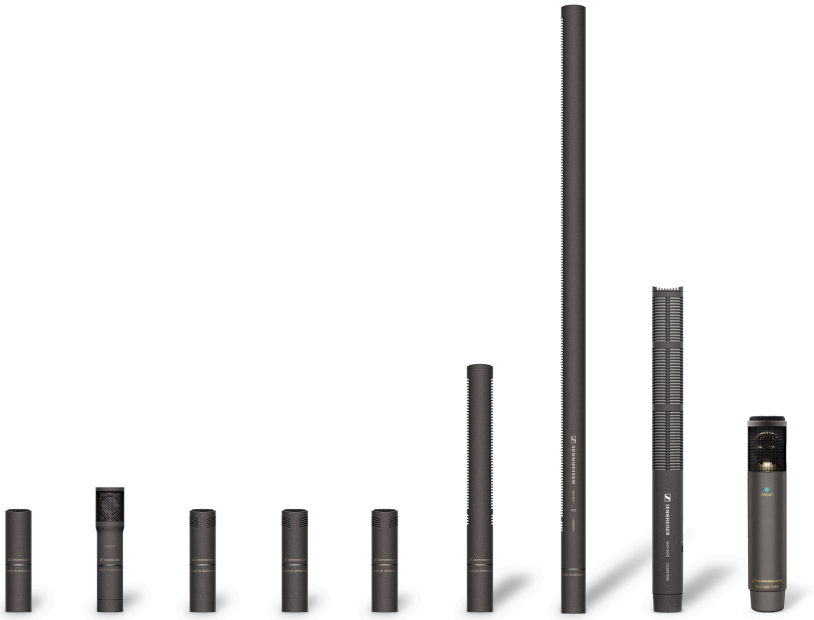


MKH 8000 series

PDF export of the original HTML instructions

Contents

1. Preface 5
2. Product information 6
    Microphones 6
        MKH 8018 7
        MKH 8020 8
        MKH 8030 9
        MKH 8040 10
        MKH 8050 11
        MKH 8060 12
        MKH 8070 13
        MKH 8090 14
        MKH 800 TWIN 15
    Available sets 16
        MKH 8020 stereo set 16
        MKH 8040 stereo set 17
    Accessories 18
        Module 18
        Floor stand components 20
        Table stands 24
        Extension cables 26
        Mounts 27
        Clips / Clamps 28
        Windshield 33
3. User manual 38
    Retrofitting or extending the microphone 38
    Stereo recording 40
    MKH 8018 43
        Product overview 43
        Starting up 45
        Operation 49
    MKH 8020 52
        Product overview 52
        Starting up 53
        Operation 55
    MKH 8030 56

Product overview 56
Starting up 57
Operation 59
MKH 8040 61
Product overview 61
Starting up 62
Operation 64
MKH 8050 65
Product overview 65
Starting up 66
Operation 68
MKH 8060 69
Product overview 69
Starting up 70
Operation 72
MKH 8070 73
Product overview 73
Starting up 74
Operation 76
MKH 8090 77
Product overview 77
Starting up 78
Operation 80
MKH 800 TWIN 81
Product overview 81
Starting up 83
Operation 86
MZF 8000 II 90
Product overview 90
Starting up 91
Operation 92
Cleaning and maintenance 93
4. Specifications 94
MKH 8018 94
MKH 8020 101
MKH 8030 103
MKH 8040 105

MKH 8050 107
MKH 8060 109
MKH 8070 112
MKH 8090 115
MKH 800 TWIN 117
MZF 8000 II 120
5. Contact 122

1. Preface

PDF export of the original HTML instructions

This PDF document is an automated export of an interactive set of HTML instructions. It may be the case that not all contents and interactive elements are contained in the PDF as they cannot be presented in this format. Furthermore, automatically generated page breaks may cause coherent contents to be moved slightly. We can therefore only guarantee the completeness of the information in the HTML instructions, and recommend that you use these. You can find these in the download section of the website under www.sennheiser.com/download.

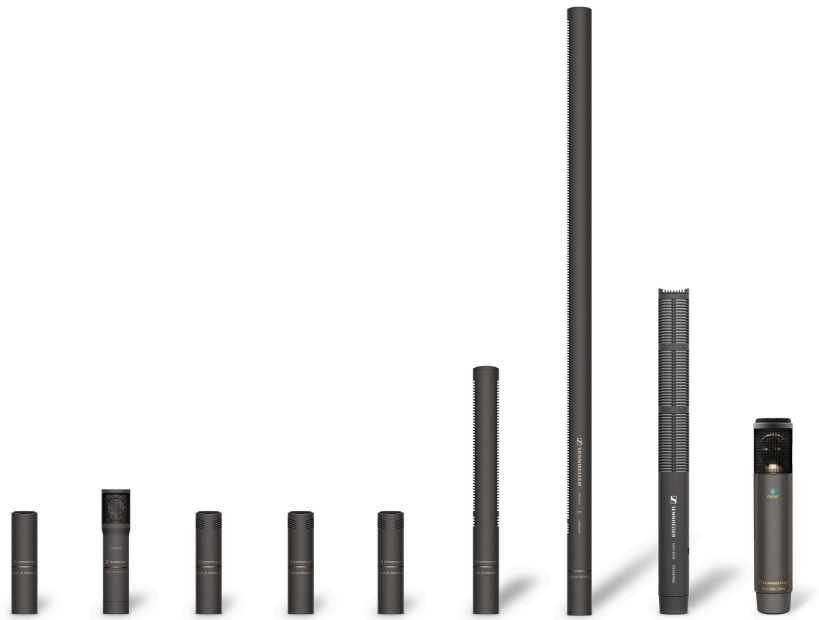
2. Product information

All information about the product and available accessories at a glance.

Microphones

Available sets

Accessories



Microphones

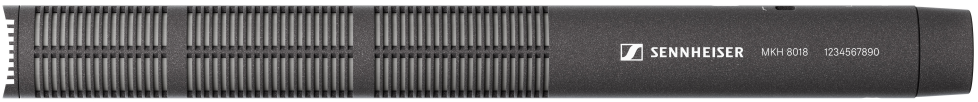
You can find more detailed information in the following sections:

- For information about the available **accessories**, see Accessories
- You can find information about **starting up** and **operating** the products under User manual
- You can find technical **specifications** for the individual products under Specifications

Related information

MKH 8018
MKH 8020
MKH 8030
MKH 8040
MKH 8050
MKH 8060
MKH 8070
MKH 8090
MKH 800 TWIN

MKH 8018



Shotgun microphone with switchable stereo-modes

Art. no. 700252

Delivery includes

- MKH 8018
- Microphone clip MZQ 100
- Windshield MZW 8018
- Camera adapter MZR 8000
- Threaded transport tube
- Quick guide
- Safety instructions

You can find more detailed information in the following sections:

- Instruction manual MKH 8018
- Specifications MKH 8018

MKH 8020

Omni-directional instrument microphone

Art. no. 506287

Delivery includes

- MKH 8030
- Microphone clamp MZQ 8000
- Duo clip
- Windshield
- Quick guide
- Safety instructions

You can find more detailed information in the following sections:

- Instruction manual MKH 8020
- Specifications MKH 8020

MKH 8030

Figure-8 instrument microphone

Art. no. 700251

Delivery includes

- MKH 8030
- Microphone clamp MZQ 8000
- 2x duo clip with rubber rings
- Windshield MZW 8030
- Quick guide
- Safety instructions

> **i** You can find more detailed information in the following sections:
>
> - Instruction manual MKH 8030
> - Specifications MKH 8030

MKH 8040

Versatile cardioid microphone

Art. no. 506289

Delivery includes

- MKH 8040
- Microphone clamp MZQ 8000
- Windshield MZW 8000
- Quick guide
- Safety instructions

You can find more detailed information in the following sections:

- Instruction manual MKH 8040
- Specifications MKH 8040

MKH 8050

Super-cardioid microphone

Art. no. 506291

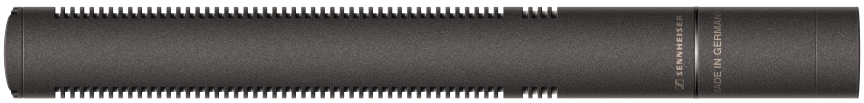
Delivery includes

- MKH 8050
- Microphone clamp MZQ 8000
- Windshield MZW 8000
- Quick guide
- Safety instructions

You can find more detailed information in the following sections:

- Instruction manual MKH 8050
- Specifications MKH 8050

MKH 8060



Compact shotgun microphone

Art. no. 506292

Delivery includes

- MKH 8060
- Microphone clamp MZQ 8060
- Windshield MZW 8060
- Quick guide
- Safety instructions

i You can find more detailed information in the following sections:

- Instruction manual MKH 8060
- Specifications MKH 8060

MKH 8070

Long shotgun microphone

Art. no. 506293

Delivery includes

- MKH 8070
- Microphone clamp MZQ 8070
- Windshield MZW 8070
- Quick guide
- Safety instructions

You can find more detailed information in the following sections:

- Instruction manual MKH 8070
- Specifications MKH 8070

MKH 8090

High-quality wide cardioid microphone

Art. no. 506294

Delivery includes

- MKH 8090
- Microphone clamp MZQ 8000
- Windshield MZW 8000
- Quick guide
- Safety instructions

i You can find more detailed information in the following sections:

- Instruction manual MKH 8090
- Specifications MKH 8090

MKH 800 TWIN

Condenser microphone with two cardoid pick-up patterns

MKH 800 TWIN Nx | Art. no. 502083

Delivery includes

- MKH 800 TWIN
- MZQ 80 microphone clamp
- MZS 80 shock mount
- AC 20 adaptor cable
- Transport case
- Quick guide
- Safety instructions

i You can find more detailed information in the following sections:

- Instruction manual MKH 800 TWIN
- Specifications MKH 800 TWIN

Available sets

Related information
MKH 8020 stereo set
MKH 8040 stereo set

MKH 8020 stereo set

The sets offer matched pairs, meaning the sensitivity difference is < 1 dB and the frequency response difference is < 1 dB.

The set consists of the following components:

- 2x MKH 8020
- 2x microphone clamp MZQ 8000
- 2x windshield MZW 8000
- Quick guide
- Safety instructions

You can find more detailed information in the following sections:

- Instruction manual MKH 8020
- Specifications MKH 8020

MKH 8040 stereo set

> **i** The sets offer matched pairs, meaning the sensitivity difference is < 1 dB and the frequency response difference is < 1 dB.

The set consists of the following components:

- 2x MKH 8040
- 2x microphone clamp MZQ 8000
- 2x windshield MZW 8000
- Quick guide
- Safety instructions

> **i** You can find more detailed information in the following sections:
>
> - Instruction manual MKH 8040
> - Specifications MKH 8040

Accessories

Various accessory parts are available for the microphones.

Related information

Module
Floor stand components
Table stands
Extension cables
Mounts
Clips / Clamps
Windshield

Module

Filter module MZF 8000 II

MZF 8000 II is a filter module for the MKH 8000 professional RF condenser microphone series. Especially in the broadcast and film industries, it effectively blocks interference caused by infrasound, such as low-frequency noises caused by wind and handling.

Art. no. 700249

You can find more detailed information in the following sections:

- Instruction manual MZF 8000 II
- Specifications MZF 8000 II

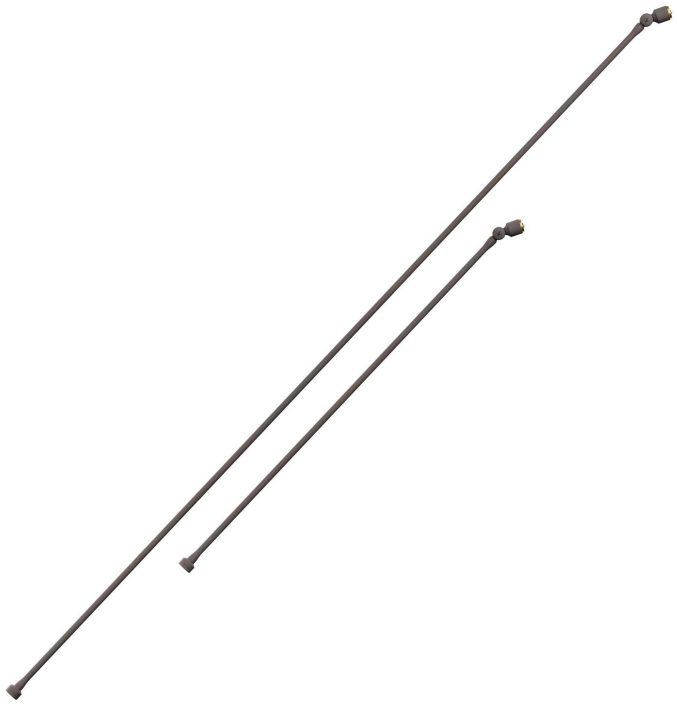
XLR modul MZX 8000

Das XLR modul MZX 8000 is a connection module.

Art. no. 502098

Floor stand components

MZE 8060, MZE 8120



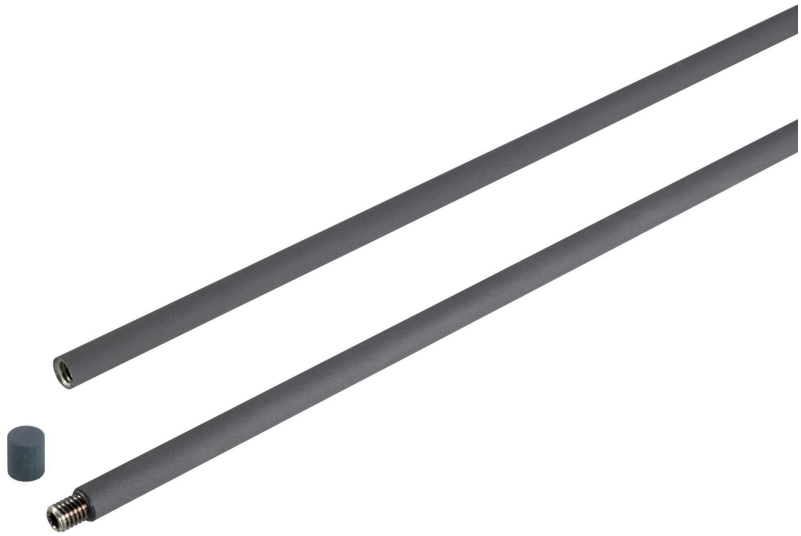
Special bar that carries the audio signal

Available in lengths 60 and 120 cm

MZE 8060 | Art. no. 502316

MZE 8120 | Art. no. 502317

MZEF 8060, MZEF 8120



Vertical bar with standard 3/8" thread

Available in lengths 60 and 120 cm

MZEF 8060 | Art. no. 502318

MZEF 8120 | Art. no. 502319

MZFS 8000

Floor stand

Art. no. 502322

MZGE 8000

Tube connector

Art. no. 700310

Table stands

MZT 8000

Classic metal table stand, sturdy and robust

Art. no. 502331

MZH 8042

Goose neck with two flexible joints

Length 40 cm

Art. no. 700253

Extension cables

MZL 8003

Connects between the microphone head and the XLR module

Length 3 m

Art. no. 502326

MZL 8010

Connects between the microphone head and the XLR module

Length 10 m

Art. no. 502327

Mounts

MZS 20-1

Suspension with pistol grip

Art. no. 003609

Compatible with:

- MKH 8060
- MKH 8070

MZS 40

Shock mount designed for the effective attenuation of structure-borne noise with 3/8", 5/8", 1/2" thread insert

Art. no. 003017

Compatible with:

- MKH 8060

Clips / Clamps

MZQ 8000

Standard clip included in the delivery of the MKH 8000 microphones

Art. no. 502328

Included with:

- MKH 8020
- MKH 8030
- MKH 8040
- MKH 8050
- MKH 8090

MZQ 8001

Miniature clamp. Ideal if the microphone is used with a MZL cable. 3/8" standard thread.

Art. no. 502329

Compatible with:

- MKH 8020
- MKH 8040
- MKH 8050
- MKH 8090

MZQ 8060

Standard clip included in the delivery of the MKH 8000 microphones

Art. no. 538146

Compatible with:

- MKH 8060
- MKH 8070

MZH 8000

Ceiling mount with cable guide when used with the MZL cable

Art. no. 502435

Compatible with:

- MKH 8020
- MKH 8040
- MKH 8050
- MKH 8090

MZG 8000

Swivel joint designed for desktop mounting in conjunction with the MZS 31 elastic suspension

MZG 8000 | Art. no. 502323

MZS 31 | Art. no. 005087

Compatible with:

- MKH 8020
- MKH 8040
- MKH 8050
- MKH 8060
- MKH 8090

Windshield

MZW 8000

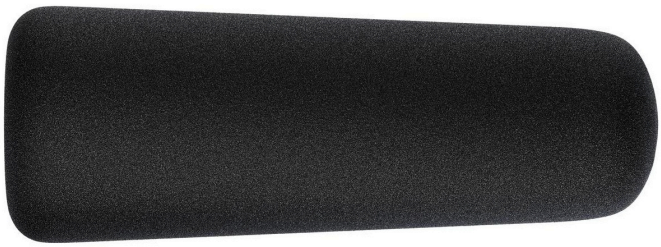
Windshield

Art. no. 502333

Included with:

- MKH 8020
- MKH 8040
- MKH 8050
- MKH 8090

MZW 8018



Windshield for MKH 8018

Art. no. 700255

Included with:

- MKH 8018

MZW 8030

Windshield for MKH 8030

Art. no. 700254

Included with:

- MKH 8030

MZW 8060

Windshield for MKH 8060

Art. no. 534924

Included with:

- MKH 8060

MZW 8070

Windshield for MKH 8070

Art. no. 538138

Included with:

- MKH 8070

MZW 20-1

Basket windshield with excellent suppression of wind noise when used for outdoor applications

> **i** Can **only** be used in combination with the MZS 20-1

Art. no. 003606

Compatible with:

- MKH 8060

MZW 80-1

Basket windshield with excellent suppression of wind noise when used for outdoor applications

> **i** Can **only** be used in combination with the MZS 20-1

Art. no. 504738

Compatible with:

- MKH 8070

MZW 80-ANT

Windshield

Art. no. 003780

Compatible with:

- MKH 800 TWIN

MZH 20-1

Hairy cover used in conjunction with MZW 20-1 with maximum protection against wind noise when used for outdoor applications

Art. no. 003610

Compatible with:

- MKH 8060

MZH 80-1

Hairy cover used in conjunction with MZW 80-1 with maximum protection against wind noise when used for outdoor applications

Art. no. 504737

Compatible with:

- MKH 8070

3. User manual

Starting up and operating devices of the MKH 8000 series.

Related information

Retrofitting or extending the microphone
Stereo recording
MKH 8018
MKH 8020
MKH 8030
MKH 8040
MKH 8050
MKH 8060
MKH 8070
MKH 8090
MKH 800 TWIN
MZF 8000 II
Cleaning and maintenance

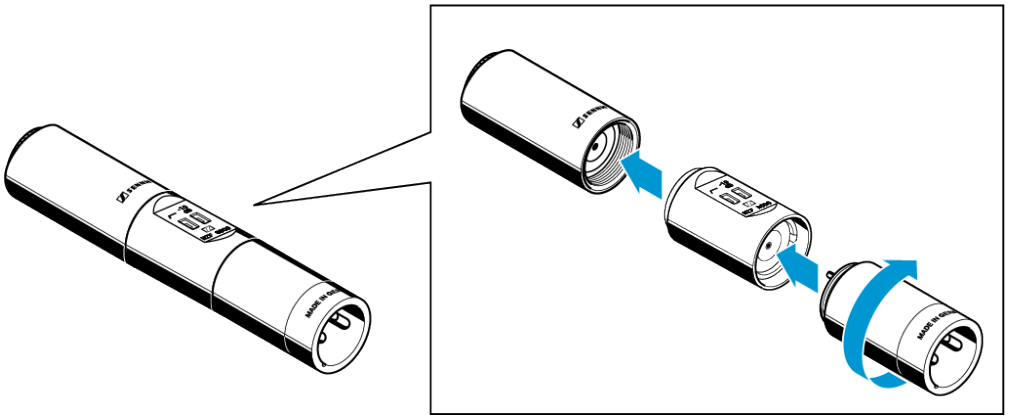
Retrofitting or extending the microphone

You can retrofit and extend the microphones of the modular MKH 8000 microphone series by exchanging the microphone head or by using optional modules.

i Retrofitting and expansion are possible for all microphones – except the MKH 8018.

- Disconnect all cables.
- Unscrew the microphone head from the XLR module.

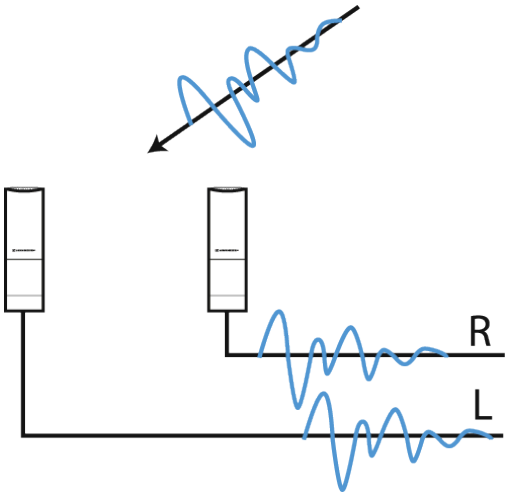
- Add, for example, the Filter module MZF 8000 II or a MZL cable (see Extension cables).
- Screw the modules together again.



Stereo recording

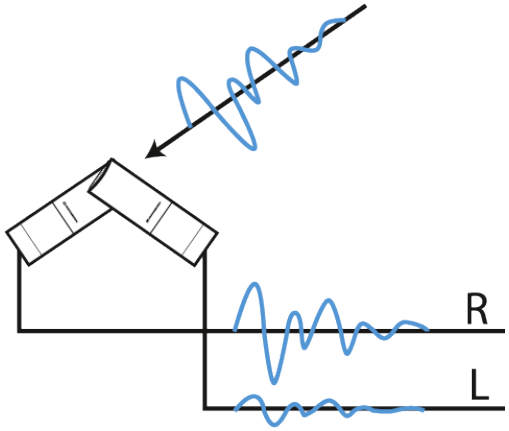
Time-of-arrival stereo (AB)

(almost) only time-of-arrival differences



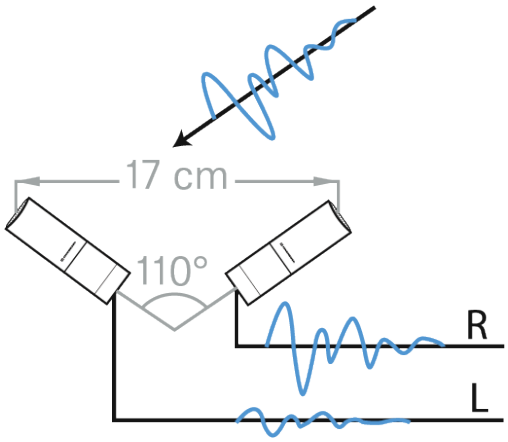
Intensity stereo (XY)

only sound pressure level differences



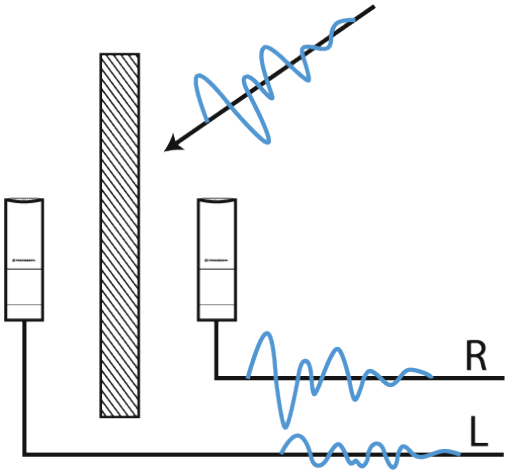
Equivalence or mixed stereo (here: ORTF):

sound pressure level and time-of-arrival differences



Baffle stereo (here: OSS)

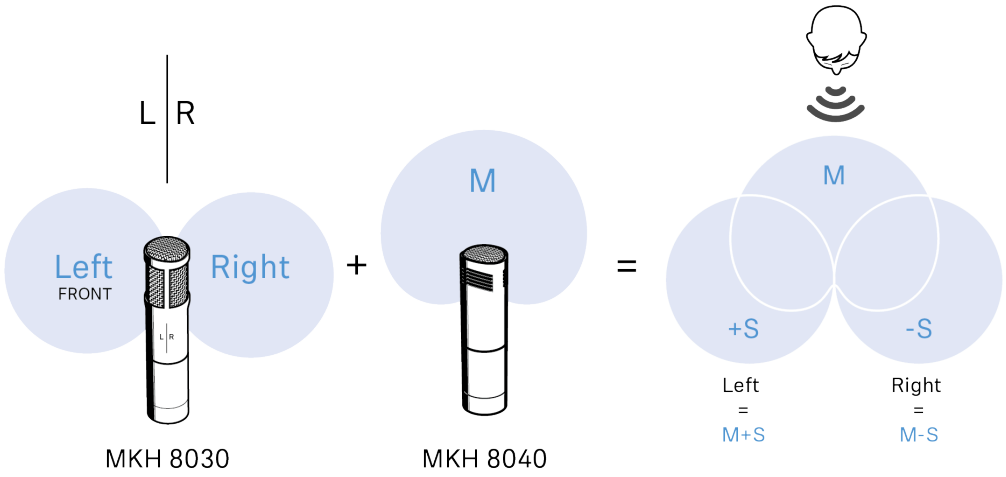
sound pressure level, time-of-arrival and spectral differences with off-axis sound



Mid/side (MS)

M-Microphone records the mono signal

S-Microphone (fig-8) records the side signals



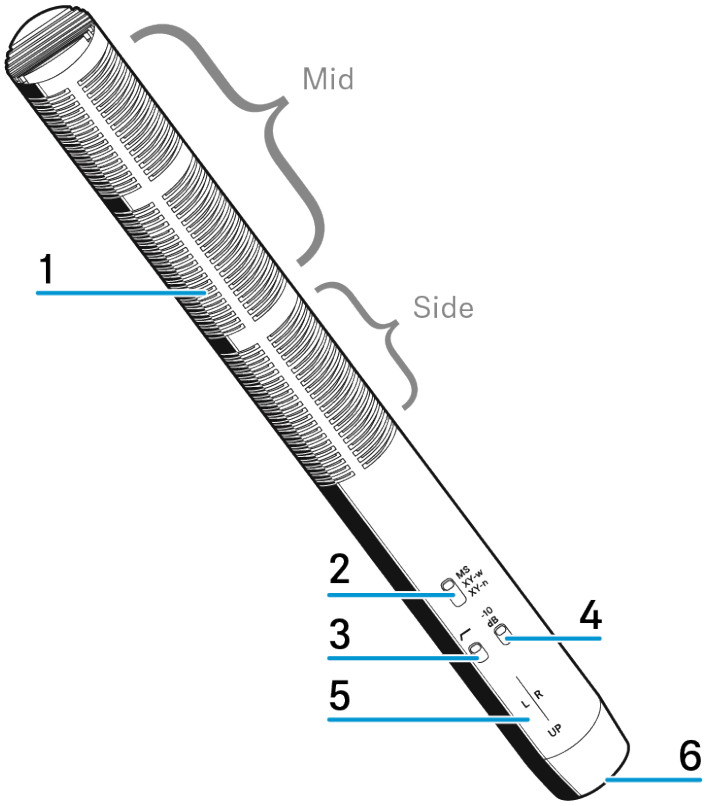
MKH 8018

These sections contain detailed information about starting up and operating the MKH 8018.

You can find technical specifications under MKH 8018.

Related information
Product overview
Starting up
Operation

Product overview



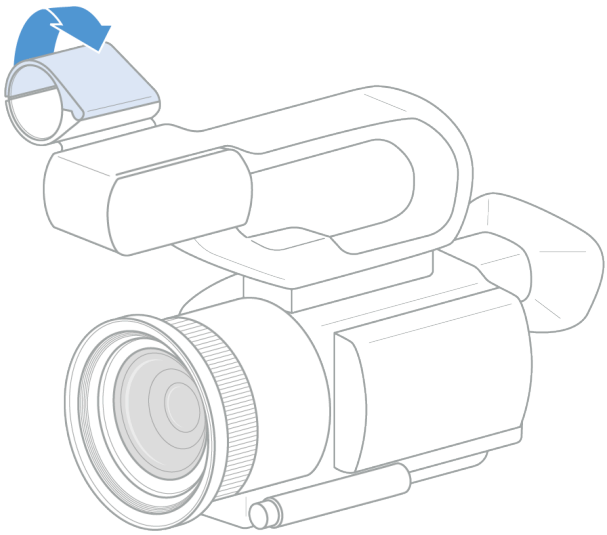
1 Sound inlet baskets Mid/Side
2 Switch pick-up pattern
3 Switch low-cut
4 Switch pad
5 Left (L) | Right (R) + UP markings

6 XLR-5 socket

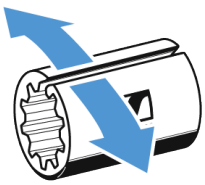
Starting up

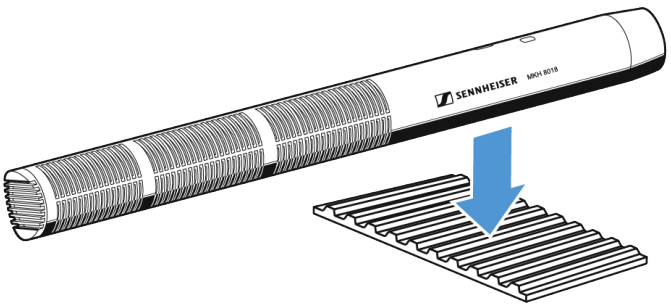
Mounting the microphone on a camera

- Open the mount on the camera for the microphone.

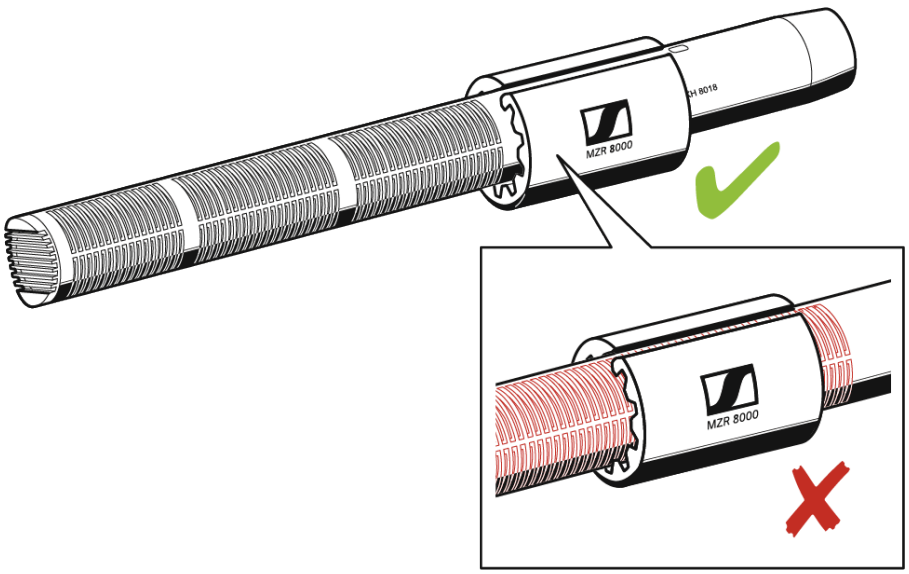


- Open the camera adapter MZR 8000.
- Put the microphone in the camera adapter.

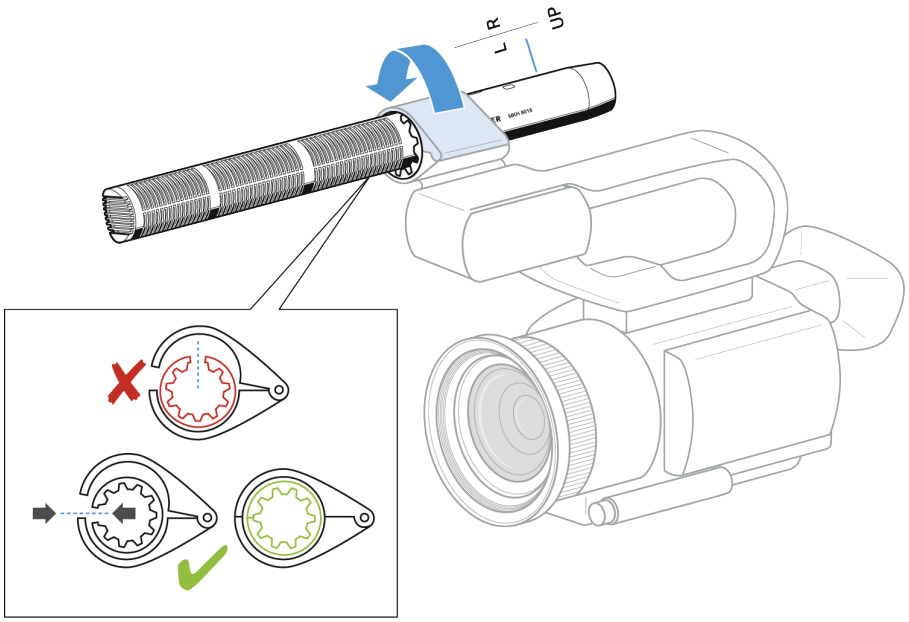




- Make sure that the sound inlet baskets are not obstructed.

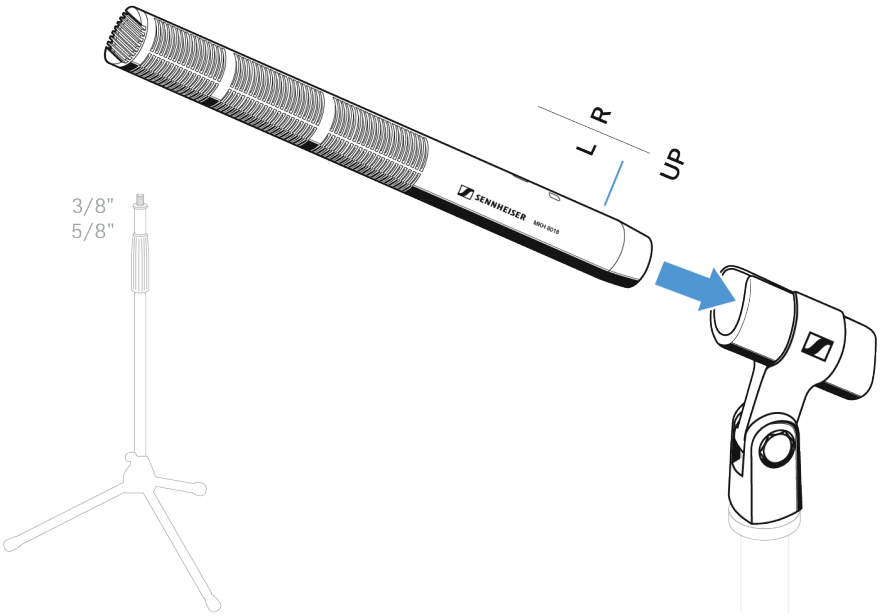


- Put the microphone into the mount on the camera as shown and close the mount.



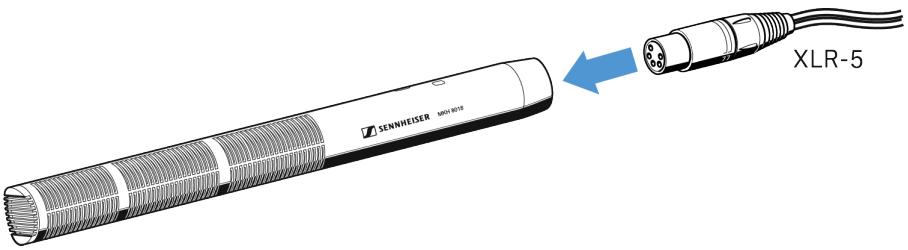
Mounting the microphone to a stand

- Screw the microphone clamp to a stand (optional accessory).
- Place the microphone into the clamp.

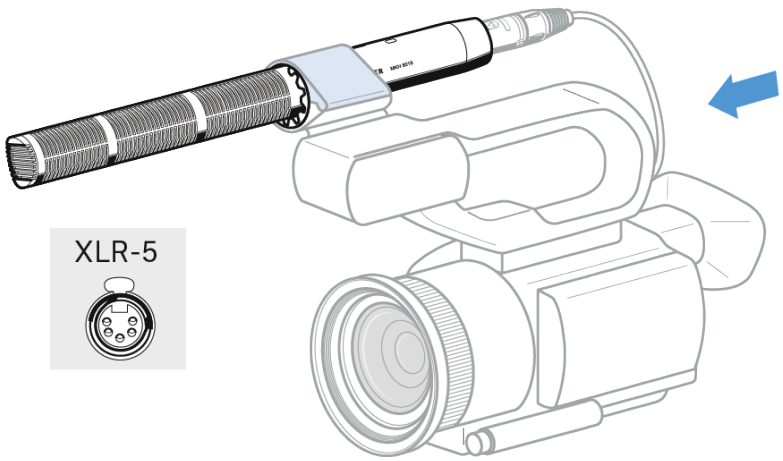


Connecting the microphone

- Connect the XLR-5 socket of the microphone cable (optional accessories) to the XLR-5 socket of the microphone.



- Connect the other end of the cable to a camera.



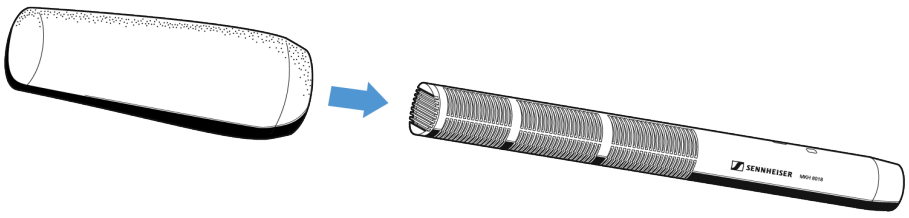
OR

- Connect the other end of the cable to a mixing console.

Using the windshield

> **i** The windshield changes the sound only slightly, but attenuates wind noise by approx. 20 dB.

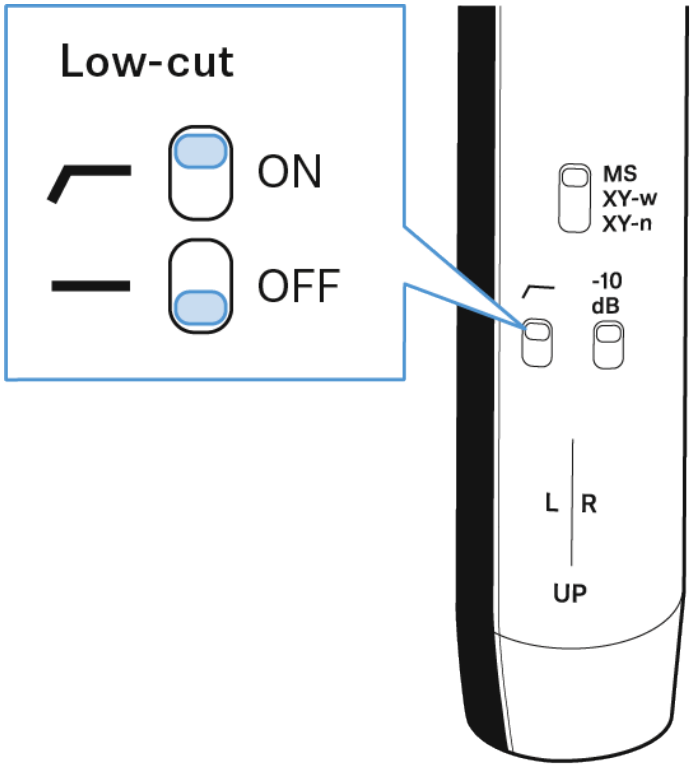
- Place the MZW 8018 windshield over the microphone head.



Operation

Adjust low-cut

- Slide the switch to the desired position: **ON** or **OFF**.

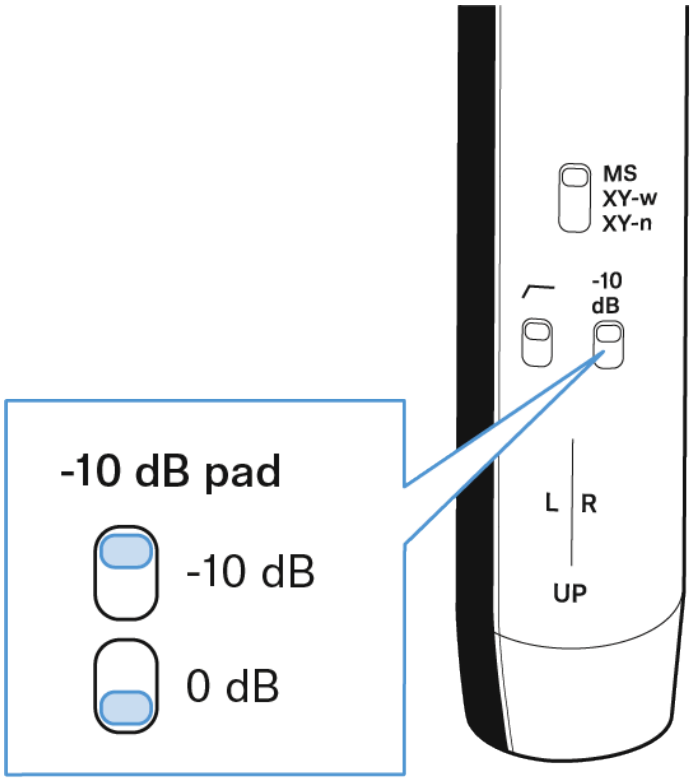


✓ Reduction of low-frequency noises (e. g. wind- and handling noises) by 3 dB at 70 Hz.

Adjust attenuation

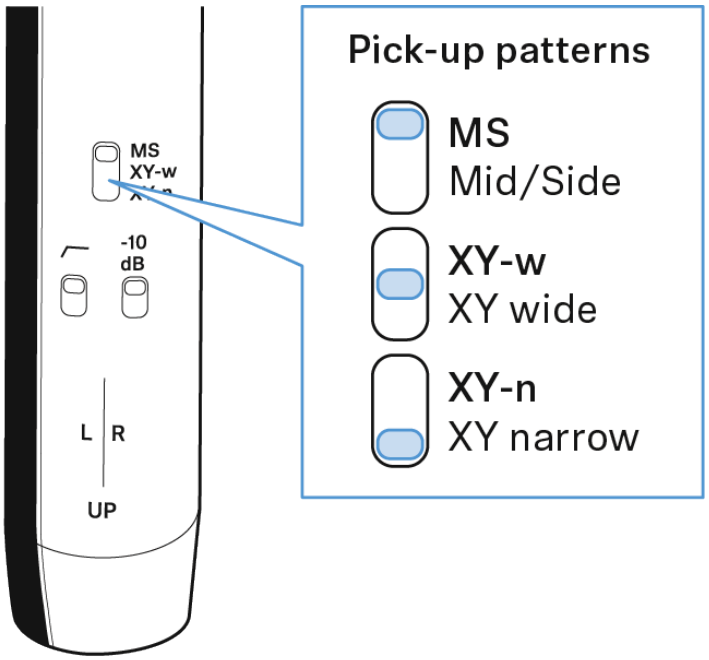
Attenuation of the signal level to protect against clipping with very loud signals.

- Slide the switch to the desired position: **-10 dB** oder **0 dB**.



Adjust the pick-up pattern

- Slide the switch to the desired position: **MS** (Mid/Side), **XY-w** (wide) or **XY-n** (narrow).



Related information

Stereo recording

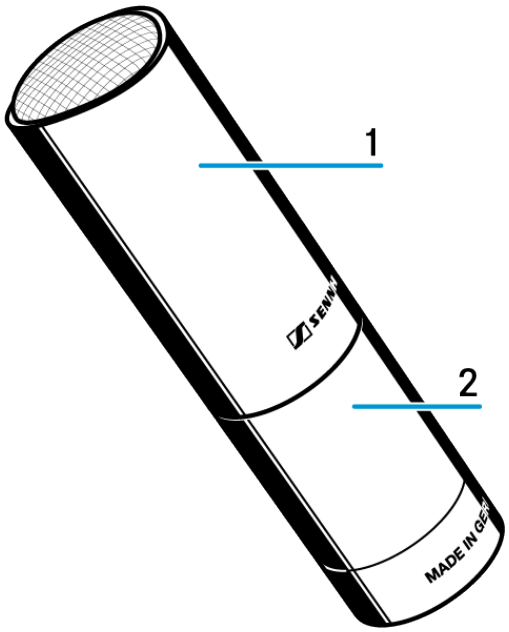
MKH 8020

These sections contain detailed information about starting up and operating the MKH 8020.

You can find technical specifications under MKH 8020.

Related information
Product overview
Starting up
Operation

Product overview



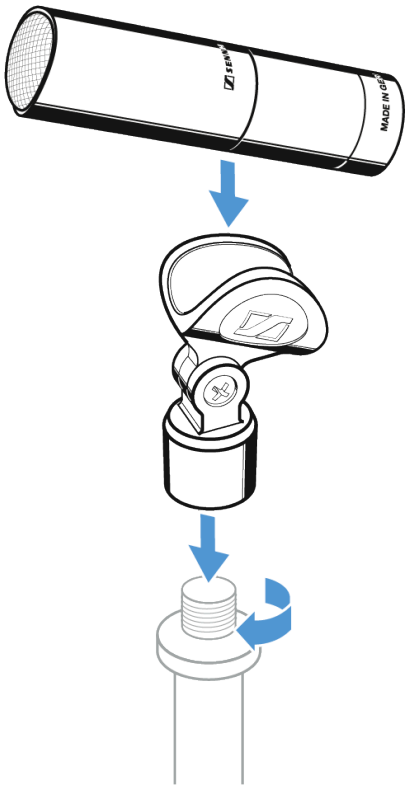
1 Microphone head

2 XLR module

Starting up

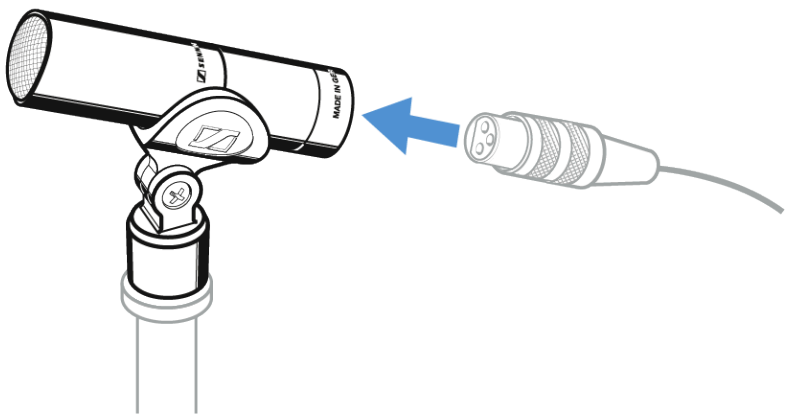
Mounting the microphone

- Screw the microphone clamp to a stand.
- Place the microphone into the clamp.
- Orient the microphone together with the microphone clamp.



Connecting the microphone

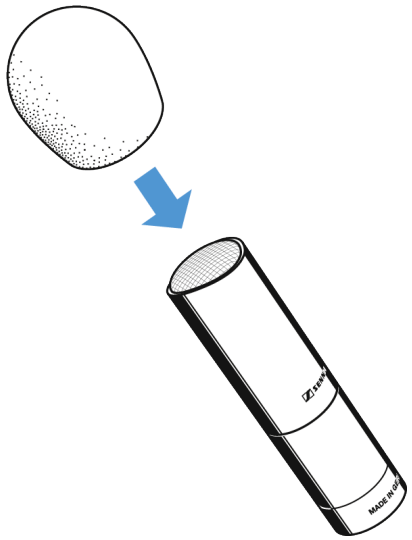
- Connect the XLR-3 socket of the microphone cable (optional accessories) to the XLR-3 socket of the microphone.



Using the windshield

> **i** The windshield changes the sound only slightly, but attenuates wind noise by approx. 30 dB.

- Place the MZW 8000 windshield over the microphone head.



Operation

Related information

Retrofitting or extending the microphone

Stereo recording

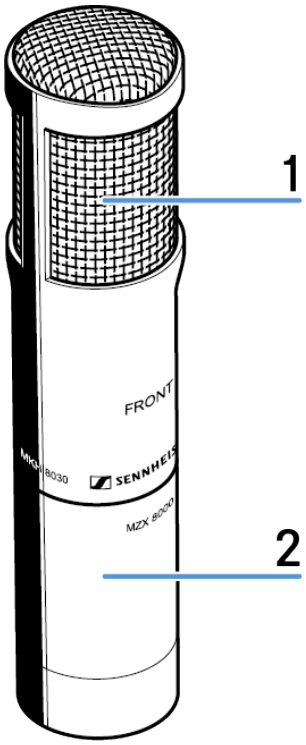
MKH 8030

These sections contain detailed information about starting up and operating the MKH 8030.

You can find technical specifications under MKH 8030.

Related information
Product overview
Starting up
Operation

Product overview



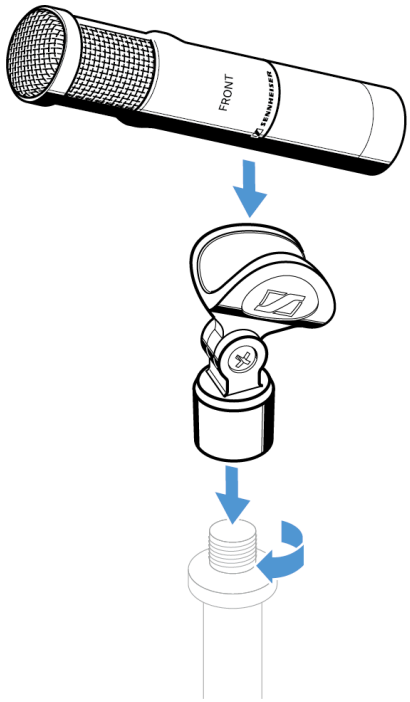
1 Microphone head

2 XLR module

Starting up

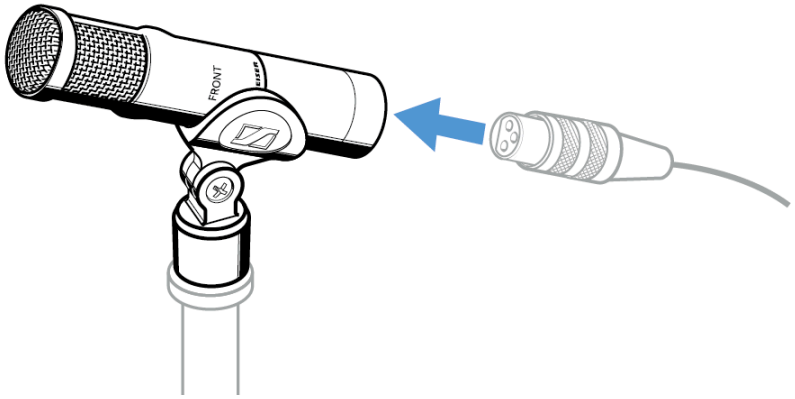
Mounting the microphone

- Screw the microphone clamp to a stand.
- Place the microphone into the clamp.
- Orient the microphone together with the microphone clamp.



Connecting the microphone

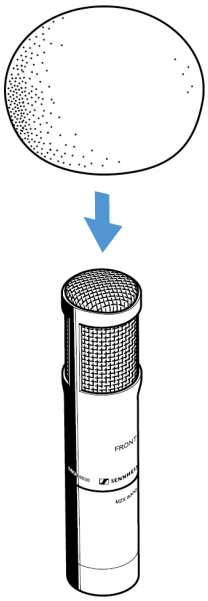
- Connect the XLR-3 socket of the microphone cable (optional accessories) to the XLR-3 socket of the microphone.



Using the windshield

> **i** The windshield changes the sound only slightly, but attenuates wind noise by approx. 20 dB.

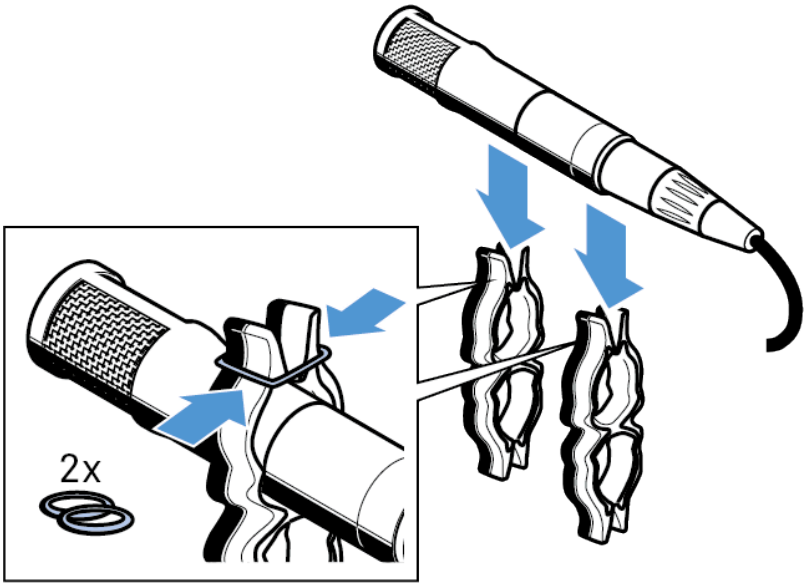
- Place the MZW 8030 windshield over the microphone head.



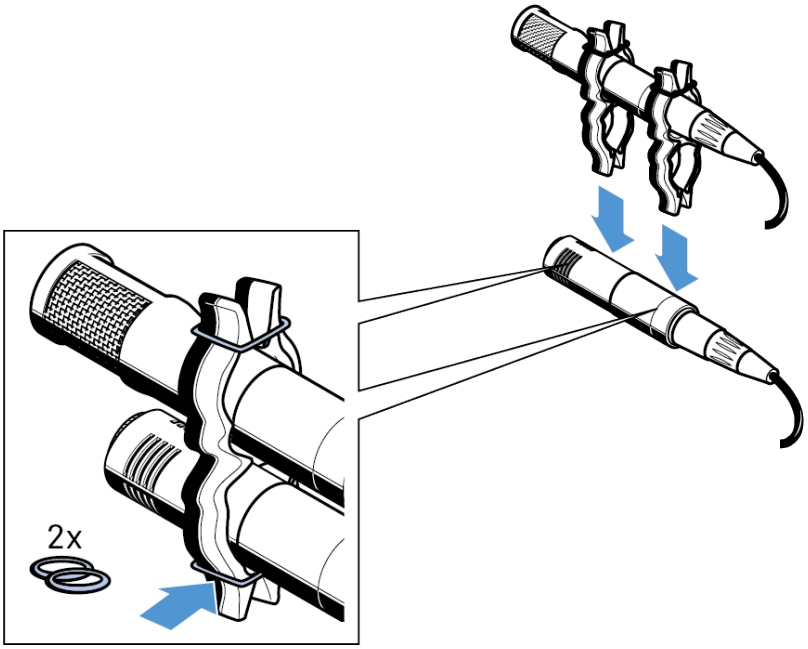
Operation

Using the duoclips

- Insert the MKH 8030 into the top openings of the two duoclips.
- Place a rubber ring over each clip opening.



- Insert the MKH 8040 into the bottom openings of the two duoclips.
- Place a rubber ring over each clip opening.



Related information

Retrofitting or extending the microphone

Stereo recording

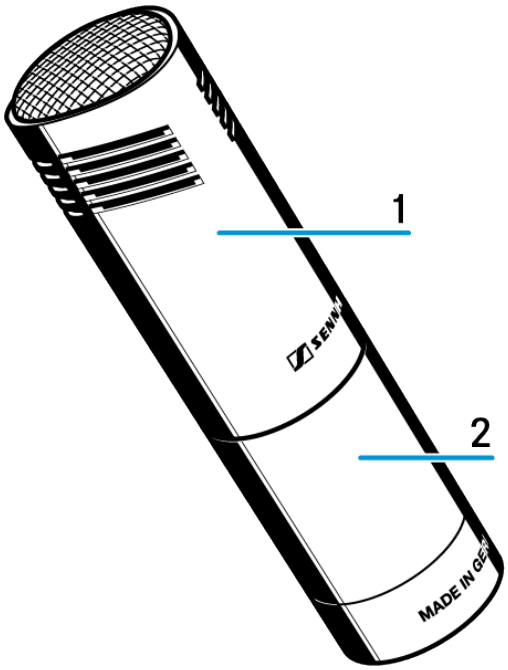
MKH 8040

These sections contain detailed information about starting up and operating the MKH 8040.

You can find technical specifications under MKH 8040.

Related information
Product overview
Starting up
Operation

Product overview



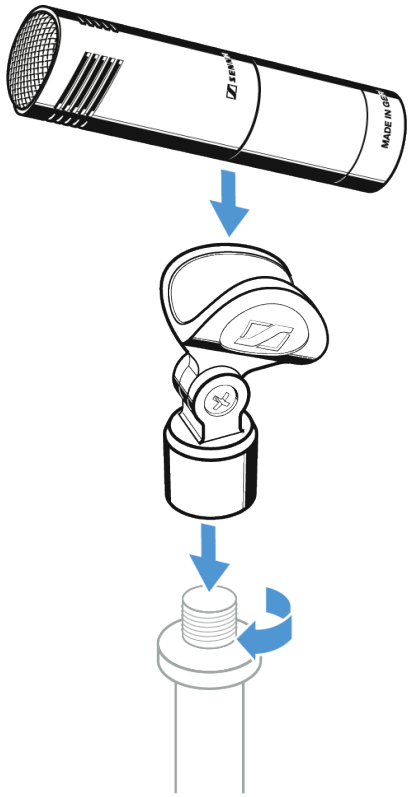
1 Microphone head

2 XLR module

Starting up

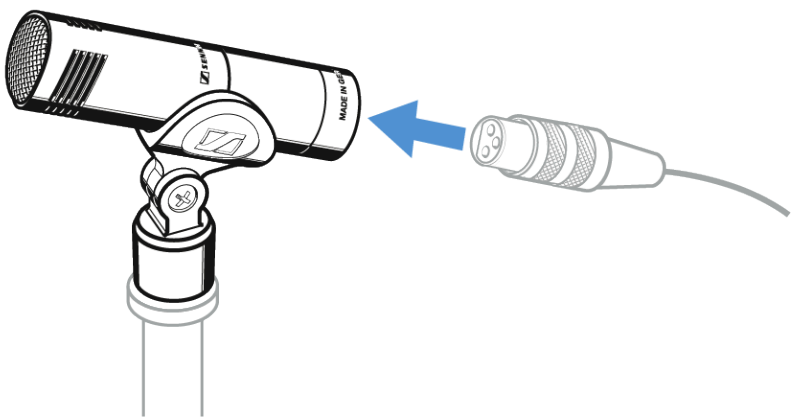
Mounting the microphone

- Screw the microphone clamp to a stand.
- Place the microphone into the clamp.
- Orient the microphone together with the microphone clamp.



Connecting the microphone

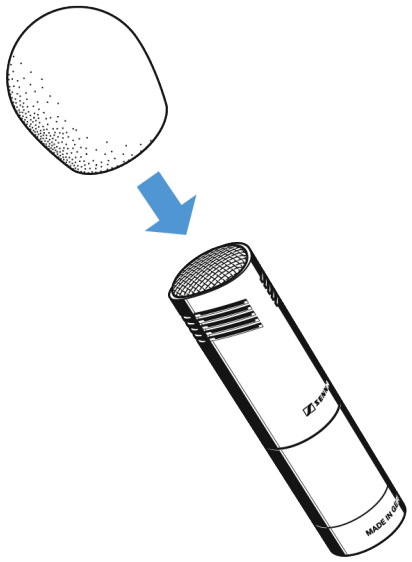
- Connect the XLR-3 socket of the microphone cable (optional accessories) to the XLR-3 socket of the microphone.



Using the windshield

> The windshield changes the sound only slightly, but attenuates wind noise by approx. 30 dB.

- Place the MZW 8000 windshield over the microphone head.



Operation

Related information

Retrofitting or extending the microphone

Stereo recording

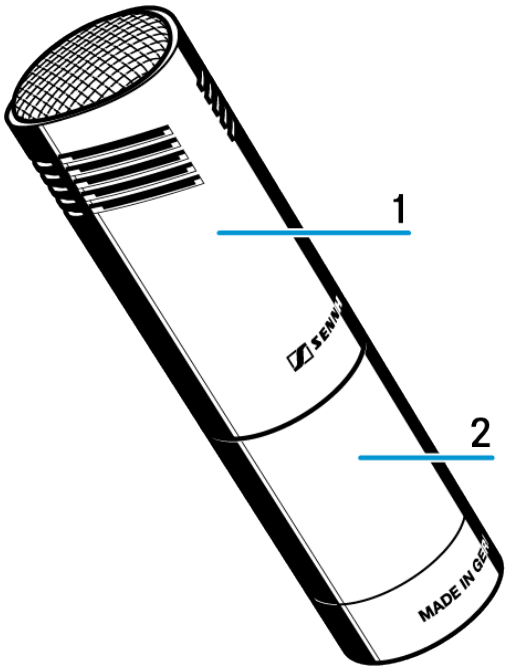
MKH 8050

These sections contain detailed information about starting up and operating the MKH 8050.

You can find technical specifications under MKH 8050.

Related information
Product overview
Starting up
Operation

Product overview



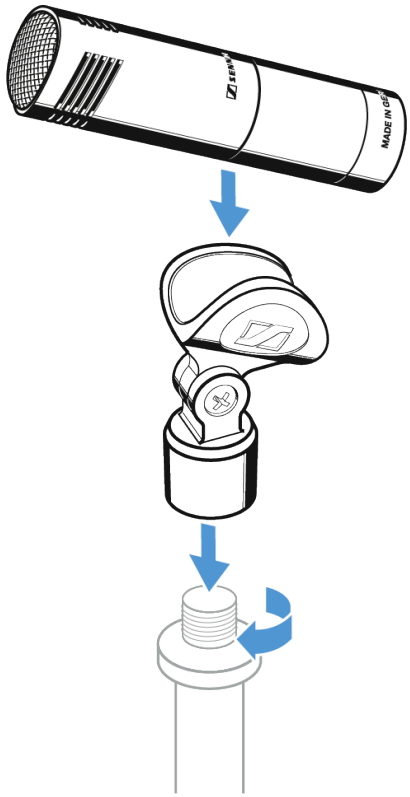
1 Microphone head

2 XLR module

Starting up

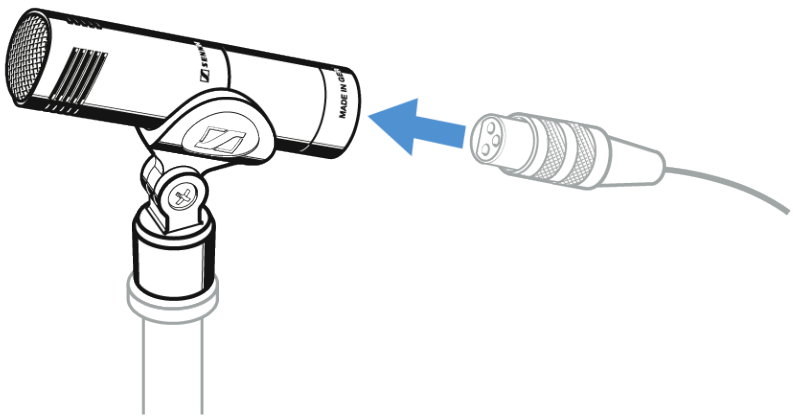
Mounting the microphone

- Screw the microphone clamp to a stand.
- Place the microphone into the clamp.
- Orient the microphone together with the microphone clamp.



Connecting the microphone

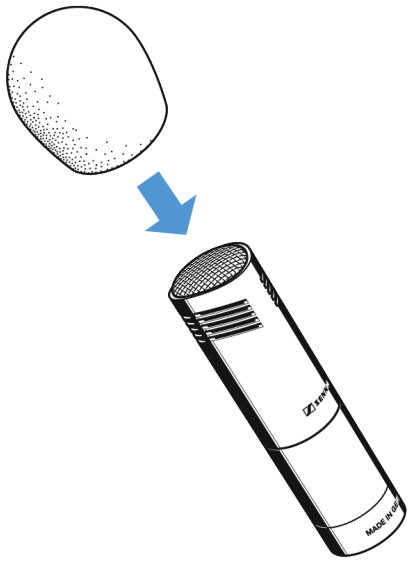
- Connect the XLR-3 socket of the microphone cable (optional accessories) to the XLR-3 socket of the microphone.



Using the windshield

> **i** The windshield changes the sound only slightly, but attenuates wind noise by approx. 30 dB.

- Place the MZW 8000 windshield over the microphone head.



Operation

Related information

Retrofitting or extending the microphone

Stereo recording

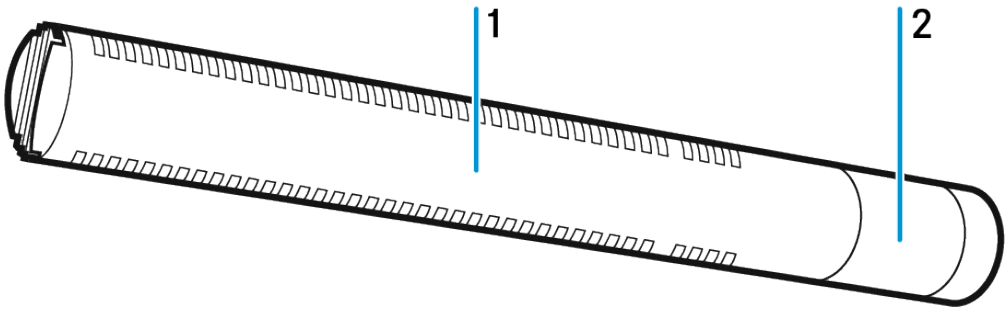
MKH 8060

These sections contain detailed information about starting up and operating the MKH 8060.

You can find technical specifications under MKH 8060.

Related information
Product overview
Starting up
Operation

Product overview



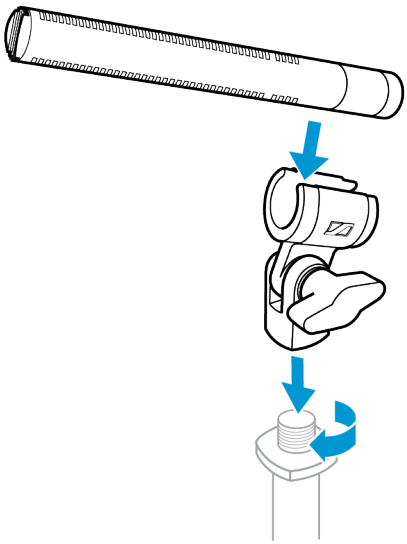
1 Microphone head

2 XLR module

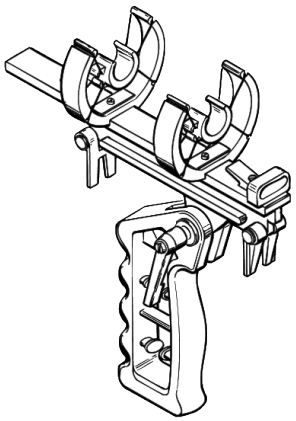
Starting up

Mounting the microphone

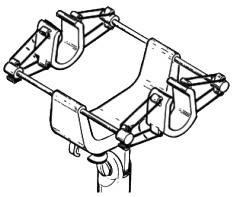
- Screw the microphone clamp to a stand.
- Place the microphone with its back end into the microphone clamp: Make sure that the lateral slots are not covered.
- Orient the microphone together with the microphone clamp and fix them by screwing the wing screw tight.



To suppress structure-borne noise, you can use one of the optional shock mounts (see MZS 20-1 and MZS 40).



MZS 20-1

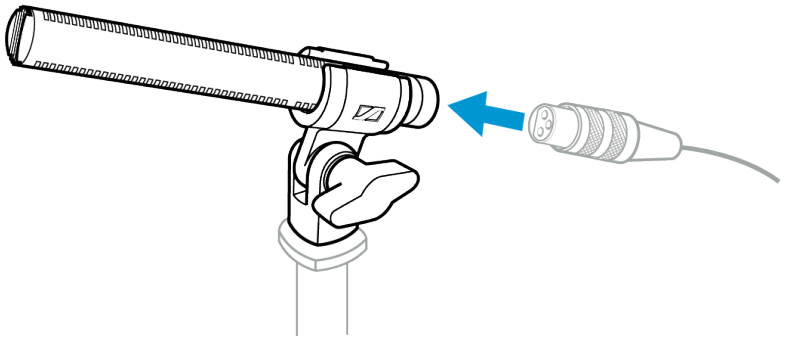


MZS 40

i For optimal wind protection, use the MZS 20-1 in combination with the MZW 20-1 basket windshield and the MZH 20-1 cover.

Connecting the microphone

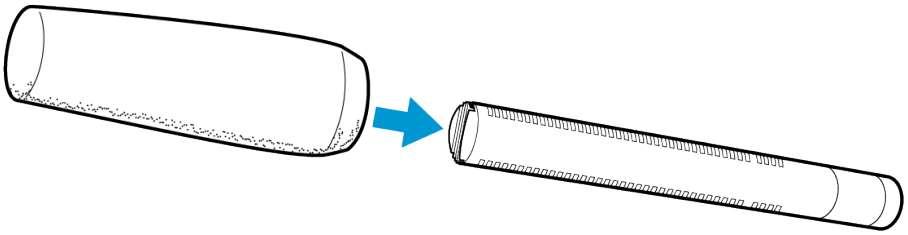
- Connect the XLR-3 socket of the microphone cable (optional accessories) to the XLR-3 socket of the microphone.



Using the windshield

> **i** The windshield changes the sound only slightly, but attenuates wind noise by approx. 25 dB.

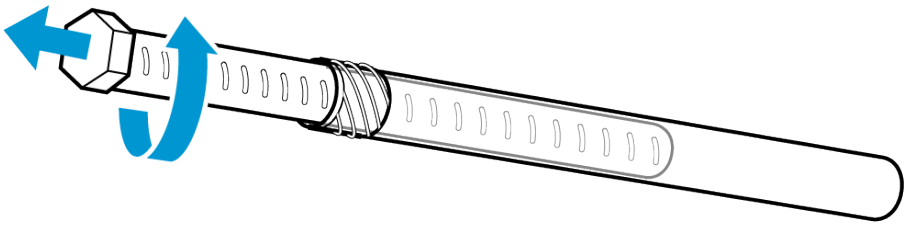
- Place the MZW 8060 foam windshield over the microphone head so that all lateral slots are covered.



Operation

Prepare the microphone for transport

- Let the microphone dry if you used it under extreme climatic conditions.
- If necessary, remove the windshield or take the microphone out of the basket windshield.
- Slide the microphone into the transport tube.



Related information

Retrofitting or extending the microphone

Stereo recording

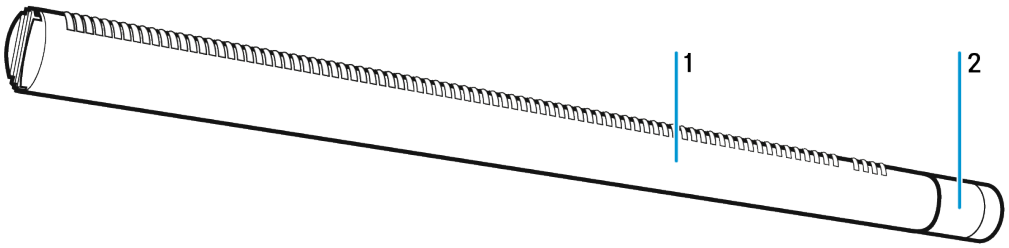
MKH 8070

These sections contain detailed information about starting up and operating the MKH 8070.

You can find technical specifications under MKH 8070.

Related information
Product overview
Starting up
Operation

Product overview



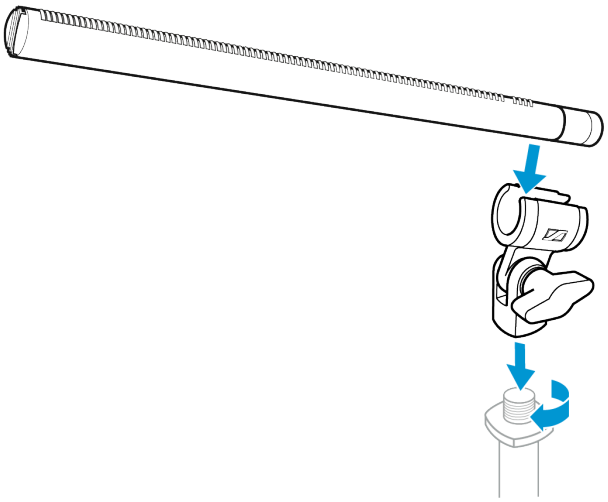
1 Microphone head

2 XLR module

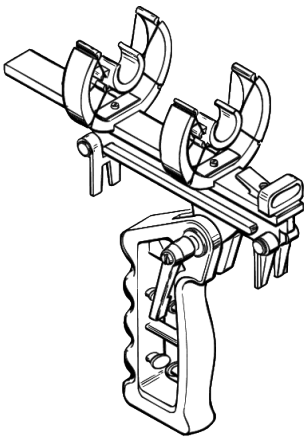
Starting up

Mounting the microphone

- Screw the microphone clamp to a stand.
- Place the microphone with its back end into the microphone clamp: Make sure that the lateral slots are not covered.
- Orient the microphone together with the microphone clamp and fix them by screwing the wing screw tight.



To suppress structure-borne noise, you can use one of the optional shock mounts (see MZS 20-1).

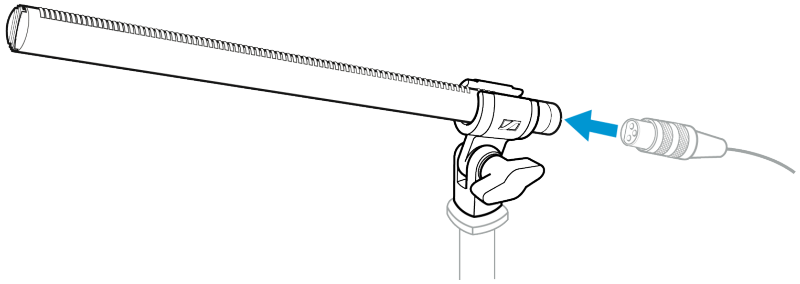


MZS 20-1

i For optimal wind protection, use the MZS 20-1 in combination with the MZW 20-1 basket windshield and the MZH 20-1 cover.

Connecting the microphone

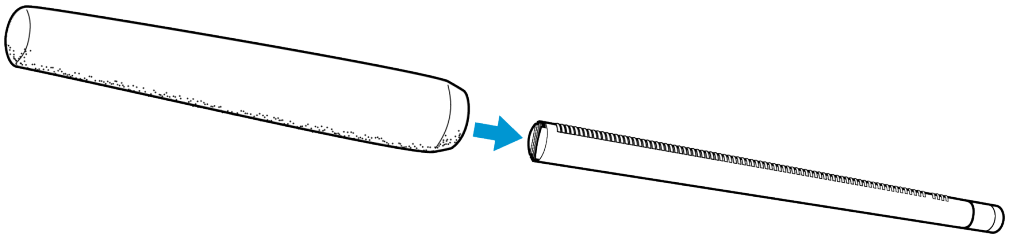
- Connect the XLR-3 socket of the microphone cable (optional accessories) to the XLR-3 socket of the microphone.



Using the windshield

> **i** The windshield changes the sound only slightly, but attenuates wind noise by approx. 25 dB.

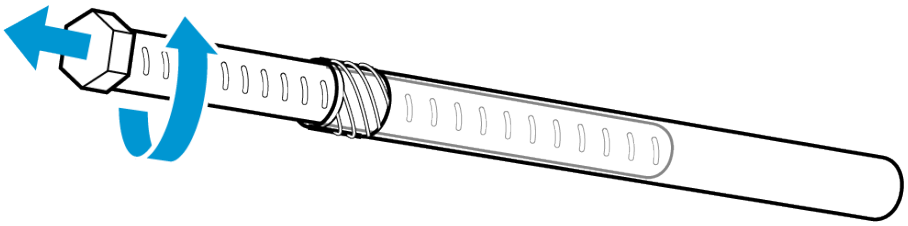
- Place the MZW 8060 foam windshield over the microphone head so that all lateral slots are covered.



Operation

Prepare the microphone for transport

- Let the microphone dry if you used it under extreme climatic conditions.
- If necessary, remove the windshield or take the microphone out of the basket windshield.
- Slide the microphone into the transport tube.



Related information

Retrofitting or extending the microphone

Stereo recording

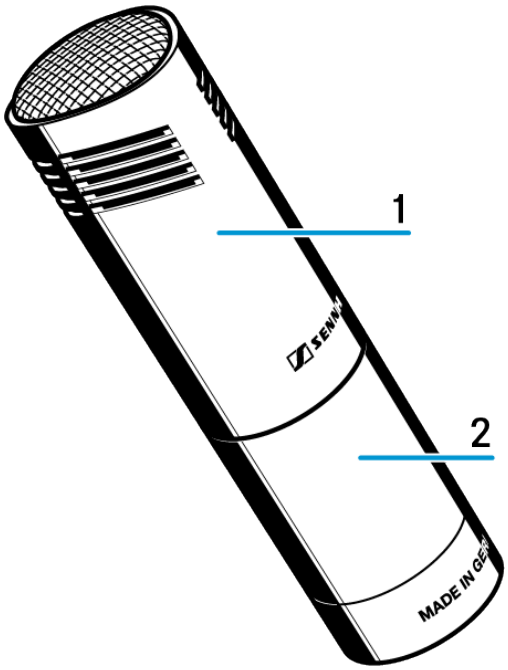
MKH 8090

These sections contain detailed information about starting up and operating the MKH 8090.

You can find technical specifications under MKH 8090.

Related information
Product overview
Starting up
Operation

Product overview



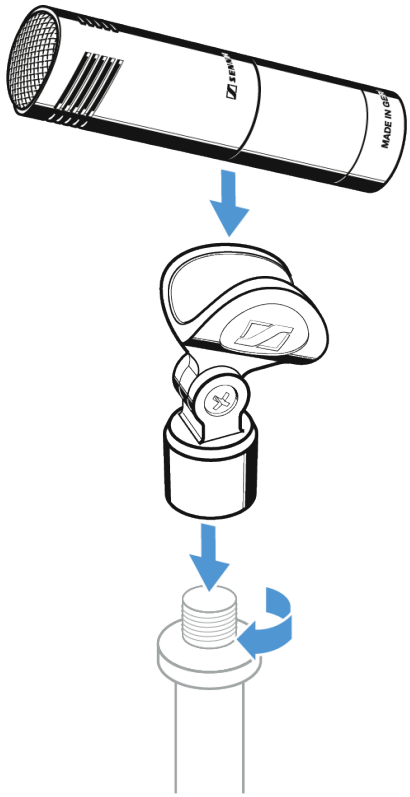
1 Microphone head

2 XLR module

Starting up

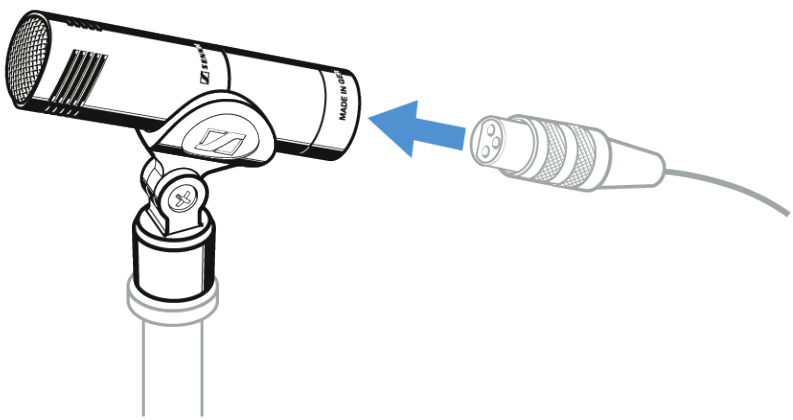
Mounting the microphone

- Screw the microphone clamp to a stand.
- Place the microphone into the clamp.
- Orient the microphone together with the microphone clamp.



Connecting the microphone

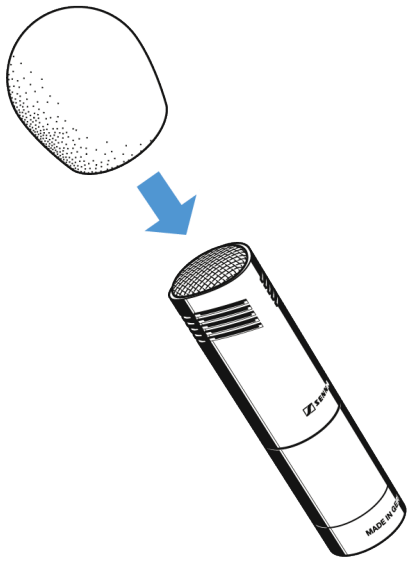
- Connect the XLR-3 socket of the microphone cable (optional accessories) to the XLR-3 socket of the microphone.



Using the windshield

> **i** The windshield changes the sound only slightly, but attenuates wind noise by approx. 30 dB.

- Place the MZW 8000 windshield over the microphone head.



Operation

Related information

Retrofitting or extending the microphone

Stereo recording

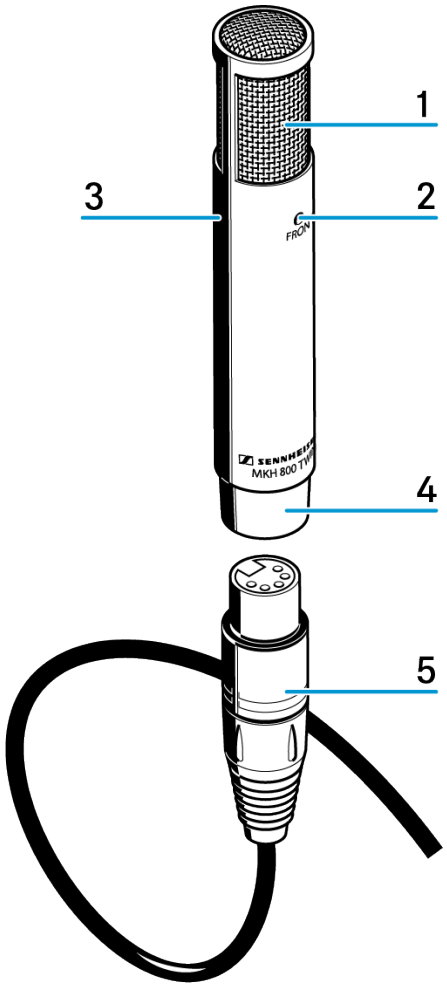
MKH 800 TWIN

These sections contain detailed information about starting up and operating the MKH 800 TWIN.

You can find technical specifications under MKH 800 TWIN.

Related information
Product overview
Starting up
Operation

Product overview



1 Sound inlet basket

2 LED Front (blue)

3 LED Rear (red)

4 XLR-5 connector

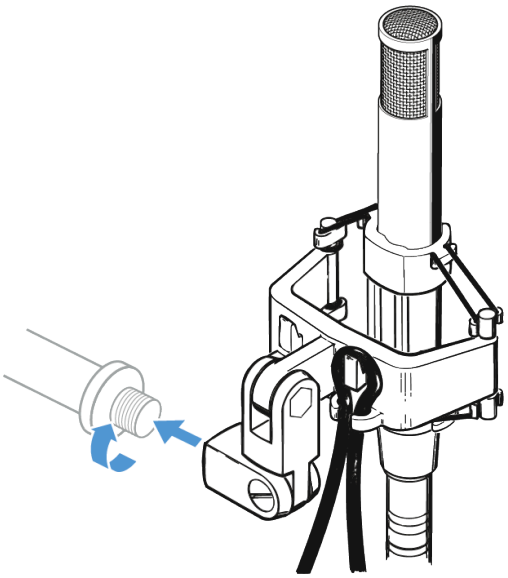
5 AC 20 adaptor cable

Starting up

Mounting the microphone

> The supplied MZS 80 shock mount allows the MKH 800 TWIN to be mounted to a stand and effectively protects against structure-borne noise.

- Select the suitable mounting thread:
  - Without thread insert: 5/8" thread
  - With thread insert: 3/8" thread
- Screw the shock mount to a stand.
- Pass the cable through the cable grip as shown.
- Place the microphone into the shock mount as shown.

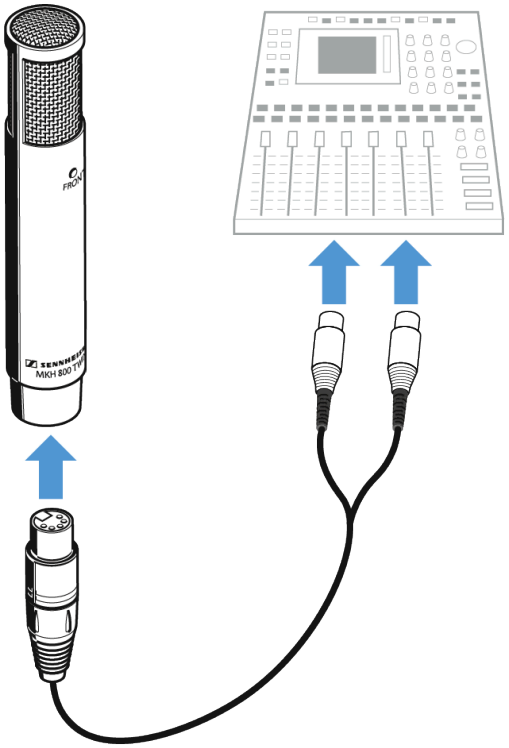


Connecting the microphone

> The MKH 800 TWIN has been designed for a 48 ± 4 V phantom powering.

- Connect the XLR-5 socket of the adaptor cable to the XLR-5 connector of the microphone.
- Connect the two XLR-3 connectors of the adaptor cable to the corresponding sockets of your mixing console.

- Switch on the phantom powering on your mixing console.



✓ The LEDs Front and Rear on the microphone light up.

Aligning the microphone

- The front of the microphone is marked by the word “Front” and a blue LED whereas the rear is marked by a red LED.
- The LEDs can be used for aligning the microphone. On-axis alignment is indicated by maximum brightness.

Function monitoring

- The two LEDs Front and Rear indicate operational readiness separately for both channels. The LEDs go off if the supply voltage drops below 42 V.

Using the windshield

> **i** Pop noises resulting from close miking can be suppressed effectively using the optional MZW 80-ANT windshield.

- Slide on the windshield onto the sound inlet basket.

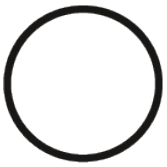
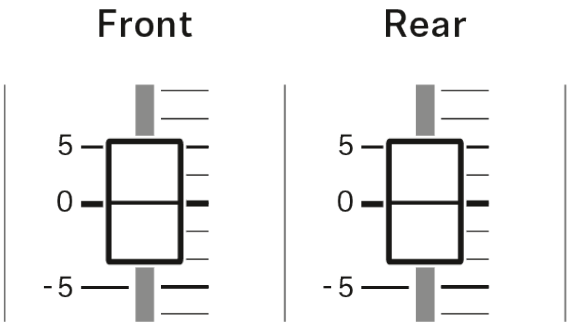
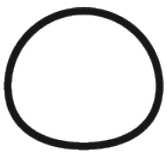
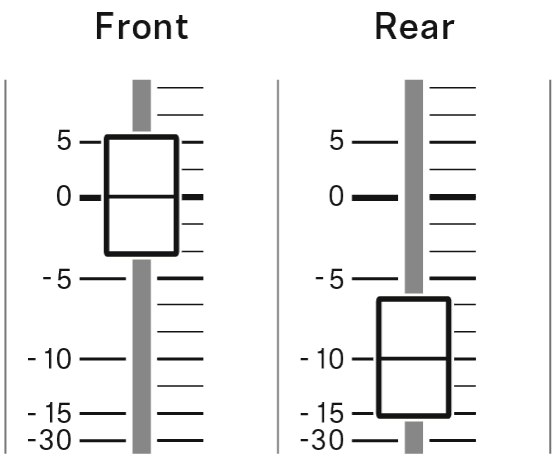
Operation

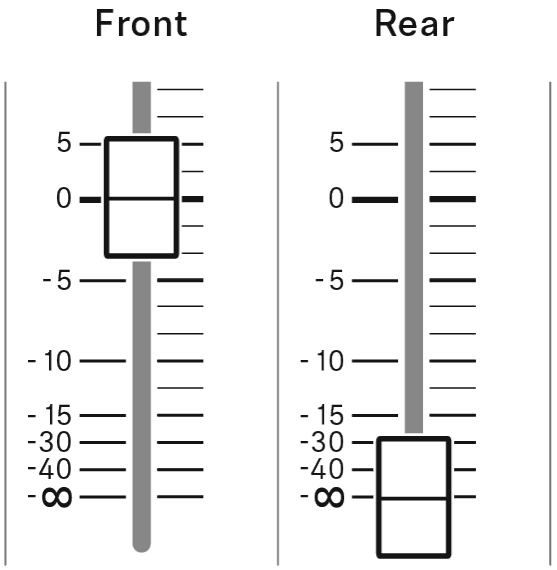
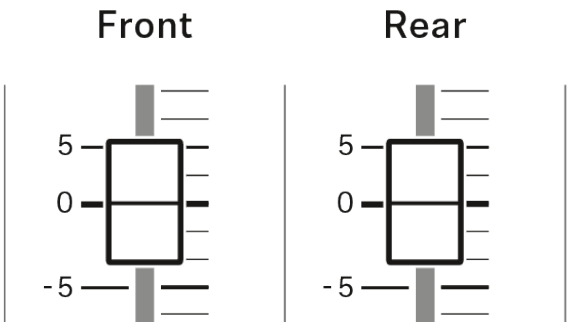
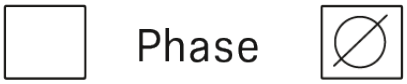
Remote adjustment of the pick-up patterns

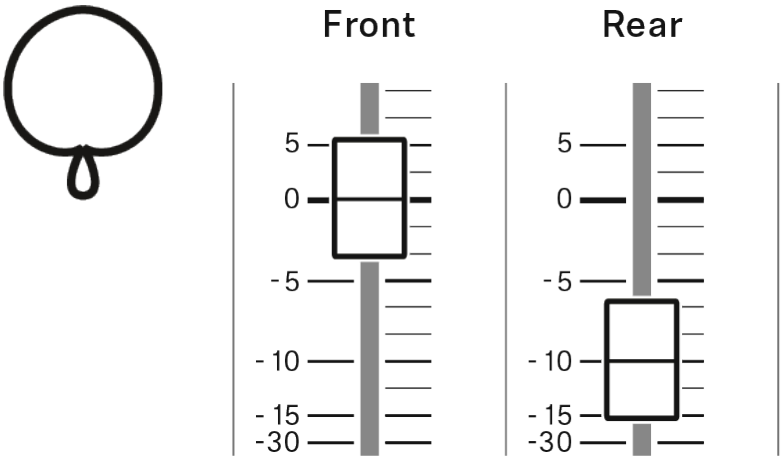
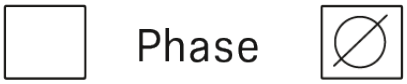
i The two signals of the MKH 800 TWIN allow the remote adjustment of the pick-up patterns at the mixing console.

The two microphone signals (front and rear) are routed to separate channels and summed together. The sum signal is then distributed over the stereo channels as usual using the pan control.

▶ The pan control of both channels has to be aligned identically for correct operation.

Pick-up pattern	Setting
Omni-directional 	Set the amplification to the same value in both channels. 
Wide cardioid* 	Set the amplification in the rear channel lower than in the front channel. 

Pick-up pattern	Setting
Cardioid	Activate the front channel only. 
Figure-8	Set the amplification to the same value in both channels.  Invert the phase of the rear channel. 

Pick-up pattern	Setting
Super-cardioid**	Set the amplification in the rear channel lower than in the front channel.  Invert the phase of the rear channel. 

***Wide cardioid: Pattern between omni-directional and cardioid**

The wide cardioid pattern of the MKH 800 is, for example, the result if the rear channel has 10 dB less amplification than the front channel. The pick-up pattern becomes more omni-directional at higher amplification and more cardioid at lower amplification.

At the same time, the rear attenuation (180° attenuation) of the microphone changes. It is the direct result of the amplification ratio between the front and the rear channel, i.e. 10 dB in the example of the wide cardioid pattern.

****Super-cardioid: Pattern between cardioid and figure-8**

The super-cardioid pattern of the MKH 800 is, for example, the result if the amplification of the rear channel is 10 dB lower than that of the front channel and if the phase of the rear channel is inverted. At higher amplification, the pick-up pattern tends towards the figure-8 pattern, otherwise the pattern becomes more cardioid.

The cancellation angle at which the microphone is especially insensitive also changes. It is 180° in the case of the cardioid pattern, 120° for the super-cardioid pattern and 90° for the figure-8 pattern. If the MKH 800 TWIN is used as a supporting microphone, the attenuation between different groups of instruments in an orchestra can for example be optimised in this way. Here, too, the rear attenuation is the result of the amplification ratio between the front and the rear channel, i.e. 10 dB in the case of the super-cardioid pattern.

Changing the pick-up pattern

There are two different ways of changing the pick-up pattern of the microphone.

- If the microphone level has to be changed **infrequently**: At the mixing console, set the preamplification to the same value in both channels.
- Vary the pick-up pattern by using the level control and the phase switch of the rear channel. The level control of the front channel stays in the same position.
- If the microphone level has to be changed **frequently**: At the mixing console, set the level controls to the same value and couple them mechanically or electrically.
- Change the pick-up pattern by using the pre-set gain control and the phase switch of the rear channel.

Surround applications

As a result of the symmetry of the microphone, it is also possible to create any desired rear pick-up pattern. For this purpose the microphone signals are additionally routed to two other channels, whereby front and rear channel exchange roles. The settings are then made in the same way as described above and the rear pick-up patterns can be freely selected. Both pick-up patterns are then available simultaneously, for example for a surround front channel and a surround rear channel. With two MKH 800 TWIN, four surround channels can be created in this way.

If only the cardioid pick-up pattern is required for the front and rear channels, the microphone signals can also be used directly. This minimises the necessary effort.

With an MKH 800 TWIN and a figure-8 microphone (e.g. MKH 30) full surround-sound recording using the double MS technique (MSM) can be done. As is common with the MS technique, the figure-8 microphone is positioned above the MKH 800 TWIN and directed to the left. The front and rear left and right surround channels are produced by matrixing the figure-8 signal and the front and rear signals of the MKH 800 TWIN.

By combining the front and rear signals of the MKH 800 TWIN, a centre channel with any pick-up pattern can be achieved and even a centre rear channel is possible if required. In spite of the wide range of options, postproduction still only requires the original microphone signals to be saved, i.e. only three signals for five or six surround channels.

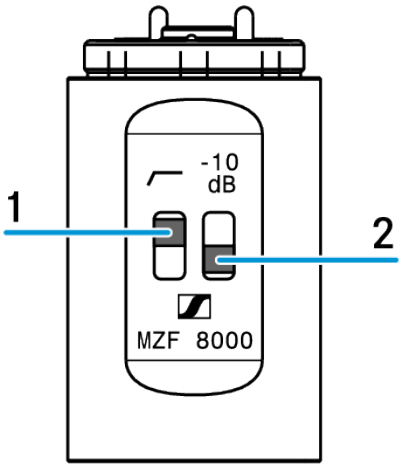
MZF 8000 II

These sections contain detailed information about starting up and operating the MZF 8000 II.

You can find technical specifications under MZF 8000 II.

Related information
Product overview
Starting up
Operation

Product overview



1 Switch for low-cut/roll-off filter

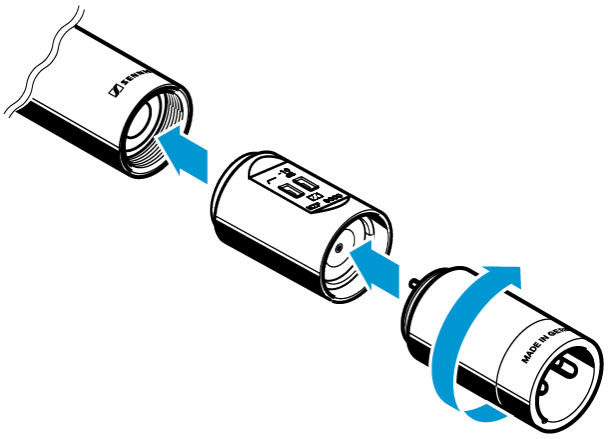
2 Switch for attenuation

Starting up

You can retrofit and extend the microphones of the modular MKH 8000 microphone series by using the filter module - except the MKH 8018.

Connecting the filter module

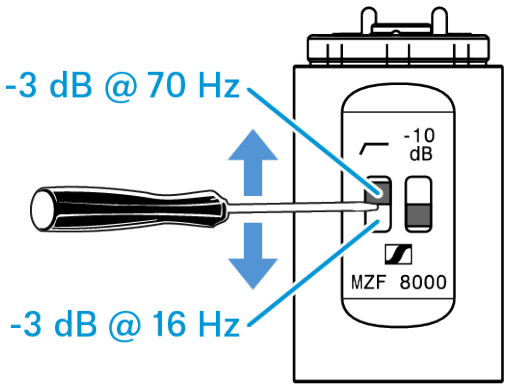
- If necessary, disconnect a connected XLR cable in order to not distort the cable and to avoid short-circuits.
- Unscrew the microphone head from the XLR module.
- Screw the MZF 8000 II filter module at a suitable place in the audio signal chain between microphone head and XLR module.



Operation

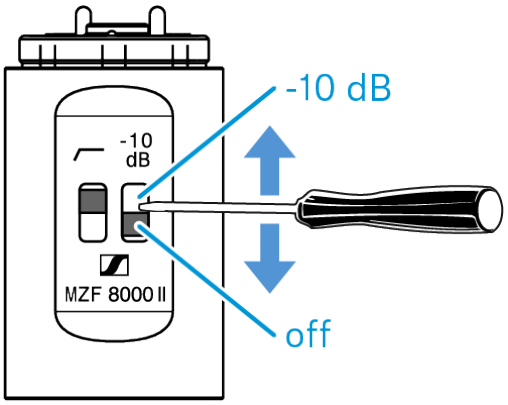
Adjusting the low-cut/roll-off filter

- Set the low-cut/roll-off switch to the desired position:



Adjusting the attenuation

- Set the attenuation switch to the desired position:



Cleaning and maintenance

Note the following information when cleaning and maintaining MKH 8000 series products

NOTICE

Liquids can damage the electronics of the product

Liquids entering the product housing can cause a short-circuit and damage the electronics.

- Keep all liquids away from the products.
- Do not use any solvents or cleansing agents.
- Disconnect the mains-operated products from the power supply system and remove rechargeable batteries and batteries (if present) before you begin cleaning.
- Clean all products only with a soft, dry cloth.

4. Specifications

All specifications at a glance.

MKH 8018
MKH 8020
MKH 8030
MKH 8040
MKH 8050
MKH 8060
MKH 8070
MKH 8090
MKH 800 TWIN
MZF 8000 II

MKH 8018

SPECIFICATIONS

Pick-up pattern

- stereo shotgun

Frequency response

- 40 Hz - 20,000 Hz

Sensitivity

- M-Channel: 56 mV/Pa; -25 dB ref (1 V/Pa)
- S-Channel: 25 mV/Pa; -32 dB ref (1 V/Pa)
- XY Narrow: 50 mV/Pa; -26 dB ref (1 V/Pa)
- XY Wide: 32 mV/Pa; -30 dB ref (1 V/Pa)

Equivalent noise level

- M-Channel: 12 dB A-weighted; 24 dB CCIR-weighted
- S-Channel: 14,5 dB A-weighted; 24 dB CCIR-weighted
- XY Narrow: 12 dB A-weighted; 24 dB CCIR-weighted
- XY Wide: 13 dB A-weighted; 25 dB CCIR-weighted

Nominal impedance at 1 kHz

- 430 Ω

Min. load impedance

- 4.7 kΩ

Low-cut filter (switchable)

- -3 dB @ 70 Hz

Attenuation (switchable)

- -10 dB

Power supply

- P48 (IEC 61938)

Current consumption

- 2x 3.4 mA

Max. SPL

- > 126 dB

Connector

- XLR-5M

Diameter

- 22 mm

Length

- 230 mm

Weight

- 115 g

Temperature range

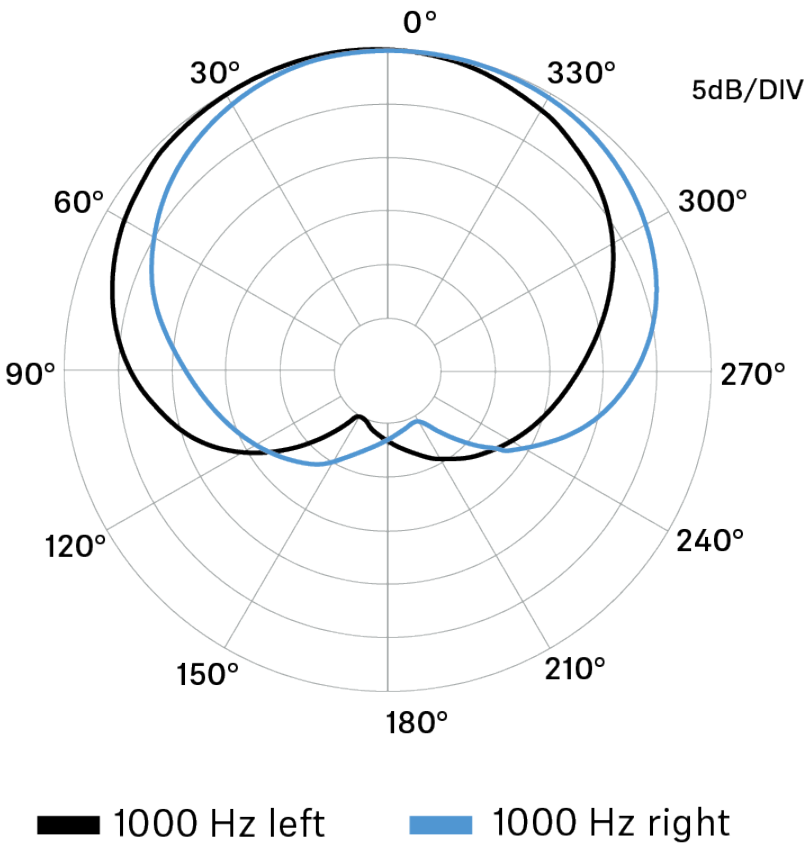
- Operating: -10 °C bis +60 °C
- Storage: -20 °C bis 70 °C

Relative humidity

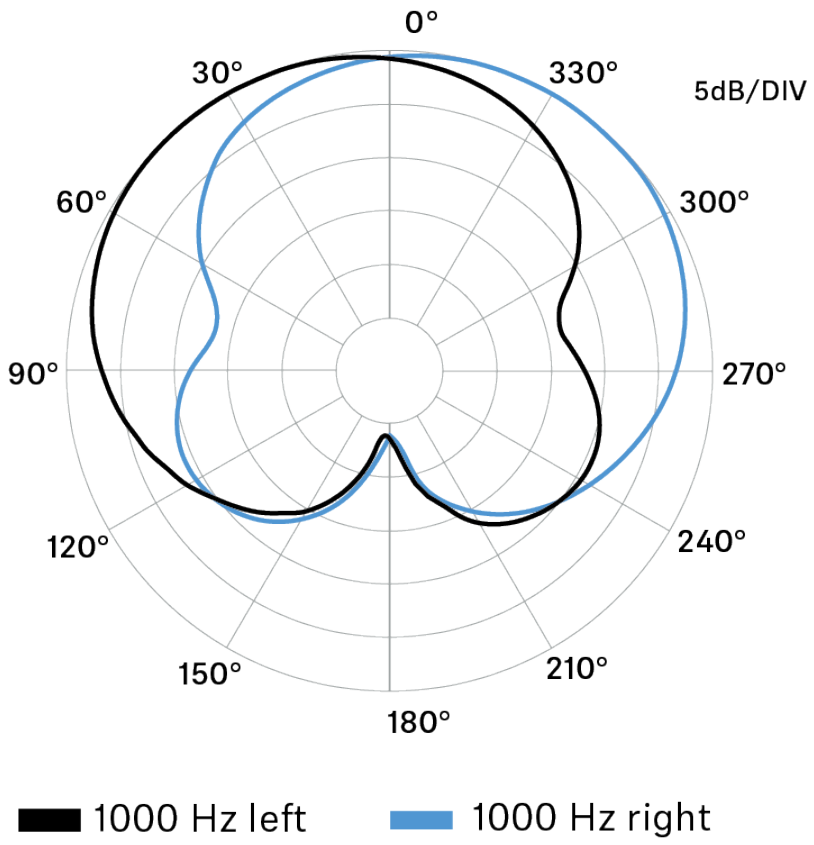
- 5 to 95%, non condensing

Polar pattern

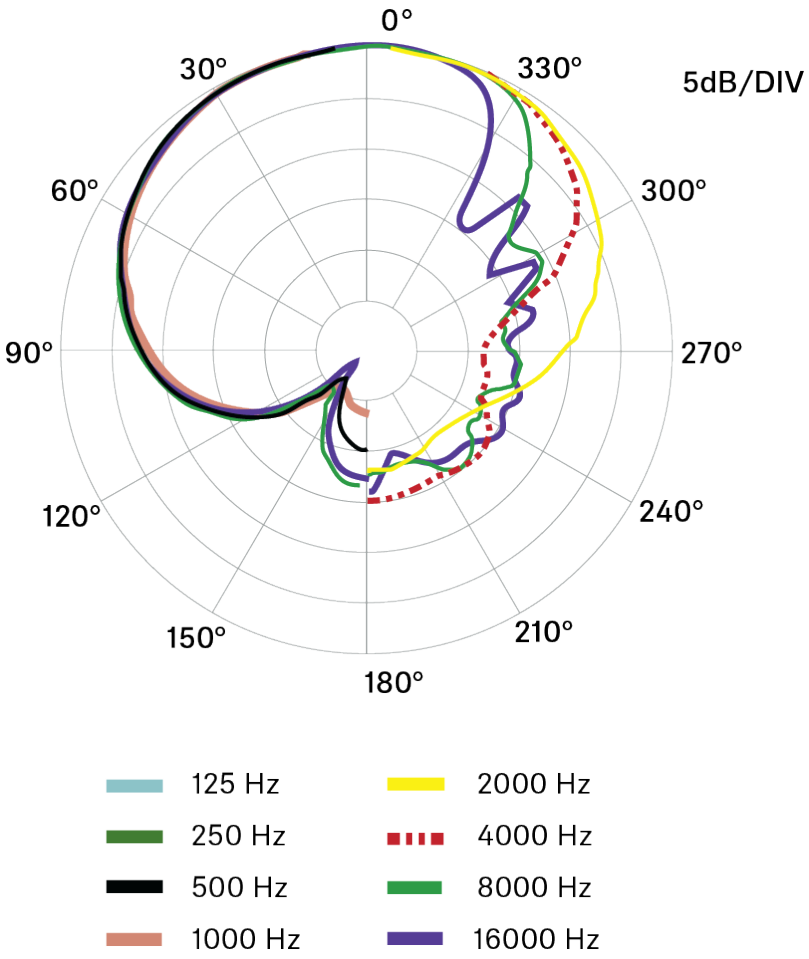
XY narrow



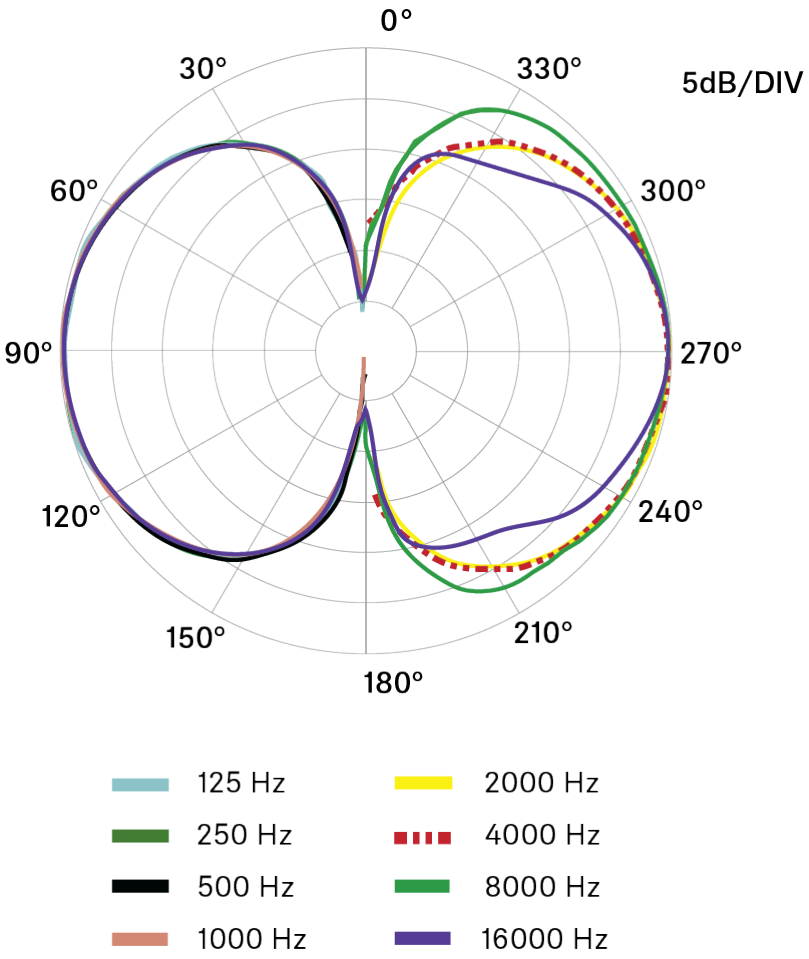
XY wide


0°
30°
330°
5dB/DIV
60°
300°
90°
270°
120°
240°
150°
210°
180°
1000 Hz left
1000 Hz right

Mid / M-Channel

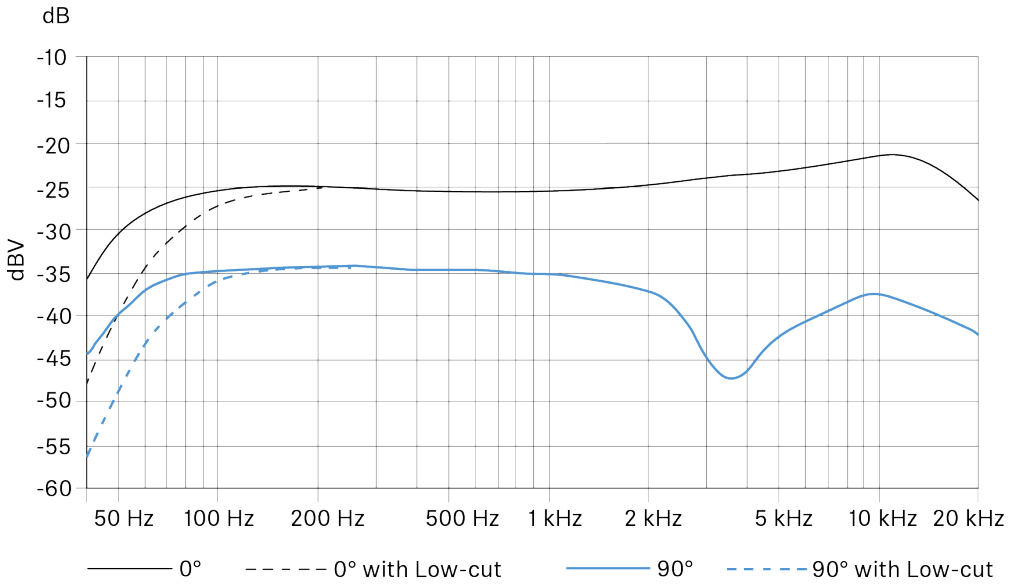


Side / S-Channel

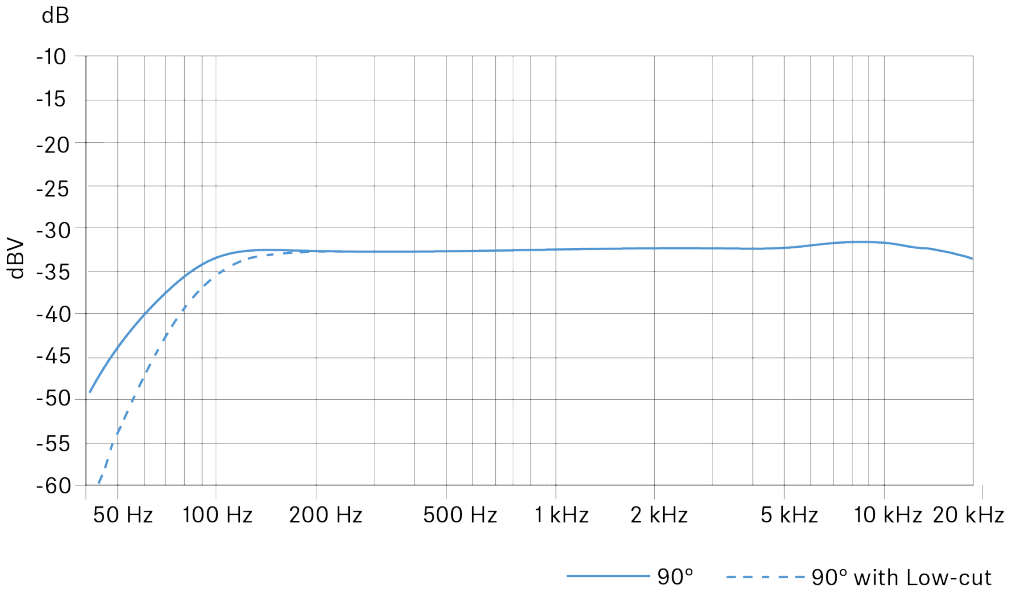


Frequency response

Mid / M-Channel



Side / S-Channel



MKH 8020

Specifications

Pick-up pattern

- Omni-directional

Frequency response

- 30 - 50,000 Hz

Sensitivity

- -30 dBV/Pa (31 mV/Pa) without MZF 8000 II filter module
- -40 dBV/Pa (10 mV/Pa) with MZF 8000 II filter module

Sound pressure level limit

- 138 dB SPL without MZF 8000 II filter module
- 133 dB SPL with MZF 8000 II filter module

Equivalent noise level

- A-weighted: 10 dB(A)
- CCIR-weighted: 21 dB

Phantom powering

- 48 V ± 4 V (P48, IEC 61938)

Power consumption

- 3.3 mA

Diameter

- approx. 19 mm

Length

- approx. 41 mm
- approx. 75 mm with XLR-Modul MZX 8000

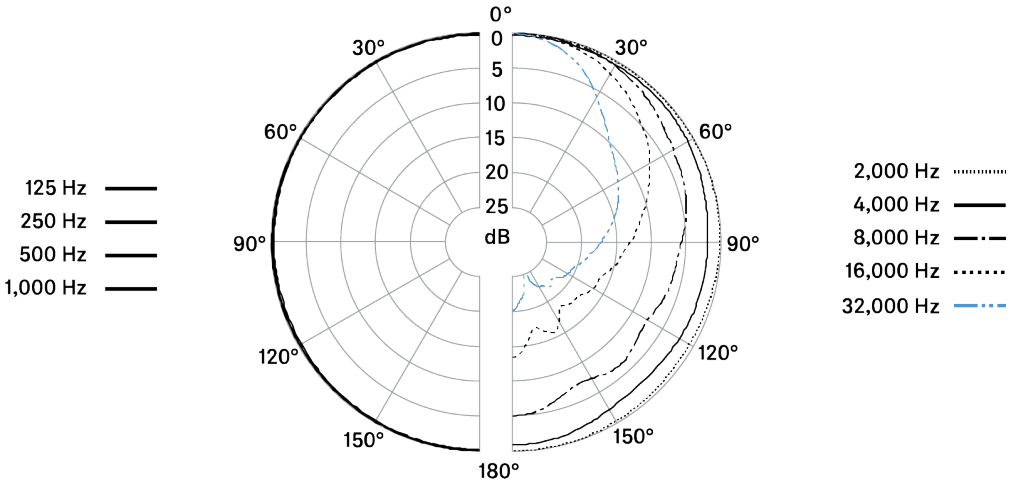
Weight

- approx. 25 g
- approx. 55 g with XLR-Modul MZX 8000

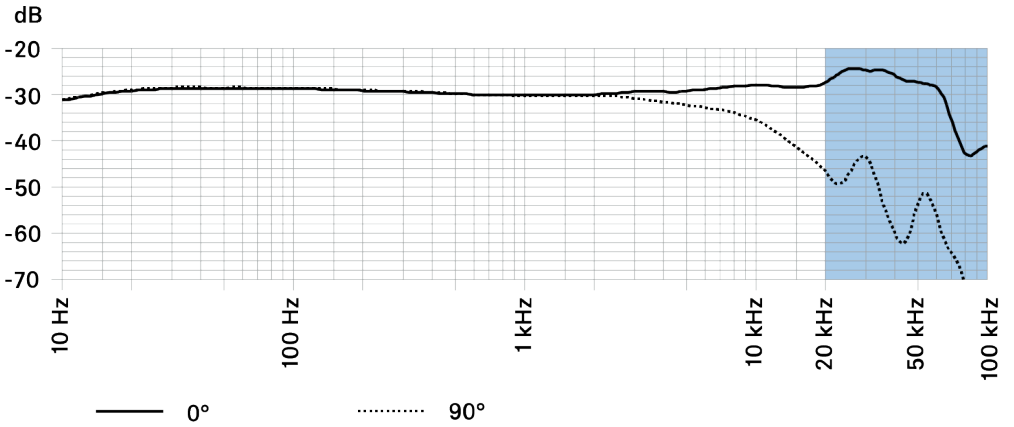
Temperature range

- -10 °C to +60 °C

Polar pattern



Frequency response



MKH 8030

Specifications

Pick-up pattern

- Figure-of-eight

Frequency response

- 30 - 50,000 Hz

Sensitivity

- -31 dBV/Pa (31 mV/Pa)

Sound pressure level limit

- 139 dB SPL

Equivalent noise level

- A-weighted: 13 dB(A)
- CCIR-weighted: 21 dB

Phantom powering

- 48 V ± 4 V (P48, IEC 61938)

Power consumption

- 3.3 mA

Diameter

- approx. 19 mm, max. 21 mm

Length

- approx. 59 mm
- approx. 93 mm with XLR-Modul MZX 8000

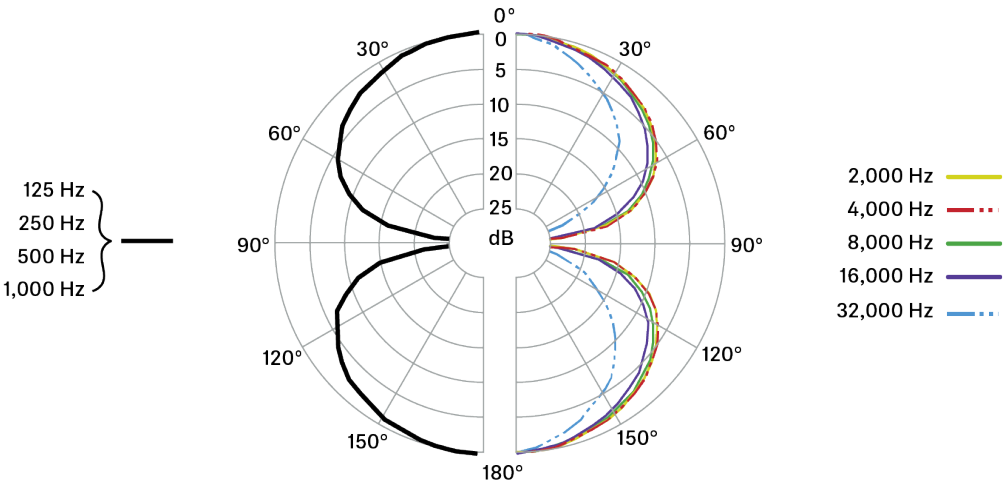
Weight

- approx. 38 g
- approx. 70 g with XLR-Modul MZX 8000

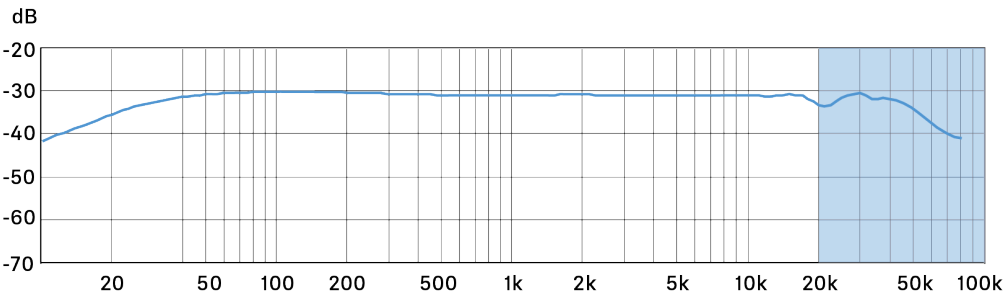
Temperature range

- -10 °C to +60 °C

Polar pattern



Frequency response



MKH 8040

Specifications

Pick-up pattern

- Cardioid

Frequency response

- 30 - 50,000 Hz

Sensitivity

- -34 dBV/Pa (20 mV/Pa) without MZF 8000 II filter module
- -44 dBV/Pa (6.3 mV/Pa) with MZF 8000 II filter module

Sound pressure level limit

- 142 dB SPL without MZF 8000 II filter module
- 137 dB SPL with MZF 8000 II filter module

Equivalent noise level

- A-weighted: 13 dB(A)
- CCIR-weighted: 22 dB

Phantom powering

- 48 V ± 4 V (P48, IEC 61938)

Power consumption

- 3.3 mA

Diameter

- approx. 19 mm

Length

- approx. 41 mm
- approx. 75 mm with XLR-Modul MZX 8000

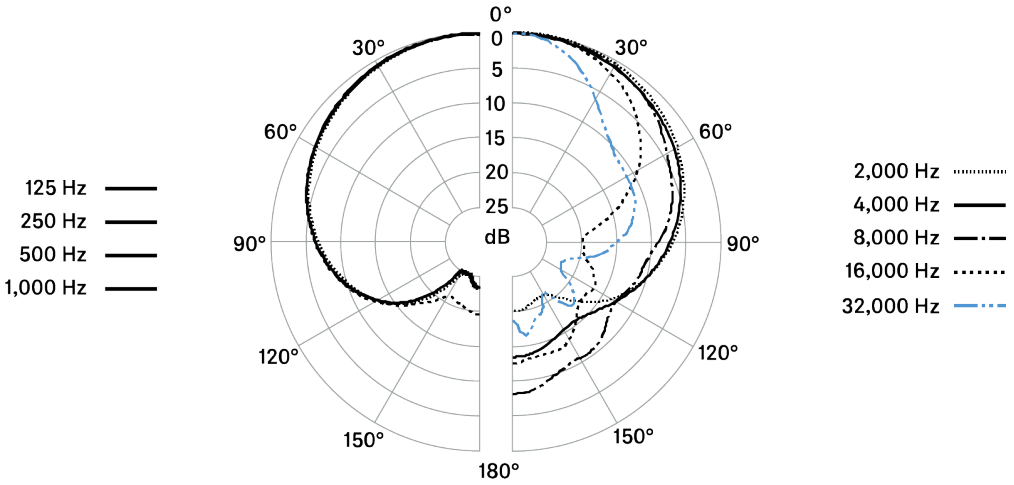
Weight

- approx. 25 g
- approx. 55 g with XLR-Modul MZX 8000

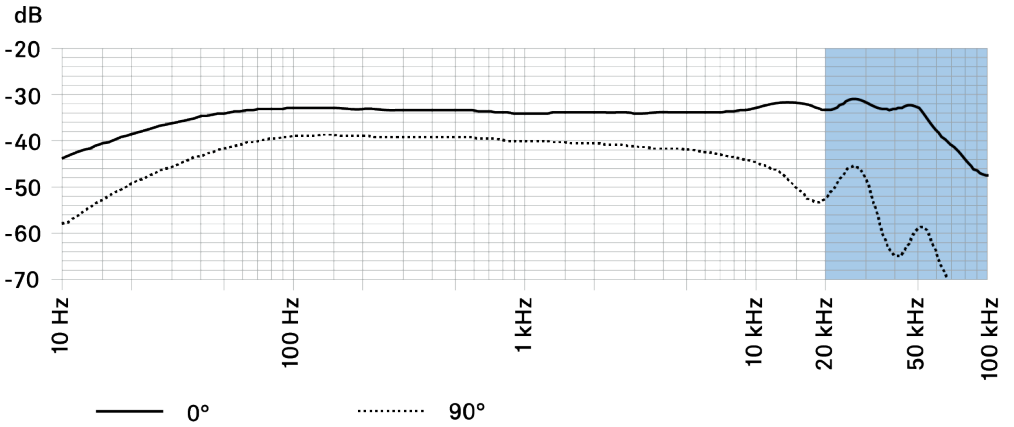
Temperature range

- -10 °C to +60 °C

Polar pattern



Frequency response



MKH 8050

Specifications

Pick-up pattern

- Super-cardioid

Frequency response

- 30 - 50,000 Hz

Sensitivity

- -34 dBV/Pa (20 mV/Pa) without MZF 8000 II filter module
- -44 dBV/Pa (6.3 mV/Pa) with MZF 8000 II filter module

Sound pressure level limit

- 142 dB SPL without MZF 8000 II filter module
- 137 dB SPL with MZF 8000 II filter module

Equivalent noise level

- A-weighted: 13 dB(A)
- CCIR-weighted: 22 dB

Phantom powering

- 48 V ± 4 V (P48, IEC 61938)

Power consumption

- 3.3 mA

Diameter

- approx. 19 mm

Length

- approx. 41 mm
- approx. 75 mm with XLR-Modul MZX 8000

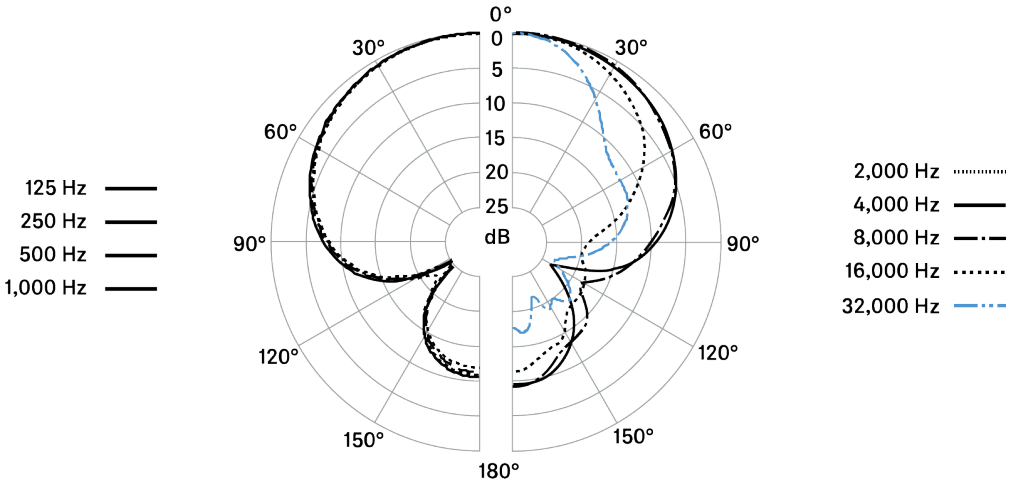
Weight

- approx. 25 g
- approx. 55 g with XLR-Modul MZX 8000

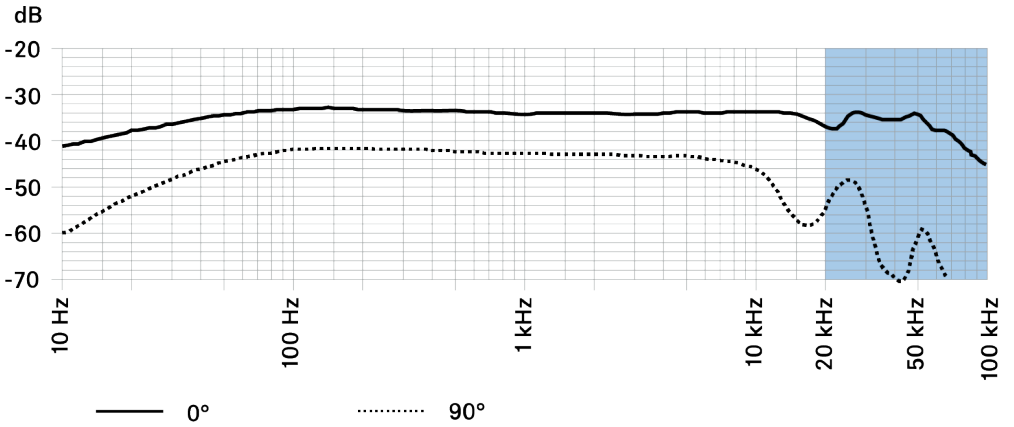
Temperature range

- -10 °C to +60 °C

Polar pattern



Frequency response



MKH 8060

Specifications

Pick-up pattern

- Super-cardioid / Lobar

Frequency response

- 50 - 25,000 Hz

Sensitivity

- -24 dBV/Pa (63 mV/Pa)

Sound pressure level limit

- 129 dB SPL

Equivalent noise level

- A-weighted: 11 dB(A)
- CCIR-weighted: 23 dB

Rated impedance

- 25 Ω

Min. terminating impedance

- 2 kΩ

Phantom powering

- 48 V ± 4 V (P48, IEC 61938)

Power consumption

- 3.3 mA

Diameter

- approx. 19 mm

Length

- approx. 145 mm
- approx. 178 mm with XLR-Modul MZX 8000

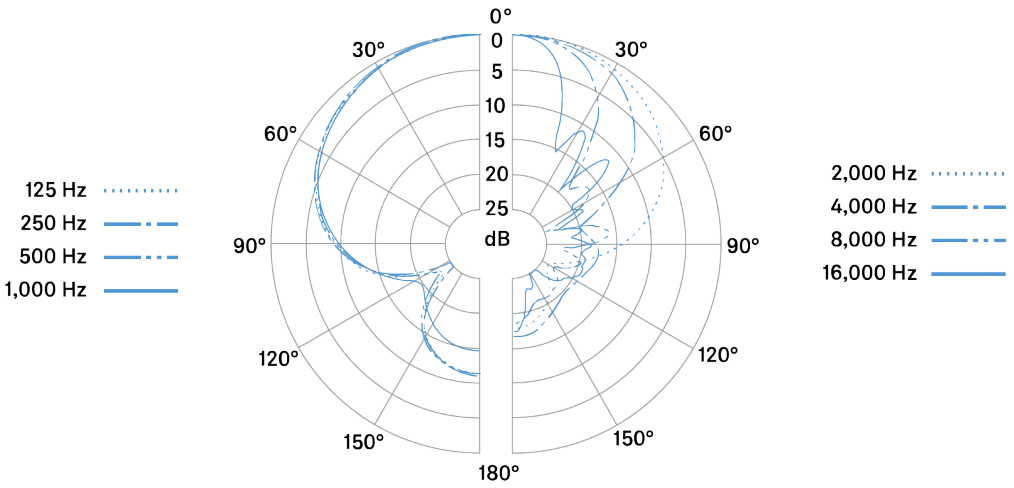
Weight

- approx. 80 g
- approx. 112 g with XLR-Modul MZX 8000

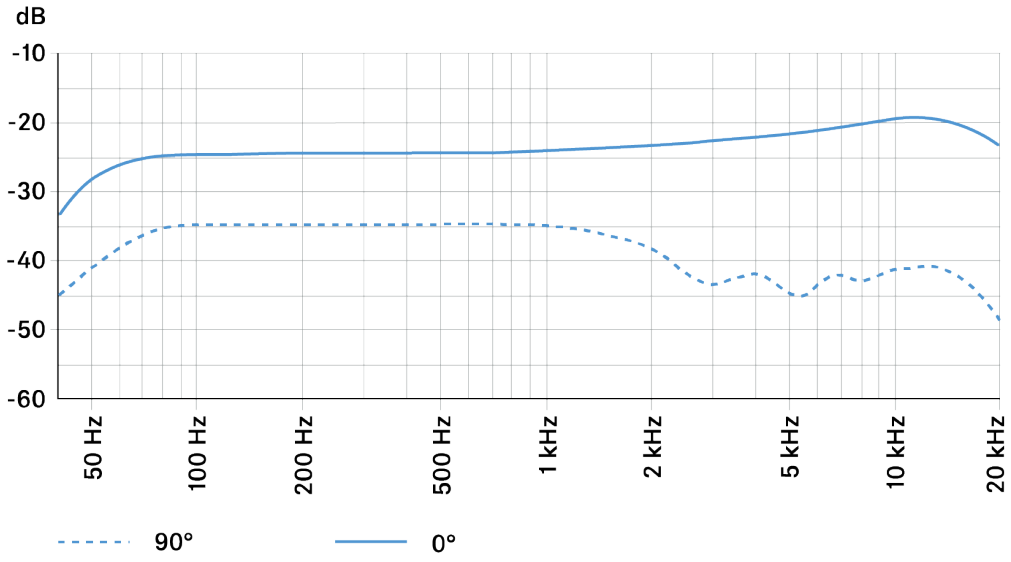
Temperature range

- -10 °C to +60 °C

Polar pattern



Frequency response



MKH 8070

Specifications

Pick-up pattern

- Lobar

Frequency response

- 45 - 20,000 Hz

Sensitivity

- -19 dBV/Pa (112 mV/Pa)

Sound pressure level limit

- 124 dB SPL

Equivalent noise level

- A-weighted: 8 dB(A)
- CCIR-weighted: 21 dB

Rated impedance

- 25 Ω

Min. terminating impedance

- 2 kΩ

Phantom powering

- 48 V ± 4 V (P48, IEC 61938)

Power consumption

- 3.3 mA

Diameter

- approx. 19 mm

Length

- approx. 432 mm
- approx. 465 mm with XLR-Modul MZX 8000

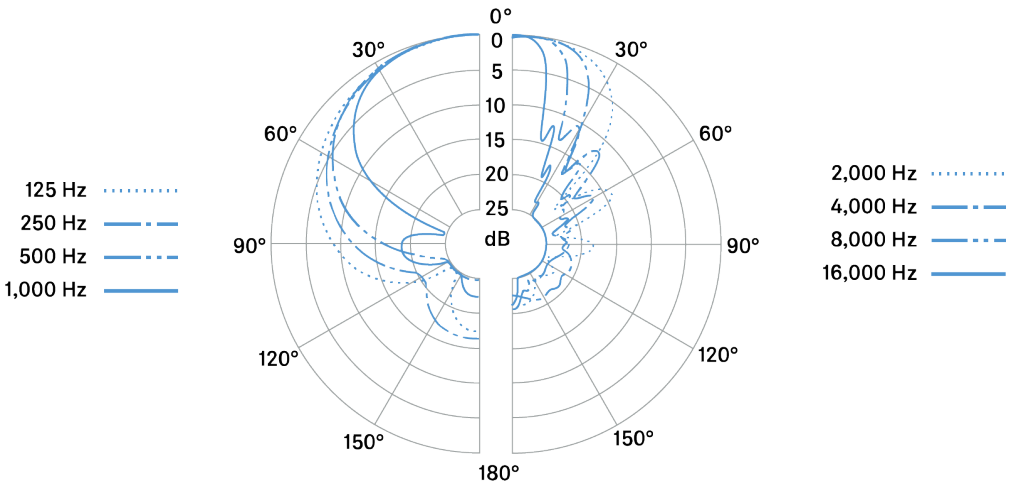
Weight

- approx. 300 g
- approx. 332 g with XLR-Modul MZX 8000

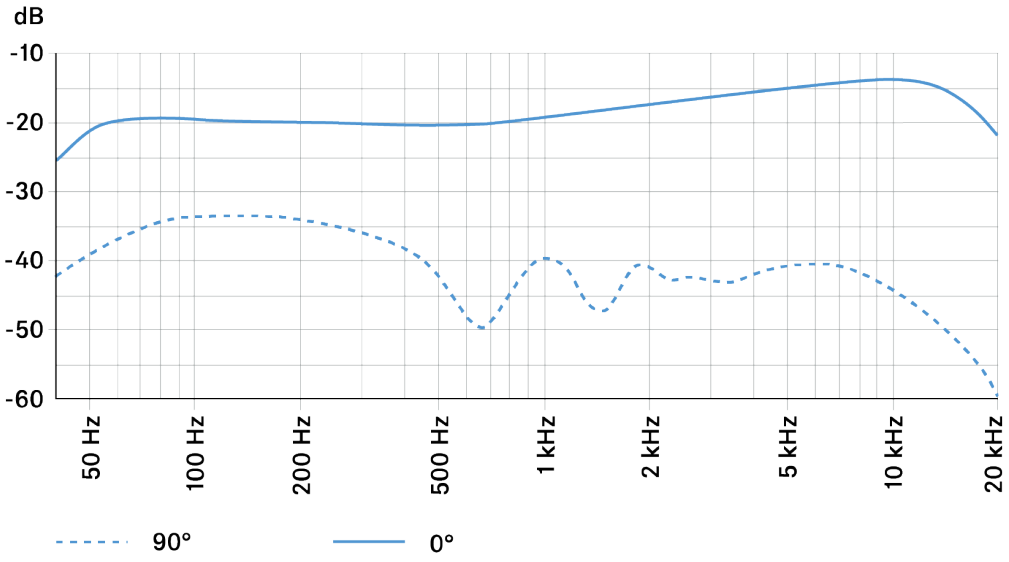
Temperature range

- -10 °C to +60 °C

Polar pattern



Frequency response



MKH 8090

Specifications

Pick-up pattern

- Wide Cardioid

Frequency response

- 30 - 50,000 Hz

Sensitivity

- -34 dBV/Pa (20 mV/Pa)
- -44 dBV/Pa (6.3 mV/Pa) with MZF 8000 II filter module

Sound pressure level limit

- 142 dB SPL with and without MZF 8000 II filter module

Equivalent noise level

- A-weighted: 13 dB(A)
- CCIR-weighted: 23 dB

Rated impedance

- 25 Ω

Min. terminating impedance

- 2 kΩ

Phantom powering

- 48 V ± 4 V (P48, IEC 61938)

Power consumption

- 3.3 mA

Diameter

- approx. 19 mm

Length

- approx. 41 mm
- approx. 75 mm with XLR-Modul MZX 8000

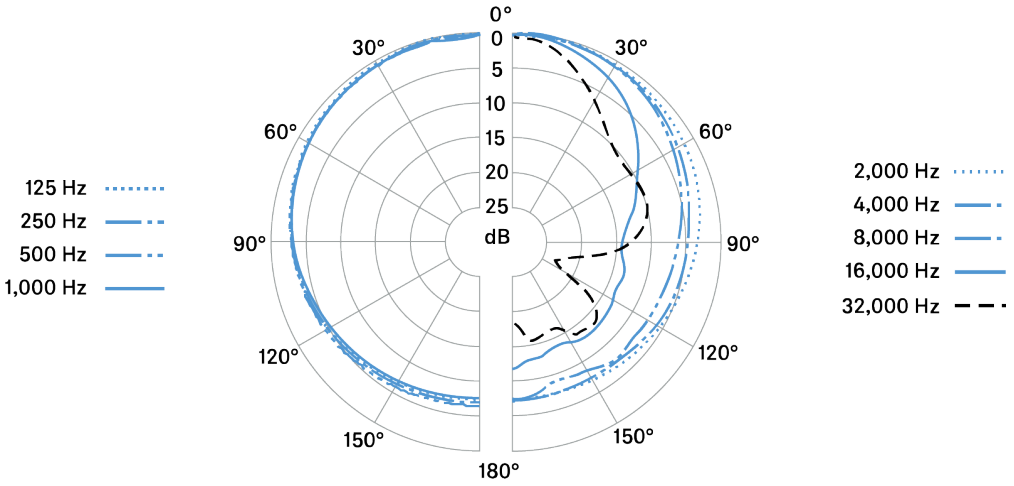
Weight

- approx. 25 g
- approx. 55 g with XLR-Modul MZX 8000

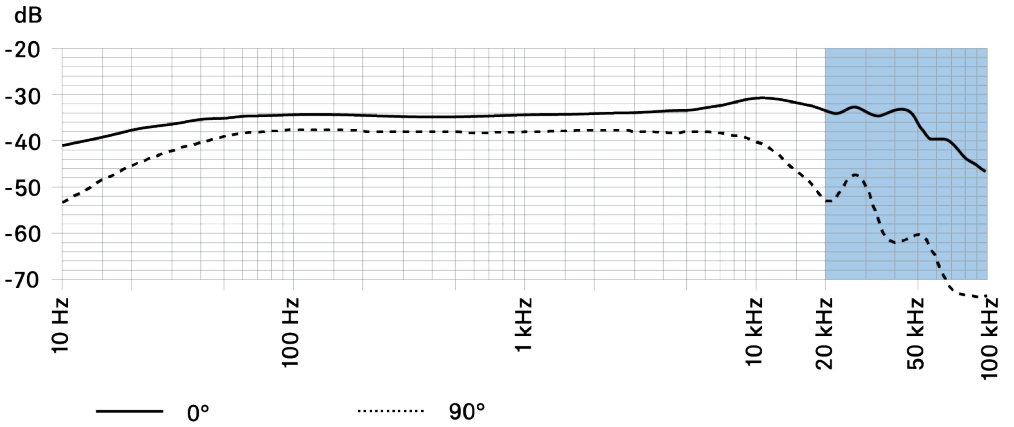
Temperature range

- -10 °C to +60 °C

Polar pattern



Frequency response



MKH 800 TWIN

Specifications

Frequency response

- 30 - 50,000 Hz

Pick-up pattern

- 2x cardioid

Sensitivity (free field, no load) (1 kHz)

- 40 mV/PA ±1 dB

Nominal impedance

- 100 Ω

Min. terminating impedance

- 2 kΩ

Max. SPL

- 136 dB SPL / 1 kHz

Max. output voltage

- 4 V

Equivalent noise level

- A-weighted: approx. 12 dB
- CCIR-weighted: approx. 20 dB

Noise voltage

- A-weighted: 3 µV
- CCIR-weighted: 8 µV

Dynamic range

- A-weighted: 122 dB
- CCIR-weighted: 114 dB

Power supply

- 48 V ±4 V

Current consumption

- 2x 3.1 mA

Dimensions

- Ø 27 x 136 mm

Weight

- 172 g

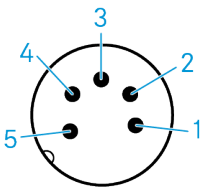
Temperature range

- Storage: -20 °C to +70 °C

Connector

- XLR-5M

Connector assignment



1 Ground/housing

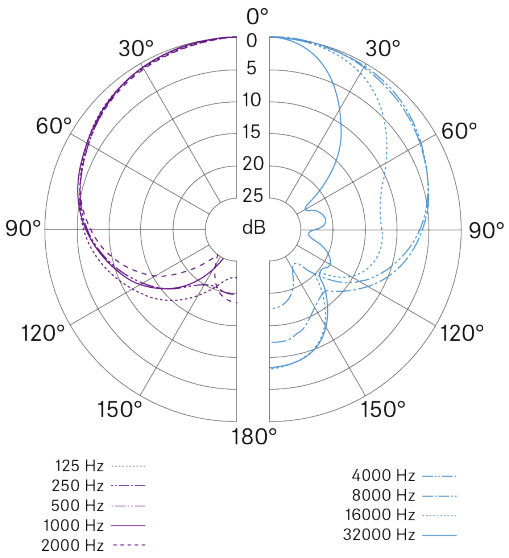
2 Front channel: (+)

3 Front channel: (-)

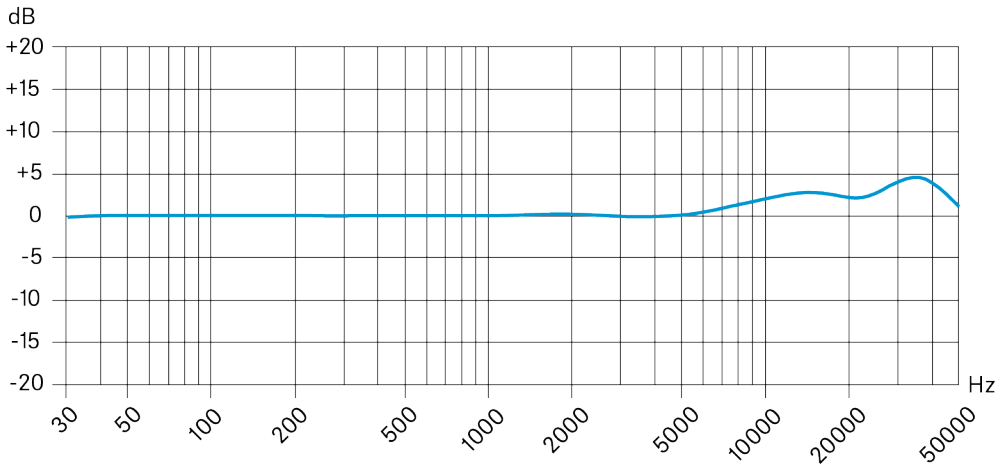
4 Rear channel: (+)

5 Rear channel: (-)

Polar pattern



Frequency response



MZF 8000 II

Specifications

Low-cut filter

- -3 dB @ 16 Hz

Roll-off (switchable)

- -3 dB @ 70 Hz

Attenuation (switchable)

- -10 dB

Additional equivalent noise level

- @ 0 dB: 1 dB(A)
- @ -10 dB: 4 dB(A)

Max. input voltage

- @ 0 dB: 14 dBV
- @ -10 dB: 9 dBV

Max. output voltage

- @ 0 dB: 14 dBV
- @ -10 dB: -1 dBV

Typ. impedance

- 50 Ω

Min. terminating impedance

- 2 kΩ

Phantom powering

- 48 V ±4 V (P48, IEC 61938)

Dimensions

- Ø 19 x 29 mm

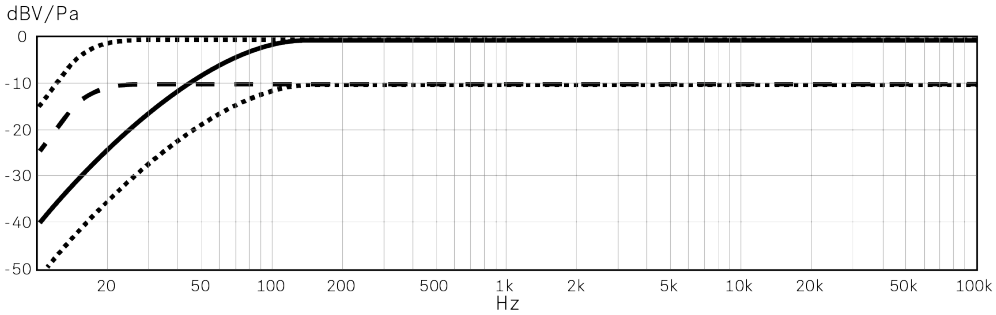
Weight

- 26 g

Temperature range

- -10 °C to +60 °C

Frequency response



	Low cut	10 dB attenuation
———	enabled	dissabled
- - - -	dissabled	enabled
.....	both switches dissabled & enabled respectively	

5. Contact

Contact information in case of questions about our products and/or services.

Questions about the product / Help with technical issues
If you have any questions about our products and/or services, please do not hesitate to contact us at sennheiser.com/support.

Sennheiser electronic SE & Co. KG | Am Labor 1 | 30900 Wedemark | Germany