RF Condenser Microphones

Operating Principle of the RF Condenser Microphone

RF condenser microphones constitute a unique, sophisticated class of condenser microphones. They fulfil the very highest demands made on sound quality and versatility, and are renowned for their high quality, highly accurate sound reproduction, ruggedness, all-weather operation, wide frequency response and extremely low inherent self-noise.

Usually, a high capsule polarisation voltage would be necessary, however, RF condenser microphones use a comparatively low RF voltage, generated by a low-noise oscillator. It is modulated by the capacitance changes produced by the sound waves moving the capsule diaphragm. Following the demodulation, a low-noise audio frequency signal with very low source impedance is available, which can be used to directly drive ‘ordinary’ bipolar transistors.

As bipolar transistors produce less random noise than the field-effect transistors usually needed, electrical equalisation technology can be included to increase the microphone’s dynamic range and linearise its frequency response. As a result, an excellent low frequency response can be achieved even with small capsules, which would normally only be possible using larger capsules. In addition, small capsules achieve a considerably better high frequency response than large capsules.

The RF process results in a considerable reduction of the electrical impedance of the capsule and enables RF condenser microphones to be operated in all weather conditions. A further advantage of this process is that an ungrounded audio frequency signal is available although the capsule is grounded. This is why all RF condenser microphones possess a genuine fully floating, balanced output without having to use an audio frequency transformer.

Sennheiser’s Revolutionary Symmetrical Microphone Capsule

The MKH 20 to 80 microphones have Sennheiser’s unique and revolutionary symmetrical push-pull capsule. Besides the normal back plate, this capsule is fitted with an additional front plate, with the diaphragm being positioned between them. Both plates are acoustically transparent. Any impedance changes in the air gaps between the diaphragm and the respective plate are opposite and therefore cancel each other out, which leads to an unchanging acoustic impedance. This balanced design produces extremely low distortion figures and a higher capsule output that gives a much lower noise figure. The result is a microphone series unmatched in clarity and neutrality.

Power Supply Units

All RF condenser microphones use 48 V phantom powering (P 48). The TU 3 version of the MKH 416 operates using 12 V AB (T) powering. All models are powered externally via the microphone cable. The MZA 14 P 48 U (or MZA 14 T U) battery unit is available for both types of powering.

Connections

All RF condenser microphones are fitted with a 3-pin XLR connector as standard. Standard polarity results in a positive voltage at pin 2 against pin 3, when pressure increases in front of the diaphragm.
Pick-up Patterns

The various pick-up patterns of Sennheiser’s MKH RF condenser microphones are illustrated by the examples below:

- **Omnidirectional**
  - MKH 20
- **Figure-of-eight**
  - MKH 30
- **Cardioid**
  - MKH 40
- **Super-cardioid**
  - MKH 50
- **Short gun**
  - MKH 60
- **Long gun**
  - MKH 70

Recommendations for Use

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<td><strong>Nature recordings</strong></td>
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<td><strong>Hand-held microphones</strong></td>
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▲ with MZP 40
○ with suspension/pistol grip
<table>
<thead>
<tr>
<th>Cat. No.</th>
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<td>Polar diagrams and frequency response curves of the MKH 800</td>
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</table>
The MKH 20 is usually used as a main microphone for orchestras and solo instruments, and picks up the natural acoustics of the room, though it does have a much wider range of applications as omni-directional microphones do not suffer from ‘proximity effect’.

Features
- Exceptionally flat frequency response, switchable for near and diffuse field applications
- High-frequency response can be accentuated by means of a pressure build-up ring
- Slightly increasing directivity at high frequencies to adjust tonal balance
- Exceptionally low inherent self-noise
- Transformerless and fully floating balanced output
- Switchable pre-attenuation
- Black, anodised light metal body
- Delivery includes: 1 MKH 20, 1 M ZS 40 shock mount, 1 M ZW 41 windshield, 1 pressure build-up ring

Technical Data
- Pick-up pattern: omni-directional
- Frequency response: 12 - 20,000 Hz
- Sensitivity (free field, no load) (1 kHz): 25 (8) mV/Pa ± 1 dB
- Nominal impedance: 150 Ω
- Min. terminating impedance: 1 kΩ
- Equivalent noise level A-weighted (DIN IEC 651): 10 (18) dB
- CCIR-weighted (CCIR 468-3): 20 (28) dB
- Max. sound pressure level: 134 (142) dB at 1 kHz
- Power supply: phantom 48 ± 4 V
- Supply current: 2 mA
- Dimensions in mm: Ø 25 x 153
- Weight: approx. 100 g

Recommended Accessories
- Battery power supply unit: MZA 14 P 48 U
- Table stand: MZT 441, MZT 100
- Dual clip: MZD 30, for M S stereo
- Fish pole: MZB 415
- Shock mount: MS 40
- Foam windshield: MZW 41
- Popshield: MZP 40
- Shock mount: MZS 40
- Basket windshield: MZW 20-1
- Hairy cover: MZH 20-1

Profile
Omni-directional studio microphone with switchable diffuse-field correction, switchable pre-attenuation and pressure build-up ring, frequency response 12 Hz - 20,000 Hz, sensitivity (free field, no load) 25 (8) mV/Pa ± 1 dB at 1 kHz, nominal impedance 150 Ω, min. terminating impedance 1 kΩ, equivalent noise level A-weighted 10 (18) dB, CCIR-weighted 20 (28) dB, max. SPL 134 (142) dB at 1 kHz, phantom powering 48 ± 4 V, supply current 2 mA, dimensions in mm Ø 25 x 153, weight approx. 100 g. Values in parentheses with attenuator switched on (-10 dB).
The symmetrical transducer design of the MKH 30 produces an unusually wide and smooth frequency response. It is particularly suited to soloists and small instrumental groups and can also serve as an 'S' microphone in M/S stereo applications. As a support microphone it is particularly useful in the effective suppression of sounds from adjacent sound sources.

Features
- High rejection of lateral sounds
- Exceptionally low inherent self-noise
- Symmetrical transducer technology ensures extremely low distortion
- Transformerless and fully floating balanced output
- Switchable roll-off filter to compensate for proximity effects at a distance of approx. 0.5 m
- Switchable pre-attenuation
- Black, anodised light metal body
- Delivery includes: 1 MKH 30, 1 M ZS 80 shock mount, 1 MZW 41 windshield

**Technical Data**

- Pick-up pattern figure-of-eight
- Frequency response 40 - 20,000 Hz
- Sensitivity (free field, no load) 1 kHz: 25 (8) mV/Pa ± 1 dB
- Nominal impedance 150 Ω
- Min. terminating impedance 1 kΩ
- Equivalent noise level A-weighted (DIN IEC 651) 13 (19) dB
  CCIR-weighted (CCIR 468-3) 22 (28) dB
- Max. sound pressure level 134 (142) dB at 1 kHz
- Power supply phantom 48 ± 4 V
- Supply current 2 mA
- Dimensions in mm Ø 25 x 174
- Weight approx. 110 g

**Recommended Accessories**

- Battery power supply unit M ZA 14 P 48 U Cat. No. 02960
- Table stand M ZT 441 Cat. No. 00799
- M ZT 100 Cat. No. 01883
- Dual clip M ZD 30, for M S stereo Cat. No. 02990
- Fish pole M ZB 415 Cat. No. 00972
- M ZS 80 Cat. No. 03685
- Shock mount M ZW 41 Cat. No. 29681
- Popshield M ZP 40 Cat. No. 03609
- Shock mount M ZS 20-1 Cat. No. 03606
- Basket windshield M ZW 20-1 Cat. No. 03610
- Hairy cover M ZH 20-1 Cat. No. 03610

**Profile**

Figure-of-eight studio directional microphone with switchable pre-attenuation and switchable roll-off filter. Frequency response 40 - 20,000 Hz, sensitivity (free field, no load) 25 (8) mV/Pa ± 1 dB at 1 kHz, nominal impedance 150 Ω, min. terminating impedance 1 kΩ, equivalent noise level A-weighted 13 (19) dB, CCIR-weighted 22 (28) dB, max. SPL 134 (142) dB at 1 kHz, phantom powering 48 ± 4 V, supply current 2 mA, dimensions Ø 25 x 174 mm, weight approx. 110 g. Values in parentheses with attenuator switched on (-10 dB).
Sennheiser Microphones
RF Symmetrical Capsule Condenser Microphone M KH 40

The M KH 40 has a large number of applications, for example as a main microphone, especially in lightly reverberant or acoustically less perfect rooms, with instrumental groups or for speech applications. Its wide-angled, neutral directional characteristics and high level of reverse attenuation ensure an exceptionally balanced sound.

Features
- Maximum front-to-back ratio
- Exceptionally low inherent self-noise
- Symmetrical transducer technology ensures extremely low distortion
- Transformerless and fully floating balanced output
- Switchable roll-off filter to compensate for proximity effects at a distance of approx. 0.5 m
- Switchable pre-attenuation
- Black, anodised light metal body
- Delivery includes: 1 M KH 40, 1 M ZS 40 shock mount, 1 M ZW 41 windshield

Technical Data
- Pick-up pattern: cardioid
- Frequency response: 40 - 20,000 Hz
- Sensitivity (free field, no load) (1 kHz): 25 (8) mV/Pa ± 1dB
- Nominal impedance: 150 Ω
- Min. terminating impedance: 1 kΩ
- Equivalent noise level:
  - A-weighted (DIN IEC 651): 12 (18) dB
  - CCIR-weighted (CCIR 468-3): 21 (27) dB
- Max. sound pressure level: 134 (142) dB at 1 kHz
- Power supply: phantom 48 ± 4 V
- Supply current: 2 mA
- Dimensions in mm: Ø 25 x 153
- Weight: approx. 100 g

Recommended Accessories
- Battery power supply unit: MZA 14 P 48 U
- Table stand: MZT 441, MZT 100
- Dual clip: MZD 30, for MS stereo
- Fish pole: MZB 415
- Shock mount: MZS 40
- Foam windshield: MZW 41
- Popshield: MZP 40
- Shock mount: MZS 20-1
- Basket windshield: MZW 20-1
- Hairy cover: MZH 20-1

Cable pictured is an accessory not supplied with the microphone

Profile
Cardioid studio directional microphone with switchable pre-attenuation and switchable roll-off filter. Frequency response 40 Hz - 20,000 Hz, sensitivity (free field, no load): 25 (8) mV/Pa ± 1dB at 1 kHz, nominal impedance 150 Ω, min. terminating impedance 1 kΩ, equivalent noise level A-weighted 12 (18) dB, CCIR-weighted 21 (27) dB, max. SPL 134 (142) dB at 1 kHz, phantom powering 48 ± 4 V, supply current 2 mA, dimensions Ø 25 x 153 mm, weight approx. 100 g. Values in parentheses with attenuator switched on (-10 dB).
The super-cardioid MKH 50 offers a higher attenuation of diffuse-field and lateral sound than the cardioid microphone. It is principally designed for use as a soloist’s or spot microphone for applications requiring a high degree of side-borne sound muting and feedback rejection. The directional characteristics are frequency-independent.

**Features**
- High rejection of lateral sounds
- Exceptionally low inherent self-noise
- Transformerless and fully floating balanced output
- Symmetrical transducer technology ensures extremely low distortion
- Switchable roll-off filter to compensate for proximity effects at a distance of approx. 0.5 m
- Switchable pre-attenuation
- Black, anodised light metal body
- Delivery includes: 1 MKH 50, 1 MZS 40 shock mount, 1 MZW 41 windshield

**Recommended Accessories**
- Battery power supply unit MZA 14 P 48 U Cat. No. 02960
- Table stand MZT 441 Cat. No. 00799
- MZT 100 Cat. No. 01883
- Dual clip MZD 30, for M S stereo Cat. No. 02990
- Fish pole MZB 415 Cat. No. 00972
- Shock mount MZS 40 Cat. No. 03017
- Foam windshield MZW 41 Cat. No. 29681
- Popshield MZP 40 Cat. No. 03132
- Shock mount MZS 20-1 Cat. No. 03609
- Basket windshield MZW 20-1 Cat. No. 03606
- Hairy cover MZH 20-1 Cat. No. 03610

**Technical Data**
- Pick-up pattern super-cardioid
- Frequency response 40 - 20,000 Hz
- Sensitivity (free field, no load) (1 kHz) 25 (8) mV/Pa ± 1 dB
- Nominal impedance 150 Ω
- Min. terminating impedance 1 kΩ
- Equivalent noise level A-weighted (DIN IEC 651) 12 (18) dB
- CCIR-weighted (CCIR 468-3) 21 (27) dB
- Max. sound pressure level 134 (142) dB at 1 kHz
- Power supply phantom 48 ± 4 V
- Supply current 2 mA
- Dimensions in mm Ø 25 x 153
- Weight approx. 100 g

**Profile**
Super-cardioid studio directional microphone with switchable pre-attenuation and switchable rolloff filter. Frequency response 40 Hz - 20,000 Hz, sensitivity (free field, no load) 25 (8) mV/Pa ± 1 dB at 1 kHz, nominal impedance 150 Ω, min. terminating impedance 1 kΩ, equivalent noise level A-weighted 12 (18) dB, CCIR-weighted 21 (27) dB, max. SPL 134 (142) dB at 1 kHz, phantom powering 48 ± 4 V, supply current 2 mA, dimensions Ø 25 x 153 mm, weight approx. 100 g. Values in parentheses with attenuator switched on (-10 dB).
The MKH 60 is a lightweight short gun microphone. It is versatile and easy to handle and its superb lateral sound muting makes it an excellent choice for film and reporting applications. Its high degree of directivity ensures high sound quality for distance applications.

Features
- Extremely low inherent self-noise
- High sensitivity
- High directivity throughout the whole frequency range
- Transformerless and fully floating balanced output
- Infra-sonic cut-off filter
- Symmetrical transducer technology ensures extremely low distortion
- Switchable pre-attenuation, switchable roll-off filter and switchable treble emphasis
- Rugged and weather-proof
- Black, anodised light metal body
- Delivery includes: 1 MKH 60, 1 MZQ 40 quick release clamp

Possible Combinations
- Table stand: MZT 100 or MZT 441, MZQ 40
- Suspension/windshield: MZS 40, MZW 61 or MZS 20-1, MZW 60-1, MZH 60-1

Recommended Accessories

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<th>Accessory</th>
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<td>Battery power supply unit</td>
<td>MZA 14 P 48 U 02960</td>
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<tr>
<td>Table stand</td>
<td>MZT 100 01883</td>
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<td></td>
<td>MZT 441 00799</td>
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<tr>
<td>Quick release clamp</td>
<td>MZQ 40 35077</td>
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<tr>
<td>Shock mount</td>
<td>MZS 40 03017</td>
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<td>Foam windshield</td>
<td>MZW 61 03194</td>
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<tr>
<td>Shock mount</td>
<td>MZS 20-1 03609</td>
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<tr>
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<td>MZW 60-1 03607</td>
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<tr>
<td>Hairy cover</td>
<td>MZH 60-1 03224</td>
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</table>

Technical Data

- Pick-up pattern: super-cardioid/lobar
- Frequency response: 50 - 20,000 Hz
- Sensitivity (free field, no load) at 1 kHz: 40 (12.5) mV/Pa
- Nominal impedance: 150 Ω
- Min. terminating impedance: 1 kΩ
- Equivalent noise level: A-weighted (DIN IEC 651) 6 (14) dB, CCIR-weighted (CCIR 468-3)18 (25) dB
- Max. sound pressure level: 125 (134) dB at 1 kHz
- Power supply: phantom 48 ± 4 V
- Supply current: 2 mA
- Dimensions in mm: Ø 25 x 280
- Weight: 150 g

Values in parentheses with attenuator switched on (-10 dB).

Profile

Super-cardioid/lobar (short gun) interference tube microphone with infrasonic cut-off filter, switchable pre-attenuation, switchable roll-off filter and switchable treble emphasis. Frequency response 50 - 20,000 Hz, sensitivity (free field, no load) 40 (12.5) mV/Pa at 1 kHz, nominal impedance 150 Ω, min. terminating impedance 1 kΩ, equivalent noise level A-weighted 6 (14) dB, CCIR-weighted 18 (25) dB, max. SPL 125 (134) dB at 1 kHz, phantom powering 48 ± 4 V, supply current 2 mA, dimensions Ø 25 x 280 mm, weight 150 g. Values in parentheses with attenuator switched on (-10 dB).
The MKH 70 is a lightweight long gun microphone. Its excellent directivity is particularly suited to applications undertaken in difficult conditions, such as high background noise and distance microphone positioning. Its frequency-independent directivity prevents sound colouration from off-axis sound sources.

Features
- Exceptionally low inherent self-noise
- Transformerless and fully floating balanced output
- Infra-sonic cut-off filter
- Symmetrical transducer technology ensures extremely low distortion
- Switchable pre-attenuation, switchable roll-off filter and switchable treble emphasis
- Rugged and weather-proof
- Black, anodised light metal body
- Delivery includes: 1 MKH 70

Technical Data
- Pick-up pattern: super-cardioid/lobar
- Frequency response: 50 - 20,000 Hz
- Sensitivity (free field, no load) (1 kHz): 50 (15) mV/Pa
- Nominal impedance: 150 Ω
- Min. terminating impedance: 1 kΩ
- Equivalent noise level: A-weighted (DIN IEC 651) 5 (13) dB, CCIR-weighted (CCIR 468-3) 16 (24) dB
- Max. sound pressure level: 124 (132) dB at 1 kHz
- Power supply: phantom 48 ± 4 V
- Supply current: 2 mA
- Dimensions in mm: Ø 25 x 410
- Weight: 180 g

Possible Combinations
- Table stand: MZT 100 or MZT 441, MZQ 40
- Suspension/windshield: MZS 40, MZW 71 or MZS 20-1, MZW 70-1, MZH 70-1

Cable pictured is an accessory not supplied with the microphone.
The MKH 80 is a variable pattern condenser microphone with five switchable pick-up patterns. It is a superior microphone for any recording application, offering high clarity and the absolute minimum colouration. It is visually unobtrusive due to its compact design.

Features

- Wide, flat frequency response
- Extended low frequency response
- Exceptionally low inherent self-noise
- Wide dynamic range
- Switchable pre-attenuation, switchable roll-off filter and switchable treble emphasis
- Transformerless and fully floating balanced output
- LED for on-axis alignment
- Haematite-anodised light metal body
- Delivery includes: 1 MKH 80 P 48, 1 MZS 80 shock mount, 1 MZW 80 windshield

Recommended Accessories

- Battery power supply unit MZA 14 P 48 U Cat. No. 02960
- Foam windshield MZW 80, anthracite Cat. No. 03780
- Shock mount MZS 80 Cat. No. 03685
- Popshield MZP 40 Cat. No. 03132

Technical Data

<table>
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<tr>
<th>Feature</th>
<th>Specification</th>
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<td>Pick-up pattern</td>
<td>omni-directional, wide cardioid, cardiac, super-cardioid, figure-of-eight</td>
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<tr>
<td>Frequency response</td>
<td>30 - 20,000 Hz</td>
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<td>Sensitivity</td>
<td>(free field, no load) (1 kHz) 40 mV/Pa ± 1 dB</td>
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<td>Nominal impedance</td>
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<td>Min. terminating impedance</td>
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<td>Equivalent noise level</td>
<td>A-weighted (DIN IEC 651) 10 dB</td>
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<td></td>
<td>CCIR-weighted (CCIR 468-3) 20 dB</td>
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<tr>
<td>Max. sound pressure level</td>
<td>136 (142) dB at 1 kHz</td>
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<tr>
<td>Power supply</td>
<td>phantom 48 ± 4 V</td>
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<td>Supply current</td>
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<tr>
<td>Dimensions in mm</td>
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<tr>
<td>Weight</td>
<td>135 g</td>
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</tbody>
</table>

Values in parentheses with attenuator switched on (6/12 dB).

Profile

Studio microphone with 5 switchable pick-up patterns (omni-directional, wide cardioid, cardiac, super-cardioid, figure-of-eight), switchable pre-attenuation, switchable roll-off filter and switchable treble emphasis. Frequency response 30 - 20,000 Hz, sensitivity (free field, no load) 40 mV/Pa ± 1 dB at 1 kHz, nominal impedance 150 Ω, min. terminating impedance 1 kΩ, equivalent noise level A-weighted 10 dB, CCIR-weighted 20 dB, max. sound pressure level 136 (142) dB at 1 kHz, phantom powering 48 ± 4 V, supply current 3 mA, dimensions Ø 26.7 x 176 mm, weight 135 g. Values in parentheses with attenuator switched on (6/12 dB).
RF Symmetrical Capsule Condenser Microphone
Polar Diagrams and Frequency Response Curves

**Microphones**

**MKH 80**

### Omni-directional

![Polar Diagram](image)

### Wide cardioid

![Polar Diagram](image)

### Cardioid

![Polar Diagram](image)

### Super-cardioid

![Polar Diagram](image)

### Figure-of-eight

![Polar Diagram](image)

### Frequency Response Curves

- **Omni-directional**
- **Wide cardioid**
- **Cardioid**
- **Super-cardioid**
- **Figure-of-eight**
The MKH 800 condenser microphone is the first microphone to fully utilise the wider frequency response and dynamic range of the new high bitrate standard of advanced digital recording systems (for example SACD). Featuring five switchable pick-up patterns, the MKH 800 is a superior microphone for any recording application, offering high clarity and the absolute minimum colouration.

Features
- Extended frequency response up to 50 kHz
- Wide, flat frequency response
- Exceptionally low inherent self-noise, wide dynamic range
- Switchable pre-attenuation, switchable roll-off filter and switchable treble emphasis
- Transformerless and fully floating balanced output
- LED for on-axis alignment
- Anodised light metal body
- Delivery includes: 1 MKH 800 P 48, 1 MZS 80 shock mount, 1 MZW 80 windshield

Technical Data

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pick-up pattern</td>
<td>omni-directional, wide cardioid, cardioid, super-cardioid, figure-of-eight</td>
</tr>
<tr>
<td>Frequency response</td>
<td>30 - 50,000 Hz</td>
</tr>
<tr>
<td>Sensitivity (free field, no load) (1 kHz)</td>
<td>40 mV/Pa ± 1 dB</td>
</tr>
<tr>
<td>Nominal impedance</td>
<td>150 Ω</td>
</tr>
<tr>
<td>Min. terminating impedance</td>
<td>2 kΩ</td>
</tr>
<tr>
<td>Equivalent noise level</td>
<td>A-weighted (DIN IEC 651) 10 dB</td>
</tr>
<tr>
<td></td>
<td>CCIR-weighted (CCIR 468-3) 20 dB</td>
</tr>
<tr>
<td>Max. sound pressure level</td>
<td>136 (142) dB at 1 kHz</td>
</tr>
<tr>
<td>Power supply</td>
<td>phantom 48 ± 4 V</td>
</tr>
<tr>
<td>Supply current</td>
<td>3 mA</td>
</tr>
<tr>
<td>Dimensions in mm</td>
<td>Ø 26.7 x 176</td>
</tr>
<tr>
<td>Weight</td>
<td>135 g</td>
</tr>
<tr>
<td>Values in parentheses with attenuator switched on</td>
<td>(6/12 dB)</td>
</tr>
</tbody>
</table>

Profile

Studio microphone with 5 switchable pick-up patterns (omni-directional, wide cardioid, cardioid, super-cardioid, figure-of-eight), switchable pre-attenuation, switchable roll-off filter and switchable treble emphasis. Frequency response 30 - 50,000 Hz, sensitivity (free field, no load) 40 mV/Pa ± 1 dB at 1 kHz, nominal impedance 150 Ω, min. terminating impedance 2 kΩ, equivalent noise level A-weighted 10 dB, CCIR-weighted 20 dB, max. sound pressure level 136 (142) dB at 1 kHz, phantom powering 48 ± 4 V, supply current 3 mA, dimensions Ø 26.7 x 176 mm, weight 135 g. Values in parentheses with attenuator switched on (6/12 dB).
Microphones

RF Symmetrical Capsule Condenser Microphone
Polar Diagrams and Frequency Response Curves

MKH 800 P 48

Omni-directional

Wide cardioid

Cardioid

Super-cardioid

Figure-of-eight
The MKH 416 is a short gun interference tube microphone. Its excellent directivity and compact design, high consonant articulation and feedback rejection make the MKH 416 a superb all-round microphone for film, radio and television, especially for outside broadcast applications.

Features

- Increased directivity due to interference tube principle
- Very low inherent self-noise
- High sensitivity
- Transformerless and fully floating balanced output
- Rugged, suitable for adverse climatic conditions
- Matt black all-metal body
- Delivery includes: 1 MKH 416 P 48 U 3
  1 MZW 415 windshield

Recommended Accessories

- Battery power supply unit MZA 14 P 48 U Cat. No. 02960
- Table stand MZT 100 Cat. No. 01883
  MZT 105-1 Cat. No. 00524
  MZT 441 Cat. No. 00799
- Quick release clamp MZQ 100 Cat. No. 02155
- Foam windshield MZW 415 Cat. No. 00895
- Shock mount MZS 20-1 Cat. No. 03609
- Basket windshield MZW 60-1 Cat. No. 03607
- Hairy cover MZH 60-1 Cat. No. 03224

Possible Combinations

- Table stand: MZT 100, MZT 105-1 or MZT 441, MZQ 100
- Suspension/windshield: MZS 20-1, MZW 60-1, MZH 60-1

Technical Data

- Pick-up pattern: super-cardioid/lobar
- Frequency response: 40 - 20,000 Hz
- Sensitivity: (free field, no load) (1 kHz) 25 mV/Pa ± 1 dB
- Nominal impedance: 25 Ω
- Min. terminating impedance: 800 Ω
- Equivalent noise level: A-weighted (DIN IEC 651) approx. 13 dB
  CCIR-weighted (CCIR 468-3) approx. 24 dB
- Max. sound pressure level: 130 dB at 1 kHz
- Power supply: phantom 48 ± 12 V
- Supply current: 2 mA
- Dimensions in mm: Ø 19 x 250
- Weight: approx. 165 g

Profile

Super-cardioid/lobar short interference tube microphone, frequency response 40 - 20,000 Hz, sensitivity (free field, no load) 25 mV/Pa ± 1 dB at 1 kHz, nominal impedance 25 Ω, min. terminating impedance 800 Ω, equivalent noise level A-weighted approx. 13 dB, CCIR-weighted approx. 24 dB, max. sound pressure level 130 dB at 1 kHz, phantom powering 48 ± 12 V, supply current 2 mA, dimensions Ø 19 x 250 mm, weight approx. 165 g.

Product Variants

MKH 416 TU-3 as MKH 416 P 48 U 3, but 12 V AB (T) powered Cat. No. 01567