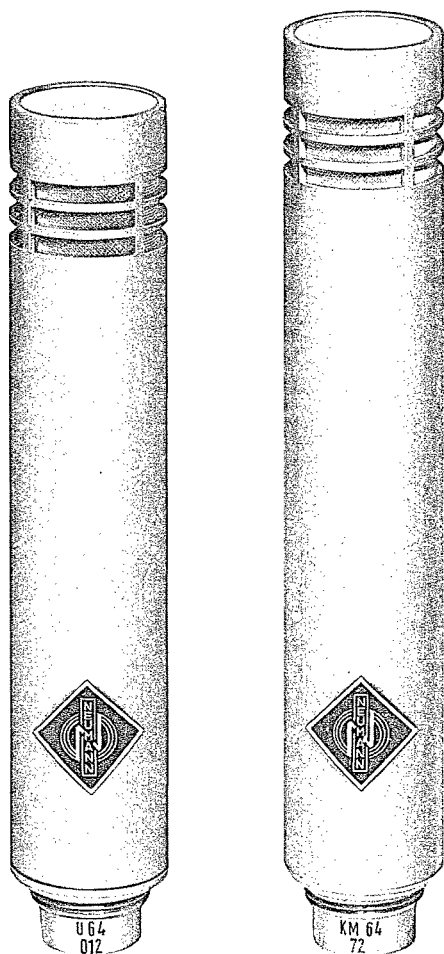


CONDENSER MICROPHONES KM 64 and U 64

KM 64 - U 64 - 910-02-01



The miniature condenser microphones KM 64 and U 64 are the latest NEUMANN-condenser microphones. They differ from the well known standard range of miniature microphones in the shape of the microphone head. The directional characteristic is cardioid. Special features of these microphones are the independence of the directional characteristic from frequency and a response extended to the high frequency end. The miniature construction makes them particularly suitable for unobtrusive use in film and television studios.

BASIC FEATURES

The microphones are equipped with a newly developed capsule which is a pressure gradient transducer with an acoustical phase shift element. The diaphragm is made of temperature stable polyester. It is vacuum gold plated.

The frequency response of the microphones extends from 40 cps to 18 kcps. A slight drop at 40 cps compensates for the bass rise at close range typical for all pressure gradient microphones. At the high frequency end, the response shows a rise of approximately 2 dB.

In the development of these new microphones, particular attention was paid to the independence of the directional characteristic from frequency. The frequency response curves for an angle of incidence of $\pm 135^\circ$ run nearly parallel. The attenuation at 135° is 15 dB in the range from 100 cps to 18 kcps. If, therefore, the sound source moves in a three quarters circle around the microphone, the level will vary, but the tone quality will remain constant. This would occur, if, for instance, an actor changes his position during recording or if people, during an interview, talk into the microphone from different directions. A further application is in the post-sync studio where changes in the tone quality may occur due to the speaker throwing his voice in a different direction when he is reading than when he is looking at the screen.

Both microphones contain the capsule head and a complete amplifier stage. The output transformer is astatically wound to avoid hum pick-up. The microphones have an internal resistance of 200 Ω but can be connected for 50 Ω . Microphones which have been connected for 50 Ω before leaving the factory are marked with a red dot beside the serial number.

The cardinal direction of the capsule is in line with the axis of the microphone. Consequently, the microphones must be pointed towards the sound source.

The microphone KM 64 is equipped with the well proven low noise Telefunken Triode AC 701k. It can consequently be connected in the same way as the well known NEUMANN miniature microphones KM 53, KM 54 and KM 56. The standard accessories for these miniature microphones can also be used with the KM 64. The RF-proof type is KM 264 which matches the accessories for the other RF-proof miniature microphones.

The difference between the U 64 and the KM 64 lies in the fact that the U 64 is equipped with a nuvistor. The nuvistor is obtainable everywhere and can be easily replaced as it has a plug-in socket.

To avoid overloading the microphone amplifier, when recording very loud solo instruments at close range, a 10 dB attenuator can be switched in between the capsule and the microphone valve. This enables the highest sound levels that are likely to be met in practice, to be recorded without distortion.

STANDARD ACCESSORIES FOR K M 6 4

The KM 64 is equipped with a 6-pole Tuchel connector type T 3402. The microphone is connected to the supply unit by means of the extension cable KC 1 or the microphone cable KC 2 which has a swivel connecting stud for stand mounting. This microphone can be supplied from the portable power supply unit NKMa, from the plug-in power supply unit N 52t or from the battery supply unit BB 12. The versatile portable power supply unit NN 48b and battery supply unit BB 50 may also be used.

Power Supply Unit NKMa

The portable power supply unit NKMa is suitable for supplying one microphone KM 64 from the mains. The heater and HT voltages are stabilised. The output voltage from the microphone is obtained on a 3-pole Tuchel connector type T 3081. The unit is connected to the mains by means of a mains connector according to DIN 49 493.

Power Supply Unit N 52t

Technical details of the power supply unit N 52t are the same as those of the NKMa, but it is constructed as a plug-in unit for rack mounting. Ten of these units may be housed side by side in a plug-in shelf type S 167/10 (for DIN-racks) and nine can be housed in a plug-in shelf type S 167/9 (for 19"-racks). The circuit is assembled on a printed circuit card which is easily replaced. The heater and HT voltages are stabilised.

Battery Supply Unit BB 12

The battery supply unit BB 12 has a base plate about the size of a postcard. Three DEAC accumulators RS 1.5 or "leakproof" miniature single cells may be used. A transistorised DC-converter provides the stabilised HT voltage from the battery voltage. The operating time with DEAC accumulators is approximately ten hours.

STANDARD ACCESSORIES FOR U 6 4

The microphone U 64 is equipped with a 5-pole Tuchel connector type T 3362. It is connected to the supply units by means of an extension cable type UC 1 or the microphone cable type UC 2 which has a swivel connecting stud for stand mounting. The U 64 can be fed from a portable power supply unit N 6 and the portable power supply unit N 62 can supply two U 64. For rack mounting the plug-in power supply unit N 6k may be used and the power supply units N 66 and N 66k can supply six microphones type U 64.

Power Supply Unit N 6

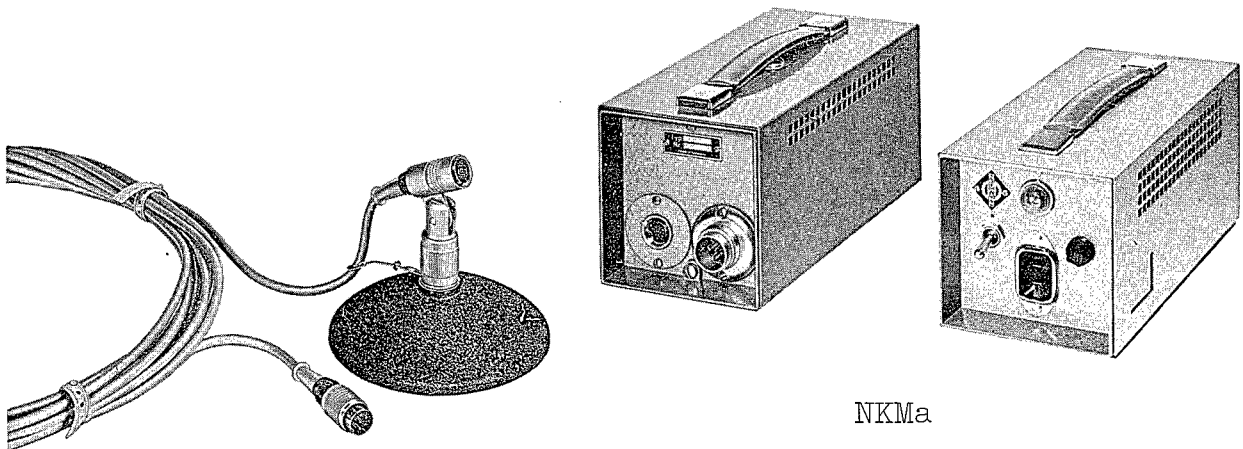
The portable power supply unit N 6 is intended to supply one microphone type U 64 from the AC-mains. The heater voltage is stabilised. The output voltage of the microphone is obtained on a 3-pole Tuchel connector type T 3081. The unit is connected to the mains by means of a mains connector according to DIN 49 493.

Power Supply Unit N 62

This portable power supply unit is the same size as the N 6 but it can supply two microphones U 64. Even in case of a short circuit in one supply circuit, the other microphone will continue to operate. The cross talk between the two systems is less than 120 dB.

Power Supply Unit N 66k

The power supply unit N 66k is suitable for mounting in DIN- or 19"-racks. It can supply six microphones type U 64. As regards short circuits and cross talk it has the same characteristics as the N 62.



MF 1 und KC 2

NKMa

TECHNICAL DETAILS

Power Supply Unit NKMa

Mains voltage.....	117/127/220/240 V 50/60 cps
Fuses.....	50 mA mt for 220/240 V 80 mA t for 117/127 V
Power consumption.....	app. 11 VA
DC-output voltages.....	4 V (100 mA) 120 V (0.5 mA)
Noise voltages.....	$\leq 8 \mu\text{V}$; $\leq 10 \mu\text{V}$ resp.
Neon pilot lamp.....	Rafi No. 2855 110 V
Dimensions.....	220 x 100 x 120 mm
Weight.....	app. 2.2 kg
Maximum length of cable..	40 m
Connectors.....	T 3403 and T 3081

Power Supply Unit N 6

Mains voltage.....	117/127/220/240 V 50/60 cps
Fuses.....	50 mA mt for 220/240 V 80 mA t for 117/127 V
Power consumption.....	app. 10 VA
DC-output voltages.....	6.2 V (135 mA) 120 V (0.9 mA)
Noise voltages.....	$\leq 0.4 \text{ mV}$; $\leq 0.7 \text{ mV}$ resp.
Neon pilot lamp.....	0501 DZ yellow 220 V
Dimensions.....	220 x 100 x 120 mm
Weight.....	app. 1.8 kg
Maximum length of cable..	40 m
Connectors.....	T 3363 and T 3081

TECHNICAL DETAILS

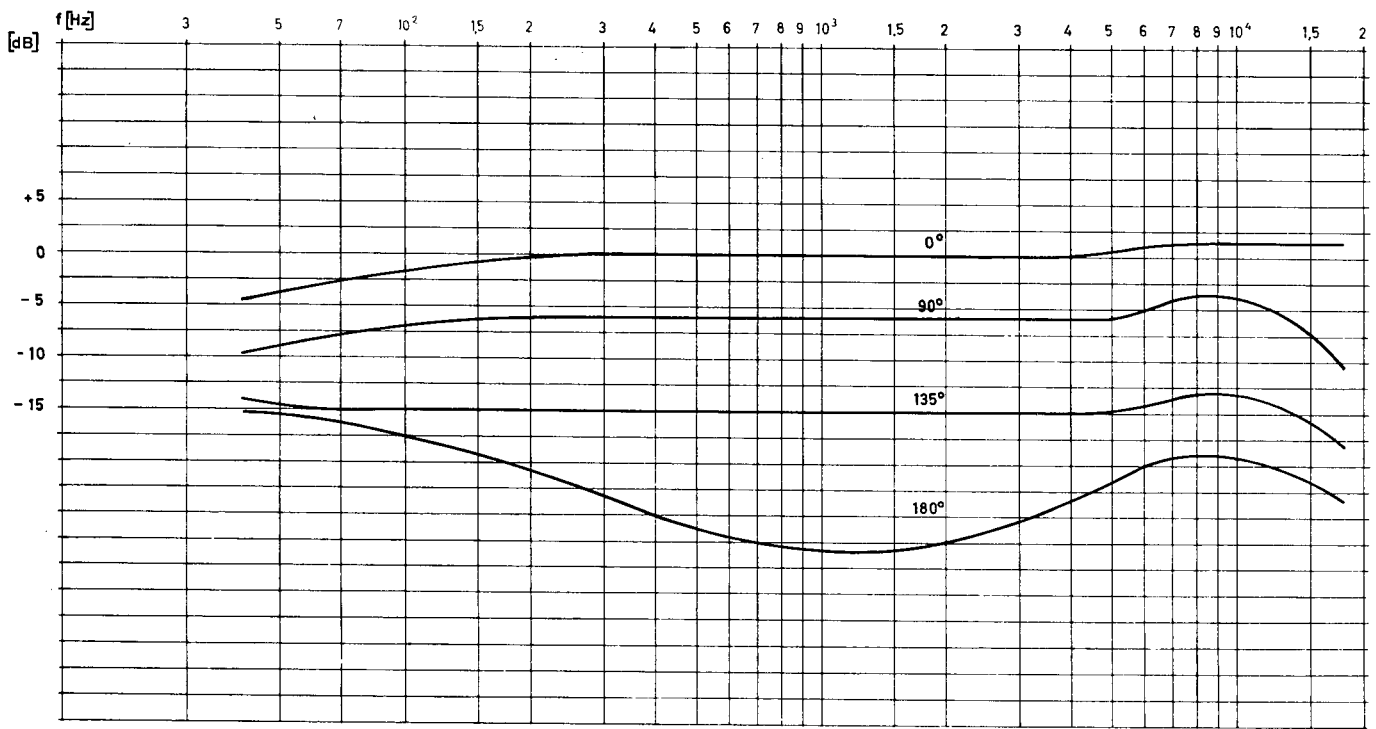
Microphone K M 6 4

Acoustical operation.....	Pressure gradient transducer
Directional characteristic.....	cardioid
Frequency response.....	40 ... 18 000 cps
Output level.....	app. 0.9 mV/ μ b across 1 k Ω
Switchable attenuation.....	app. 10 dB
Electrical load resistance.....	$\geq$ 1 000 Ω (250 Ω)
Electrical source resistance.....	200 Ω (50 Ω) $\pm$ 20 %
Capacity of capsule.....	app. 35 pF
Stray voltage.....	$\leq$ 15 μ V across 1 k Ω
Weighted noise voltage (DIN 45 405).....	$\leq$ 5 μ V across 1 k Ω $\hat{=}$ $\leq$ 29 phon
Maximum sound pressure for .5 % distortion at 40 cps, 1 kcps and 5 kcps.....	200 μ b $\hat{=}$ 120 dB 650 μ b $\hat{=}$ 130 dB (with overload protection) (dB above $2 \cdot 10^{-4}$ μ b)
Gain of microphone amplifier at 1 kcps.....	app. - 5 dB
Valves.....	1 x AC 701k
Connectors.....	T 3402
Weight.....	120 g
Dimensions.....	21 mm $\varnothing$; length 124 mm

TECHNICAL DETAILS

Microphone U 6 4

Acoustical operation.....	Pressure gradient transducer
Directional characteristic.....	cardioid
Frequency response.....	40 ... 18 000 cps
Output level.....	app. 1.1 mV/ μ b across 1 k Ω
Switchable attenuation.....	app. 10 dB
Electrical load resistance.....	$\geq$ 1 000 Ω (250 Ω)
Electrical source resistance.....	200 Ω (50 Ω) $\pm$ 20 %
Capacity of capsule.....	app. 35 pF
Stray voltage.....	$\leq$ 17 μ V across 1 k Ω
Weighted noise voltage (DIN 45 405).....	$\leq$ 6 μ V across 1 k Ω $\hat{=}$ $\leq$ 29 phon
Maximum sound pressure for .5 % distortion at 40 cps, 1 kcps and 5 kcps.....	200 μ b $\hat{=}$ 120 dB 650 μ b $\hat{=}$ 130 dB (with overload protection) (dB above $2 \cdot 10^{-4}$ μ b)
Gain of microphone amplifier at 1 kcps.....	app. - 2.5 dB
Valves.....	1 Nuvistor 7586
Connectors.....	T 3360, T 3361
Weight.....	120 g
Dimensions.....	21 mm $\varnothing$; length 112 mm



KM64 / U64

