

A pair of Sennheiser earsets, labeled Ear Set 1 and Ear Set 4. The device consists of a black cylindrical body with a coiled cable on one side and a long, thin, flexible earpiece on the other. The earpiece has a small black ring near the base and a black tip. The device is shown against a dark grey background with a subtle shadow.

# EAR SET 1 EAR SET 4

Instruction manual

 **SENNHEISER**

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# Safety instructions

- Read this instruction manual.
- Keep this instruction manual. Always include this instruction manual when passing the product on to third parties.
- Heed all warnings and follow all instructions in this instruction manual.
- Use only a cloth for cleaning the product.
- Do not place the product near any heat sources such as radiators, stoves, or other devices (including amplifiers) that produce heat.
- Never open the device. If devices are opened by customers in breach of this instruction, the warranty becomes null and void.
- Only use attachments/accessories specified by Sennheiser.

## Intended use of the device

Intended use includes:

- having read this instruction manual, especially the chapter “Safety instructions”,
- using the product within the operating conditions and limitations described in this instruction manual.

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

# Delivery includes

## Ear Set 1

- 1 Ear Set 1 ear-worn microphone
- 1 MZQ 02 cable clip
- 1 connection cable with silicone tube
- 1 MZC 1-1 frequency response cap, small
- 1 MZC 1-2 frequency response cap, large
- 1 adhesive tape
- 1 plastic transport case
- 1 instruction manual

## Ear Set 4

- 1 Ear Set 4 ear-worn microphone
- 1 MZQ 02 cable clip
- 1 connection cable with silicone tube
- 1 MZW 4 windshield
- 1 adhesive tape
- 1 plastic transport case
- 1 instruction manual

# Ear Set 1 / Ear Set 4

The Ear Set 1 and Ear Set 4 are high-quality pre-polarized condenser ear-worn microphones designed for professional applications. They differ from each other in their pick-up patterns (see the polar diagrams in the chapter “Specifications”).

- Ear Set 1: omni-directional
- Ear Set 4: cardioid

## Features of the Ear Set 1 / Ear Set 4

- Compatible with all Sennheiser wireless microphone systems
- Individually adjustable to the ear due to flexible earband
- Cable is insensitive to structure-borne noise
- Modular design, i.e. all system components are easily interchangeable
- Very small dimensions
- Very insensitive to the penetration of sweat and moisture
- High maximum sound pressure level and excellent speech intelligibility
- Based on the proven acoustics of the MKE 1 sub-miniature clip-on microphone (Ear Set 1) or the HSP 4 headmic (Ear Set 4)
- Transparent and skin-friendly hypoallergenic adhesive tape ensures a perfect fit of the microphone boom even during strong movements and provides strain relief for the cable
- Made in Germany

# Putting into operation

## Wearing the ear-worn microphones

Your ear-worn microphone comes with a preinstalled connection cable and is ready for operation on delivery.

The Ear Set 1 with its omni-directional pick-up pattern can be worn on the left or right ear.

Due to the directivity of its cardioid pick-up pattern, the Ear Set 4 can only be worn on the right ear.



## Adjusting the earband to the shape of your ear

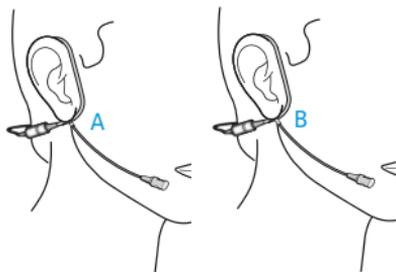
### CAUTION! Damage to the earband



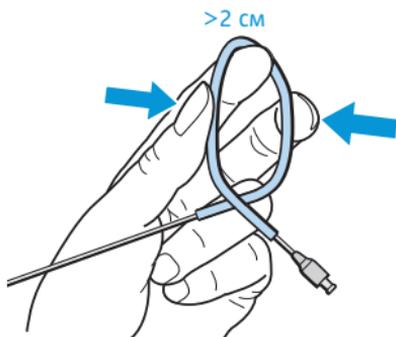
The earband can break or be impaired in its function when the bend diameter is too small ( $< 2$  cm) or when you bend it close to the connector. Also avoid frequent alternate bendings. If the earband breaks, you can be injured.

- ▶ Adjust the earband to the shape of your ear as described below.

- ▶ Put on the ear-worn microphone. The earband has to closely follow the shape of your ear. To improve the wearing comfort, make sure that the end of the connector is placed in front (A) or behind (B) the microphone boom.



- ▶ Adjust the pre-bent earband to the individual shape of your ear. To do so, carefully bend the earband over your index finger.



## Positioning the microphone boom towards the corner of the mouth

For best possible fit and comfort and optimum transmission quality, the microphone boom has to be adjusted to the shape of your face.

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### CAUTION! Damage to the microphone boom



The microphone boom can break or be impaired in its function when the bend diameter is too small (< 2 cm) or when you bend it close to the microphone. Also avoid frequent alternate bendings. If the microphone boom breaks, you can be injured.

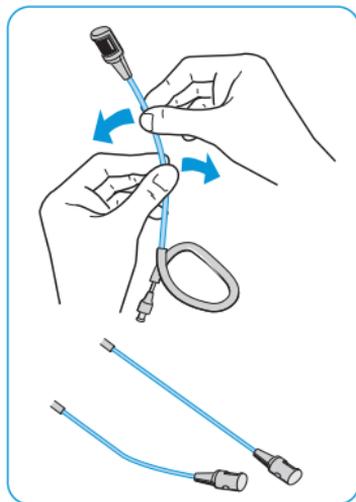
- ▶ Adjust the microphone boom to the shape of your face as described below.

- 
- ▶ If necessary, bend the earband again in order to adjust the angle of the microphone boom.

- ▶ Adjust the microphone boom: You can change the length of the microphone boom by bending it. Due to the omni-directional pick-up pattern of the Ear Set 1, no particular distance between microphone and mouth has to be maintained.

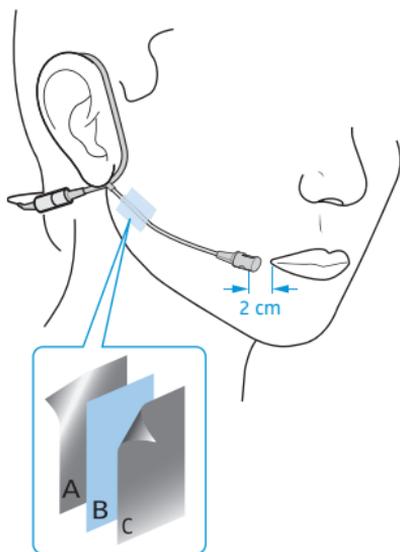
With the Ear Set 4, maintain a distance of 2 to 3 cm between microphone and mouth.

- ▶ Adjust the microphone boom to the shape of your face.



The supplied hypoallergenic adhesive tape allows you to additionally fix the microphone boom to the cheek.

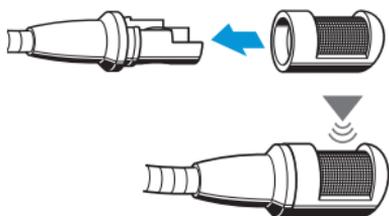
- ▶ Remove the white protective foil (A).
- ▶ Stick the adhesive tape (B) over the microphone boom.
- ▶ Remove the thin protective foil (C) from the upper side of the adhesive tape.
- ▶ If necessary, apply make-up to the adhesive tape.



## Attaching the sound inlet basket (Ear Set 4 only)

### Notes

- ▶ Do not position the microphone directly in front of your mouth as it will pick up your breathing and plosive noises from your mouth. In addition, moisture can adversely affect the sound and performance of your microphone.
- ▶ When attaching the sound inlet basket, make sure that it locks into place with an audible click.
- ▶ Make sure you do not cover the sound inlet.



## Treble boost using the MZC 1-1 and MZC 1-2 frequency response caps (Ear Set 1 only)

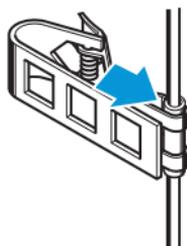
The Ear Set 1 is supplied with two different frequency response caps. These caps allow you to adjust the treble response of the microphone (see the frequency response curve in the chapter “Specifications”). In addition, the large MZC 1-2 frequency response cap attenuates wind noise by approx. 15 dB and provides an extended protection against the ingress of moisture.



- ▶ Slip the cap of your choice onto the microphone head until it locks into place.

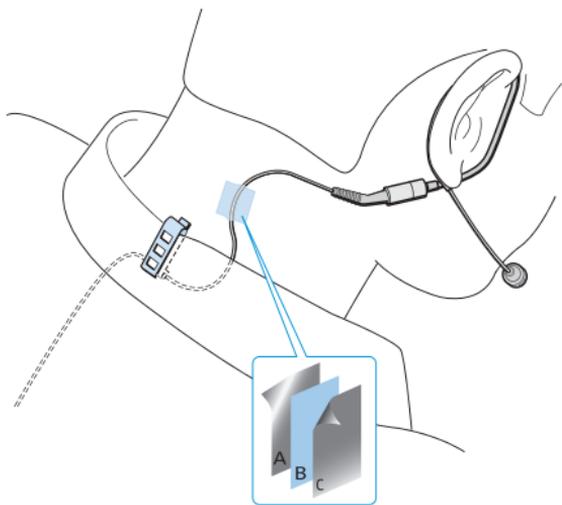
## Attaching the connection cable to clothing

- ▶ Press the tube of the connection cable into the cable grip of the MZQ 02 cable clip.
- ▶ Attach the cable clip to the rear of your collar (see diagram on the next page).
- ▶ Run the connection cable under your clothing.



The supplied hypoallergenic adhesive tape allows you to additionally fix the connection cable to the neck.

- ▶ Remove the white protective foil (A).
- ▶ Stick the adhesive tape (B) over the connection cable.
- ▶ Remove the thin protective foil (C) from the upper side of the adhesive tape.



# Variants

## Ear Set 1

Variants	Cable and connector type	Cat. No.
Ear Set 1-4	Black cable with special connector	504230
Ear Set 1-4-3	Beige cable with special connector	504231
Ear Set 1-ew	Black cable with 3.5 mm jack plug, lockable	504232
Ear Set 1-ew-3	Beige cable with 3.5 mm jack plug, lockable	504233

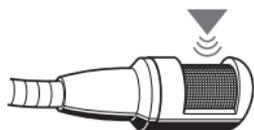
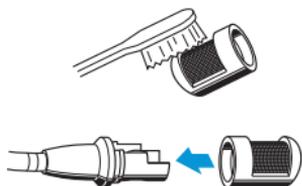
## Ear Set 4

Variants	Cable and connector type	Cat. No.
Ear Set 4-4	Black cable with special connector	504234
Ear Set 4-4-3	Beige cable with special connector	504235
Ear Set 4-ew	Black cable with 3.5 mm jack plug, lockable	504236
Ear Set 4-ew-3	Beige cable with 3.5 mm jack plug, lockable	504237

# Care and maintenance

## Cleaning the sound inlet basket

- ▶ To clean or replace the sound inlet basket, carefully pull it from the capsule.
- ▶ Moisten a small brush (bristle brush or toothbrush) with isopropyl alcohol.
- ▶ Carefully brush off the sound inlet basket.
- ▶ Allow the sound inlet basket to air dry for approx. 1 hour so that the remaining isopropyl alcohol can evaporate.
- ▶ Reattach the sound inlet basket to the capsule so that it locks into place with an audible click. When attaching the sound inlet basket, make sure not to cover the sound inlet.

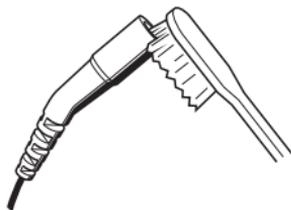
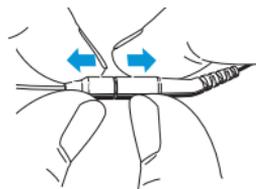
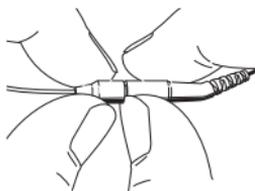


## Cleaning the contacts of the connection cable

Over time, salt deposits from sweat can build up on the connector and the socket. Clean the connector and the socket using standard isopropyl alcohol.

To loosen the connection:

- ▶ Slide the silicone tube aside.
- ▶ Insert your fingernail into the join.
- ▶ Pull the connector and the socket apart as shown.
- ▶ Moisten a small brush (bristle brush or toothbrush) with isopropyl alcohol.
- ▶ Carefully brush off the connector and the socket and remove the salt deposits.



- ▶ Rinse the connector and the socket with isopropyl alcohol to remove the remaining salt deposits.
- ▶ Dry the connector and the socket using a soft cloth or a small piece of cotton wool and carefully tap them off.
- ▶ Allow the connector and the socket to air dry for approx. 1 hour so that the remaining isopropyl alcohol can evaporate.
- ▶ Slide the silicone tube onto the connector.
- ▶ Connect the connector to the socket.

# Accessories

## Ear Set 1

Item	Cat. No.
MZC 1-1 frequency response cap, small, black	513179
MZC 1-2 frequency response cap, large, black	521701
MZC 1-1 frequency response cap, small, beige	513198
MZC 1-2 frequency response cap, large, beige	513197
MZW 01 windshield, black	521724
MZW 01 windshield, beige	521726
MZW 02 foam windshield, black	536809
MZW 02 foam windshield, beige	514524
Cable with special connector, black	530990
Cable with special connector, beige	530992
Cable with 3.5 mm jack plug, black	530994
Cable with 3.5 mm jack plug, beige	530996
Plastic transport case	535377
MZA 900 P phantom power adapter, 3.5 mm socket	500226
MZA 900 P-4 phantom power adapter, special socket	500872
MZC 1-3 make-up protector	521746
MZQ 02 cable clip, black	076659
MZQ 02 cable clip, beige	076680
Hypoallergenic adhesive tape, 10 m, transparent, can be covered with make-up	502756

## Ear Set 4

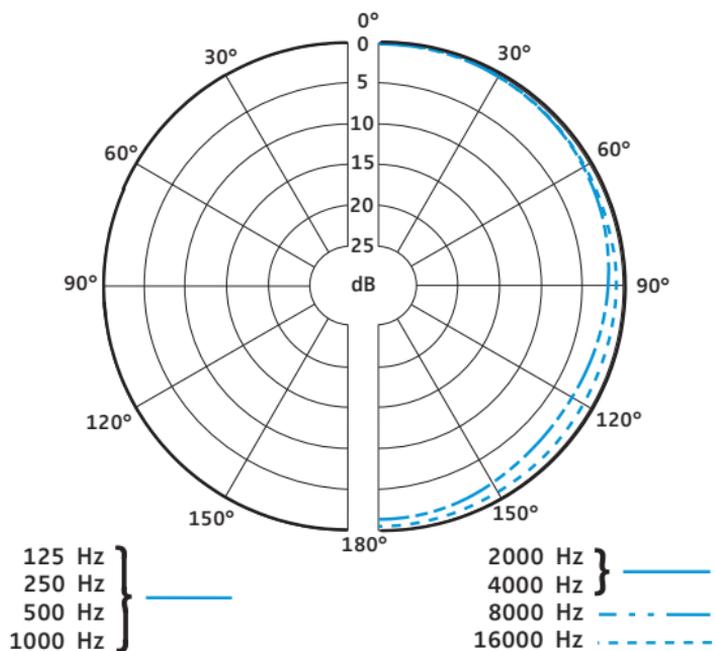
Item	Cat. No.
MZW 4 foam windshield, black	510862
MZW 4 foam windshield, beige	510863
Cable with special connector, black	530990
Cable with special connector, beige	530992
Cable with 3.5 mm jack plug, black	530994
Cable with 3.5 mm jack plug, beige	530996
Plastic transport case	535377
MZA 900 P phantom power adapter, 3.5 mm socket	500226
MZA 900 P-4 phantom power adapter, special socket	500872
MZQ 02 cable clip, black	076659
MZQ 02 cable clip, beige	076680
Hypoallergenic adhesive tape, 10 m, transparent, can be covered with make-up	502756
Windshield cap, black	511715
Windshield cap, beige	511716

# Specifications

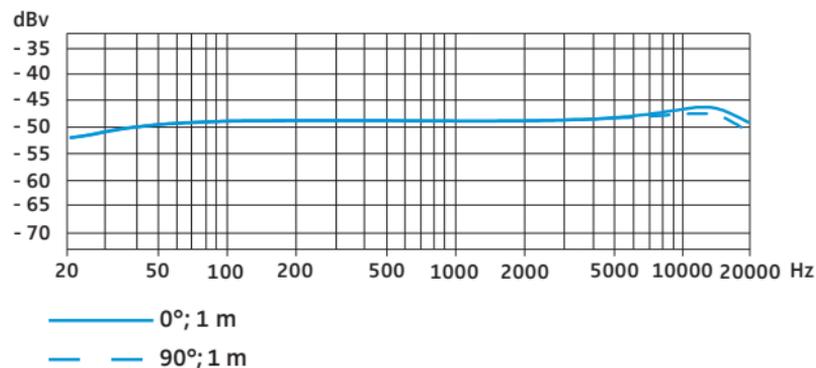
## Specifications Ear Set 1

Frequency response	20 to 20,000 Hz $\pm$ 3 dB
Pick-up pattern	omni-directional
Nominal impedance (at 1 kHz)	1 k $\Omega$
Min. terminating impedance	4.7 k $\Omega$
Sensitivity (at 1 kHz)	5 mV/Pa $\pm$ 2.5 dB
Diameter of mic capsule	3.3 mm
Max. sound pressure level	143 dB
Equivalent noise level	27 dB (A)
Supply current	approx. 240 $\mu$ A
Power supply	4.5 to 15 V
Operating temperature	-10°C to +50°C
Cable length	1.6 m
Diameter of boom arm	1.1 mm
Weight (without cable)	2.3 g
Connector	see "Variants" on page 11

## Polar diagram Ear Set 1



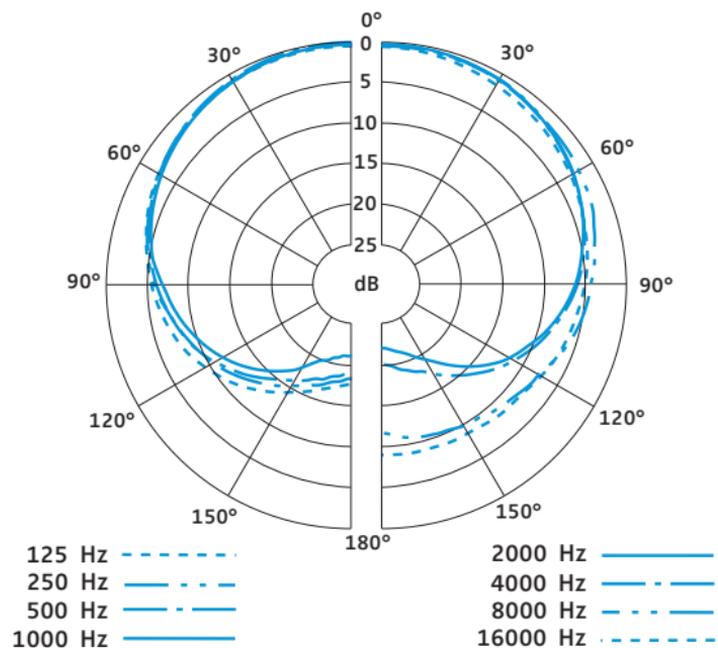
## Frequency response curve Ear Set 1



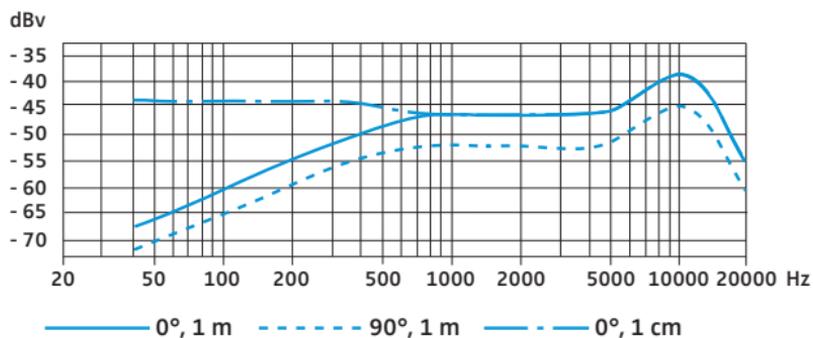
## Specifications Ear Set 4

Frequency response	40 to 20,000 Hz $\pm$ 3 dB
Pick-up pattern	cardioid
Nominal impedance (at 1 kHz)	1 k $\Omega$
Min. terminating impedance	4.7 k $\Omega$
Sensitivity (at 1 kHz)	4 mV/Pa $\pm$ 2.5 dB
Diameter of mic capsule	8.4 mm
Max. sound pressure level	150 dB
Equivalent noise level	37 dB (A)
Supply current	approx. 240 $\mu$ A
Power supply	4.5 to 15 V
Operating temperature	-10°C to +50°C
Cable length	1.6 m
Diameter of boom arm	1.1 mm
Weight (without cable)	4.6 g
Connector	see "Variants" on page 11

## Polar diagram Ear Set 4



## Frequency response curve Ear Set 4



# Manufacturer Declarations

## Warranty

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

For the current warranty conditions, please visit our website at [www.sennheiser.com](http://www.sennheiser.com) or contact your Sennheiser partner.

## Declaration of Conformity



This equipment is in compliance with the essential requirements and other relevant provisions of Directive 2004/108/EC. The declaration is available on the Internet at [www.sennheiser.com](http://www.sennheiser.com).

## In compliance with the following requirements

- RoHS Directive (2002/95/EC)
- WEEE Directive (2002/96/EC)



Please dispose of this product at the end of its operational lifetime by taking it to your local collection point or recycling center for such equipment.

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