

MKH 8000 series

PDF export of the original HTML manual

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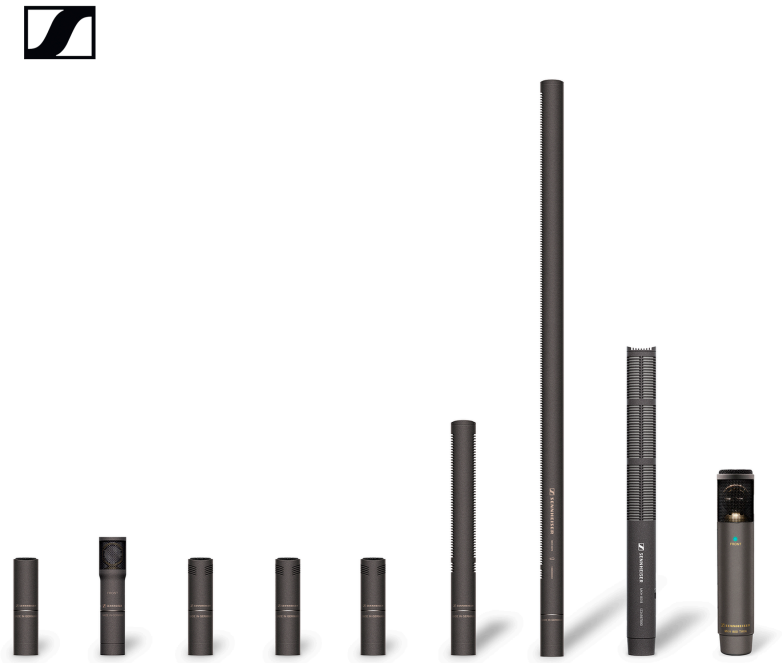
1. Preface

PDF Export of the Original HTML Manual

This PDF document is an automatic export of an interactive set of HTML manuals. Some content and interactive elements may not be included in the PDF because they cannot be displayed in this format. In addition, automatically generated page breaks may cause related content to be slightly shifted. We can therefore only guarantee the completeness of the information in the HTML manual and recommend using it. You can find it in the Documentation Portal at www.sennheiser.com/documentation.

2. Product information

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

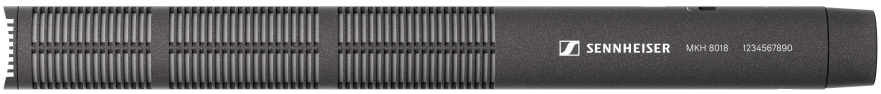


Microphones

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 Instruction manual
- You can find technical **specifications** for the individual products under Specifications

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

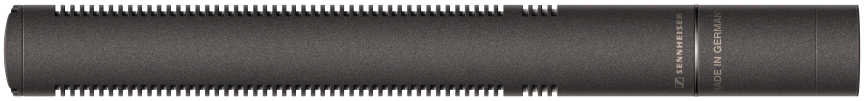
Delivery includes

- 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

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

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

MKH 8020 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 8020
- 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 8020
> - Specifications MKH 8020

MKH 8040 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 8040
- 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 8040
> - Specifications MKH 8040

Accessories

Various accessory parts are available for the microphones.

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

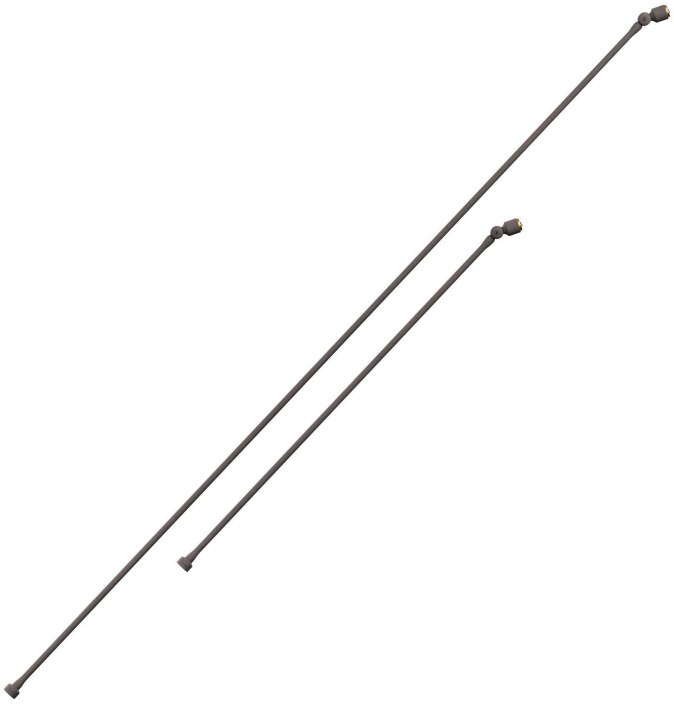
The XLR modul MZX 8000 is a connection module.

Art. no. 502098

Floor stand components



MZE 8060, MZE 8120



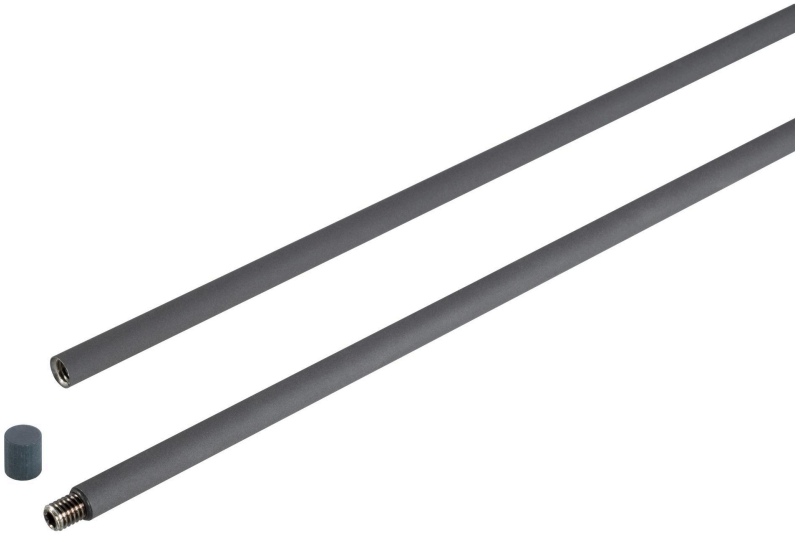
Special bar that carries the audio signal

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



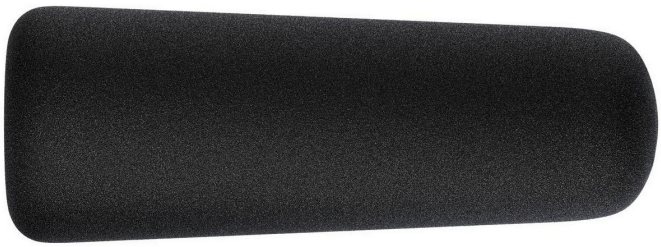
Windshield

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



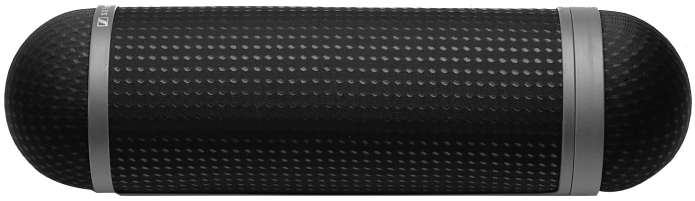
Windshield for MKH 8070

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. Instruction manual

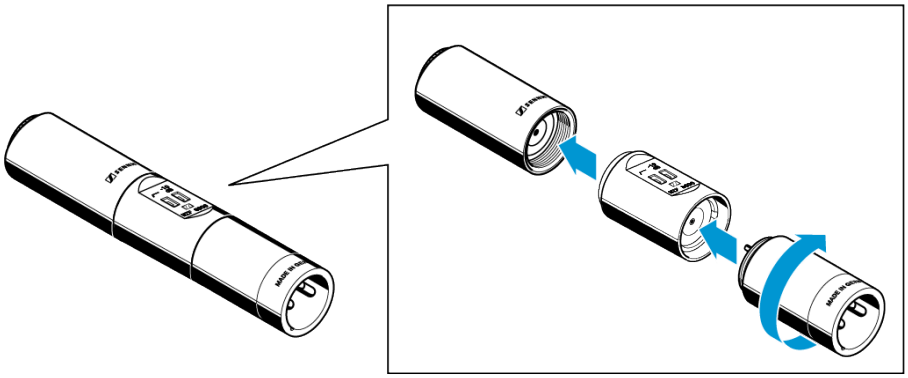
Starting up and operating devices of the MKH 8000 series.

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.

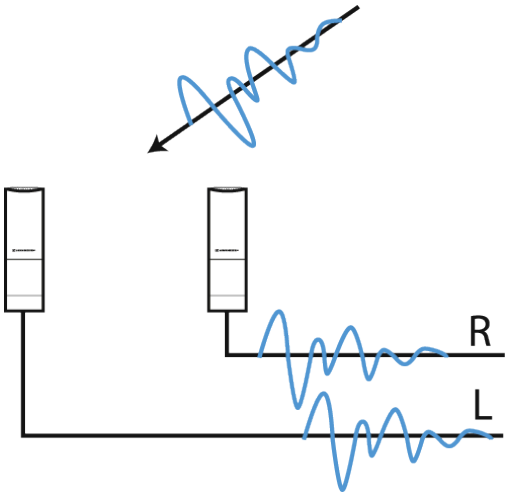
- Disconnect all cables.
- Unscrew the microphone head from the XLR module.
- Add, for example, the Filter module MZF 8000 II or a MZL cable (see Extension cables).
- Screw the modules together again.



Stereo recording

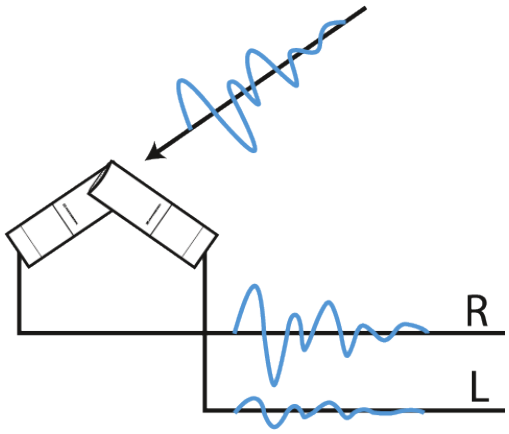
Time-of-arrival stereo (AB)

(almost) only time-of-arrival differences



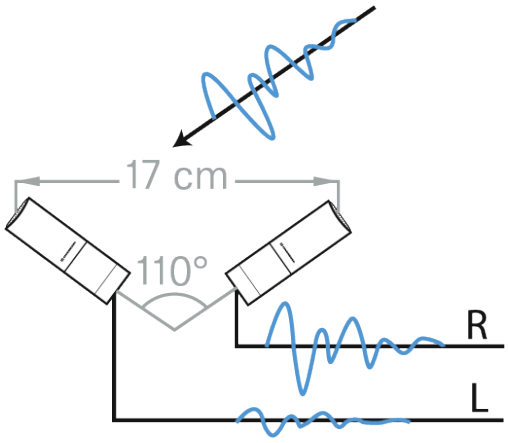
Intensity stereo (XY)

only sound pressure level differences



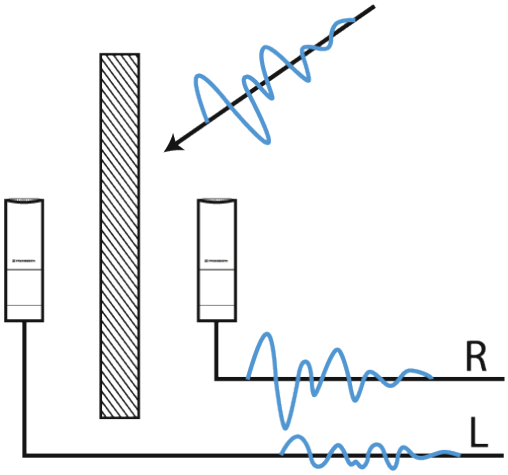
Equivalence or mixed stereo (here: ORTF):

sound pressure level and time-of-arrival differences



Baffle stereo (here: OSS)

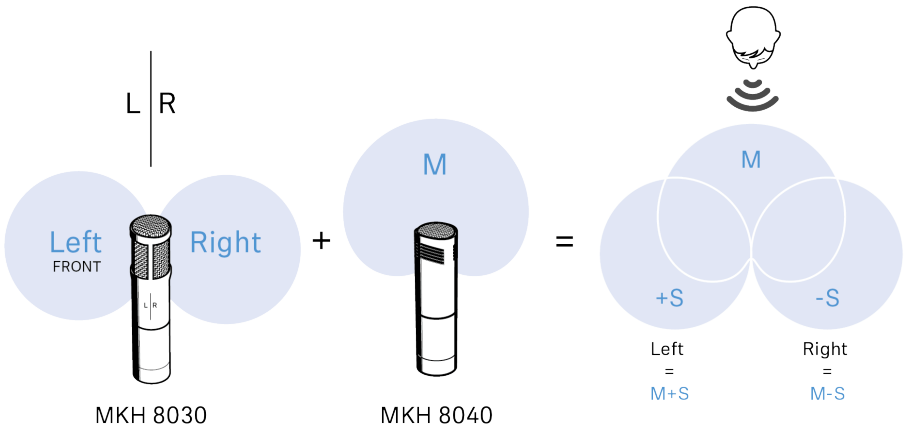
sound pressure level, time-of-arrival and spectral differences with off-axis sound



Mid/side (MS)

M-Microphone records the mono signal

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

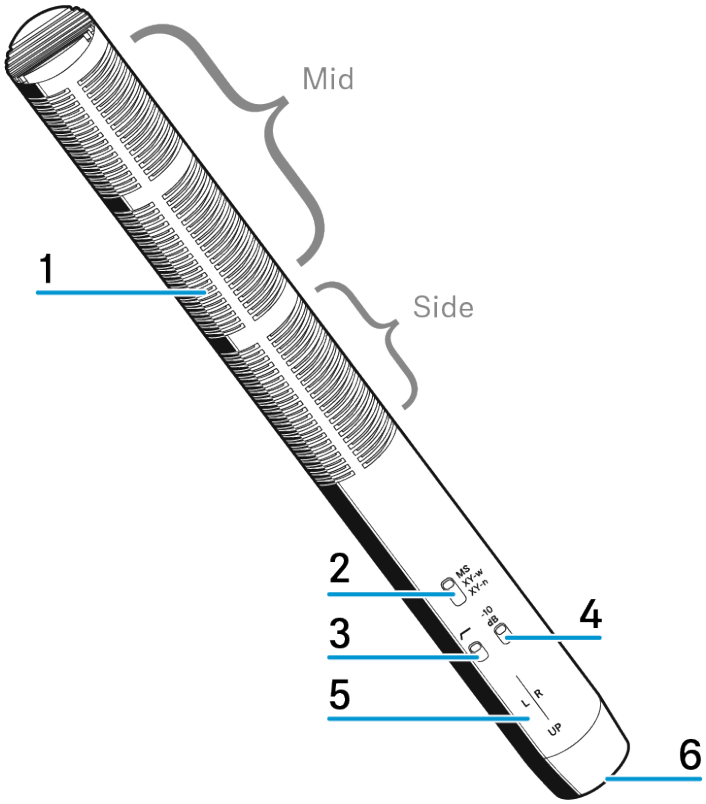


MKH 8018

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

You can find technical specifications under MKH 8018.

Product overview



1 Sound inlet baskets Mid/Side

2 Switch pick-up pattern

3 Switch low-cut

4 Switch pad

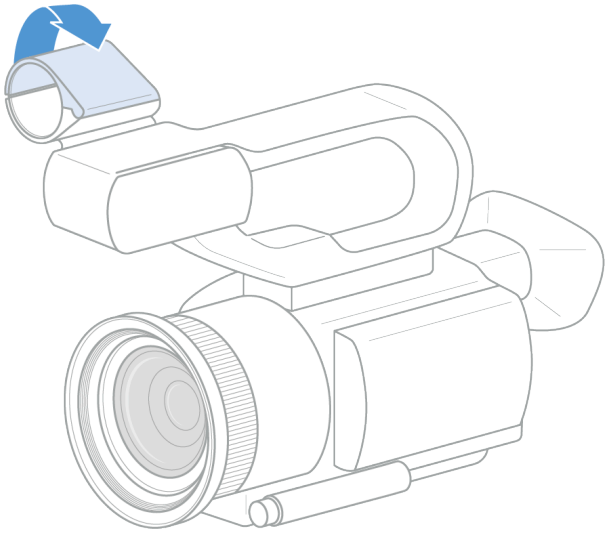
5 Left (L) | Right (R) + UP markings

6 XLR-5 socket

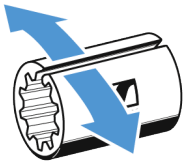
Starting up

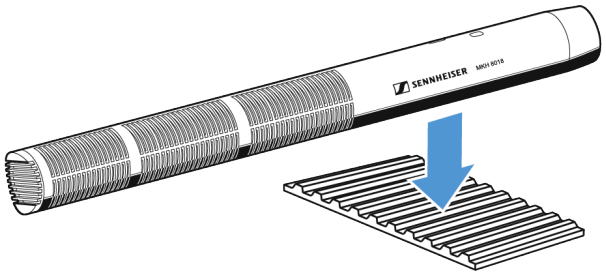
Mounting the microphone on a camera

- Open the mount on the camera for the microphone.

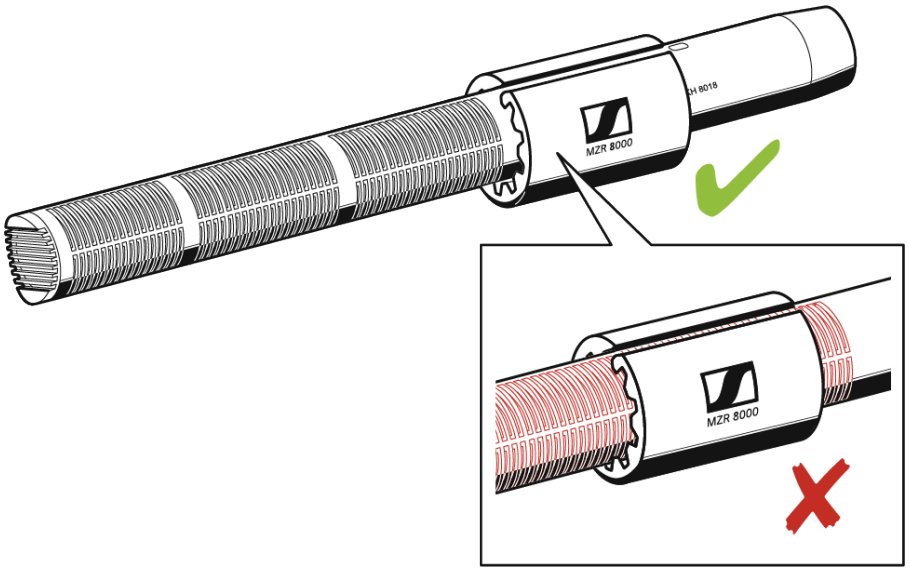


- Open the camera adapter MZR 8000.
- Put the microphone in the camera adapter.

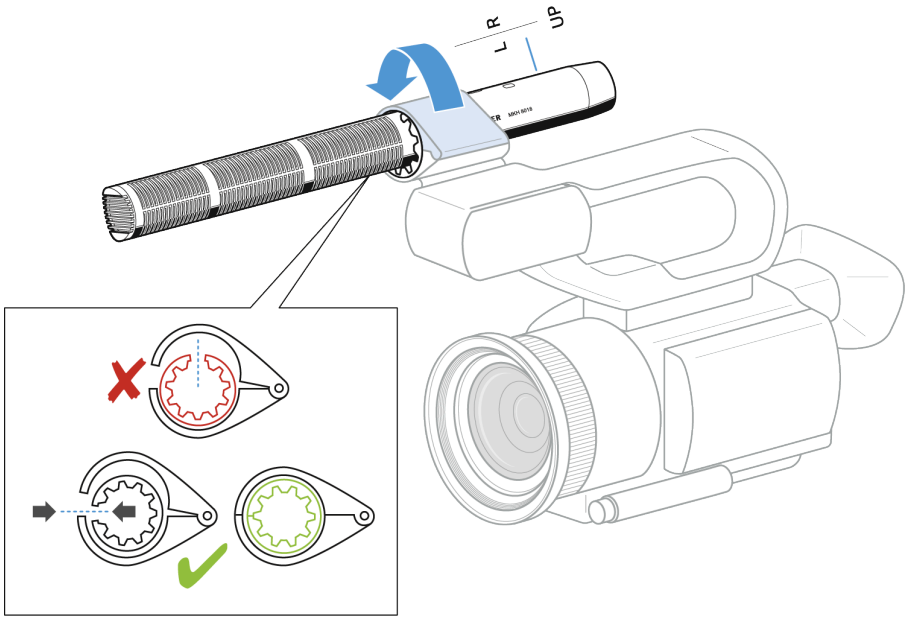




- Make sure that the sound inlet baskets are not obstructed.

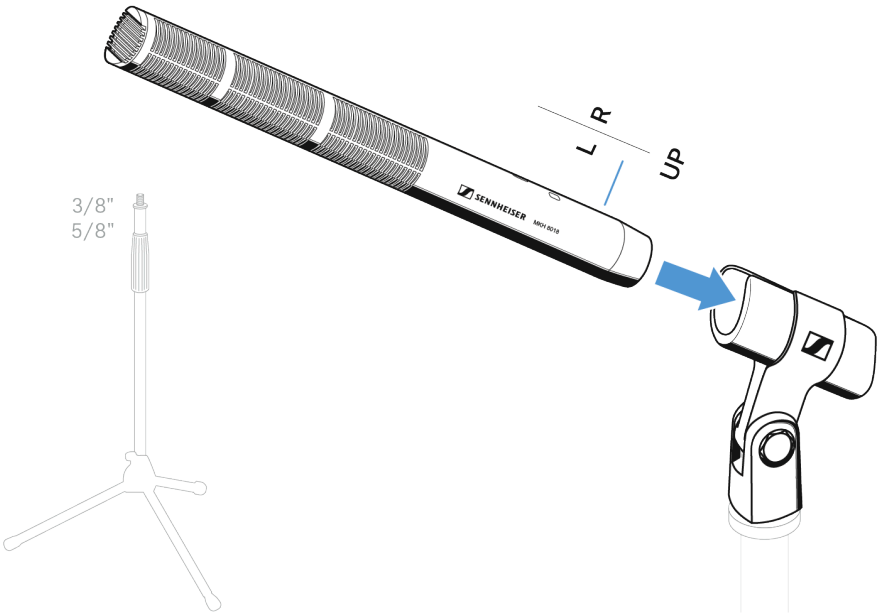


- Put the microphone into the mount on the camera as shown and close the mount.



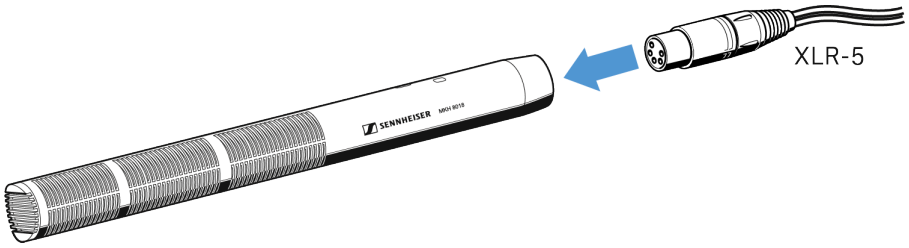
Mounting the microphone to a stand

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

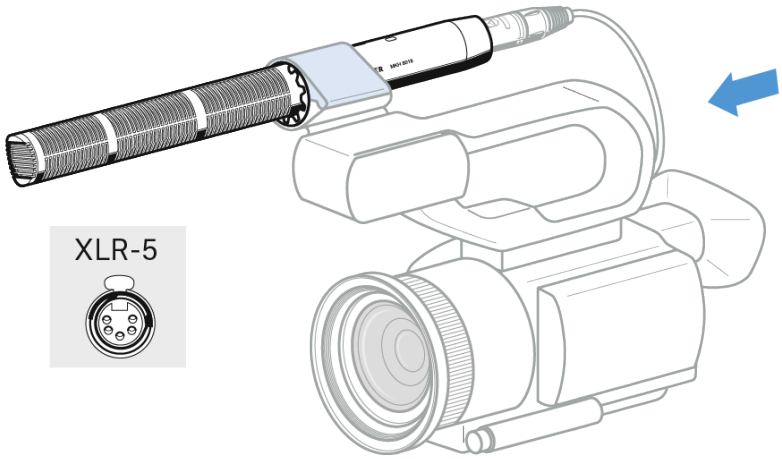


Connecting the microphone

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

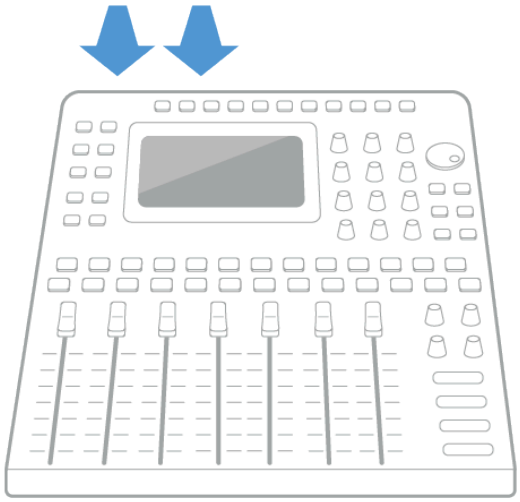


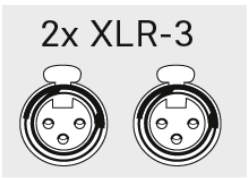
- Connect the other end of the cable to a camera.

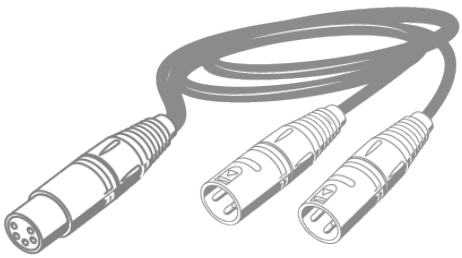


OR

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



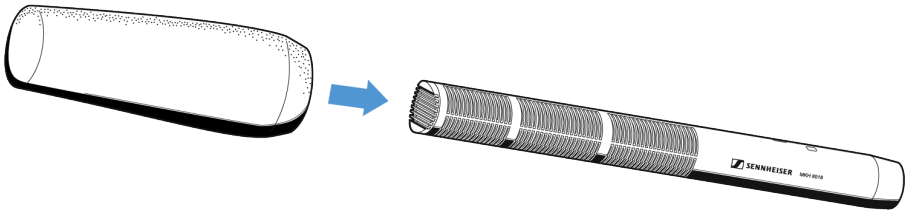




Using the windshield

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

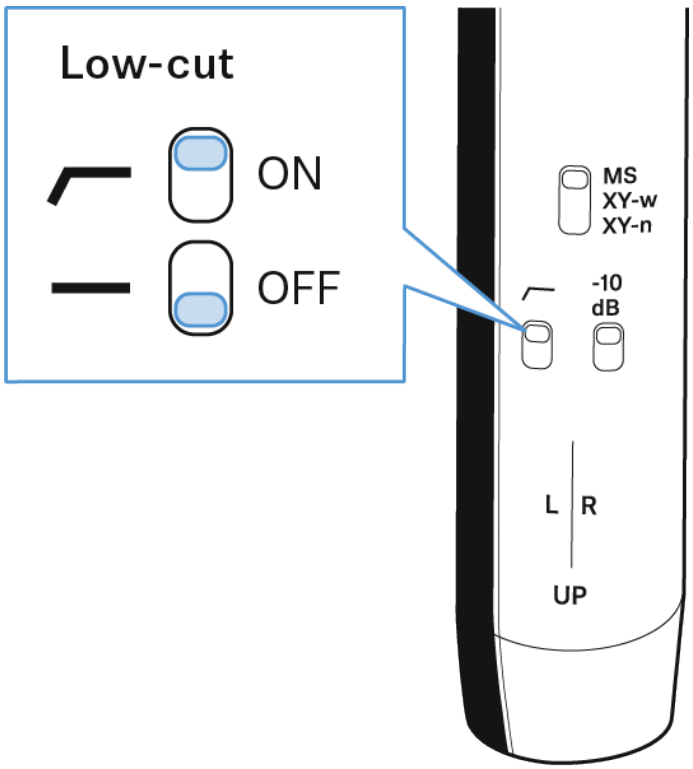
- Place the MZW 8018 windshield over the microphone head.



Operation

Adjust low-cut

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

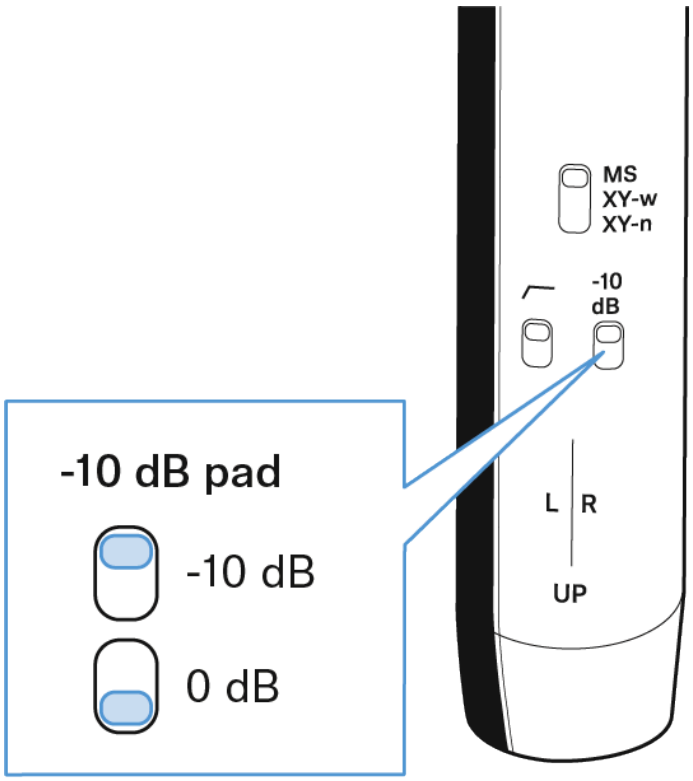


✓ Reduction of low-frequency noises (e. g. wind- and handling noises) by 3 dB at 70 Hz.

Adjust attenuation

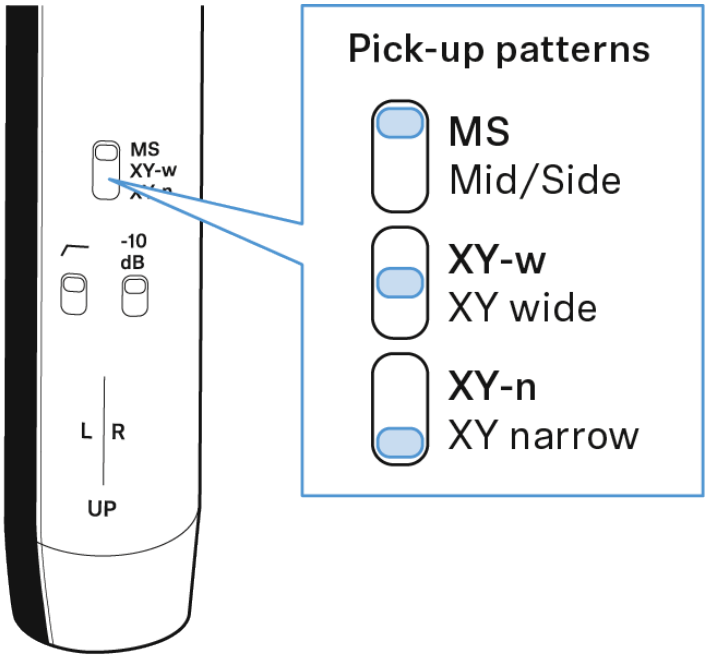
Attenuation of the signal level to protect against clipping with very loud signals.

- 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).

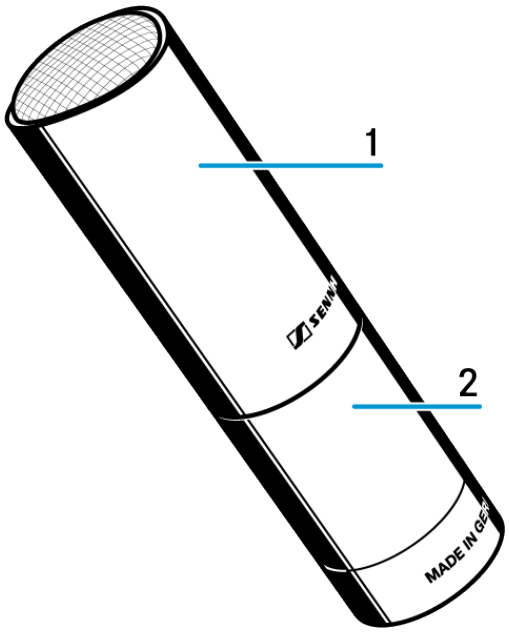


MKH 8020

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

You can find technical specifications under MKH 8020.

Product overview



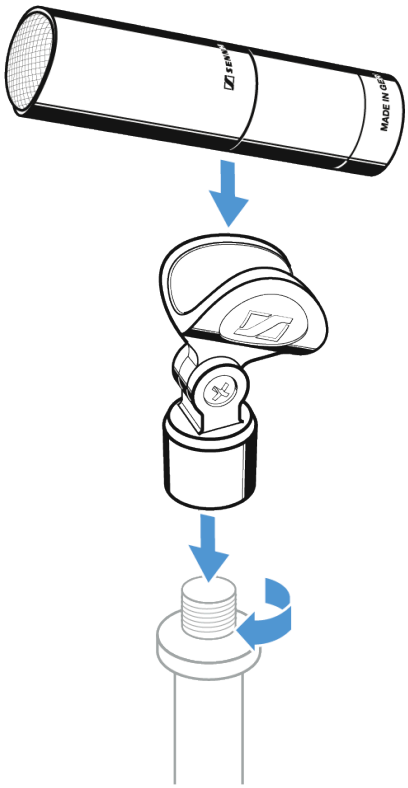
1 Microphone head

2 XLR module

Starting up

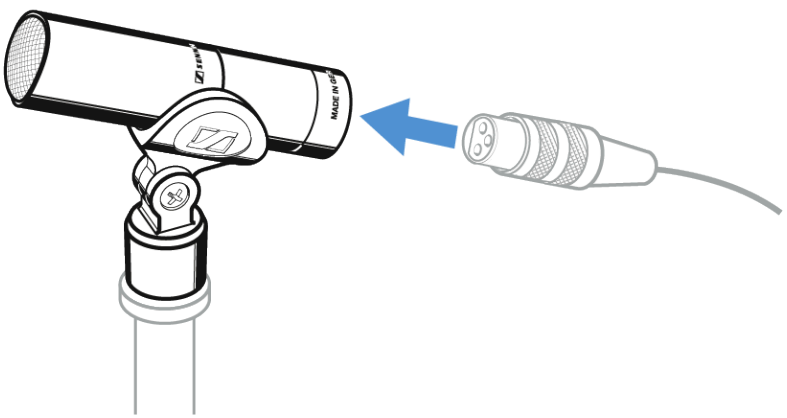
Mounting the microphone

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



Connecting the microphone

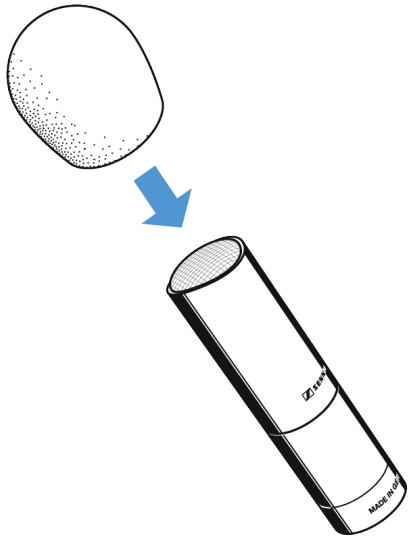
- Connect the XLR-3 socket of the microphone cable (optional accessories) to the XLR-3 socket of the microphone.



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.



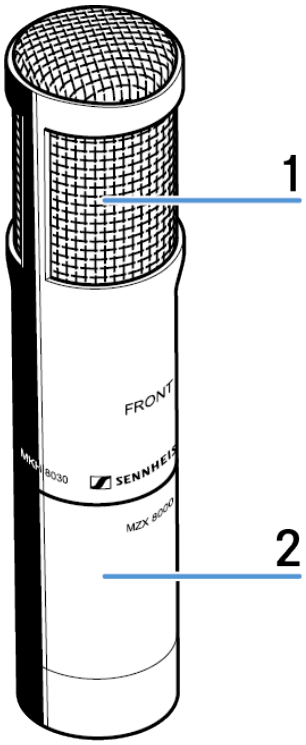
Operation

MKH 8030

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

You can find technical specifications under MKH 8030.

Product overview



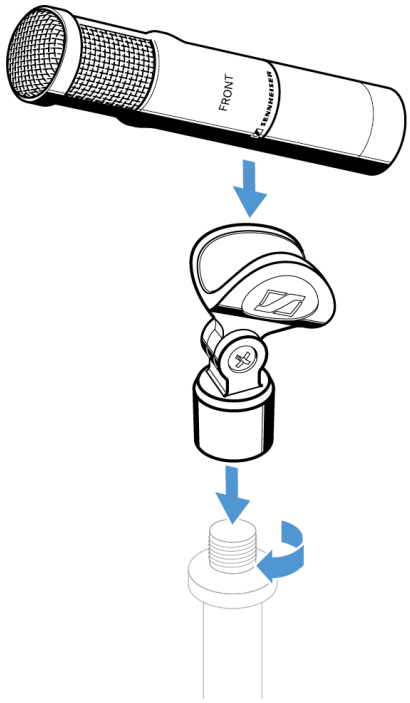
1 Microphone head

2 XLR module

Starting up

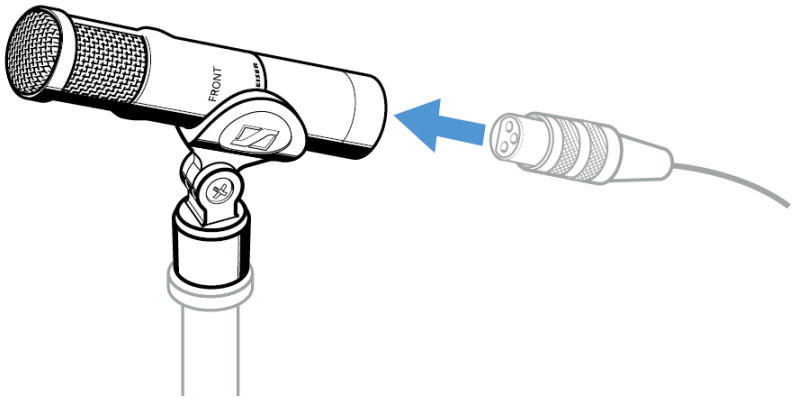
Mounting the microphone

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



Connecting the microphone

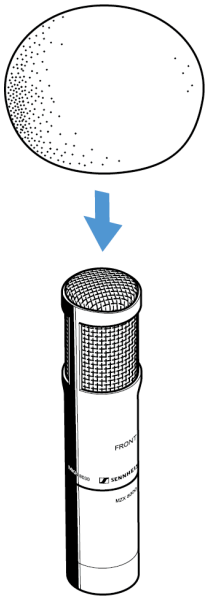
- Connect the XLR-3 socket of the microphone cable (optional accessories) to the XLR-3 socket of the microphone.



Using the windshield

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

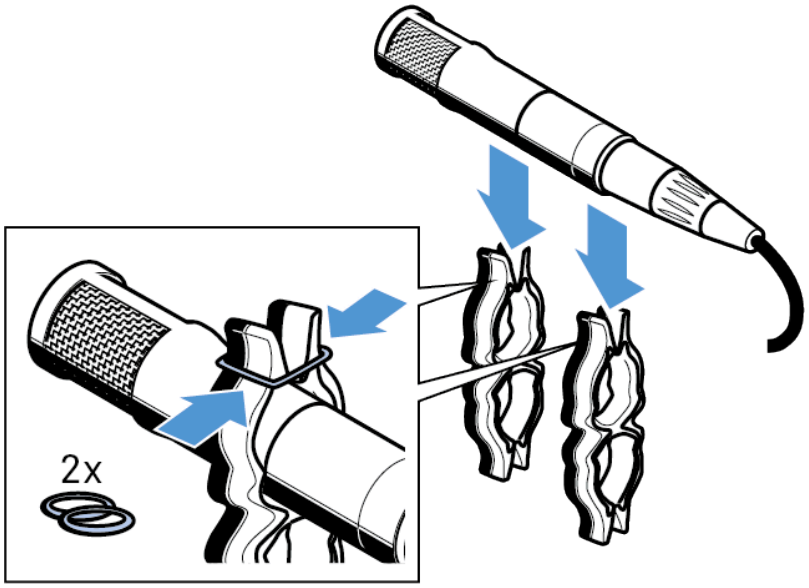
- Place the MZW 8030 windshield over the microphone head.



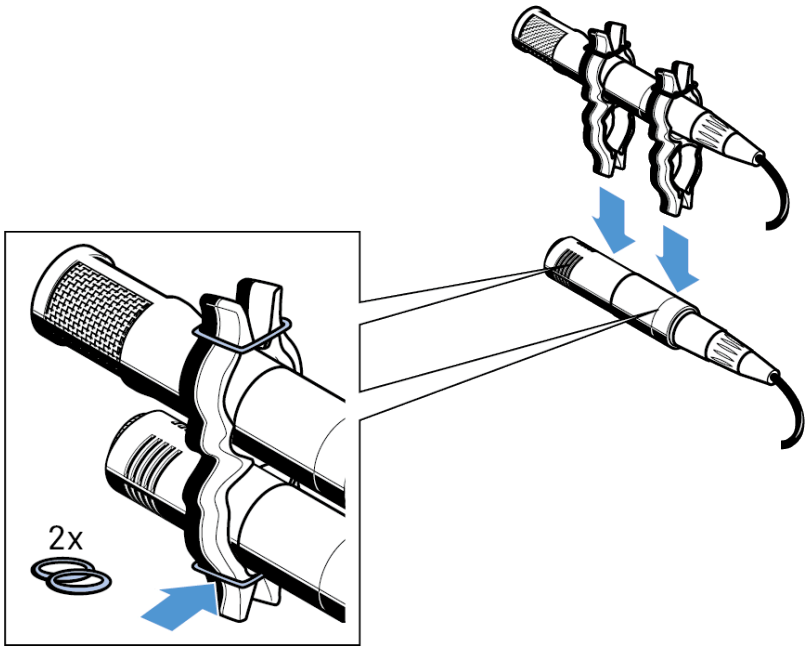
Operation

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.

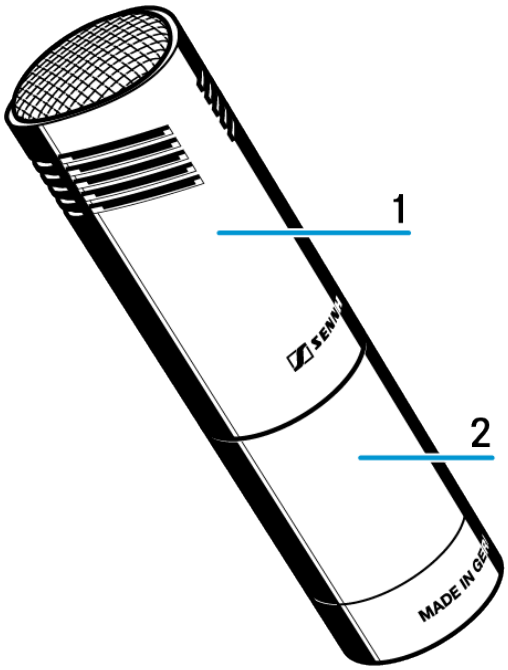


MKH 8040

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

You can find technical specifications under MKH 8040.

Product overview



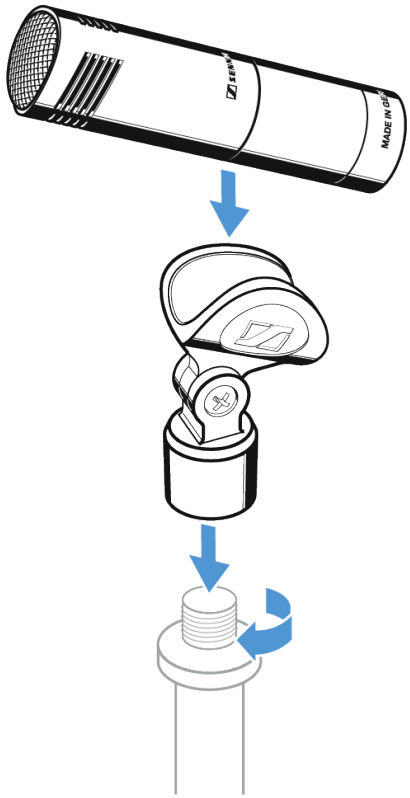
1 Microphone head

2 XLR module

Starting up

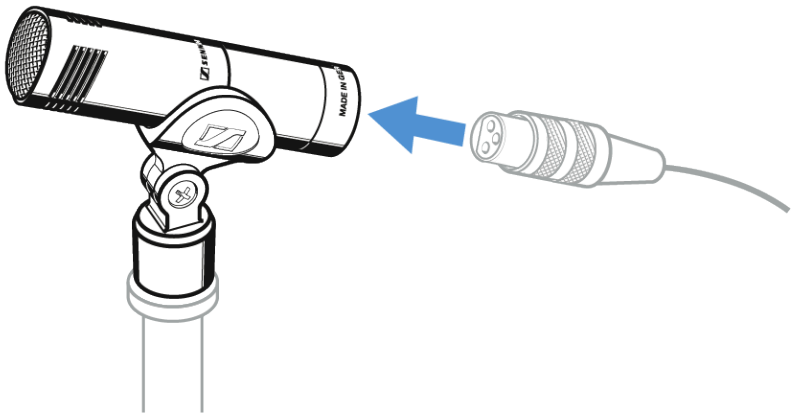
Mounting the microphone

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



Connecting the microphone

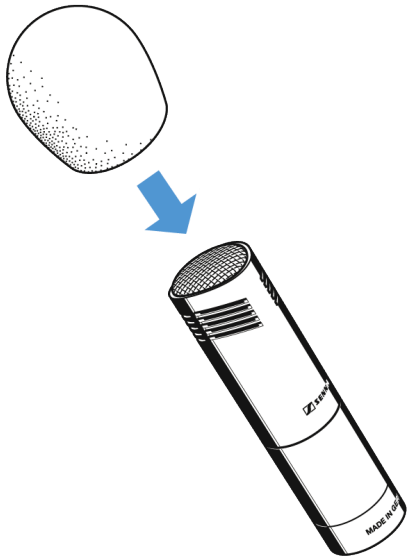
- Connect the XLR-3 socket of the microphone cable (optional accessories) to the XLR-3 socket of the microphone.



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.



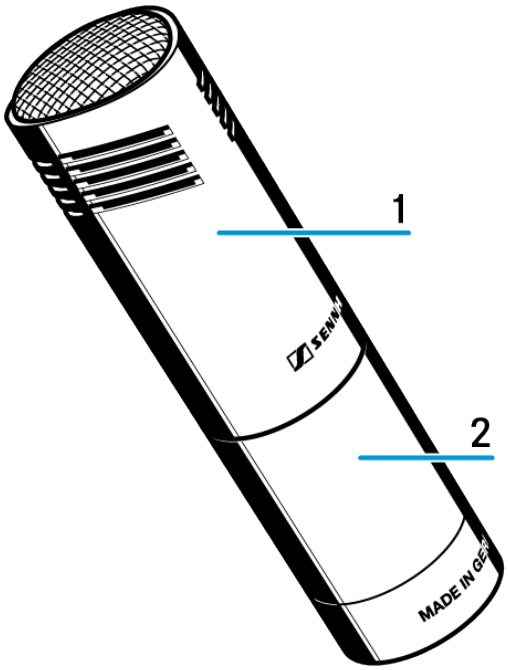
Operation

MKH 8050

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

You can find technical specifications under MKH 8050.

Product overview



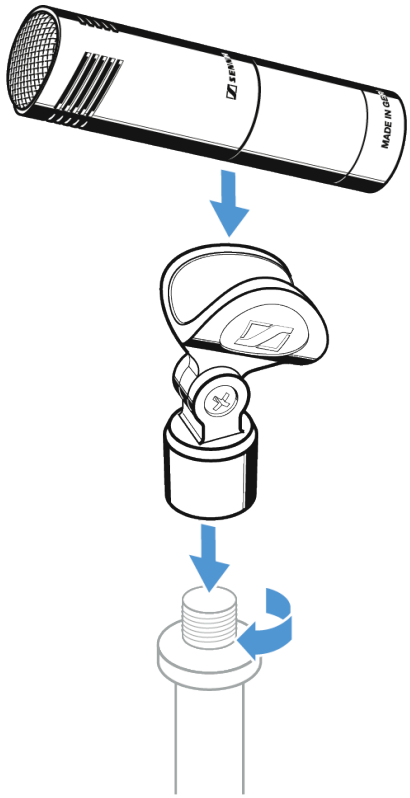
1 Microphone head

2 XLR module

Starting up

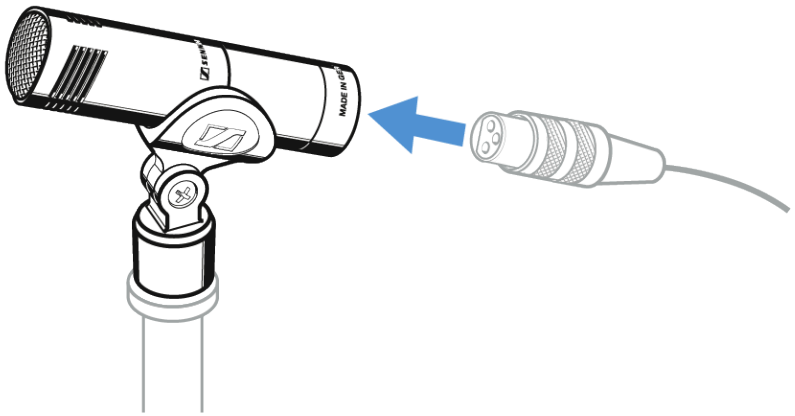
Mounting the microphone

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



Connecting the microphone

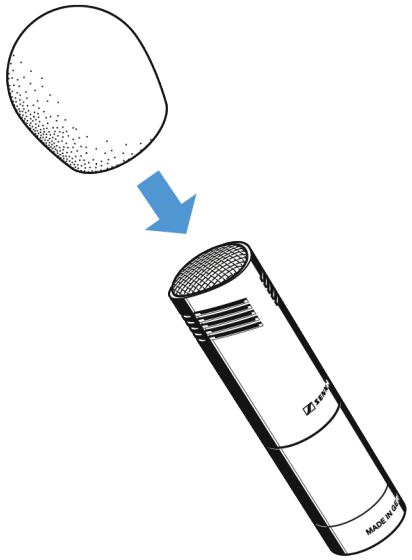
- Connect the XLR-3 socket of the microphone cable (optional accessories) to the XLR-3 socket of the microphone.



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.



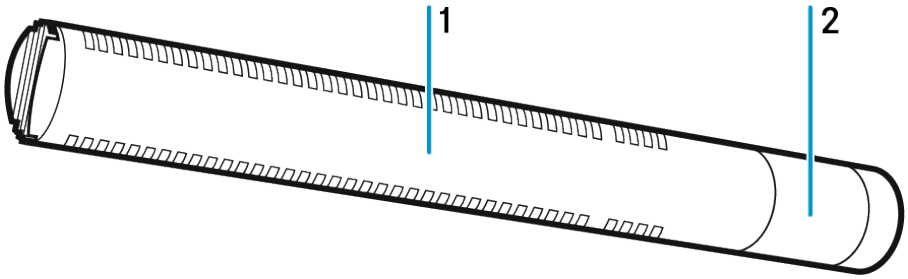
Operation

MKH 8060

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

You can find technical specifications under MKH 8060.

Product overview



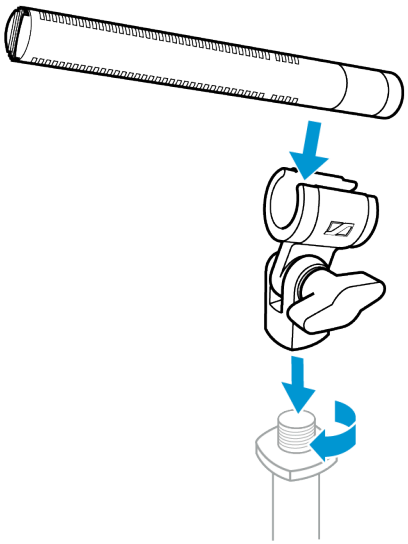
1 Microphone head

2 XLR module

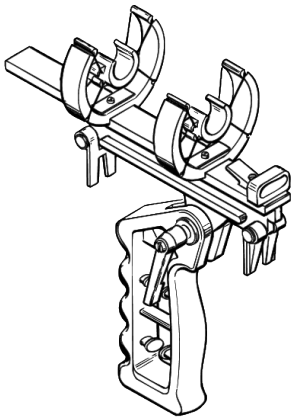
Starting up

Mounting the microphone

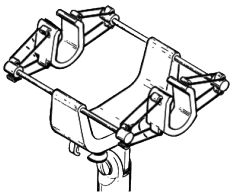
- Screw the microphone clamp to a stand.
- Place the microphone with its back end into the microphone clamp: Make sure that the lateral slots are not covered.
- Orient the microphone together with the microphone clamp and fix them by screwing the wing screw tight.



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



MZS 20-1

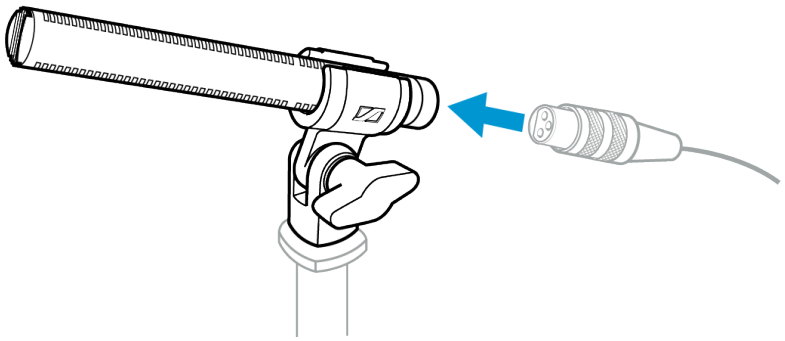


MZS 40

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

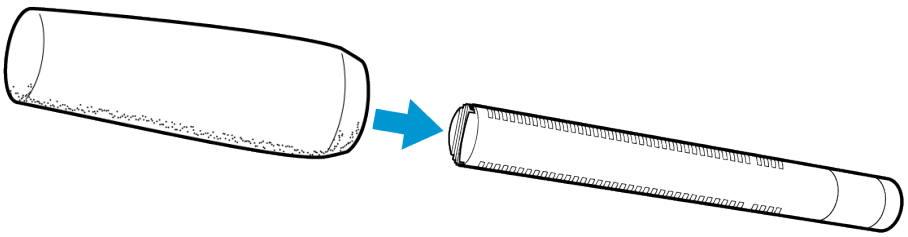
- Connect the XLR-3 socket of the microphone cable (optional accessories) to the XLR-3 socket of the microphone.



Using the windshield

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

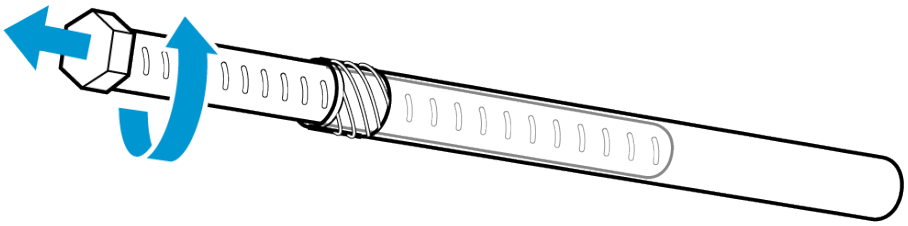
- Place the MZW 8060 foam windshield over the microphone head so that all lateral slots are covered.



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.

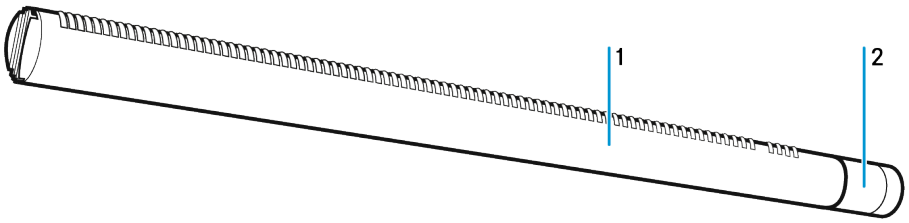


MKH 8070

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

You can find technical specifications under MKH 8070.

Product overview



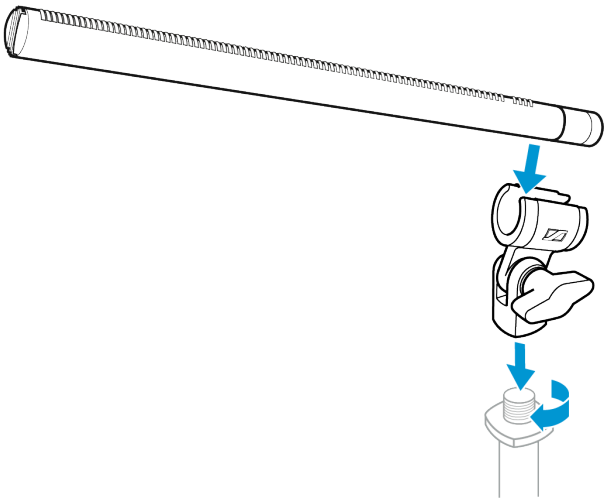
1 Microphone head

2 XLR module

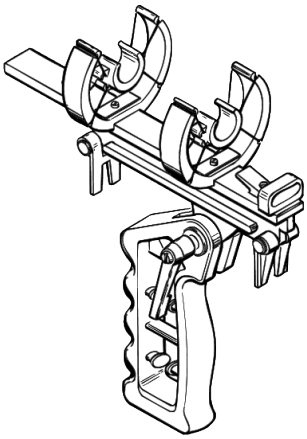
Starting up

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).

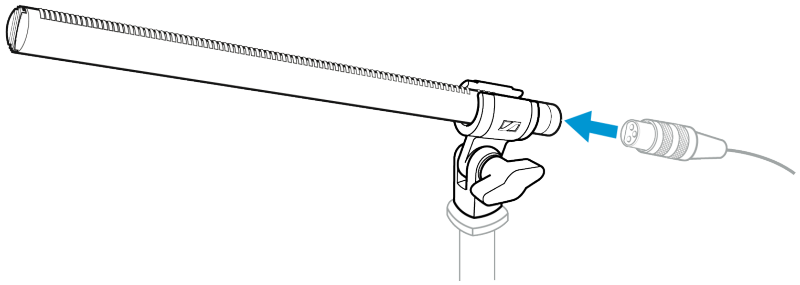


MZS 20-1

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

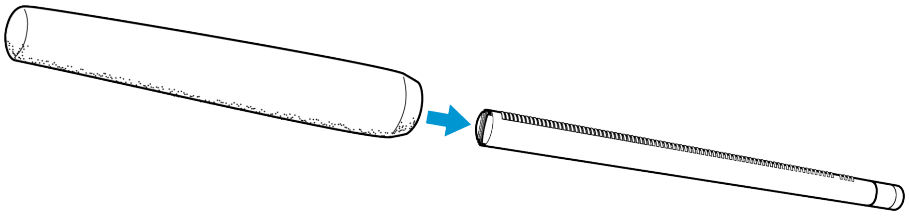
- Connect the XLR-3 socket of the microphone cable (optional accessories) to the XLR-3 socket of the microphone.



Using the windshield

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

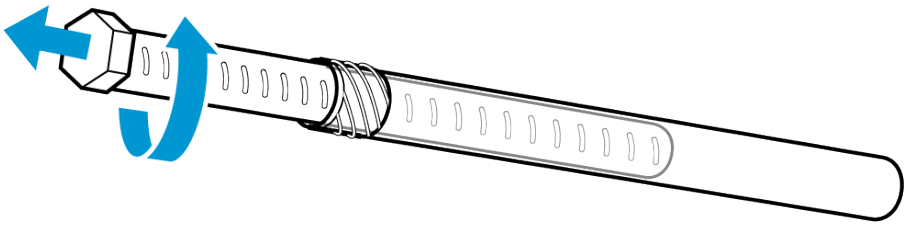
- Place the MZW 8060 foam windshield over the microphone head so that all lateral slots are covered.



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.

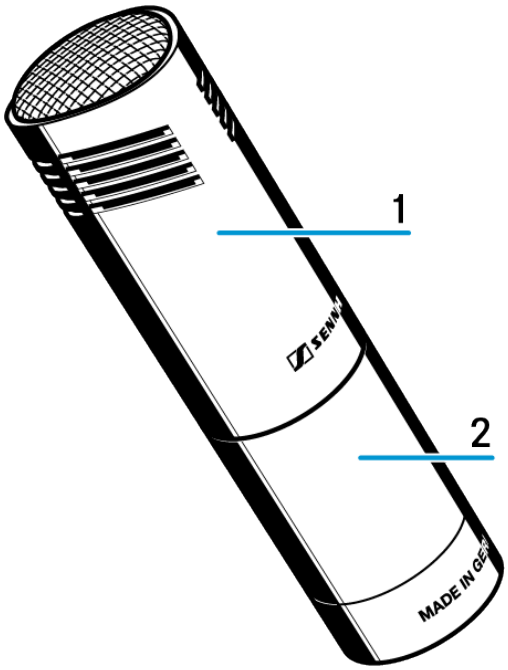


MKH 8090

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

You can find technical specifications under MKH 8090.

Product overview



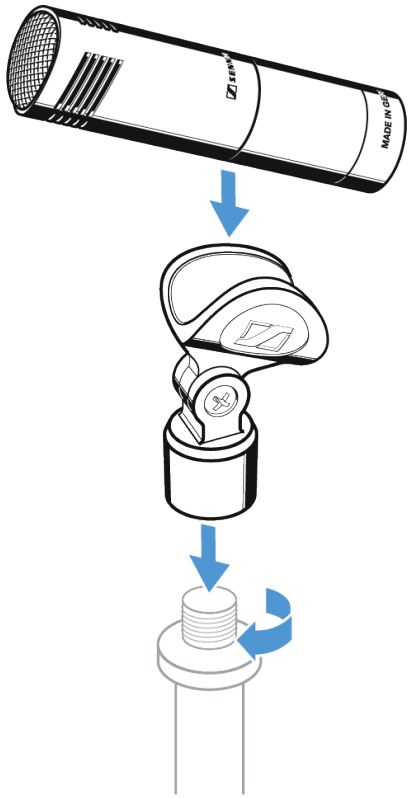
1 Microphone head

2 XLR module

Starting up

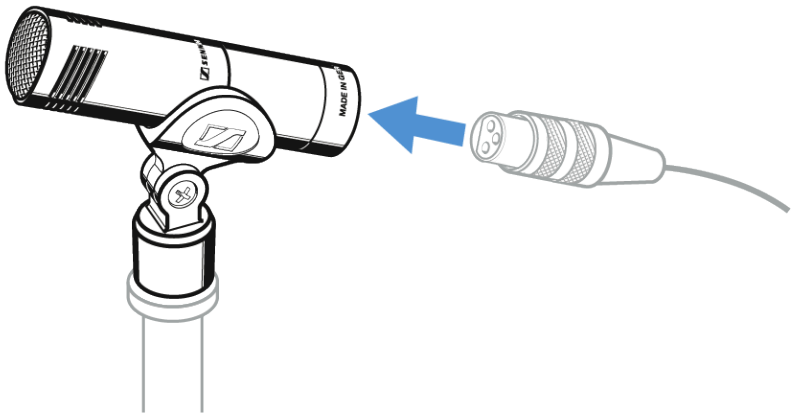
Mounting the microphone

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



Connecting the microphone

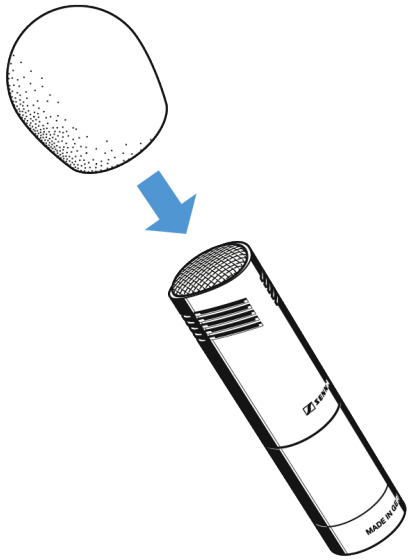
- Connect the XLR-3 socket of the microphone cable (optional accessories) to the XLR-3 socket of the microphone.



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.



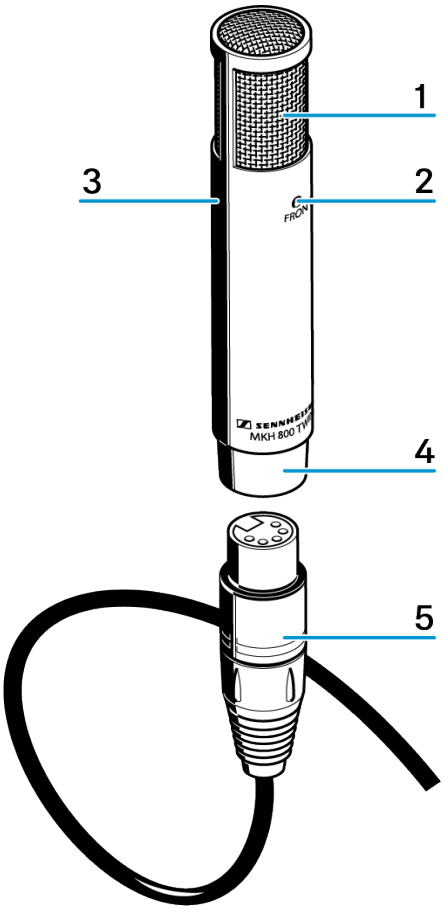
Operation

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.

Product overview



1 Sound inlet basket

2 LED Front (blue)

3 LED Rear (red)

4 XLR-5 connector

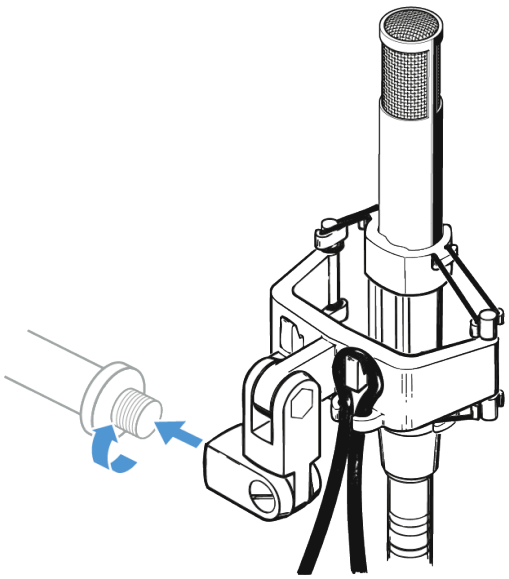
5 AC 20 adaptor cable

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.

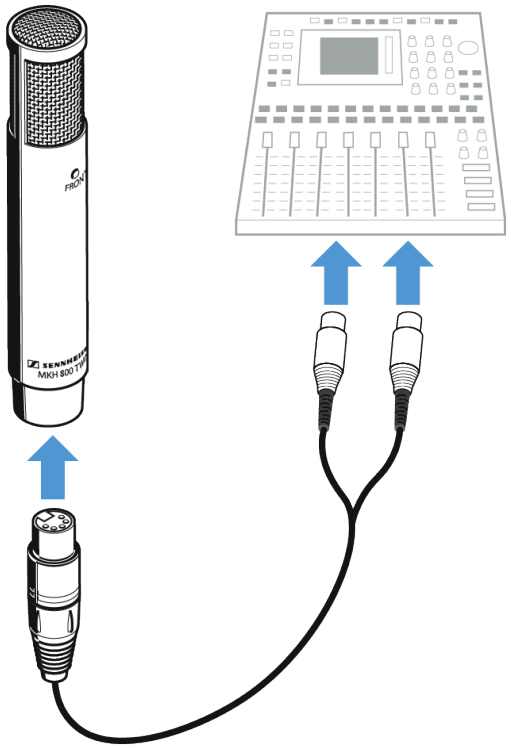
- Select the suitable mounting thread:
  - Without thread insert: 5/8" thread
  - With thread insert: 3/8" thread
- Screw the shock mount to a stand.
- Pass the cable through the cable grip as shown.
- Place the microphone into the shock mount as shown.



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.

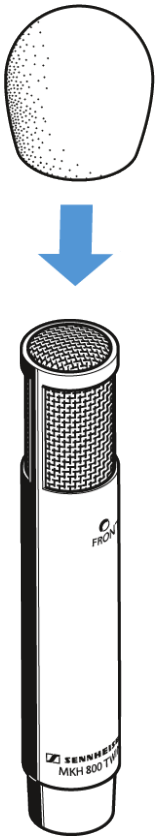
Function monitoring

- 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.

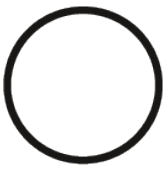
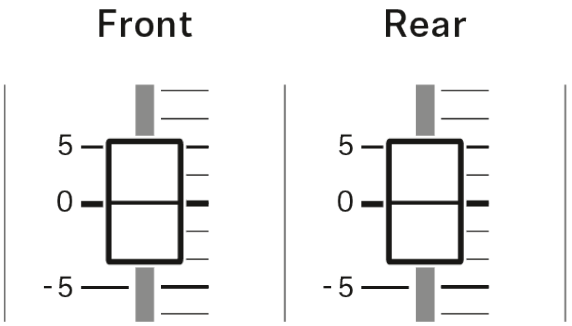
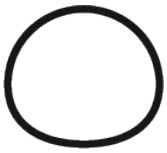
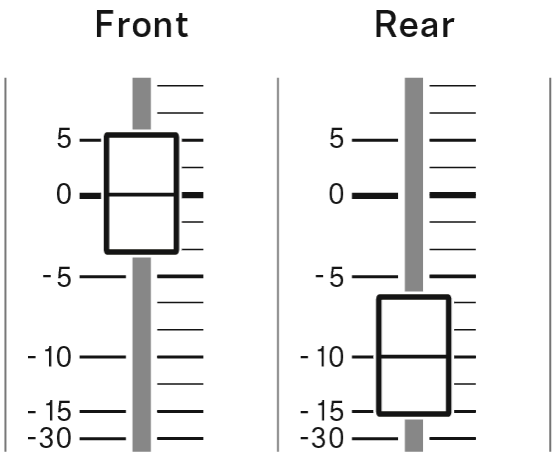


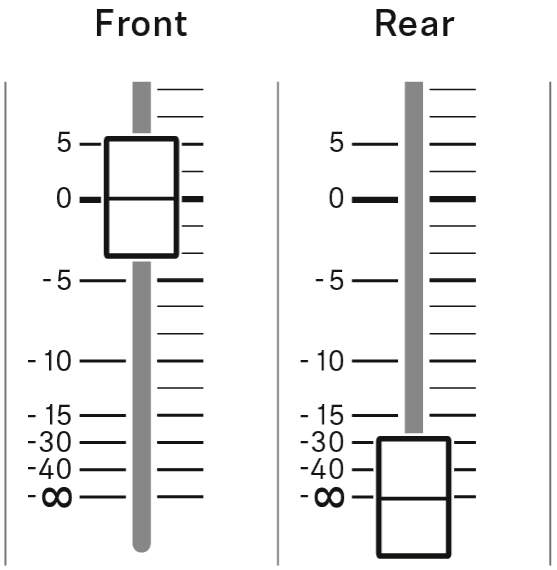
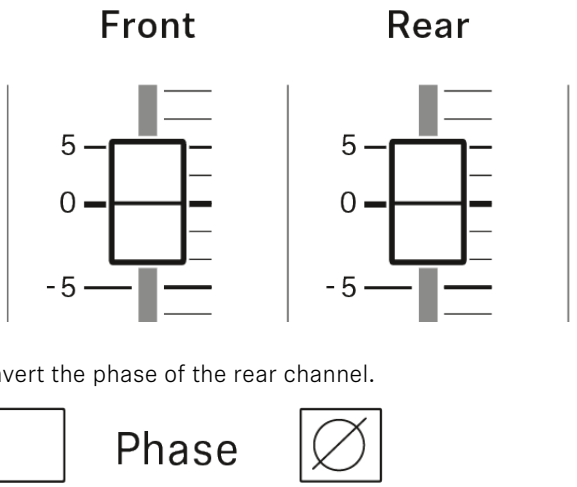
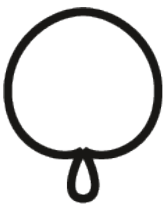
Operation

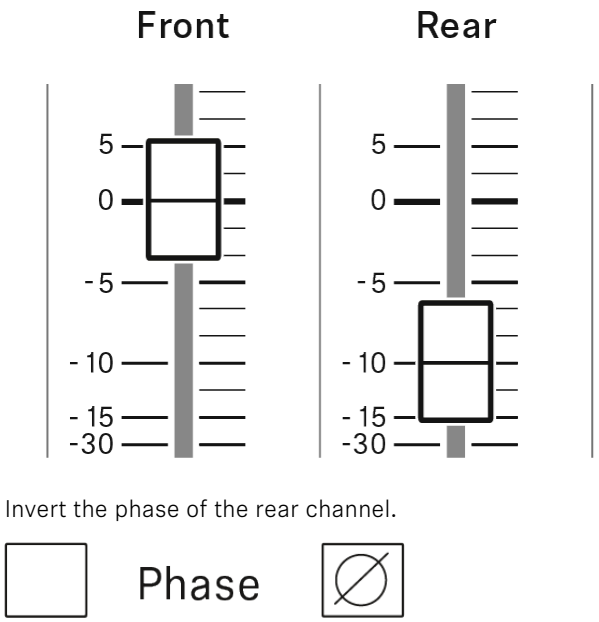
Remote adjustment of the pick-up patterns

> 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. 
Cardioid	Activate the front channel only.

Pick-up pattern	Setting
	
Figure-8	Set the amplification to the same value in both channels.
	 Invert the phase of the rear channel.
Super-cardioid**	Set the amplification in the rear channel lower than in the front channel.
	

Pick-up pattern	Setting
	 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.

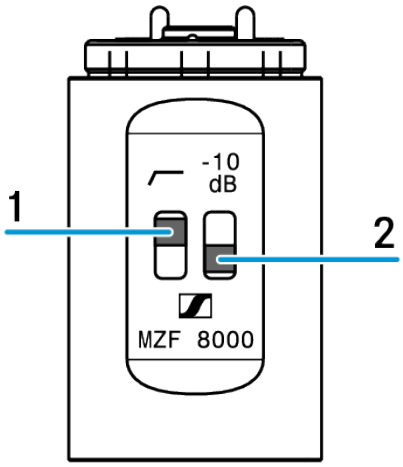
By combining the front and rear signals of the MKH 800 TWIN, a centre channel with any pick-up pattern can be achieved and even a centre rear channel is possible if required. In spite of the wide range of options, postproduction still only requires the original microphone signals to be saved, i.e. only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

Product overview



1 Switch for low-cut/roll-off filter

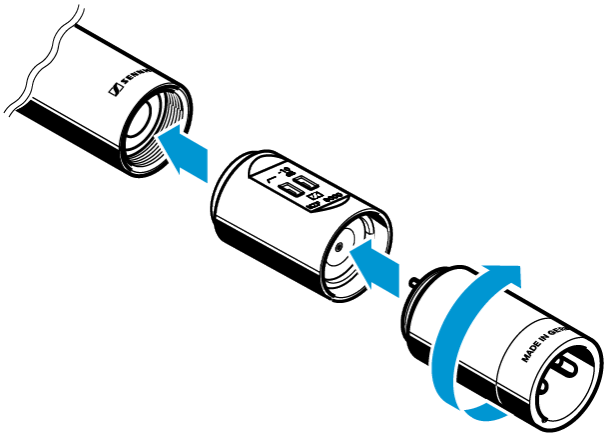
2 Switch for attenuation

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

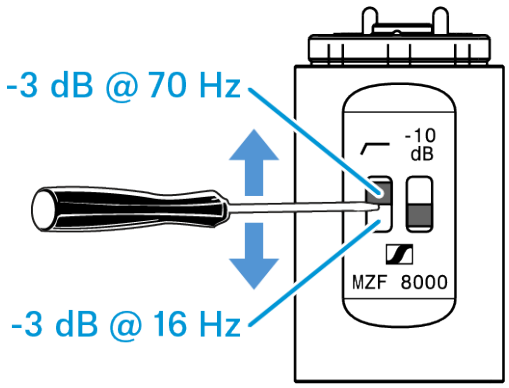
- If necessary, disconnect a connected XLR cable in order to not distort the cable and to avoid short-circuits.
- Unscrew the microphone head from the XLR module.
- Screw the MZF 8000 II filter module at a suitable place in the audio signal chain between microphone head and XLR module.



Operation

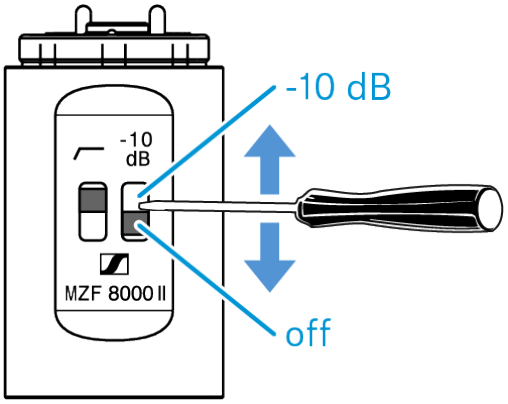
Adjusting the low-cut/roll-off filter

- 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

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

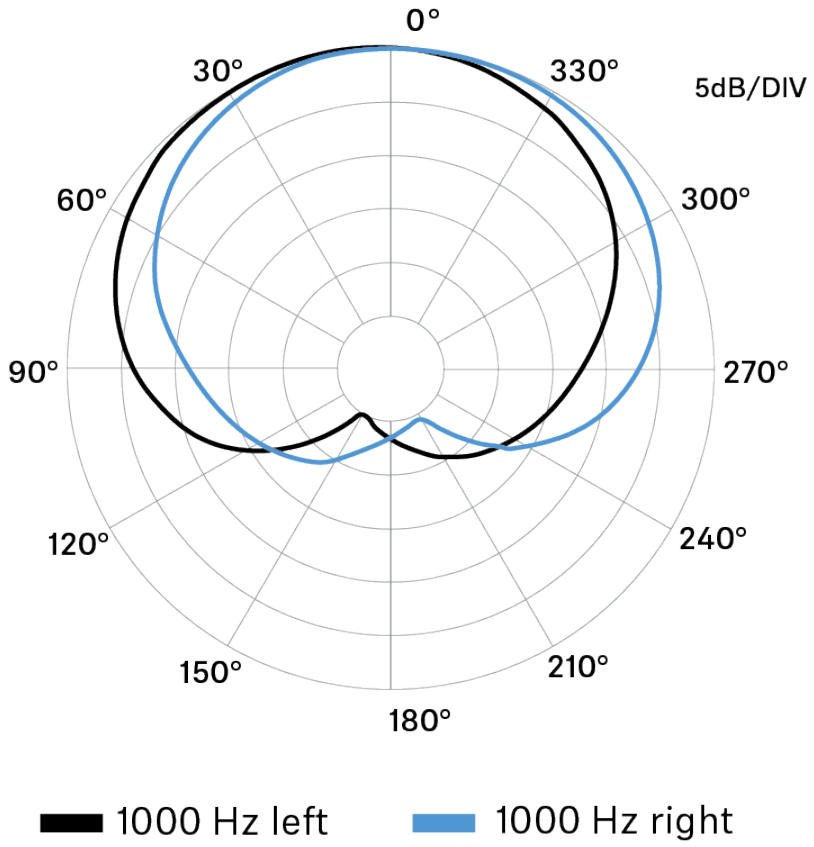
- Operating: -10 °C bis +60 °C
- Storage: -20 °C bis 70 °C

Relative humidity

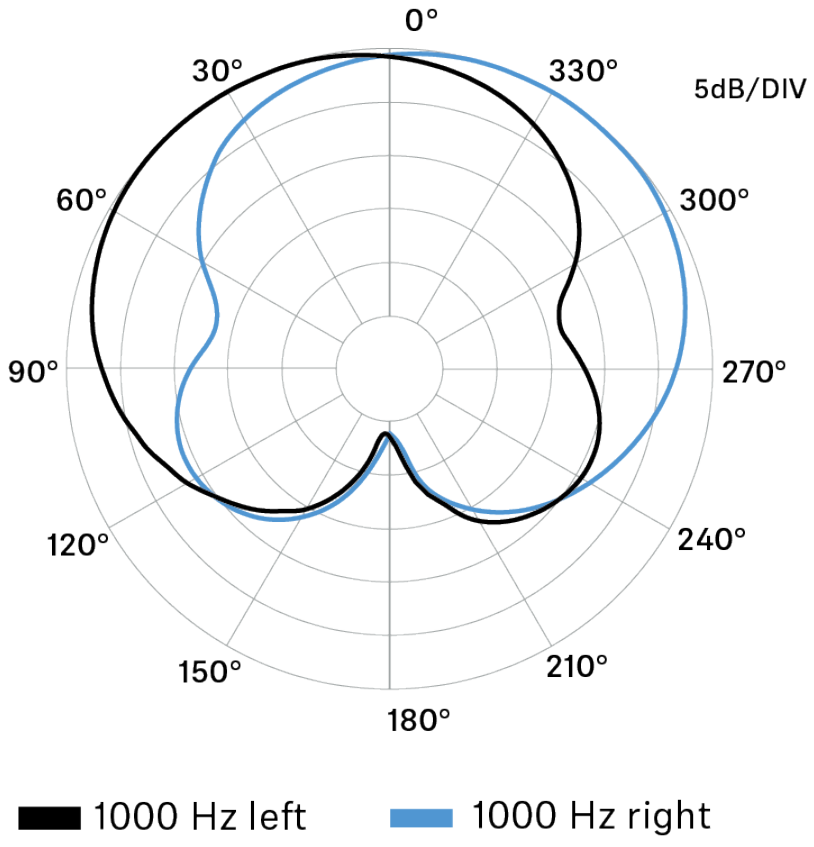
- 5 to 95%, non condensing

Polar pattern

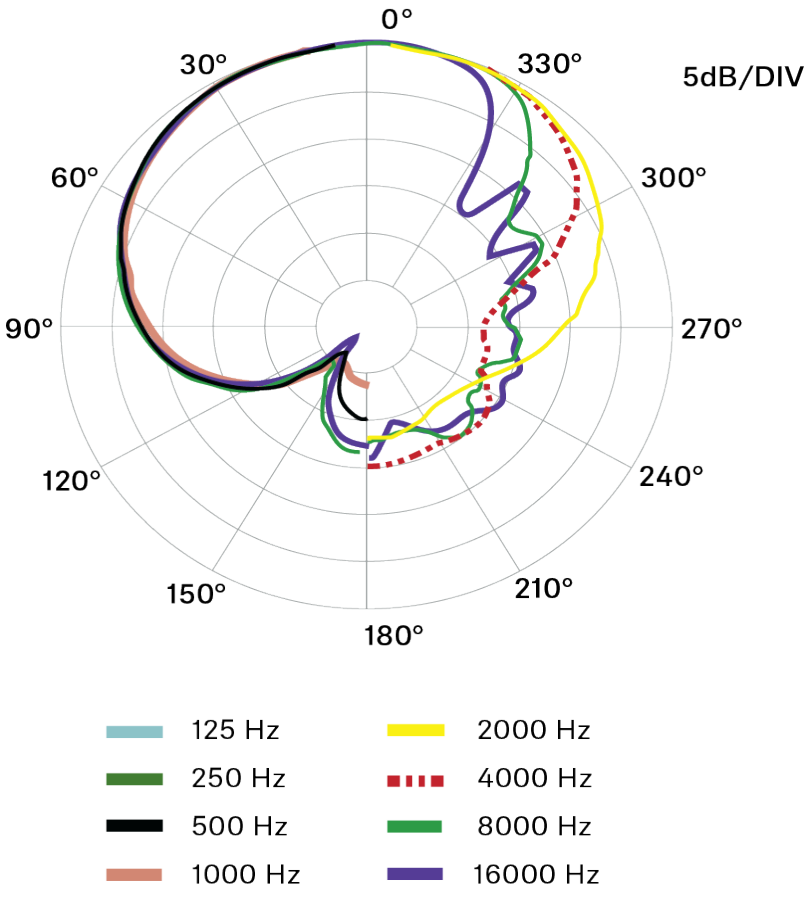
XY narrow


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

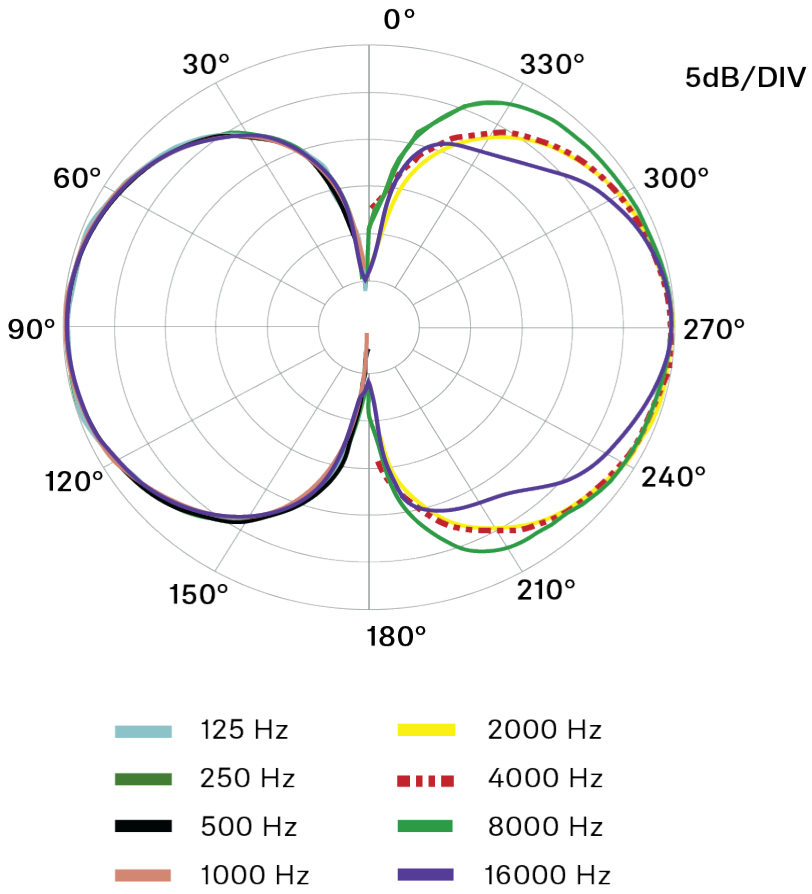
XY wide


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

Mid / M-Channel

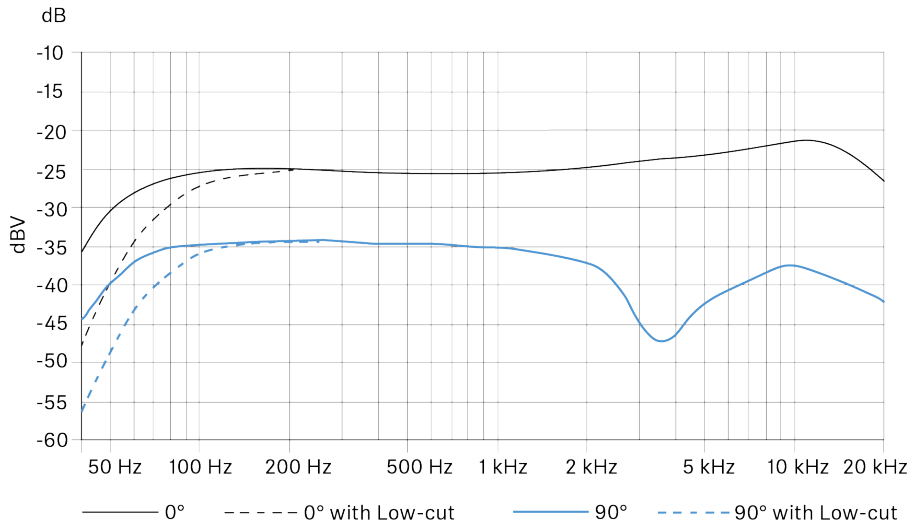


Side / S-Channel

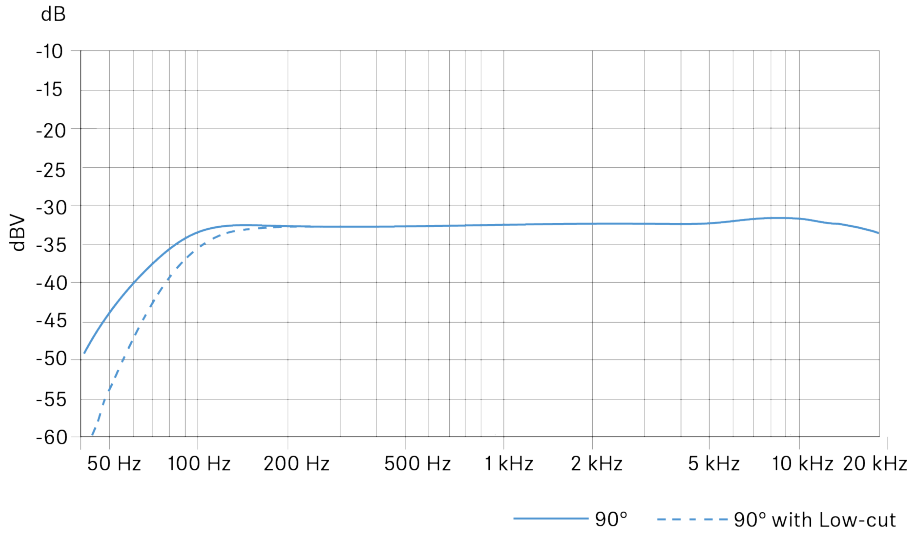


Frequency response

Mid / M-Channel



Side / S-Channel


dB
-10
-15
-20
-25
-30
-35
-40
-45
-50
-55
-60
dBV
50 Hz
100 Hz
200 Hz
500 Hz
1 kHz
2 kHz
5 kHz
10 kHz
20 kHz
90°
90° with Low-cut

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

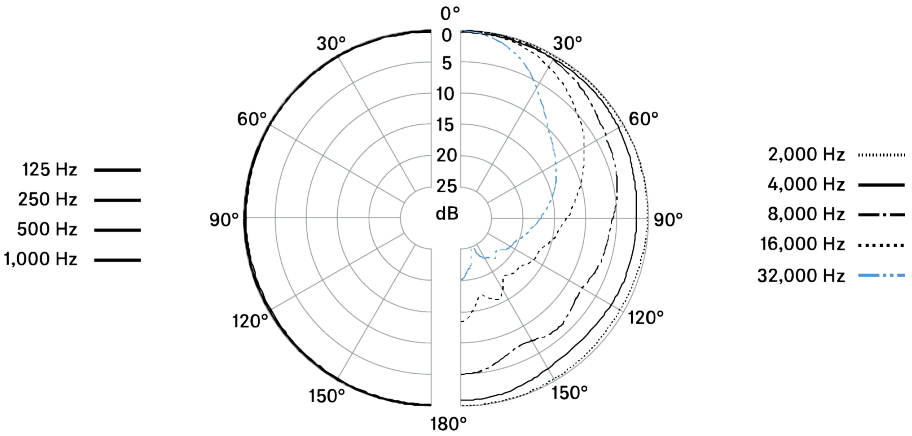
Weight

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

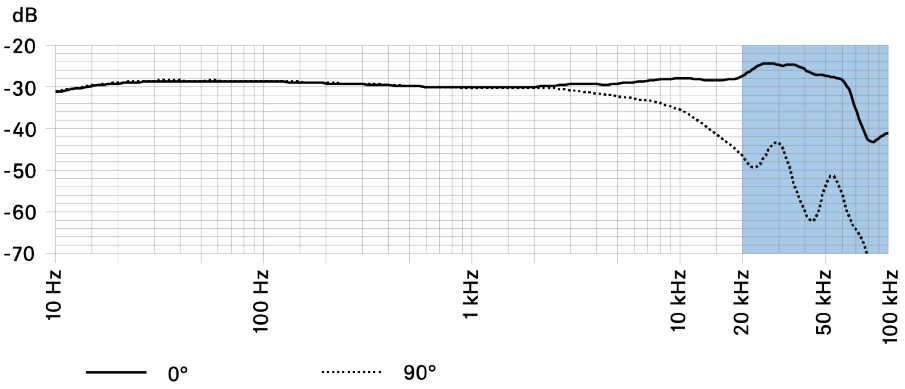
Temperature range

- -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

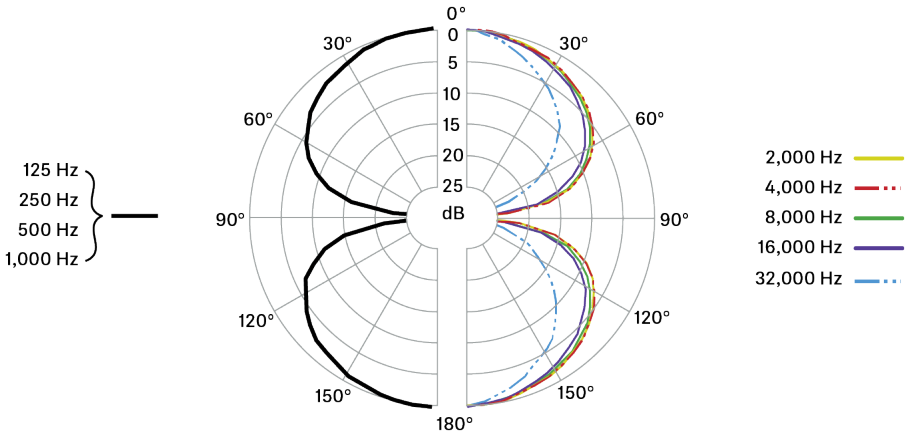
Weight

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

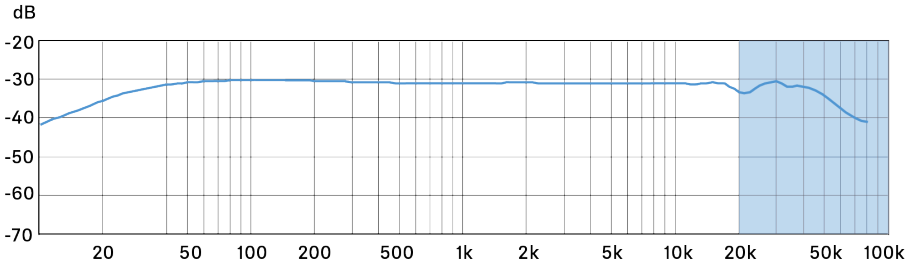
Temperature range

- -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

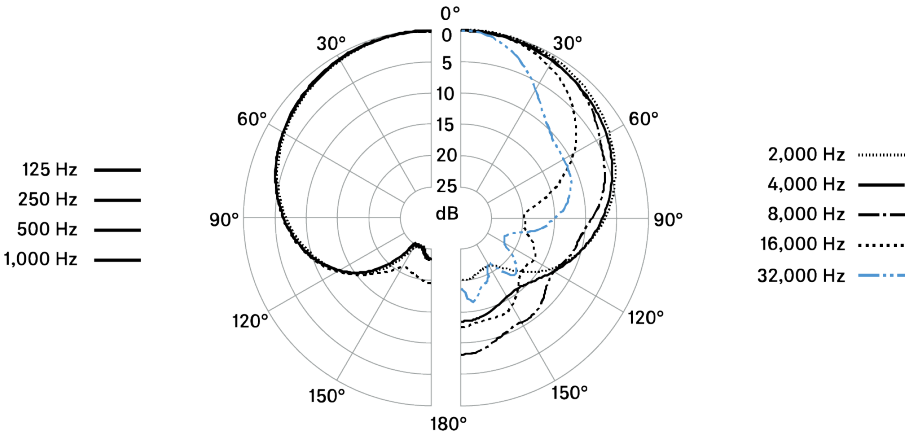
Weight

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

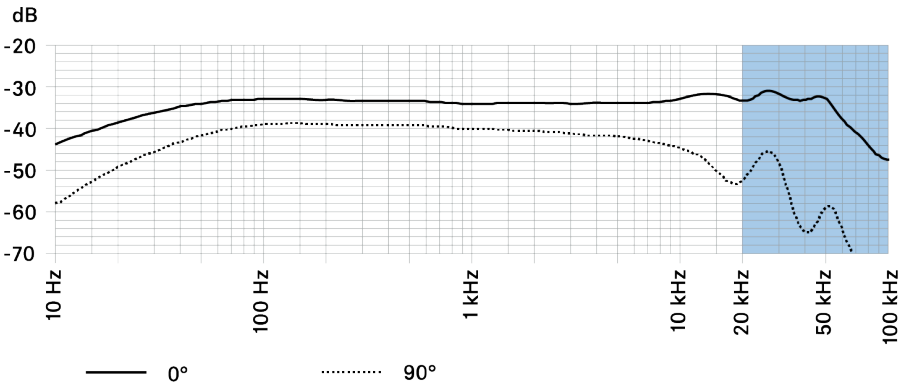
Temperature range

- -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

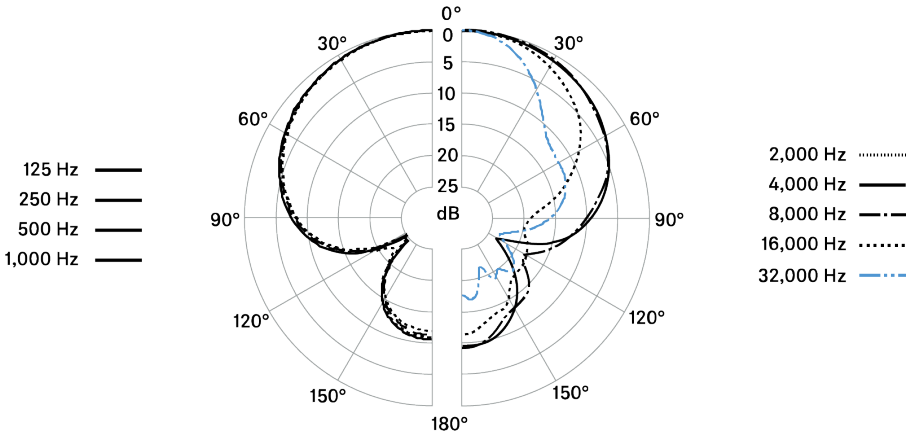
Weight

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

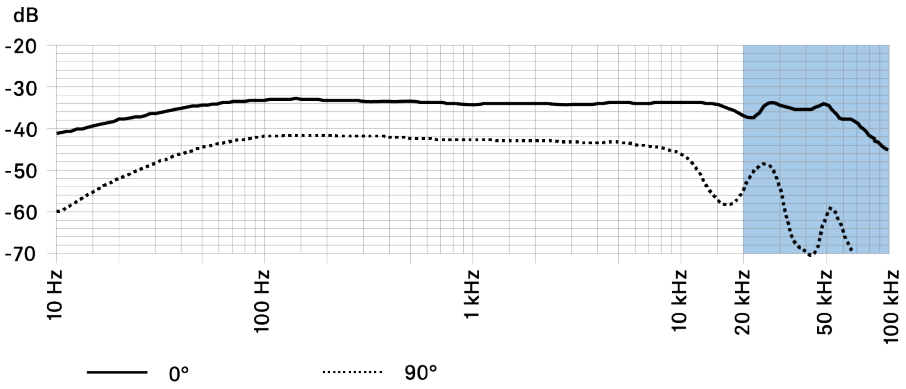
Temperature range

- -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

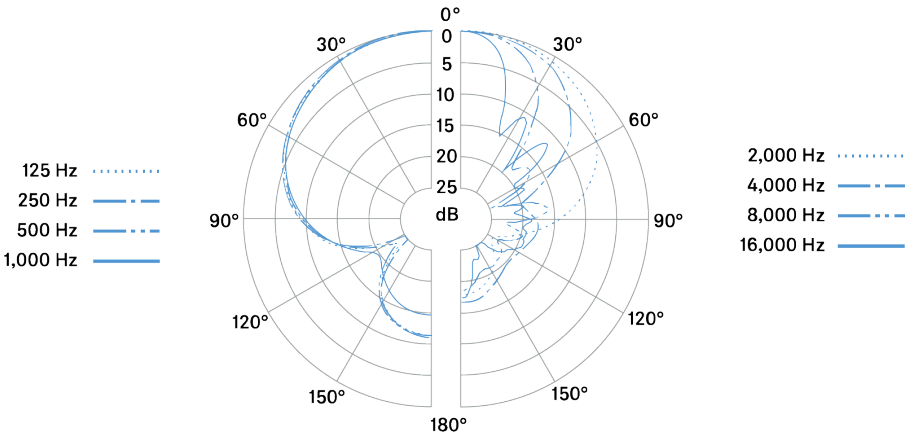
Weight

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

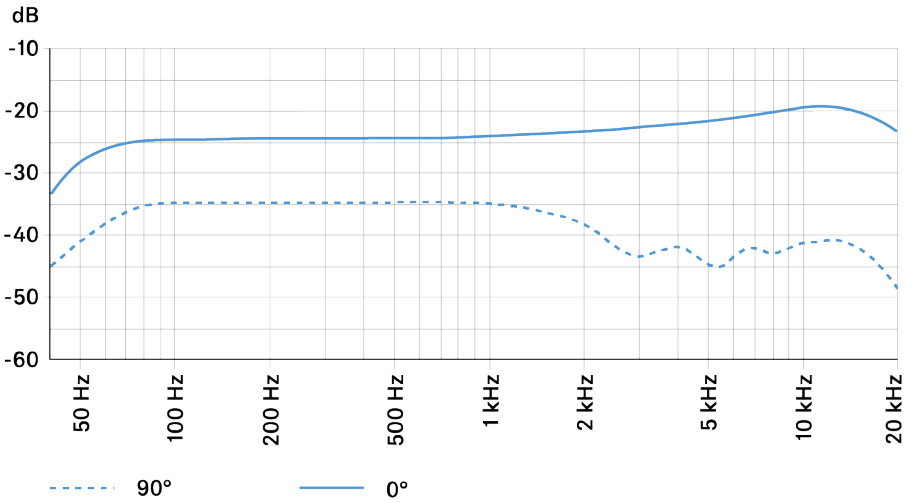
Temperature range

- -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

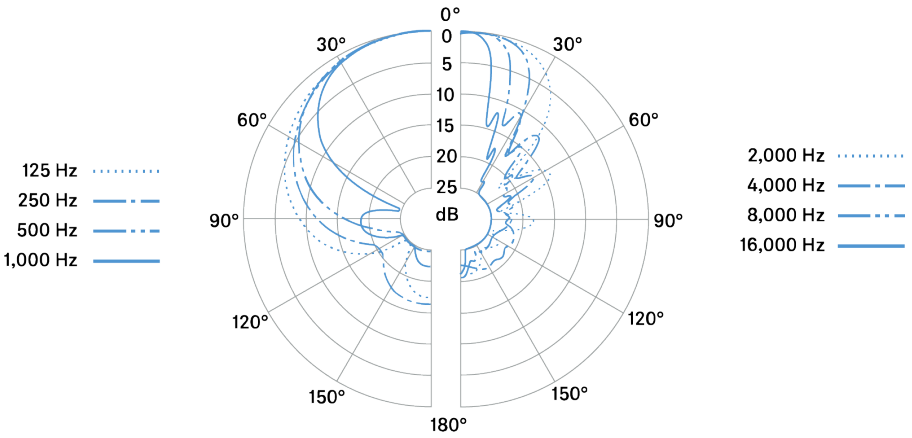
Weight

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

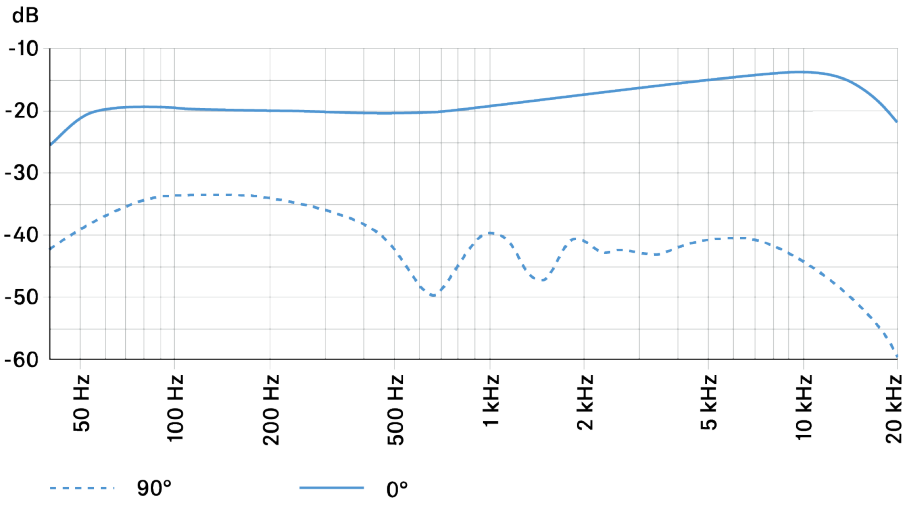
Temperature range

- -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

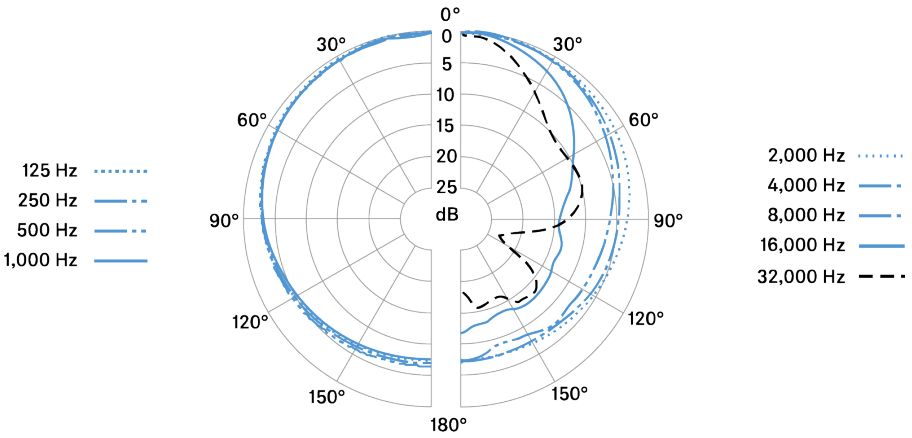
Weight

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

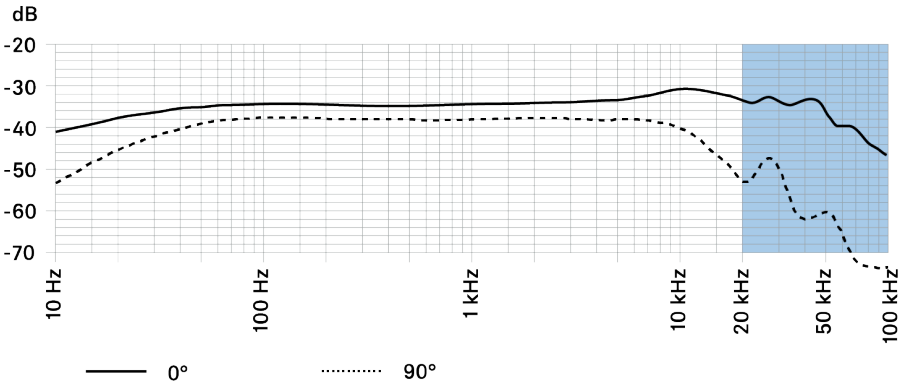
Temperature range

- -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

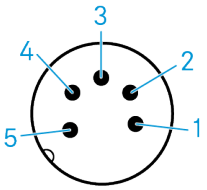
Temperature range

- Storage: -20 °C to +70 °C

Connector

- XLR-5M

Connector assignment



1 Ground/housing

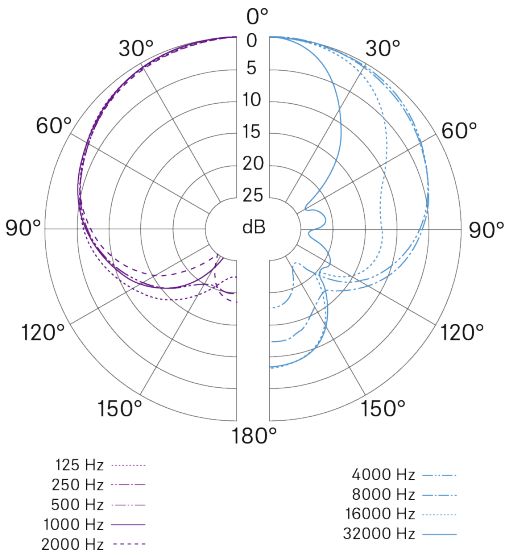
2 Front channel: (+)

3 Front channel: (-)

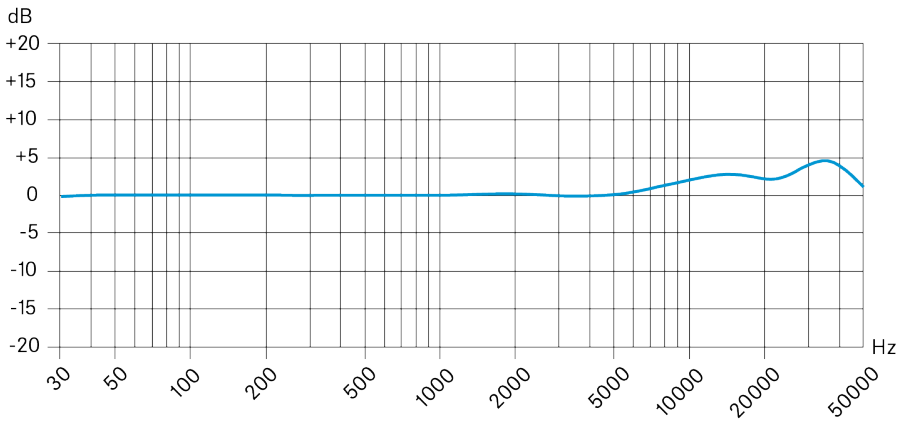
4 Rear channel: (+)

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

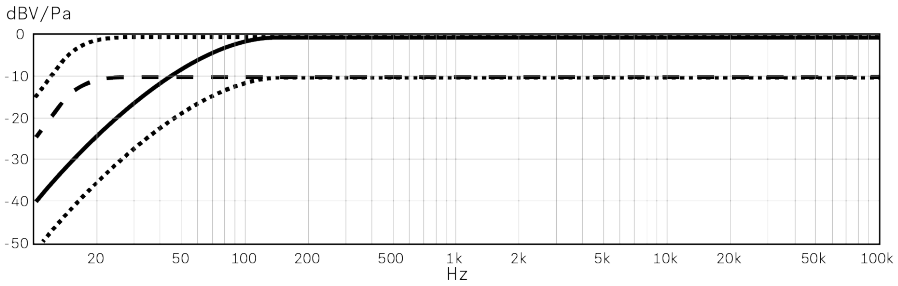
Weight

- 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. Regulatory information

Information on manufacturer declarations, environmental and disposal notices, and terms of use.

Model: MKH 8018, MKH 8020/Stereoset, MKH 8020 Stereoset, MKH 8030, MKH 8040/ Stereoset, MKH 8040 Stereoset, MKH 8050, MKH 8060, MKH 8070, MKH 8090, MKH 800 TWIN, MZF 8000 II

Warranty

Sennheiser electronic SE & Co. KG gives a warranty of 24 months on these products.

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

In the US please contact:

Sennheiser Electronic Corporation

1 Enterprise Drive, Old Lyme, CT 06371

www.sennheiser.com

Warranty for Australia and New Zealand only

Sennheiser Australia Pty Ltd provides a warranty of 24 months on these products. For the current warranty conditions, visit Sennheiser website: Australia: sennheiser.com, New Zealand: sennheiser.com

Sennheiser goods come with guarantees that cannot be excluded under Australian and New Zealand Consumer law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

This warranty is in addition to other rights or remedies under law. Nothing in this warranty excludes, limits or modifies any remedy available to be consumer which is granted by law.

To make a claim under this contract, raise a case via Sennheiser website. Australia: sennheiser.com/support, New Zealand: sennheiser.com/support

All expenses of claiming the warranty will be borne by the person making the claim.

Sennheiser international warranty is provided by: Sennheiser Australia Pty Ltd (ABN 68 165 388 312) Level 14, Tower A Zenith Building, 821 Pacific Highway, Chatswood NSW 2067, Australia

Europe

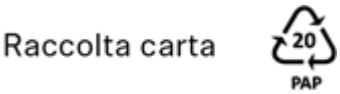
CE

In compliance with the following requirements

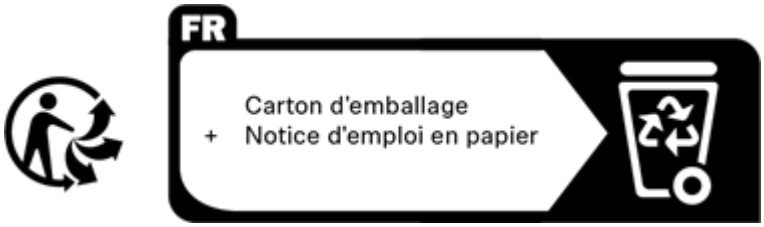
- Regulation (EU) 2023/988 on general product safety
- WEEE Directive (2012/19/EU)



Italy:



France:



Notes on disposal

The symbol of the crossed-out dumpster on the product, the (rechargeable) battery (if applicable) and/or the packaging indicates that these products must not be disposed of with normal household waste, but must be disposed of separately at the end of their service life. For the packaging, follow the regulations in your country for separating waste. Improper disposal of packaging materials can be harmful to your health and the environment.

The separate collection of waste electrical and electronic equipment, (rechargeable) batteries (if applicable) and packaging is intended to promote reuse and recycling and to prevent negative impacts on public health and the environment, for example due to hazardous substances contained in these products. At the end of their service life, recycle electrical and electronic equipment and (rechargeable) batteries so that their materials can be reused and to prevent environmental pollution.

If (rechargeable) batteries can be removed without destroying them, you are obliged to dispose of them separately (see the product's operating instructions for information on how to remove the batteries safely). Be especially careful when handling (rechargeable) batteries containing lithium, as these pose special hazards, such as the risk of fire and/or health risks if button cells are swallowed. Reduce battery waste as much as possible by using longer-life batteries or rechargeable batteries.

Further information on the recycling of these products can be obtained from your municipal administration, from the municipal collection points, or from your Sennheiser partner. You

may also be able to return electrical or electronic equipment to your distributor, if they are legally required to do so. By disposing of your batteries properly, you are helping to protect public health and the environment.

EU Declaration of conformity

- RoHS Directive (2011/65/EU)
- EMC Directive (2014/30/EU)

The full text of the EU declaration of conformity is available at the following internet address: sennheiser.com/download.

United Kingdom

In compliance with the following requirements

- WEEE Regulations (2013)



UK Declaration of conformity

- RoHS Regulations (2012)
- EMC Regulations (2016)

Importer: Sennheiser UK Ltd.

Pacific House, Third Avenue, Globe Park, Marlow

Buckinghamshire SL7 1EY, United Kingdom

USA

FCC 47 CFR 15 subpart B

Statements regarding FCC and ISED

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.

Contact information: Sennheiser Electronic Corporation, 1 Enterprise Drive, Old Lyme, CT 06371; sennheiser.com

Canada

CAN ICES-003(B)/NMB-003(B)

Statements regarding FCC and ISED

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.

Contact information: Sennheiser Electronic Corporation, 1 Enterprise Drive, Old Lyme, CT 06371; sennheiser.com

Australia / New Zealand



Vietnam

Kể từ ngày 1 tháng 12 năm 2012, các sản phẩm được sản xuất bởi Sennheiser tuân thủ Thông tư 30/2011/TT-BCT quy định về giới hạn cho phép đối với một số chất độc hại trong các sản phẩm điện và điện tử.

China

MKH 8018, MKH 8020/Stereoset, MKH 8030, MKH 8040/Stereoset, MKH 8050, MKH 8060, MKH 8070, MKH 8090, MKH 800 TWIN

China RoHS

部件名称 (Parts)	有害物质										
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr6+)	多溴联苯 (PBB)	多溴二苯醚 (PBDE)	邻苯二甲酸二(2-乙基己)酯 (DEHP)	邻苯二甲酸丁苄酯 (BBP)	邻苯二甲酸二丁酯 (DBP)	邻苯二甲酸二异丁酯 (DIBP)	产品环保年限 EFUP
金属部件 (Metal parts)	x	o	o	o	o	o	o	o	o	o	15
电路模块 (Circuit Modules)	x	o	o	o	o	o	o	o	o	o	15
电缆及电缆组件 (Cables & Cable Assemblies)	x	o	o	o	o	o	o	o	o	o	15
电路开关 - 如果包含 (Circuit Breakers - if available)	x	o	o	o	o	o	o	o	o	o	15

本表格依据 SJ/T 11364 的规定编制。
o：表示该有害物质在该部件所有均质材料中的含量均在GB/T 26572 规定的限量要求以下。
x：表示该有害物质至少在该部件的某一均质材料中的含量超出GB/T 26572 规定的限量要求。

MZF 8000 II

China RoHS

部件名称 (Parts)	有害物质										
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr6+)	多溴联苯 (PBB)	多溴二苯醚 (PBDE)	邻苯二甲酸二(2-乙基己)酯 (DEHP)	邻苯二甲酸丁苄酯 (BBP)	邻苯二甲酸二丁酯 (DBP)	邻苯二甲酸二异丁酯 (DIBP)	产品环保年限 EFUP
金属部件 (Metal parts)	x	o	o	o	o	o	o	o	o	o	15
电路模块 (Circuit Modules)	x	o	o	o	o	o	o	o	o	o	15

本表格依据 SJ/T 11364 的规定编制。
o：表示该有害物质在该部件所有均质材料中的含量均在GB/T 26572 规定的限量要求以下。
x：表示该有害物质至少在该部件的某一均质材料中的含量超出GB/T 26572 规定的限量要求。

6. Contact

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





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