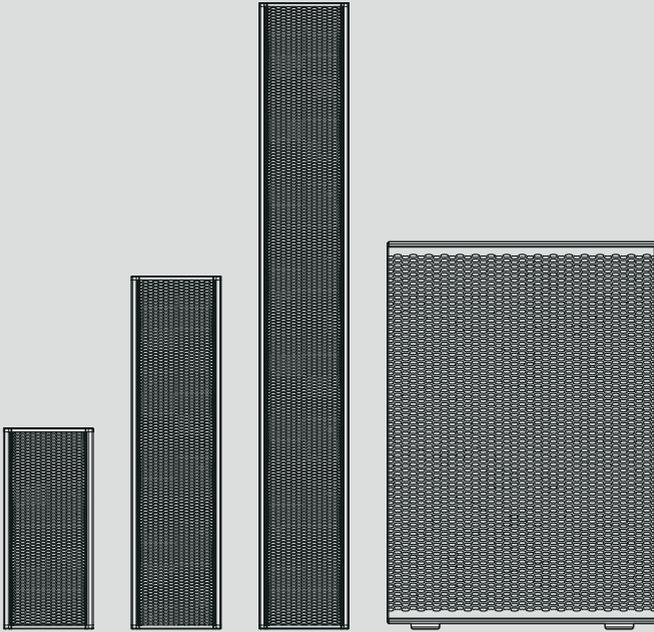




AUDIOTECHNIK

I-LINE

INSTALLATION SYSTEM



MANUAL

THANK YOU FOR CHOOSING **s)))e AUDIOTECHNIK®.**

We are happy to be the solution for your sound reinforcement and professional sound needs. The system you purchased is the sum of 20 years of experience as a loudspeaker manufacturer, and more than 40 years as a speaker designer. It is the sum of German precision and Chinese efficiency, which ensures a high-quality product that will last you for the long-term.

Please, take the time to carefully read this manual and follow its instructions. It will allow you to get the most out of your product under safe operating conditions and suggest some care instructions leading to long-term endurance. Keep this manual in a safe place for further reference!

If you find any mistakes or have further questions or suggestions, please contact us at info@se-audiotechnik.de.

For more information about **SE AUDIOTECHNIK®** products, visit our website www.se-audiotechnik.de. There you will also find the latest updates to manuals, firmware and technical documents for additional support.

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The content of this document is subject to change without prior notice to improve reliability, function, design or otherwise.

D

EN

中文

LIST OF CONTENTS

| | |
|---------------------------------------|-----------|
| IMPORTANT SAFETY INSTRUCTIONS | 6 |
| PACKAGE CONTENTS | 9 |
| INTRODUCTION | 10 |
| Intended use | 11 |
| I-LINE PRODUCTS | 12 |
| IC 32 / IC 34 / IC 38X | 12 |
| S 112i PRO Subwoofer | 14 |
| IA 202D / IA 402D | 16 |
| WIRING AND INSTALLATION | 18 |
| Wiring | 18 |
| Installation | 19 |
| LCD PLATE AMPLIFIER | 22 |
| Overview Screen | 23 |
| Menu | 24 |
| DSP Settings | 25 |
| System Settings | 34 |
| Factory Presets | 37 |
| APPLICATIONS | 38 |
| Meeting Room | 39 |
| Conference Room | 40 |
| Bar or Restaurant | 41 |
| SPECIFICATIONS | 42 |
| IC 32 / IC 34 / IC 38X | 42 |
| S 112i PRO Subwoofer | 44 |
| IA 202D / IA 402D | 46 |
| Smart-Mounting Brackets: SMB and SMBX | 48 |
| MANUFACTURER'S DECLARATIONS | 50 |

D

EN

中文

IMPORTANT SAFETY INSTRUCTIONS

GRAPHICAL SYMBOLS ON THE PRODUCT



The lightning bolt triangle is used to alert the user to the risk of electric shock.



Symbol indicating that the equipment is for indoor use only.



The exclamation point triangle is used to alert the user to important operating or maintenance procedures and instructions.



Symbol for conformity with Directive 2002/96/EC and Directive 2003/108/EC of the European Parliament, on waste electrical and electronic equipment (WEEE).



The CE mark indicates the conformity with the relevant EU directives for safety, health and environmental protection. See the *Manufacturer's Declaration* section.



Symbol for ground connection.



The CCC mark indicates the conformity with the relevant Chinese directives for safety, health and environmental protection.

GRAPHICAL SYMBOLS IN THIS MANUAL



Symbol for important safety information related with the risk of electric shock.



Symbol for important concepts and information for a better understanding of the functioning of the product.



Symbol to alert the user about important operating or maintenance instructions.



Symbol for practical tips and ideas useful to ensure the correct use of the product and improve its operation.

The products included in this manual have been engineered and manufactured to ensure your personal safety. However, **IMPROPER USE CAN RESULT IN POTENTIAL ELECTRICAL SHOCK, FIRE HAZARD AND OTHER HEALTH RISKS.** Always follow the basic precautions listed here to avoid the possibility of serious injury or even death from electrical shock, short-circuiting, damages, fire or other hazards. These precautions include, but are not limited to, the following items in this chapter.



ELECTRICAL SAFETY PRECAUTIONS



DO NOT EXPOSE ANY OF THIS EQUIPMENT TO RAIN OR MOISTURE, DRIPPING OR SPLASHING LIQUIDS. OBJECTS FILLED WITH LIQUIDS, SUCH AS VASES, SHOULD NOT BE PLACED ON THIS APPARATUS.



TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT ATTEMPT TO OPEN ANY PART OF THE UNIT. THERE ARE NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



EQUIPMENT INCLUDED IN THIS MANUAL REQUIRE AC POWER SUPPLY. TO COMPLETELY DISCONNECT THEM FROM THE AC MAINS, DISCONNECT THE POWER SUPPLY CORD PLUG FROM THE AC RECEPTACLE. THE MAINS PLUG OF THE POWER SUPPLY CORD SHALL REMAIN READILY OPERABLE.

NOISE EXPOSURE PRECAUTIONS



PRODUCTS DESCRIBED IN THIS MANUAL CAN RADIATE HIGH SOUND PRESSURE LEVELS (SPL), THAT CAN LEAD TO IRREVERSIBLE HEARING DAMAGE. SE AUDIOTECHNIK® RECOMMENDS TO RESPECT THE TIMES OF EXPOSURE TO HIGH SPL.

| Noise level (dBA) | 85 | 94 | 97 | 112 | 127 |
|---|--------|-------|---------|---------|--------|
| Max. recommended exposure time per 24 hours | 8 hrs. | 1 hr. | 30 min. | 56 sec. | 1 sec. |

Noise exposure recommendations according to US National Institute for Occupational Safety and Health (NIOSH).

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EN

中文

IMPORTANT SAFETY INSTRUCTIONS

1. Keep these instructions.

2. Read these instructions.

3. Follow thoroughly all instructions.

4. Heed all warnings.

5. Do not use this apparatus near water.

6. Clean only with a dry cloth. Disconnect the device from the AC outlet before cleaning. Do not use paint thinners, solvents, cleaning fluids, or chemical-impregnated wiping cloths.

7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.

8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

9. Do not defeat the safety purpose of the grounding-type plug. A grounding-type plug has two blades and a third grounding prong. The third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.

11. Unplug this apparatus during lightning storms or when unused for long periods of time.

12. Use the mains plug to disconnect the apparatus from the mains.

13. Keep away from objects which may be impaired by an external magnetic field. To avoid the damage of equipment such as computers, video monitors and magnetic data carriers, they should be located at least 1 meter away.

14. Only use safety pins, attachments, accessories and adapters specified and/or provided by the manufacturer.

15. Refer all servicing to qualified service personnel. This is required when the product has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

16. Do not insert your fingers, hands or any other foreign objects into any gaps or openings of the device.

17. When this product reaches its end of life, take it to a collection point designated by local authorities. The separate collection and recycling of your product at the time of disposal will help conserve natural resources and ensure that it is recycled in a manner that protects human health and environment.

PACKAGE CONTENTS

The packaging of the **IC 32** and **IC 34** columns includes:

- 2 x **IC 32** or **IC 34** speakers
- 2 x **SMB** (Smart-Mounting Brackets)
- 2 x Phoenix MSTB 4-pin connectors
- 1 x QC PASS card
- 1 x warranty card

The packaging of the **IC 38X** column includes:

- 1 x **IC 38X** speaker
- 1 x **SMBX** (Extended Smart-Mounting Bracket)
- 2 x Phoenix MSTB 4-pin connectors
- 1 x QC PASS card
- 1 x warranty card

The packaging of the subwoofer includes:

- 1 x **S 112i PRO** installation subwoofer
- 1 x AC power cord with powerCON® connector
- 1 x QC PASS card
- 1 x warranty card

The packaging of the **IA** system amplifiers includes:

- 1 x **IA 202D** or **IA 402D** amplifier
- 1 x AC power cord with C13 connector
- 1 x QC PASS card
- 1 x warranty card

Please inspect your product packaging before unboxing it. If it has been damaged during shipping, unbox the product and check for any visual damage before using it. Notify the shipping company immediately and contact your SE AUDIOTECHNIK® dealer or support center for help and assistance.

Finally, save the shipping carton as evidence for the possible claim, which can be requested only by you. We also recommend you to keep all the packing materials and contents for any further transportation.

INTRODUCTION

The I-Line is a set of products designed for fixed installations with ambitious requirements regarding aesthetics, speech reproduction and music playback. No matter if you want to fill a conference room, the sales area of a shop or a bar with sound: the I-Line offers you freedom of choice to compose a setup which suits your needs best.

The line comprises column speakers, an installation subwoofer and two system amplifiers:

- **IC 32:** The smallest column comprising 2 x 3.5" neodymium magnet woofers.
- **IC 34:** Middle-sized column comprising 4 x 3.5" neodymium magnet woofers.
- **IC 38X:** The largest column comprising 8 x 3.5" neodymium magnet woofers and 2 x 0.5" compression drivers coaxially mounted in two of the eight woofers.
- **S 112i PRO:** The self-powered 12" subwoofer for installation with user controllable DSP.
- **IA 202D:** dedicated I-Line 200 W class-D power amplifier with controllable DSP.
- **IA 402D:** dedicated I-Line 400 W class-D power amplifier with controllable DSP.

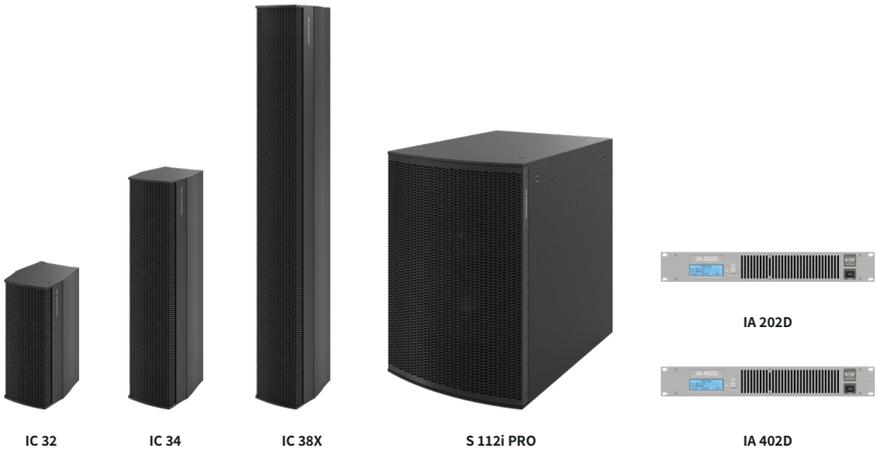


Figure 1. I-Line products.

INTENDED USE

The **IC 32**, **IC 34** and **IC 38X** are column speakers designed for sound reinforcement in small to medium-sized venues. Conceived for fixed installation systems, they are suitable for applications where high SPL and intelligibility are key. Their acoustic design allows for wide horizontal directivity reaching broad audience areas as well as a narrower vertical directivity, depending on the columns installed.

The use of the **IA 202D** and **IA 402D** amplifiers allows to implement systems composed by several columns. This includes the possibility of having several secondary systems delayed to cover bigger venues.

In addition, the bandwidth of these powerful columns can be extended in the low frequency with the **S 112i PRO** subwoofer. Specially designed for installation, this active subwoofer can be used to enhance the capabilities of the system, mainly in applications involving music reproduction.

The amplifiers and the active subwoofer include factory presets individually configured to assure the right coupling between I-Line products.

Please, read thoroughly the [Wiring and Installation](#) and [Applications](#) sections for further information about the setups, deployment and possibilities of the I-Line products.

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I-LINE PRODUCTS

IC 32 / IC 34 / IC 38X

The **IC 32**, **IC 34** and **IC 38X** conform the column speakers of the I-Line, equipped respectively with two, four and six high-performance 3.5" neodymium drivers. In addition, **IC 38X** contains two 3.5" coaxial woofers with 0.5" exit and 1" voice coil tweeters. A custom designed basket with advanced cooling module, paired with a high-end paper membrane, enables these transducers to reproduce a wide frequency band with high fidelity.

Furthermore, the speakers are properly aimed left and right alternately, in order to provide an optimal horizontal high-frequency coverage. The IC columns come in brushed aluminum housings and their slim and subtle appearance makes them blend well into many different environments.

When it comes to installing, you can mount the system speakers almost anywhere and at any desired orientation by utilizing for **IC 32** and **IC 34** the proper Smart-Mounting-Brackets **SMB**, and **SMBX** for the **IC 38X** columns. Both **IC 32** and **IC 34** speaker models have two 4-pin Phoenix connectors with accompanying channel switch, while **IC 38X** has only one on the bottom. These connectivity options make the wiring process as easy and cost-efficient as possible, also minimizing the total required cable length.

Features

- Wide 120° horizontal coverage
- Compact and high SPL output
- Easy setup using **SMB** and **SMBX** bracket
- Aesthetic design
- Available in black and white

REAR PANEL

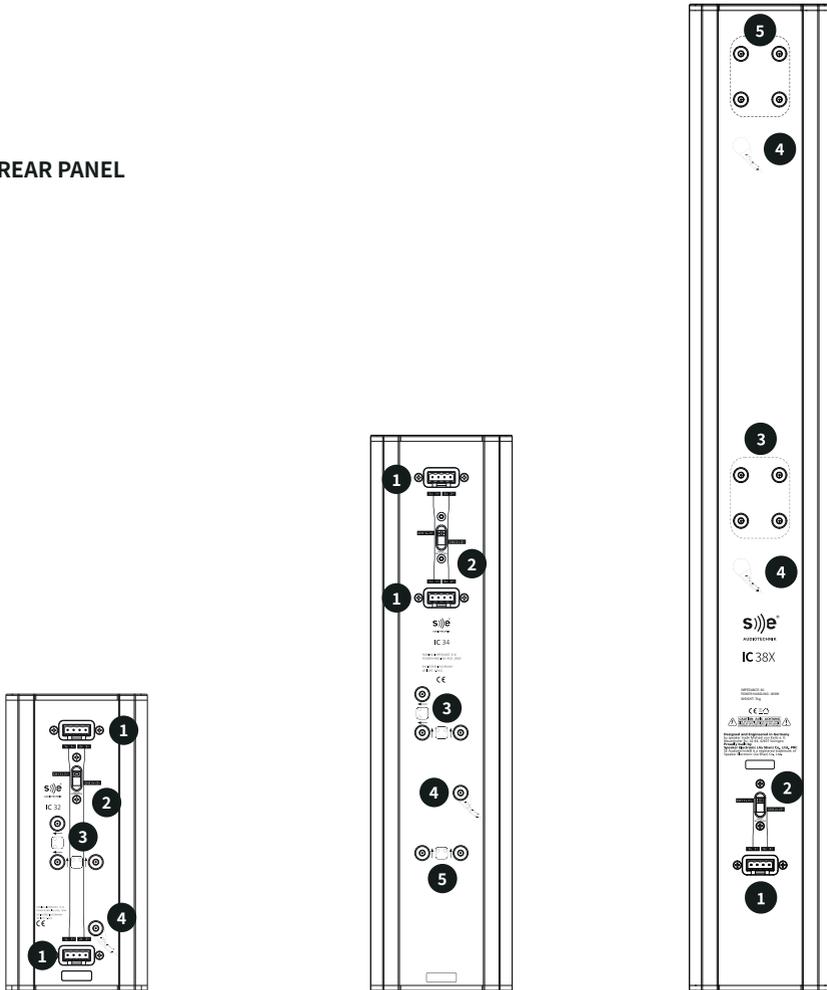


Figure 2. Rear panel. IC 32 (left), IC 34 (center) and IC 38X (right).

- 1 Input/Link Phoenix MSTB 4-pin connector/s.
- 2 Input selection switch. Selecting input signal between +/-1 and +/-2.
- 3 Main bracket mounting position.
Allows for horizontal and vertical orientation in **IC 32** and **IC 34** columns.
- 4 Mounting point of safety wire.
- 5 Additional bracket mounting position.

S 112i PRO SUBWOOFER

The **S 112i PRO** is an active subwoofer designed specially for the I-Line family. It is composed by a single 12" driver in a bass-reflex configuration, powered by an updated 800 W Class-D amplifier. Furthermore and compared to previous developments, its improved enclosure design reduces port-noise and maximizes system SPL.

Integrated DSP-presets enable different system setups to be used with various **IC 32**, **IC 34** or **IC 38X** configurations. Additionally, its efficient design and compact size guarantees safe, discrete and versatile placement, offering also an aesthetic appearance for installation applications.

Features

- Ultra-compact subwoofer, weighing only 23 kg
- Increased SPL with reduced port-noise than predecessors
- DSP-Presets for easy subwoofer setup
- Built-in DSP and 800 W of class-D amplification
- Simple to use LCD screen and rotary encoder controller
- Eight-points flying points for safe and easy installation
- Wide range of supported applications with **IC** column speakers
- Available in black and white

REAR PANEL

- 1 Indicator LEDs:
 - Protect:** Lights red if the amplifier has short-circuited or overheated, which will be muted automatically. Upon reaching normal operating conditions, the device reverts to normal operating mode after a few seconds.
 - Limit:** Lights red when the limiter starts working. If the limiter LED lights up permanently or for longer periods, the gain level should be reduced. Failure to do so may result in a distorted sound.
 - Signal:** Lights green as soon as an audio signal is present. The input signal monitoring is performed before the Main Level controller.
 - Power:** Lights green once the system is properly connected to the mains power and switched on.
- 2 Alphanumeric LCD for DSP display.
- 3 Rear panel heatsink.
- 4 **Power In.** powerCON® type-A mains power socket. An appropriate power cable is included in the package. The amplifier is intended for two operating voltage ranges: 100-120 and 200-240 VAC. The electrical conversion is done automatically.
- 5 **Power Out.** powerCON® type-B mains power output to link power between several units in the line.
 -  Never connect nor disconnect powerCON cables to/from the unit while the power switch is turned to the ON position!
- 6 **Master control.** Rotary encoder with push button for DSP control.

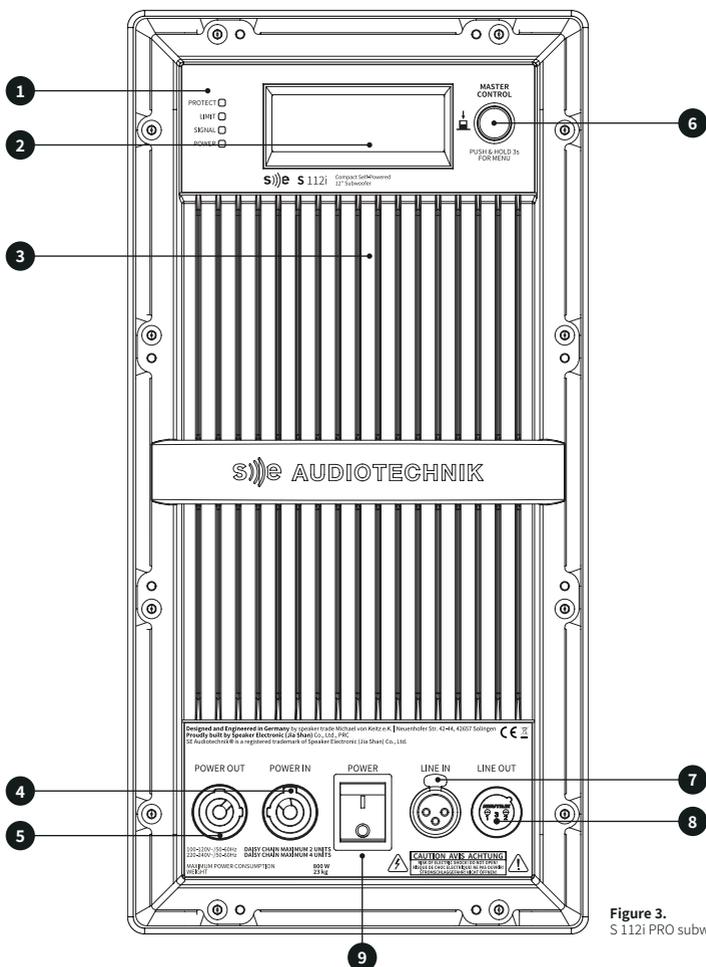


Figure 3.
S 112i PRO subwoofer rear panel.

- 7 **Line In.** Balanced line-level input with female Neutrik® XLR-3 connector to connect input signal. It allows input levels up to +20 dBu.



For an optimal signal-to-noise ratio, it is recommended to input signals with a level of at least 0 dBu.

- 8 **Line Out.** Balanced and buffered line-level output with male Neutrik® XLR-3 connector. It shall be used to link other components of the system, as additional **S 112i PRO** subwoofers.

- 9 **Power.** Switch to turn the unit on and off.



To avoid clicks and pops, turn on your PA system last and turn it off first before other connected devices. Additionally, after turning the unit off, wait for more than five seconds before turning it on again.

IA 202D / IA 402D

I-Line offers two 2-channel class-D power amplifiers with switching mode power supply. **IA 202D** delivers 2x 250 Watts at 8 Ω, while **IA 402D** provides 2x 400 Watts at 4 Ω.

Each amplifier is equipped with a digital encoder with push button for DSP and preset selection. Our efficient DSP engine brings the flexibility to load speaker presets, adjust parametric EQ, delay, filter, gain and polarity settings thus helping with quick and easy system optimisation and sound tuning.

Sensor-controlled fan and optimized front-to-back airflow, together with very low idle power consumption, ensure low noise levels for quiet environments at all times. Finally, a combination of XLR-3, speakON® and Phoenix connectors for in- and output signal, ensures maximum flexibility during the installation process.

Features

- Two-channel power amplifiers with switched supply
- Low noise and efficient heat dissipation with fan-aided airflow system
- **IA 202D**: 250 W of class-D amplification
- **IA 402D**: 400 W of class-D amplification
- DSP-Presets for easy system setup
- Simple to use LCD screen and rotary encoder controller
- Different types of connectors for versatile connectivity
- Wide range of supported applications with **IC** column speakers

FRONT PANEL

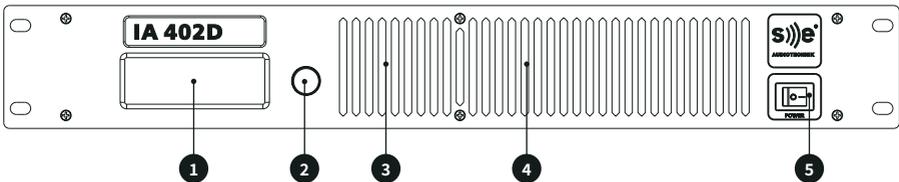


Figure 4. Front panel of the IA 202D I-Line amplifier.

- 1 Alphanumeric LCD for DSP display.
- 2 **Master control.** Rotary encoder with push button for DSP control.
- 3 **Cooling fan.** Air intake of sensor-controlled fan.
- 4 Air-intake vents.
- 5 **Power.** Switch to turn the unit on and off.

REAR PANEL

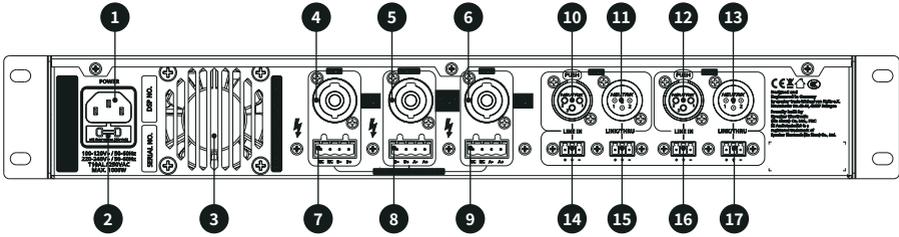


Figure 5. Rear panel of the IA 202D and IA 402D system amplifiers.

- 1 **AC power connector.** mains power socket. An appropriate power cable is included in the package. The amplifier is intended for two operating voltage ranges: 100-120 and 200-240 VAC. The electrical conversion is done automatically.
- 2 Fuse.
- 3 **Cooling fan.** Air intake of sensor-controlled fan.
- 4 to 6 **SpeakON® Outputs.** From left to right, channel A, A&B and B.
- 7 to 9 **Phoenix Outputs.** From left to right, channel A, A&B and B.
- 10 and 12 **Balanced Line In.** Balanced line-level input with female Neutrik® XLR-3 connector to connect input signal in channels A and B respectively.
- 11 and 13 **Balanced Line Out.** Balanced and buffered line-level output with male Neutrik® XLR-3 connector for channels A and B respectively. It shall be used to link other components of the system, as additional **S 112i PRO** subwoofers.
- 14 and 16 **Unbalanced Line In.** Unbalanced line-level input with 4-pin Phoenix MSTP connector, to connect input signal in channels A and B respectively.
- 15 and 17 **Unbalanced Line Out.** Unbalanced line-level output with 4-pin Phoenix MSTP connector for channels A and B respectively.

WIRING AND INSTALLATION

WIRING

Each **IC** column system and **IA** system amplifier has clearly marked pinout for inputs and outputs. Please follow the marking to ensure proper wiring for your system, as shown in figure 2.

Also, ensure to use cables with sufficient cross-section to avoid energy-losses. It is recommended to use cables with at least 18 AWG conductor size. For long cable lengths, the maximum conductor size is 14 AWG.

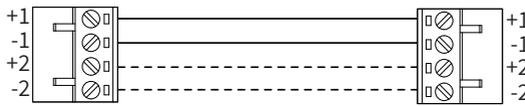


Figure 6. Phoenix MSTB 4-pin connector wiring.

The **S 112i PRO** subwoofer uses powerCON® connectors for the mains power input and link. Figure 7 shows how to plug-in and connect these wires.

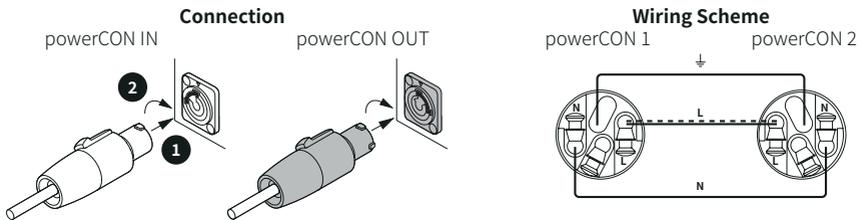


Figure 7. powerCON® plug-in and link cable connection.

Conversely, audio signals in the IA amplifiers can be output through a speakON® connector. These wires should be connected as shown below:

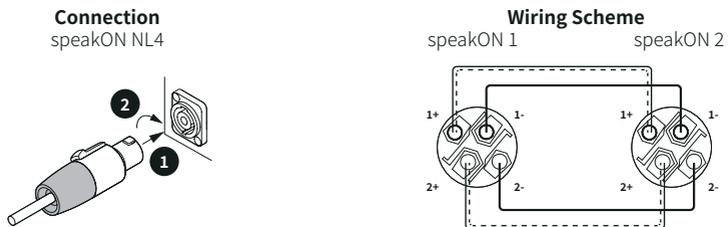


Figure 8. speakON® plug-in and link cable connection.

Finally, the **S 112i PRO** subwoofer and the **IA** system amplifiers can input and link audio signals through XLR-3 connectors. They follow the next plug-in and configuration scheme:

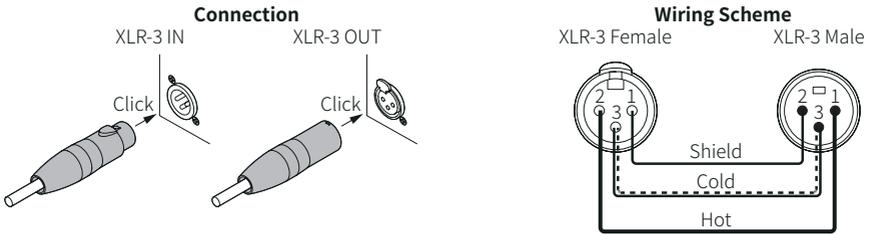


Figure 9. XLR-3 plug-in and cable connection.

INSTALLATION

Each of the **IC 32** and **IC 34** columns includes its own Smart-Mounting Bracket **SMB**, and the **IC 38X** an its dedicated **SMBX**. These permit great mounting flexibility and safety. Designed by German engineers, the bracket has a maximum loading capacity of 10 kg. It can be individually adjusted on both axes, reaches $\pm 90^\circ$ in all directions by steps of 10° , and is suitable for ceiling and wall mount.

The **IC 32** column has one single centered point where the **SMB** can be attached both horizontally or vertically. This allows orienting them properly to match architectural requirements and fit aesthetically in the room.

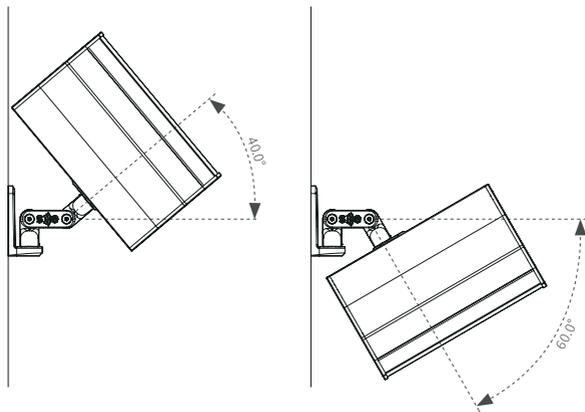


Figure 10. Mounting possibilities in the vertical plane for **IC 32** with **SMB** in the center points.

To use optimally the narrow vertical directivity of the **IC 34** and **IC 38X** columns, the **SMB** or **SMBX** bracket can be placed only in this direction, but from two different points: one located in the center and the other in the bottom. Please refer to figure 11 for middle mounting position and figure 12 for bottom mounting position.

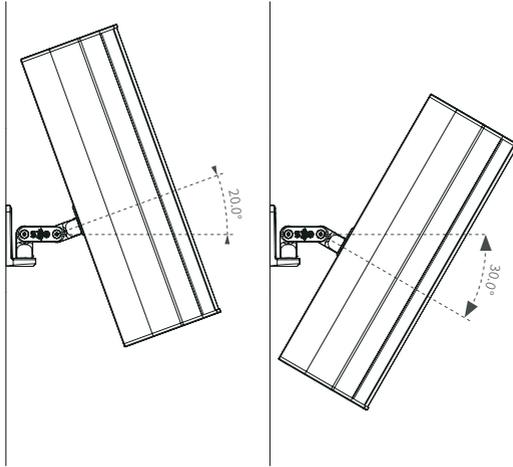


Figure 11. Mounting possibilities in the vertical plane for **IC 34** with **SMB** in the middle mounting position.

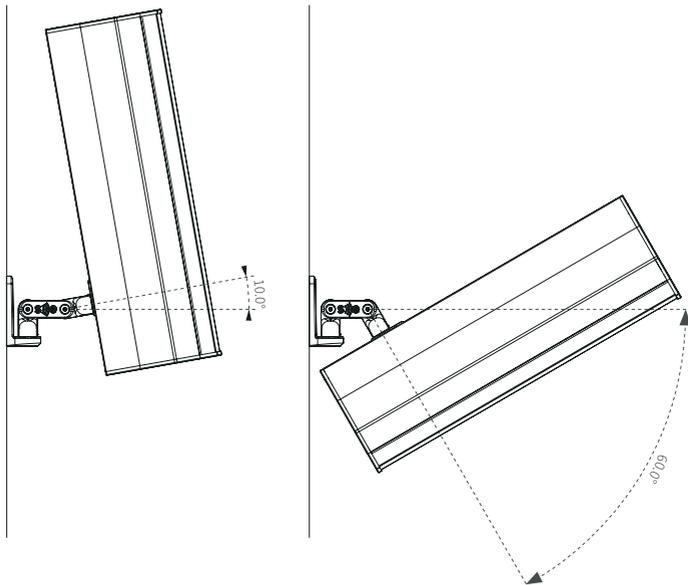


Figure 12. Mounting possibilities in the vertical plane for **IC 34** with **SMB** in the bottom mounting position.

In addition to the multiple options available in the vertical plane, the **SMB** or **SMBX** bracket allows wide angles in the horizontal direction, leading to increased flexibility as shown below.

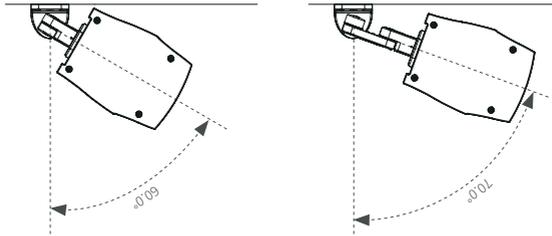


Figure 13. Different aiming angles in the horizontal plane with the **SMB** bracket.

The **S 112i PRO** subwoofer includes eight flying points: two up on each side and four on the top. These are steel M10 screws, which allow great versatility when installing the subwoofers.

LCD PLATE AMPLIFIER

The **S 112i PRO** installation subwoofer is equipped with a built-in 48 kHz/24 bit DSP processor, that provides controlled signal processing and limiting. This DSP core is fed by dual-range inputs to improve the Signal to Noise Ratio, and is easy to manipulate thanks to the rotary control encoder with push button, and the 4x20 symbol alpha-numeric LCD screen.

This section details the features of the DSP firmware, whose adjustable parameters and features include 5 EQ bands, delay, polarity, high-pass and selection of low-pass filters. A variety of factory presets is also available to easily setup different systems and in addition, the **S 112i PRO** subwoofer includes also directivity control function.



The **IA 202D** and **IA 402D** system amplifiers include also a 48 kHz/24 bit DSP processor with the same parameters, so the following instructions can be used for them as well.

The instructions for the DSP Settings describe the functioning of the single channel of the **S 112i PRO** subwoofer, but apply independently for the channels of the **IA** amplifiers: **A**, **B** and **A+B**. The System Settings are common for all three products.

Some key cursors, symbols and considerations used throughout the menu structure are:

- The first line of each screen is the specific name or title of the given screen.
- The cursor ">" marks the current point of action.
- When editing preset names, the cursor "←" indicates deleting function.
- The symbol "*" highlights the selection of a given preset or setting. It indicates also that the edition of a given parameter is enabled.
- The symbol "L" indicates the lock state of the amplifier and thus, that editing any parameter is not possible. This symbol appears only when this is activated, and only within the Overview screen.

Figure 14 details the different menus and functions of the DSP firmware, detailed in the following subsections. Conversely, figures 19 and 34 show respectively the functions included in the DSP Settings and System Settings.

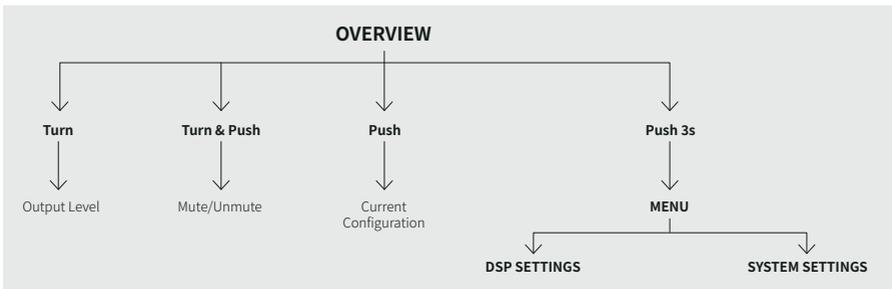


Figure 14. DSP firmware functions and menus.

OVERVIEW SCREEN

The Overview screen is the one shown by default on the amplifier LCD, during normal operation (Figure 15). It details the next information:

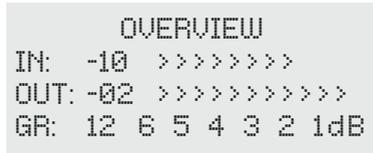


Figure 15. Overview screen.

- The first row shows the title of the screen and if applicable, the "L" letter in the top right-corner, informing the lock state of the amplifier.
- The second row shows the letters "IN:" followed by a numerical input level meter. The meter shows the current input level value in dBFS, with minimum "-90" for low or no signal. The ">>>" symbols show the signal strength relative to the clipping point at 0 dBFS. The readout is replaced with text "INPUT CLIPPING!" if the signal reaches or exceeds 0 dBFS. In such case, the screen backlight is flashing to call the attention of the user.
- The third row shows the letters "OUT:" which are followed by the output level meter. This meter shows current output level relative to the maximum amplifier output. If the channel is muted, the level display meters are replaced with the text "MUTED".
- The fourth row shows the gain reduction in dB "GR:" applied to the signal when the limiter threshold is reached. When the value increases, new levels appear from right to left, according with the amount of reduction applied.

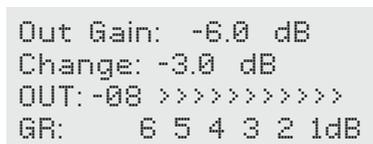


Figure 16. Turning the encoder in Overview screen allows to change output gain.

From the Overview screen, the following options can be executed with the Master Control rotary encoder:

- **Turn left or right** to adjust the output level (Figure 16). The output gain and the relative change in dB are shown. The output level is always recalled and is not affected by any reset function.
- **Turn one step and push** to quickly mute or unmute the amplifier output.
- **Push (without turning)** to open the Active Preset Info screen and see both the active preset and the delay currently defined (Figure 17). Clicking "**Back**" will return to the Overview screen.

Letters "**CA**" after the name of the preset indicate that the cardioid directivity function is enabled. End-fire function is denoted as "**EF**" and normal radiation shows no additional letters.

- **Press and hold 3 seconds** to enter the MENU.

```
ACTIVE PRESET INFO
MF3AP:Default CA
USER DELAY:
0.64 ms      > BACK
```

Figure 17. Active Presets View.

MENU

To enter the MENU of the amplifier, **press and hold** the Master Control rotary knob for 3 seconds. A menu as shown in Figure 5 will appear on the screen.

```
MENU
> DSP Settings
  System Settings
  Exit
```

Figure 18. Main Menu.

Two submenus can be accessed from this point:

- DSP Settings: signal processing settings such as presets, filters, EQ, delay are configured here.
- System Settings: power amplifier operation settings are configured here.

Clicking "**Exit**" will return to the Overview screen.

DSP SETTINGS

DSP Settings menu is shown in Figure 19.

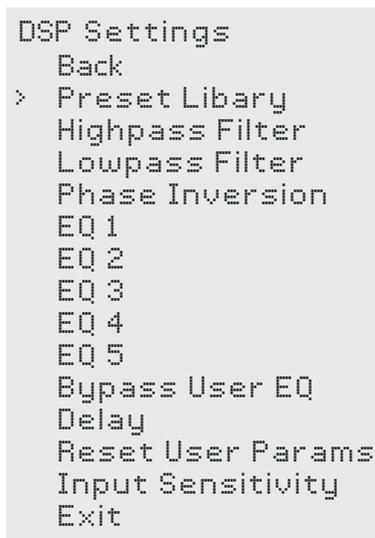


Figure 19. DSP Settings menu.

DSP SETTINGS > PRESET LIBRARY

Preset Library menu allows to load and save DSP processing presets. These are divided in two basic types:

- Factory presets: these are the default configurations for each SE AUDIOTECHNIK'S® speaker intended to be used with your subwoofer, and contain the information about factory pre-defined filter and limiter settings.
They are marked with an "F" letter at the right side of the preset. More details can be found in the Factory Preset subsection of this manual.
- User presets: 8 custom configurations for the user to define, using the factory presets as starting point and saving additional adjustments, as:
 - User High-pass filter settings
 - User Low-pass filter settings
 - User EQ settings
 - User Delay settings
 - User Phase Inversion (Polarity) settings

They are marked with a "U" letter at the right side of the preset name.

As mentioned, the current loaded preset is marked with the "*" symbol.



Figure 20. Preset Library menu.

The names of the presets are organized in such a way that the first symbols will always refer the loudspeaker model which the preset has been made from. This way the user knows what factory preset was the origin of the custom user preset.

DSP SETTINGS > PRESET LIBRARY > PRESET LOADING

To load a preset, scroll to it and click the rotary controller. A dialogue is displayed on the screen to either load preset, save preset or go back. By pressing "**Load Preset**", the preset is loaded in the DSP and the message "**Load Done**" is displayed shortly on the screen.

To return to the Preset Library, choose "**Back**" and click the rotary controller.



Figure 21. Loading factory preset.

DSP SETTINGS > PRESET LIBRARY > PRESET SAVING

To save a preset, choose one of the existing or empty user preset locations and click the rotary controller. A dialogue similar to factory preset loading is displayed on the screen but an additional option is available to save the preset. Saving is only available in the user presets.

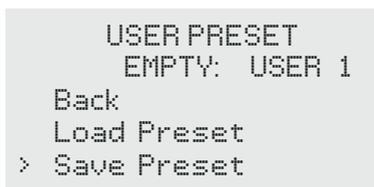


Figure 22. Saving user preset.

By clicking on **"Save Preset"**, a dialogue to define the preset name is displayed. By default, the first characters of the name are the same of the current loaded preset and these can not be changed. Thus, before being able to setting and saving any user preset, a factory preset needs to be active.

To customize the name of the new preset, the user can edit the last symbols of the default name, separated by the ":" symbol. To do this:

1. Set the cursor ">" on the name and click the encoder. The "*" symbol appears to indicate that name edition is enabled.
2. Turn the controller to choose the character desired and fix it by pressing the button. Character deletion is performed by choosing the "←" symbol and clicking.
3. Complete the editing of the name by choosing the **"space"** symbol and then click twice.

To confirm, choose **"Save"** and click the rotary controller. The message **"Save Done"** is shortly displayed on the screen. To return to the Preset Library, choose **"Back"** in the following two screens.

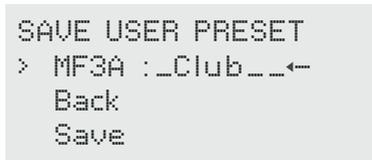


Figure 23. Saving user preset.

DSP SETTINGS > PRESET LIBRARY > PRESET INFORMATION

By pressing 3 seconds on the selected preset, a dialog shows up displaying various information about it. In the latest firmware version, the Name, Date, Version and Author are displayed and shall be used to ensure that the speaker presets are up to date.

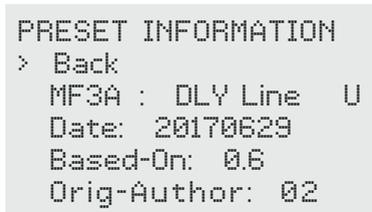


Figure 24. Preset information dialog.

DSP SETTINGS > HIGHPASS FILTER

The Highpass Filter section allows to change cut-off frequency of the high-pass protection filter. The lowest possible setting is an electrical 4th order, tuned for **S 112i PRO** at 36 Hz. This filter is always enabled.

All frequency steps above the lowest option correspond to an acoustical 6th order Butterworth filter. These additional values are: 48, 50, 53, 56, 60, 63, 67, 71, 75, 80, 85, 90, 95 and 100 Hz.

Changing this cut-off frequency can be useful mainly when the **S 112i PRO** subwoofer is used with other subwoofers that cover the lower frequency bands. To do this:

1. Set the cursor „>“ on the option „**Freq**“ and click the encoder. The „*“ symbol appears to indicate that edition is enabled.
2. Turn the controller to choose the value desired and fix it by pressing the button.
3. Choose „**Back**“ and click the rotary controller to return to the DSP Settings submenu.

```
HIGHPASS FILTER
> Back
  Freq.: 36 Hz
```

Figure 25. High-pass Filter adjustment.

DSP SETTINGS > LOWPASS FILTER

The DSP of the subwoofer also includes an adjustable Lowpass Filter and this submenu allows to change its type, slope and cut-off frequency, and to bypass it.

```
LOWPASS FILTER
> Back
  Bypass: OFF
  Freq: 120 Hz
  Type: LR 24dB/Oct
```

Figure 26. Low-pass Filter adjustment.

The selection of the parameters is performed as explained for the Highpass Filter, and the options are:

- Bypass: On or Off.
 - Freq.: sets cut-off frequency (-3 dB) from 80 to 240 Hz, with 1 Hz steps.
- Type:
 - Butterworth filters: BW 6 - 48 dB/Oct.
 - Linkwitz-Riley filters: LR 12, 24, 36 or 48 dB/Oct

DSP SETTINGS > DIRECTIVITY (S 112i PRO ONLY)

Turning the control knob in the Directivity menu activates different directivity options in order to modify the radiation of the **S 112i PRO** subwoofer. This function offers three options:

- Normal: no process is applied and the subwoofer behaves as an omnidirectional source. For this mode, no additional information is shown in the Active Preset Info screen.
- Cardioid: it implements specific DSP processes to create a cardioid directivity pattern when used properly in a subwoofer array. In this mode, the letters "**CA**" appear in the Active Preset Info screen.
- End-Fire: it enables end-fire configuration by selecting a desired tuning frequency with the "**Att. Freq**" parameter. This factor ranges from 40 Hz to 100 Hz, in 1 Hz steps.

By changing the attenuation frequency, the screen shows the necessary space between the front grilles of the subwoofers to get the effect. Finally, when this mode is implemented, the Active Preset Info screen shows the letters "**EF**".

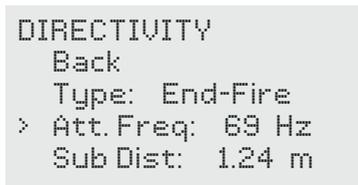


Figure 27. Example of an end-fire setup in the Directivity menu.



Subwoofer arrays are able to control and aim the sound by introducing directivity in the intended direction. The "Cardioid" and "End-Fire" configurations are two of the most common setups.

The first one uses typically three subwoofers aligned or stacked: two of them facing front or towards the audience, and the other facing rear or towards the stage.

End-Fire setups use two or more subwoofers placed behind each other with a fixed spacing and - in some cases - different polarities. They provide very good rear-cancellation and are easy to set up, but require more space to implement.

In both cases, a specific delay must be applied in order to achieve wave summation in the front, and cancellation in the rear.



In cardioid setups, select "Normal" mode for subwoofers facing front, and "Cardioid" mode for the one facing rear.

For end-fire configuration, select "End-Fire" mode for the first subwoofer and observe in the screen, the distance calculated. Place the second subwoofer behind keeping that distance between the grilles, and select "Normal" mode for the second subwoofer.

DSP SETTINGS > PHASE INVERSION

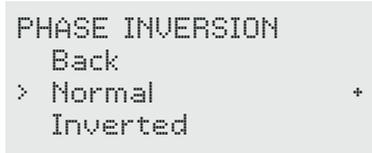


Figure 28. Equalizer menu.

The Phase Inversion submenu switches the phase of the signal. In other words, it allows to invert or „reverse“ its polarity. Two settings are available:

- Normal: In phase setting.
- Inverted: The phase/polarity is inverted by introducing a 180° phase shift to all frequencies. Only for Parametric filters.

DSP SETTINGS > EQUALIZERS (EQ1 TO EQ5)

For system tuning purposes, five user-adjustable equalizers are available with the following parameters:

- **Bypass:** On (the EQ is bypassed) or Off (the EQ is active).
- **Type:** Low Shelf, Parametric, Allpass 1st, Allpass 2nd and High Shelf.
- **Gain:** -12 to 12 dB, with 0.1 dB steps. For all-pass filters it is always 0.0 dB.
- **Freq:** 20 Hz to 1 kHz, 1 Hz steps. Sets the centre frequency for Parametric and both all-pass filters. Conversely, sets the edge frequency for Shelf filters.
- **Slope:** 0.5 to 2, with steps of 0.1. Only for Shelf filters.
- **Quality:** 0.01 to 16 with steps of 0.01, where higher Quality Factor values mean narrower bandwidth. Only for Parametric and 2nd-order all-pass filters.

An example of a parametric equalizer with EQ1 in parametric mode is shown below.

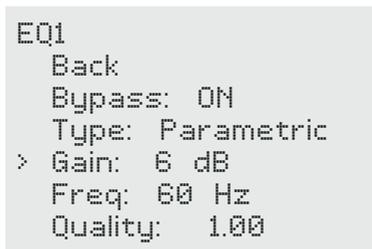


Figure 29. Equalizer menu.

To modify equalizer parameters, follow the same steps detailed in the Highpass Filter section. Notice that the equalizers can be individually bypassed, their default setting.

DSP SETTINGS > BYPASS USER EQ

In order to compare the response of the subwoofer with and without the applied EQ, this section allows to bypass all user EQs with a single click.

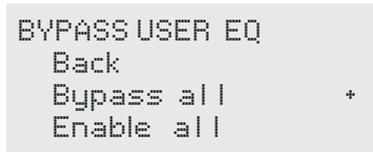


Figure 30. Bypass User EQ menu.

Remember that user EQs are bypassed by default and can be activated individually.

DSP SETTINGS > DELAY

The Delay section allows the user to apply a delay to the signal, visualize it in different units and determine the total delay. This screen has the following three sections:

- User added delay: This is the delay defined or added by the user depending on the specific needs of his application.
- Preset delay: Depending on the preset enabled or selected, the system may include an additional delay. This delay is added by the current preset and for some factory presets, it can be also edited.
- Total DSP delay: Total sum of "User", "Preset" and internal DSP latency. It is not an editable parameter and is only shown for information and reference.

The "User" and "Preset" delays can be defined in three different units, corresponding to the editable parameters in the first two delay sections:

- Samples: for 48 kHz sampling rate.
- Time: Delay in milliseconds (ms), referred to the 48 kHz sampling rate.
- Distance: Delay in meters (m), referred to $c = 343$ m/s.

When changing a parameter in any section, all the other parameters are updated with the corresponding value in their units.

```

DELAY
  Back
  User addad delay:
> Bypass: OFF
   Samples: 0
   Time: 0.00 ms
   Distance: 0.00 m
  Preset delay:
   Bypass: OFF
   Samples: 10
   Time: 0.21 ms
   Distance: 0.07 m
  Total DSP delay:
   Samples: 63
   Time: 0.31 ms
   Distance: 0.45 m

```

Figure 31. Delay menu.

Depending on the factory preset selected, the "User" delay available for the **S 112i PRO** subwoofer may range from 1,232 to 1,380 samples. These values correspond respectively to 25.7 and 28.8 ms or approximately, 8.8 to 9.9 meters of propagation delay.



In the **IA 202D** and **IA 402D** amplifiers, a delay of up to 700 samples can be applied to each channel. In addition, it can be configured through the LCD that one channel uses all 1,400 samples.

DSP SETTINGS > RESET USER PARAMS

The Reset User Params submenu resets user DSP settings such as:

- High-pass filter
- Low-pass filter
- Equalizers
- Delay
- Phase Inversion
- Bypass user EQ

The Output Gain, Input Sensitivity and the Preset selected are not affected by this function.

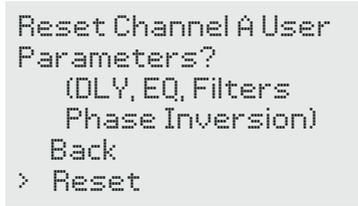


Figure 32. Reset user parameters menu.

By turning the controller, the options "**Reset**" or "**Back**" will appear. By choosing the first one, the message "**Reset Done**" is shortly displayed on the screen. To return to the DSP Settings, choose "**Back**".

DSP SETTINGS > INPUT SENSITIVITY

For more flexibility and variability in installation applications, the input sensitivity can be adjusted by the user both for the **S 112i PRO** and **IA** amplifiers, depending on the signal source used. The screen shows the different sensitivities available in dBu or dBV, and their corresponding values in volts.

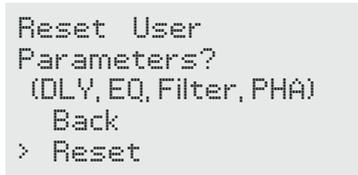


Figure 33. Input sensitivity menu.

SYSTEM SETTINGS

The System Settings is the second submenu of the main MENU. It allows to set different parameters of the amplifier and access various system functions.

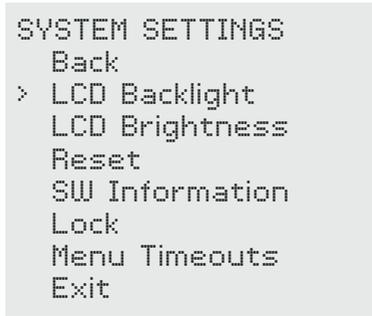


Figure 34. System Settings menu.

SYSTEM SETTINGS > LCD BACKLIGHT

The LCD Backlight submenu configures the LCD screen's backlight settings. There are two general choices:

- Auto Off: Which will turn-off the backlight after 6 seconds by default. To set a different value:
 1. Set the cursor ">" on this option and click the encoder.
 2. Turn the controller to choose a value between 1 and 60 seconds. Pressing the button will fix this value and return the screen to the LCD Backlight submenu.
- Always On: Which sets the backlight to be always on.



Figure 35. LCD Backlight menu.

SYSTEM SETTINGS > LCD BRIGHTNESS

The LCD Brightness screen enables to set the brightness of the LCD screen. To fix a value, follow the same procedure stated for the LCD Backlight submenu.



Figure 36. . LCD Brightness menu.

SYSTEM SETTINGS > RESET

The Reset function clears the current selections and sets the factory-default ones for the following settings:

- LCD Backlight settings
- LCD Brightness
- Lock settings

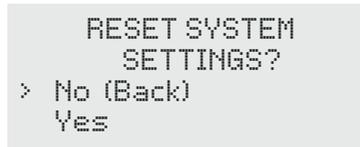


Figure 37. Reset menu.

SYSTEM SETTINGS > SW INFORMATION

This screen shows the most relevant information about the amplifier's firmware, which can be important not only for users but also for service technicians.

- MCU: Software version of the Micro Controller Unit.
- FW: Firmware version.
- Model: model of your SE AUDIOTECHNIK® product.

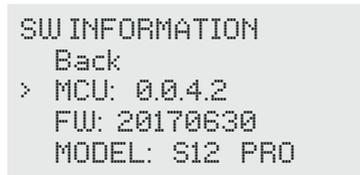


Figure 38. SW Information menu.

SYSTEM SETTINGS > LOCK

In the Lock menu, the user can set one of the following options for the screen locking function:

- Automatic Lock: This option will lock automatically the amplifier's screen after 10 seconds by default. To set a different value, between 2 and 60 seconds, follow the same procedure described for the LCD Backlight submenu.
- Lock Now: This option will lock the screen instantly. The selected settings for Automatic Lock or No Lock, are kept.
- No Lock: This is the option set by default. It will disable the automatic lock function and make the screen always accessible.

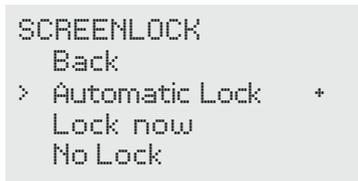


Figure 39. Screen Lock menu.

When the screen is locked, the letter "L" is shown in the top-right part of the Overview screen. To unlock the amplifier, press the controller for 3 seconds until the message "**Screen Unlocked!**" is shortly displayed on the screen. This message details the active preset as well.

SYSTEM SETTINGS > MENU TIMEOUTS

In the Menu Timeouts, the preferred behavior of the main MENU can be configured according with the options:

- On, jumping out: After 5 minutes of inactivity, the display returns to the Overview screen.
- Off, stay in menu: the display stays in the current menu indefinitely. This option is selected by default.

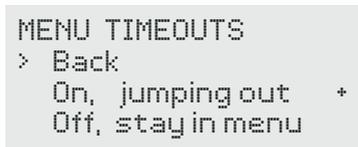


Figure 40. Menu Timeouts menu.

FACTORY PRESETS

The list of available presets for the S 112i PRO subwoofer is shown below:

| Preset Name | Description |
|-----------------|---|
| IC 32 | When used together with IC 32 columns. |
| IC 34 | When used together with IC 34 columns. |
| IC 38X | When used together with IC 38X columns. |
| L 35 | When used together with L 35 passive line array units. |
| GENEERL. | Preset for general purposes. |

The presets included in the **IA 202D** and **IA 402D** amplifiers are:

| Preset Name | Description |
|---------------|---|
| IC 32 | Preset when powering IC 32 columns. |
| IC 34 | Preset when powering IC 34 columns. |
| IC 38X | Preset when powering IC 38X columns. |
| FLAT | Preset for general purposes. |

Finally, **IA 402D** amplifiers include a wide range of factory presets to be used with **L 35** units, an ultra-compact passive line array system from SE AUDIOTECHNIK®. More information about these can be found in the dedicated **L 35** user manual, available in our website www.se-audiotechnik.de.



Factory presets provide natural sound and even frequency response between products in the close distance.

If the preset library on your product differs from the list shown above, please check your firmware version in the System Settings > SW Information menu and contact your dealer to update it.

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APPLICATIONS

The I-Line products have been designed to match the needs of a wide-range of installation applications. The column systems are being driven with IA system amplifiers and S 112i PRO subwoofers provide LF extension for full bandwidth. Depending on the application, the system can be used with or without the subwoofer.



Due to air-absorption, a HF emphasis might be necessary for longer throw applications. Typically, a high-shelf equalizer at 4-5 kHz and 3-6 dB boost can provide good results.



When mounted to the wall, low-frequencies are being boosted due to the coupling effect. This may alter the LF response of the system, depending on the materials, proximity and number of nearby surfaces. Mounting the speaker in the corner, close to the ceiling or in the middle of a wall will provide various amounts of LF boost. To balance it, a low-shelf equalizer can be used.

Following, some of the most common setups are shown - but depending on your application, many different configurations can be implemented.

It is important to keep in mind that the amount of drivers in the passive columns, is duplicated from one model to the next. Level-wise, this allows to state the following SPL equivalences:

$$1x \text{ IC } 38X = 2x \text{ IC } 34 = 4x \text{ IC } 32$$

In addition and again in terms of the SPL level produced, each of these quantities will match one **S 112i PRO** subwoofer.

Of course, all this is valid only when the corresponding presets are chosen, both in the **IA** I-Line amplifiers, and in the **S 112i PRO** subwoofer.

MEETING ROOM

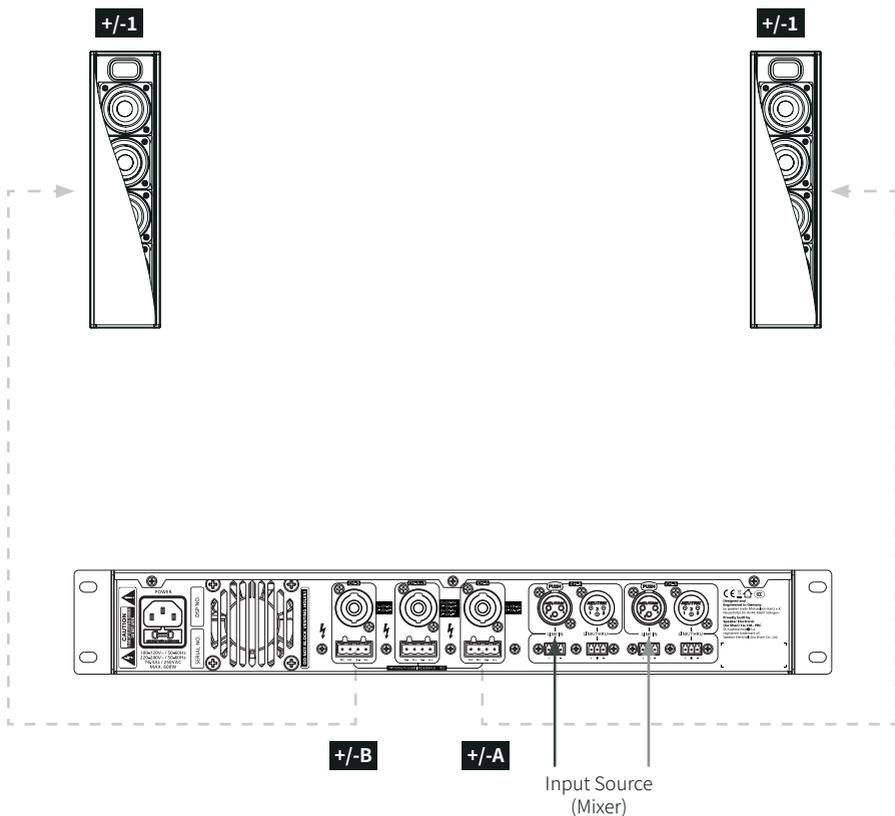


Figure 41. Schematic of Meeting Room Example.

Features

- Wide bandwidth with minimum components
- Great intelligibility for speech reproduction
- Easy and safe to install and setup

Events

- Meetings
- Study rooms
- Projections for reduced audiences

Components

- 2 x **IC 34** Column speakers
- 2 x **SMB** Smart Mounting Bracket
- 1 x **IA 202D** System Amplifier

Presets / Adjustments

- **IA 202D** system amplifier:
- IC 34: Default preset

CONFERENCE ROOM

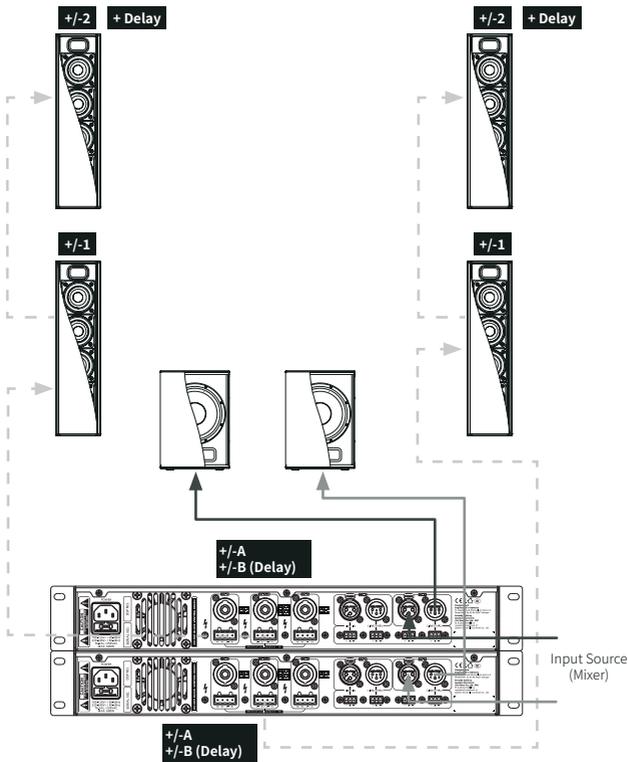


Figure 42. Schematic of Conference Room Example.

Features

- Wider coverage with delayed speakers
- Full bandwidth for music and speech
- Easy and safe to install and setup

Events

- Conference rooms
- Mini multipurpose halls
- Small cafés and bars

Components

- 4 x **IC 34** column speakers
- 4 x **SMB** mounting brackets
- 2 x **S 112i PRO** installation subwoofers
- 2 x **IA 202D** system amplifiers

Presets / Adjustments

S 112i PRO installation Subwoofers:

- IC 34: default preset

IA 202D system amplifiers:

- IC 34: default preset
- Second line of IC 34 with delay adjusted for the distance

BAR OR RESTAURANT

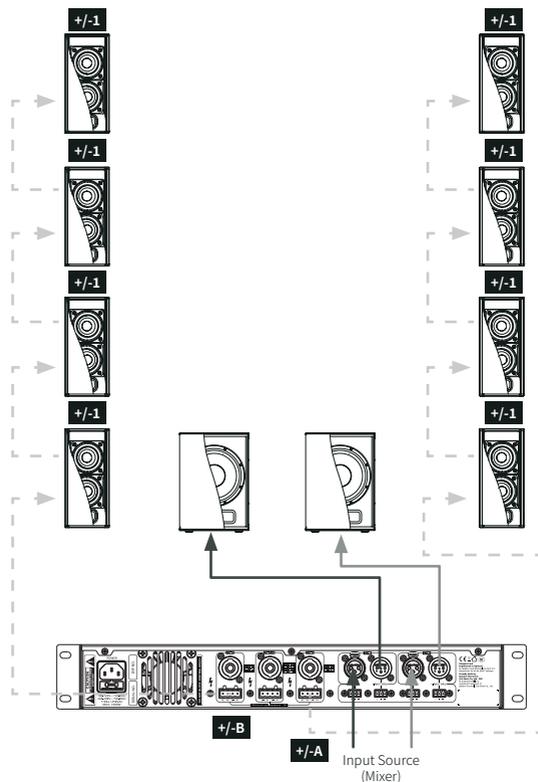


Figure 43. Schematic of Bar or Restaurant Example.

Features

- Full bandwidth for music and speech
- Wider coverage with multiple IC units
- Easy and safe to install and setup

Events

- Bars, restaurants and cafés
- Small clubs
- Exhibition halls

Components

- 8 x **IC 32** column speakers
- 8 x **SMB** mounting brackets
- 2 x **S 112i PRO** installation subwoofers
- 1 x **IA 402D** system amplifier

Presets / Adjustments

S 112i PRO installation Subwoofers:

- IC 32: default preset

IA 202D system amplifier:

- IC 32: default preset

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SPECIFICATIONS

IC 32 / IC 34 / IC 38X

TECHNICAL SPECIFICATIONS

| PARAMETER | IC 32 | IC 34 | IC 38X |
|---------------------------------------|---|--|--|
| ACOUSTICAL | | | |
| Frequency range (-3 dB) ¹ | 150 Hz - 17 kHz | 150 Hz - 17kHz | 240 Hz - 18 kHz |
| Frequency range (-10 dB) ¹ | 100 Hz - 20 kHz | 100 Hz - 20kHz | 110 Hz - 20 kHz |
| Coverage (-6dB) [H x V] | 120° x 60° | 120° x 40° | 120° x 30° |
| Nominal impedance | 16 Ω | 8 Ω | 4 Ω |
| Sensitivity ¹ | 91 dB | 94 dB | 96 dB |
| Peak power: | 400 W | 800 W | 1600 W |
| Continuous power ² | 100 W | 200 W | 400 W |
| Maximum Peak SPL ³ | 123 dB | 129 dB | 134 dB |
| System type | 1-way passive system | 1-way passive system | 2-way passive system |
| Crossover frequency | - | - | 3 kHz |
| Transducers | 2 x 3.5" neodymium drivers | 4 x 3.5" neodymium drivers | LMF: 8 x 3.5" neodymium drivers HF: 2 x 0.5" exit compression drivers coaxially mounted |
| Connectors | Input / Link: Phoenix contact MSTB 4-pins | Input / Link: Phoenix contact MSTB 4-pins | Input signal: Phoenix contact MSTB 4-pins |
| Enclosure type | Vented box | Vented box | Closed box |
| Controls | 2-positions input selection switch | 2-positions input selection switch | 2-positions input selection switch |
| Wiring | Pins 1+/1- or 2+/2- (switchable) | Pins 1+/1- or 2+/2- (switchable) | Pins 1+/1- or 2+/2- (switchable) |
| MECHANICAL | | | |
| Product Dimensions [H x W x D] | 247 x 116 x 150 mm | 462 x 116 x 150 mm | 924 x 116 x 150mm |
| Net Weight | 2 kg | 4 kg | 8.3 kg |
| Packaging dimensions [H x W x D] | 405 x 268 x 375 mm | 620 x 268 x 375 mm | 975 x 233 x 255 mm |
| Total Weight | 6.35 kg | 10.1 kg | 9.75 kg |
| Cabinet | Die-cast aluminium housing, plastic | Die-cast aluminium housing, plastic | Die-cast aluminium housing, plastic |
| Cabinet finishing | Black or white polyurea coating | Black or white polyurea coating | Black or white polyurea coating |
| Grille | Powder coated perforated steel | Powder coated perforated steel | Powder coated perforated steel |
| Hardware | - | - | - |
| Mounting | Centered mounting point for SMB bracket. Vertical and horizontal orientation. Safety wire fixing point. | Center and bottom mounting points for SMB bracket. Safety wire fixing point. | Center and bottom mounting points for SMB bracket. Safety wire fixing point. |
| Splay angles | - | - | - |
| ACCESSORIES | | | |
| Smart Mounting Bracket | SMB | SMB | SMBX |
| Ceiling Mounting Bracket | - | - | IC38X CMB |

¹ Whole space, 1W / 1m, on axis.

² According to EIA-426B Standard (based on RMS Voltage).

³ Max peak SPL = Sensitivity + 10log₁₀(Continuous Power) + 12 dB Crest factor.

MECHANICAL DRAWINGS

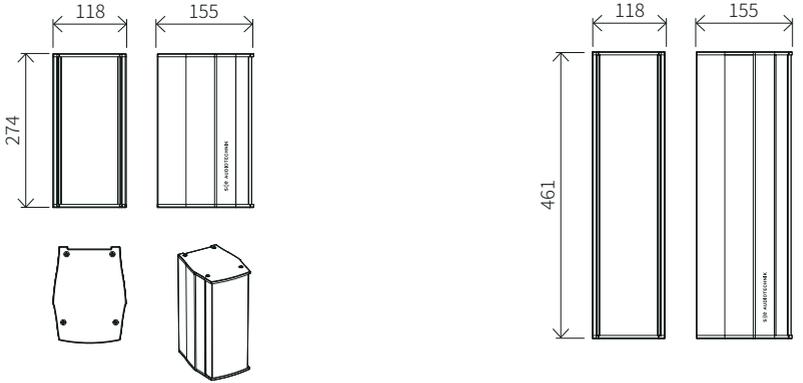


Figure 44. IC 32 (left) and IC 34 (right) views and dimensions. Annotations given in millimetres

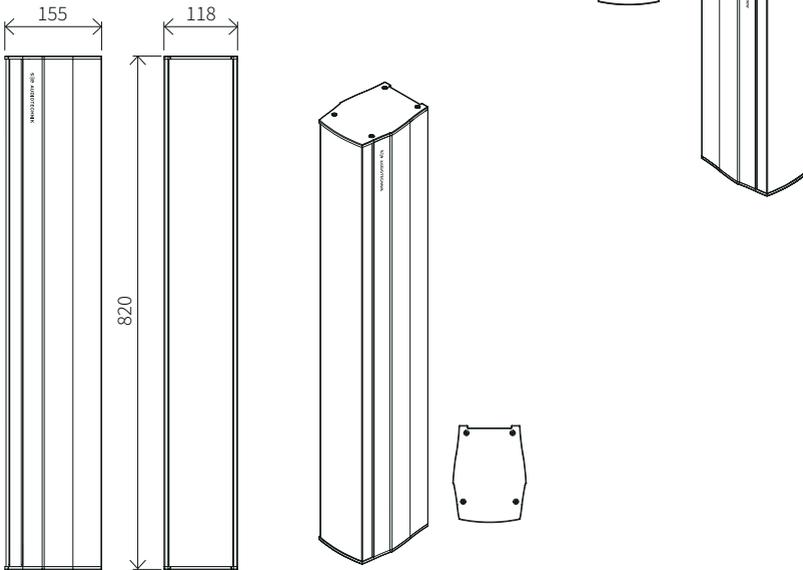


Figure 45. IC 38X views and dimensions. Annotations given in millimetres.

S 112i PRO SUBWOOFER

TECHNICAL SPECIFICATIONS

| PARAMETER | S 112i PRO |
|---|---|
| ACOUSTICAL | |
| Frequency range (-3 dB) ^{1,3} | 42 Hz-99 Hz ¹ , 42 Hz-250 Hz ² |
| Frequency range (-10 dB) ^{1,3} | 36 Hz-145 Hz ¹ , 36 Hz-300 Hz ² |
| Coverage (-6dB) [H x V] | Omnidirectional |
| Maximum Peak SPL ² | 132 dB |
| System type | 1-way active system |
| Crossover frequency | - |
| Transducers | 1 x 12" driver |
| Enclosure type | Vented box |
| AMPLIFICATION | |
| Type | Single channel, class-D with SMPS |
| Output power | 800 W |
| Protection | Short circuit, overheating, overcurrent |
| Connectors | Input signal: balanced XLR 3-pin female, Link output: balanced XLR 3-pin male, Power input: powerCON® 20A, Power link output: powerCON® 20A |
| Wiring | Pin 1: Ground, Pin 2: Positive, Pin 3: Negative |
| Input sensitivity | 0 dBu |
| DSP | 48 kHz/24-bit with extended dynamics Processing latency: 1.1 ms |
| Processing | Factory and user presets, directivity control, EQ, delay, phase inversion, input sensitivity |
| User controls | Power: ON/OFF switch, DSP: display with digital encoder |
| MECHANICAL | |
| Product Dimensions [H x W x D] | 507 x 355 x 495 mm |
| Net weight | 23 kg |
| Packaging dimensions [H x W x D] | 593 x 435 x 580 mm |
| Total weight | 25.2 kg |
| Cabinet | 15 mm plywood |
| Cabinet finishing | Black or white polyurea coating |
| Grille | Powder coated perforated steel |
| Hardware | 4 rubber feet, 2x M10 pole thread on each side and 4 on top |
| Rigging | - |
| Splay angles | - |

¹ Measured with dedicated preset.

² Measured with 12 dB Crest factor Pink Noise, half space.

³ Measured with GENERAL preset

MECHANICAL DRAWINGS

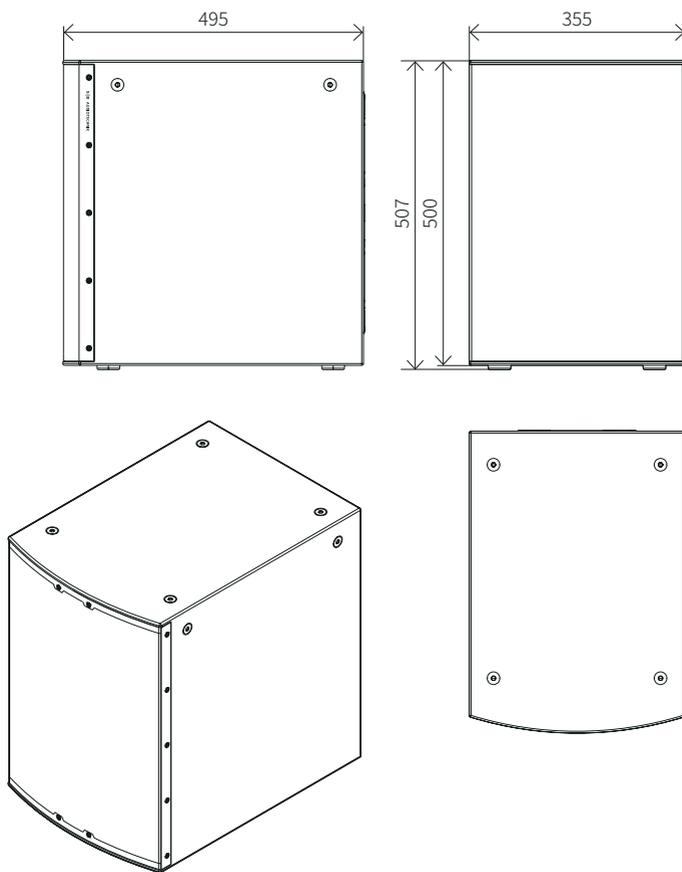


Figure 46. S 112i PRO installation subwoofer views and dimensions. Annotations given in millimetres.

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IA 202D / IA 402D

TECHNICAL SPECIFICATIONS

| PARAMETER | IA 202D | IA 402D |
|---|---|---|
| ELECTRICAL | | |
| Type | Class-D, Switched Mode Power Supply | Class-D, Switched Mode Power Supply |
| Channels | Two | Two |
| Rated Output Power (1kHz, THD: < 1%) ¹ | - 2 x 250 W @ 8 Ω - 2 x 150 W @ 16 Ω | - 2 x 400 W @ 4 Ω - 2 x 200 W @ 8 Ω - 2 x 100 W @ 16 Ω |
| Minimum load impedance | 8 Ω | 4 Ω |
| Damping factor | > 200 | > 200 |
| Input impedance: | 10 kΩ balanced/unbalanced | 10 kΩ balanced/unbalanced |
| Maximum input level | +20 dBu | +20 dBu |
| SNR Line In to Spk out | 90 dB | 90 dB |
| Noise Floor | -52 dBu (A-weighted) @4 dBu sensitivity, 0 dB master attenuation | -52 dBu (A-weighted) @4 dBu sensitivity, 0 dB master attenuation |
| Channel crosstalk | 64 dB | 62 dB |
| THD+N | < 0.1% @1 W, 1 KHz; <0.3% @ 1 dB below rated power | < 0.1% @ 1 W, 1 KHz; <0.3% @ 1 dB below rated power |
| DSP | 48 kHz, 24-bit DSP processor Processing latency: 1.1 ms | 48 kHz, 24-bit DSP processor Processing latency: 1.1 ms |
| Protection | Short circuit, overheating, overcurrent | Short circuit, overheating, overcurrent |
| Cooling | - Sensor controlled fan - Front-to-back air flow | - Sensor controlled fan - Front-to-back air flow |
| Power efficiency | Up to 76% | Up to 83% |
| Power consumption | - Idle: 29 W - Full power: 600 W | - Idle: 30 W - Full power: 1000 W |
| Operating voltage range | - 100 – 240 VAC 50/60 Hz | 100 – 240 VAC 50/60 Hz |
| HARDWARE | | |
| Screen | LCD, 4x20 symbol alpha-numeric | LCD, 4x20 symbol alpha-numeric |
| User controls | Control encoder with push-button, Power On | Control encoder with push-button, Power On |
| Input signal connectors | - XLR-3 female line-level inputs - XLR-3 male link outputs - Phoenix MSTP 3-pin inputs and link outputs | - XLR-3 female line-level inputs - XLR-3 male link outputs - Phoenix MSTP 3-pin inputs and link outputs |
| Output signal connectors | - Neutrik SpeakON® NL4 outputs - Phoenix Contact MSTB 4-pin outputs | - Neutrik SpeakON® NL4 outputs - Phoenix Contact MSTB 4-pin outputs |
| Power connector | IEC-60320 C14 | IEC-60320 C14 |
| SOFTWARE | | |
| DSP Features | Levels, Parametric EQ, Delay, Phase, Input Sensitivity, RMS Limiter, Peak Limiter, IIR/FIR Filtering | Levels, Parametric EQ, Delay, Phase, Input Sensitivity, RMS Limiter, Peak Limiter, IIR/FIR Filtering |
| Configuration handling | - Loading of factory presets - Saving and recalling of user presets | - Loading of factory presets - Saving and recalling of user presets |
| Monitoring | Temperatures | Temperatures |
| MECHANICAL | | |
| Product Dimensions [H x W x D] | 66 x 483 x 256 mm / 1.5 RU | 66 x 483 x 256 mm / 1.5 RU |
| Net weight | 4.7 kg | 5.1 kg |
| Packaging dimensions [H x W x D] | 143 x 588 x 380 mm | 143 x 588 x 380 mm |
| Total weight | 7.25 kg | 7.65 kg |
| Cabinet | Aluminium front panel, steel body | Aluminium front panel, steel body |
| Rack mounting | Four frontal 6 mm holes at both sides | Four frontal 6 mm holes at both sides |
| Operating temperature range | [0°C ; 40°C] | [0°C ; 40°C] |
| Storage temperature range | [-40°C ; 70°C] | [-40°C ; 70°C] |

¹ According to IHF-A-202

MECHANICAL DRAWINGS

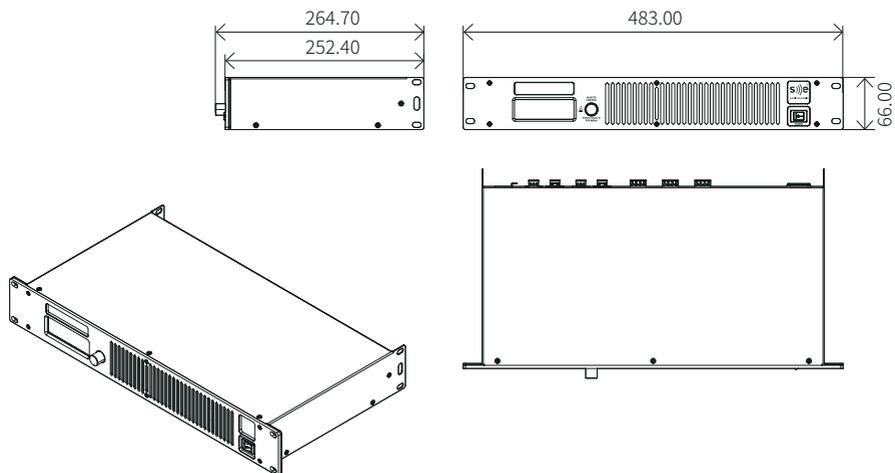


Figure 47. IA 202D / IA 402D system amplifiers views and dimensions. Annotations given in millimetres.

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SMART-MOUNTING BRACKETS: SMB AND SMBX

MECHANICAL DRAWINGS

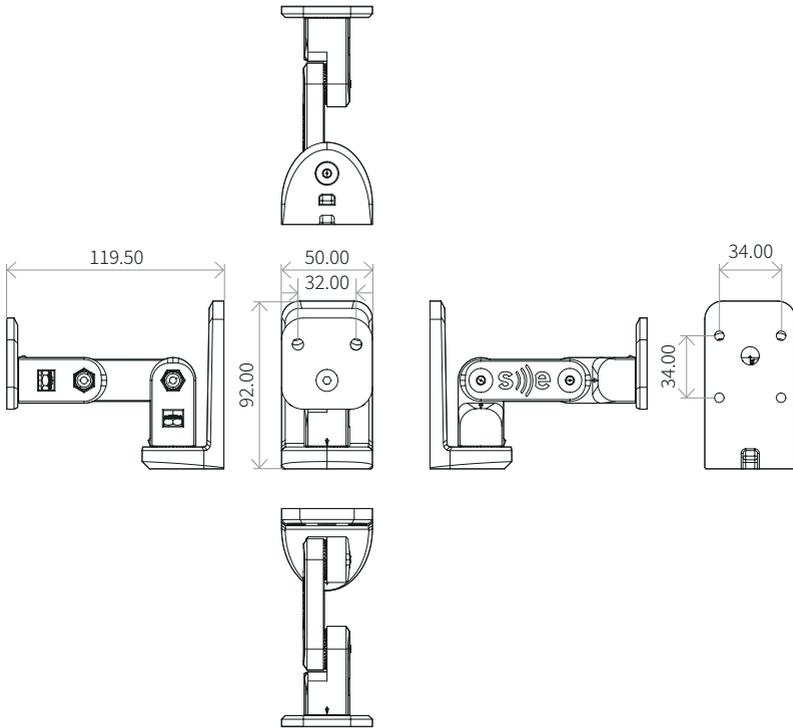


Figure 48. SMB views and dimensions. Annotations given in millimetres.

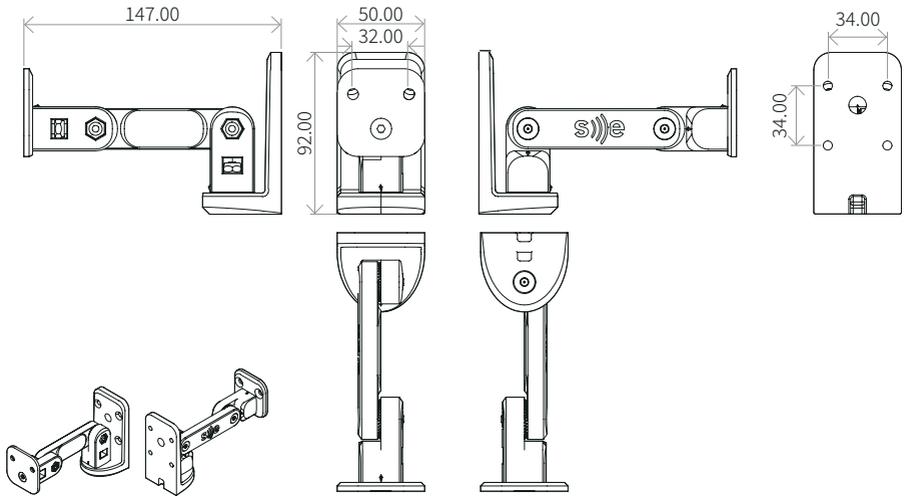


Figure 49. SMBX views and dimensions. Annotations given in millimetres.

MANUFACTURER'S DECLARATIONS

LIMITED WARRANTY

This limited warranty applies to SE AUDIOTECHNIK® branded products.

The statutory warranty rights towards the seller are not affected by this guarantee. In fact, it justifies additional independent warranty claims towards SE Audiotechnik.

SE AUDIOTECHNIK® warrants that the SE AUDIOTECHNIK® product purchased from SE AUDIOTECHNIK® or from an SE AUDIOTECHNIK® authorized reseller, is free from defects in materials or workmanship under normal use, for a period of three years from the date of purchase.

The limited warranty period starts on the date of purchase. To receive warranty services, proof of the purchase must be provided. The dated sales or delivery receipt, stating the date of purchase, is the proof of purchase.

Should products of the brands named above be in need of repair within the limited warranty period, you are entitled to warranty services according to the terms and conditions stated in this document.

This limited warranty extends only to the original purchaser of this SE AUDIOTECHNIK® branded product and is not transferable to anyone who obtains ownership of the SE AUDIOTECHNIK® product from the original purchaser. During the limited warranty period, SE AUDIOTECHNIK® will repair or replace the defective component parts or the product. All component parts or hardware products removed under this limited warranty become the property of SE AUDIOTECHNIK®.

In the unlikely event that the SE AUDIOTECHNIK® product has a recurring failure, SE AUDIOTECHNIK®, at its discretion, may elect to provide a replacement unit of SE AUDIOTECHNIK® choice that is at least equivalent to your SE AUDIOTECHNIK® branded product in hardware performance.

SE AUDIOTECHNIK® does not warrant that the operation of this product will be uninterrupted or error-free.

SE AUDIOTECHNIK® is not responsible for damage that occurs as a result of your failure to follow the instructions included with the SE AUDIOTECHNIK® branded product.

This limited warranty does not apply:

- to wear parts
- to any product from which the serial number has been removed or that has been damaged or rendered defective as the result of an accident
- in case of misuse, abuse, or other external causes
- by operation outside the usage parameters stated in the user's documentation
- by use of spare parts not manufactured or sold by SE AUDIOTECHNIK®
- by modification or service by anyone other than SE AUDIOTECHNIK®

These terms and conditions constitute the complete and exclusive warranty agreement between the purchaser and SE AUDIOTECHNIK® regarding the SE Audiotechnik branded product purchased.

LIMITATION OF LIABILITY

If the SE AUDIOTECHNIK® branded hardware product fails to work as warranted above, the sole and exclusive remedy shall be repair or replacement. SE AUDIOTECHNIK®'s maximum liability under this limited warranty is explicitly limited to the lesser of the price it has been paid for the product, or the cost of repair or replacement of any hardware components that malfunction in conditions of normal use.

SE AUDIOTECHNIK® is not liable for any damages caused by the product or the failure of the product, including any lost profits or savings or special, incidental or consequential damages. SE AUDIOTECHNIK® is not liable for any claim made by a third party or made by the purchaser for a third party.

This limitation of liability applies whether damages are sought, or claims are made, under this limited warranty or as a tort claim (including negligence and strict product liability), a contract claim, or any other claim. This limitation of liability cannot be waived or amended by any person. This limitation of liability will be effective even if the purchaser

has advised SE AUDIOTECHNIK®, or an authorized representative of SE AUDIOTECHNIK®, of the possibility of any such damages.

This limitation of liability however, will not apply to claims for personal injury.

This limited warranty gives the purchaser specific legal rights. There may also be other rights that may vary from state to state or from country to country. The purchaser is advised to consult applicable state or country laws for a full determination of his rights.

REQUESTING WARRANTY SERVICE

To request warranty service for the product, the purchaser must contact SE AUDIOTECHNIK® or the SE AUDIOTECHNIK® authorized reseller from which the product was purchased.

EC DECLARATION OF CONFORMITY

This device meets the essential requirements and further relevant specifications of the Directives of the European Union. The detailed declaration, and the list of these Directives and the Harmonized Standards, is available in our website www.se-audiotechnik.de.

CORRECT DISPOSAL OF THIS PRODUCT (ELECTRICAL WASTE)

(Applicable in the European Union and other European countries with separate collection systems)

This marking, shown on the product or its literature, indicates that it should not be disposed with other household wastes at the end of its working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this from other types of waste and recycle it responsibly to promote the sustainable reuse of material resources.

Household users should contact either the retailer where they purchased this product, or their local government office, for details on where and how they can recycle this item in an environmentally friendly manner.

Business users should contact their supplier and check the terms and conditions of the purchase contract. This product should not be mixed with other wastes for disposal.

WEEE-DECLARATION

This SE AUDIOTECHNIK® product was developed and manufactured with high quality materials and components which can be recycled and/or reused. This symbol indicates that electrical and electronic equipment must be disposed separately from normal waste at the end of its operational lifetime.

Please dispose this product by bringing it to your local collection point or recycling centre for such equipment. This will help to protect the environment in which we all live.

S)))e AUDIOTECHNIK

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Designed in Germany

Version 2021/12

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