

RSM 191

▶ **Stereo Shotgun
Microphone**



www.neumann.com



The RSM 191 is a stereo microphone system consisting of the microphone and the MTX 191 A matrix amplifier. It has an adjustable pick-up angle and high directivity.

The microphone has two separate capsule systems, a hypercardioid element and a figure-8, both in a short shotgun. Together they generate the mid and the side signals.

The matrix amplifier controls the width of the stereo image by changing the gain of the side signal relative to the middle signal in six 3 dB steps.

The output signals of the matrix amplifier are either mid-side (MS) or left/right (XY). The signals are converted through transformerless sum-and-difference circuitry.

The balanced, transformerless technology permits the use of long cables between the microphone, the matrix amplifier and the following mic input of other signal processing equipment.



Applications

The RSM 191 system is an ideal microphone system for:

Outdoor stereophonic news coverage, even in extremely noisy surroundings;

Stereo recordings for film and television where the actors are recorded simultaneously with acoustic ambiance, or an orchestra;

Stereophonic motion picture sound where the width of the sound image must match the camera viewing angle.

Features

- Variable stereo shotgun microphone with shotgun and figure-8 patterns
- Interference/pressure-gradient transducer
- MS-stereo microphone, switchable to XY-stereophony
- Transformerless circuitry
- Switchable low frequency roll-off and switchable 10 dB preattenuation
- Set with case and accessories
- Battery or phantom powering

Construction

The RSM 191 consists of a capsule head containing two separate transducer systems and an amplifier section with two independent transformerless microphone amplifiers.

An interference tube system with a hypercardioid characteristic generates the middle signal, while a horizontal figure-8 assembly provides the side signal.

Acoustic features

The RSM 191 achieves its high directivity and special acoustic features through a unique construction. The microphone capsule assembly is mounted inside a housing tube that is acoustically open but has a high flow resistance.

This results in a high driving force for the diaphragm, even with a low pressure gradient factor of the capsule. Therefore, the microphone can suppress unwanted off-axis interference to a considerably higher degree than other microphones without such an interference tube.



The middle system (M-signal) combines high attenuation of lateral sound incidence, similar to a hypercardioid characteristic (which is about 10 dB), with the large front-to back ratio of the super-cardioid characteristic.

Therefore, sound from the rear is likewise attenuated by approximately 10 dB. This design approach makes the microphone less sensitive to wind or pop noise than other shotgun microphones.

The side system (S-signal) consists of two single capsules arranged back to back, closely behind the interference tube (M-signal) capsule. Arrows engraved on the microphone housing show their orientation.



The uniform and balanced performance characteristic of the microphone system is achieved without resorting to corrective resonance effects. Therefore, the microphone maintains

an excellent impulse response, reproducing all transient phenomena in music and speech without coloration. The entire internal construction is decoupled from the housing to avoid structure borne and handling noise.

Electrical features

The output signals of the included matrix amplifier are in either MS or XY format. The small capsules are mounted in close proximity to ensure transparent and coloration-free stereo sound with excellent mono-compatibility. The stereo acceptance angle is variable and controlled remotely.

Filter and attenuation

For the handling of very high sound pressure levels, a 10 dB attenuation can be switched ON to avoid overloading of the following equipment.

To suppress structure borne noise, a high-pass filter in the matrix box provides cutoff frequencies of 40 Hz, 80 Hz, and 200 Hz.



Battery supply

The RSM 191 system is fed from either 2 x P48 phantom power or from a 9 V battery inside the matrix box.

One alkaline battery provides 8 hours of operation.



Technical Data

Acoustical operating principle	M: Pressure gradient/interference transducer	Equivalent noise level, CCIR ¹⁾	25/31 dB ²⁾
	S: Pressure gradient transducer	Equivalent noise level, A-weighted ¹⁾	16/22 dB-A ²⁾
Directional pattern	M: Lobe-shaped	Maximum SPL for THD 0.5% ³⁾	134 dB
	S: Figure-8	Maximum SPL for THD 0.5% with preattenuation ³⁾	144 dB
Frequency range	20 Hz..20 kHz	Maximum output voltage	2540 mV
Sensitivity at 1 kHz into 1 kohm	23 mV/Pa	Supply voltage (P48, IEC 61938)	2 x 48 V ± 4 V
Rated impedance	50 ohms	Current consumption (P48, IEC 61938)	2 x 1.9 mA
Rated load impedance	1000 ohms	Matching connector	2 x XLR3F
Signal-to-noise ratio, CCIR ¹⁾ (rel. 94 dB SPL)	69/63 dB ²⁾	Weight	170 g
Signal-to-noise ratio, A-weighted ¹⁾ (rel. 94 dB SPL)	78/72 dB ²⁾	Diameter	30 mm
		Length	212 mm

¹⁾ according to IEC 60268-1; CCIR-weighting according to CCIR 468-3, quasi peak; A-weighting according to IEC 61672-1, RMS ²⁾ M/S ³⁾ measured as equivalent el. input signal



Delivery range

The complete microphone system comes in a robust aluminium carrying case.

Along with the microphone and the matrix amplifier the case contains a windscreen, the special interconnecting cable and an adapter cable that splits the 5-pin XLR output of the matrix amplifier into two 3-pin XLR connectors for channels I and II to connect with the following equipment.



Application Hints

- Stereo recordings for
 - broadcasting/ENG,
 - film productions
 - video productions
- Recordings with variable stereo width
- Handheld and boom/fishpole operation
- As variable stereo overhead system for drums (percussion)

These are just some of the most common applications. We recommend additional experimentation to gain maximum use from this microphone.

Delivery Range

Microphone RSM 191
 Matrix amplifier MTX 191 A
 Microphone cable KT 5
 Adapter cable AC 20
 Windscreen WS 191
 Aluminium case

Catalog No.

RSM 191 A Set..... blk 007087

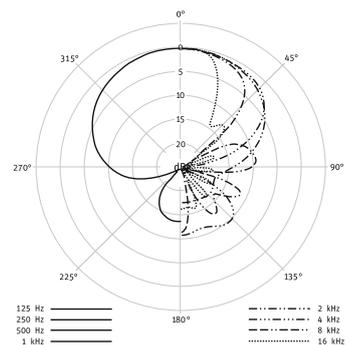
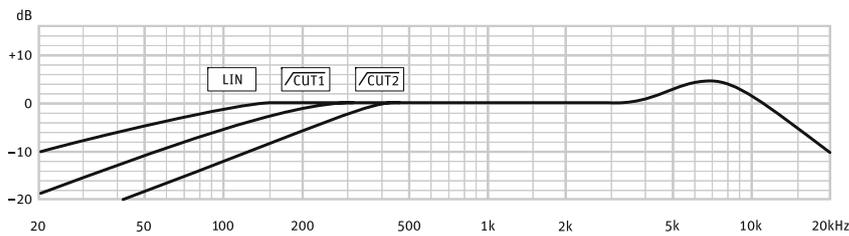
Selection of Accessories

Power supply, N 248 EU blk 008537
 Power supply, N 248 US blk 008538
 Power supply, N 248 UK blk 008539
 Auditorium hanger, MNV 87 mt blk 006806
 Elastic suspension, EA 30 B mt blk 006349
 Microphone cable, KT 6
 (with stand mount swivel) blk 006725
 Microphone cable, IC 7 blk 006740

A complete survey and detailed descriptions of all accessories are contained in the accessories catalog.

Meaning of color codes:
 blk = black
 ni = nickel

M-System



S-System

