SpeechLine

SL Loudspeaker 52 A

Instruction Manual

SENNHEISER

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Important safety instructions

1. Read this instruction manual.
2. Keep this instruction manual. Always include this instruction manual when passing the apparatus on to third parties.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Only clean the apparatus when it is not connected to the mains power supply. Clean only with a dry cloth.
7. Always ensure a free air flow around the cooling fins on the rear of the product. 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 polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are 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 it exits from the apparatus.
11. Only use attachments/accessories specified by Sennheiser.

12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus 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, when the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. To completely disconnect this apparatus from the AC mains, disconnect the power supply cord plug from the AC receptacle.

16. WARNING: To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.
17. Do not expose this equipment to dripping or splashing and ensure that no objects filled with liquids, such as vases, are placed on the equipment.
18. The mains plug of the power supply cord shall remain readily accessible.
19. CAUTION: These servicing instructions are for use by qualified service personnel only. To reduce the risk of electric shock, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.

Hazard warnings on the rear of the product

The label shown on the left is attached to the rear of the product. The symbols on this label have the following meaning:

Presence of uninsulated dangerous voltage within the product's enclosure that may be of sufficient magnitude to constitute risk of electric shock.

Never open the product – there is a risk of electric shock. There are no user serviceable parts inside. Refer servicing to an authorized Sennheiser service partner.

Read and follow the safety and operating instructions contained in the instruction manual.

This equipment is a Class II or double insulated electrical appliance.

CAUTION: To prevent electric shock hazard, do not connect to mains power supply while grille is removed.

Risk of fire due to overloading

Do not overload wall outlets and extension cables as this may result in fire and electric shock.

Danger of hearing damage due to high volumes

This product is used for commercial purposes. Commercial use is subject to the rules and regulations of the trade association responsible. Sennheiser, as the manufacturer, is therefore obliged to expressly point out possible health risks arising from use.

The product can produce sound pressure exceeding 85 dB(A). 85 dB(A) is the sound pressure corresponding to the maximum permissible volume which is by law (in some countries) allowed to affect your hearing for the duration of a working day. It is used as a basis according to the specifications of industrial medicine. Higher volumes or longer durations can damage your hearing. At higher volumes, the duration must be shortened in order to prevent hearing damage.

The following are sure signs that you have been subjected to excessive noise for too long a time:

- You can hear ringing or whistling sounds in your ears.
- You have the impression (even for a short time only) that you can no longer hear high notes.

Inform all operators about these facts and, if necessary, ask them to set the volume to a medium level.

Intended use

Intended use of the product includes

- using the product for professional purposes,
- having read and understood this instruction manual, especially the chapter ''Important safety instructions'',
- using the product within the operating conditions and limitations described in this instruction manual.

''Improper use'' means using the product other than as described in this instruction manual, or under operating conditions which differ from those described herein.

Package contents

1 active loudspeaker SL Loudspeaker 52 A

1 SL SpeakerMount 100 wall mounting system including:
- 1 wall bracket
- 1 loudspeaker bracket
- 2 spacers
- 1 set of safety wire, screws and anchors

1 quick guide
1 safety guide

A list of accessories including mains cables in different lengths can be found on the product page of the SL Loudspeaker 52 A at www.sennheiser.com.

For information on suppliers, contact your local Sennheiser partner:

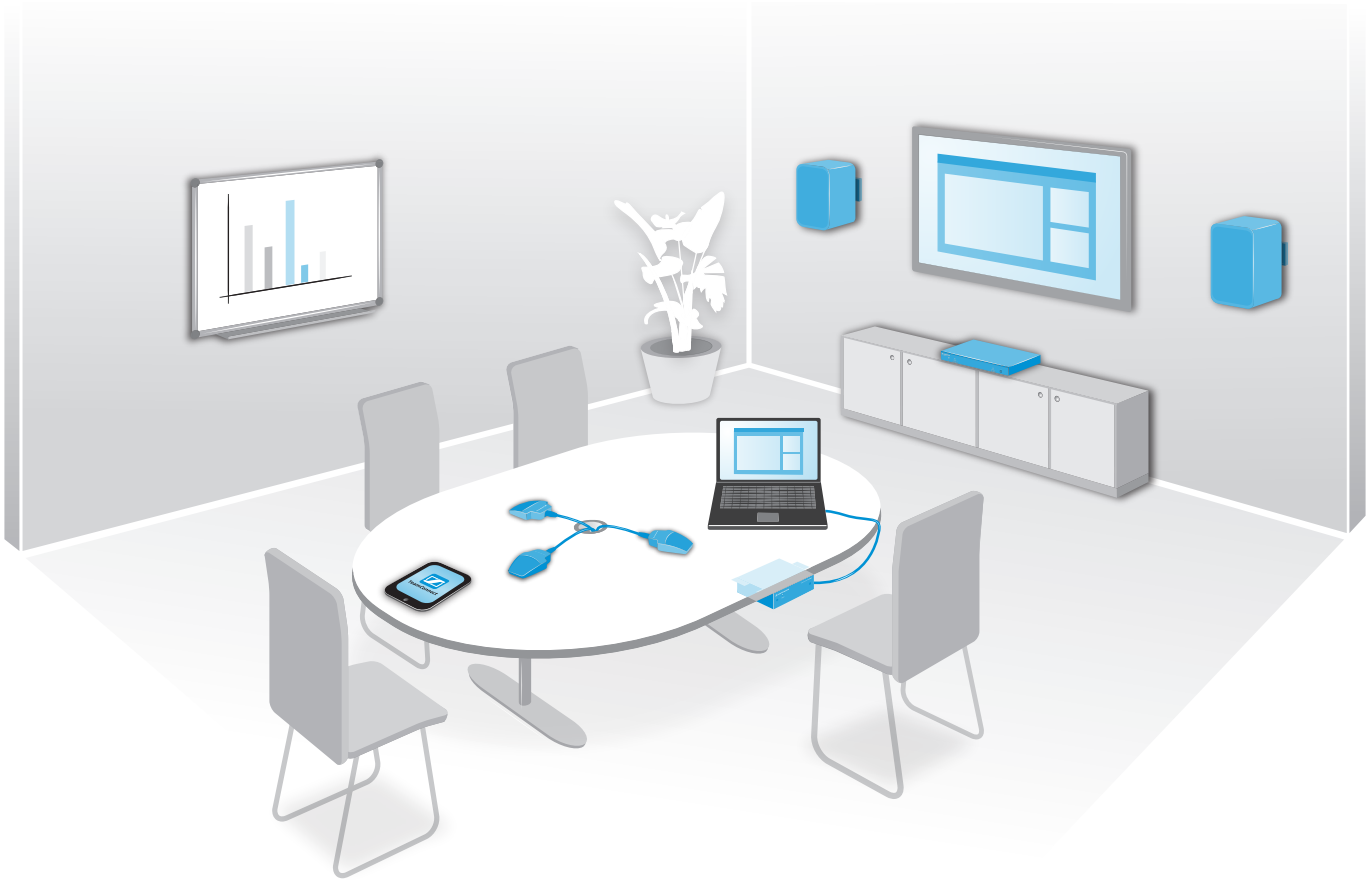
www.sennheiser.com > ''Service & Support''

The Sennheiser active loudspeaker SL Loudspeaker 52 A

The Sennheiser Group, with its headquarters in Germany, is one of the world's leading manufacturers of microphones, headphones and wireless transmission systems. We are shaping today the audio world of tomorrow – that is the ambition that we and our company live by from day to day. This vision statement describes what we are hoping to achieve together. The foundation for this is our history, our culture of innovation and our passion for excellence.

The SL Loudspeaker 52 A has been optimized for meeting rooms. The active loudspeaker transmits the spoken words of all participants in the web and telephone conference as naturally as possible. Its unobtrusive design underlines the high quality approach.

Due to the optimization for speech intelligibility all TeamConnect components such as microphones and loudspeakers match perfectly.



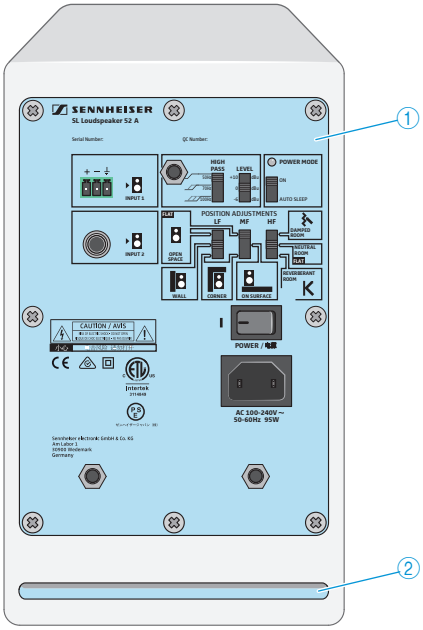
This illustration shows the complete Sennheiser TeamConnect system with all components in a typical meeting room situation.

For more information on the Sennheiser TeamConnect solution refer to the product page at www.sennheiser.com.

Product overview

Front

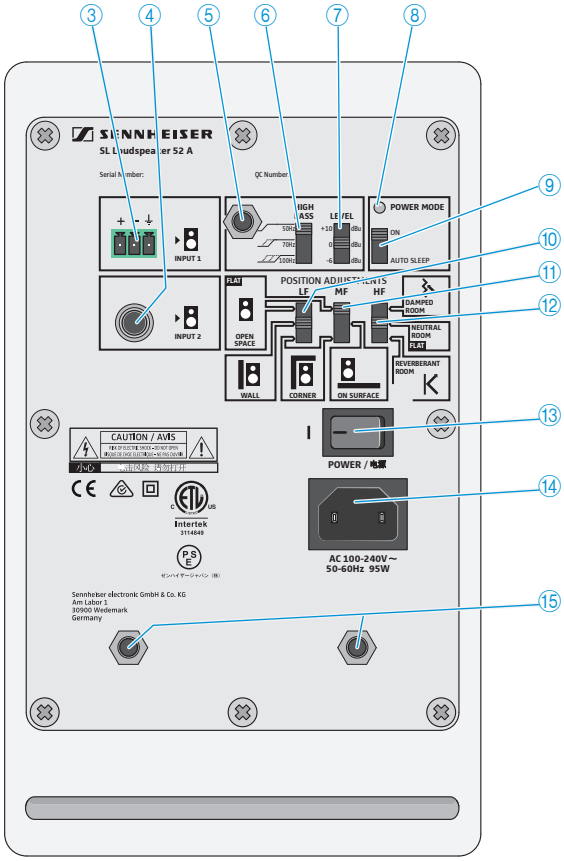
Back



① Operating elements

② Bass reflex port

Operating elements



③ INPUT 1 input (terminal socket)

④ INPUT 2 input (RCA socket)

⑤ Mounting hole for the safety wire

⑥ HIGH PASS adjustment switch

⑦ LEVEL adjustment switch

⑧ Power indicator

⑨ POWER MODE switch

⑩ LF adjustment switch

⑪ MF adjustment switch

⑫ HF adjustment switch

⑬ POWER on/off switch

⑭ Mains socket

⑮ Mounting holes for the SL SpeakerMount 100

Installing the SL Loudspeaker 52 A

For installing the SL Loudspeaker 52 A there are four aspects you need to consider:

- Selecting a position for the loudspeaker in the room (see „Positioning the SL Loudspeaker 52 A“ on page 9)
- Adjusting the acoustic settings of the loudspeaker according to the characteristics of the room (see „Adjusting the SL Loudspeaker 52 A to the room characteristics“ on page 13)
- Mounting the loudspeaker to a wall (see „Mounting the SL Loudspeaker 52 A to a wall“ on page 14)
- Connecting the audio and power cables (see „Connecting the SL Loudspeaker 52 A“ on page 19)

These four aspects interact with each other. Therefore, it is important you read this entire chapter “Installing the SL Loudspeaker 52 A” before starting to install the SL Loudspeaker 52 A.

In this chapter you will find recommendations on how to position the loudspeaker and how to adjust the loudspeaker’s acoustic settings. However, due to the acoustic specifications and individual characteristics of the respective room, these are just general recommendations. Based on the respective local conditions and your personal judgement you may choose different positions or settings for the loudspeakers.

Positioning the SL Loudspeaker 52 A

This chapter gives recommendations on how to position and configure the SL Loudspeaker 52 A in the meeting room.

Recommendations for positioning the SL Loudspeaker 52 A

When choosing a place for installing the loudspeaker in the meeting room there are several aspects that should be considered, e.g. the number of loudspeakers, the place of installation in the meeting room, the correct installation height and the distance between the loudspeakers.

Recommended number of loudspeakers

The number of required loudspeakers depends on the size of the meeting room. We recommend the following number of loudspeakers for the following room sizes:

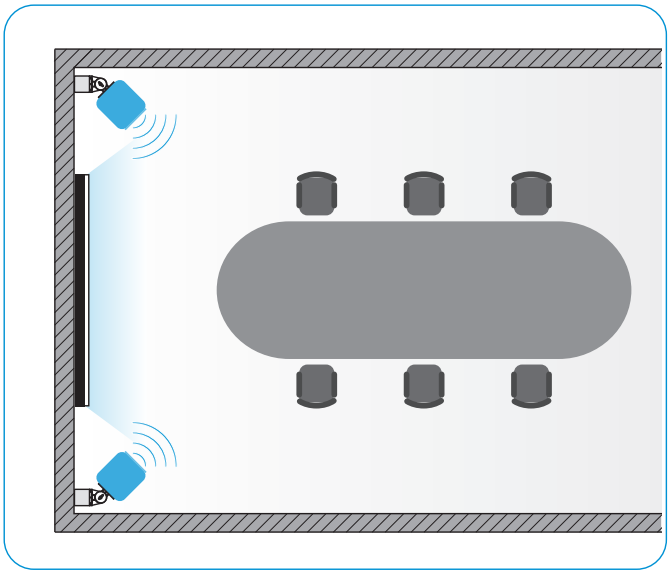
Meeting room size	Number of loudspeakers
30 m²	2
60 m²	4
100 m²	6

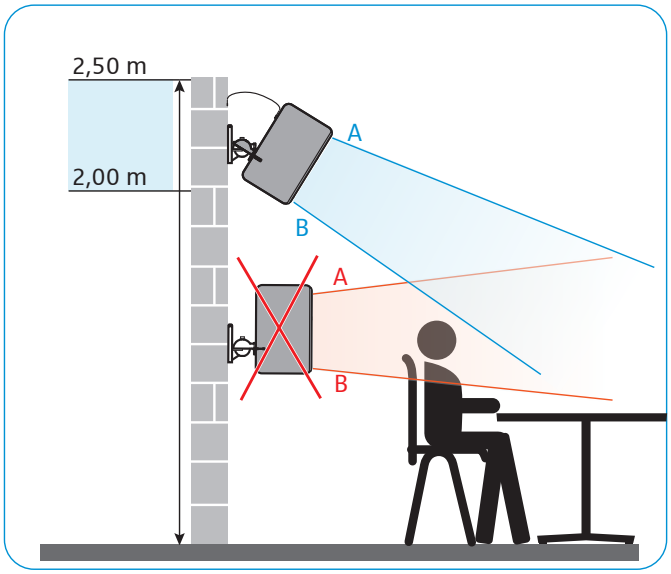
Place and height of installation

The place of installation in the meeting room may vary depending on the size and proportion of the room.

There are some general aspects which we recommend considering:

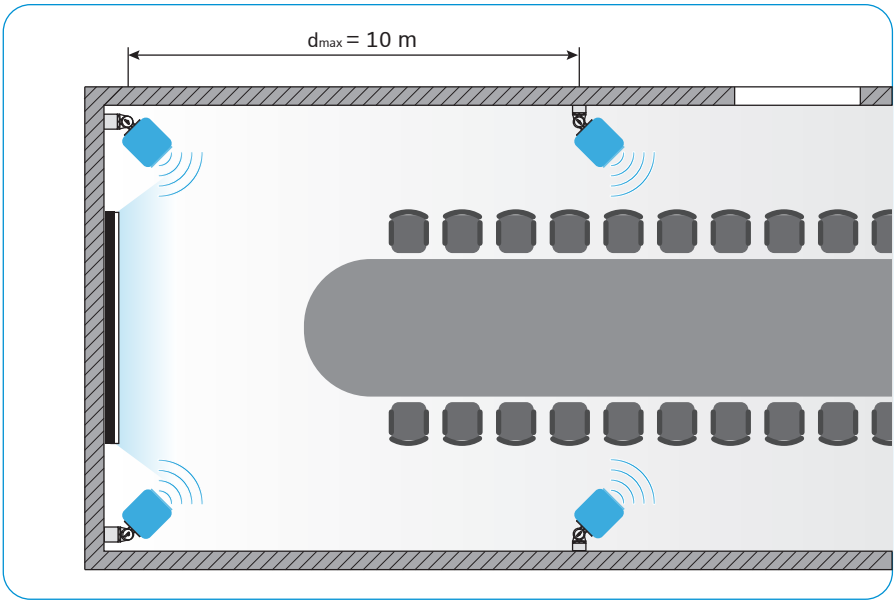
- The loudspeakers should always be placed at the centre of attention of the audience (e.g. left and right of a monitor or beamer projection).
- The loudspeakers should always be placed facing the audience and not behind them.
- The loudspeakers should be mounted to the wall at a height of approximately 2 to 2.5 meters.
- The loudspeakers should be tilted by an appropriate angle facing towards the audience.





Distance between loudspeakers

If the room size requires the use of more than two loudspeakers, the distance between the loudspeakers should not exceed 10 meters.

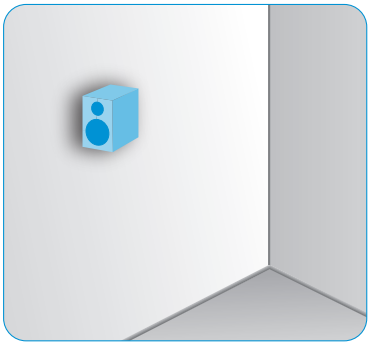


Most common loudspeaker positions

The SL Loudspeaker 52 A can either be mounted to a wall using the supplied mounting hardware or placed on a flat surface. Depending on the position of the loudspeaker in the room, the LF and MF switches on the back of the loudspeaker need to be adjusted.

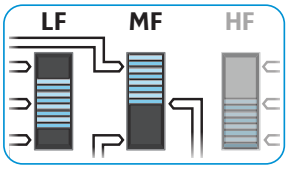
There are six typical possibilities of positioning the loudspeaker in the room. For your personal setup refer to the position closest to your application.

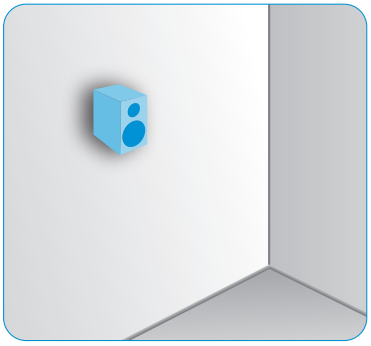
The following switch settings for the different loudspeaker positions are recommended by us. However, you may adjust the settings based on your individual judgement.



Mounted sideways against the wall

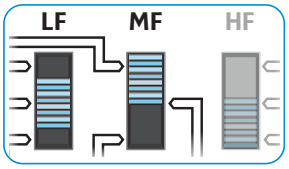
For this or a similar scenario we recommend the following positions of the LF and MF switches:

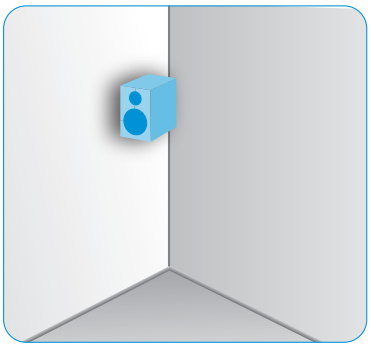




Mounted on the wall

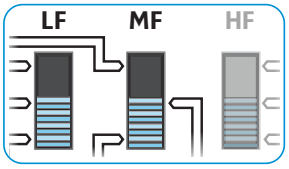
For this or a similar scenario we recommend the following positions of the LF and MF switches:

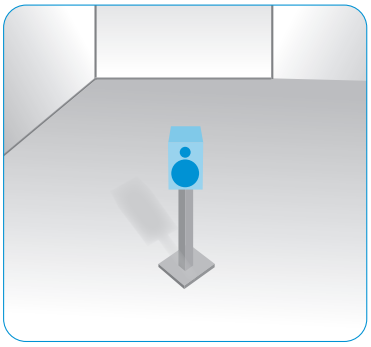




Mounted in the corner

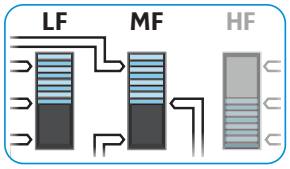
For this or a similar scenario we recommend the following positions of the LF and MF switches:

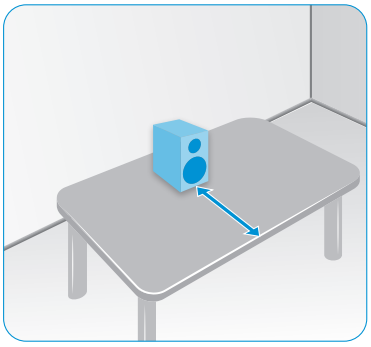




Free-standing

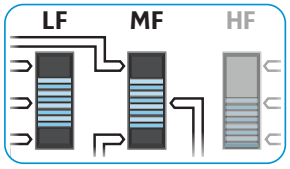
For this or a similar scenario we recommend the following positions of the LF and MF switches:

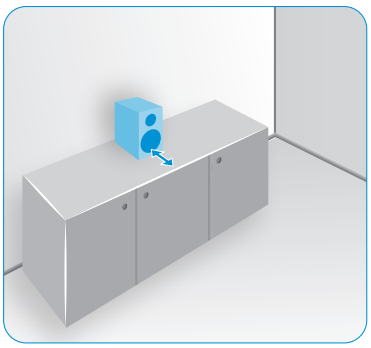




Placed on a large surface

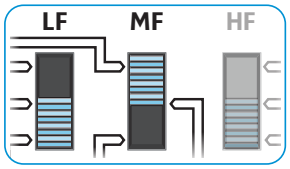
For this or a similar scenario we recommend the following positions of the LF and MF switches:





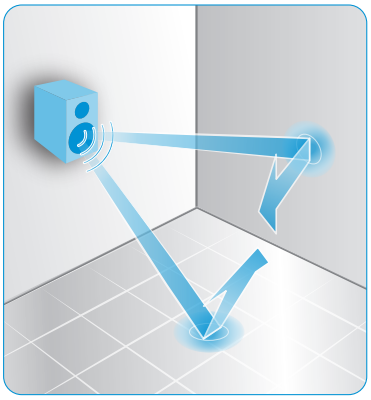
Placed on a small surface

For this or a similar scenario we recommend the following positions of the LF and MF switches:



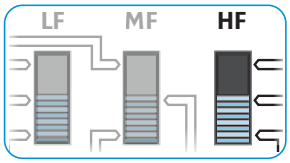
Adjusting the SL Loudspeaker 52 A to the room characteristics

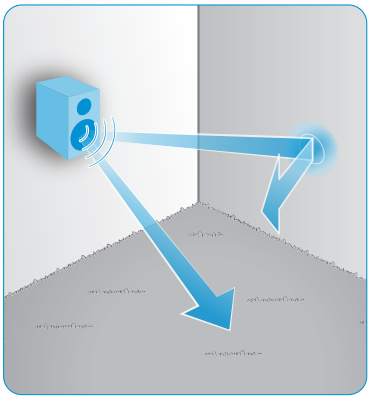
Depending on the characteristics of the room, the HF switch on the back of the loudspeaker should be adjusted as follows:



Reverberant room

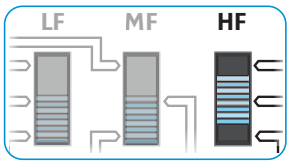
If the room is reverberant, we recommend the following position of the HF switch:

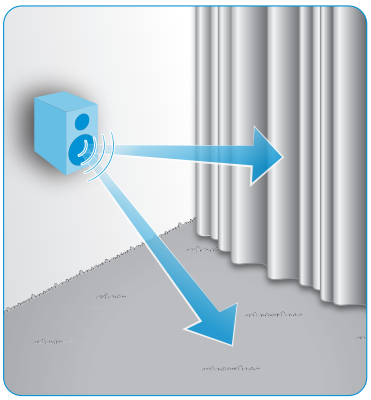




Neutral room

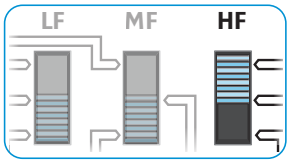
If the room is neutral, we recommend the following position of the HF switch:





Damped room

If the room is damped, we recommend the following position of the HF switch:



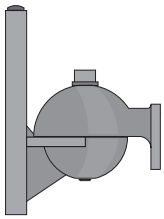
Mounting the SL Loudspeaker 52 A to a wall

CAUTION

Danger of injury and material damage due to tipping/dropping of the product!

If improperly mounted, the product and/or the mounting hardware can tip over or drop down.

- Always mount the product as described in this instruction manual.
- Always use the supplied safety wire.
- Only use the Sennheiser SL SpeakerMount mounting hardware and screws supplied with the SL Loudspeaker 52 A.

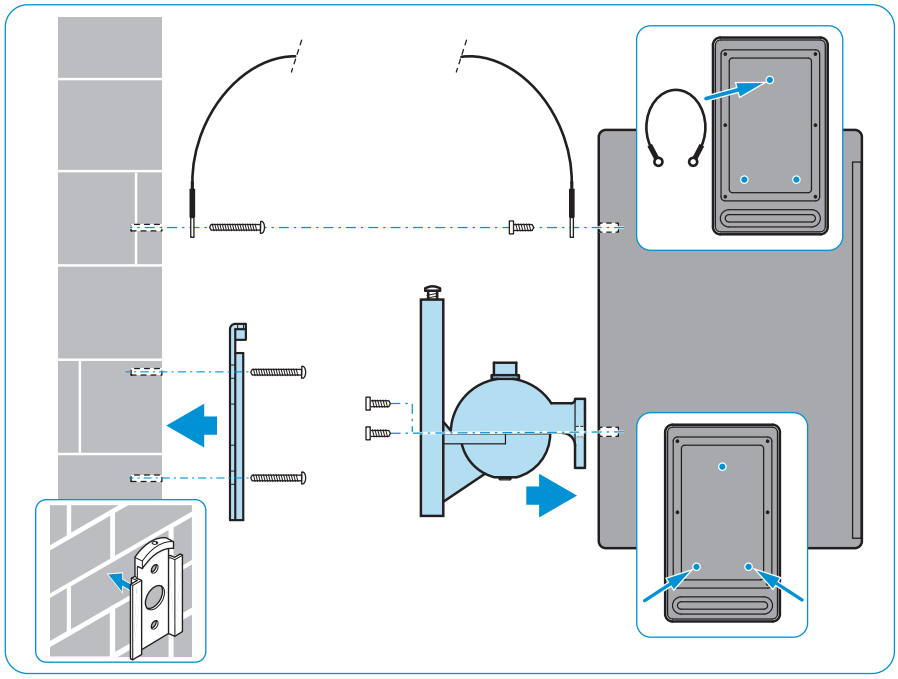


The supplied Sennheiser SL SpeakerMount 100 wall mounting system consists of two mounting brackets: one for attaching to the wall and one for attaching to the loudspeaker.

It also includes to spacers which can be placed between the wall bracket and the wall in order to increase the angle by which the loudspeaker can be rotated left or right.

Attaching the mounting hardware

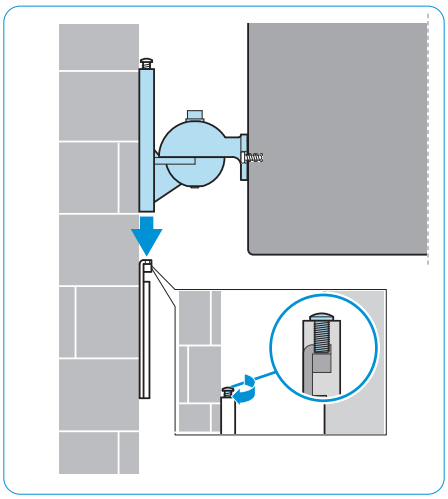
To attach the mounting hardware to the wall and the loudspeaker:



- Attach the wall bracket to a vertical surface as shown in the figure using the supplied screws and anchors.

  The surface must be able to carry the weight of the loudspeaker. Additionally consider the leverage.
- Attach the loudspeaker bracket to the backplate of the loudspeaker as shown in the figure using the supplied screws.
- Use the supplied safety wire to additionally protect the loudspeaker and the mounting hardware against dropping. Attach the safety wire as shown in the figure using the supplied screws and anchors.

To screw the two mounting brackets together:

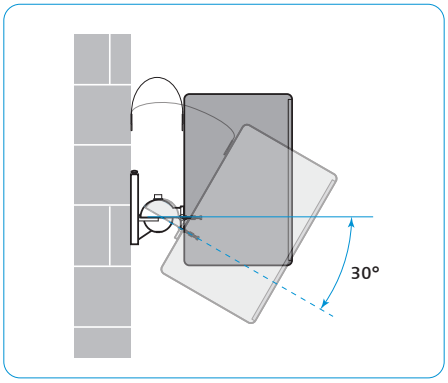


- Slide the loudspeaker bracket with the loudspeaker attached top down on the wall bracket as shown in the figure.
- Fasten the loudspeaker bracket to the wall bracket with the attached screw as shown in the figure.

Adjusting the angle

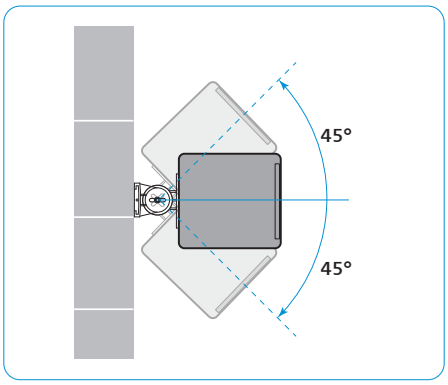
The loudspeaker can be tilted up and down by 30 degrees and rotated left or right by 45 degrees.

To tilt the loudspeaker up and down:



- Loosen the screw on top of the ball joint of the loudspeaker bracket.
- Tilt the loudspeaker by the desired angle.
- Fasten the screw on top of the ball joint of the loudspeaker bracket.

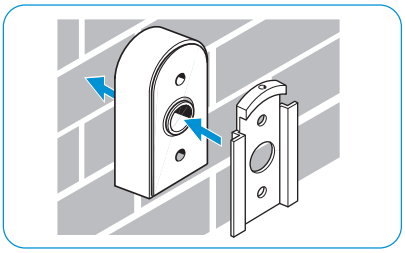
To rotate the loudspeaker left or right:



- Loosen the screw on top of the ball joint of the loudspeaker bracket.
- Rotate the loudspeaker left or right by the desired angle.
- Fasten the screw on top of the ball joint of the loudspeaker bracket.

Using the spacers

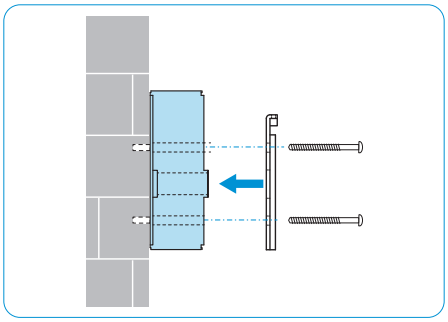
The SL SpeakerMount 100 wall mounting system includes two spacers which can be placed between the wall and the wall bracket in order to increase the angle by which the loudspeaker can be rotated left or right.



Using one spacer

Using one spacer increases the angle by which the loudspeaker can be rotated left or right from 45 degrees to 70 degrees.

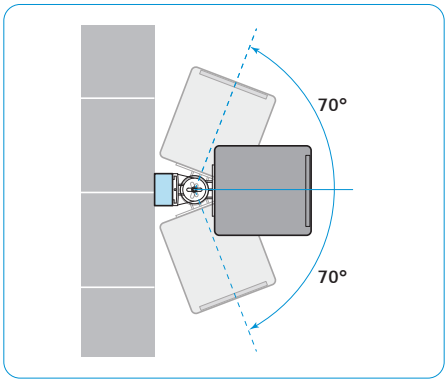
To fasten the wall bracket with one spacer:

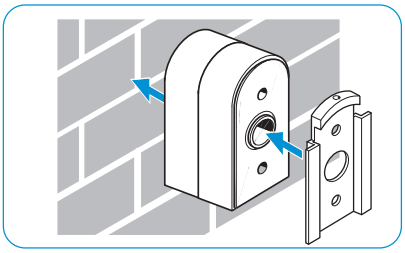


- Place the spacer between the wall and the wall bracket as shown in the figure.
- Attach the spacer and the wall bracket to a vertical surface as shown in the figure using the supplied screws and anchors.

For information on the remaining steps of mounting the loudspeaker to a wall refer to „Attaching the mounting hardware“ on page 14.

After the installation with one spacer the loudspeaker can be rotated left or right by 70 degrees.

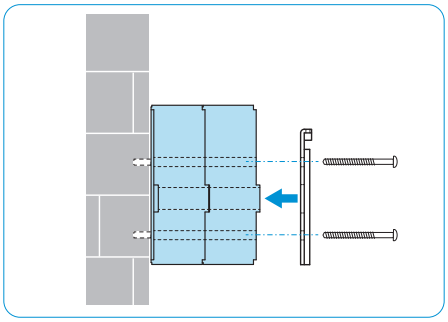




Using two spacers

Using two spacers increases the angle by which the loudspeaker can be rotated left or right from 45 degrees to 90 degrees.

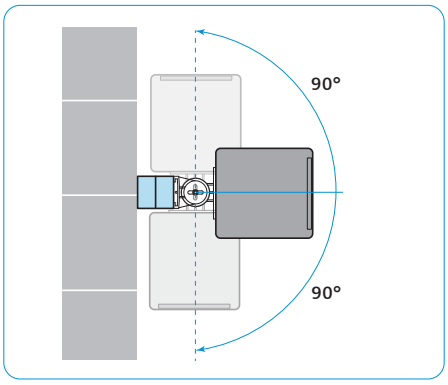
To fasten the wall bracket with two spacers:



- Place the spacers between the wall and the wall bracket as shown in the figure.
- Attach the spacers and the wall bracket to a vertical surface as shown in the figure using the supplied screws and anchors.

For information on the remaining steps of mounting the loudspeaker to a wall refer to „Attaching the mounting hardware“ on page 14.

After the installation with two spacers the loudspeaker can be rotated left or right by 90 degrees.

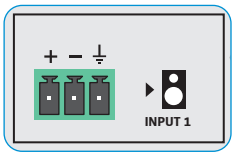


Connecting the SL Loudspeaker 52 A

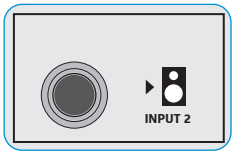
This chapter describes how to connect audio and power cables to the SL Loudspeaker 52 A.

Connecting the audio cables

The SL Loudspeaker 52 A has two input sockets:

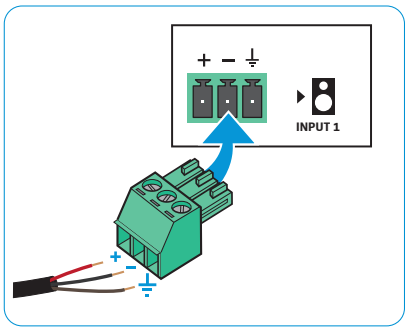


INPUT 1 — Balanced input terminal for terminal connectors (e.g. Phoenix Contact MC 1.5/ 3-ST-3.5 or similar)



INPUT 2 — Unbalanced RCA input socket

We recommend using the balanced INPUT 1 terminal as it is less sensitive to interference and noise.



To connect an audio signal to the INPUT 1 terminal:

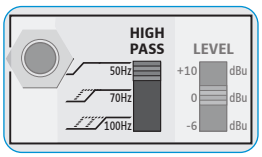
- Remove the insulation from the wires at the end of the audio cable.
- Attach the three wires of the audio cable to the terminal connector observing the correct pin allocation (see figure on the left).
- Plug the terminal connector into the INPUT 1 terminal.

To connect an audio signal to the INPUT 2 socket:

- Plug an RCA connector of an audio cable into the INPUT 2 socket.

Adjusting the High Pass and the Level

To eliminate impact sound like rumble you can adjust a high pass filter to cut off low frequencies below 50 Hz, 70 Hz or 100 Hz.

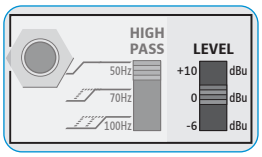


To adjust the high pass filter:

- Set the HIGH PASS switch to 50 Hz, 70 Hz or 100 Hz.

We recommend leaving the HIGH PASS switch at the 50 Hz position, which should work fine for standard applications. Only in case of extreme impact noise it needs to be adjusted.

You can also adjust the sensitivity of the audio signal to turn the volume up or down.



To adjust the sensitivity of the loudspeaker:

- Set the LEVEL switch to +10 dBu, 0 dBu or -6 dBu.

Connecting/disconnecting the SL Loudspeaker 52 A to/from the mains power supply

Mains cables for the SL Loudspeaker 52 A are available in different lengths as accessories on the product page of the SL Loudspeaker 52 A at www.sennheiser.com.

To connect the SL Loudspeaker 52 A to the mains power supply:

- ▶ Make sure that the POWER switch is switched off.
- ▶ Connect the IEC connector of the mains cable to the mains socket.
- ▶ Connect the mains plug of the mains cable to a suitable wall socket.

To disconnect the SL Loudspeaker 52 A from the mains power supply:

- ▶ Set the POWER switch to the off position.
- ▶ Pull the mains plug out of the wall socket.

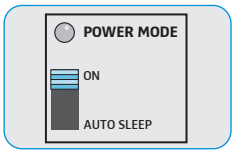
Switching the SL Loudspeaker 52 A on/off

Mains power

To switch the loudspeaker on or off:

- ▶ Set the POWER switch to:
  - "I" to switch on the loudspeaker.
  - the off position to switch off the loudspeaker.

Power mode



To select the power mode of the loudspeaker:

- ▶ Set the POWER MODE switch to:
  - "ON" to have the loudspeaker permanently switched on.
  - "AUTO SLEEP" to have the loudspeaker enter sleep mode when no audio signal is present for a period of 20 minutes.

Cleaning and maintaining the SL Loudspeaker 52 A

CAUTION

Damage to the product caused by liquids!

Liquids entering the product can cause a short-circuit in the electronics and damage or even destroy the product.

- Keep all liquids away from the product.

- Before cleaning, disconnect the product from the mains power supply.
- Use a soft, dry, and lint-free cloth to clean the product.

Specifications

Acoustics

Frequency response ± 3 dB	53 - 30,000 Hz
Max. SPL at 1 m (150 - 5,000 Hz)	97 dB SPL
THD at 90 dB SPL at 1 m > 200 Hz	< 1 %

Electronics

Nominal output power woofer RMS at 1 % THD (with deactivated limiter)	40 W
Nominal output power tweeter RMS at 1 % THD (with deactivated limiter)	40 W
THD + N vs. frequency at 1 W output	0.16 %
SNR at 1 kHz	95 dB
CMRR	71 dB
Crossover frequency	4.5 kHz
Slope low pass woofer	12 dB/oct. (2^{nd} order)
Slope high pass tweeter	24 dB/oct. (4^{th} order)
Resonance frequency high pass woofer	55 Hz; 75 Hz; 100 Hz
Slope high pass woofer	24 dB/oct. (4^{th} order)
HF position adjustments	f = 2,800 Hz, Gain +1.4 dB flat f = 2,800 Hz, Gain -1.5 dB
MF position adjustments	flat f = 100 Hz, Gain -2.7 dB f = 320 Hz, Gain -3.7 dB
LF position adjustments	flat f = 800 Hz, Gain -2.0 dB, 6 dB Lowshelf f = 800 Hz, Gain -4.0 dB, 6 dB Lowshelf
Input sensitivity at 97 dB SPL	Switch positions -6 dBu 0 dBu 10 dBu
Switch-on level switch-on automatics	1.4 mVRMS
Auto standby	20 min
Input impedance:	
balanced	> 10 kΩ
unbalanced	> 10 kΩ

Product properties

Power consumption (standby)	230 V AC; 0.47 W / 110 V AC; 0.34 W
Power consumption (idle)	230 V AC; 4.75 W / 110 V AC; 4.53 W
Power consumption (max)	230 V AC; 95 W / 110 V AC; 91 W
Dimensions (H x W x D)	240 mm x 140 mm x 161 mm (9.45" x 5.51" x 6.34")
Weight	3.1 kg
Mounting points	2 x M6 for SL SpeakerMount 100 1 x M6 for safety wire on rear panel with depth 10 mm

Power supply	AC 100 - 240 V~; 50 - 60 Hz

Operating and storage conditions

Temperature	Operation: 0 - +40 °C Storage: -25 - +70 °C
Relative humidity	95 % (non-condensing)

In compliance with

Europe	EMC: EN 55103-1/-2 Safety: En 60065
USA	47 CFR 15 subpart B
Canada	CAN ICES-3 (B)/NMB-3(B)

Manufacturer Declarations

Warranty

Sennheiser electronic GmbH & Co. KG gives a warranty of 24 months on this product.

For the current warranty conditions, please visit our website at www.sennheiser.com or contact your Sennheiser partner.

CE Declaration of Conformity

- RoHS (2011/65/EU)
- Low Voltage Directive (2006/95/EC)
- EMC Directive (2004/108/EC)

The declarations are available on the product page at www.sennheiser.com.

Certified by

Audio, Video and Similar Electronic Apparatus - Safety Requirements CAN/CSA-C22.2 No. 60065:03 and UL Std. No. 60065

Trademarks

Sennheiser is a registered trademark of Sennheiser electronic GmbH & Co. KG.

Other company, product, or service names mentioned in this instruction manual may be the trademarks, service marks, or registered trademarks of their respective owners.

Statements regarding FCC and Industry Canada

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

CAN ICES-3 (B)/NMB-3(B):
This Class B digital apparatus complies with the Canadian ICES-003.

Changes or modifications not expressly approved by Sennheiser electronic Corp. could void the user's authority to operate the equipment.

SENNHEISER

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