

CONDENSER MICROPHONE KM 74

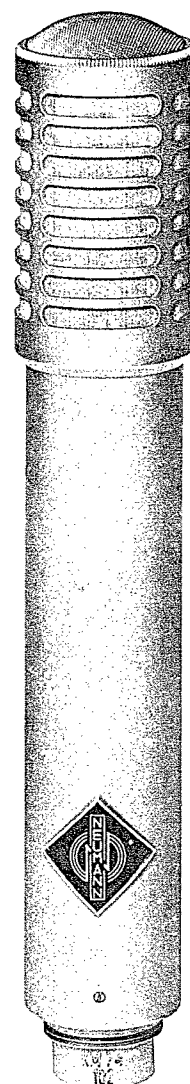
KM 74-910-02-02

The condenser microphone KM 74 has the same characteristics as the NEUMANN miniature microphones KM 64 and U 64. Like with these miniature microphones, the directional characteristics are virtually independent of frequency. The amplifier which is built into the microphone uses, instead of a valve, semi-conductors giving particular advantages such as simplified connections, reduced power consumption, absence of warm-up period and valve microphony and a high reliability factor. The miniature construction makes the microphone particularly useful for unobtrusive use in film and television studios.

BASIC CHARACTERISTICS

The microphone capsule which is used in the KM 74 has already proven itself. It is a pressure gradient transducer with an acoustical phase shift element, and uses a vacuum gold-plated diaphragm of temperature stable polyester. A main feature of the design is the directional characteristic which is virtually independent of frequency. The frequency response curve for angles of incidence of plus or minus 135 degrees are very nearly parallel. The attenuation at 135° is approx. 15 dB between 100 cps and 16 kcps. If therefore, the sound source moves in a three quarter circle around the microphone, the level will vary, but the tone quality will remain constant. The cardinal direction of the microphone is in line with the axis of the microphone. It should therefore be pointed axially towards the sound source.

The microphone amplifier is equipped with a field-effect transistor followed by a silicon-planar transistor in grounded collector configuration, requiring a supply voltage of 7,5 ... 14 V. This total range can be covered without switching. The audio output level and the equivalent loudness will thus be influenced by less than 1 dB. Alimentation can be made by standard 9 V batteries (IEC recommendation 6F22), or for studio installations by 12 V DC mains (DIN 45 595). As it is not a high frequency circuit, but a simple audio frequency amplifier, special techniques for avoiding detuning or over-



modulation due to very low frequency interference (wind, rumble, etc.) can be dispensed with, and the circuit is therefore particularly straightforward and reliable.

The stabilised polarising voltage for the capsule and the supply voltage for the field-effect transistor are provided by a built-in DC-converter of very simple construction. Although the microphone contains no transformers, the output voltage is balanced.

The supply voltage is fed through the same pair of wires as the signal. This means that only one screened pair is required as microphone cable using a three-pole connector, the same as for dynamic microphones. The only thing that is necessary is to fit a battery supply unit BS 9 or a supply-junction unit SW 1224 at any point along the twin screened microphone cable. While the little battery supply unit BS 9 is equipped with a universally obtainable 9 volt battery the supply junction unit SW 1224 is intended to be built into mixing desks or into the terminal boxes containing microphone sockets which are used in many studios. The supply junction units SW 1224 are connected to a 12- or 24-V-DC-mains supply.

The three-pole microphone lines, which are equipped with the junction unit SW 1224 can also be used for connecting ordinary microphones which do not require this supply voltage, however, in that case the DC voltage must be switched off.

Due to the very low power consumption of the microphone of only 6 mA, the microphone cable may have a length of several hundred yards. Due to the higher output voltage and the reduced source impedance compared with conventional condenser microphones, the signal from this microphone is less susceptible to interference.

ACCESSORIES

Battery Supply BS 9:

The battery supply BS 9 is for the supply of one microphone from a commonly used 9 volt battery.

Power supply N 9:

The power supply N 9 (45 × 85 × 118 mm) provides the necessary supplies for one microphone from the mains. The DC output is stabilised.

Power supply N 92:

This power supply has the same dimensions as the N 9, however, two microphones can be fed. Even with a short-circuit in one supply circuit the second microphone will still work correctly. Channel separation ≥ 110 dB.

Power supply NN 24:

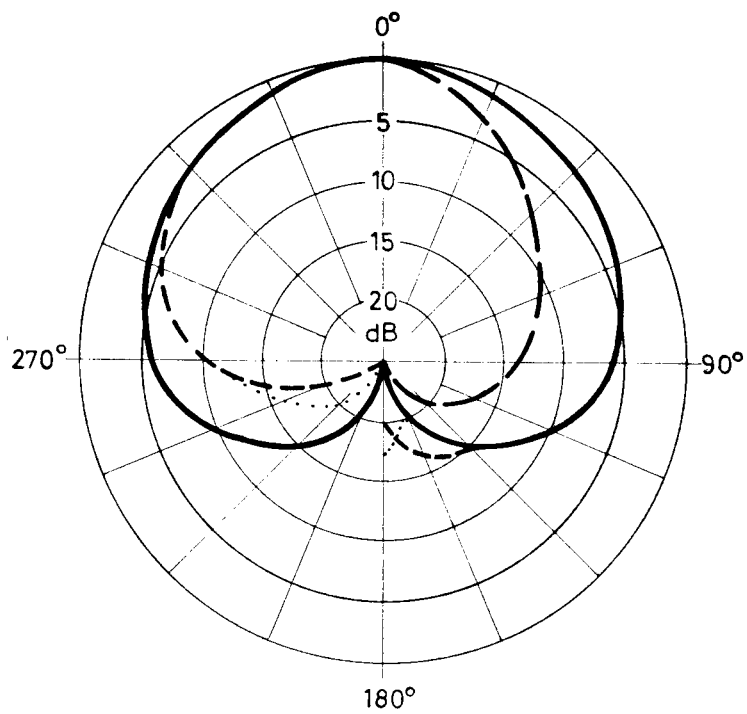
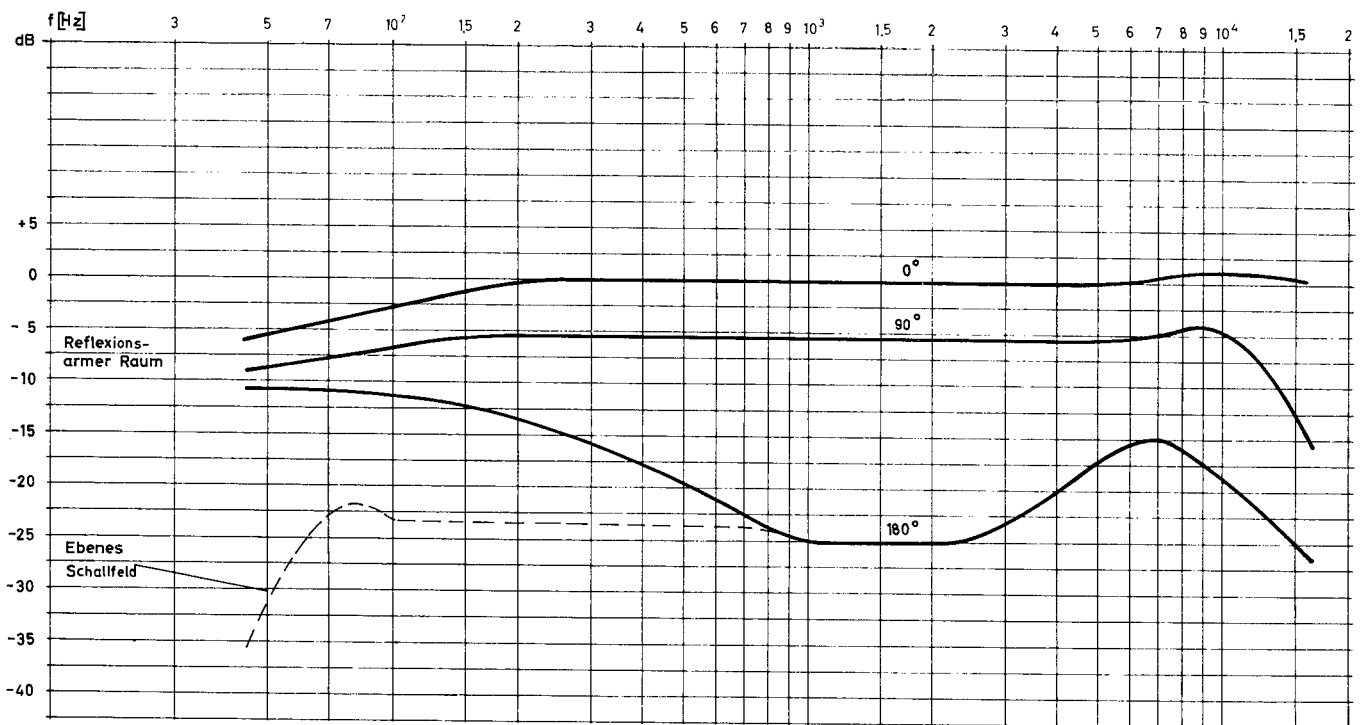
The power supply NN 24 provides a 24 volts DC. By means of supply junction units SW 1224 up to 10 microphones can be fed. The power supply NN 24 is provided for rack mounting, standard size 1.

Microphone Cables KT 1 and KT 2:

The microphone is fitted with a three-pole connector type T 3260/1. Connection to the supply units is done by means of extension cable KT 1 and interconnecting cable KT 2 with swivel stand attachment. The cables have a length of 10 meters each.

TECHNICAL DATA

Acoustical operation.....	Pressure gradient transducer
Directional characteristic.....	cardioid
Frequency response.....	40 ... 16 000 cps
Output level.....	approx. 2,5 mV/ μ b across 1 k Ω
Electrical load resistance.....	$\geq 1000 \Omega$
Electrical source resistance.....	$\leq 200 \Omega$
Capacity of capsule.....	approx. 34 pF
Weighted noise voltage (DIN 45 405).....	$\leq 12,5 \mu\text{V} = 28 \text{ dB re } 2 \times 10^{-4} \mu\text{b}$
Maximum sound pressure for .5 % distortion at 40 cps, 1 kcps and 5 kcps.....	$\geq 200 \mu\text{b} \approx 120 \text{ dB (for } 8 \dots 13 \text{ V DC)}$ $\geq 100 \mu\text{b} \approx 114 \text{ dB (for } 7.5 \dots 14 \text{ V DC)}$
Gain of microphone amplifier at 1 kcps.....	+ 3 dB
Connectors.....	T 3260/1
Operating voltage.....	7.5 ... 14 V DC
Power consumption.....	6 mA (9 V), 10 mA (12 V)
Weight.....	93 grams
Dimensions.....	21 + 24 mm $\varnothing$ 145 mm long



125 Hz	----	2 kHz	----
250 Hz		4 kHz	----
500 Hz		8 kHz	
1000 Hz	----	16 kHz	----