

User Guide

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KSM9



SHURE INCORPORATED

KSM9

Thank you for selecting the KSM series from Shure.



Over 85 years of audio experience has contributed to making this one of the finest microphones available.

If you have any questions not answered in this guide, please contact Shure Applications Engineering at 847-600-8440, Monday through Friday, from 8:00 am to 4:30 pm, CST. In Europe, call 49-7262-92490. In Asia, call 852-2893-4290. Our web address is www.shure.com.

General Description

Consistent with legendary Shure microphone innovation, the KSM9 is the first handheld condenser with dual diaphragms and variable polar patterns. As a premium vocal microphone, the KSM9 captures vocal subtlety with extraordinary detail to deliver clear articulation, functional flexibility and precise vocal reproduction for live performance. Transformerless, Class A preamplifier circuitry and dual, gold-layered diaphragms capture a transparent sound, revealing every nuance and subtlety in a vocal performance. The KSM9 uses an advanced suspension shock mount to virtually eliminate handling noise even in the most demanding live environments.

Features

- Dual 3/4" gold layered, low-mass Mylar® diaphragms provide superior frequency response and proximity control
- Dual polar patterns (cardioid and supercardioid) for maximum flexibility in a wide variety of performance applications
- Class A, discrete, transformerless preamplifier for transparency, extremely fast transient response and no crossover distortion, while minimizing harmonic and inter-modulation distortions
- Advanced suspension shock mount system that isolates cartridge from handling and stand noise
- Subsonic filter eliminates rumble from mechanical vibration below 17 Hz
- Premium electronic components, including gold-plated internal and external connectors
- Integrated three-stage "pop" protection grille reduces plosives, wind, and other breath noise

Performance Characteristics

- Extremely uniform polar response
- Extended frequency response
- Minimal self-noise
- Exceptional low-frequency reproduction
- Able to withstand high SPLs
- High output level
- No crossover distortion
- Superior common-mode rejection and suppression of radio frequency interference (RFI)

Model Variations

The KSM9 series consists of two models featuring unique, switchable polar patterns and a variety of finishes.

KSM9HS: Features hypercardioid and subcardioid polar patterns with a black finish.

KSM9: Features cardioid and supercardioid polar patterns with a charcoal-gray or champagne finish.

Applications

The KSM9 is designed to capture and control the detailed sonic nuances of critical studio performance, while withstanding the punishment of professional live sound reinforcement. The frequency response of the two patterns are nearly identical, allowing performers to easily adapt to any venue.

The cardioid pick-up pattern is ideal in live performances for musicians with in-ear monitors, providing a warm, full sound. This setting provides excellent gain before feedback, with minimal off-axis coloration.

The supercardioid pick-up pattern provides maximum sound isolation and is ideal for applications in which there are high levels of ambient noise, or where multiple instruments or vocalists are close together.

Operation

Proximity Effect

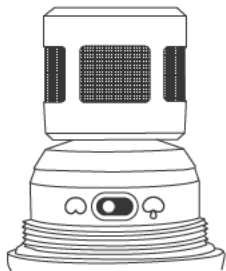
Directional microphones progressively boost bass frequencies as the microphone is placed closer to the source. This phenomenon, known as proximity effect, can be used to create a warmer, more powerful sound. However, it usually requires the vocalist to maintain a consistent distance from the microphone in order to avoid changing the low-frequency response.

The dual-diaphragm design of the KSM9 helps to control and minimize proximity effect, resulting in a more uniform low-frequency response. This allows the performer to move closer or further from the microphone with minimal changes in sound quality.

Selecting a Polar Pattern

Cardioid: Captures sound directly in front of the microphone and has the greatest rejection 180 degrees toward the rear. A cardioid pattern has a wider coverage angle, resulting in increased off-axis pickup. This is the most common pattern in studio recording and live-sound applications.

Supercardioid: Captures sound directly in front of the microphone and has the greatest sound rejection at points 120 degrees toward the rear of the microphone. A supercardioid pattern has a narrower coverage angle of 115 degrees, resulting in increased off-axis rejection. This pattern is ideal for loud environments or applications when sound sources are very close together.



Power Requirements

This microphone requires phantom power and performs best with a 48 V DC supply (IEC-61938), but it can operate with supplies as low as 11 V DC. Most modern mixers provide phantom power and require the use of a **balanced** microphone cable: XLR-to-XLR or XLR-to-TRS.

Load Impedance

Maximum SPL capability, output clipping level, and dynamic range vary with the input load impedance of the preamplifier to which the microphone is connected. Shure recommends a minimum input load impedance of 1000 Ohms. Most modern microphone preamplifiers meet this requirement. Higher impedance results in better performance for these specifications.

Integral Pop Filter

The microphone grille consists of 3 separate mesh layers that act as an integral pop filter. This helps reduce wind and breath noise. Depending on the performer, an external pop-protection screen or windscreens may be necessary when close-miking vocalists.

Accessories and Parts

Furnished Accessories

Aluminum Carrying Case	A9SC
Microphone Clip	A25E

Optional Accessories

Foam Windscreen	A85WS
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Replacement Parts

Grille, Champagne	RPM260
Grille, Charcoal	RPM262
KSM9 Cartridge	RPM160
Switch Circuit Board Assembly	RPM462
Preamp Circuit Board Assembly	RPM460

Certifications

Eligible to bear CE Marking. Conforms to European EMC Directive 2004/108/EC. Meets Harmonized Standards EN55103-1:1996 and EN55103-2:1996, for residential (E1) and light industrial (E2) environments.

The CE Declaration of Conformity can be obtained from: www.shure.com/europe/compliance

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Specifications

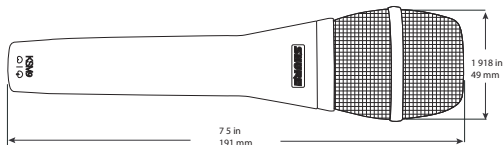
Cartridge Type	Electret Condenser
Polar Pattern	Cardioid, Supercardioid (selectable)
Frequency Response	50 to 20,000 Hz
Output Impedance	150 Ω
Sensitivity open circuit voltage, @ 1 kHz, typical	-51 dBV/Pa ^[1] (2.8 mV)
Maximum SPL 1 kHz at 1% THD ^[2]	2500 Ω load: 152 dB 1000 Ω load: 152 dB
Signal-to-Noise Ratio^[3]	72 dB
Dynamic Range @ 1 kHz	2500 Ω load: 130 dB 1000 Ω load: 130 dB
Clipping Level 20 Hz to 20 kHz, 1% THD	2500 Ω load: 6.7 dBV 1000 Ω load: 6 dBV
Self Noise equivalent SPL, A-weighted, typical	22 dB SPL-A
Common Mode Rejection 10 to 100,000 kHz	≥60 dB
Connector	Three-pin professional audio (XLR), male, balanced
Polarity	Positive pressure on diaphragm produces positive voltage on pin 2 with respect to pin 3
Power Requirements	11–52 V DC ^[4] phantom power (IEC-61938) 5.2 mA, maximum
Net Weight	300 g (10.6 oz.)

^[1] 1 Pa=94 dB SPL

^[2]THD of microphone preamplifier when applied input signal level is equivalent to cartridge output at specified SPL

^[3]S/N ratio is the difference between 94 dB SPL and equivalent SPL of self noise, A-weighted

^[4]All specifications measured with a 48 Vdc phantom power supply. The microphone operates at lower voltages, but with slightly decreased headroom and sensitivity.



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Patent Notice: Patent Des. 530 706 Des. 531 171

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