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TONSTUDIOTECHNIK

HILPERT - TONSTUDIOTECHNIK  
TECHNICAL SUPPORT AEG / TELEFUNKEN - MAGNETOPHON  
HAMBURG

FON: +40 64492444 FAX: +40 64492446

EMAIL: [hilpert@hilpert-audio.de](mailto:hilpert@hilpert-audio.de) WEB: [www.hilpert-audio.de](http://www.hilpert-audio.de)

AEG  
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magnetophon

**TECHNICAL INFORMATION**

# magnetophon 21 R

# AEG

## Editorial magnetic tape recorder

Technical Information

The M21 R (short for "magnetophon 21 R") Editorial Recorder is a professional magnetic tape recorder for audio recording and reproducing in editors' offices.

The 21 R magnetophon is an advanced professional system of the M21 product family.

The machine is designed for stereo recording, with oxide coating inside or outside, for 7.5 and 15 ips tape speed.

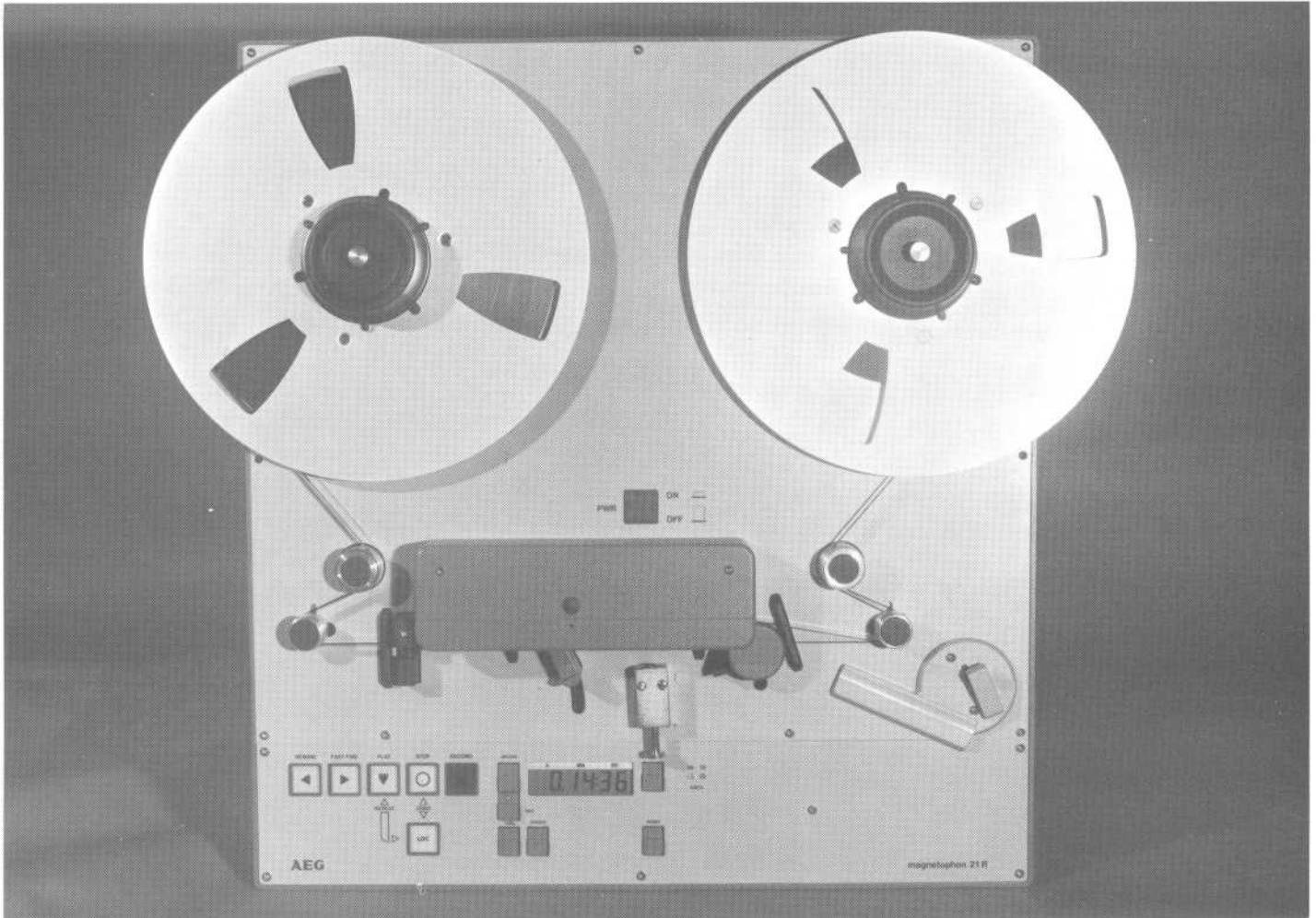
It can be used with all types of hubs and reels such as turntables with self-supporting tape packs, NAB reels

or cine-type reels. It handles up to 12 1/2" diameter NAB reels or 300 mm diameter turntables. Minimum tape reel core diameter is 1 3/4".

Due to its compact dimensions and minimum space requirement the M21 R is highly suited for installation in 19" racks or carrying cases. It can, of course also be installed in existing consoles. When mounted in the vario stand the operating height and tilt may be adapted to sitting or standing operators. The machine operates in any position between horizontal and vertical.



*magnetophon 21 R (A-wind) as a table model*



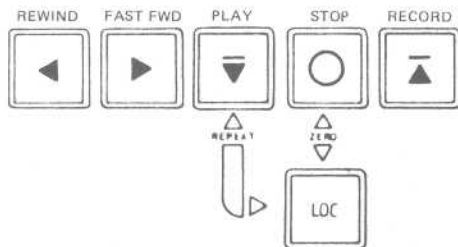
Editorial magnetic tape recorder M21 R

## Control panel

Push-button function

Rewind  
Fast Forward  
Play  
Stop  
Record

Push-button designation



Push-button function

Unloading tape from heads

Editing

Rewind at search

Function enabling button: Tape speed switch-over

Tape speed switch-over

Setting the tape timer to zero

Push-button designation

UNLOAD

EDIT

↶

ENABLE

SPEED

RESET

## SPECIFICATIONS

### Tape transport

#### Motor

3-motor tape transport:

1 electronically controlled brushless crystal oscillator reference dc motor for direct capstan drive

2 electronically controlled dc reel motors

#### Tape speed

15/7.5 ips

tape speeds selectable on the operating panel

Deviation of average speed from nominal speed

max. 0.2%

#### Wow and flutter

peak weighted (DIN 45507, IEC Publ. 368, ANSI)

measured using EMT 420 with 3,300 ft (1000 m)

standard tape on European tape hub per DIN 45515

at 15 ips max.  $\pm 0.04\%$

at 7.5 ips max.  $\pm 0.06\%$

#### Tape slip

max. 0.1%

#### Tape width

6.3 mm (1/4 inch)

#### Hub diameter

max. 12 1/2"  $\hat{=}$  3,960 ft (1200 m) standard

tape (50  $\mu$ m)  $\hat{=}$  5,940 ft (1800 m) long play

tape (35  $\mu$ m), min. 45 mm

#### Tape coating

inside (A-wind) or outside (B-wind)

(alternative models)

#### Applicable hubs and reels

European type hub per DIN 45515, 3 7/8" (1000 mm) diameter (with turntable for self-supporting tape packs) or

Cine-type reels per DIN 45514, min. 1 3/4" (45 mm) center diameter (with reel locking mechanism) or

NAB reels, 4 1/2" (114 mm) center diameter (with adapter)

Starting time at 15 ips and 3,300 ft (1000m) tape

to attainment of nominal speed: 0.2 sec

to attainment of  $\pm 1\%$

wow and flutter: 0.5 sec

#### Fast wind time

max. 100 sec for 3,300 ft (1000 m) tape

(variable wind speed optional)

#### Stopping time

(out of fast wind with full 3,300 ft (1000 m) spool

stop max. 3 sec: end of tape max. 3 sec

#### Spooling tape tension

1N (3.6 ozs force)

#### Electronic tape timer

5-digit illuminated LCD indicator in hours, minutes and seconds for all tape speeds, with negative sign below zero

#### Time timer error

max. 0.3%

#### Timer overshoot after tape end run-off

max. 1 sec

#### Tape transport and amplifier control

microcomputer with 8085 microprocessor

#### Remote control interface optional

### Record and playback electronics

#### Equalization

at 15 ips 35  $\mu$ s (IEC1)

at 7.5 ips 70  $\mu$ s (IEC1)

Two speed-/equalization combinations selectable at the operating panel

#### Input

balanced, floating with input transformer

#### Input level

+6 dBm (nominal value) adjustable from 0 dBm to +15 dBm (max. 24 dBm)

#### Input impedance

min. 5 k $\Omega$  between 30 Hz and 16 kHz

with input transformer

#### Output

balanced, floating with output transformer

#### Output level

+6 dBm (nominal value), adjustable from 0 to +12 dBm (at 514 nWb/m), max. output level +24 dBm

#### Output impedance

max. 40 $\Omega$  between 30 Hz and 16 kHz with output transformer

min. load impedance:

150  $\Omega$  up to +18 dBm

200  $\Omega$  up to +24 dBm

#### Erase/bias frequency

205 kHz (crystal reference)

## Overall characteristics

These data refer to modern tapes such as 3M226, Ampex 456, BASF LGR50, Agfa PEM 468 or equivalent

### Frequency response

at 15 ips	20 Hz .. 20 kHz	± 1.5 dB
	30 Hz .. 18 kHz	± 1 dB
at 7.5 ips	20 Hz .. 16 kHz	± 1.5 dB
	20 Hz .. 14 kHz	± 1 dB

### Signal-to-noise ratio

RMS, A-weighted according to DIN 45633 (IEC Publ. 179), referred to 1020 nWb/m and NAB equalization

	15	7.5	ips
stereo (30 mil $\hat{=}$ 0.75 mm track separation) (514 nWb/m)	73	71	dB

Quasi-peak, weighted according to CCIR 462-2, referred to CCIR equalization

	15	7.5	ips
stereo (510 nWb/m)	55	54	dB

Total harmonic distortion referred to 400 nWb/m (i.e. 6 dB above vu operating level)

stereo max. 0.6%

### Crosstalk rejection

measured at 1 kHz in accordance with DIN 45521 stereo version min. 50 dB (30 mil  $\hat{=}$  0.75 mm track separation)

### Erase attenuation

min. 85 dB at 1 kHz (1020 nWb/m)

### AC mains

100, 110, 120, 200, 220 or 240 V (+5%/-10%) (by changing solder connections) 50 or 60 Hz

### Power consumption at nominal voltage

~ 160 VA  
max. 250 VA

### Ambient temperature

+5°C to +45°C  
cold start (-5°C) ready for operation after 5 minutes

### Operating positions

any horizontal to vertical

### Dimensions, weights

	H x	W x	D (mm)	Weight (kg)
Chassis	277+50 (11"+2")	483 (19")	525 (20.6")	45 (100 lbs)
Carrying case	405 (16")	510 (20.1")	600 (23.6")	14.8 (33 lbs)
Console 700	920 (36.2")	730 (28.7")	605 (23.8")	42 (92.4 lbs)
Vario stand (max. dimensions)	1320 (52")	664 (26")	800 (31.5")	32 (70.4 lbs)

\* when installed in console 700 the height is the same as that of the M15A, namely 252.2 mm (10")

## We are easy to reach.

One of our representatives is certainly in your vicinity, too. Please contact the representatives abroad or our central address below. One of them will respond at once.

## Distributor



AEG Aktiengesellschaft  
Information Systems Products  
Professional Tape Recorder Branch  
Postfach 2154  
D-7750 Konstanz W. Germany  
Phone West Germany (7531) 86-2370  
Telefax West Germany (7531) 86-2421  
Telex 733 233