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Neumann U 87 Ai

Neumann U 87 Ai Switchable Studio Microphone

USER MANUAL



Image: Front view of the Neumann U 87 Ai studio microphone in nickel finish, showcasing its classic design and grille.

Introduction

The Neumann U 87 Ai is a large-diaphragm condenser microphone, recognized as an industry standard for professional audio recording. This microphone features three selectable polar patterns, a switchable high-pass filter, and a 10dB pre-attenuation pad, making it versatile for various recording applications. This manual provides essential information for the proper setup, operation, maintenance, and troubleshooting of your U 87 Ai microphone.

Important Safety Information

- Always handle the microphone with care to prevent damage to the sensitive capsule.
- Ensure the microphone is securely mounted on a stand using the provided shockmount to avoid accidental drops.
- The U 87 Ai requires 48V phantom power. Connect it only to equipment that provides standard phantom power.
- Avoid exposing the microphone to extreme temperatures, high humidity, or direct moisture.
- Do not attempt to open or service the microphone yourself. Refer all servicing to qualified personnel.
- Keep the microphone away from strong magnetic fields.

Package Contents

Verify that all items are present in your package:

- Neumann U 87 Ai Studio Microphone
- EA87 Shockmount
- Windscreen
- XLR Cable
- Wooden Jeweler's Box



Image: The Neumann U 87 Ai microphone resting securely within its custom-fitted wooden storage box, indicating careful

Setup

1. Unpacking

Carefully remove the microphone and its accessories from the wooden box. Inspect all components for any signs of damage.

2. Mounting the Microphone

Attach the EA87 shockmount to a suitable microphone stand. Gently insert the U 87 Ai microphone into the shockmount, ensuring it is held firmly but without excessive force. The shockmount helps to isolate the microphone from vibrations transmitted through the stand.

3. Connecting the Microphone

Connect the provided XLR cable to the 3-pin XLR connector at the base of the microphone. Connect the other end of the XLR cable to a microphone preamplifier, audio interface, or mixing console that supplies 48V phantom power. Ensure phantom power is turned off on your device before connecting or disconnecting the microphone to prevent potential damage.

Operating the Microphone

1. Polar Patterns

The U 87 Ai offers three selectable polar patterns: omnidirectional, cardioid, and figure-8. These patterns determine the microphone's sensitivity to sound from different directions.

- **Omnidirectional:** Picks up sound equally from all directions. Ideal for capturing room ambiance or multiple sources.
- **Cardioid:** Most sensitive to sound from the front, with significant rejection from the rear. Suitable for vocals and isolating individual instruments.
- **Figure-8:** Equally sensitive to sound from the front and rear, with rejection from the sides. Useful for recording two vocalists facing each other or for M/S stereo techniques.

The polar pattern switch is located on the front of the microphone body, below the grille.



Image: A detailed view of the polar pattern switch on the microphone body, showing the symbols for omnidirectional, cardioid, and figure-8 patterns.

2. Pre-attenuation Pad (-10dB)

The U 87 Ai features a switchable -10dB pre-attenuation pad. This pad reduces the microphone's output level by 10 decibels, preventing distortion when recording very loud sound sources, such as close-miked drums or guitar amplifiers. Engage this switch when the input signal is too hot for your preamplifier.



Image: A close-up of the -10dB pad switch, clearly labeled, on the side of the microphone body.

3. Low-Frequency Roll-off

A switchable low-frequency roll-off (high-pass filter) is integrated into the U 87 Ai. This filter attenuates frequencies below approximately 100 Hz, which can be useful for reducing unwanted rumble, handling noise, or proximity effect when close-miking. The switch for the low-frequency roll-off is typically located near the polar pattern and pad switches.

4. Optimal Placement

Microphone placement significantly impacts the recorded sound. Experiment with distance and angle relative to the sound source to achieve the desired tonal balance and minimize unwanted room reflections. For vocals, a pop filter is recommended to reduce plosives.

Maintenance and Care

- **Cleaning:** Use a soft, dry cloth to wipe the microphone body. Do not use liquid cleaners or solvents, as they can damage the finish or internal components.
- **Storage:** When not in use, store the microphone in its original wooden box or a protective case to shield it from dust, moisture, and physical impact.
- **Handling:** Avoid dropping or subjecting the microphone to harsh impacts. The capsule is a delicate component.
- **Environment:** Operate and store the microphone in a clean, dry environment with stable temperature and humidity.

Troubleshooting

- **No Sound:**
 - Ensure 48V phantom power is enabled on your preamplifier or audio interface.
 - Check all XLR cable connections for proper seating.
 - Test with a different XLR cable.
 - Verify that the input gain on your preamplifier is set appropriately.

- **Distorted Sound:**
 - If recording loud sources, engage the -10dB pre-attenuation pad on the microphone.
 - Reduce the input gain on your preamplifier.
 - Ensure the microphone is not overloaded by excessively loud sound sources.
- **Excessive Bass/Rumble:**
 - Engage the low-frequency roll-off switch on the microphone.
 - Increase the distance between the microphone and the sound source to reduce proximity effect.
- **Intermittent Sound/Noise:**
 - Check for faulty cables or connectors.
 - Ensure proper grounding of all audio equipment.
 - Verify that the microphone is not picking up electrical interference from other devices.

Technical Specifications

Specification	Value
Item Weight	1.1 pounds (500 Grams)
Impedance	200 Ohm
Microphone Form Factor	Microphone Only
Power Source	Phantom Power (48V)
Signal-to-Noise Ratio	82 dB
Number of Channels	1
Frequency Response	20 Hz - 20 kHz
Manufacturer	Neumann
UPC	615104070226
Item model number	U 87 Ai
Color Name	Nickel
Percussion Diameter	56 Millimeters
Recommended Uses For Product	Singing, Instrument Recording
Connectivity Technology	XLR
Connector Type	XLR
Compatible Devices	Audio Interface, Mixing Console, Digital Recorder
Included Components	EA87 Shockmount, Windscreen, Cable, Wooden Jeweler's Box
Polar Pattern	Multipattern (Omnidirectional, Cardioid, Figure-8)
Audio Sensitivity	127 Decibels

Warranty and Support



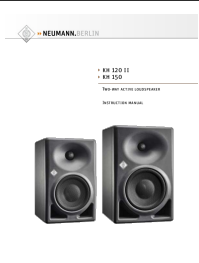
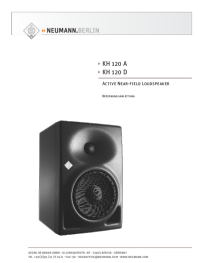
The Neumann U 87 Ai microphone is covered by a manufacturer's warranty. For specific warranty terms and conditions, please refer to the documentation provided with your purchase or visit the official Neumann website. For technical support, service, or replacement parts, please contact an authorized Neumann service center or your dealer.





You can find more information and support resources on the [Neumann Store on Amazon](#).

Disposal Information

Do not dispose of this product with household waste. Electronic equipment contains materials that can be harmful to the environment if not disposed of properly. Please consult your local authorities for information on proper disposal and recycling options for electronic devices.

Related Documents - U 87 Ai

	<p>Neumann TLM 102 Microphone Operating Manual</p> <p>Operating manual for the Neumann TLM 102 condenser studio microphone, covering setup, operation, troubleshooting, and technical specifications.</p>
	<p>Neumann MT 48 Audio Interface: A Brief Introduction</p> <p>Comprehensive guide to the Neumann MT 48 audio interface, covering setup, features, mixer functions, advanced settings, and connectivity for professional audio production.</p>
	<p>Neumann KH 120 II & KH 150 Studio Monitors: Instruction Manual</p> <p>Comprehensive instruction manual for Neumann KH 120 II and KH 150 two-way active studio monitors. Learn about setup, configuration, operation, and troubleshooting for these high-fidelity loudspeakers.</p>
	<p>Neumann KH 120 A/D Bedienungsanleitung</p> <p>Offizielle Bedienungsanleitung für die Neumann KH 120 A und KH 120 D Aktiv-Nahfeldmonitore. Enthält Anleitungen zur Installation, Bedienung, akustischen Anpassung und technische Daten.</p>

 <p>KH 750 DSP / KH 805 II ACTIVE SUBWOOFERS AES67 / Dante Network INSTRUCTION MANUAL</p>  <p>NEUMANN BERLIN www.neumann-berlin.com</p>	<p>Neumann KH 750 DSP / KH 805 II Active Subwoofer Instruction Manual</p> <p>Comprehensive instruction manual for the Neumann KH 750 DSP and KH 805 II active subwoofers, covering setup, connection, configuration, calibration, and technical specifications for professional audio applications.</p>
 <p>KH 120 II AES67 KH 150 AES67 TWO-WAY ACTIVE STUDIO MONITORS AES67 / Dante Network INSTRUCTION MANUAL</p>  <p>NEUMANN BERLIN www.neumann-berlin.com</p>	<p>Neumann KH 120 II AES67 and KH 150 AES67 Instruction Manual</p> <p>Comprehensive instruction manual for Neumann KH 120 II AES67 and KH 150 AES67 two-way active studio monitors. Covers setup, connection, configuration, AES67/DANTE networking, operation, maintenance, and troubleshooting.</p>