



SM 69 - 910-02-00

APPLICATION

The double condenser microphone SM 69 is a high quality studio microphone for stereophonic recordings. It has been developed for the various types of intensity techniques. As the SM 69 consists of two completely independent microphones in one unit, it may be used for single channel recordings whenever two microphones with different directional characteristics are needed in one particular position.

BASIC FEATURES

The double microphone SM 69 consists of a capsule head containing two microphone capsules which are mounted closely above one another and are rotatable, and the amplifier section containing two complete microphone amplifiers.

The microphone connections are brought out so as to enable it to be fed, either from a special power supply unit NSMa 23 or from two separate single power supply units NN 48b or N 52t.



TECHNICAL DETAILS

Each capsule system consists of two fixed electrodes which are suitably drilled and are firmly screwed together, and two vacuum gold plated diaphragms made of temperature stable polyester. Each half of either capsule system has a cardioid characteristic. By applying suitable polarising voltages to the central electrode and the diaphragms, the three directional characteristics "omni-directional", "cardioid" and "figure-of-eight" can be obtained. The directional characteristics of the two systems can be set up, independently of one another, from the power supply unit.

The upper capsule can be rotated through an angle of 270 degrees relative to the lower one. The cardinal direction is vertical to the microphone axis. The cardinal direction of the lower capsule is indicated by the name plate on the microphone and that of the upper capsule by a mark on the microphone casing.

Each capsule has its own amplifier. The valve used is the well proven low noise Telefunken Triode AC 701k. The output transformers are astatically wound to avoid hum pick-up. The internal resistance of the microphone amplifiers is 200 Ω . It can be reduced to 50 Ω by connecting the secondary windings of the output transformer in parallel. The output voltage is thereby reduced by 6 dB. Microphones which are connected for 50 Ω before leaving the factory are marked with a red dot beside the serial number.

STANDARD ACCESSORIES

The microphone SM 69 is connected to the power supply unit NSMa 23 by means of the extension cable SC 1 or by means of the microphone cable SC 2 with swivel connecting stud for stand-mounting. These cables have a length of ten meters. The total permissible length of cable between the microphone and the power supply unit is 40 meters.

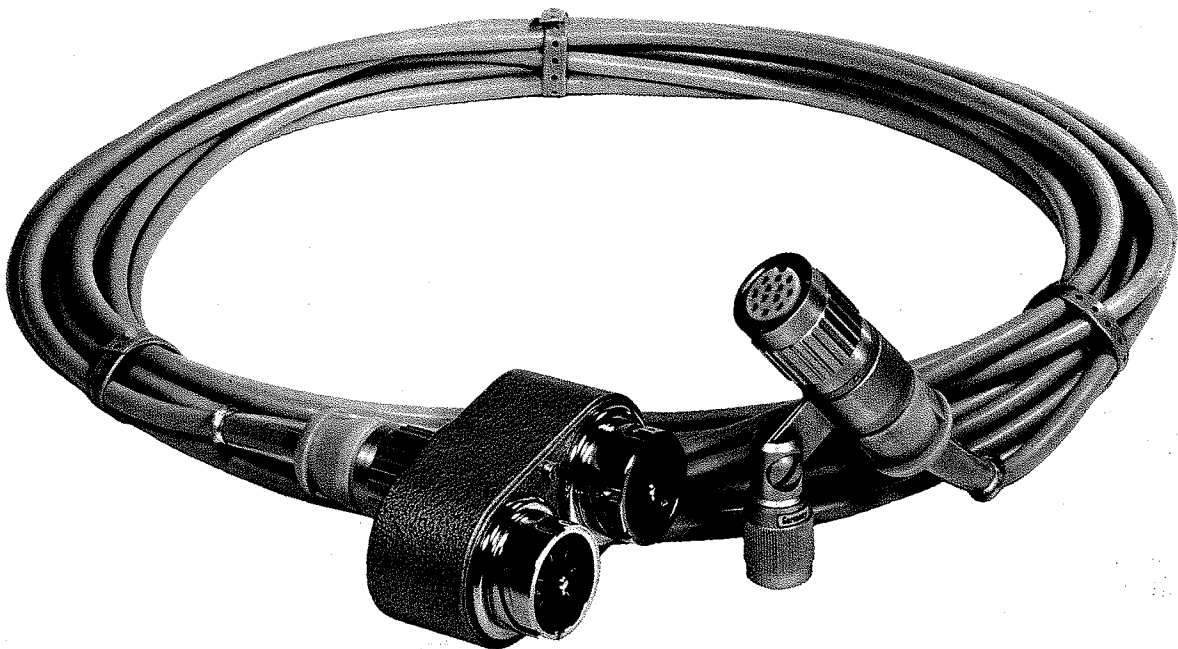
Power Supply Unit NSMa 23

The portable power supply unit NSMa 23 serves to supply one double microphone SM 69 from the mains. The heater and HT voltages are stabilised. The directional characteristics can

be adjusted in nine steps by means of two switches on the output side of the power supply unit. The unit is connected to the mains by means of a mains connector according to DIN 49 493.

Adapter Plugs Z 10, Z 11, Z 11-90

If the SM 69 is to be supplied by means of two separate power supply units, it is necessary to resolve the microphone cable SC 1 or SC 2 into two microphone cables type C 26. This is done by means of the adapter Z 10. If power supply units with 7-pole RF-screened standard couplings are used, the adapter Z 11 is appropriate. The third adapter Z 11-90 has a swivel connecting stud for stand-mounting. In this case, the microphone is screwed on directly without intermediate cable.

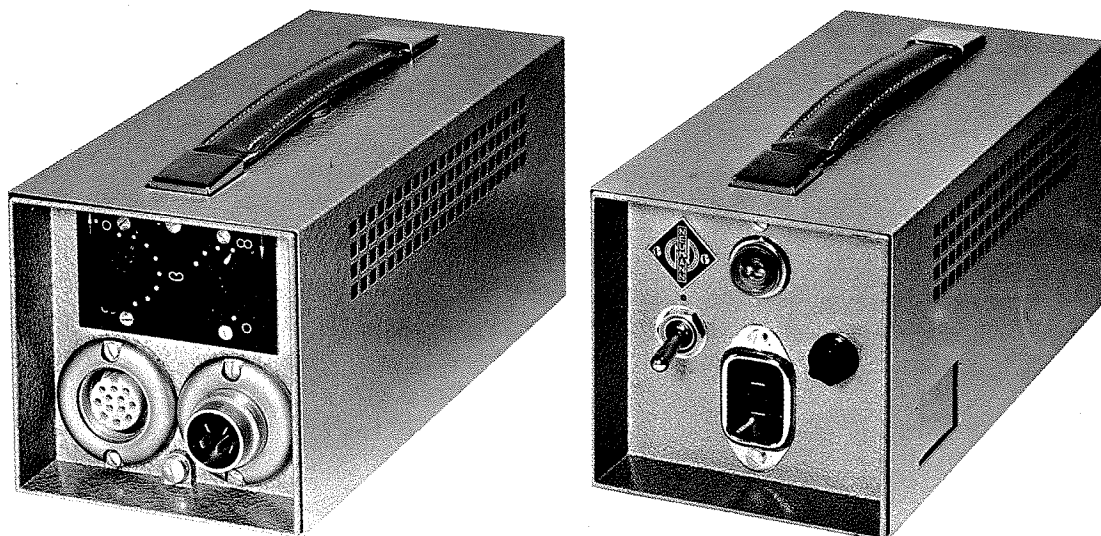


Power Supply Unit NN 48b

The double microphone SM 69 may be supplied from the mains by means of two portable power supply units NN 48b. The heater and HT voltages are stabilised. The directional characteristics of the microphone are controlled by means of the potentiometer on the power supply unit. The output voltage of either microphone system is obtained on a 3-pole Tuchel connector 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

The technical details of the power supply unit N 52t are the same as those of the NN 48b but it is constructed as a plug-in unit for mounting in a frame. Ten of these units may be housed side by side in a plug-in shelf S 167/10 (for DIN-racks) and nine in a plug-in shelf S 167/9 (for 19"-racks). The circuit is assembled on a printed circuit card which can be easily replaced. The heater and HT voltages are stabilised.



Battery Supply Unit BB 50

The BB 50 is a portable battery supply unit which corresponds in its dimensions and technical details to the power supply unit NN 48b. It uses four DEAC accumulators type SD 7. The stabilised HT voltage is obtained from the battery voltage by means of a semiconductor converter. The operating time is approximately 50 hours.

TECHNICAL DETAILS

Power Supply Unit NSMa 23

Mains voltages.....	117/127/220/240 V 50/60 cps
Fuses.....	60 mA mt / 125 mA mt
Transistors	TF 80/60
Power consumption.....	app. 11 VA
DC output voltages.....	4 V (100 mA) 120 V (0.5 mA) 0 ... 120 V
Hum voltages.....	$\leq 8 \mu\text{V}$; $\leq 10 \mu\text{V}$ resp.
Neon pilot lamp.....	0501 DZ yellow 220 V
Dimensions.....	220 x 100 x 120 mm
Weight.....	app. 2.5 kg
Maximum length of cable.....	40 m
Connectors.....	T 3618 / T 3085

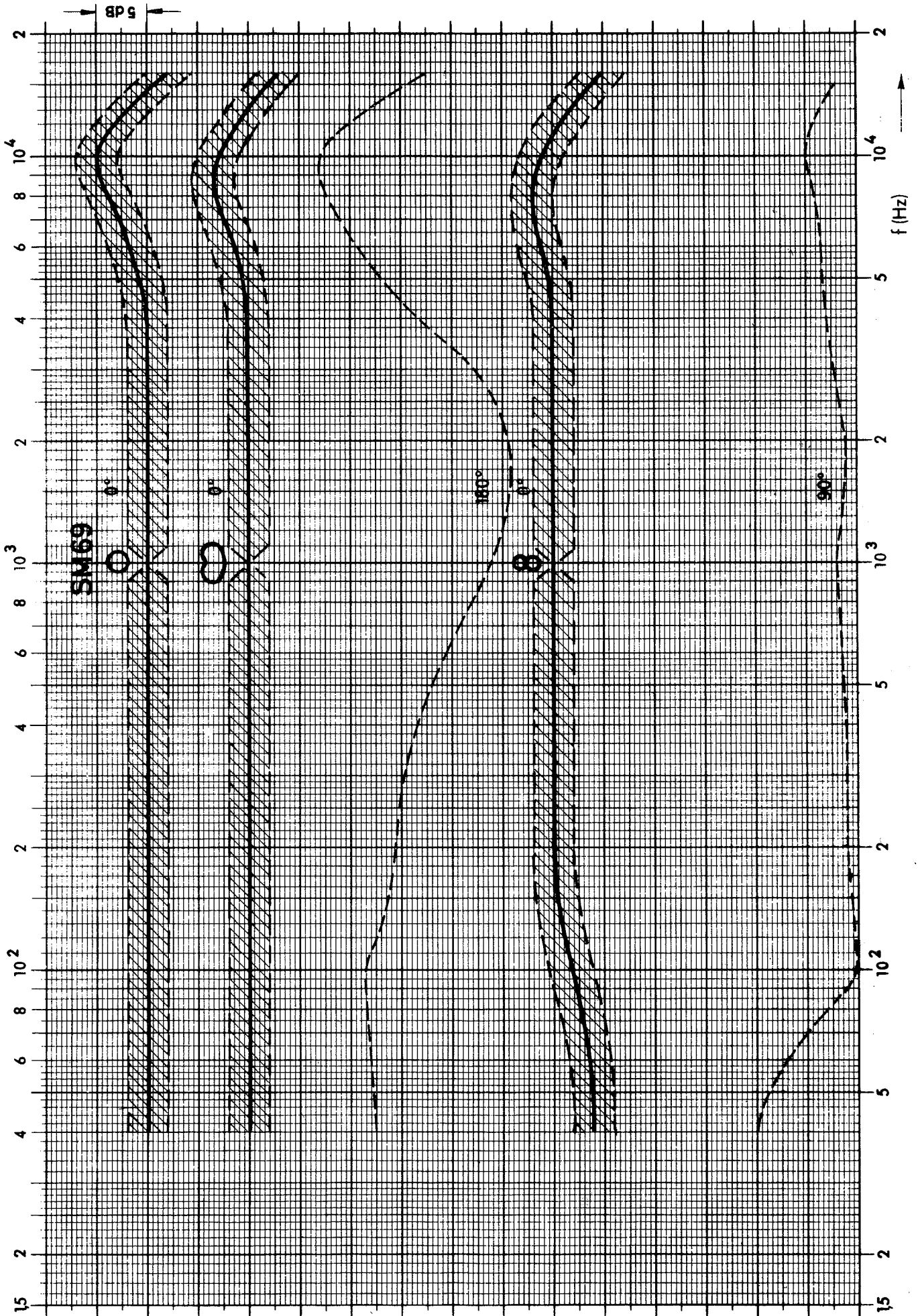
Power Supply Unit NN 48b

Mains voltages.....	117/127/220/240 V 50/60 cps
Fuses.....	50 mA mt / 80 mA t
Valves.....	150 B 2
Power consumption.....	app. 11 VA
DC output voltages.....	4 V (100 mA) 120 V (0.5 mA) 0 ... 120 V
Hum voltages.....	$\leq 8 \mu\text{V}$; $\leq 10 \mu\text{V}$ resp.
Dimensions.....	220 x 100 x 120 mm
Weight.....	app. 2.2 kg
Maximum length of cable.....	40 m
Connectors.....	T 3053 / T 3403 / T 3081

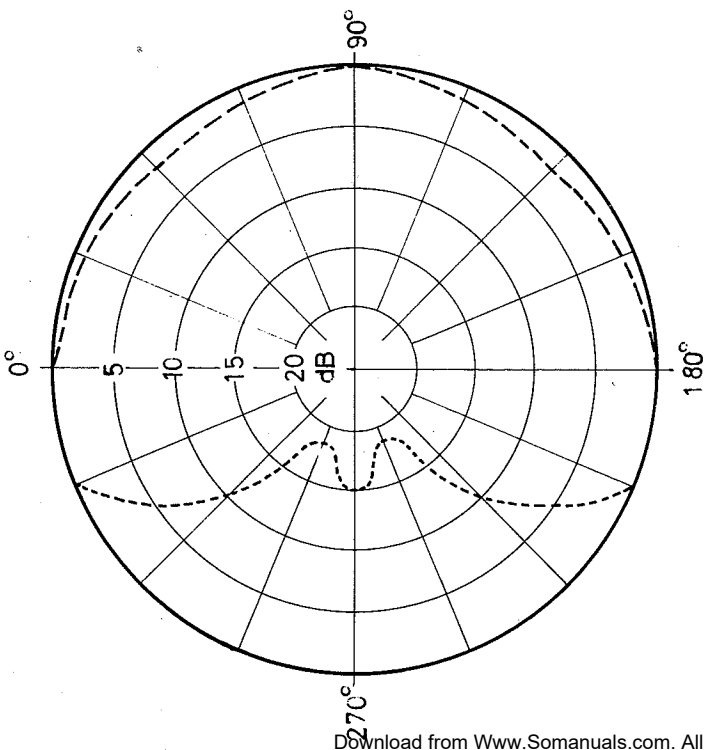
TECHNICAL DETAILS

SM 69

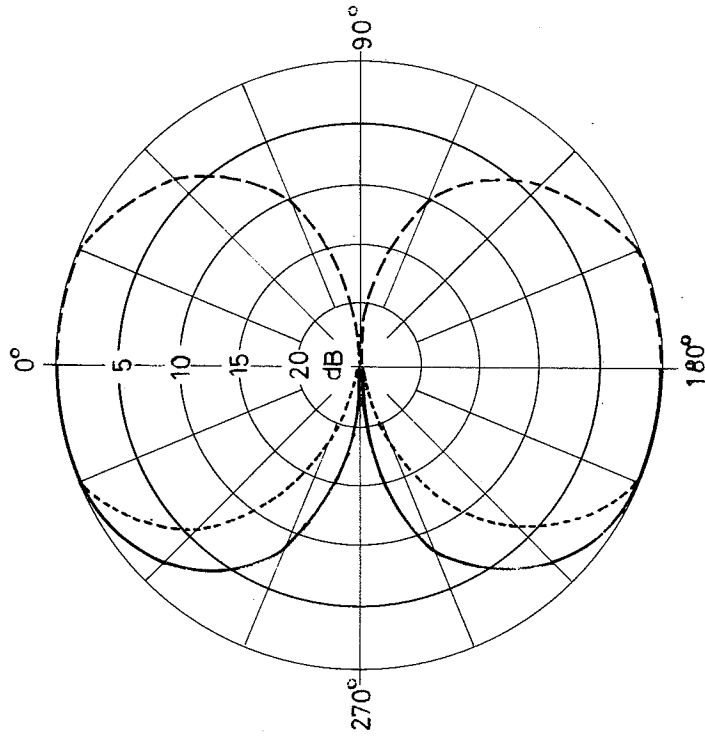
Acoustical operation.....	combination of two pressure gradient transducers
Directional characteristics...	"omni-directional" "figure-of-eight" "cardioid" remote controlled
Output level.....	app. 1.5 mV/ μ b across 1000 Ω
Channel separation.....	\geq 45 dB
Electrical Load Resistance ...	\geq 1000 Ω (250 Ω)
Electrical source resistance..	200 Ω (50 Ω) \pm 20 %
Capacity of capsule.....	2 x 55 pF
Stray voltage.....	\leq 8 μ V
Weighted noise voltage (DIN 45 405).....	\leq 3.5 μ V $\hat{=}$ \leq 22 phon
Maximum sound pressure for .5 % distortion at 40 cps, 1 kcps and 5 kcps.....	166 μ b $\hat{=}$ 118 dB (dB above 2 x 10 ⁻⁴ μ b)
Gain of microphone amplifier at 1 kcps.....	app. 0 dB
Valves.....	2 x AC 701k
Connector.....	T 3617
Weight.....	app. 460 g (1 lb)
Dimensions.....	30 mm \varnothing and 48 mm \varnothing ; length 256 mm



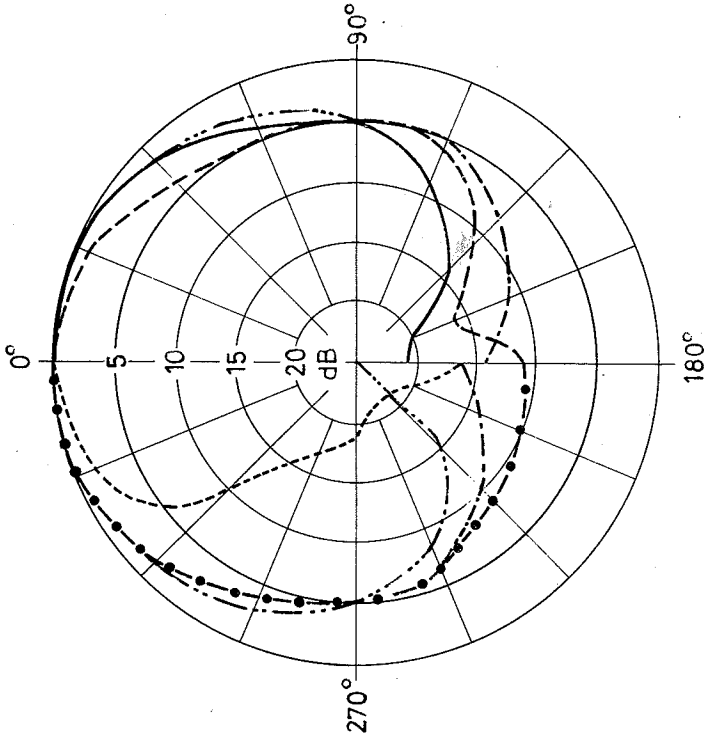
SM 69



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

Nicht eingezeichnete Frequenzkurven fallen mit der 1kHz Kurve zusammen

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