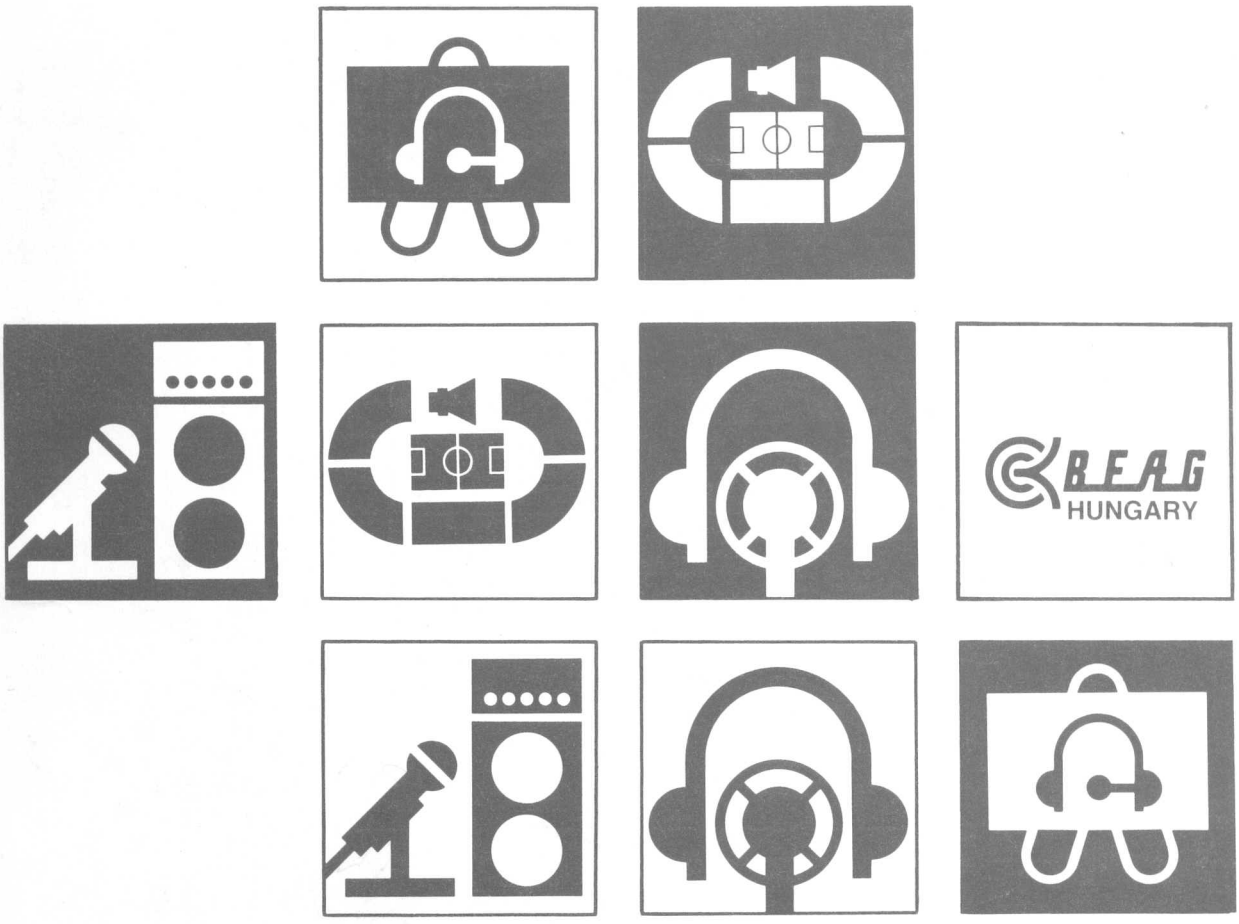
ACOUSTICAL, ELECTRONIC AND AUXILIARY PRODUCTS



ELECTRO-ACOUSTICAL FACTORY
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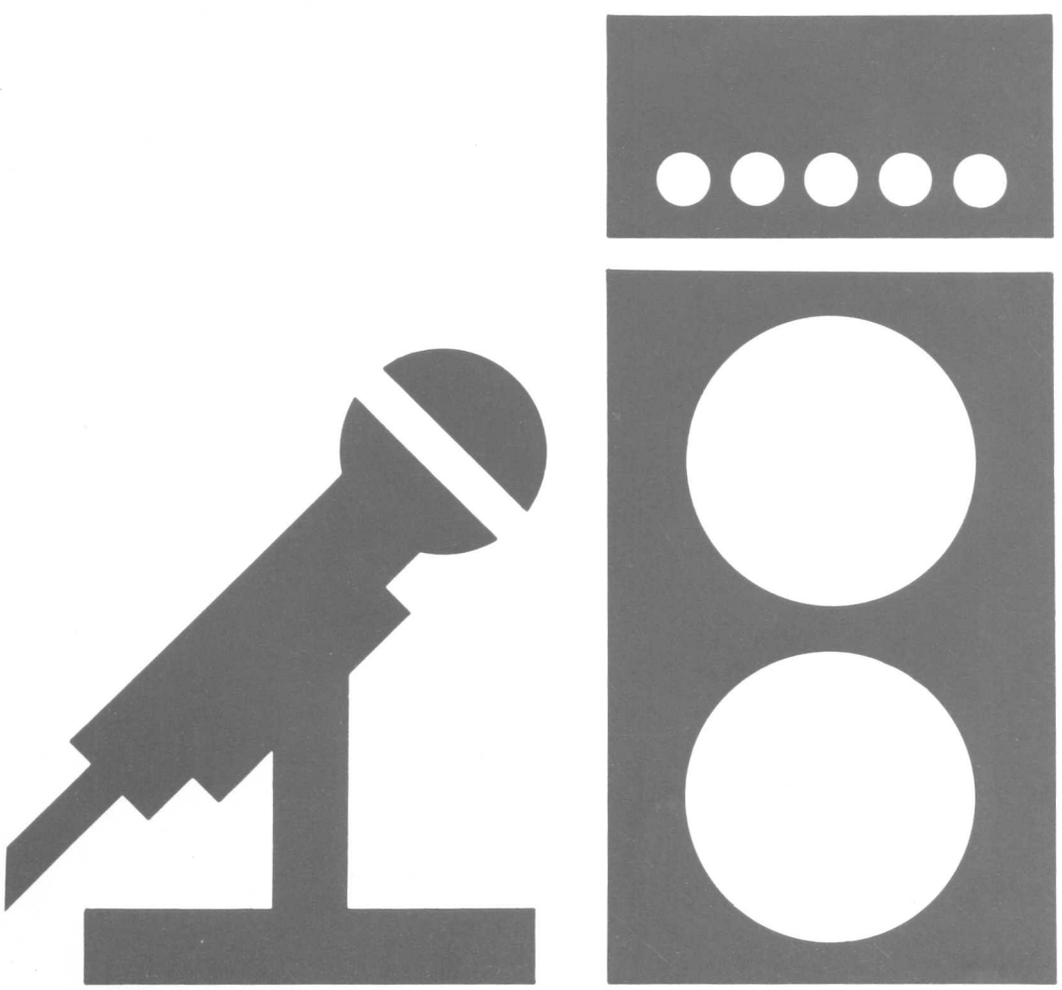
ADAMISNE

ACOUSTICAL, ELECTRONIC AND AUXILIARY PRODUCTS



3. ACOUSTICAL, ELECTRONIC AND AUXILIARY PRODUCTS USED IN BEAG SOUND SYSTEM

Page

Acoustical Products
Microphones, microphone accessories, microphone cables, microphone stands, headphones, earphones, pillowphones 3– 3
Studio monitoring, loudspeakers, sound boxes and sound columns, sound box series in plastic enclosure 3– 19
Sound absorbing panels 3– 19

Electronic Products and Auxiliary Units
Mixing consoles, announcer's desks, intercom units 3– 69
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MICROPHONES, MICROPHONE ACCESSORIES, MICROPHONE CABLES, MICROPHONE STANDS, HEADPHONES, EARPHONES, PILLOWPHONES

MICROPHONES (DYNAMIC)

MD 14/N Cardioid
MD 21/N Cardioid
MD 100 Spherical
MD 102 Spherical
MD 110 Cardioid
MD 112 Cardioid
MD 114 Cardioid
MD 210 Cardioid, studio quality
MD 221 Cardioid, studio quality

MICROPHONE STANDS

Floor microphone stands type MAX 01, DM 201, DM 203
Microphone stands with boom arm type DM 211-2, DM 213, DM 221, DM 223, MAP 23
Table microphone stands type MAP 01, DM 110, DM 120, DM 130
Screened connecting cables with connector plugs type
3 KSZ..., 5 KSZ...,
EX 232..., EX 300...,
EX 330..., EX 331...

STEREO DYNAMIC HEADPHONES, EARPHONES, PILLOWPHONES

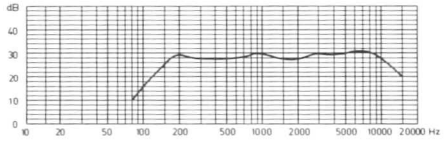
FDS 12
FDS 25
FDS 26
FDS 33
Earphones OD 11-400
Pillowphone PH 20

DYNAMIC HEADPHONE WITH MICROPHONE

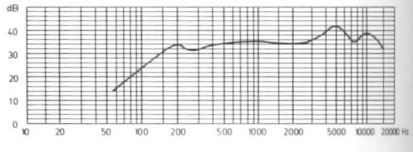
FMD 12
FMD 25
FMD 26
FMD 33

MICROPHONES TYPES	MD 14 N	MD 19 N	MD 21 N
Principle of the transducer Rated frequency range (Hz)	dynamic 100 to 15,000	dynamic 100 to 15,000	dynamic 80 to 15,000
Free field. Sensitivity (mV/Pa)	1.5	1.5	1.5
Frequency response	according to curve	according to curve	according to curve
Rated impedance (Ohms) Directivity pattern	200 cardioid	200 cardioid	200 cardiod
Front to rear sensitivity index		15 dB at 1,000 Hz	13 dB at 1,000 Hz
Electrical connection	3-pole sock. type DIN 41524	3-pole sock. type DIN 41524	3-pole sock. type DIN 41524
Accessories	3-pole plug + guard cover	3-pole plug + guard cover	3-pole plug + guard cover
Additional elements	stand-conn. DM 501 transformer MKT 1-H wind screen DM 504	stand-conn. DM 501 transformer MKT 1-H wind screen DM 504	stand-conn. DM 523 B transformer MKT 1-H wind screen DM 504
Weight (kg)	0.11	0.125	0.13
Dimensions (mm)	∅ 49 x 60	∅ 48 x 57	∅ 47 x 56
Applications	reinforcement systems, reporter, announcer	reinforcement systems, reporter, sing rec.	reinforcement systems, reporter, sing rec.

L: low impedance
M: middle impedance
H: high impedance

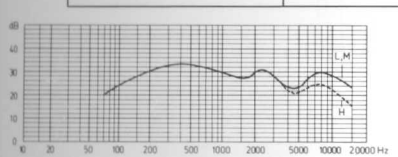


Sensitivity vs. frequency
(types MD 14N and MD 19N)

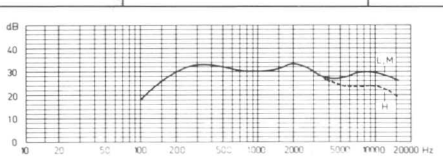


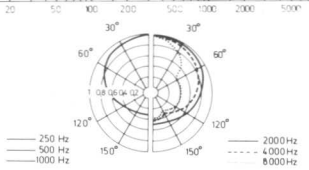
Sensitivity vs. frequency
(types MD 21N)

MD 100	MD 102	MD 110	MD 112	MD 114
dynamic 70 to 16,000	dynamic 17 to 16,000	dynamic 100 to 16,000	dynamic 100 to 16,000	dynamic 100 to 16,000
–L: 1 –M: 5 –H: 14	–500, L: 1.6 –M, –M–T: 5 –H, –60K: 14 mV/Pa	–L, –N, –N, –K: 1 –M: 5 –H: 14 mV/Pa	–500, –L: 1.6 –M, –T: 5 –H, –60K: 14 mV/Pa	N: 1 L: 1.6 M: 5 H: 14 mV/Pa
according to curve	according to curve	accordint to curve	according to curve	according to curve
–L: 200 –M: 5 x 10^3 –H: 6 x 10^4 spherical	–500, L: 500 Ohm –M, –M–T: 5 kOhm –H, –60K: 60 kOhm spherical	–L, –N, –N–K: 200 Ohm –M: 5 kOhm –H: 60 kOhm cardioid	–500, –L: 500 Ohm –M, –M–T: 5 kOhm –H, –60K: 60 kOhm cardioid	N: 200 Ohm L: 500 Ohm M: 5 kOhm H: 60 kOhm cardioid
2 m cable 3-pole plug type DIN 41524	1.5 cable 3-pole plug type DIN 41524 + 6-pole plug for tape-rec. remote start	2 m cable 3-pole plug type DIN 41524	1.5 cable 3-pole sock. type DIN 41524 + 6-pole plug for tape-rec. remote start	2 m cable 3-pole plug type DIN 41524
stand DM 524	stand OKO 1524	stand connector DM 524 (exc. –N, and –N–K)	stand OKO 1524 (exc. –500)	stand OKO 1524 (exc. –N)
stand-connector DM 525	stand-connector DM 500	stand-connector DM 525	stand-connector DM 500 (for type –500)	stand-connector DM 500 (for type –N)
0.06	0.08	0.06	0.09	0.1
∅ 25.5 x 80	∅ 25.5 x 120	∅ 25.5 x 90	∅ 26 x 140	∅ 26 x 137
music-, talk-, sing rec.	music-, talk-, sing rec. rem. start	music-, talk-, sing rec. reinforcement systems	music-, talk-, sing rec. rem. start reinforcement systems	reinforcement systems, reporter recording

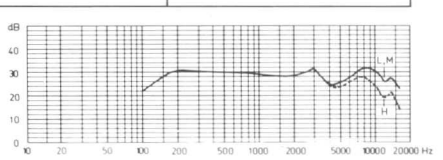


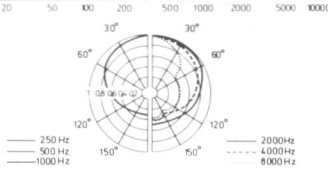
Sensitivity vs. frequency
(types MD 100 and MD 102)



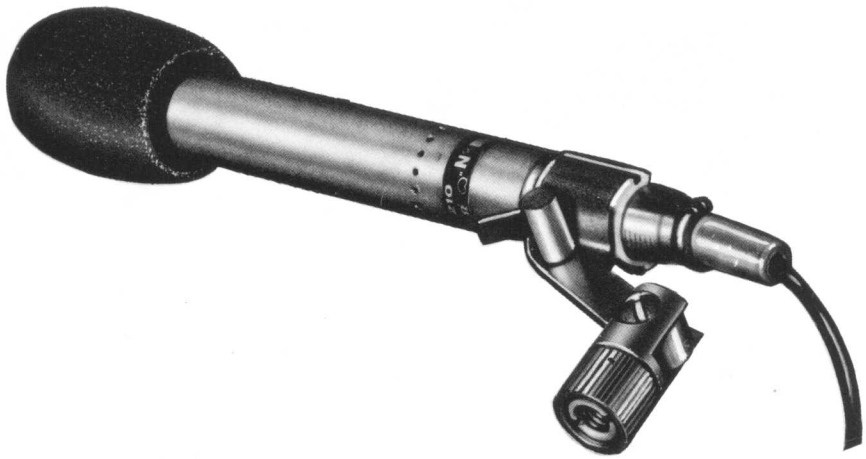


Sensitivity vs. frequency and directivity pattern (types MD 110 and MD 112)





Sensitivity vs. frequency and directivity pattern (type MD 114)

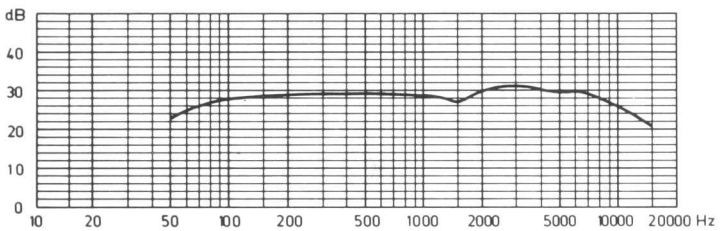


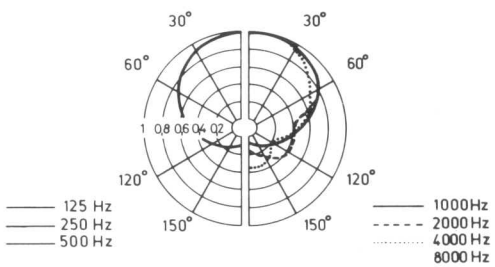
STUDIO DYNAMIC MICROPHONE SETS

MD 210, 221

The sets consist of elements serving for special purposes (for orchestra, announcer, reporter, singing purposes) and of studio microphone type MD 210 and MD 221. These sets meet the high requirements of studio technic.

Technical specifications:	MD 210	MD 221
Principle of the transducer	dynamic	
Rated frequency range	50 to 16,000 Hz	
Free field sensitivity (mV/Pa)	1	1
Frequency responce	according to curve	
Rated impedance	200 Ohms	200 Ohms
Directivity pattern	cardioid	cardioid
Connection	ungrounded, symmetrical	
Built-in connector	Cannon XLR 3 – 50	
Dimensions	∅ 26 x 190 mm	∅ 26 x 195 mm
Weight	~ 0.2 kg	~ 0.25 kg
Front to rear sensitivity index at 1 kHz	15 dB	15 dB
Interfering magnetic sensitivity (μV/50 mOe)	< 10	< 10
Correction at 50 Hz	–	0 dB, –8 dB, –20 dB





Sensitivity vs. frequency and directivity pattern (types MD 210 and MD 221)

ELEMENTS OF SETS

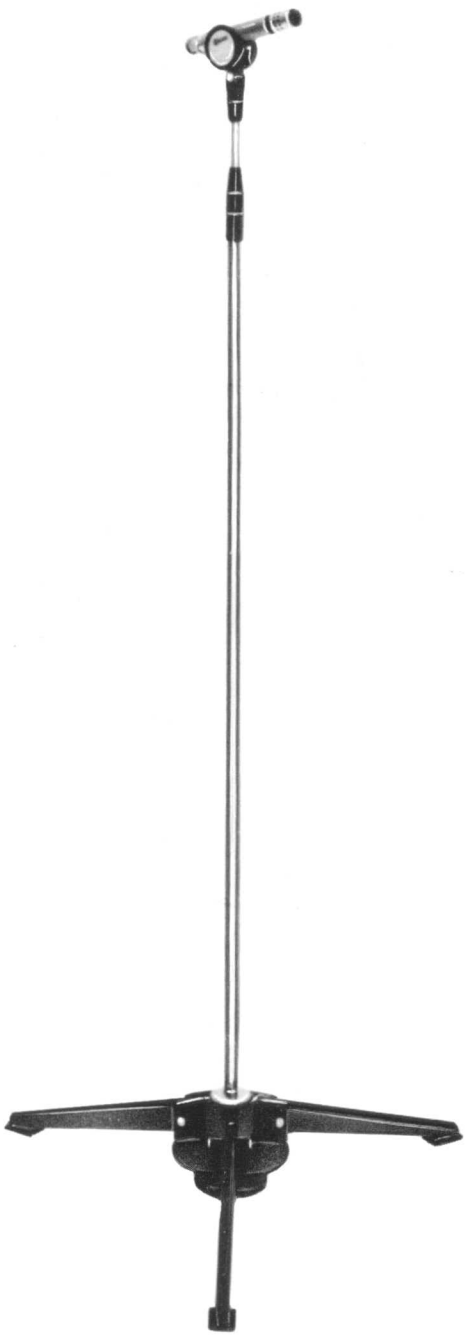
Connector socket (Cannon XLR-3-11C)
Stand clamp (Type BQO 20349)
Speed lock clamp (Type KQO 20466)
Wind screen (Type OUO 7141)
Balanced to unbalanced microphone transformer (Type MKT 1-H)
Table microphone stand (Type MAP 01)
Connecting cable (Type EK 330-10) 10 m fitted with connector Cannon XLR-3-12C)
Connecting cable (Type EK 232-10) 10 m fitted with screened connector plug DIN 41524
Three-pole connector plug according to DIN 41524
Stand for two microphones (Type BQO 6018)
Stand for four microphones (Type BQO 6019)

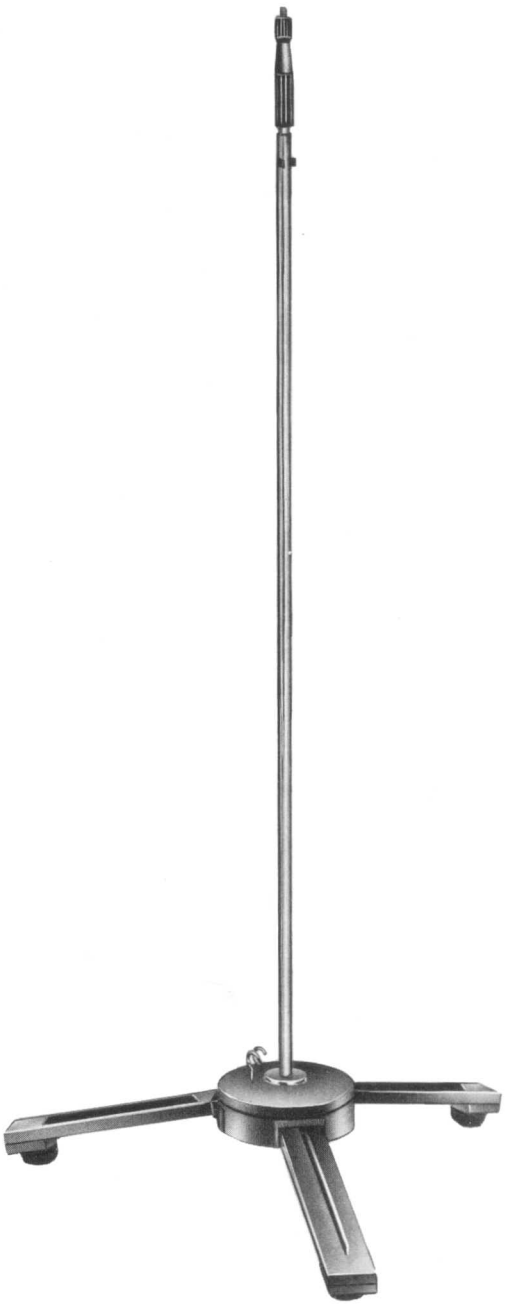
MICROPHONE STANDS

The microphone stands are essential instruments in recording technics, live broadcasting and with almost all broadcasting and public address systems.
The wide variety of our microphone stands has been constructed according to acoustical and aesthetical requirements.
Most of the stands can be utilized with one or more microphones without the risk of falling over. The equipment designed for TV studios are glitterfree. Almost every stands are mechanically protected against step-noise, rumble. The following types and the additional elements render possible the construction of a lot of type variations.

FLOOR MICROPHONE STANDS WITH MECHANICAL FILTER

TYPE	MAX 01	DM 201	DM 203
Fixing screw for the microphone	W 3/8''	W 3/8''	W 3/8''
Diameter of foot circle	680 mm	720 mm	720 mm
Height	1,310 mm	630 mm	1,300 mm
Max. height	2,240 mm	860 mm	2,250 mm
Weight	3.5 kg	4.9 kg	5.3 kg





MAX 01 **DM 203**

FLOOR STAND WITH BOOM ARM

TYPE	DM 211-2	DM 213	DM 221	DM 223	MAP 23 two-jib
Fixing screw for the microphone	W 3/8''	W 3/8''	W 3/8''	W 3/8''	W 3/8''
Diameter of foot circle	720 mm	720 mm	720 mm	720 mm	720 mm
Height	630 mm	1,300 mm	630 mm	1,300 mm	1,300 mm
Max. height	860 mm	3,500 mm	860 mm	3,200 mm	2,300 mm
Length of the boom arm	1,600 mm	1,600 mm	980 mm	980 mm	50 to 980 mm
Weight	5.8 kg	7.7 kg	5.8 kg	7.7 kg	6.7 kg

DM 223 **MAP 23**

TABLE MICROPHONE STANDS

TYPE	MAP 01	DM 110	DM 120	DM 130
Fixing screw for the microphone	W 3/8''	W 3/8''	W 3/8''	W 3/8''
Diameter of foot circle	180 mm	–	118 mm	118 mm
Height	350 mm	50 mm	DM 120 48 mm DM 120/I 98 mm DM 120/II 248 mm	DM 130 48 mm DM 130/I 98 mm DM 130/II 248 mm
Max. height	600 mm	150 mm	DM 120 146 mm DM 120/I 196 mm DM 120/II 346 mm	DM 130 146 mm DM 130/I 196 mm DM 130/II 346 mm
Weight	2.1 kg	0.18 kg	1 kg	1 kg

MAP 01

DM 110

DM 120

STEREO DYNAMIC HEADSETS

TECHNICAL SPECIFICATIONS	FMD 12	FMD 25
Rated impedance (Ohms)	8, 200, 300, 400, 600	8, 200, 300, 400, 600
Rated sensitivity referred to $2 \cdot 10^{-5}$ Pa	FMD 12-8: 119 dB/$\sqrt{W}$ at the other types: 105 dB/$\sqrt{mW}$	FMD 25-8: 119 dB/$\sqrt{W}$ at the other types: 105 dB/$\sqrt{mW}$
Rated power (per side)	FMD 12-8: 5 W at the other types: 200 mW	FMD 12-8: 5 W at the other types: 200 mW
Rated damage limited power	FMD 12-8: 2.5 W at the other types: 100 mW	FMD 25-8: 2.5 W at the other types: 100 mW
Rated frequency range	20 to 20,000 Hz	20 to 20,000 Hz
Max. sound pressure level referred to $2 \cdot 10^{-5}$ Pa	128 dB	128 dB
Total harmonic distortion (at 105 dB average sound pressure level, at 1,000 Hz)	< 1%	< 1%
Technical data of the close talking microphones: Rated frequency range Close talking sensitivity	 50 to 15,000 Hz 0.75 mV/Pa	 50 to 15,000 Hz 0.75 mV/Pa
Rated impedance	200 Ohms	200 Ohms
Directivity pattern	cardioid	cardioid
Weight	0.2 kg	0.35 kg
Electrical connection	according to table	
Applications	Headset with rubber ear cushions offered for various purposes primarily for teaching and language training equipment	This type with soft ear cushions provides high damping of external noise. It is offered primarily for teaching or individual language training equipment

STEREO DYNAMIC HEADSETS

TECHNICAL SPECIFICATIONS	FMD 26	FMD 33
Rated impedance (Ohms)	200, 300, 400, 600	8, 200, 300, 400, 600
Rated sensitivity referred to $2 \cdot 10^{-5}$ Pa	113 dB/$\sqrt{W}$	FMD 33-8: 119 dB/$\sqrt{W}$ at the other types: 105 dB/$\sqrt{mW}$
Rated power (per side)	200 mW 100 mW	FMD 33-8: 5 W at the other types: 200 mW
Rated damage limited power		FMD 33-8: 2.5 W at the other types: 100 mW
Rated frequency range	20 to 20,000 Hz	20 to 20,000 Hz
Max. sound pressure level referred to $2 \cdot 10^{-5}$ Pa	136 dB	128 dB
Total harmonic distortion (at 105 dB average sound pressure level, at 1,000 Hz)	< 1% (at 120 dB sound pressure level)	< 1%
Technical data of the close talking microphones: Rated frequency range Close talking sensitivity	 50 to 15,000 Hz 0.75 mV/Pa	 50 to 15,000 Hz 0.75 mV/Pa
Rated impedance	200 Ohms	200 Ohms
Directivity pattern	cardioid	cardioid
Weight	0.5 kg	0.4 kg
Electrical connection	according to table	
Applications	This type with soft ear cushions is a stable construction. It is suitable for professional purposes. It is offered primarily for teaching, language training broadcasting and intercom systems. It has high damping for external noise	This type with soft ear cushions provides high damping of external noise. It is suitable for professional purposes (e.g. language laboratories) as well as for other ones (e.g. radio amateur, language training, etc.)

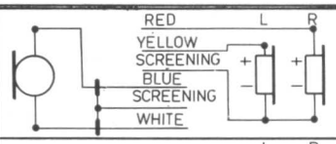
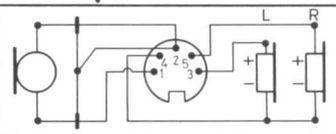
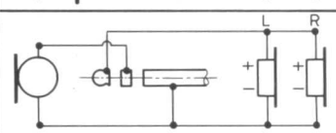
STEREO DYNAMIC HEADPHONES

TECHNICAL SPECIFICATIONS	FDS 12	FDS 25
Rated impedance (Ohms)	8, 200, 300, 400, 600	8, 200, 300, 400, 600
Rated sensitivity referred to $2 \cdot 10^{-5}$ Pa	FDS 12-8: 119 dB/$\sqrt{W}$ other types: 105 dB/$\sqrt{mW}$	FDS 25-8: 119 dB/$\sqrt{W}$ other types: 105 dB/$\sqrt{mW}$
Rated power (per side)	FDS 12-8: 5 W other types: 200 mW	FDS 25-8: 5 W other types: 200 mW
Rated damage limited power (per side)	FDS 12-8: 2.5 W other types: 100 mW	FDS 25-8: 2.5 W other types: 100 mW
Max. sound pressure level referred to $2 \cdot 10^{-5}$ Pa	128 dB	128 dB
Total harmonic distortion at 105 dB average sound pressure level, at 1,000 Hz	$< 1\%$	$< 1\%$
Electrical connection	according to the table	
Weight	0.14 kg	0.3 kg
Applications	Headphone with rubber ear cushions for commercial purposes	Headphone with soft ear cushions. Comfortable to wear even over longer time. High damping of external noise. For music listening, for communication purposes also in noisy-places

STEREO DYNAMIC HEADPHONES

TECHNICAL SPECIFICATIONS	FDS 26	FDS 33
Rated impedance (Ohms)	200, 300, 400, 600	8, 200, 300, 400, 600
Rated sensitivity referred to $2 \cdot 10^{-5}$ Pa	113 dB/$\sqrt{mW}$	FDS 33-8: 119 dB/$\sqrt{W}$ other types: 105 dB/$\sqrt{mW}$
Rated power (per side)	200 mW	FDS 33-8: 5 W other types: 200 mW
Rated damage limited power (per side)	100 mW	FDS 33-8: 2.5 W other types: 100 mW
Max. sound pressure level referred to $2 \cdot 10^{-5}$ Pa	136 dB	128 dB
Total harmonic distortion at 105 dB sound pressure level, at 1,000 Hz	< 1% (at 120 dB sound pressure level)	< 1%
Electrical connection	according to the table	
Weight	0.45 kg	0.35 kg
Applications	Headphone with soft ear cushions. Stable construction. It is suitable for professional purposes (e.g. language labs) as well as for custom ones (e.g. Hi-Fi music). Accessory of studio equipment	Headphone with soft ear cushions. High damping of external noise. It is suitable for professional purposes (e.g. for studios)

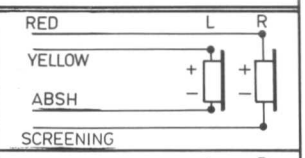
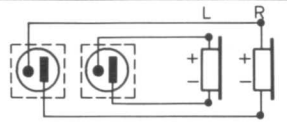
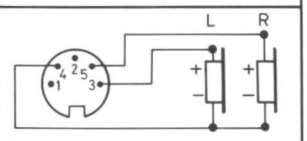
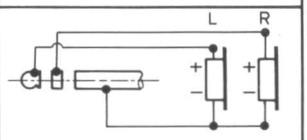
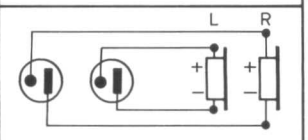
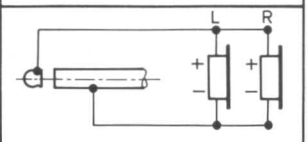
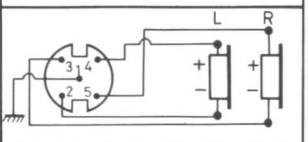
TABLE OF HEADPHONES

Typ / CONNECTOR CODE (LAST NUMBER)	FMD 12					FMD 25					FMD 26				FMD 33					CONNECTION OF HEADPHONES WITH MICROPHONE TYPE FMD
	8	200	300	400	600	8	200	300	400	600	200	300	400	600	8	200	300	400	600	
0 WITHOUT CONNECTOR	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
2 DKAS 05	–	+	+	+	+	–	+	+	+	+	+	+	+	+	–	+	+	+	+	
3 ø 6,25 mm Jack plug	–	+	+	+	+	–	+	+	+	+	+	+	+	+	–	+	+	+	+	
6 DEPENDING ON THE REQUIREMENT (SPECIAL CONNECTION)	–	–	–	–	–	–	–	–	–	–	–	–	–	+	–	–	–	–	–	
7 DKAS 05 (NOT STANDARDIZED CONNECTION)	–	–	–	–	–	–	–	–	–	–	+	–	–	–	–	–	–	–	–	

EXAMPLE: ⊛FMD 26 - 602
IT MEANS : Headphone with microphone type FMD 26 ; 600Ω ; DKAS 05 plug

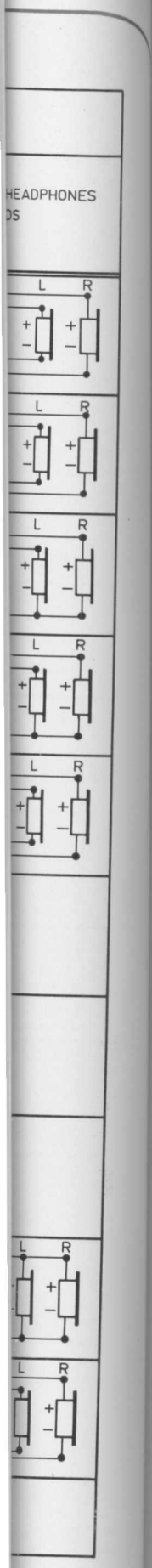
Table of headphone connections

TABLE OF HEADPHONES

Typ / CONNECTOR CODE (LAST NUMBER)	FDS 12					FD 13	FDS 25					FDS 26				FDS 33					CONNECTION OF HEADPHONES TYPE FDS
	8	200	300	400	600	400	8	200	300	400	600	200	300	400	600	8	200	300	400	600	
0 WITHOUT CONNECTOR	+	+	+	+	+	—	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
1 Beckhiet „WS"	—	+	+	+	+	—	—	+	+	+	+	⊛ +	+	+	+	—	+	+	+	+	
2 DKAS 05	—	+	+	+	+	—	—	+	+	+	+	+	+	+	+	—	+	+	+	+	
3 ø 6,25 mm Jack plug	—	+	+	+	+	—	—	+	+	+	+	+	+	+	+	—	+	+	+	+	
4 DKAD 02	—	+	+	+	+	—	—	+	+	+	+	+	+	+	+	—	+	+	+	+	
5 DEPENDING ON THE REQUIREMENT (SPECIAL CONNECTION)	—	—	—	+	—	—	—	—	—	—	—	—	—	—	+	—	—	—	—	—	
6 DEPENDING ON THE REQUIREMENT (SPECIAL CONNECTION)	—	—	—	—	—	+	—	—	—	—	—	—	—	—	+	—	—	—	—	—	
7 DKAS 05 (NOT STANDARDIZED CONNECTION)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
8 ø 3,5mm Jack plug (VIA A 4m LONG SPECIAL CABLE)	—	+	+	+	+	—	—	+	+	+	+	+	+	+	+	—	+	+	+	+	
9 IEC-14	—	+	+	+	+	—	—	+	+	+	+	+	+	+	+	—	+	+	+	+	

EXAMPLE: ⊛ FDS 26 - 201
IT MEANS: Headphone type FDS 26 ; 200 Ω ; Beckhiet „WS" plug

Table of headphone connections



SCREENED EXTENSION CABLES

3 KSZ, 5 KSZ

A.F. extension cables of standard construction. Three-pole screened plugs type DIN 41524 (cable type 3 KSZ) and five-pole screened plugs type DIN 41524 (cable type 5 KSZ) resp. and plastic fixing caps are mounted to both ends of the cable. Extension cable type 3 KSZ containes two cores, while type 5 KSZ four-cores. Both cables are of flexible construction and fitted with external insulation. Cable length is indicated by a number separated from the type designation by a hyphen (e.g. 3 KSZ-6 means a two-core connecting cable of 6 m length).

Technical specifications:

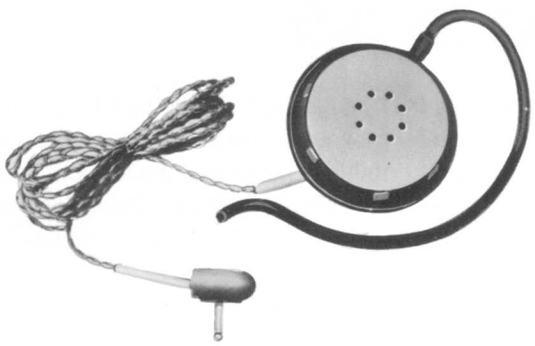
Available cable lengths: 3 KSZ – 3, 6, 10, 15, 20, 26, 30 m
5 KSZ – 6, 10, 15, 20, 30 m

SCREENED EXTENSION CABLES

EX

These are screened two core extension cables with connector type Cannon XLR-3-11C mounted to one of its ends, while any other type of connector can be mounted to the other end of the cable. The kind of connector is indicated by the type designation. Length of the cable is also given by the number separated from the type designation by hyphen (e.g. type EX 232-10 means a 3-pole cable of 10 m length and fitted with a connector type DIN 41524).

EX 232-3 3-pole connector (DIN 41524)
EX 300- without connector (tinned cable end)
EX 330- connector Cannon (XLR-3-12C)
EX 331- connector Amphenol (T 3260)



EARPHONES

OD 11-400

PILLOWPHONE

PH 20

TECHNICAL SPECIFICATIONS	EARPHONES OD 11-400	PILLOWPHONE PH 20
Rated impedance	400 Ohms	8, 15, 200, 400 Ohms
Rated power	200 mW	PH 20-8 5 W PH 20-15 10 W The other types 200 mW
Rated damage limited power	100 mW	PH 20-8 2,5 W PH 20-15 5 W The other types 100 mW
Rated frequency range	100 to 10,000 Hz	50 to 15,000 Hz
Total harmonic distortion factor	1%	
Accessories	1.2 m cable with Jack plug of ∅ 3.5 mm	2 m cable without connector
Weight	0.014 kg	0.062 kg
Applications	Simultaneous interpreting sets, conference systems	For hospitals, and homes, built into pillow

STUDIO MONITORING LOUDSPEAKERS, SOUND BOXES AND SOUND COLUMNS, SOUND BOX SERIES IN PLASTIC ENCLOSURE

SOUND ABSORBING ELEMENTS

HEC 12 Studio monitoring loudspeaker
HEC 20 Small size studio monitoring loudspeaker
HEC 24 Battery supplied small size studio monitoring loudspeaker
HOX 05 Loudspeaker system 200/100 W
HOX 06 Loudspeaker system 140/100 W
HOX 07 Loudspeaker system 140/100 W
HOX 08 Loudspeaker system 140/100 W
HOX 21 Loudspeaker system 100/50 W
HOX 22 Loudspeaker system 200/100 W
HOX 41 Loudspeaker system 40/30 W
HOX 55 Spherical loudspeaker 25/12 W
HOX 56 Sound box 25/12 W
HT 220 Horn loudspeaker 20 W
HTB 11, HTB 12 High power loudspeaker system
HTX 12 Professional loudspeaker system 50 W
HTX 20 Small size professional loudspeaker system 50 W
HTX 55 Spherical loudspeaker 10/5 W
HTB 20 Wall sound radiator 4 W
HTP 30 Sound column 25 W
HTP 30/A Sound column 50 W
HTP 45 Cardioid sound column 50 W
HTP 90 Cardioid sound column 100 W
HYB 52, HYB 53, HYB 54, HYB 55 Sound radiators for hotels

DYNAMIC LOUDSPEAKERS

HX 121, HX 123, HX 124, HX 125, HX 127, HX 128 wide range loudspeaker of ∅ 125 mm
HX 301 woofer of ∅ 300 mm
HX 401 woofer of ∅ 400 mm
HT 101 Horn tweeter

SOUND ABSORBING ELEMENTS

HE... Low-frequency sound absorber
Hp... Mid-frequency sound absorber
HM... High-frequency sound absorber
HK 01 Noise absorbing prism

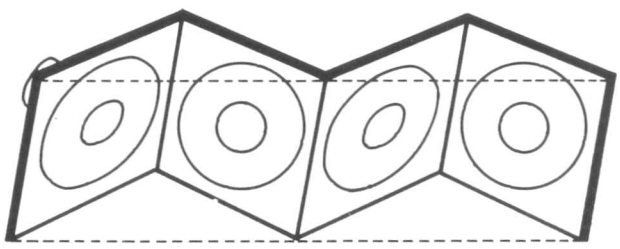
STUDIO MONITORING LOUDSPEAKER SYSTEM

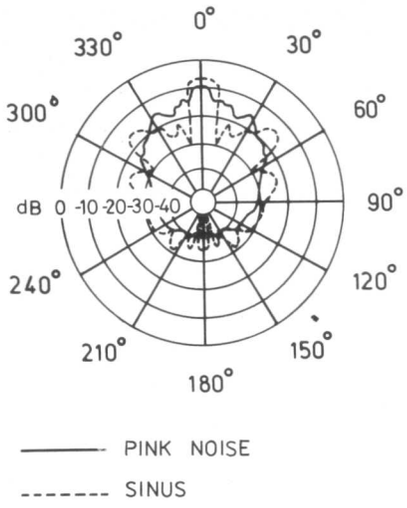
HEC 12

It is made for radio-, TV-, film and recording studios. It is designed on the basis of up-to-date scientific results and according to the reqirements of artists and technicians working in studios. The 12 different mechanical fittings applicable to the basic type help to solve the arrangement problems. Its radiating parameters are excellent, moreover, equalizing possibility is also provided, which results in practically identical monitoring circumstances also in studios of different acoustics.

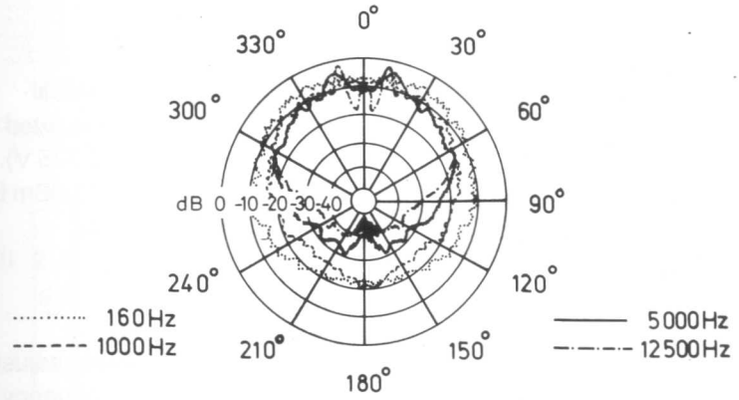
Acoustical system of the basic type

Tweeter unit: 4 loudspeakers of ∅ 125 mm with specially soft rim
Impedance: 4 Ohms
Woofer unit: 1 loudspeaker of ∅ 300 mm with specially soft rim
Impedance: 4 Ohms

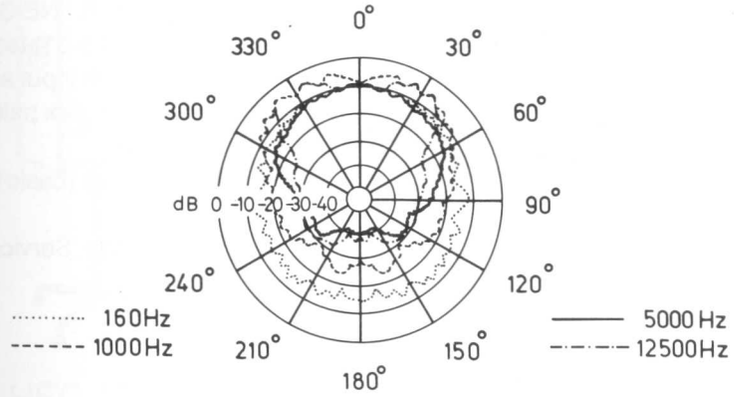




Typical directivity pattern measured with a) 5 kHz sinusoidal signal, b) 1/3 octave band, 5 kHz center frequency pink noise



Vertical directivity patterns of HEC 12 measured with 1/3 octave band pink noise



Typical horizontal directivity patterns of HEC 12 measured with 1/3 octave band pink noise

ELECTRICAL SYSTEM OF THE BASIC TYPE HEC 12

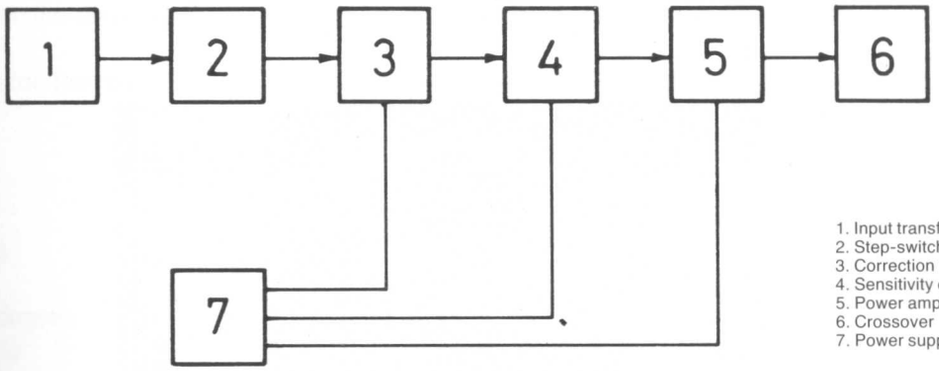
Consists of two units: a) amplifier
b) mounted chassis serving for mechanical and electrical connections.

Features of the studio monitoring loudspeaker type HEC 12

- High reliability
- Wide frequency range
- High sound power
- Low harmonic distorsion
- Practically frequency-independent sound pressure level
- Short decay time
- Excellent ''presence'' effect
- Adjustable sound pressure level
- Adjustability to achieve standardized listening conditions
- Up-to-date electronics built-in 19'' Rack system
- Simple adjustment and servicing
- Easy movability
- Very small size and weight compared with quality and power

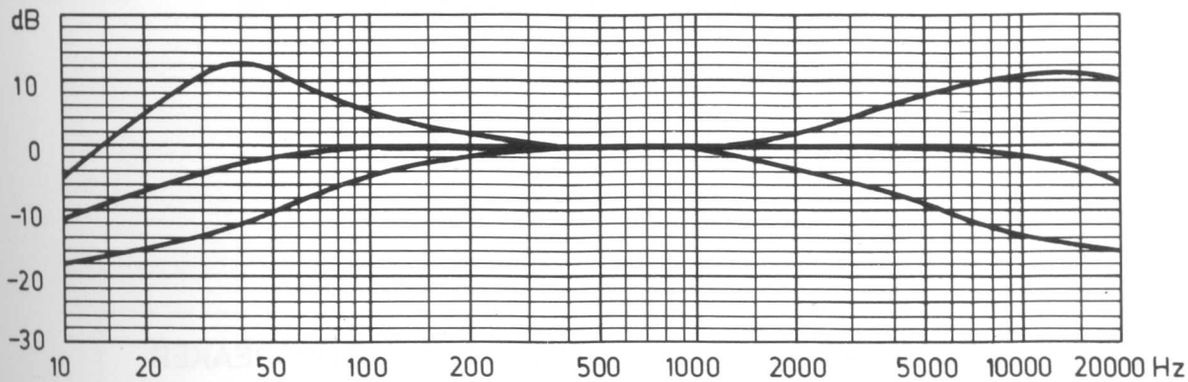
Technical specifications:

Suggested room-volume	$<$ 200 cu.m
Input	ungrounded, symmetrical
Rated input impedance	$>$ 10 kOhms (over the rated frequency range)
Rated input level	+ 6 dB (referred to 0.775 V). It can be adjusted from 0 dBm up to +18 dBm by a potentiometer built in the equipment.
Rated sound pressure level at the rated input level	105 dB (referred to 1 m, $2 \cdot 10^{-5}$ N/sq.m
Rated frequency range	40 to 16,000 Hz
Decay time	approx. 5 ms
Tone control	$\pm$ 10 dB, continuously adjustable (referred to the high- and low frequency limits of the rated frequency range)
Cross-over frequency	1 kHz
Cross-over attenuation	12 dB/octave
Rated output power of the amplifier	50 W (in the rated frequency range loaded by a rated impedance of 4 Ohms)
Volume control	in 11 steps of 1.5 dB
Mains voltage	220 V, 50/60 Hz (changeable to 117 V, 50/60 Hz)
Current consumption	0.9 A
Connector (at the rear side)	mains (Cannon XLR LNE-31) A.F. (Cannon XLR 3-31) tests points (cross-over network input and output terminals coupled to banana-jack pairs by short-current limiting resistors)
Dimensions	820 x 540 x 320 mm (basic type)
Weight	33 kg
Accessories	Operating manual + Service manual

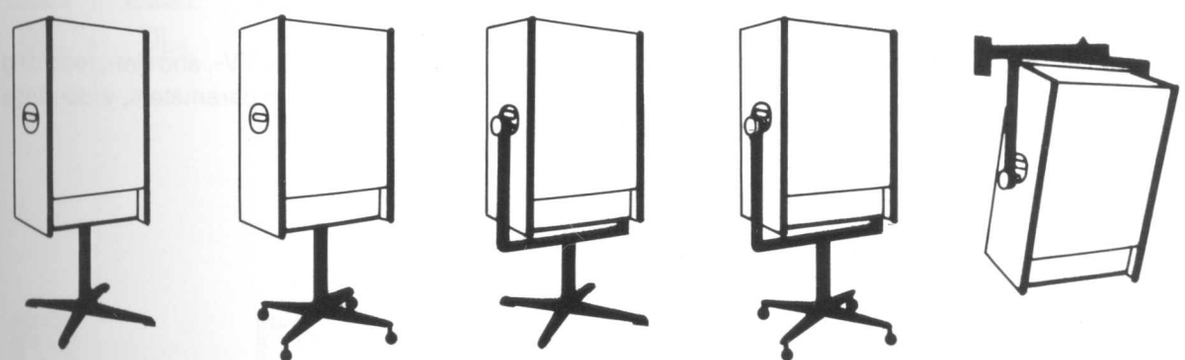


1. Input transformer
2. Step-switch volume control
3. Correction unit
4. Sensitivity control
5. Power amplifier
6. Crossover
7. Power supply

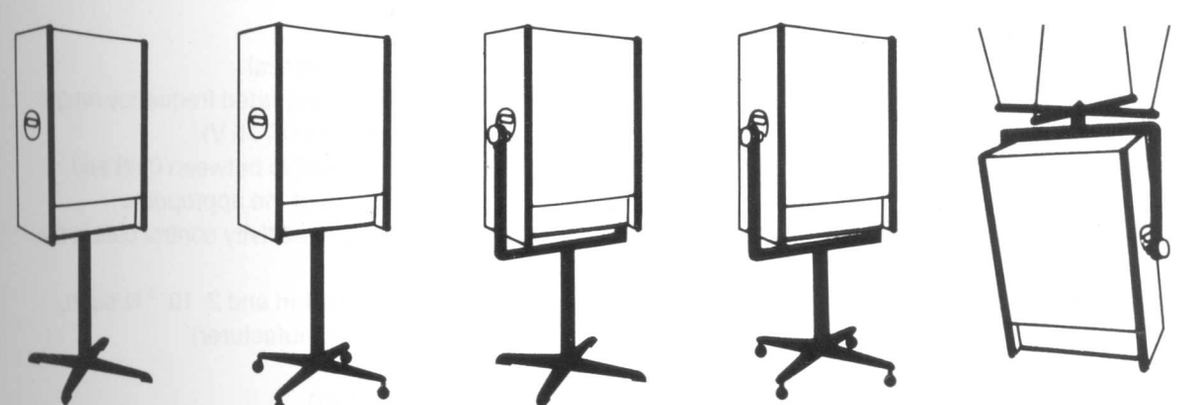
Amplifier functional block diagram



Typical frequency responses with tone controls in mid. and extreme positions

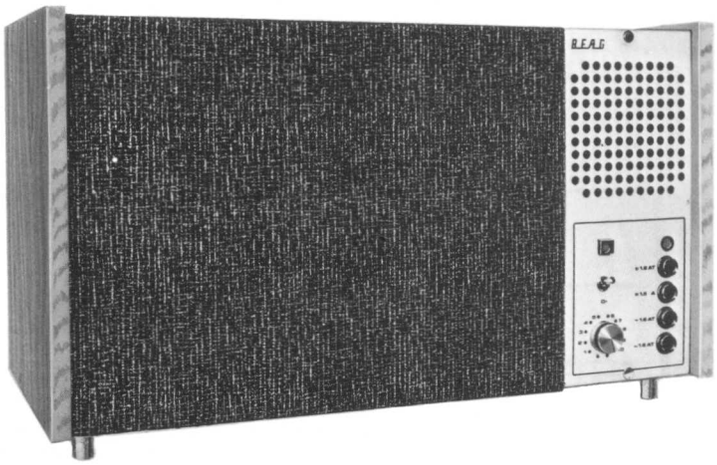


HEC 12-01 HEC 12-02 HEC 12-03 HEC 12-04 HEC 12-06



HEC 12-11 HEC 12-12 HEC 12-13 HEC 12-14 HEC 12-07

Type versions of studio monitoring loudspeaker type HEC 12



HEC 20 SMALL SIZE STUDIO MONITORING LOUDSPEAKER

HEC 20

The studio monitoring loudspeaker type HEC 20 is made for medium size radio-, TV-, and film-, recording studios. Reliable monitoring of recording is facilitated by its excellent acoustic parameters, wide-range loudspeaker system, the built-in power amplifier and equalizer unit.

Features

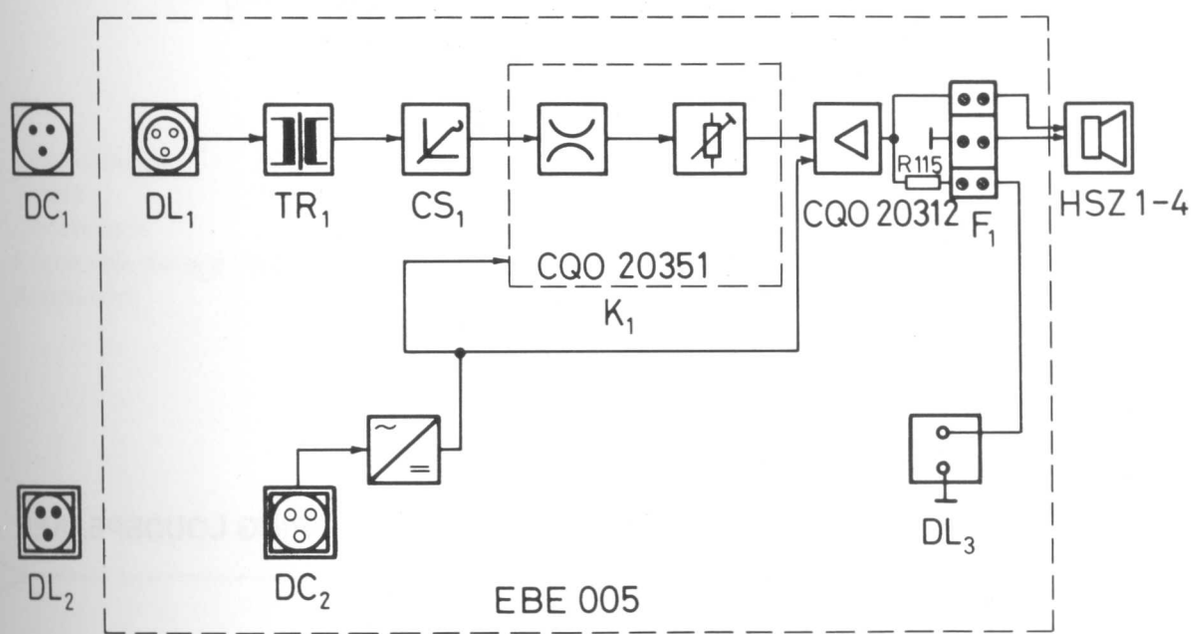
- High reliability
- Practically frequency-independent directivity patterns
- Practically flat frequency response
- Excellent ''presence'' effect
- Five different fittings are available for the basic type

Technical specifications

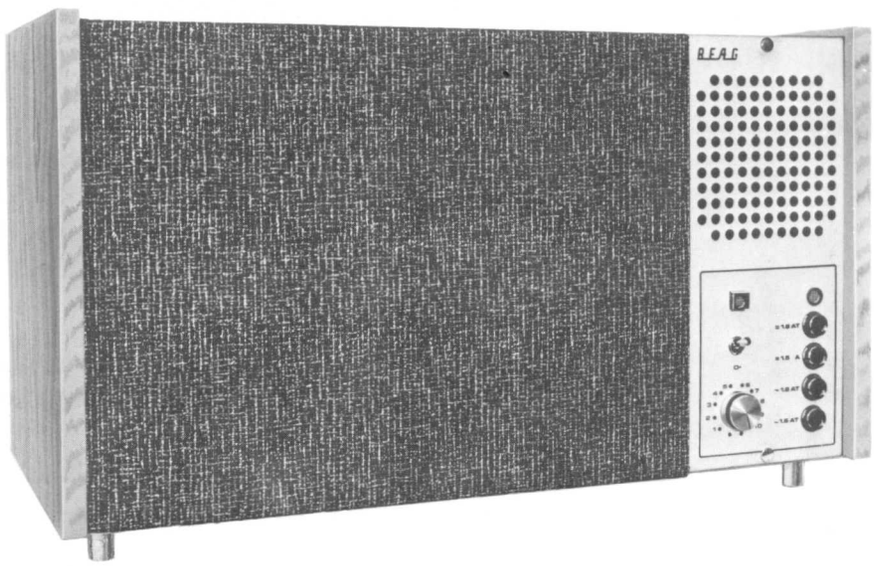
Suggested room volume	< 125 cu.m.
Input	ungrounded, symmetrical
Rated input impedance	> 10 kOhms (over the rated frequency range)
Rated input level	+ 6 dBm (referred to 0.775 V) The level is changeable between 0 dB and +18 dB in the case of the appropriate adjustment of the sensitivity control built in the equipment.
Rated sound pressure level at the rated input level	101 dB (referred to 1 m and $2 \cdot 10^{-5}$ N/sq.m, (adjusted by the manufacturer)
Rated frequency range	40 to 16,000 Hz
Volume control	in 11 steps of 1.5 dB
Mains voltage	220 V*, 50/60 Hz (changeable to 117 V, 50/60 Hz)
Rated current consumption	0.32 A

* 117 V, 50–60 Hz version can be ordered by the number HEC 20 A.

Indicators (on the amplifier)	"Short-circuit" lamp (green) "ON" lamp (red)
Connectors (on the rear)	Mains: Cannon XLR LNE-31 A.F.: Cannon XLR 3-31 Test points: The terminals of the amplifier (coupled to banana socket through the current limiting resistors).
Dimensions	540 x 290 x 260 mm
Weight	14 kg (basic type)
Protection degree	IP 20
Climate code	10/040/02 (IEC 68-2)
Permissible storage temperature	−25°C...+55°C
Accessories	Operating manual and service manual Mains connector plug (Cannon XLR LNE 12-C) AF connector plug (Cannon XLR 3-12 C) 3 pcs fuses 1.6 AT 1 pc fuse 1.5 A 1 pc dust bag Decorative screws with conical plastic and chrome-plated metal washers (4 pcs each)



Functional block diagram of HEC 20



BATTERY SUPPLIED HEC 24 SMALL SIZE STUDIO MONITORING LOUDSPEAKER

HEC 24

(For recording and O.B. vans.)

Utilization of this small studio monitoring sound radiator is suggested as checking equipment primarily for O.B. Vans of TV-, radio-, film- and recording studios. The 24 V DC supply voltage makes possibile to use it independently of mains. Of course, it can also be utilized for sonorization purposes. The quality of mono, stereo just as quadrophone broadcasting or recording can be evaluated and controlled by the sound engineer due to the proper acoustical parameters.

Features

- High reliability
- Directivity pattern practically independent from the frequency
- Sound pressure level practically independent from the frequency
- High quality presence
- Easy to move

Technical specifications

Suggested room volume	< 125 cu.m.
Input	ungrounded, symmetrical
Rated input impedance	> 10 kOhms over the rated frequency range
Rated input level	+6 dBm (referred to 0.775 V). The rated input level is changeable between 0 dB and + 18 dB by the appropriate adjustment of the sens. Control built in the equipment.
Rated sound pressure level at the rated input level	101 dB (referred to 1 m and $2 \cdot 10^{-5}$ N/sq.m. (adjusted by the manufacturer)
Rated frequency range	40 to 16,000 Hz
Volume control	in 11 steps of 1.5 dB
Supply voltage	24 V DC. − 5 + 15%
Rated current consumption	2.6 A
Indicators (on the amplifier)	Short-circuit lamp (yellow) ON lamp (red)
Controls (on the amplifier)	Supply switch Volume control knob
Connectors (at the rear)	Supply voltage: Cannon XLR LNE-31 A.F.: Cannon XLR 3-31 Test points: Terminals of the amplifier (coupled to banana socket through the current limiter resistors)
Dimensions	540 x 290 x 260 mm (basic type)
Weight	13 kg
Climate code	10/040/02 (IEC 68-2)
Permissible storage temperature	− 25°C . . . + 55°C
Accessories	Operating manual and service manual Supply connector plug (Cannon XLR LNE-12 C) A.F. connector plug (Cannon XLR 3-12 C) 3 pcs fuses 6.3 AT 1 pc dust guard Decorative screws with conical plastic and chrome-plated metal washers (4 pcs each)

LOUDSPEAKER SYSTEM

HOX 05

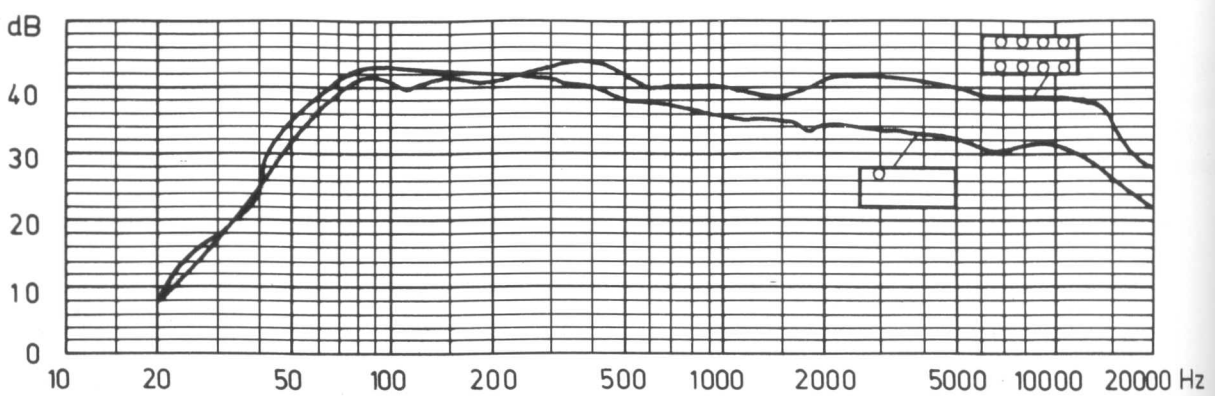
The high quality loudspeaker system is suitable for sound reinforcement of clubs, places of amusement, homes. The sound box includes two loudspeaker systems radiating into two opposit directions. The direct sound is made more plastic by the delayed sound originating from the rear side radiator and reflected by the wall.

Features

- Small size
- Low distortion
- High fidelity
- Adjustable "presence" effect

Technical specifications

Rated power	200 VA
Rated damage limited power	100 VA
Rated frequency range	45 to 20,000 Hz
Rated impedance	8 Ohms
Rated sensitivity (on the labeled side)	94 dB (referred to 1 m, and 1 VA)
Dimensions	600 x 540 x 315 mm
Weight	16 kg



Frequency response

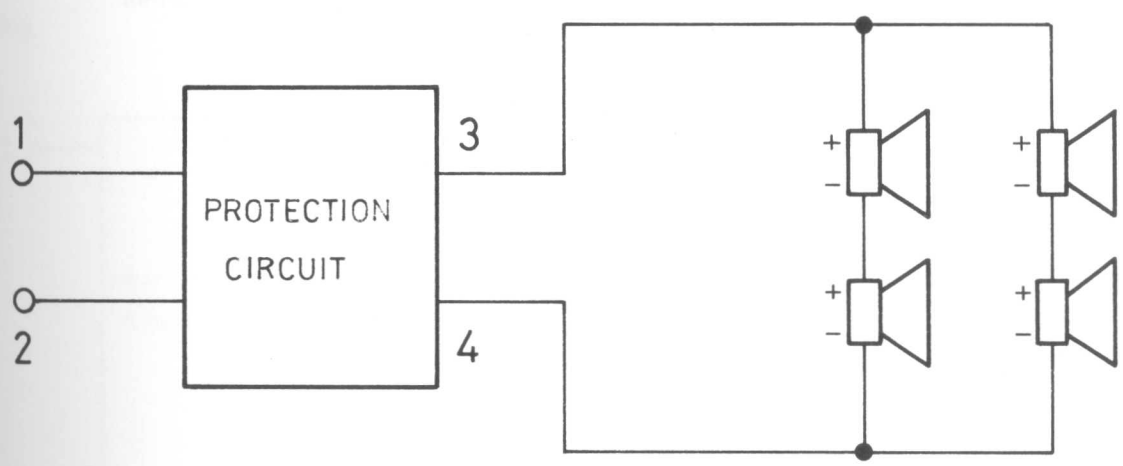
LOUDSPEAKER SYSTEMS OF THE BEAT-SET

HOX 06

This type is designed for solo- and rhythm-guitar and electronic organ of beat bands. Overload protecting circuit with automatic control is built in the box inside.
The box comprises four loudspeakers of ∅ 300 mm. The box is covered with leather-cloth, fitted with angle staffs and self-aligning rollers. Flushed holders on the sides facilitate transportation.

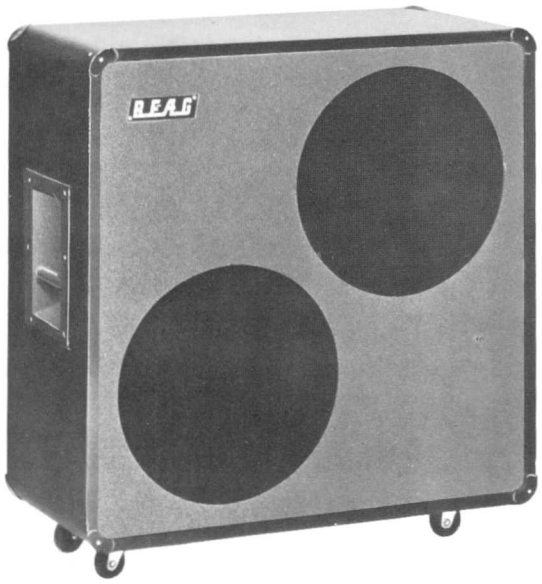
Technical specifications

Rated power	140 VA
Rated damage limited power	100 VA
Rated impedance	8 Ohms
Rated frequency range	50 to 9,000 Hz
Rated sensitivity	100 dB (referred to 1 m, and 1 VA)
Dimensions	750 x 750 x 350 mm
Weight	36 kg
Connection	coaxial Jack plug of ∅ 6.5 mm



Circuit diagram

4 × HX 301 — 8



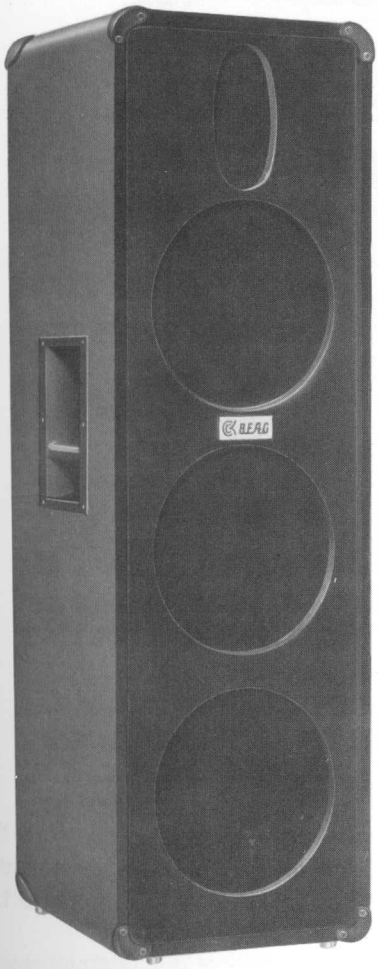
LOUDSPEAKER SYSTEM

HOX 07

It is a loudspeaker system for beat bands serving for sound reinforcement of bass guitar. The box comprises two loudspeakers of ∅ 400 mm. Transportation is facilitated by flushed, holders on the sides of the leather-cloth covered box and by the self-aligning rollers.
The overload-protecting circuit connected to the input of the sound radiator limitates automatically the output power in case of overload.

Technical specifications

Rated power	140 VA
Rated damage limited power	100 VA
Rated impedance	8 Ohms
Rated frequency range	40 to 5,000 Hz
Rated sensitivity	100 dB (referred to 1 m, and 1 VA)
Dimensions	750 x 750 x 350 mm
Weight	36 kg
Connecting	coaxial Jack plug of ∅ 6.5 mm



SOUND COLUMN

HOX 08

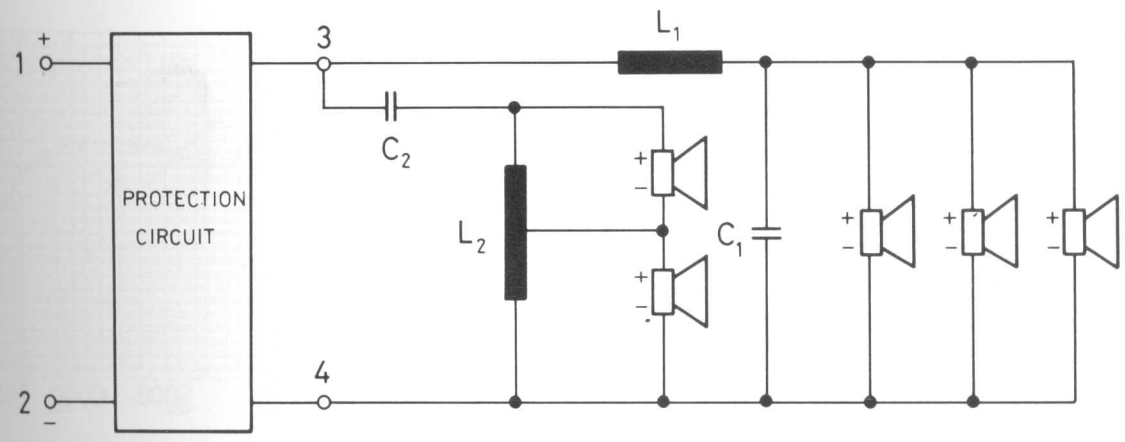
High forward-reverse ratio is provided by the cardioid directivity pattern, which is a novelty in the field of beat sing-columns. It is advantageous, because the performer standing just behind the sound column is not disturbed by the high sound pressure level, while high power is radiated, into the room.

The sound column is designed for beat singers. The performer is not disturbed by the high sound pressure level because of the two way acoustic system, the cardioid directivity pattern and by the high forward reverse ratio of the radiator. The box containes two pressure chamber tweeters and three woofers of ∅ 300 mm. Flushed holders on the sides of the leather-cloth covered box facilitate transportation.

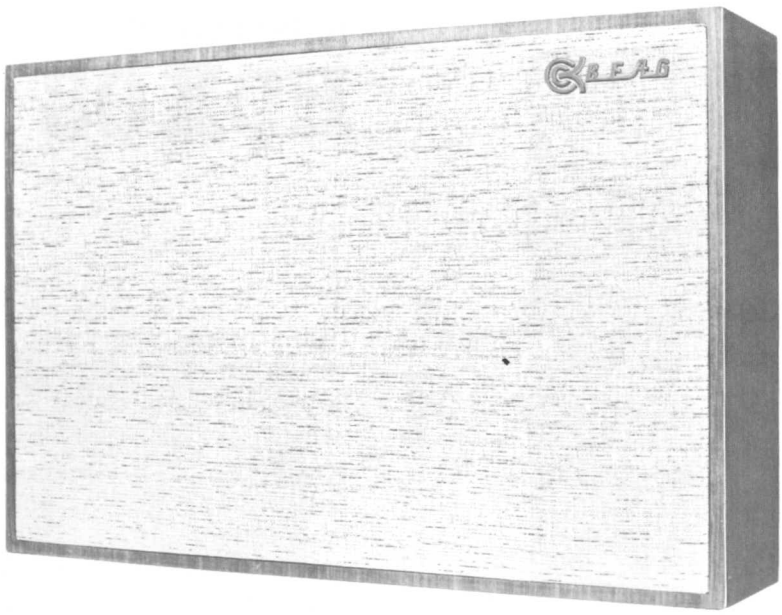
The overload protecting circuit connected to the input of the sound radiator limitates automatically the output power in case of overload.

Technical specifications

Rated power	140 VA
Rated damage limited power	100 VA
Rated impedance	8 Ohms
Rated frequency range	70 to 16,000 Hz
Rated sensitivity	103 dB (referred to 1 m, and 1 VA)
Dimensions	1201 x 380 x 350 mm
Weight	45 kg
Connecting	coaxial Jack plug of ∅ 6.5 mm



Circuit diagram



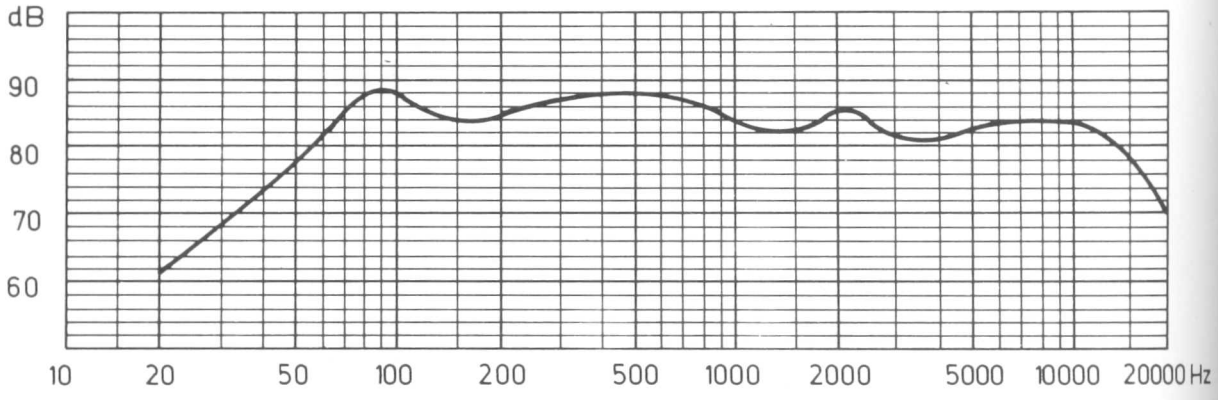
SOUND BOX

HOX 21

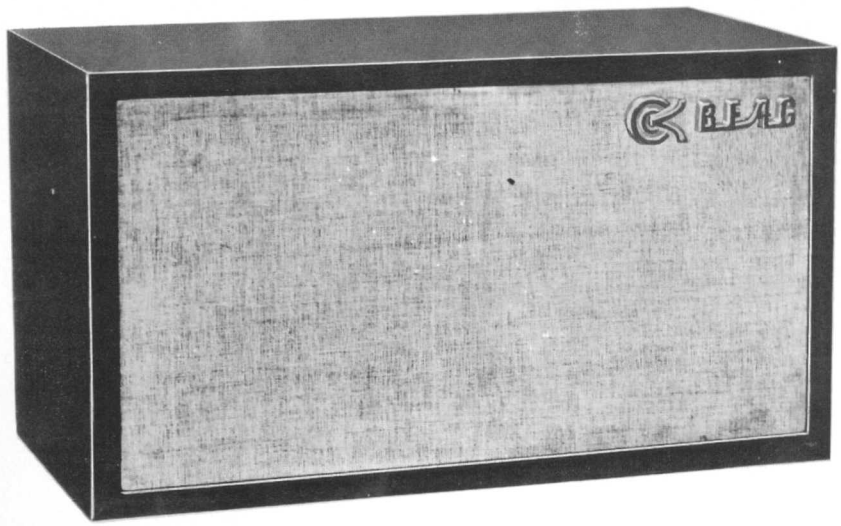
Sound box of modern form fitting well the environment. The sound field formed by this sound box is practically independent of frequency. It is fully suitable for home reinforcement purposes because high stereophonic sensation is made possible by the "presence" effect, and the box can be hung on the wall, therefore easy to place. The box includes four loudspeakers of ∅ 125 mm with soft rim.

Technical specifications

Rated power	100 VA
Rated damage limited power	50 VA
Rated impedance	8 Ohms
Rated frequency range	60 to 20,000 Hz
Rated sensitivity	93 dB (referred to 1 m, and 1 VA)
Dimensions	400 x 600 x 140 mm
Weight	6.5 kg



Frequency response



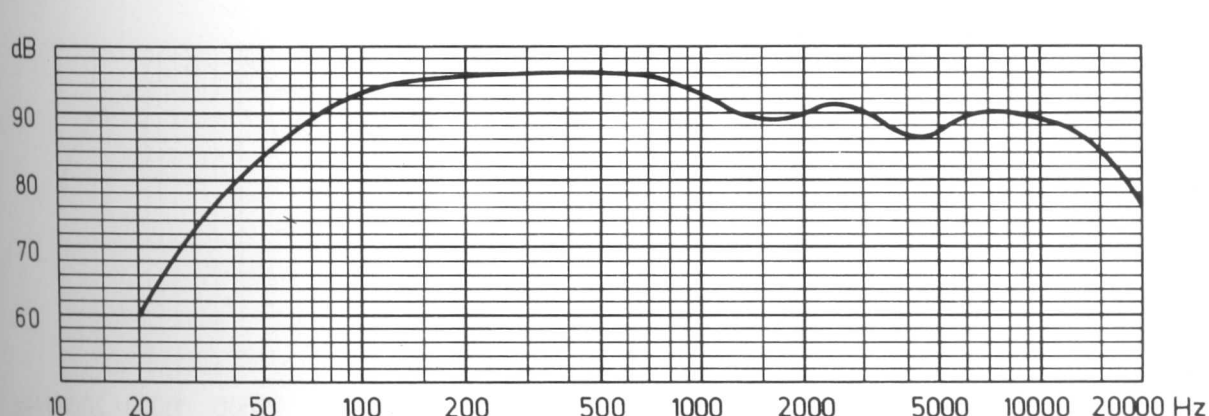
LOUDSPEAKER SYSTEM

HOX 22

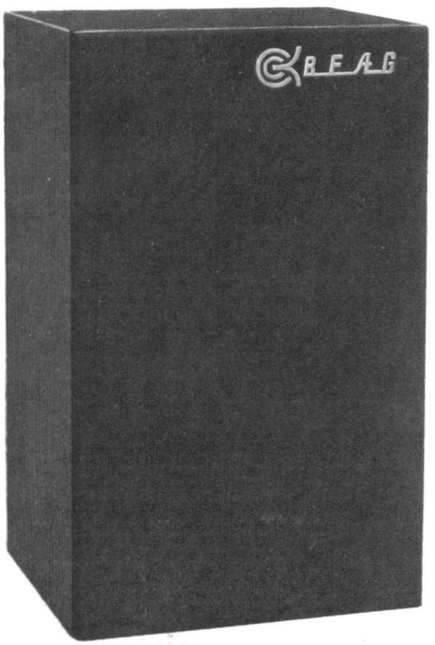
High power loudspeaker system of small size. Due to its acoustical construction a sound field practically independent of frequency can be formed. The equipment can also be used in reinforcement systems. Extensivness of the sound source can also be perceived well in case of stereo programme, as a result of the "presence" effect. The box comprises eight loudspeakers of ∅ 125 mm with soft rim.

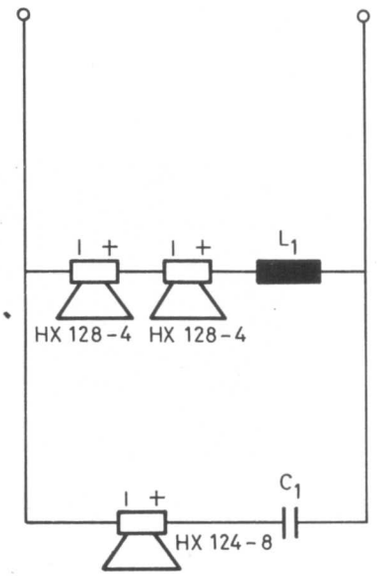
Technical specification

Rated power	200 VA
Rated damage limited power	100 VA
Rated impedance	8 Ohms
Rated frequency range	45 to 20,000 Hz
Rated sensitivity	95 dB (referred to 1 m, and 1 VA)



Frequency response





Circuit diagram

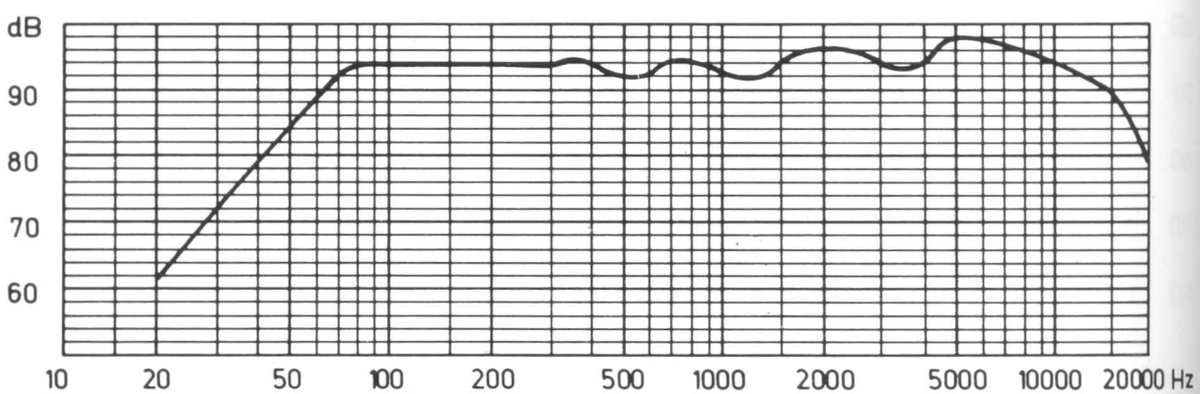
SOUND BOX

HOX 41

The sound box type HOX 41 known in Western Europe as SWING 3000 represents a top design both in form and construction. It can be utilized in every kind of environment. It can operate with or without frontplate, according to the listening customs. Further, it is suitable to operate in lying or standing position. The box containes two woofers of ∅ 125 mm with soft rim, developed for this special purpose and one tweeter of ∅ 125 mm.
The sound box is an optimally damped vanted box.

Technical specifications

Rated power	40 VA
Rated damage limited power	30 VA
Rated impedance	8 Ohms
Rated frequency range	40 to 20,000 Hz
Rated sensitivity	92 dB (referred to 1 m, and 1 VA)
Dimensions	470 x 285 x 245 mm
Weight	7.8 kg



Frequency response

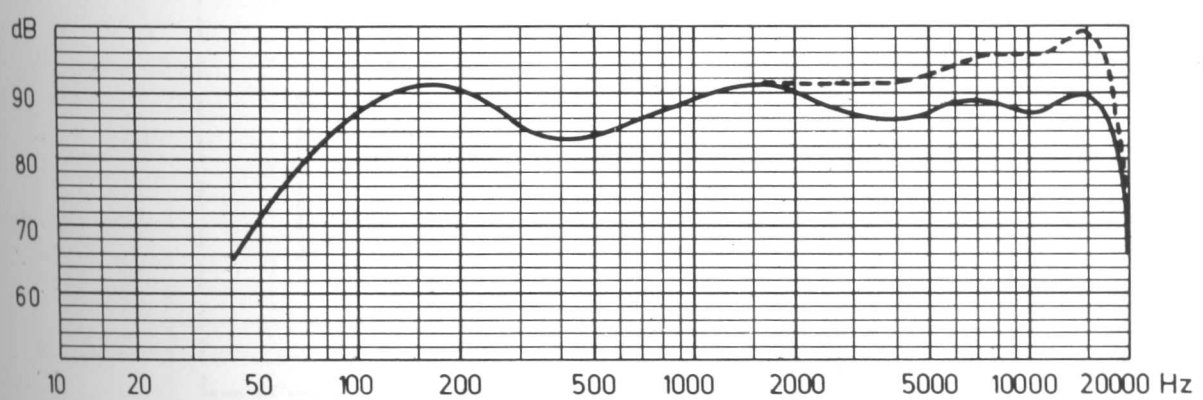
SOUND BOX

HOX 55

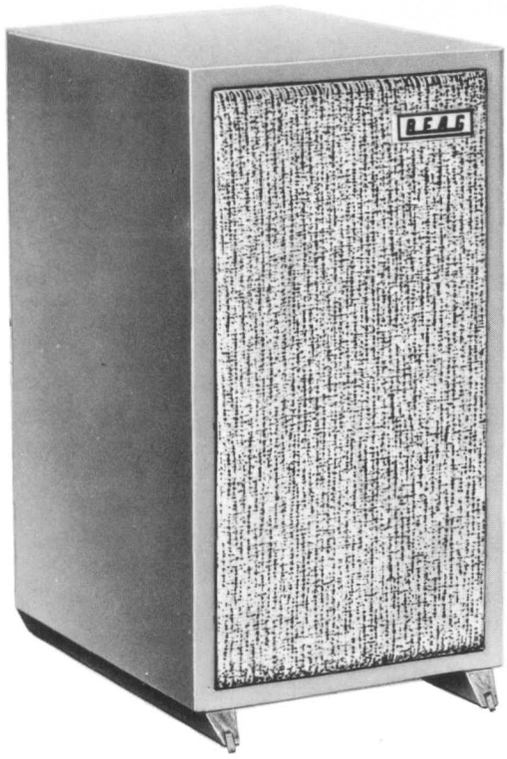
Spherical sound box of small size. It has aesthetical appearance, fits every kind of environment. It is produced in several colours, so it can be utilized together with modern and less modern, or with professional and commercial equipment because of appropriate colour and form. The use of this sound box is recommended in places where its radiated power is sufficient (e.g. clubs, hotels, transits, living rooms, surgeries...) because it can be placed at any places (ceiling shelf, table, wardrobe, etc.).

Technical specifications

Rated power	25 VA
Rated damage limited power	12 VA
Rated impedance HOX 55 A	4 Ohms
HOX 55 B	8 Ohms
Rated frequency range	60 to 20,000 Hz
Rated sensitivity	88 dB (referred to 1 m, and 1 VA)
Dimensions	∅ 215 mm
Full height	260 mm
Weight	2 kg



Frequency response in an average living room



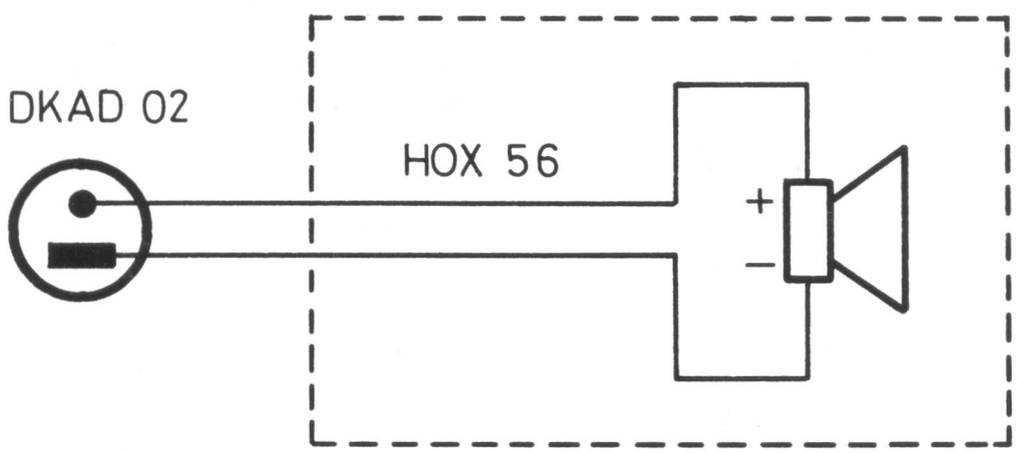
SOUND BOX

HOX 56

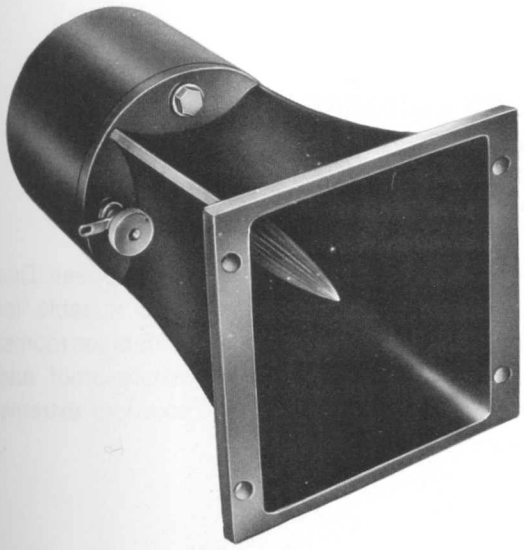
Sound box of aesthetical apperiance and up-to-date construction. It can be used in studios of schools, colleges, hotels because of its small size. HI-FI reproduction of music programmes is provided by this sound box. One loudspeaker of ∅ 125 mm is built into the box.

Technical specifications

Rated power	25 VA
Rated damage limited power	12 VA
Rated impedance	4 Ohms
Rated frequency range	80 to 20,000 Hz
Rated sensitivity	86 dB (referred to 1 m, and 1 VA)
Dimensions	315 x 163 x 204 mm
Weight	3.2 kp



Circuit diagram



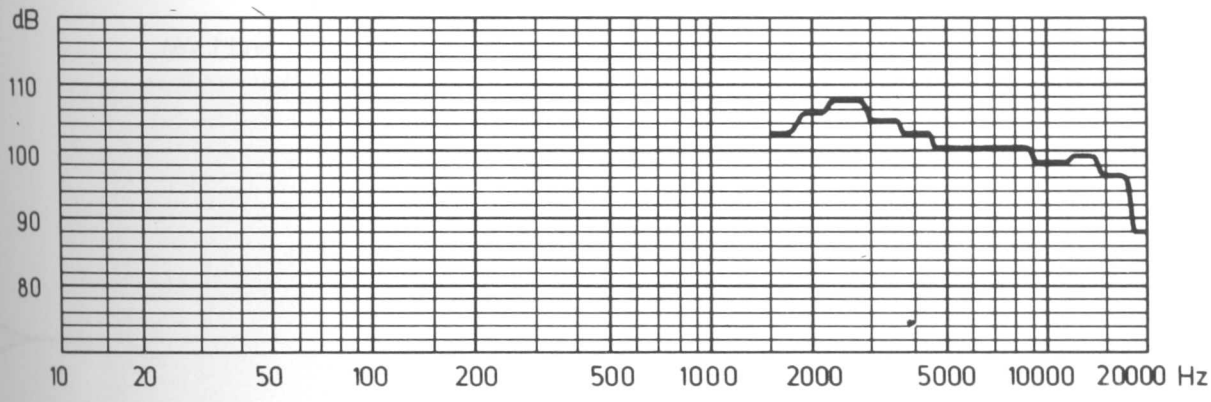
HORN TWEETER

HT 101

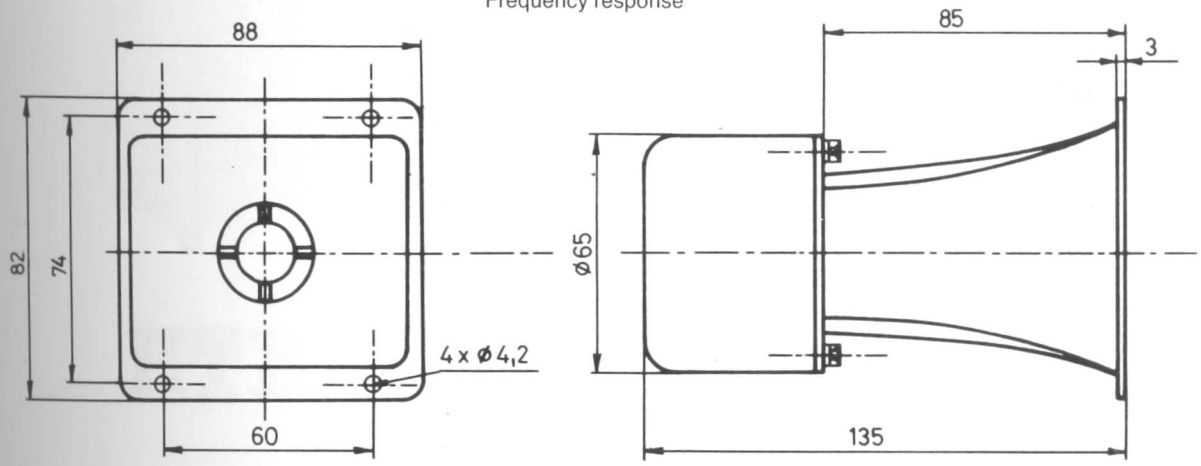
The tweeter type HT 101 can be utilized both in indoor and outdoor speaker systems. The loudspeaker built-up of metal and with fitted special plastic membrane is very reliable and of rugged construction.

Technical specifications

Rated power	20 W
Rated damage limited power	20 W
Rated impedance	HT 101-4 40 Ohms
	HT 101-8 8 Ohms
	HT 101-16 16 Ohms
Rated frequency range	2000 to 20,000 Hz
Rated sensitivity	103 dB (referred to 1 m, and 1 W)
Flux density	1.4 T
Weight	approx. 1.5 kg
Climate code	55/070/56



Frequency response



Mating dimensions for fixing attachement

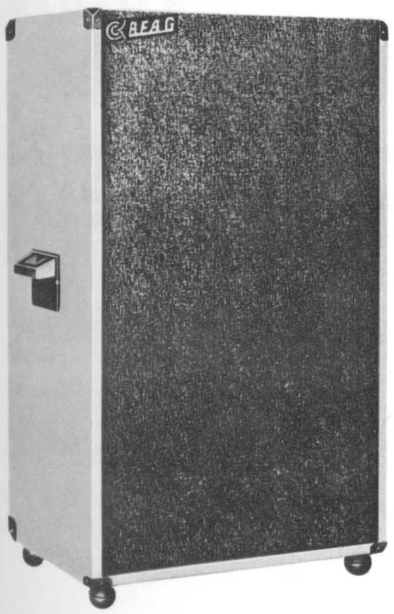
HORN LOUDSPEAKER

HT 220

It is primarly designed for outdoor purposes. Due to its acoustical parameters it is suitable for reinforcement in railway stations, machine rooms, sport establishment. It is moisture-proof and operates with high reliability also under extreme climatic conditions.

Technical specifications

Rated power	5, 10, 20 VA (can be adjusted)
Line voltage	HT 220/30 25 to 30 V
	HT 220/100 100 to 120 V
Rated frequency range	250 to 5,000 Hz
Rated sensitivity	105 dB (referred to 1 m, and 1 VA)
Flux density	13,000 Gauss (1.3 Tesla)
Horn diameter	200 mm
Length	285 mm
Climate code	55/070/56 (according to IEC 68-1)
Weight	3.5 kg

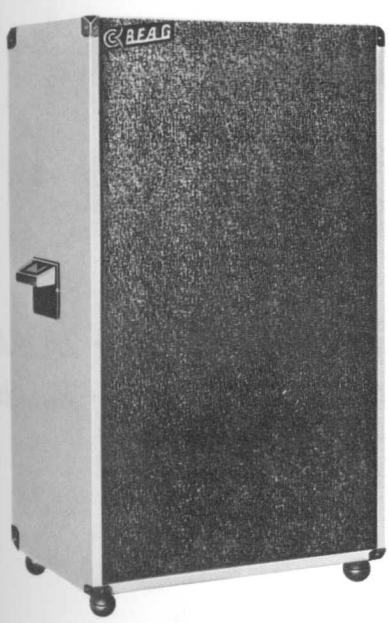


HTB 11

HIGH POWER LOUDSPEAKER SYSTEMS

HTB 11, HTB 12

The two-way, high power sound radiators type HTB 11, HTB 12 and radiator groups composed of this two basic types resp. can be used to accomplish high level sonorization problems. Sonorization in sport establishments, culture houses, concert halls, theatres is made possible by these 200 W sound radiators. Both sound radiators comprise 9 loudspeakers in a special arrangement providing a directivity pattern practically independent from the frequency. A protector circuit, built into both types gives a signalization for the operator in case of disturbances (overload, acoustic feedback) through a signalizing system, which can be connected to the sound radiator. If the fault hadn't eliminated within a certain time a resistor is connected in serial with the loudspeakers to protect them of eventually being demaged.
This process is accomplished without sounds to be heard. The original state automatically restored, if the disturbance has been eliminated.



HTB 12

LOUDSPEAKER SYSTEMS

HTB 11

The sound radiator comprising cross-over and matching transformer can be operated from 100 V audio line and can be matched with different power. The built-in overload protecting circuit is placed in the reflex-aperture. The loudspeaker is fitted also with a 15 Ohms input.

LOUDSPEAKER SYSTEMS

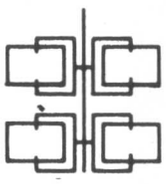
HTB 12

Low- and high-frequency channels of this loudspeaker can separately be driven by the amplifier. The cross-over has to be inserted before the amplifier. The high and low channels can be matched separately with different power.
By means of the corresponding mechanical fitting 11 sound radiator assemblies can be set up of the basic types HTB 11 and HTB 12. The mechanical fittings are also supplied by BEAG.

HTB 11-01
HTB 12-01

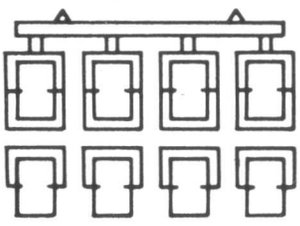
HTB 11-11/A ; B
HTB 12-11/A ; B

HTB 11-02
HTB 12-02



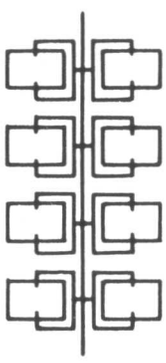
HTB 11-13/A ; B
HTB 12-13/A ; B

HTB 11-03/A ; B
HTB 12-03/A ; B



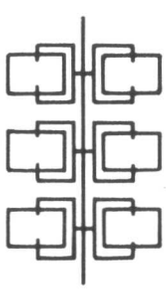
HTB 11-20
HTB 12-20

HTB 11-04/A ; B
HTB 12-04/A ; B

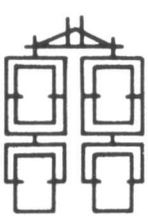


HTB 11-23
HTB 12-23 A

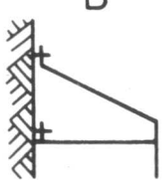
HTB 11-06
HTB 12-06 B

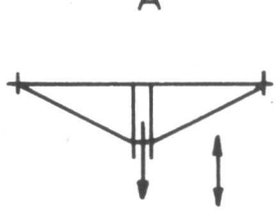


HTB 11-24/A ; B
HTB 12-24/A ; B



HTB 11-07
HTB 12-07 B

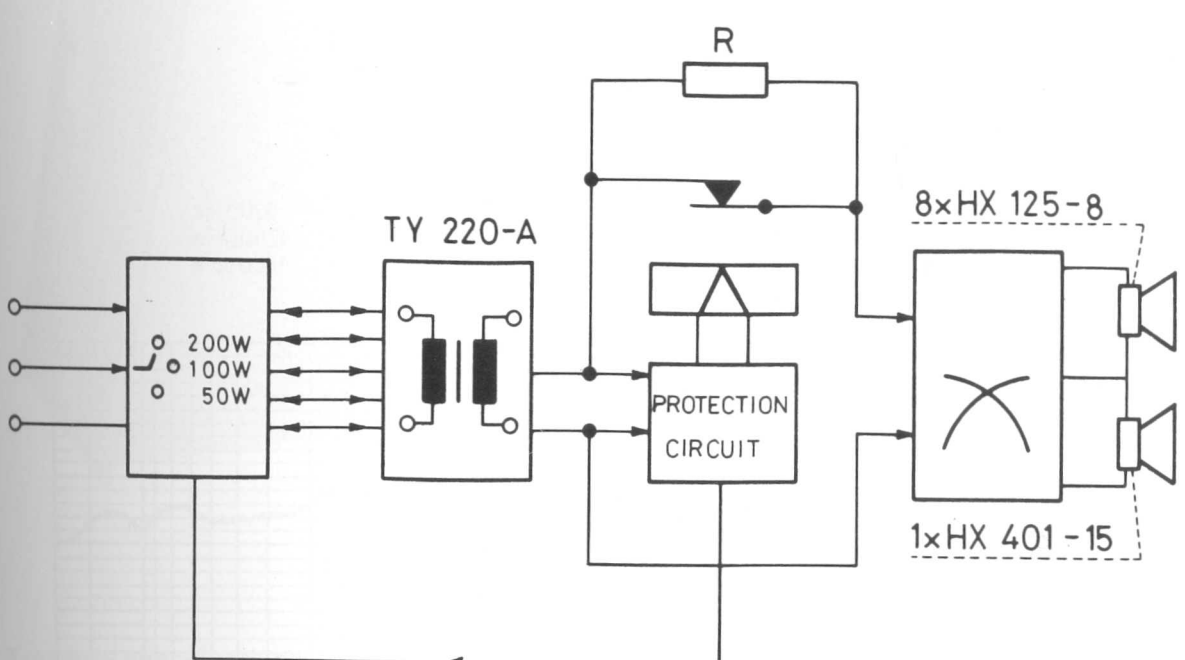




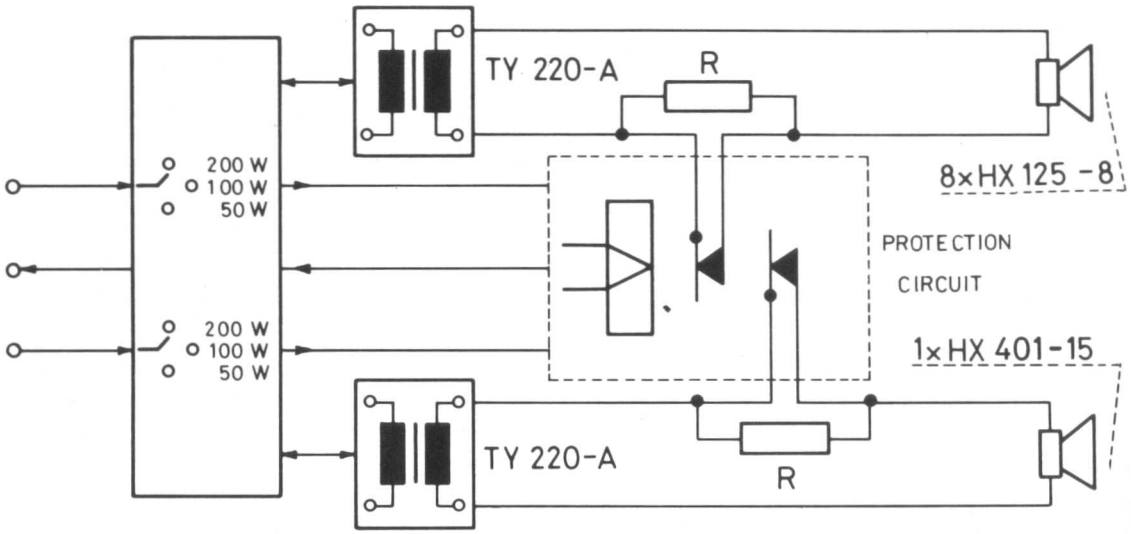
Speaker system combinations composed of basic types

Technical specifications

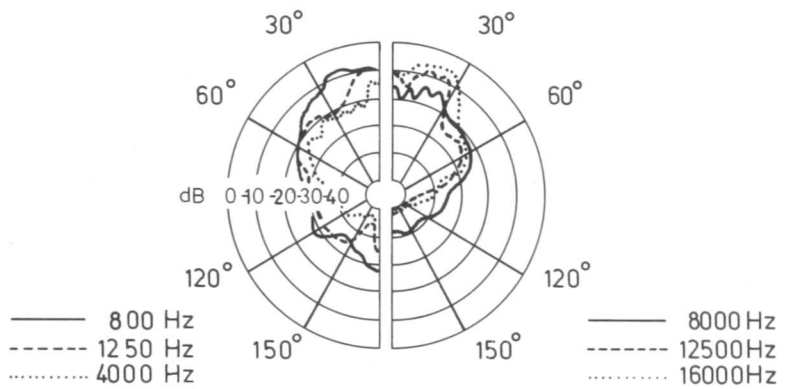
	HTB 11	HTB 12
Rated power (changeable)	200 VA	200 VA (each channel)
	100 VA	100 VA (each channel)
	50 VA	50 VA (each channel)
		12.5 VA (each channel)
Rated line voltage	55 V	55 V (each channel)
	100 V	100 V (each channel)
Rated impedance (can be switched over)	15 Ohms	15 Ohms (each channel)
	50 Ohms	50 Ohms (each channel)
	100 Ohms	100 Ohms (each channel)
	200 Ohms	200 Ohms (each channel)
		800 Ohms (each channel)
Rated damage limited power	50 VA	
Rated sensitivity	98 dB (referred to 1 m, and 1 VA)	
Rated frequency range	40 to 20,000 Hz	
Cross-over attenuation	12 dB/octave	
Dimensions	600 x 1000 x 400 mm	
Weight	60 kg	



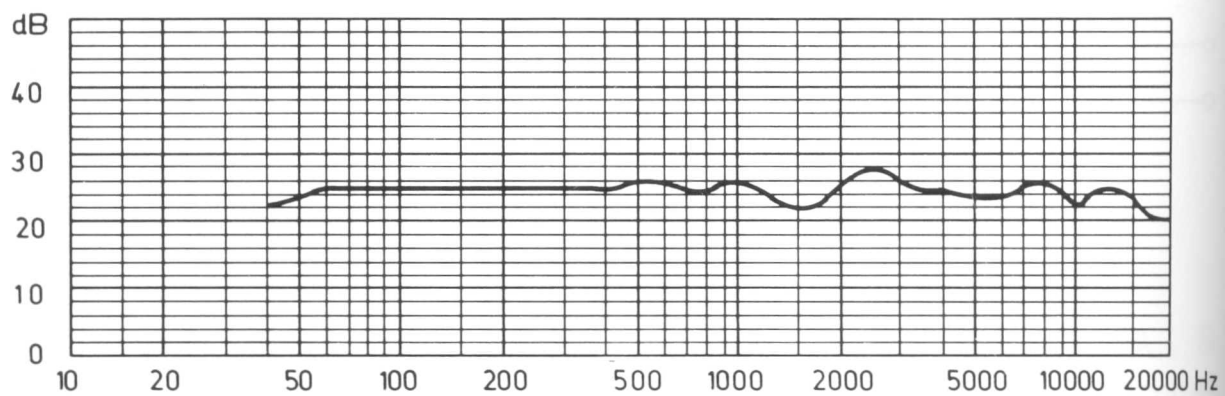
Circuit diagram of HTB 11



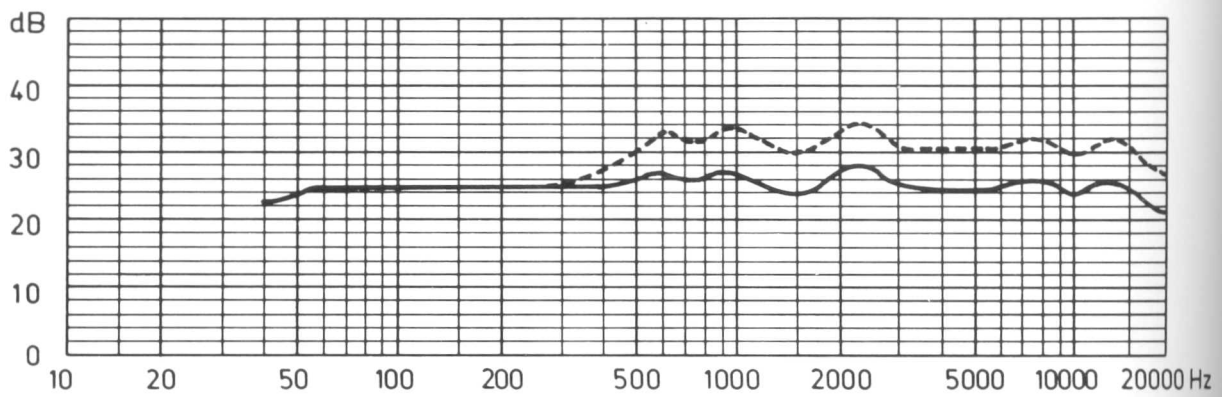
Circuit diagram of HTB 12



Directivity patterns of tweeter system



Frequency response of HTB 11



Frequency response of HTB 12

PROFESSIONAL LOUDSPEAKER SYSTEM

HTX 12

It is to be used in high quality (mono, stereo, quadrophone) sound reinforcement systems.

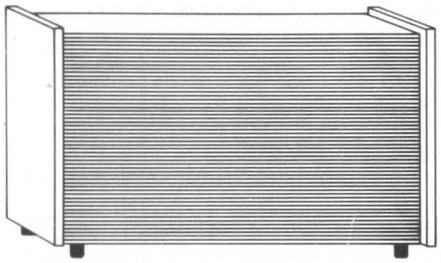
Features

- High power
- Flat frequency response
- Frequency independent directivity patterns
- Presence effect
- Wide stereo listening area
- Easy movability*

Technical specifications

Rated damage limited power	50 VA			
Rated power (VA)	50	25	12.5	50
Rated impedance (Ohms)	200	400	800	8
Rated line voltage (V)	100	100	100	20
Rated sensitivity	94 dB (referred to 1 m, and 1 VA)			
Rated frequency range	40 to 16,000 Hz			
Forward-reverse radiation ratio	10 dB (above 1 kHz)			
Connecting	with screws, on the rear side			
Protection degree	IP 200			
Weight				
Dimensions (basic type)	540 x 320 x 820 mm			

* Construction 4 specially arranged tweeters of ∅ 125 mm form the high frequency section. One woofer of ∅ 300 mm with soft rim and a cross-over are located in the lower part of the box.



PROFESSIONAL SOUND BOX

HTX 20

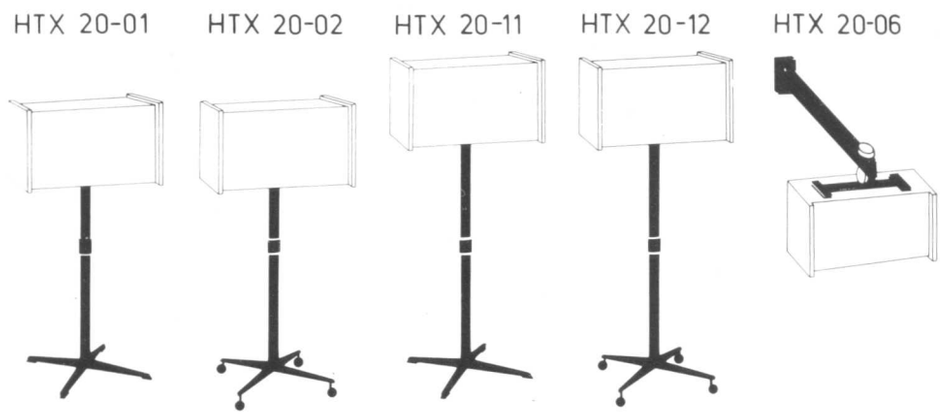
It is primarily designed for high quality studio-technical utilization.

Features

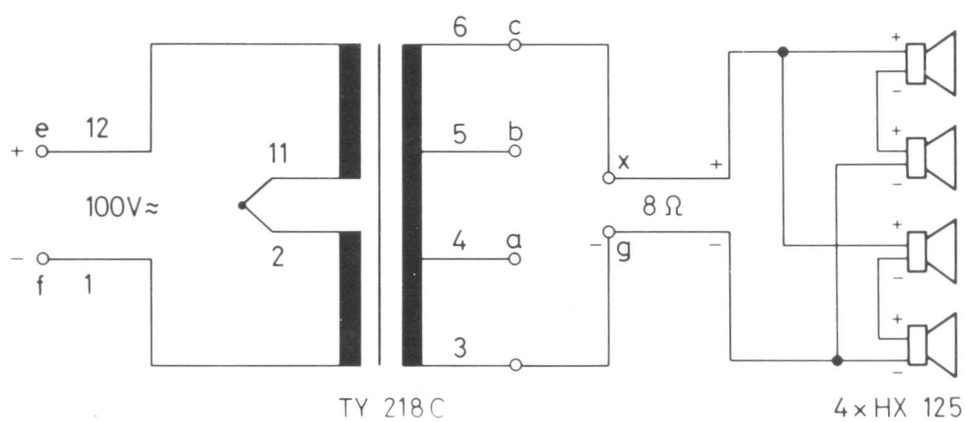
- Parallel monitoring of recorded signal in several places with identical quality
- Playing-back in studios
- Inserting of records
- Several placing possibilities

Technical specifications

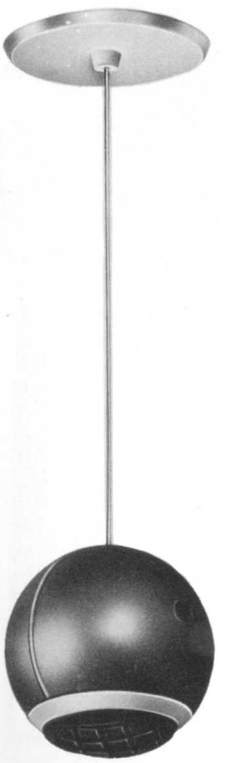
Rated power	50 (W)	25 (W)	12.5 (W)	50 (W)
Rated impedance (Ohms)	200	400	800	8
Rated line voltage		100 V		
Rated sensitivity	92 dB (referred to 1 m, and 1 W)			
Rated frequency range	50 to 20,000 Hz			
Dimensions	540 x 290 x 260 mm			
Weight	11.5 kp			
Protection degree	IP 20			
Climate code	25/055/02			



Mechanical type versions



Circuit diagram



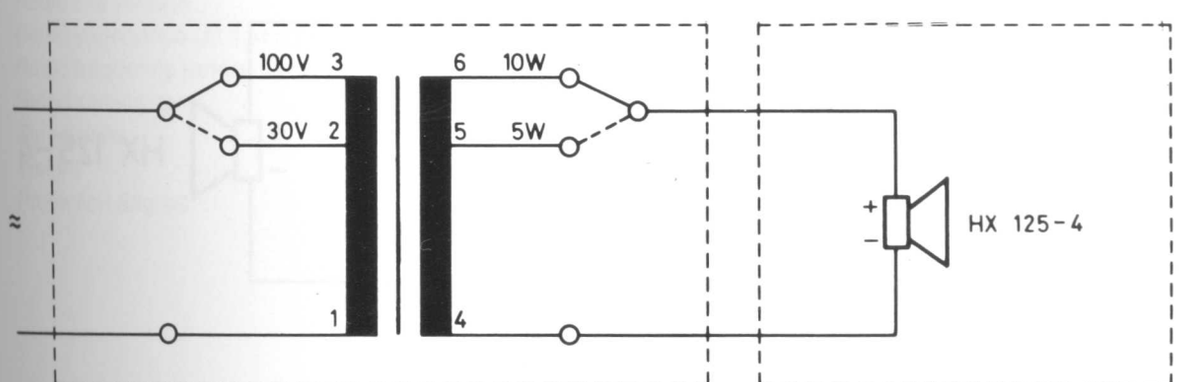
SPHERICAL SOUND BOX

HTX 55

High quality loudspeaker for sound reinforcement of halls, entrance-halls, clubs. Power consumption can be adjusted by means of the built-in matching transformer. It is available in several coloures.

Technical specifications

Rated power	5 W, 10 W	5 W, 10 W
Rated line voltage	30 V	100 V
Rated impedance (Ohms)	180, 90	2000, 1000
Rated sensitivity	88 dB (referred to 1 m, and 1 W)	
Rated frequency range	60 to 20,000 Hz	
Dimensions	∅ 215 mm	
Weight	2.4 kg	
Dimension of the transformer case	∅ 93 x 120 mm	
Connection	7 part serial damp	
Fixing	By means of its bridle hung on a hook fixed into the ceiling.	



Circuit diagram

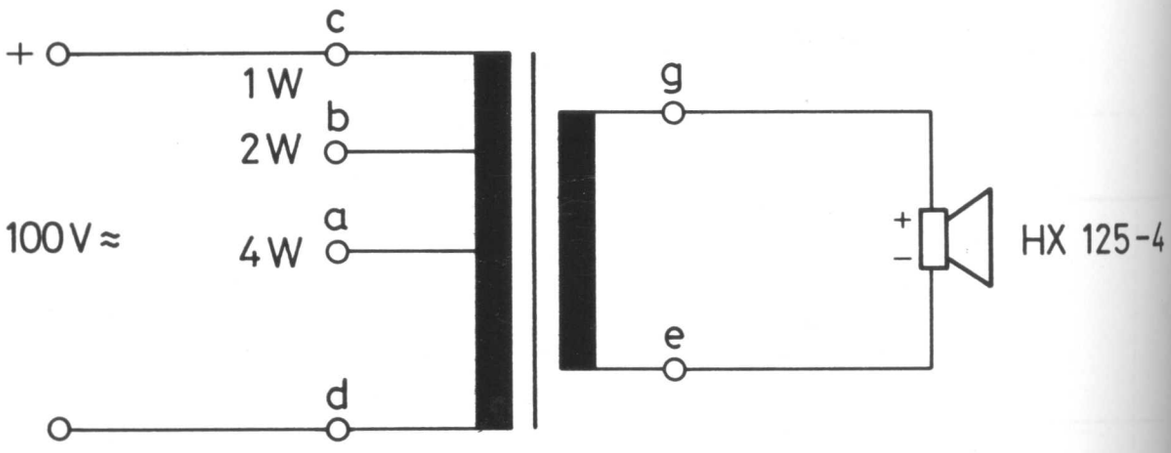
SOUND BOX

HTB 20

It is suitable for high quality sound reinforcement of establishments, houses of culture, hotels due to its excellent appearance and acoustic features. Power consumption can be adjusted by the built-in matching transformer.

Technical specifications

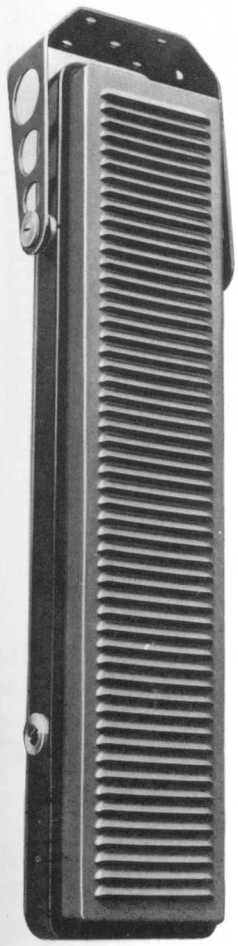
Rated power	4 W, 2 W	1 W
Rated line voltage	100 V	
Rated impedance (Ohms)	2,500, 5,000	10,000
Rated sensitivity	89 dB (referred to 1 m, and 1 W)	
Rated frequency range	100 to 16,000 Hz	
Protection degree	IP 00	
Dimensions	300 x 200 x 100 mm	
Weight	2.8 kg	



Circuit diagram

due to its
matching

125-4



SOUND COLUMN SERIE

HTP 30

The serie includes three sound columns. These are of fully new constructions. The power-weight ratio is improved to a great extent by their special internal construction. External covering is aesthetic and practical.

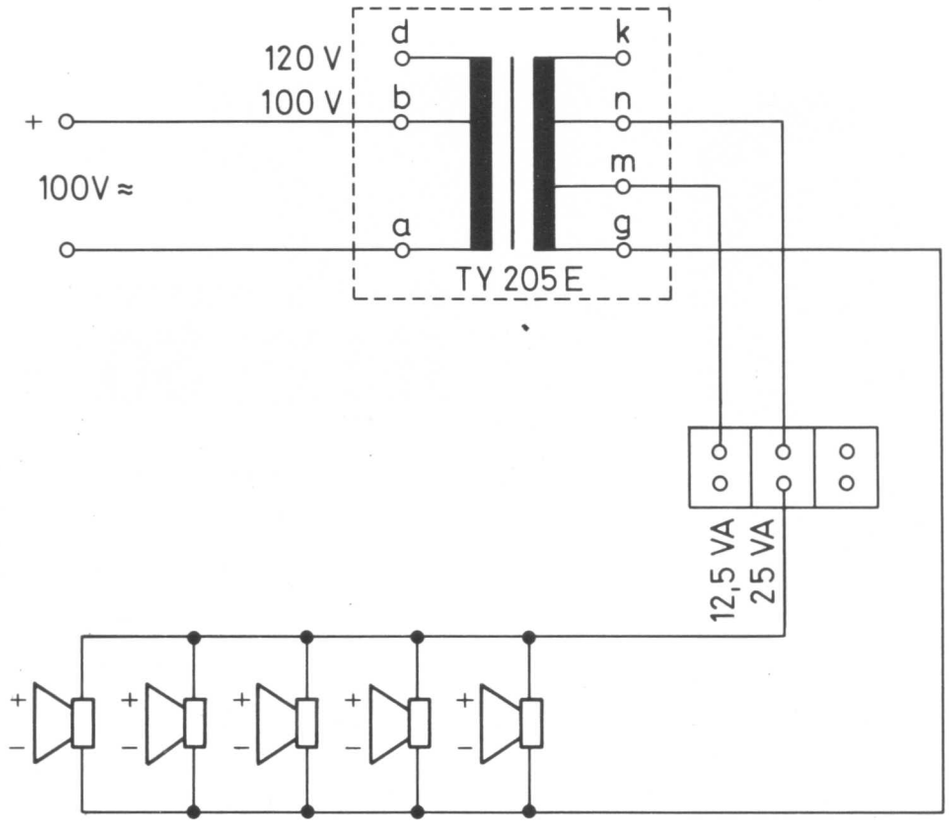
Features

- High power
- Small dimensions
- Small weight
- Corrosion resistance
- Protected against mechanical effects and adverse climate conditions
- High reliability

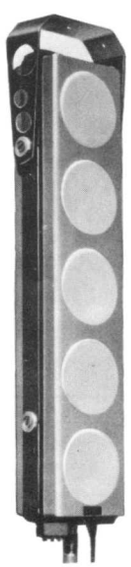
It is a sound column consisting of loudspeakers built into a metal case. It is primarily designed for outdoor purposes. Several radiating requirements can be met if used in groups. It can also be utilized as a member unit in different sound systems.The five specially constructed loudspeakers and the matching transformer are protected against adverse climate conditions and mechanical influences by rubber foam inside the metal case. The column can easily be fixed by the mounting assemblies.

Technical specifications

Rated power	12.5 VA	25 VA
Rated line voltage	100 V; 120 V	100 V; 120 V
Rated impedance (at 1 kHz) (Ohms)	800, 1150	400, 576
Rated frequency range	160 to 10,000 Hz	
Rated sensitivity	96 dB (referred to 1 m, and 1 VA)	
Dimensions	890 x 217 x 110 mm	
Weight	10 kg	
Protection degree	IP 33	



Circuit diagram of HTP 30



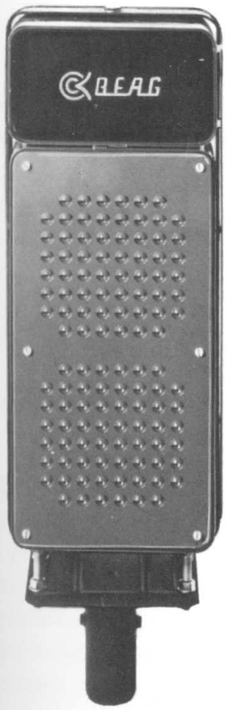
SOUND COLUMN SERIE

HTP 30/A

Sound column for indoor utilization. Its internal layout is identical with that of the sound column type HTP 30. Type HTP 30 A can be used in different sound reinforcement systems. Several radiating requirements can be met by forming a group of these columns.

Technical specifications

Rated power	12.5 VA	25 VA	50 VA
Rated line voltage	100, 120 V	100, 120 V	100, 120 V
Rated impedance (at 1 kHz) (Ohms)	800, 1150	400, 576	200, 288
Rated frequency range	125 to 12,500 Hz		
Rated sensitivity	94 dB (referred to 1 m, and 1 VA)		
Dimensions	890 x 217 x 110 mm		
Weight	10 kp		
Protection degree	IP 21		



HIGH POWER CARDIOID SOUND COLUMN

HTP 45

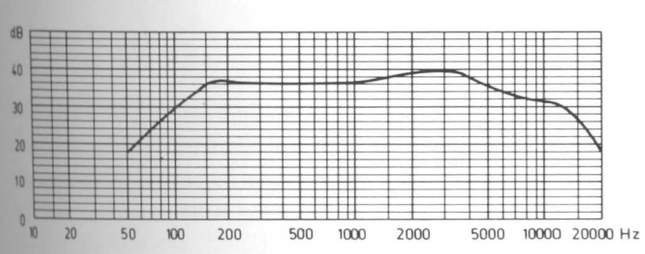
This sound column is suitable for professional sound reinforcement systems. It is adequate both for indoor and outdoor utilization. Cardioid directivity patterns is provided in the whole frequency range (also at low frequencies!) by the special construction. So its forward-reverse ratio of radiated energy is 20 times greater than that of a traditional sound column.

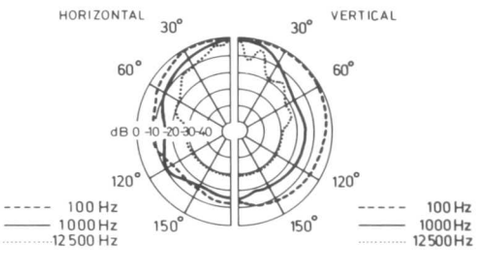
Features

- Cardioid directivity pattern in the whole frequency range both in horizontal and vertical plane
- Powerful built-in loudspeakers
- Resistance against adverse climatic conditions
- Easy mounting
- High reliability
- Small dimensions and weight compared to power

Technical specifications

Rated power	50 VA
Rated line voltage	100 V, 120 V
Rated impedance	100 Ohms, 144 Ohms
Rated frequency range	60 to 16,000 Hz
Rated sensitivity	97 dB (referred to 1 m, and 1 VA)
Forward-reverse radiating ratio (above 100 Hz)	$\geqslant$ 13 dB
Max. sound pressure level	117 dB (referred to 1 m, and 1 VA)
Storage temperature	-65°C to $+55^{\circ}$C
Climate code	25/055/10 (according to IEC 68-1)
Dimensions	860 x 330 x 295 mm
Weight	37 kg





Frequency response of HTP 45

CARDIOID SOUND COLUMN

HTP 91

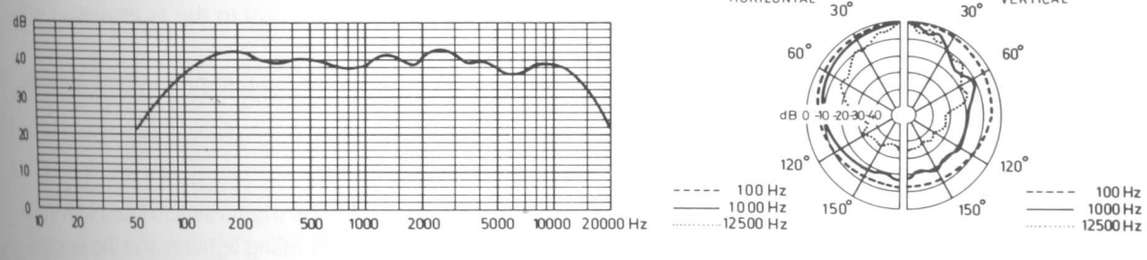
This sound column is designed for professional sound reinforcement systems. Due to its cardioid directivity diagram, the max. sound pressure level can be improved by at least 4 to 5 dB or in most favourable case by 10 dB. It is a component part of the low acoustic feedback system, which can be set, up of the products of Messrs. BEAG. Both indoor and outdoor utilizations are possible. It have a wide pass band, so it is suitable for transmitting high quality programmes. This feature is to be contributed to its two-way system and its horn tweeters.

Features

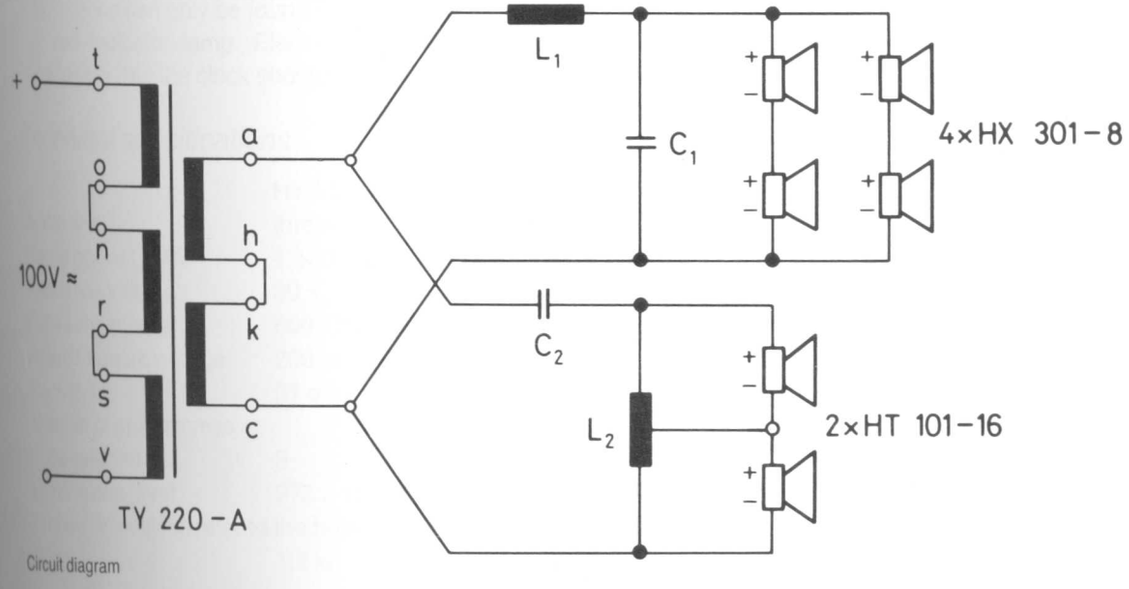
- Flat frequency response in wide frequency range
- Similar cardioid directivity patterns in the whole frequency range both in horizontal and vertical planes
- Powerful loudspeakers
- High sound pressure level
- Resistance against adverse climatic conditions
- Easy mounting
- High reliability
- Small dimensions and weight compared to power

Technical specifications

Rated power	100 VA
Rated line voltage	100 V, 120 V
Rated impedance	100 Ohms, 144 Ohms
Rated frequency range	60 to 16,000 Hz
Rated sensitivity	100 dB (referred to 1 m, and 1 VA)
Max. sound pressure level	123 dB (referred to 1 m, and 1 VA)
Forward-reverse radiating ratio (above 100 Hz)	$\geqslant$ 13 dB
Storage temperature	$-$ 65°C to + 55°C
Climate code	25/055/10 (according to IEC 68-1)
Protection degree	IP 33
Dimensions	1510 x 330 x 295 mm
Tiltability	$\pm$ 25°



Frequency response and directivity patterns of HTP 91



Circuit diagram

LOUDSPEAKER CHASSIS SERIE FOR HOTELS

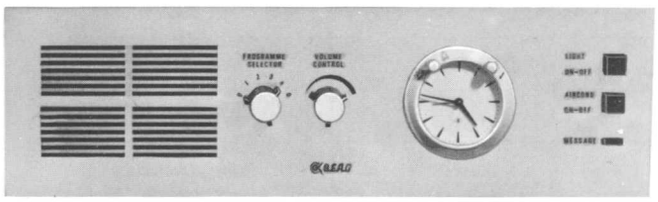
HYB 52

All the four types of the loudspeaker chassis serie provide suitable sound reinforcement for hotels of any cathegory. These can be built into the furniture as well as into the wall.

HYB 52 The basic type of the serie. The chassis made of aluminium is covered by a decorative cover plate with labels for the controls. The box comprises a transformer and a volume control-programme selector unit. The loudspeaker chassis can be connected to a three-wire, 30 V balanced audio line. The three-wire system provides, that the important informations get through to the loudspeaker with controls in any position – e.i. also if they are switched off.
Selection from three simultaneous programmes is made possible by the built-in programme selector. Volume control is in 6 steps.

HYB 53 This type differs from the basic type in having an additional unit. The mains switch fitted with three press-buttons serves for separated ON-OFF switching of the TV set, the ceiling lighting and the reading-lamp. The red indicator lamp indicates a message from the porter (letter, visitor).

HYB 53



HYB 54 , 55

LOUDSPEAKER CHASSIS SERIE

HYB 54 and HYB 55 These types are essentially identical with the two types mentioned above. Difference can only be found in the arrangement of controls. These types contain two pressbuttons and a red indicator lamp. Electrical alarm-clock can also be mounted into the equipment in case of necessity, but the clock should be provided by the customer.

Technical specifications

	HYB 52	HYB 53	HYB 54	HYB 55
Audio line	three-wire, balanced			
Rated power (mVA)	1,500 (after jumpering 135 or 320)			
Rated line voltage	30 V			
Rated impedance	600 Ohms (after jumpering 6700 or 2840)			
Rated frequency range	200 to 10,000 Hz			
Sensitivity	91 dB (referred to 1 m, and 1 VA)			
Number of programmes to be selected	3	3	4	4
Dimensions (mm)	278 x 108 x 100	358 x 108 x 100	512 x 152 x 330	
(These dimensions refer to the hole into which the chassis can be flush mounted.)				
Weight	1.2 kg	1.3 kg	5 kg	

HX 125

SMALL SIZE DYNAMIC LOUDSPEAKERS

Loudspeakers of ∅ 125 mm with mating dimensions corresponding to recommendation IEC 268-14. Electroacoustical and climate endure parameters of the loudspeakers are different. These loudspeakers can widely be utilized for home reinforcement purposes as well as for studio monitoring by reason of technical data and construction. Definition and measurement of technical data correspond to recommendation IEC 268-5

TECHNICAL SPECIFICATIONS	HX 121	HX 123
Rated power	12 VA (W)	5 VA (W)
Rated damage limited power	12 VA (W)	5 VA (W)
Rated impedance (Ohms)	HX 121- 8: 8 HX 121-16: 16	HX 123-4: 4 HX 123-8: 8
Rated resonance frequency	60 Hz	160 Hz
Rated frequency range (Hz)	40 to 20,000	100 to 20,000
Rated sensitivity (1 m, 1 VA)	88 dB	90 dB
Weight	0.7 kg	0.7 kg
Diameter	125 mm	125 mm
Diameter of the aperture on the sound box	107 mm	107 mm
Pitch circle diameter of fixing holes	140 mm	140 mm
Diameter of fixing holes	5 mm	5 mm
Number of fixing holes	4	4
Depth	60 mm	60 mm
Climate code IEC 68-1	25/055/02	25/055/02
Applications	Studio monitoring, sound columns Hi-Fi sound boxes	Sound columns, box public address systems
Note	Low distortion at low frequencies	With paper rim

HX 124	HX 125	HX 127	HX 128
40 VA (W)	12 VA (W)	5 VA (W)	12 VA (W)
30 VA (W)	12 VA (W)	5 VA (W)	12 VA (W)
HX 124-4: 4 HX 124-8: 8	HX 125-4: 4 HX 125-8: 8	HX 127-4: 4 HX 127-8: 8	HX 128-4: 4 HX 128-8: 8
600 Hz	60 Hz	100 Hz	60 Hz
1,000 to 16,000	40 to 20,000	80 to 20,000	40 to 10,000
94 dB	88 dB	92 dB	88 dB
0.7 kg	0.7 kg	1 kg	0.7 kg
125 mm	125 mm	125 mm	125 mm
107 mm	107 mm	107 mm	107 mm
140 mm	140 mm	140 mm	140 mm
5 mm	5 mm	5 mm	5 mm
4	4	4	4
60 mm	60 mm	60 mm	60 mm
25/055/02	25/055/02	25/055/02	25/055/02
Tweeter for multi-way loudspeaker systems	Studio monitoring, Hi-Fi sound boxes	Outdoor loudspeaker systems, sound columns	Woofer and midrange speaker of Hi-Fi loudspeaker systems
With dark-blue cage, paper rim. It can also be utilized in sound boxes without front-plate	Characteristic of sound pressure vs. frequency rises in high-frequency range	With cast magnet	With dark-blue cage. It can also be utilized in sound boxes without front-plate

DYNAMIC WOOFERS

HX 401

Dynamic loudspeakers with plastic rim. These can be utilized in custom as well as in professional speaker systems. However, they can also be used in outdoor speaker systems. Definition and measurement of technical data are according to recommendation IEC 268-5.

Technical specifications

TYPE	HX 301	HX 401
Rated power	40 VA (W)	80 VA (W)
Rated damage limited power	20 VA (W)	40 VA (W)
Rated impedance	HX 301- 4: 4 Ohms HX 301- 8: 8 Ohms HX 301-15: 15 Ohms	HX 401- 8: 8 Ohms HX 401-15: 15 Ohms
Rated resonance frequency	30 Hz	20 Hz
Rated frequency range	30 to 7,000 Hz	20 to 8,000 Hz
Rated sensitivity (1 m, 1 VA)	95 dB	100 dB
Weight	3.25 kg	7.8 kg
Diameter	315 mm	400 mm
Pitch circle diameter of fixing holes	290 mm	375 mm
Diameter of fixing holes	7 mm	7 mm
Number of fixing holes	4	8
Depth	158 mm	200 mm
Climate code IEC 68-1	25/055/02	25/055/02
Applications	Custom and professional sound systems, sound columns	Professional speaker systems, speaker systems for orchestras

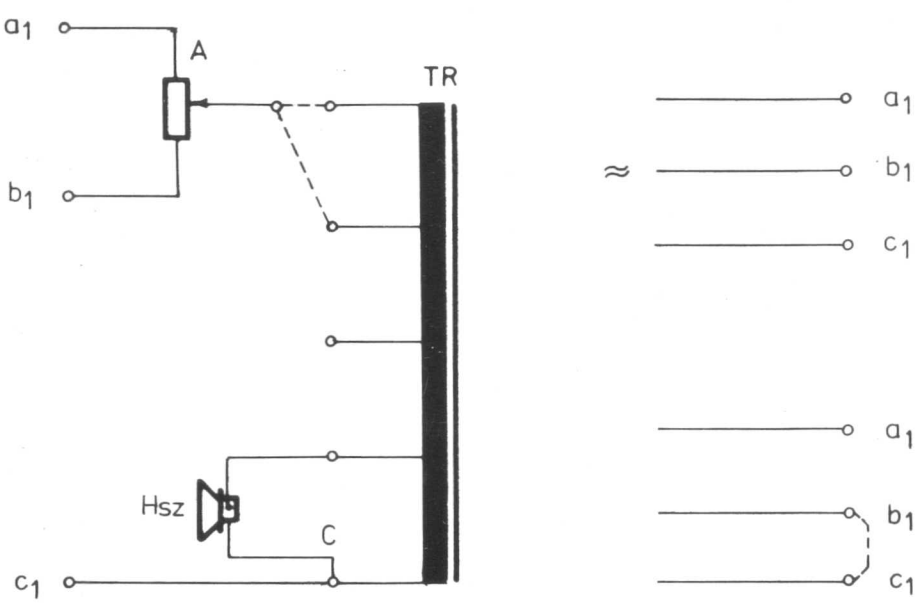
SOUND BOX SERIES FOR PUBLIC ADDRESS SYSTEMS

The different communication sets differ from all other electro-acoustical systems, because these equipment are not used for amusing or entertaining purposes, but for quick and exact transmission of informations. Quick and exact communication is of vital importance in every place, where immediate information, quick decision, and organizational measures can result in economic advantages. The communication systems have a great importance also in the work of servicing establishments (hotel, office, etc.).

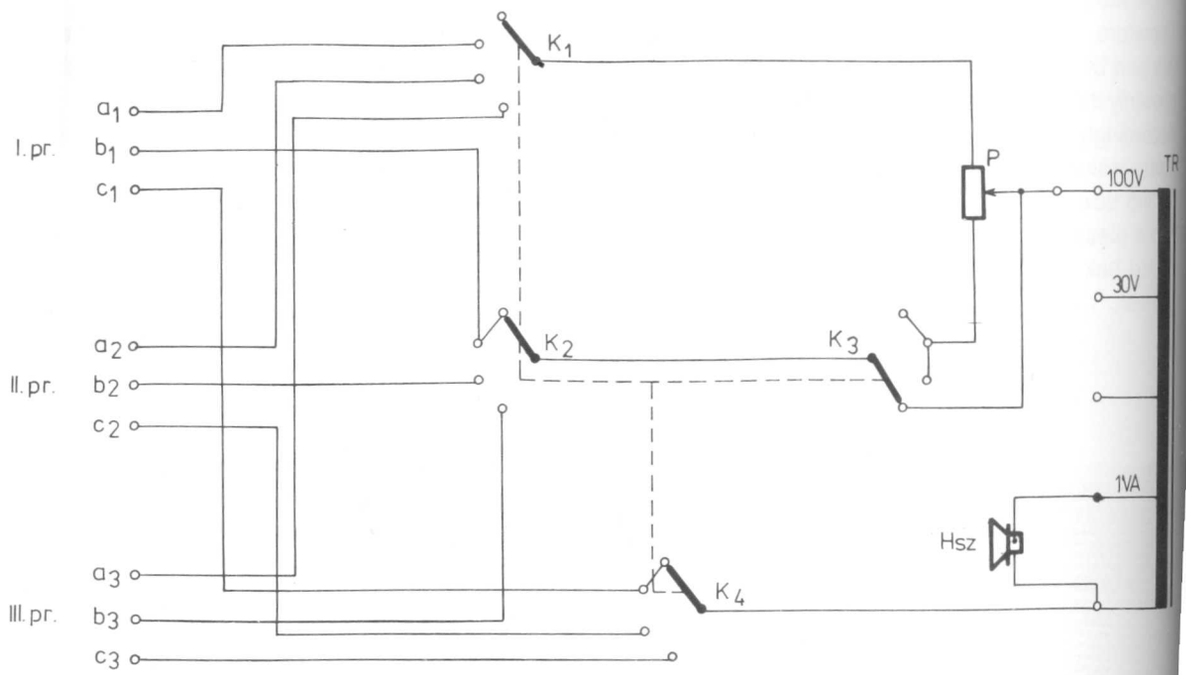
Therefore, these sets are employed mainly in such establishments, where the work should be helped by this part of the electrical system of the building. Purpose is not the Hi-Fi transmitting of audio signal, but primarily the correct transmission of verbal informations.

Accordingly, this communication system – comprising a sound box series – provides for the correct transmission of both information and amusing music programmes.

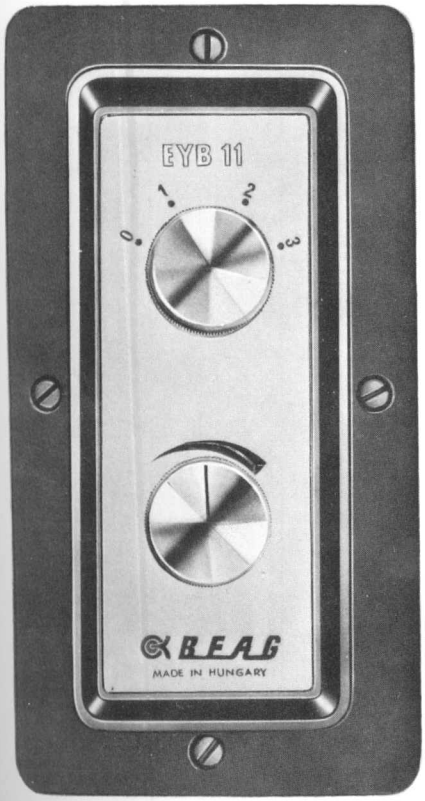
Sound box type HOB 50 is most suitable to demonstrate system. It comprises one loudspeaker built into a pleasant plastic box. The box can be pivoted around a metal bridle, making possibile to set the sound box into the required angular position. The sound box can be placed on a table or hung on the wall.



Circuit diagram of HTB 50, 51



Circuit diagram of HYB 50, 51



The sound box type HOB 51 is electrically identical with the type HOB 50. The differences are in construction of the plastic box and in the lacking metal bridle. Construction of the plastic case of type HOB 51 makes possible to sink the whole sound radiator into the wall and to fix it by two ornated screws.

The other types of the series extend the field of utilization. Their mechanical construction is identical with that of type

HOB 50, AND HOB 51 RESP., HOWEVER, THEIR ELECTRICAL CONSTRUCTION ARE DIFFERENT. THE LETTERS AND NUMBERS OF THE TYPE DESIGNATION HAVE THE FOLLOWING MEANING:

- H = sound radiator
- O = containes only loudspeaker
- T = containes also transformer
- P = containes also transformer and potentiometer
- Y = containes also transformer, potentiometer, line selector and switch
- B = for indoor sound system
- 50 = to be fixed on to the wall, or placed on the table
- 51 = can be sunk into the wall
- 52 = radiating in both directions
- C = matched with 30 V line

Electrical data of the sound box series are contained in Table 1, its mechanical data in Table 2.

If communication system requires that the listener be able to adjust the volume or to select the programme required, access to the sound boxes should be ensured, since the controls are located at the box. This requirement may decreas the flexibility of the system, and may give rise to aesthetical and acoustical problems.

Such problems can be overcome by the use of control boxes, which anyhow provide higher comfort in operation. Control boxes marked with "EPB" or "EYB" work together with sound boxes type HTB. The control boxes include the required controls, so their placing is only determined by the comfort. The sound boxes type HTB can be placed at the best place with respect to radiation.

THE LETTERS AND NUMBERS OF THE TYPE DESIGNATION OF CONTROL BOXES HAVE THE FOLLOWING MEANING:

- E = control unit
- P = comprises potentiometer
- Y = comprises potentiometer and line selector
- B = for indoor sound system
- 10 = can be mounted on the wall
- 11 = can be sunk into the wall
- C = matched with 30 V line

One sound box type HTB can be connected to one control box. Technical data of the control boxes are given in Table 3. Control boxes and sound boxes including volume control are constructed so that the important informations, commands get through to the loudspeaker independently of the controls. This priority is provided by the three-wire system. Accordingly, the sound boxes and control boxes are operated in three-wire balanced system. Wiring: a–b–c–. Naturally, these can also be connected to a two-wire balanced network, however, points "b" and "c" should be interconnected in this case.

TECHNICAL DATA OF SOUND BOXES

	Types "HOB"	Types "HTB"				Types "HPB"		Types "HYB"	
						no suffix after the type-number	suffix "C" after the type-number	no suffix after the type-number	suffix "C" after the type-number
Rated power (VA)	5	3		1		1.5		1.5	
Rated damage limited power (VA)	3	3		1		1.5		1.5	
Rated line voltage (V)	–	25–30	100–120	25–30	100–120	100–120	25–30	100–120	25–30
Rated input impedance (Ohms)	4	300	3,300	900	10,000	6,600	600	6,600	600
Rated frequency range (Hz)	200 to 10,000								
Rated sensitivity (dB · m/VA)	91								
Value of the built-in potentiometer (kOhms)	–	–				20	1.8	20	1.8
Number of programmes to be selected	1	1				1		3	

GEOMETRICAL DIMENSIONS OF SOUND BOXES

		Type-number "50"	Type-number "51"	HTB 52
Sound box	length (mm)	220	246	220
	width (mm)	125	151	125
	depth (mm)	73	73	73
Part of the sound box, which is sunk into the wall	length (mm)	–	220	–
	width (mm)	–	125	–
	depth (mm)	–	55	–
Distance of the screws fixing the sunk box (mm)		–	141	–
Box size with bridle	length (mm)	235	–	235
	width (mm)	136	–	136
	depth (mm)	73	–	73
Distance of the screws fixing the bridle (mm)		93	–	93
Weight (kg)		1	1	1
Colour		light-gray; blue; dark-gray; red		

TECHNICAL DATA OF CONTROL BOXES

TYPE	EPB 10	EPB 10/C	EPB 11	EPB 11/C	EYB 10	EYB 10/C	EYB 11	EYB 11/C
Sound boxes, which can be connected to the control box	HTB 50 HTB 51 HTB 52	HTB 50 51 52	HTB 50 51 52	HTB 50 51 52	HTB 50 51 52	HTB 50 51 52	HTB 50 51 52	HTB 50 51 52
Rated power (VA)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Rated damage limited power (VA)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Line voltage (V)	100 to 120	25 to 30	100 to 120	25 to 30	100 to 120	25 to 30	100 to 120	25 to 30
Rated input impedance (Ohms)	6,600	600	6,600	600	6,600	600	6,600	600
Power of the loudspeaker, which can be connected to the control box (VA)	1	1	1	1	1	1	1	1
Rated impedance of the loudspeaker, which can be connected to the control box (Ohms)	10,000	900	10,000	900	10,000	900	10,000	900
Built-in potentiometer (kOhms)	20	1.8	20	1.8	20	1.8	20	1.8
Construction	can be hung on the wall		can be sunk into the wall		can be hung on the wall		can be sunk into the wall	
Length (mm)	142	142	150	150	142	142	150	150
Width (mm)	72	72	80	80	72	72	80	80
Depth (mm)	65	65	65	65	65	65	65	65
Weight (kg)	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Number of programmes to be selected	1	1	1	1	1	1	1	1

SYSTEM ENGINEERING SUMMARY

Electrical features \ Mechanical construction		One unit			Two units (sound box + control box)			
					Angle position of the sound box can be adjusted		Sound box is sunk into the wall	
		Adjustable angle position	Sunk into the wall	Radiates in two directions, adjustable angle position	Box is mounted on the wall	Box is sunk into the wall	Box is mounted on the wall	Box is sunk into the wall
Low impedance direct connection		HOB 50	HOB 51	–	–	–	–	–
100 V line	without volume control	HTB 50	HTB 51	HTB 52	–	–	–	–
	volume control	HPB 50	HPB 51	–	HTB 50 + EPB 10	HPB 50 + EPB 11	HTB 51 + EPB 10	HTB 51 + EPB 11
	programme selection volume control	HYB 50	HYB 51	–	HTB 50 + EYB 10	HTB 50 + EYB 11	HTB 51 + EYB 10	HTB 51 + EYB 11
30 V line	without volume control	HTB 50	HTB 51	HTB 52	–	–	–	–
	volume control	HPB 50/C	HPB 51/C	–	HTB 50 + EPB 10 C	HTB 50 + EPB 11 C	HTB 51 + EPB 10 C	HTB 51 + EPB 11 C
	programme selection volume control	HYB 50 C	HYB 50 C	–	HTB 50 + EYB 10 C	HTB 50 + EYB 11 C	HTB 51 + EYB 10 C	HTB 51 + EYB 11 C

SOUND ABSORBING ELEMENTS

Sound absorbing elements are suitable for modifying the acoustical parameters of rooms for different purposes. This correction contributes to a large extent to that, that the hazards to health caused by the high noise level can be decreased, and the awkward and tiring environment improved. In the course of design of the panels the ISO recommendations on sound absorbtion (ISO R. 354) were considered. Accordingly, systems suitable for damping low-, mid-, and high frequencies can be set up of this panels.

Fields of utilization

- Decreasing noise-level (e.g. railway stations, airports, posts, etc.)
- Exempting from echo (e.g. museums, hotels, hospitals, etc.)
- Providing advantageous acoustical circumstances (cultural establishments)
- Adjustment of reverberation time (in studios, technical rooms, etc.)

Sound absorbing frequency range of the panels

Low-frequency	Mid-frequency	Hig-frequency
40 to 250 Hz	250 to 2,000 Hz	500 to 10,000 Hz

These elements can easily be mounted, they have an aesthetic and appearance their surface is hygienic and can easily be cleaned.

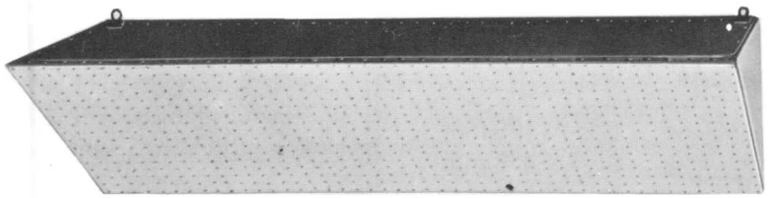
LOW-FREQUENCY SOUND ABSORBING ELEMENTS

TYPE	Dimensions (mm)	Material of the front plate	Weight (kg)	Equivalent sound absorbing surface (sq. m.)					
				125 Hz	250 Hz	500 Hz	1,000 Hz	2,000 Hz	4,000 Hz
HE 01	1000 x 1000 x 200	Laminated fibreboard	26	0.43	0.25	0.28	0.23	0.20	0.11
HE 02	1000 x 1000 x 200	Colour-veneered fibreboard	26	0.56	0.44	0.31	0.27	0.19	0.17
HE 03	1000 x 1000 x 200	Decorit	26	1.00	0.47	0.33	0.40	0.20	0.18
HE 04	1000 x 1000 x 200	Hard fibreboard	26	0.62	0.35	0.18	0.17	0.16	0.15
HE 05	1000 x 1000 x 200	PVC	26	0.44	0.33	0.20	0.17	0.13	0.10
HE 06	1000 x 1000 x 200	Leather-cloth	26	1.00	0.80	1.00	1.00	0.80	0.47
HE 07	1000 x 1000 x 50	Laminated fibreboard	13	0.57	0.34	0.14	0.32	0.20	0.14
HE 08	1000 x 1000 x 50	Colour-veneered fibreboard	13	0.95	0.25	0.20	0.23	0.20	0.24
HE 09	1000 x 1000 x 50	Decorit	13	0.85	0.72	0.23	0.32	0.17	0.07
HE 10	1000 x 1000 x 50	Hard fibreboard	13	0.51	0.34	0.23	0.20	0.26	0.23
HE 11	1000 x 1000 x 50	PVC	13	0.60	0.45	0.23	0.20	0.10	–
HE 12	1000 x 500 x 15	Laminated fibreboard	6	0.06	0.32	0.10	0.05	0.08	0.03
HE 13	1000 x 500 x 15	Colour-veneered fibreboard	6	0.10	0.36	0.12	0.10	–	–
HE 14	1000 x 500 x 15	Decorit	6	0.14	0.30	0.31	0.27	0.24	0.11
HE 15	1000 x 500 x 15	Hard fibreboard	6	0.18	0.38	0.27	0.20	0.19	0.08
HE 16	1000 x 500 x 15	PVC	6	0.30	0.34	0.20	0.10	0.10	–
High-frequency Sound Absorbing Elements									
HM 01	1000 x 500 x 100	Textile	10	0.50	0.67	0.64	0.70	0.75	0.60
HM 02	1000 x 500 x 50	Textile	8.5	0.07	0.61	0.63	0.68	0.63	0.43
HM 03	1000 x 500 x 25	Textile	6.5	0.02	0.27	0.55	0.62	0.52	0.38

MID-FREQUENCY SOUND ABSORBING ELEMENTS

TYPE	Dimensions (mm)	Material of the front plate	Perforating coefficient K (%)	Weight (kg)	Equivalent sound absorbing surface (sq. m.)					
					125 Hz	250 Hz	500 Hz	1,000 Hz	2,000 Hz	4,000 Hz
HP 01	1000 x 500 x 50	Decorit	10	8.5	0.08	0.51	0.64	0.68	0.63	0.33
HP 02	1000 x 500 x 50	Hard fibreboard	10	8.5	0.16	0.55	0.80	0.58	0.42	0.14
HP 03	1000 x 500 x 50	Laminated fibreboard	13	8.5	0.13	0.52	0.72	0.62	0.46	0.35
HP 04	1000 x 500 x 50	Colour-veneered fibreboard	1.4	8.5	0.32	0.68	0.34	0.26	0.07	0.02
HP 05	1000 x 500 x 25	Colour-veneered fibreboard	1.4	6.5	0.12	0.38	0.40	0.29	0.23	0.06
HP 06	1000 x 500 x 25	Decorit	13	6.5	–	0.17	0.44	0.64	0.54	0.38
HP 07	1000 x 500 x 25	Hard fibreboard	13	6.5	–	0.18	0.55	0.52	0.46	0.14
HP 08	1000 x 500 x 15	Colour-veneered fibreboard	13	5	–	0.16	0.42	0.48	0.40	0.40
HP 09	1000 x 500 x 15	Laminated fibreboard	13	5	–	–	0.22	0.58	0.35	–
HP 10	1000 x 500 x 15	Hard fibreboard	13	5	–	0.10	0.20	0.52	0.60	0.35
HP 11	1000 x 500 x 15	Decorit	13	5	–	0.05	0.23	0.43	0.52	0.30
HP 12	1000 x 500 x 50	Laminated fibreboard	1.4	8.5	0.30	0.60	0.28	0.20	0.05	–

Perforating coefficient: K % – summed surface of the holes referred to the whole surface of the module element.



NOISE ABSORBING PRISM

HK 01

Description

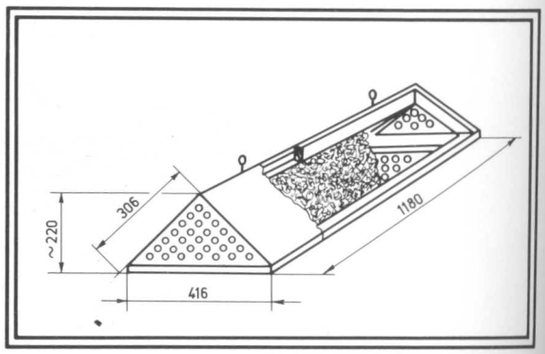
As a result of technological progress, the level of noise intensity often exceeds the permissible limits. The Noise Absorbing Prism Type HK-01 can be used efficiently whenever the noise-reducing measures also necessitate a room-acoustical damping.
The Noise Absorbing Prism Type HK-01 is a prefabricated sound absorbing modul unit suspended from the ceiling. The prism-shaped modul unit provides efficient sound absorbing over a wide frequency range, the actual degree of which is determined by the number and geometrical arrangement of modular elements employed in a given room. Featuring a wide variability in aesthetic appearance, the noise absorbing prism has a number of valuable properties.

- Equalised sound absorption over a wide range
- High sound absorbing efficiency
- Convenient installation
- Hygienic surface
- Flame-proof construction
- Light weight

The Noise Absorbing Prism Type HK-01 is an acoustically combined device. Of the 5 effective faces, the two base plates and one side plate are perforated. The other two side plates are fitted with acoustically "transparent" (sound transmitting) coating. The perforated faces are resonators tuned to 500 Hz. The acoustically transparent faces will absorb sounds of higher frequencies (owing to a sound absorbing bed arranged behind them). The installation of the prisms will not interfere with the illumination of the room from the ceiling, the ventilation, the fittings on the ceiling, etc. The sound absorbing properties of the HK-01 Noise Absorbing Prism are particularly effective in the range of medium- and high-frequency sounds. Therefore, it can be used to advantage in machine, locksmith, and carpenter workshops, weaving-mills, dyeing, and electroplating workshops, food processing plants, house factory plants, assembly halls, etc. as well as in offices, business-machine and computer rooms, sports halls.

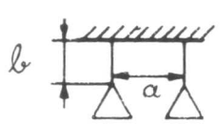
Technical specifications

Dimensions:	length	1180 mm
	width	416 mm
	height	220 mm
Weight		appr. 8 kg

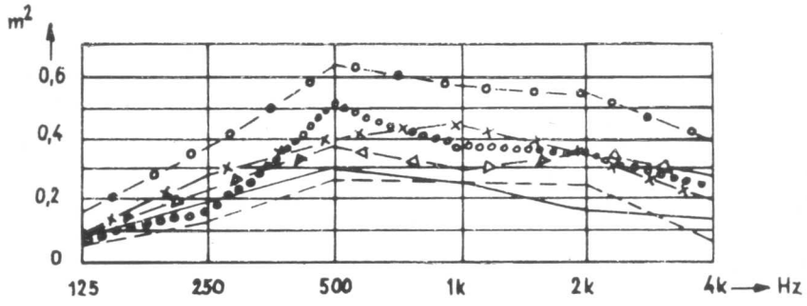


Construction of noise absorbing prism HK 01

Cover varnished perforated fibreboard and glass fabric.
Flame-proofness in compliance with Hungarian Standard MSZ 802-69. The equivalent sound absorbing surface area of the prism (sq.m.) is given versus frequency, depending on the geometrical arrangement of the prisms. Tested in compliance with ISO Recommendation No. R 354.



	a(mm)	b(mm)
—x—x—	500	500
—Δ—Δ—	600	0
•••••••••	600	500
—o—o—o—	600	1000
———	1000	0
– – – – –	1000	500



Equivalent sound absorbing area of the noise absorbing prism HK 01 vs. frequency

MIXING CONSOLES, ANNOUNCER'S DESKS, INTERCOM UNITS

Technical Specifications of "FIT" System Mixing Consoles Manufactured by BEAG

PKC 18 12 channel "FIT" mixing console
PKC 78 24 channel "FIT" mixing console
PKP 35 "FIT" mixing console for theatres
PKP 11 6 channel portable mixer
PKP 19 8 channel portable mixing console

PBC 05 Announcer's desk
EKC 01 Intercom unit
EKC 10 Intercom unit
EKP 04 Intercom unit
PTC 11 Desk for the competition organizing body

TECHNICAL SPECIFICATIONS OF EQUIPMENT BUILT-UP OF PLUG-IN UNITS OF THE SYSTEM FIT

Data of main and auxiliary chains

Input	balanced, free-from-earth
Input impedance at microphone inputs	min. 1,000 Ohms
at line inputs	min. 5,000 Ohms
Source impedance at microphone inputs	max. 200 Ohms
at line inputs	max. 600 Ohms
Sensitivity at normal output level, faders in −6 dB position at microphone inputs	−72, −62, −52 −42, −32, −22 dBm
at line inputs	−12, −6, 0, +6, +12 dBm
Overdrive range	36 dB
Max. input level	+ 22 dBm
Output	balanced, free-from-earth
Load impedance	600 Ohms, min. 200 Ohms
Output level	+ 6 dBm
Max. output level	+ 12 dBm
Limiter (KCE 131)	
Limiting range	30 dB
Output level increase at an overdrive of 20 dB	max. +1 dB
Frequency response	
In any position of the input sensitivity selector, in the range of 31.5 to 16,000 Hz	+ 0.6 dB
Equalizer (KYE 121)	− 1.2 dB
Low-frequency band-limiting filter at 180, 250, 500 Hz	− 1.7 dB
High frequency band-limiting filter at 5,000, 8,000, 12,500 Hz	− 1.7 dB
Slope	12 dB/octave
Bass control at 63 Hz	+ 3, + 6, + 9, + 12, + 15 dB − 3, − 6, − 9, − 12, − 15 dB
Treble control at 12,500 Hz	+ 3, + 6, + 9, + 12, + 15 dB − 3, − 6, − 9, − 12, − 15 dB
Frequencies of presence filter	700, 1,000, 1,400, 2,000, 2,800, 4,000 Hz
Boost at the above frequencies	1.5; 3; 4.5; 6; 7.5; 9 dB
Harmonic distortion (THD)	
At a rated fader setting, at rated input and output levels, in the range of 31.5 to 16,000 Hz	max. 0.5%
Signal-to-noise ratio	
Referred to the rated output level at an input sensitivity of −72 dBm	min. 52 dB
at an input sensitivity of +12 dBm	min. 70 dB
Cross talk attenuation	
Between any two inputs, or any input and output, in the range of 31.5 to 16,000 Hz	min. 80 dB
PPM's	
Output level for 0 dB reading	+ 6 dBm
Integration time for a reading of	− 4 ± 1 dB is 3 ms
Measuring range	− 40 to + 4 dB
Accuracy	± 1 dB

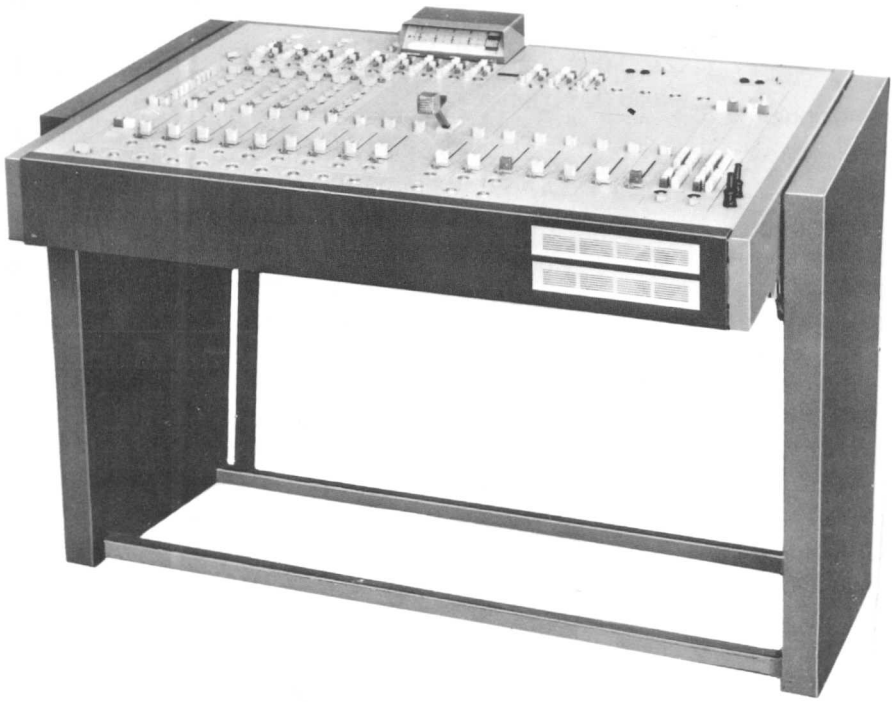
Monitoring system

The data of the monitoring outputs are identical with the output data of the main chain.

Two-way intercom unit (EKE 122)

Microphone amplifier section

Output	balanced, free-from-earth
Output impedance	max. 25 Ohms
Load impedance	min. 200 Ohms
Output level	+ 6 dBm
Power amplifier section	
Input	balanced, free-from-earth
Input impedance	min. 5,000 Ohms
Source impedance	600 Ohms
Input level	+ 6 dBm
Environmental conditions	
Temperature limits	+ 10 and + 60°C
Relative humidity	max. 70%
Power supply	
Mains voltage	220 V, 50 Hz
Allowable voltage deviations	+ 5 and − 10%
Mains power consumption	approx. 100 W
Supply voltage of signalling section	24 V ± 3 V



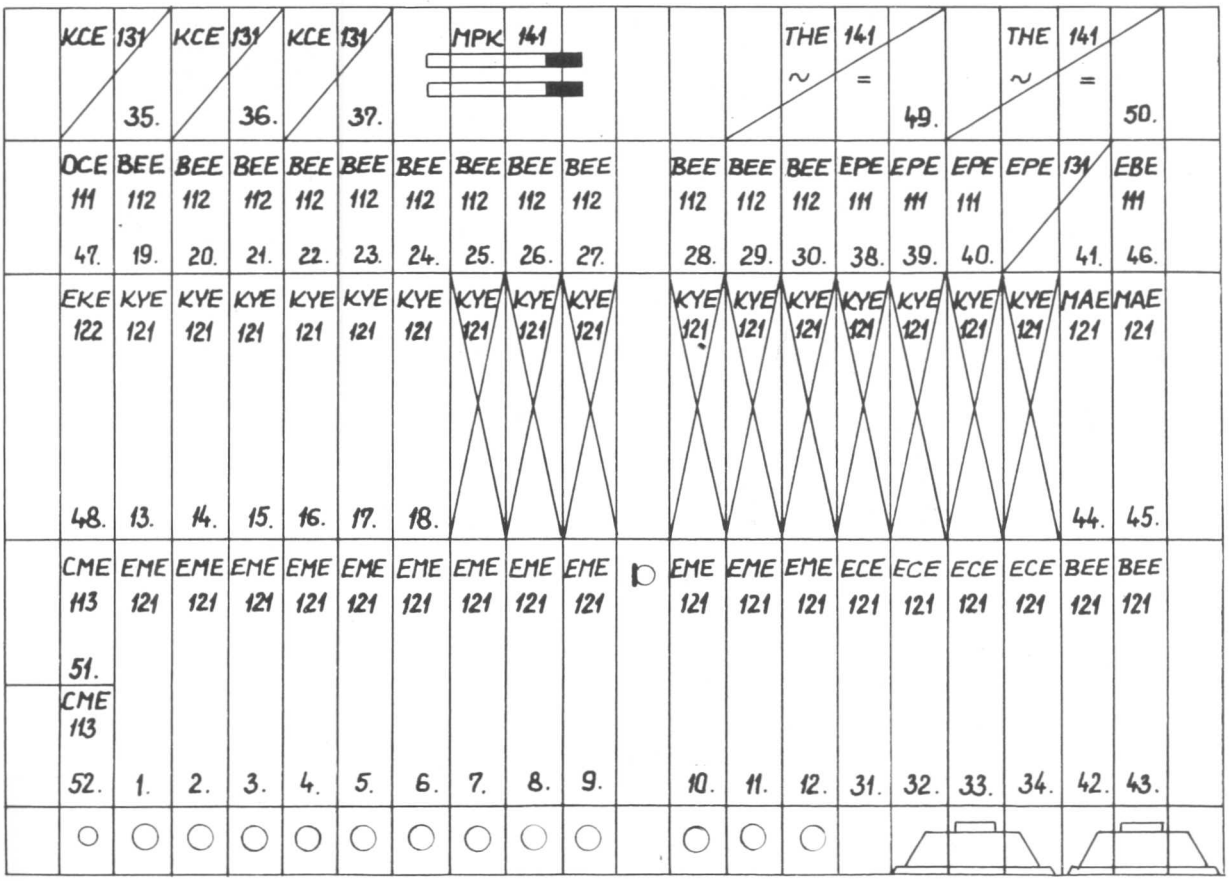
MIXING CONSOLE

PKC 18

Designed primarily for sports establishments, cultural centres, and for small theatres.
The console is built-up of FIT-system plug-in units as follows:

- 12 input channels
- 3 main outputs and 1 auxiliary output (groups)
- 2 x 12 microphone and 4 line level inputs
- Input selector in each channel
- Fader in each channel
- 6 equalizers insertable into any six of the total 12 input channels
- Pre-fade and after equalizer listening facility
- Two independent level checking and monitoring systems
- Two-way intercom systems for 8 stations
- Built-in A.F. generator
- Overdrive indicator lamps in every channel and group amplifier
- Light pointer PPM
- Total number of plug-in units: 63
- Mains supply voltage: 220 V, 50 Hz, 100 VA
- Dimensions: approx. 1300 x 870 x 940 mm
- Weight: approx. 170 kg.

Detailed technical specifications are given in the general description of the FIT system.



Components side drawing of PKC 18

GENERAL DESCRIPTION OF THE FIT SYSTEM

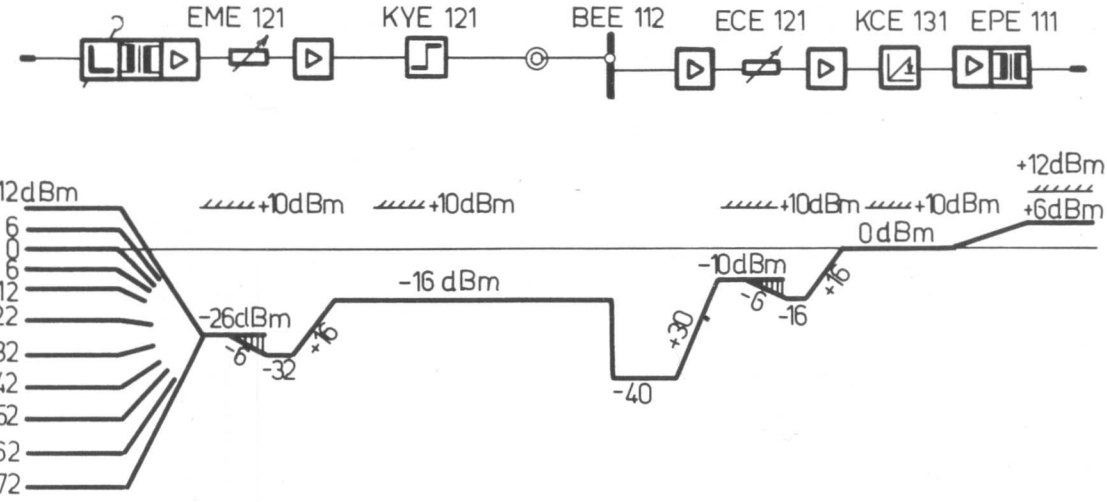
Construction of electronics (Example: mixing console type PKC 18)

The fully transistorized mixing console type PKC 18 is composed of plug-in units of the FIT system so, that the various functions are performed by different units. Considering that construction of the channels is identical it is sufficient to describe the operation of only one channel. The description of the main chain and the auxiliary chain will be followed by a description of the monitoring and signalling systems of the mixing console and its auxiliaries. The construction of the mixing console is shown in the block diagram.

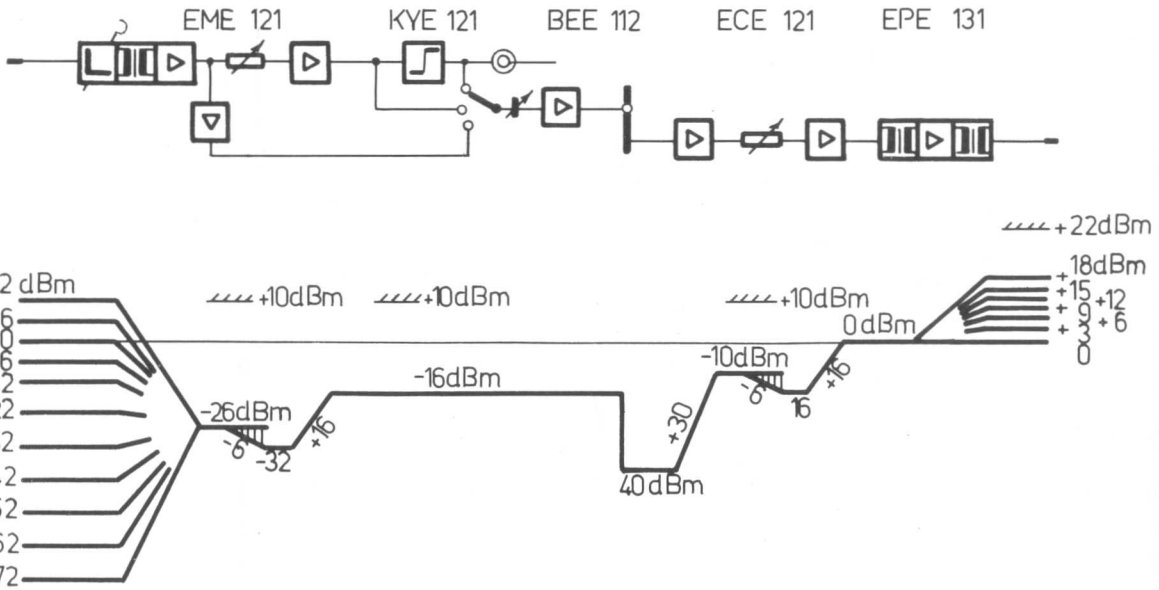
Description of main programme chain and auxiliary chain

The input of any channel can be connected to six different sources. The first two sources (A, B) receive microphones; the next four (L1, L2, L3, L4) receive lines. When the crossbar plug is turned by 180°, line L4 will be replaced with the built-in audio-frequency generator. The four input lines are connected parallel to the input selectors of all the 12 channels.

The input selector is followed by the input sensitivity selector of the channel amplifier, then the input transformer and the first amplifier stage are arranged. The channel fader and a separating amplifier are connected to the amplifier output. The output of the separating amplifier is connected to the pre-fade listen pressbutton and to the auxiliary output selector (the latter is in unit BEE 112). After the channel fader, the signal path is divided again. The signal is connected to the output amplifier of the unit EME 121 and to the auxiliary output selector. After the output of EME 121, the equalizer (KYE 121) can be inserted into the amplifier chain by means of a cross-bar plug. The equalizer includes five filter networks of independent operation: high frequency band-limiting filter (5 kHz, 8 kHz, 12.5 kHz) with a slope of 12 dB/octave; a low frequency band-limiting filter (180 Hz, 250 Hz, 500 Hz) with a slope of 12 dB/octave; treble-control providing ±15 Db cut and boost in 10 steps at 12.5 kHz; bass control providing ±15 dB cut and boost in 10 steps at 63 Hz; finally, the fifth filter group is a ''presence'' filter by which max. 9 dB boost can be realized in 1.5 dB steps at 0.7; 1; 1.4; 2; 2.8 and 4 kHz.



Colour diagram of the main and auxiliary group



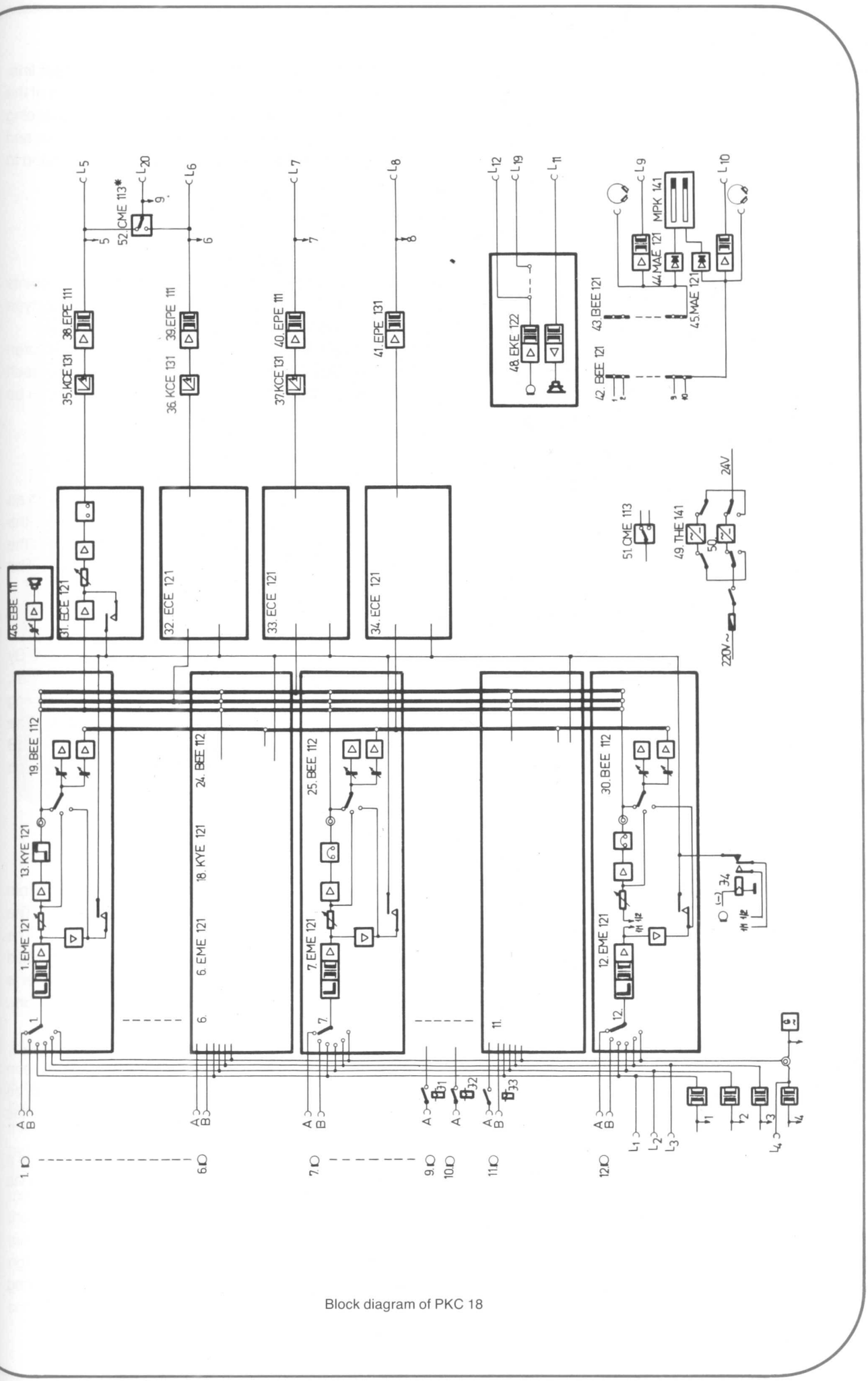
Other units can also be inserted into the sound path (e.g. a special corrector, and compressor, etc.) through the socket of the cross-bar plug inserting the equalizer.

There are three push-buttons connected to the output of the equalizer, permitting the channel to be connected to the mixing-bars of the group amplifiers. The unit type BEE 112 includes these push-buttons, the level control potentiometer the separating amplifier the source selector and the on-off switch of the auxiliary output selector and push-button. Connecting of channels to the mixing bars does not influence the parameters of the mixing console (e.g. level drop, etc.).

The mixing console includes four mixing-bars three for the main chain, one for the auxiliary chain. Each of the four mixing bars is connected to the input stage of a group amplifier type ECE 121.

The output of the input stage is connected to the fader adjusting the group level and to the pre-fade listen push-button. The fader is followed by an amplifier and then by an ''empty'' unit containing only short circuits.

Since the mixing console includes altogether six equalizers type KYE 121 and equalizer can be connected in any one of the 12 channels and the 4 groups, the console includes ''empty'' units (with short circuits only) instead of 10 equalizers. Empty units can be interchanged freely with the equalizers. The next component of the main chain is the limiter type KCE 131 limiting the output level of the mixing console at a constant value within 1 dB up to an overdrive of 10 dB.



Block diagram of PKC 18

The output amplifier (EPE 111) of the main chain includes the balancing transformer of the output line. The rated output level of main outputs is + 6 dBm (1.55 volt) at 600 Ohms load. The group amplifier of the auxiliary chain is identical with that of the main chain. The group amplifier is followed by a balancing transformer (because the line amplifier type EPE 131 of the auxiliary chain has a balanced input and output). The auxiliary chain has a rated load impedance of 600 Ohms; the output level can be adjusted to +6; +9; +15 and +18 dBm.

Description of the check-up system

PRE-FADE LISTEN

The points before the faders of the 12 channel amplifiers, the outputs of the six equalizers and the points before the fader of the 4 group amplifiers can be checked by a 0.5 watt power pre-fade listen amplifier type EBE 111 and a dynamic loudspeaker built-into the mixing console.

The pre-fade listen circuit works during the pressed-in state of the button only. More pre-fade listen push-buttons can also be depressed without causing any disturbance on the branch-off points (each push-button is preceeded by a separating amplifier). The volume of the pre-fade listen amplifier can be adjusted by a potentiometer.

OVERDRIVE INDICATOR

Each channel amplifier (EME 121 and EME 129) and each group amplifier (ECE 121) is provided with an overdrive indicator circuit. If the input level of these units exceeds the permissible overdrive limit, the overdrive indicator lamp will light up. The overdrive range of the channel amplifiers is 36 dB, and that of the group amplifiers is 20 dB. The overdrive indicator circuit will indicate a peak of 10 msec duration. The shortest indication period is 1 sec.

MONITORING-LEVEL CHECKING

The mixing console type PKC 18 includes two independent monitoring and level checking systems. By means of the pushbuttons of unit BEE 121 one of the four line inputs, and the changeable output L20, further the built-in audiofrequency generator can be connected simultaneously to one monitoring amplifier and light pointer PPM. The balanced monitoring output can be loaded by min. 200 Ohms. The level of the monitoring output can be adjusted in a range of 40 dB. At a normal level, the switch is in −6 dB position. The monitoring loudspeaker can be replaced by a headphone. A light-pointer indicator and an electronic unit with 40 dB working range provided for level checking (PPM).

Description of auxiliaries

INTERCOM SYSTEM

Two-way interconnections can be established with up to eight different places by the two-way intercom unit type EKE 122. Intercom push-buttons will close the circuits only as long as they are depressed. The intercom outputs are connected to a balanced 600 Ohm line (with a rated output level of +6 dBm). The microphone amplifier section also contains a limiter, limiting the output level to +6 dBm within a specified tolerance. When any of the intercom push-button is depressed, the level of the intercom loudspeaker is decreased by 20 dB. The max. 0.8 watt power amplifier has a balanced input. Rated input level is +6 dBm.

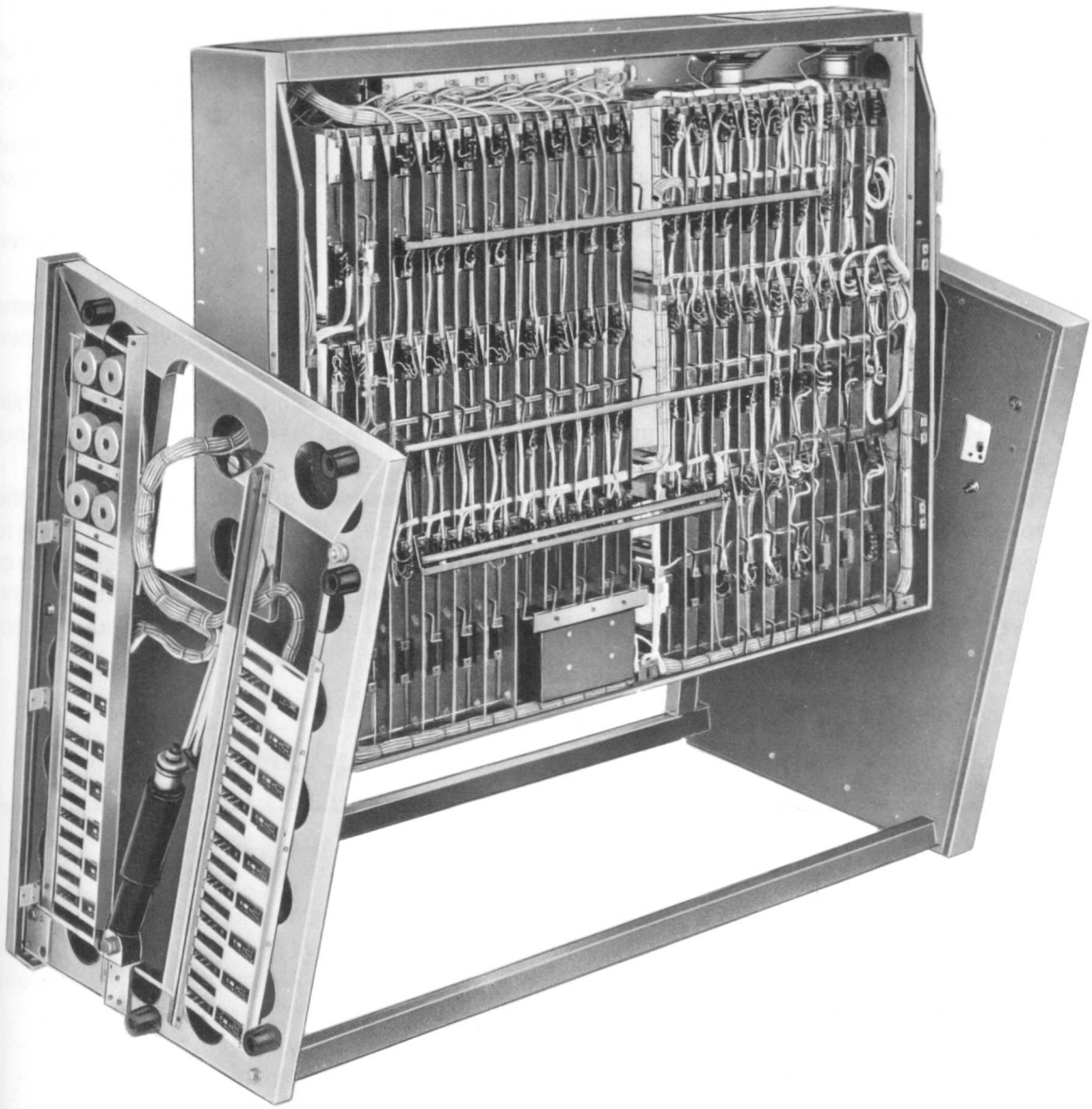
SIGNALLING SYSTEM

When the fader of any channel is moved from its "infinite" position, it will produce a short-circuit between the corresponding points of the terminal strips by means of a switch (K12−K24). This short-circuit can be used for remote control or visual signalling (e.g. starting of tape recorders, and indication of microphones "on", etc.).

The signalling system is fed by an external power supply unit which must have a voltage of 24 volts and a current of at least 0.5 ampers. The external power supply unit can be connected to the mixing console via terminal strip F 50.

POWER SUPPLY

The electronic units of the console are fed by two built-in stabilized power supply unit (THE 141). During the operation of one power supply unit the other is a standby one.



Mechanical construction

A special feature of the mixing console is that the upper plate contains the whole electronics, and the lower supporting frame contains only the wiring, a few relays and the terminal strips. The upper plate of the console is composed of replaceable units, the coverplates of which form the top surface. The type number is indicated on each module (EME 121, KYE 121, etc.).

These type numbers are written on the appropriate points of the frame of the console as well as on the modular units, facilitating each unit to be fitted in a correct position. The units can be removed by turning the metal levers placed in the slots of the bottom cover. The units can be fixed in the correct position by turning the same levers. The upper plate can be tilted up after releasing the mechanical lock placed on the right side. This is advantageous in the transport of the console: the studio consoles of the FIT system can be passed through even the narrowest doors (60 cm wide); additionally, it makes the installation more convenient and rapid.

The whole wiring of the console is placed in one plane, offering a clear view. The cables are connected to the console in the two stands of the frame – the lefthand side receives the incoming cables, the right-hand one receives the outgoing cables. The cover of the stands can be removed for the access of the terminal strips. (The cover can be drawn forward, after removing the fixing screws.)

The wires are fixed by soldering which ensures high reliability. The wire connections are indicated on labels next to the terminal strips. The symbols of the cables and lines on the plates are identical with those of the block diagram. There are earthing bars in both stands for central grounding.

The power rails are also connected on the right side. The mains on-off switch and the automatic circuit breaker are also arranged here. The transformer and the fuse of the light pointer instrument are also placed here.

The controls belonging to a given channel or group are placed in one column. The columns of the individual channels and groups are arranged next to each other.

Contrasted with other units, the light pointer instrument type MPE 141 can be removed from the frame without releasing any fixing lever. (If necessary, it can also be fixed in its position by two M3 x 15 mm screws after removing the bottom cover plate.)

The cover plate of the lightpointer instrument can be removed making accessible the mechanical zero set screw and the incandescent bulb. The intercom microphone in the middle of the table top can be pulled out and adjusted in a tilted position. It is a ''near field'' type microphone.

The various states of the mixing console are indicated by the depressed and released positions of the push-buttons. The relationships are revealed by the button colours: e.g. the push-buttons pertaining to the mixing-bar of a group have the same colour as that of the group control. The flush-mounted knobs of the rotary switches can be released by depressing the metal mandrels in their middle. After adjustment, the projecting part of the knob can be pushed back again. Thus it will not interfere with the subsequent operation of the console.

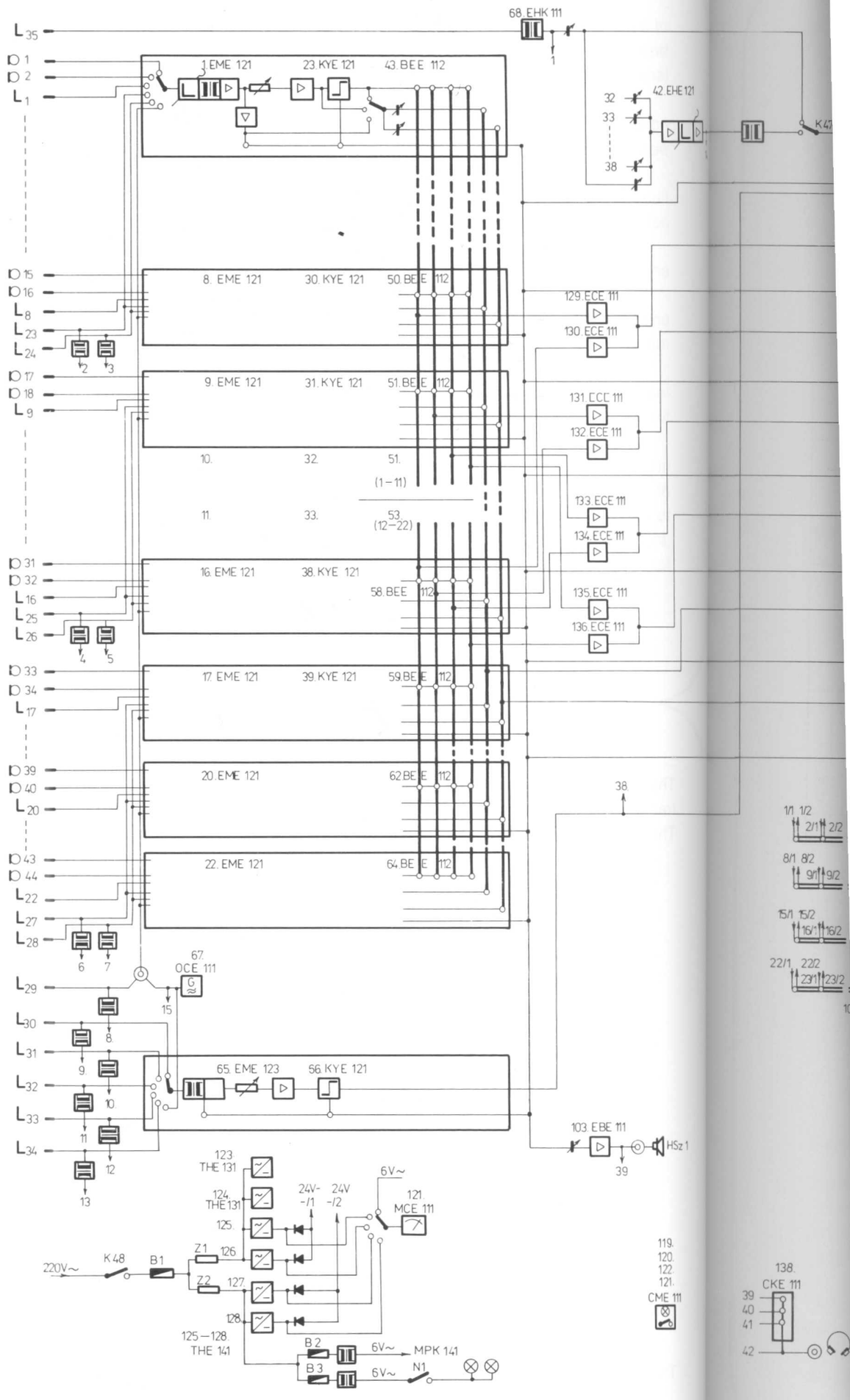
MIXING CONSOLE

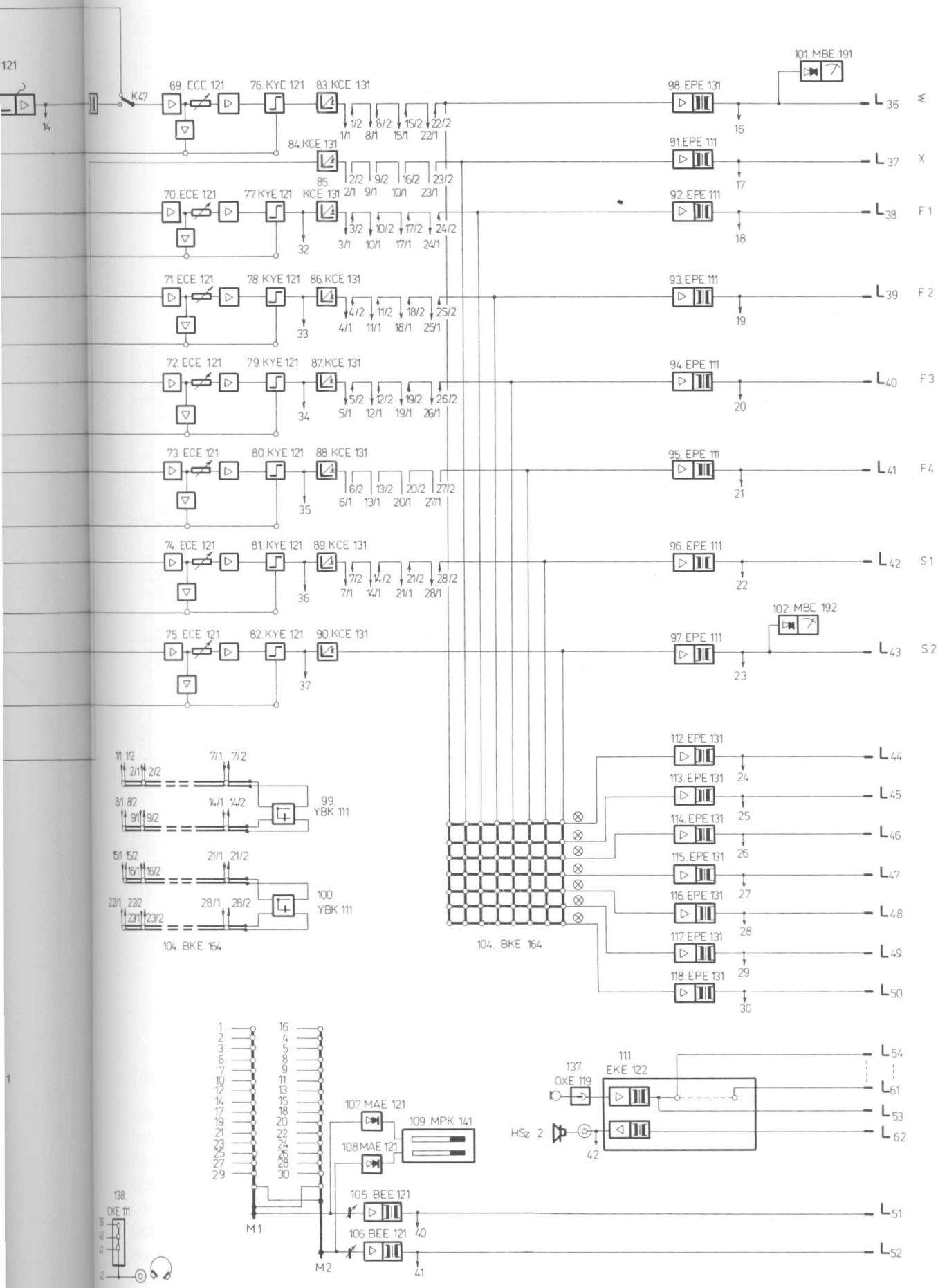
PKC 78

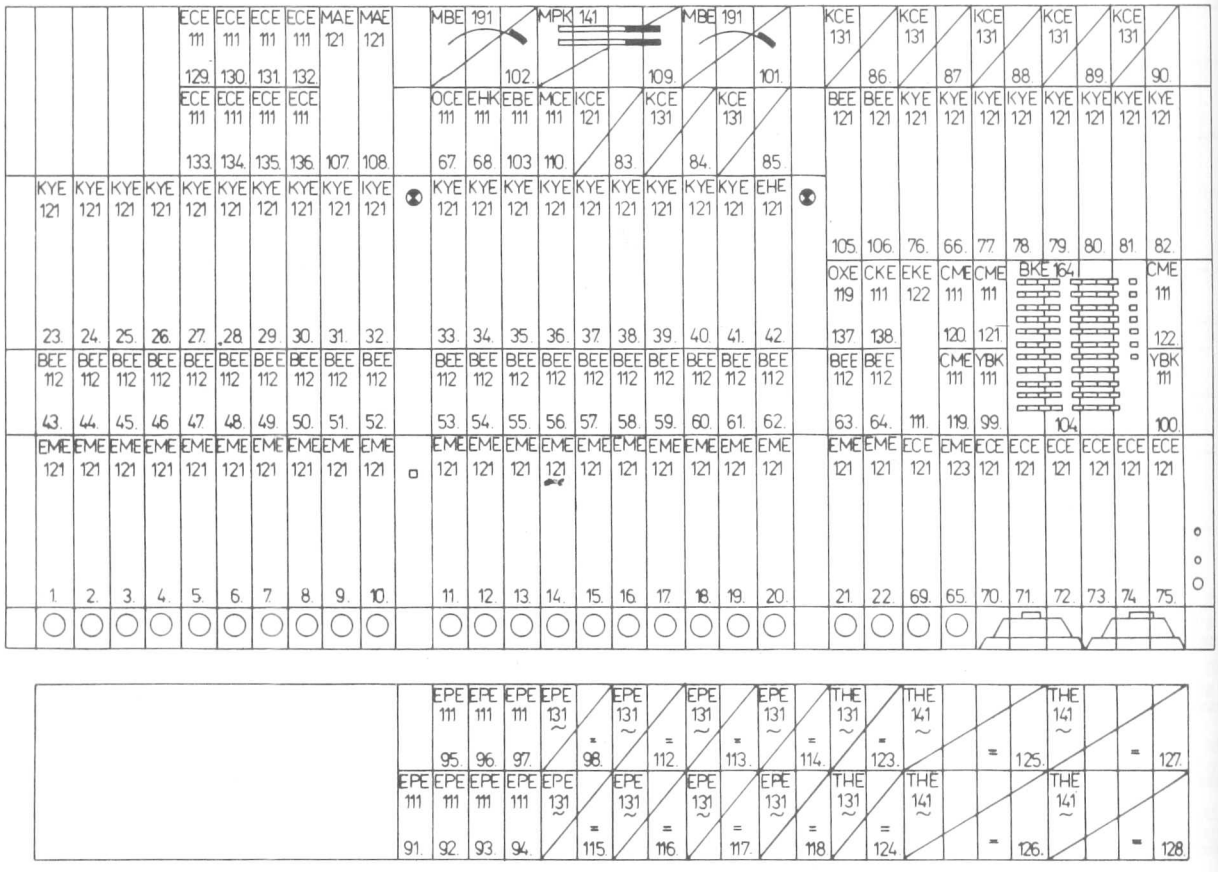
The mixing console is primarily suitable for television and radio studio recording, for programme transmission and for sound systems of sports halls.
The console is built-up of FIT system plug-in units.

- 24 input channels
- 4 main output and 2 auxiliary outputs (groups)
- 1 high-level pass-over channel
- 1 mixing output
- 22 microphone channels
- 2 high-level channels (e.g. for connection of mixing console located in the auditorium)
- Channel input selector (selection of 6 signal sources)
- In the first 19 channels and at the outputs there are equalizer units
- Pre-fade and after corrector listening facility (pre-fade listen loudspeaker)
- Insertable direction control units (two) in the output groups
- 4 remote control units for tape recorders
- Two-way intercom unit for 8 stations
- 8/7 output matrix field
- Built-in A.F. generator
- Overdrive indicator lamp in every channel and group amplifier
- Light pointer PPM (switchable to inputs and outputs)
- Mechanical pointer-type PPM on the mixing and echo outputs
- Total number of plug-in moduls: 128
- Mains supply voltage: 220 V, 50 Hz, 100 VA
- Dimensions: approx. 1900 x 1000 x 950 mm
- Weight: 330 kg

The electronic technical specifications are given in the general description of the FIT system.


68. EHK 111
1
L 35
D 1
D 2
L 1
1. EME 121
23. KYE 121
43. BEE 112
32
33
38
42. EHE 121
K 47
D 15
D 16
L 8
L 23
L 24
8. EME 121
30. KYE 121
50. BEE 112
2
3
129. ECE 111
130. ECE 111
D 17
D 18
L 9
9. EME 121
31. KYE 121
51. BEE 112
131. ECE 111
132. ECE 111
10.
32.
51.
(1–11)
11.
33.
53.
(12–22)
133. ECE 111
134. ECE 111
D 31
D 32
L 16
L 25
L 26
16. EME 121
38. KYE 121
58. BEE 112
4
5
135. ECE 111
136. ECE 111
D 33
D 34
L 17
17. EME 121
39. KYE 121
59. BEE 112
D 39
D 40
L 20
20. EME 121
62. BEE 112
38.
D 43
D 44
L 22
L 27
L 28
22. EME 121
64. BEE 112
6
7
67.
OCE 111
15
L 29
L 30
L 31
L 32
L 33
L 34
8
9
10
11
12
13
65. EME 123
56. KYE 121
103. EBE 111
HSz 1
39
123.
THE 131
124.
THE 131
125.
126
127.
128
125–128.
THE 141
24V-
-/1
24V
-/2
6V~
121.
MCE 111
220V~
K 48
B 1
Z 1
Z 2
B 2
B 3
6V~
MPK 141
N 1
6V~
119.
120.
122.
121.
CME 111
138.
CKE 111
39
40
41
42
1/1 1/2
2/1 2/2
8/1 8/2
9/1 9/2
15/1 15/2
16/1 16/2
22/1 22/2
23/1 23/2


121
14
K47
69. ECC 121
76. KYC 121
83. KCC 131
1/2 8/2 15/2 22/2
1/1 8/1 15/1 22/1
84. KCE 131
85. KCE 131
2/2 9/2 16/2 23/2
2/1 9/1 10/1 23/1
70. ECE 121
77. KYE 121
32
3/2 10/2 17/2 24/2
3/1 10/1 17/1 24/1
71. ECE 121
78. KYE 121
33
86. KCE 131
4/2 11/2 18/2 25/2
4/1 11/1 18/1 25/1
72. ECE 121
79. KYE 121
34
87. KCE 131
5/2 12/2 19/2 26/2
5/1 12/1 19/1 26/1
73. ECE 121
80. KYE 121
35
88. KCE 131
6/2 13/2 20/2 27/2
6/1 13/1 20/1 27/1
74. ECE 121
81. KYE 121
36
89. KCE 131
7/2 14/2 21/2 28/2
7/1 14/1 21/1 28/1
75. ECE 121
82. KYE 121
37
90. KCE 131
98. EPE 131
16
91. EPE 111
17
92. EPE 111
18
93. EPE 111
19
94. EPE 111
20
95. EPE 111
21
96. EPE 111
22
97. EPE 111
23
101. MBE 191
102. MBC 192
L36 X
L37 X
L38 F1
L39 F2
L40 F3
L41 F4
L42 S1
L43 S2
1/1 1/2 2/1 2/2
7/1 7/2
8/1 8/2 9/1 9/2
14/1 14/2
99. YBK 111
15/1 15/2 16/1 16/2
21/1 21/2
22/1 22/2 23/1 23/2
28/1 28/2
100. YBK 111
104. BKE 164
104. BKE 164
112. EPE 131
113. EPE 131
114. EPE 131
115. EPE 131
116. EPE 131
117. EPE 131
118. EPE 131
24
25
26
27
28
29
30
L44
L45
L46
L47
L48
L49
L50
1 2 3 6 7 10 12 14 17 19 21 23 25 27 29
16 4 5 8 9 11 13 15 18 20 22 24 26 28 30
M1
M2
107. MAE 121
108. MAE 121
109. MPK 141
105. BEE 121
106. BEE 121
40
41
138. OKE 111
39 40 41 42
137. OXE 119
111. EKE 122
HSz 2
42
L54
L61
L53
L62
L51
L52



Components side drawing of PKC 78

MIXING CONSOLE

PKP 35

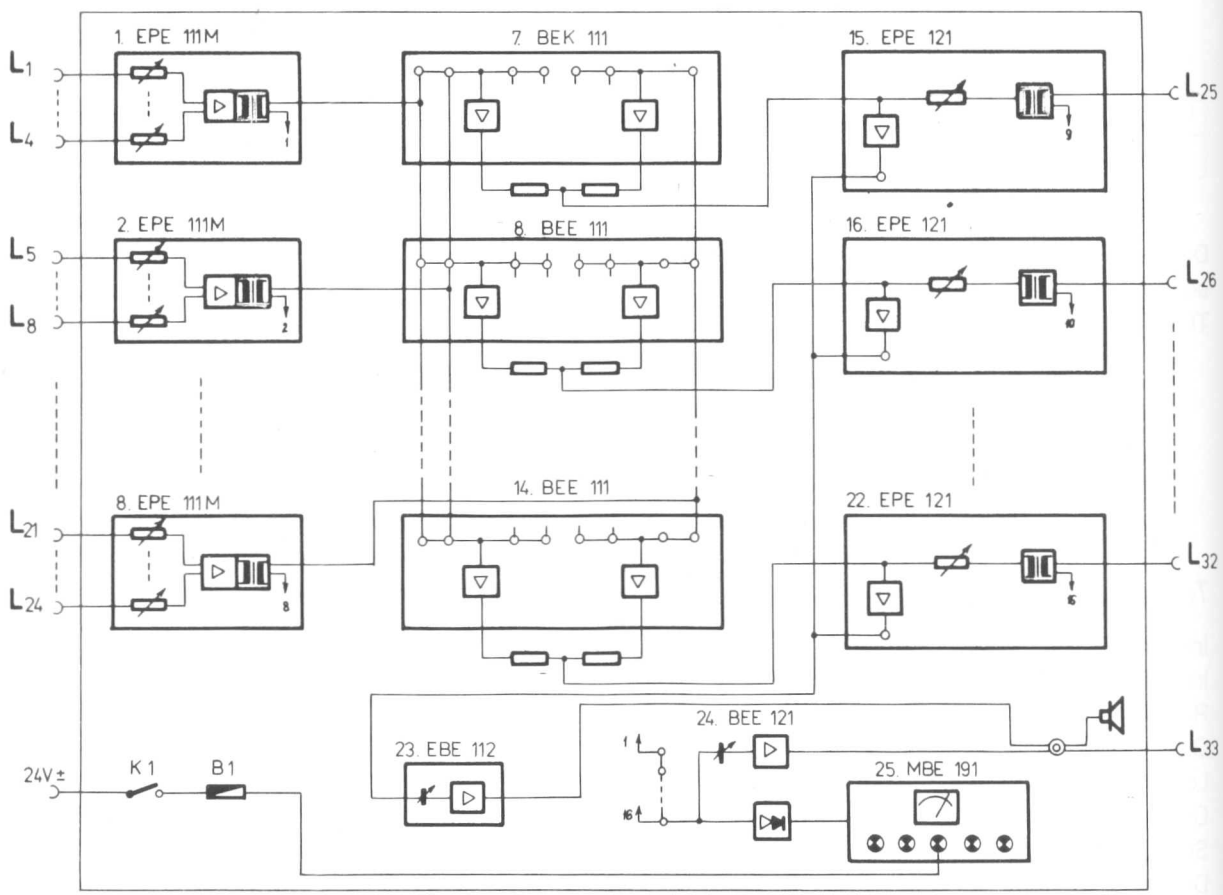
Designed primarily for sound systems of theatres, stadiums, sports halls, or for complementing the equipment of a theatre stage director's system.
The mixing console is built-up of FIT-system plug-in units.

- 24 inputs (the levels can be adjusted with a screwdriver)
- 6 four-channel mixing amplifiers
- 8 group selectors of size 2 x 4
- 8 outputs with main amplifiers and faders
- Pre-fade listen at the pre-fade points main amplifiers
- Check up and programme meter systems at the outputs of the mixers and main amplifiers

Technical specifications

Inputs (L1–L24)	unbalanced
Input impedance	min. 10 kOhms
Rated input levels	+6, 0, −6, −12, −40 dBm
Outputs (L25–L32)	balanced, free-from-earth
Load impedance	600 Ohms min. 200 Ohms
Output level	+6 dBm max. +12 dBm
Supply voltage	24 V ±1 V DC approx. 0.3 A
Dimensions	approx. 646 x 520 x 245 mm
Weight	approx. 43 kg

Components side drawing of PKP 35



Block diagram of PKP 35

PORTABLE MIXER

PKP 11

The fully professional portable mixer designed for high quality sound mixing, distributing and recording.

For radio broadcasting transmissions the mixer's output can be directly connected to the postal lines.

The possibility for giving instructions is provided by the studio monitoring lines and the headphones.

Easy to transport, because the power supply unit, the headphones and the connectors are placed in the same suitcase.

The equipment includes two major parts:

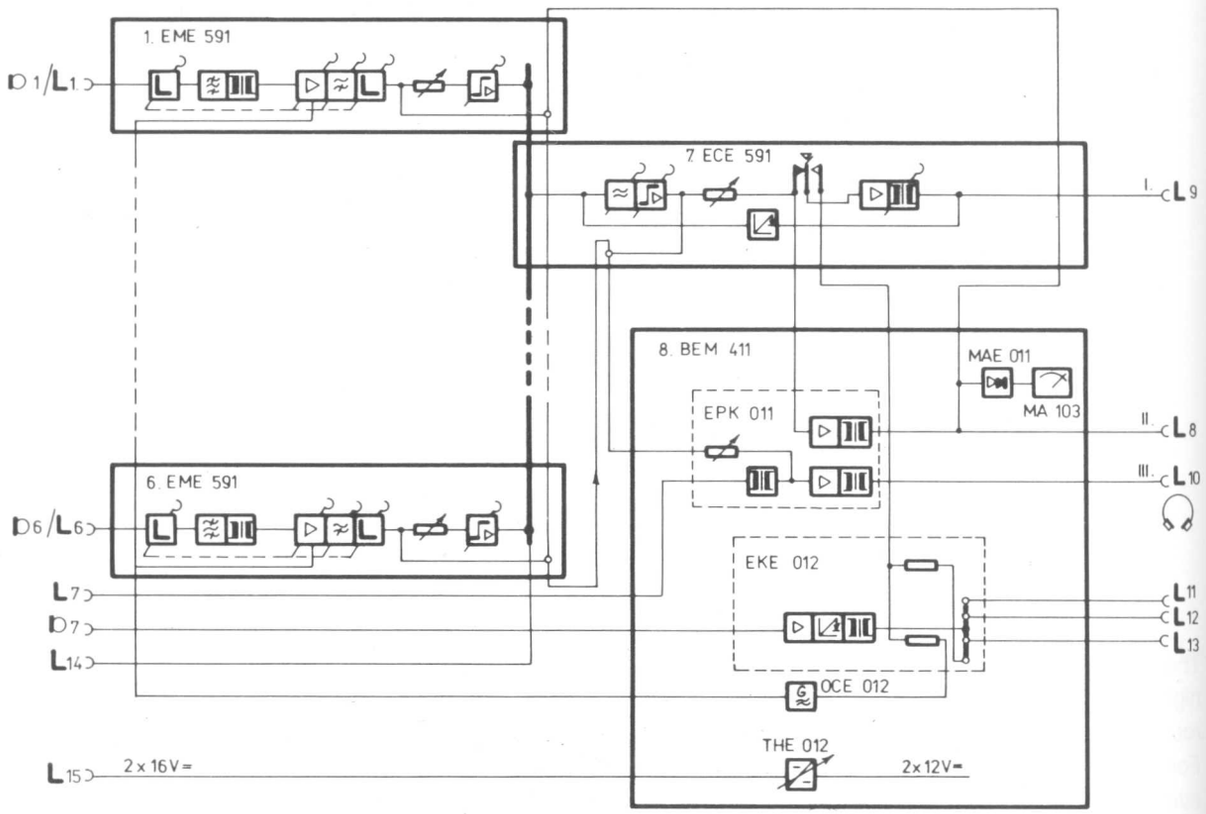
1. Audio mixer

- 6 input channels with microphone line switch over facility
- Sensitivity selector with 6 dB steps
- Bass-cut filter and frequency correction
- Faders in each channel
- Pre-fade listen facility
- Output group fader
- High-cut filter and frequency correction
- Pre-fade listen facility
- Output level selector with 6 dB steps
- Main output with transmit-key
- Auxiliary output for monitoring and recording

2. Audio check up

- Built-in tone generator
- Pre-fade listen fader
- Programme meter
- Amplifier for headphones, for monitoring and announcing
- Facility for command and announcement
- Direct connection to the mixing bar

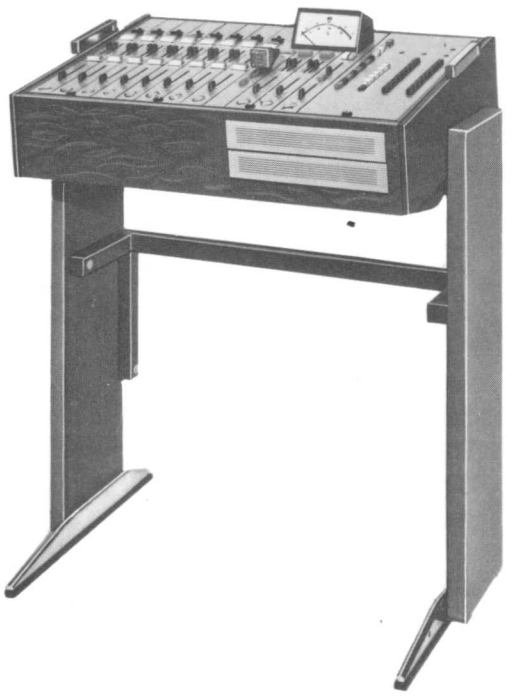
The mixer's inputs and outputs meet the technical parameters of studio technical standards and requirements.



Block diagram of PKP 11

Brief technical specifications

Inputs, outputs	balanced, free-from-earth
Input channel sensitivity	−62...+12 dBm
Source impedance	microphone 200 Ohms line 600 Ohms
Max. gain	90 dB (+6 dBm)
Nominal output level	0, +6, +12, +18 dBm
Load impedance	600 Ohms
Harmonic distortion factor	max. 0.3%
Supply voltage	2 x 16 V +20% −5%
In case of power supply unit type ETC 05	220 V, 50/60 Hz, 10 VA
Weight	approx. 7 kg



PORTABLE MIXING CONSOLE

PKP 19

The PKP 19 is a fully professional transportable console designed for high quality sound mixing, distributing and recording.
The equipment is primarily designed for studios, and theatres but can be used in lecture halls, advertisement studios, bars, and department stores, etc.
The equipment includes 4 basic circuits:

1. Audio mixer

- 8 full mixing input channels
- Switchable input for two microphones
- Bass cut filter and frequency correction for low and high frequencies
- Sensitivity selector with 6 dB steps
- Pre-fade listen
- 2 main outputs with faders and frequency correctors
- Output level selector with 6 dB steps
- Pre-fade and after-fade listen
- 1 auxiliary output with volume control and listening facility

2. Audio check up

- Built-in pre-fade listen amplifier and loudspeaker
- Peak programme meter (PPM)
- Built-in A.F. generator

3. Audio Distribution

- The signal of the two main outputs can be switched to 9 outputs
- Built-in "sound-travel" switch

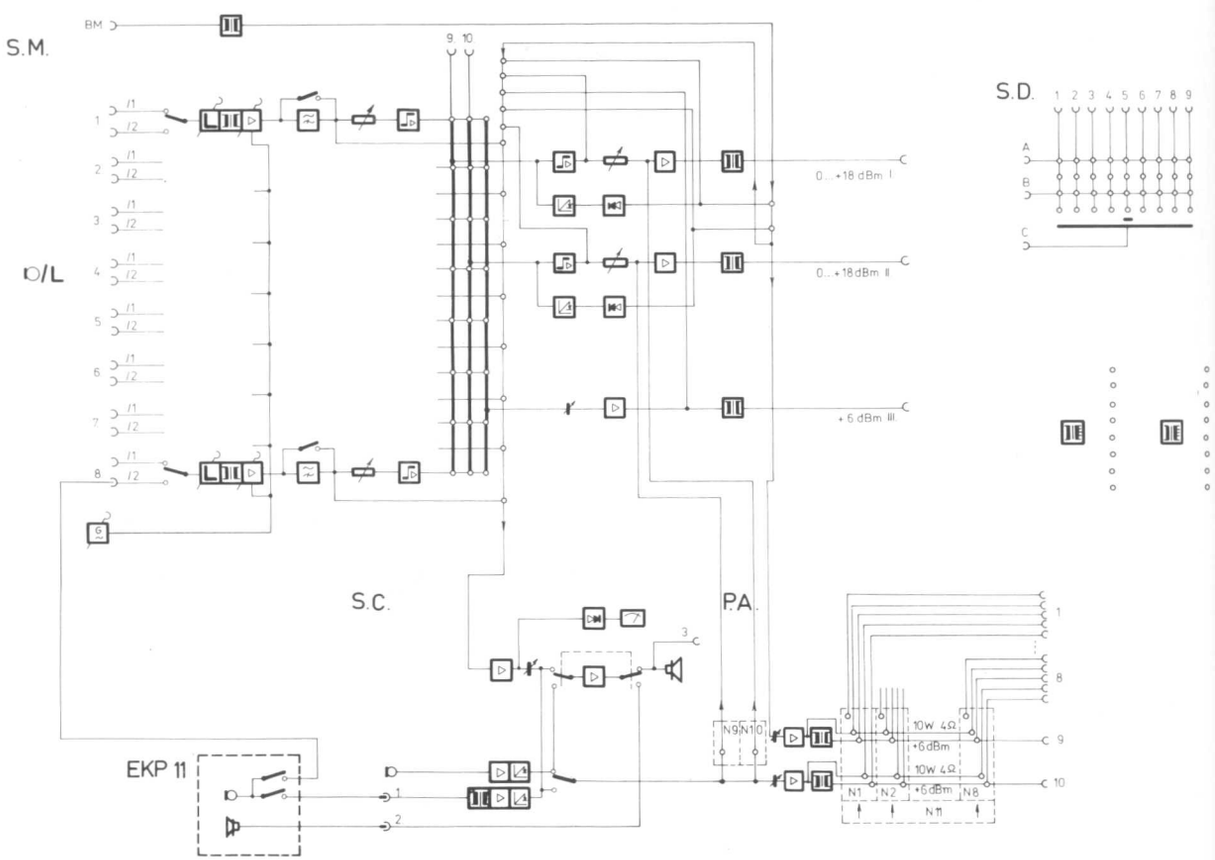
4. Public Address System

- Announce facility, individual or common (to the main outputs)
- Command and announce facility for 8 areas
- Background sound: main or independent programme
- 8 outputs, each one +6 dBm level or 10 W 4 Ohms
- Two reserve pressbutton strips

The mixer's technical parameters meet studio technical requirements.

Brief technical specifications

Input	balanced, free of earth, −68 dBm ... +12 dBm
Source impedance	200/600 Ohms
Max. gain	90 dB/+6 dBm
Output	balanced, 0, +6, +12, +18 dBm
Harmonic distortion factor	max. 0.3%
Supply voltage	220 V, 50/60 Hz, max. 80 VA or 24 V DC approx. 1.5 A
Dimensions	456 x 640 x 173 mm without foot construction
Weight	approx. 35 kg



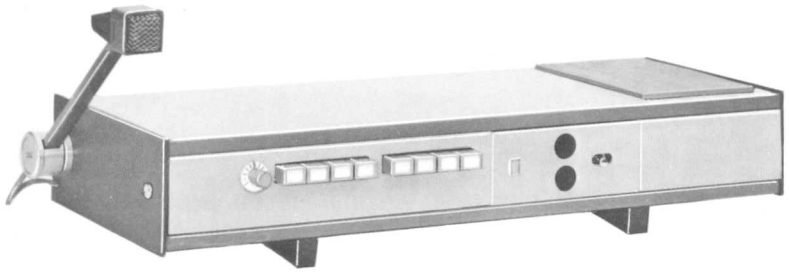
Block diagram of PKP 19

ANNOUNCER'S DESK

PBC 05

The desk was primarily designed for sports establishments, radio and television studios.

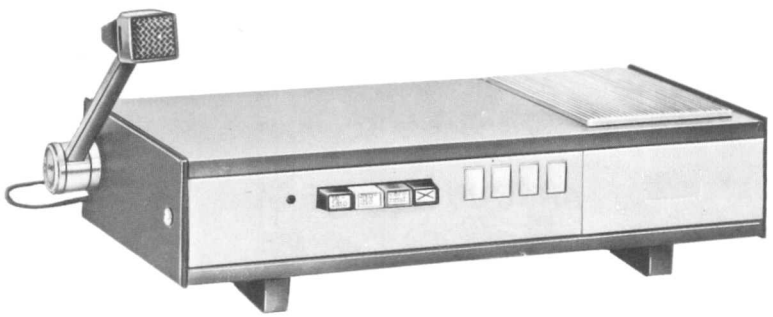
- The desk is built-up from FIT plug-in modules (EMM 121, EKE 124, THE 111)
- 4 lines two-way intercom
- Built-in command microphone
- Facility for connection of two announcing microphones
- Automatic programme fade down
- Built-in melody-sources (e.g. at sports start signal and attention signal)
- Desk-top illumination
- The desk has a metal frame with a slightly tilted top fitted with leather-cloth cover
- Connections by soldering
- Built-in power supply unit for feeding a part of the electronics
- Supply voltage: both internal and external supply units 24 V ±0.5 V
- Signalling voltage: 24 V ±3 V approx. 80 mA
- Mains voltage: 220 V, 50 Hz, approx. 100 VA
- Dimensions: 880 x 750 x 1300 mm (with lamp)
- Weight: approx. 60 kg



INTERCOM UNIT

EKC 01

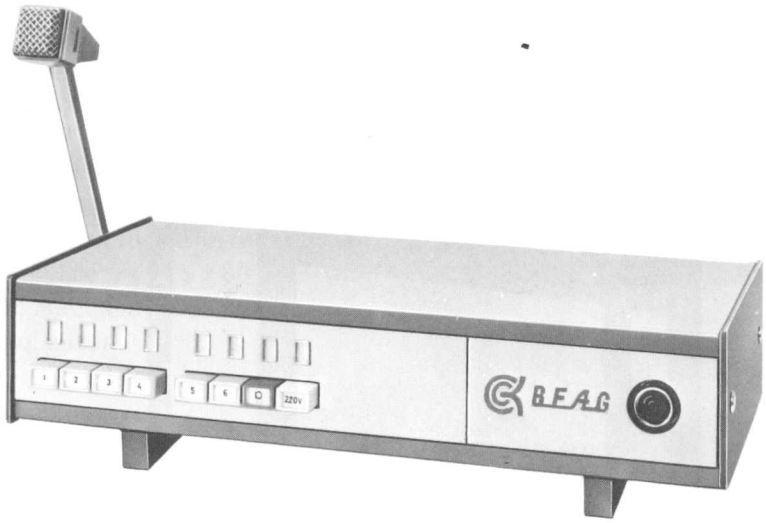
- 8 station two-way intercom unit
- Built-in microphone and loudspeaker
- Connection possibility for headphone set with microphone (head-set); recommended type FMD 25-602
- Built-in power supply unit
- Connection through soldering
- It is advisable to use the cable distributor and connector box type TKC 02
- Mains supply voltage: 220 V, 50 Hz
- Consumption: 5 VA
- Dimensions: 500 x 100 x 190 mm
- Weights: 5 kg



INTERCOM UNIT

EKC 10

- 4-station two-way intercom unit
- Built-in microphone and loudspeaker
- Connection possibility for headphone set with microphone; recommended type: FMD 25-602
- "Busy" signal
- Fed by external power supply (e.g. ETC 04)
- Connection through a releasable 30-pole connector on the rear panel
- It is advisable to use the connector box type TKP 21 for installation
- Supply voltage: 24 V DC
- Consumption: 10 VA
- Dimensions: 500 x 190 x 100 mm
- Weight: 4.5 kg



INTERCOM UNIT

EKP 04

The equipment – completed with power amplifiers and loudspeakers – can primarily be used as a information transmitting and intercom unit.

- Contains FIT modules
- Desktop type
- Built-in microphone, amplifier with dynamic compressor
- Facility for connection of external microphone (EME 112)
- Programmable connection with 6 different places, separately or simultaneously
- Remote controlled mains switch on of the amplifier racks
- Busy signal
- Remote checking of the amplifiers' operation
- Connection: with flexible cable to the power supply unit type ETC 02 and to the cable distributing board
- Supply voltage: 24 V DC max. 190 mA
- Dimensions: 370 x 190 x 100 mm
- Weight: approx. 4 kg

DESK FOR THE COMPETITION ORGANIZING BODY

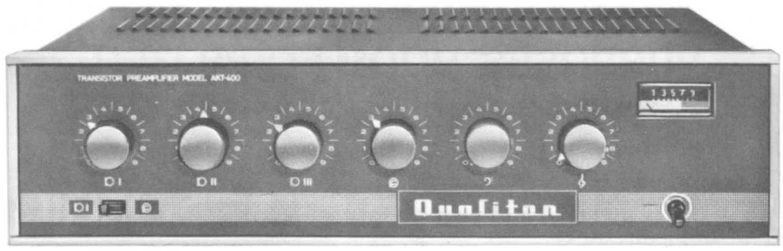
PTC 11

The desk can be used advantageously at competitions organized in sports establishments to command the competitors and participants, to inform the public and for intercom. The desk is built-up from FIT modules (EKE 122, BOE 124)

- 8 line two-way interconnections
- 7 line pre-programmable (simplex) interconnections (e.g. drive of power amplifiers, and commands, etc.)
- Built-in microphone and amplifier with dynamic compressor
- Remote checking of the power amplifiers
- Illumination of desk plate
- The desk has a metal frame with tilted plate covered with leather-cloth
- Connections: via soldering
- Supply voltage: 24 V DC max. 110 mA
- Mains voltage for desk illumination: 220 V approx. 60 VA
- Dimensions: 880 x 750 x 1300 mm (together with lamp)
- Weight: 60 kg

AMPLIFIERS FOR COMMERCIAL AND PROFESSIONAL PURPOSES, ROOM EQUALIZER, ACOUSTIC FEEDBACK REDUCER

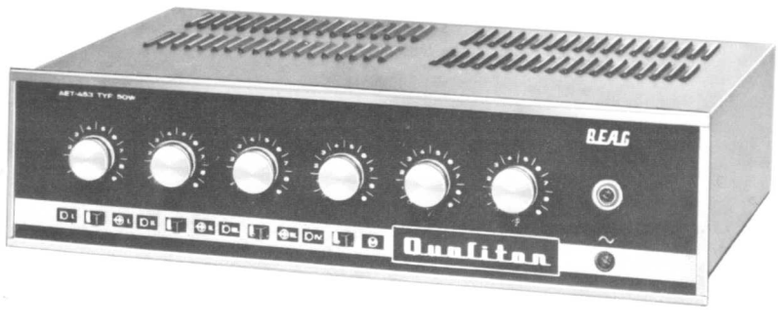
AKT 400	Mixing amplifier
AET 453	4-channel amplifier, 50 W
APX 100	Power amplifier, 100 W
AET 210	Stereo amplifier, 2 x 12 W
AET 250	Stereo amplifier, 2 x 50 W
EBE 5305	Power amplifier, 100 W
EBE 5001	Power amplifier, 100 W
EBP 101	Power amplifier, 250 W
KEP 104	Power amplifier rack, 1250 W
KEP 23	Power amplifier rack with radio set, 4 x 50 W
KEP 82/B	Power amplifier rack, 5 x 80 W
KME 5301	Acoustic feedback reducer
KYE 271	Room equalizer



MIXING AMPLIFIER

AKT 400

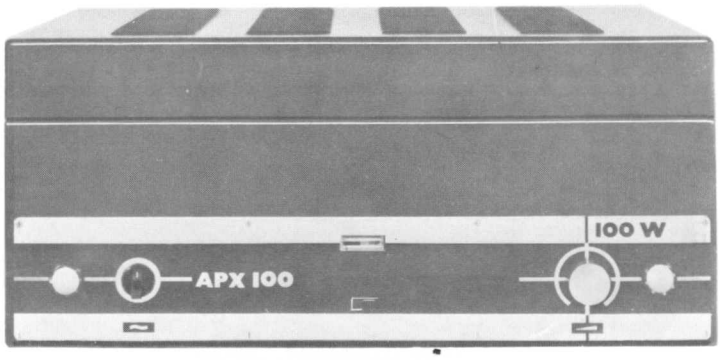
- Portable, desktop model
- 4 microphone inputs
- The first channel can be switched over for microphone level
- Common tone control
- Built-in microphone transformers
- Programme meter
- Connector sockets: DIN
- Input: 0.3 V/220 Ohm, balanced
- Output: 1.55 V/680 Ohms
- Supply voltage: 220 V, 50/60 Hz
- Dimensions: 410 x 110 x 320 mm
- Weight: approx. 6.5 kg



MIXING AMPLIFIER

AET 453

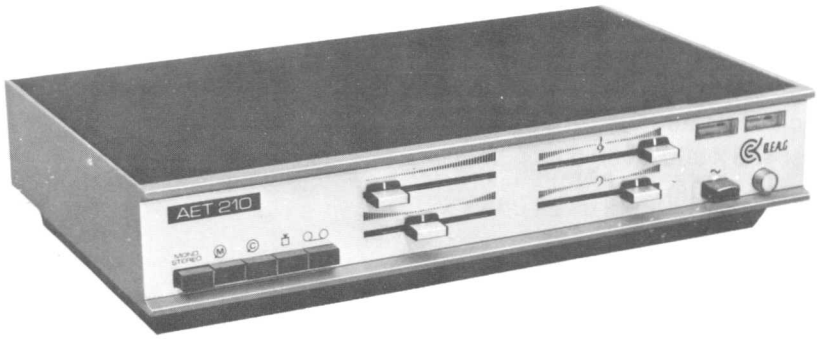
- Portable, desktop model
- 4 microphone channels, the first 3 channels can be switched-over for line inputs, the 4th for magnetic pick-up input (RIAA correction)
- Common tone control
- Connectors: input (DIN)
  audio line output HTV connector
- Built-in 50 W power amplifier, switchable for 8 Ohms or 100 V/250 Ohms
- Silicon semiconductor construction
- Supply voltage: 220 V, 50/60 Hz
- Dimensions: 410 x 110 x 320 mm
- Weight: approx. 11 kg



POWER AMPLIFIER

APX 100

- Fields of utilization: schools, factories, railway stations, small theatres, and public buildings, etc.
- The tube-type amplifier is also suitable for large power, high fidelity musical transmissions
- The unit can be driven from any audio source having an output level of 0 dBm
- The output is protected against short-circuit
- Output power: 100 W sine-wave
  140 W music
- Output voltage: 100 V/100 Ohms/k =2%
- Frequency response: 30 Hz to 15 kHz ±1 dB
- Connections: according to DIN standard
- Supply voltage: 110; 127; 220; 240 V, 50/60 Hz
- Consumption: max. 250 W
- Dimensions: 400 x 330 x 180 mm
- Weight: approx. 16 kg



STEREO AMPLIFIER

AET 210

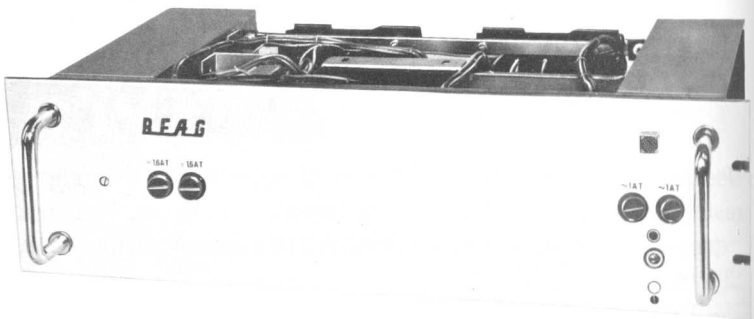
Designed primarily for sonorization of homes, but the amplifier can also be used in small clubs and restaurants. The operation of the amplifier is easy. The function of the controls and connectors are explained by symbols.The type AET 210 contains in one case two 12 W power amplifiers, built-up of Si-transistors and ICs.

- Connectable
- magnetic pick-up (built-in RIAA correction 4 mV, 4.7 kOhms)
- crystal pick-up (300 mV, 470 kOhms)
- radio (30 mV 47 kOhms)
- tape recorder (300 mV 470 kOhms)
- Output power 2 x 12 W at 4 Ohms k = 2% music power 2 x 20 W at 4 Ohms k = 2%
- Frequency response: 30 Hz to 20 kHz ±1.5 dB
- Bass and treble tone controls
- Connection: according to DIN standard
- Supply voltage: 220 V, 50/60 Hz
- Power consumption: max. 100 VA
- Dimensions: 78 x 210 x 346 mm
- Weight: 3 kg

STEREO AMPLIFIER

AET 250

- High fidelity amplifier, for use in clubs, bars, restaurants and in homes. The unit includes two 50 W, silicon transistorized amplifiers.
- Input selector switch, volume control, bass and treble tone control, stereo-mono switch, and balance control are mounted on the front plate between the mains power switch and the indicator lamp.
- Connectable equipment (in accordance to the DIN standard)
- magnetic pick-up (4 mV, 47 kOhms RIAA correction)
- crystal pick-up (250 mV, 200 kOhms)
- radio (250 mV, 200 kOhms)
- tape recorder (250 mV, 200 kOhms)
- Output power: 2 x 50 at 8 Ohms K = 1%
- Frequency response: 20 Hz to 20 kHz ±2 dB
- Mains supply voltage: 220 V, 110 V, 50/60 Hz
- Consumption: max. 200 VA
- Dimensions: 400 x 300 x 100 mm
- Weight: approx. 7.5 kg



RACK UNIT

EBE 5305

EBE 5305 Standard ASA 19'' rack unit of m^0 3 dimension
Applied in box KEP 5001
KEP 5001
Power amplifier with silicon transistors suitable for non-stop operation. It is protected against overheat, overdrive and overload.

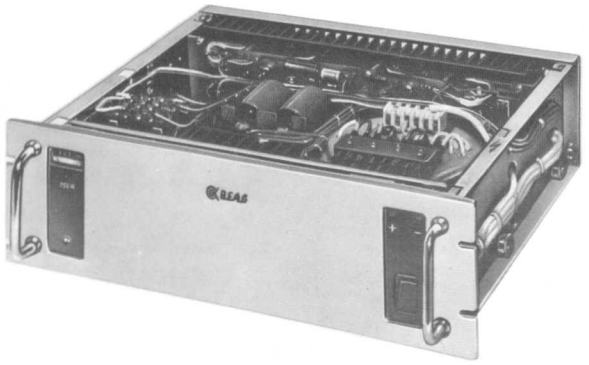
ONE 100 VA AMPLIFIER
TYPE EBE 5305

KEP 5001

in metal box connected via plug connector

Technical specifications

Input I.	
Input/source impedance	(balanced) 7500/600 Ohms
Input level	0, +6, +12, +18 dBm
Input II.	unbalanced
Rated input voltage	100 mV
Output I.	
Load impedance	(balanced) 125 Ohms
Max. output voltage/power	112 V/100 VA
Output II.	
Load impedance	15 Ohms
Output voltage	30 V
Supplementary outputs	24 V/50 Hz, 24 V A.F., 4 V A.F.
Frequency range	63 to 15,000 Hz
Harmonic distortion (THD) in the range of 63 to 15,000 Hz	2%
Signal-to-noise ratio	80 dB
Power supply	220 V, 50/60 Hz
Filters	
Low-pass	12, 5, 8, 3 kHz
High-pass	63, 125, 250 Hz
Dimensions (EBE 5305)	132 x 480 x 220 mm
Weight	16 kg



250 W AMPLIFIER

EBP 101

Utilization

The amplifier ensures the sonorization of stadiums, theatres, factories and streets. It is suitable to supply both 100 V and 30 V audio networks. The amplifier can be operated by remote control as a station of the remote-controlled sonorization system developed and manufactured by Messrs. BEAG.

Construction

It contains a 250 W power amplifier built into a metal casing. The mains switch, modulation indicator, supply voltage indicator, and LEDs are placed on the front plate. The equipment is suitable for non-stop operation. The amplifier unit (type EBE 5310) has a built-in limiter and automatic overheat, overdrive, short-circuit and overload protection circuit.

Features

- Possibility for command. The input of the amplifier is switched over the command-line from the programme-line by the relay J3.
- Mains can also be switched on by remote switching through the relay J2.
- 30 V and 100 V A.F. outputs.
- Automatic switch over to battery operation in the event of mains failure.

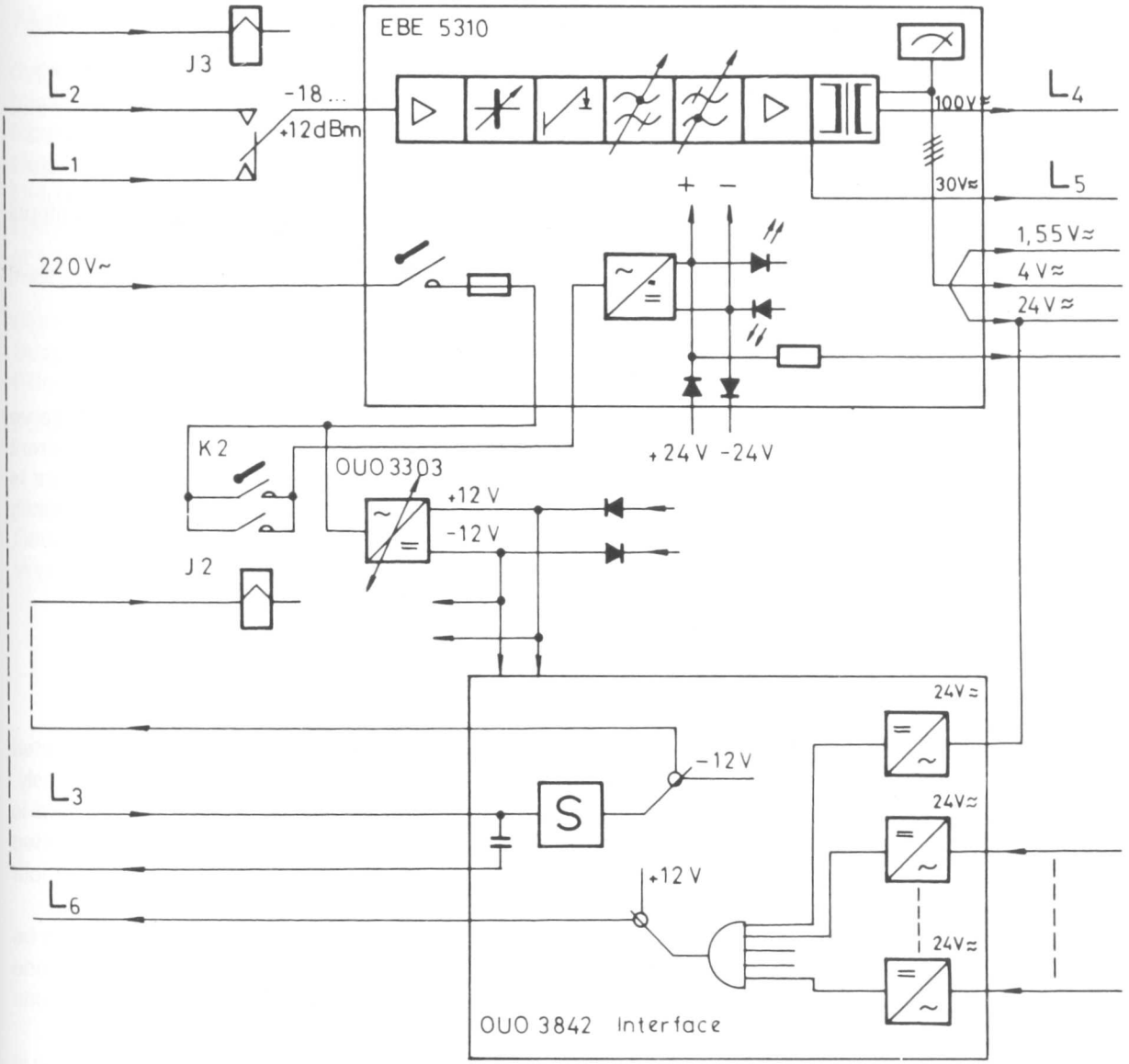
The equipment can be used as an amplifier station of the remote-controlled sonorization system manufactured by Messrs. BEAG (by a built-in interface).

- The amplifier can be switched on and switched off and controlled through the same telephone line from a long distance.
- The outputs of the amplifier can be checked through a telephone line.

Note. Connections marked with broken line (–) on the block diagram are required for the utilization of the remote-controlled sonorization system manufactured by Messrs. BEAG. (See the description of the remote-controlled sonorization system!)

Technical specifications

(EBE 5310) according to IEC 268-3	
Input/source impedance	20,000/600 Ohms differential
Input level	–18 dBm to +12 dBm
Output I. (250 VA)	100 V/40 Ohms balanced
Output II. (250 VA)	30 V/3.6 Ohms balanced
Harmonic distortion factor	
(THD) at 1,000 Hz on Output I.	0.4%
Output II.	0.8%
Signal-to-noise ratio	80 dB
Supplementary outputs	24 V, 4 V, 1.5 V A.F.
Filters	63 Hz, 125 Hz, 250 Hz
	4 kHz, 8 kHz
Power supply	220 V, 50/60 Hz $^{+10}_{-20}$%
	2 x 26 V DC. $^{+15}_{-25}$%
Ambient temperature range in operation	–10°C...+45°C
Dimensions	132 x 480 x 440 mm
Weight	26 kp



Block diagram of EBP 101

250 W AMPLIFIER RACK

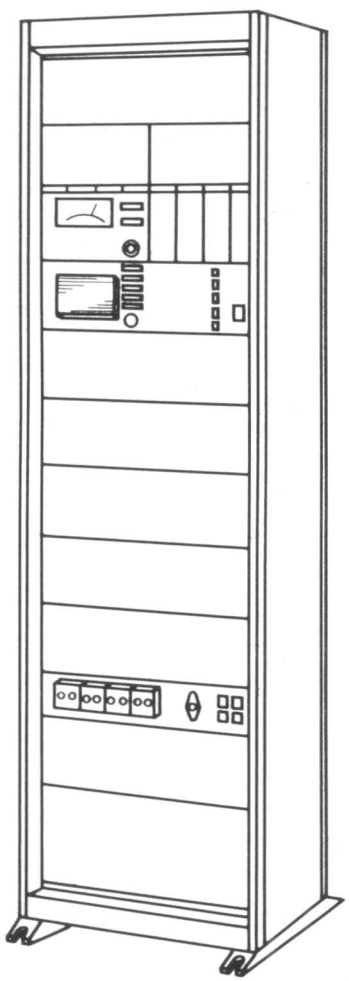
KEP 104

Utilization

The rack ensures the sonorization of stadiums, theatres, factories, and streets. The rack has two outputs to supply 100 V and 30 V audio networks.
The equipment can be used as an amplifier station of the remote-controlled sonorization system manufctured by Messrs. BEAG.

Construction

The following units are placed into the 19'' rack: five 250 W power amplifiers, pre-fade listen unit, reserve selector pressbuttons, interface unit, mains remote-control switch, relays for intercom system, different indicator lamps, 24 V (±12 V) power supply units, and connector strip (solderable). The equipment is suitable for non-stop operation. All the power amplifiers (type EBE 5310) have a built-in limiter, automatic overheat, overdrive, short circuit and overload protection circuit.



Features:

- Working modes:
  a) The five 250 W amplifiers with separated inputs and outputs work simultaneously.
  b) Four amplifiers operate, the fifth one is reserve. The reserve can be inserted instead of any amplifier (also by remote control).
- Inputs and outputs of the amplifiers can be connected parallel to supply a sound network of 1,250 W rated power through one cable-pair only.
- Automatic switch over to battery operation in the event of mains failure.
- 2–2 command relays are on the input of each channel to interrupt the programme in the case of important communications.
- All amplifiers or each one separately can be switched on by remote control. The equipment can be used as an amplifier station of the remote-controlled sonorization system manufactured by Messrs. BEAG (built-in interface).
- The amplifier can be switched on and switched off and controlled through the same telephone line from a long distance.
- The outputs of the amplifier can be checked through a telephone line.

Technical specifications

(type EBE 5310) according to IEC 268-3	
Input/source impedance	20,000/600 Ohms
Input level	−18 dBm to +12 dBm
Output I. (250 W)	100 V/40 Ohms balanced
Output II. (250 W)	30 V/3.6 Ohms balanced
Harmonic distortion factor (THD)	
at 1,000 Hz output I.	0.4%
output II.	0.8%
Signal-to-noise ratio	80 dB
Supplementary outputs	24 V, 4 V, 1.5 V A.F.
Filters	63 Hz, 125 Hz, 250 Hz, 4 kHz, 8 kHz
Power supply	220 V, 60/60 Hz $^{+10}_{-20}$%
	2 x 26 V $^{+15}_{-25}$% DC
Ambient temperature range in operation	−10°C...+45°C
Dimensions	132 x 480 x 440 mm
Weight	26 kg

EQUIPMENT RACK

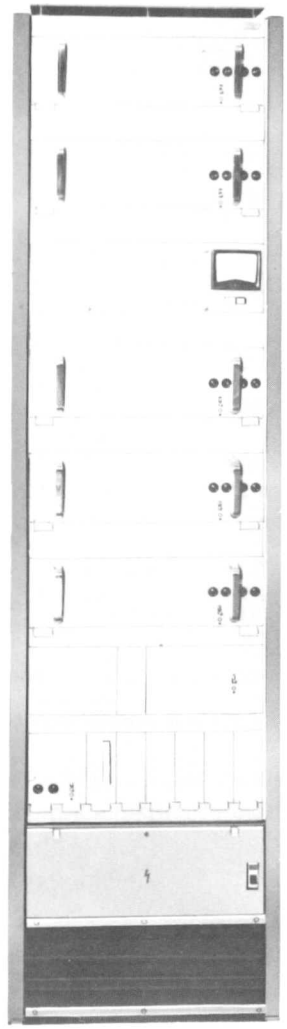
KEP 23

The rack was primarly designed for hotels, colleges, workers' hotels, and hospitals to supply them programmes.
Four indpendent programmes can be transmitted simultaneously.
The rack includes:

- 3 radio receivers (MW, VHF)
- 1 dynamic record player
- Place for tape recorder
- Pre-amplifier, programme selector, check up unit
- Facility for acoustic and instrumental control at every programme source and power amplifier
- Built-in power supply units: 24 V and 2 x 12 V
- two 2 x 50 W power amplifier (connectable to 3-lines 30 V audio network, amplifier type EBE 5307/B)
- Built-in alarm function
- Facility for tape recording
- 4 programme outputs for further amplifiers (0 dBm)
- Connection for an external line (0 dBm)
- Facility for connection of external micro-phone
- Facility for connection of command unit type EKP 04
- Remote control, remote switch on of mains, monitoring
- 19'' RACK-system
- Interchangeable plug-in units
- DIN type or 8 pole edge contact connectors for connections
- Built-in mains connectors for record player, tape recorder and service devices
- Power switch, automatic circuit breaker
- Mains supply voltage: 220 V, 50/60 Hz
- Current consumption: approx. 2 A
- Dimensions: 1780 x 540 x 520 mm
- Weight: approx. 190 kp

POWER AMPLIFIER RACK

KEP 82/B



- The rack was primarily designed for stadiums, theatres, cultural centres, and stations to feed the audio networks
- Construction in FIT-system
- Five 100 W power amplifiers type EBE 272
- Switching driver and checking unit
- Facility for visual and acoustical control at every power amplifier
- 5 independent power amplifier channels (5 x 100 W)
- 4+1 type working mode is also possible; If any of the 4 operating amplifiers are damaged, the reserve amplifier can be switched in (also by remote control) instead of the damaged one
- Also connectable to 3-line audio network
- Built-in "command" unit, which can be operated from two different places (alarm function)
- Mains switch on by remote control of the amplifiers individually or simultaneously
- Remote checking of signalling voltages
- Power channel
  input: +6, +12, +18 dBm balanced
  output: 100 V, or 30 V
- Built-in low-pass and high-pass filters
- Supply voltage: 220 V, 50 Hz max. 1 KVA
- Dimensions: 1730 x 470 x 300 mm
- Weight: approx. 170 kg

ACOUSTIC FEEDBACK REDUCER (AFR)

KME 5301

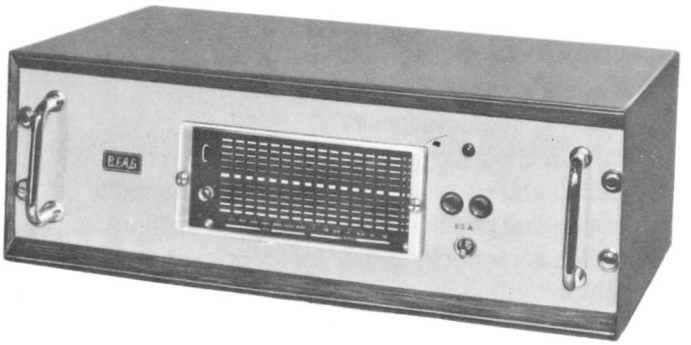
It is an equipment to reduce the acoustic feedback in a sound reinforcement system. The operation is based on continuous phase shifting of the output signal. As a result, the acoustic feedback can only be produced at much higher sound pressure level. Of course, increasing in the sound pressure is depending on the acoustical data of the room to be sonorized and on elements of the sonorizing system (e.g. microphone, speaker system). A sonorization system which is suitable for set up a feedbackless sonorization path, is developed and manufactured by Messrs. BEAG.

SUGGESTED EQUIPMENT FOR THIS SYSTEM:

Cardioid sound columns type HTP 91, HTP 45
Cardioid microphone type MD 210

Technical specifications

Rated input voltage	0.775 V RMS (0 dBm)
Total harmonic distortion (THD) at the rated input level	$< 1\%$
Rated input impedance	> 10 kOhms
Max. input voltage (limited with 2.5% THD)	2 V RMS
Rated pass band	20 to 13,000 Hz
Gain in the pass band	0 dB (A = 1)
Output	ungrounded, balanced
Load impedance	$\geqslant 600$ Ohms
Signal-to-noise ratio	$\geqslant 60$ dB (according to curve DIN "A")
Sound pressure increasing can be achieved	min. 5 dB, max. 12 dB
Mains voltage	220 V, 50 Hz
Power consumption	approx. 15 VA
Dimension	475 x 78 x 292 mm
Weight	5 kg



ROOM EQUALIZER

KYE 271

The equipment was designed to equalize the frequency response of the sound system caused by the acoustical disadvantages of the sonorized room. The unit has 14 individually adjustable filters with centre frequencies in the distance of 2/3 octaves from each other. With these filters equalization of max. ±10 dB is possible on frequencies near to the filter centre frequencies. The adjustement can be performed by slide potentiometers. The position of the sliders indicates the frequency response curve. In switched-off state of the unit the signal is not influenced by the filters.

Technical specifications

Gain (slide potentiometers in middle position)	0 dB
Frequency response (slide potentiometers in middle position)	30 Hz – 15 kHz ±2 dB
Filter centre frequencies	40 – 63 – 100 – 160 – 250 – 400 – 630 Hz 1 – 1.6 – 2.5 – 4 – 6.3 – 10 – 16 kHz
Range of adjustment	±10 dB
Input	free-from-earth, balanced 200 mV
Input impedance	5 kOhms
Output	free-from-earth, balanced
Output impedance	20 Ohms
Harmonic distortion factor	less than 1%
Mains supply voltage	220 V, 50 Hz, max. 10 VA

Types

KYE 271 in FIT system rack module of size No. 8.
Dimensions: 400 x 230 x 120 mm
KYE 2715 19'' Rack-unit
Dimensions: 482 x 235 x 132.5 mm
KYP 5001 self contained 19'' rack casing
Dimensions: 490 x 250 x 170 mm

AUDIO LINE, MICROPHONE LINE, DISTRIBUTING PANELS AND RACKS

BEAG RACKS

KEC 01	Distributing rack with line amplifiers
KKP 02	Distributing rack with line checking instruments
KKP 23	Line checking rack with intercom facility
KMC 102	Audio line distributing, checking and remote controlling rack
KMC 104	Audio line distributing and checking rack for TV commentator
KMC 116	Audio line distributing and checking rack with line amplifiers
KMC 117	Audio line distributing and checking rack for TV commentators
KMP 01/1	Universal A.F. commutator rack with microphone and line amplifiers
KMP 05	Audio line distributing rack for 80 input and 36 output lines
KMP 06	Audio line distributing rack with a matrix of 9 x 20
PK 010	Cross-bar distributor board with a matrix of 8 x 11
TKC 109	TKC 22 Audio line connector boards
TKP 12	Connector board with tumbler switch
TKP 13	Connector board with 8-pole connector
TKP 14	Connector board with volume control
TKP 21	Flush-mounting connector box to receive audio and signalizing lines

RACK FRAMES DEVELOPED AND MANUFACTURED BY BEAG

The main features of BEAG-rack frames:

- Corrosion proof metal-frame.
- Any plug-in unit of the mixing consoles can be applied in the rack frames. The unit is protected against displacement.
- Cables are connected at the bottom on soldering strips.

I. FIT SYSTEM FRAME:

Dimensions are shown on the figure.

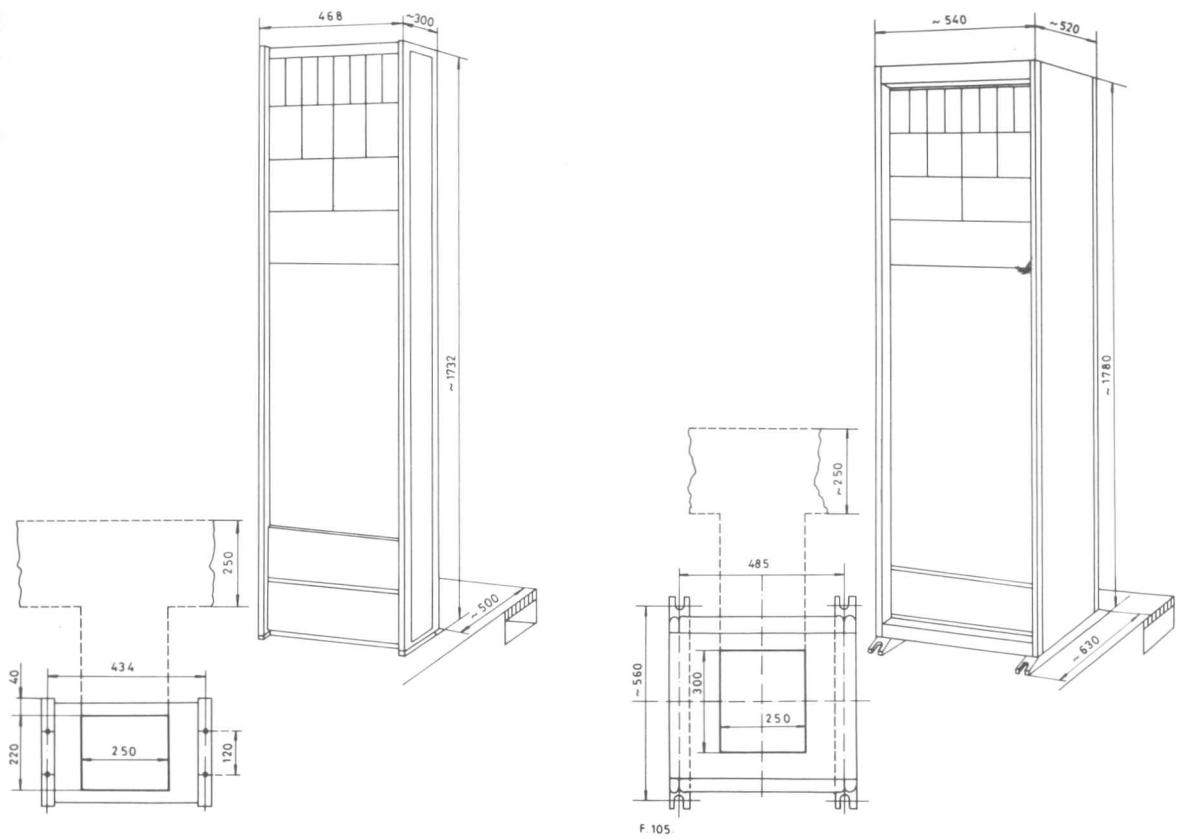
- The units can be placed into the frame from the front side.

II. 19'' FIT RACK SYSTEM:

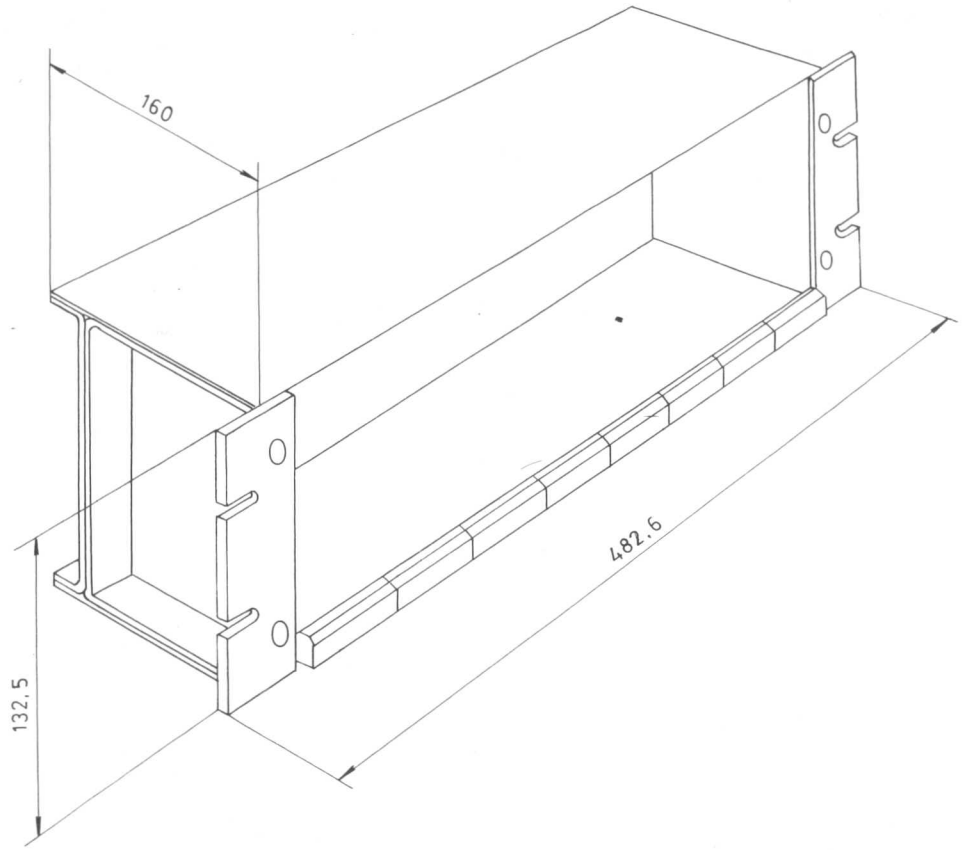
Dimensions are shown on the figure.

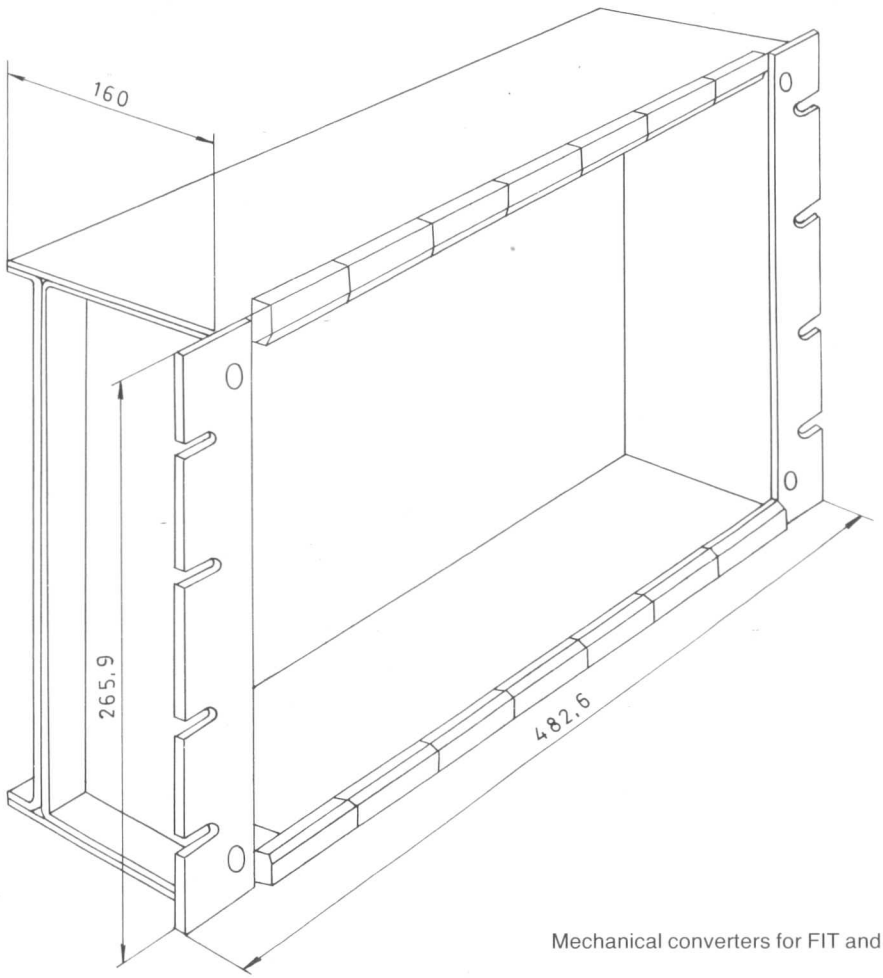
- ASA amplifiers of 19'' dimension can be fitted in.
- Plug-in modules of the mixing console can be placed in adapters of size m 3 or m 6.
- The amplifiers can be placed on the front or on both sides.
- The racks can be delivered without doors or with lockable doors, according to the following type numbers:

BQO 9272/A 1	doorless construction
BQO 9272/B 1	doorless front, two-part door in the rear
BQO 9272/C 1	one-part door in the front, two part door in the rear
BQO 9272/D 1	two-part door in the front, two-part door in the rear

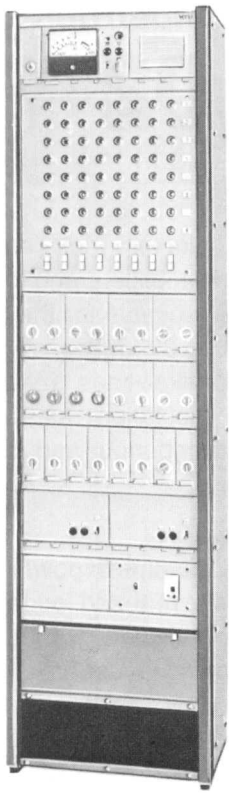


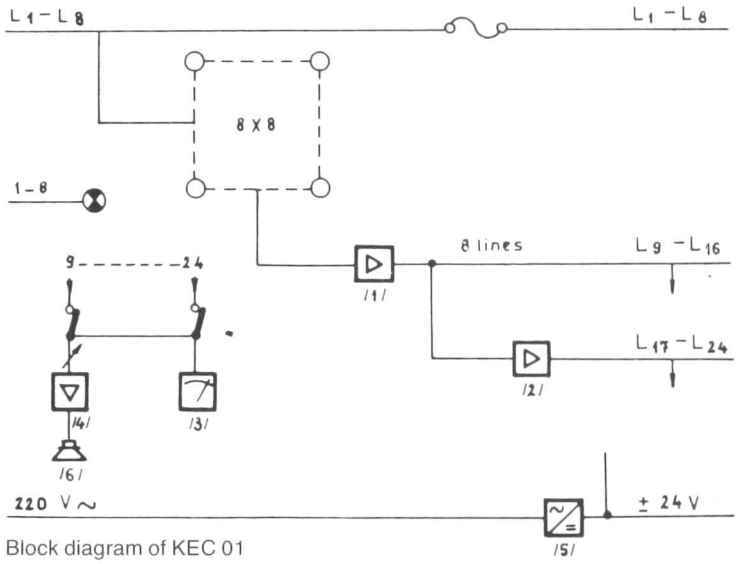
Dimensional drawing of FIT and 19'' racks





Mechanical converters for FIT and 19'' dimensions





Block diagram of KEC 01

DISTRIBUTING RACK

KEC 01

Utilization

The commutator rack assists distributing, checking the line-level signals and the amplification of the built-in amplifiers. This rack is recommended for radio and television studios and sound centres.

Operation

8 inputs can be switched on 8 outputs optionally by a 8 x 8 crossbar socket board. The outputs can be led out: without amplification; at the level of +18 dBm; at the level of +6 dBm. 16 lines can be selected for the PPM and monitoring loudspeaker (by insertion of an amplifier) by pressbuttons.

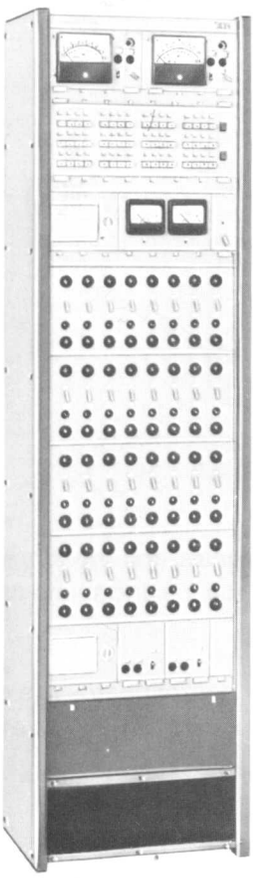
Technical specifications

Number of selectable inputs	8
Switchboard	8 x 8 crossbar system
Inputs	8 earthfree
Input impedance	10 kOhms
Outputs I.	8 earthfree
Output level	+6, +9, +12, +15, +18 dBm
Output impedance	max. 24 Ohms
Load impedance	600 Ohms, min. 200 Ohms
Gain	controllable up to +18 dBm (in 7 steps)
Outputs II.	8 earthfree
Output level	+6 dBm
Output impedance	max. 24 Ohms
Load impedance	600 Ohms, min. 200 Ohms
Output I., Output II.	
Frequency response	in the range of 31.5 to 16,000 Hz, ±0.5 dB
Harmonic distortion factor (THD)	0.5%
Signal-to-noise ratio	80 dB
PPM: range	−20 to +3 dB
attack time	10 ms
Output power of the monitoring amplifier	0.5 W
Power supply	220 V, 50/60 Hz

This rack is built according to the FIT system.

SOUND LINE DISTRIBUTING RACK

KKP 02



Utilization

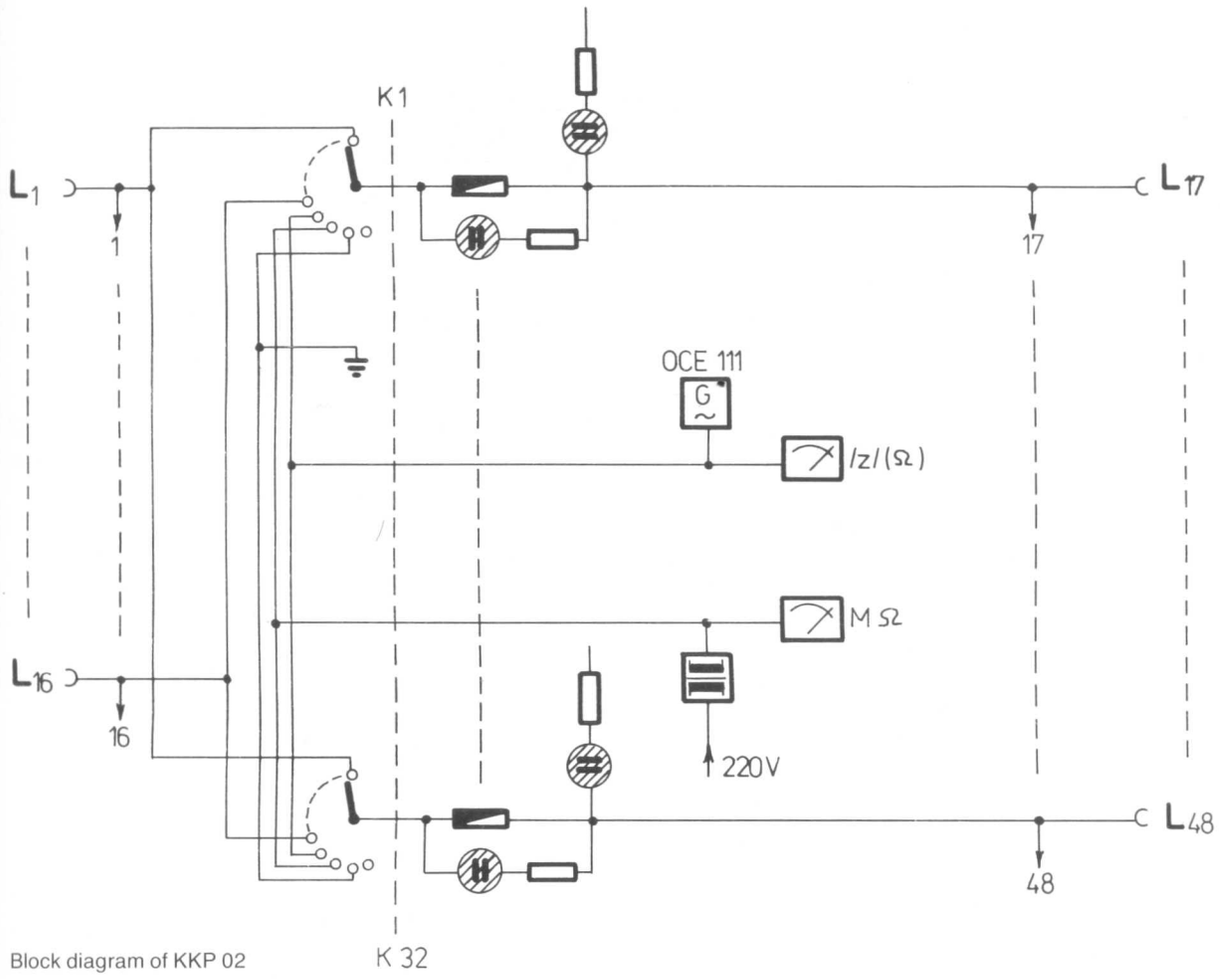
This sound line selector rack ensures the connection of power amplifiers and loudspeaker systems. The rack is suitable for the distribution of 16 amplifier lines on 32 loudspeaker systems, for checking loudspeaker-lines (measurements of impedance and insulation resistance) level checking and monitoring input and output lines.

Operation

Any of the 16 inputs (outputs of power amplifiers) can be selected for the required loudspeaker line by switches. Other positions of the switches ensure connection of the loudspeaker lines to the checking instrument for measuring impedance and insulation resistance. In the two last positions, the loudspeaker line is grounded or not connected resp.
The impedance and the insulation resistance are displayed by measuring instruments. 2 PPMs are provided for level checking (type MBE 142). The following points can be checked by the line selector pressbuttons:
the system No. 1 (upper pressbutton strip)
16 inputs
the system No. 2 (lower pressbutton strips)
32 outputs
Two built-in loudspeakers are provided for monitoring.

Technical specifications

Number of selectable inputs	16
Number of outputs (switches)	32
Switchable voltage	max. 120 V
Switchable current	max. 4 A
Impedance measuring range	1 Ohms to kOhms
Insulation resistance measuring range	1 MOhms to 7 MOhms
PPM: input impedance	20 kOhms
input level (0 dB)	120 V
measuring range	=20 to ×3 dB
accurancy	0.2 to 0.5 dB
frequency response	±0.5 dB
in the range of 31.5 to 16,000 Hz	
Output power of the monitoring amplifier	1.5 VA
Power supply	220 V, 50/60 Hz



Block diagram of KKP 02

LINE CHECKING RACK

KKP 23

Construction

The following lines are connected to the rack:

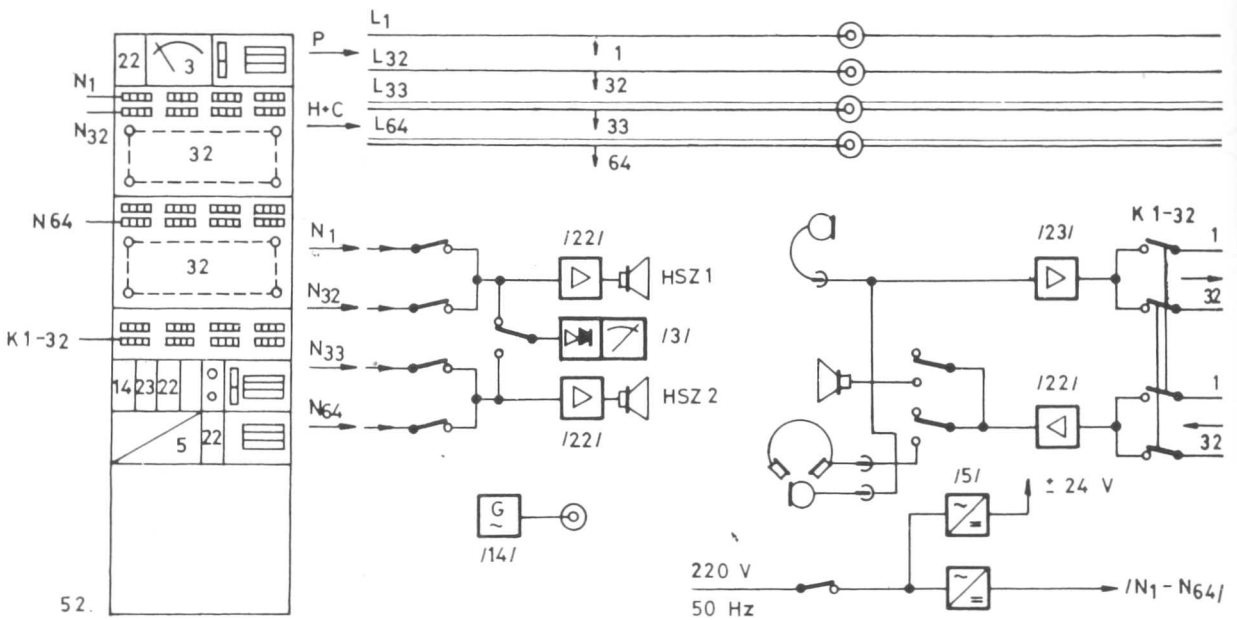
- 32 balanced programme lines, from the sources (P)
- 32 balanced programme lines to the sources (H)
- lines of 32 signalization circuits (C)

The P and H lines can be monitored and measured. The checking equipment can be connected by 32 pressbuttons. An A.F. generator is provided for line-checking. The built-in two-way intercom system ensures inter-connection with up to 32 places.

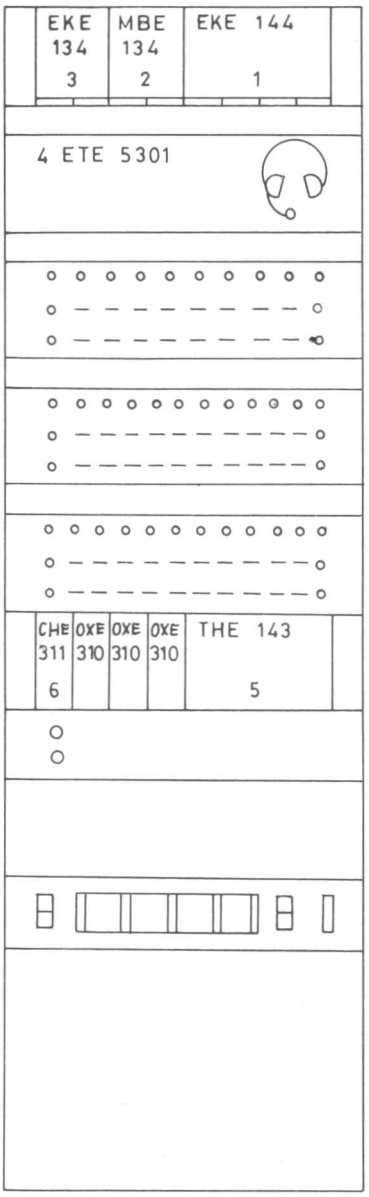
Technical specifications

Input and output level	+6 dBm, balanced
Intercom input level	−72 dBm, unbalanced
output level	3 VA/15 Ohms
Crosstalk altennuation between the lines	90 dB
Power supply	220 V, 50/60 Hz

The rack is built according to the FIT system



Block diagram of KKP 23



AUDIO LINE DISTRIBUTING, CHECKING AND REMOTE CONTROLLING RACK

KMC 102

Utilization

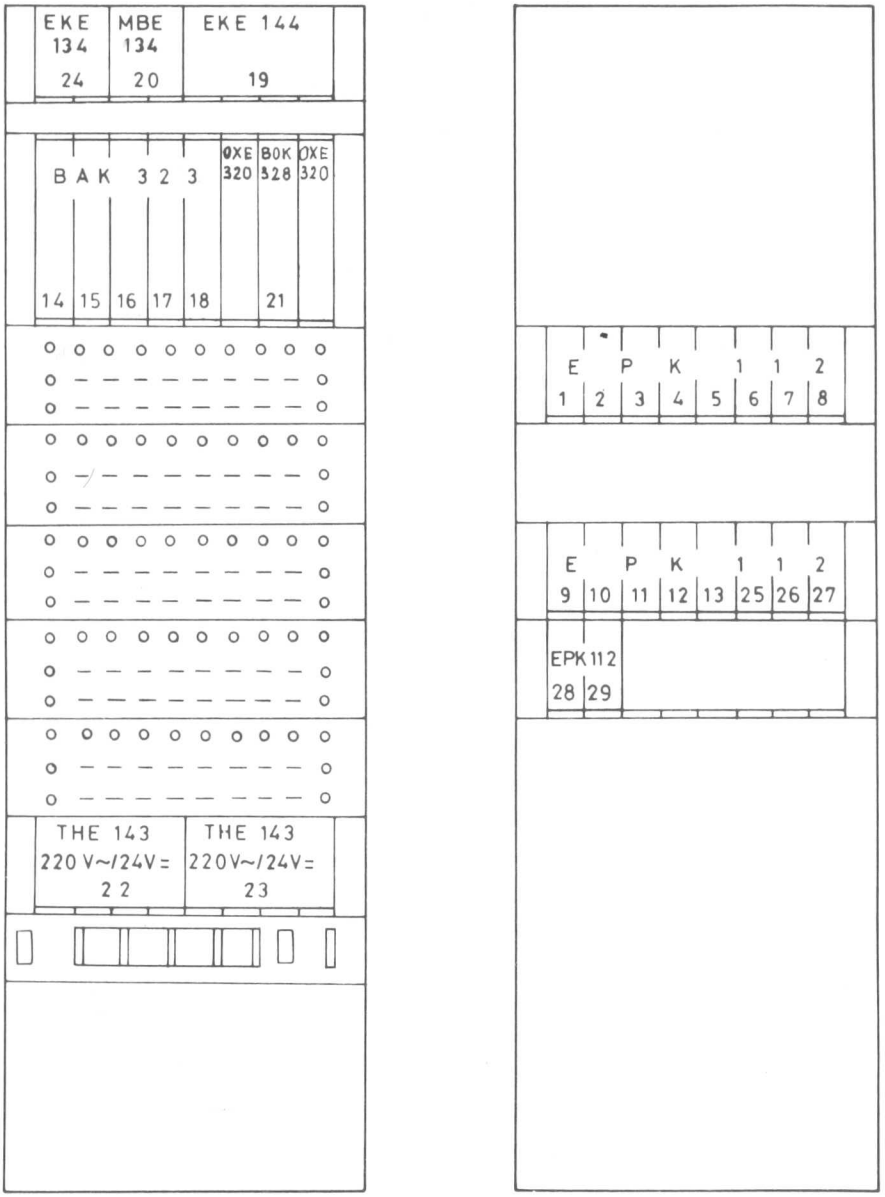
The rack ensures the distributing and checking of audio-lines of radio and television studios. A matrix remote control unit and a 10-line telephone unit are also contained in the rack.

It is connected to the KKA 102 type matrix rack.

Construction

1. Checking section: 8-line intercom system, PPM from LEDs, monitoring loudspeaker
2. Telephone unit
3. 90 crossbar sockets for commutation of the lines
4. Matrix-remote control unit

Dimensions: 540 x 520 x 1780 mm
Power supply: 220 V, 50/60 Hz



AUDIO LINE DISTRIBUTING AND CHECKING RACK

KMC 104

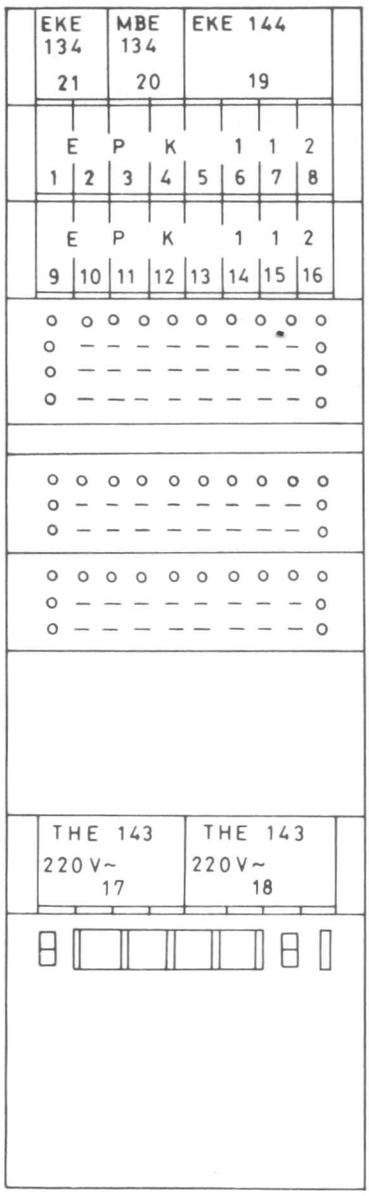
Utilization

The rack ensures the distributing and checking of the audio-lines of radio and television studios.

Construction

1. (The rack from the front) 180 crossbar sockets for commutation of the lines.
2. Switch board for checking of max. 63 lines.
3. (The rack from the rear) Checking section: 8-line intercom system, PPM from LEDs, monitoring loudspeaker.
4. 2 x 28 separating amplifiers.
   Input level: −42, −32, −22, −12, +6 dBm/20 kOhms, balanced.
   Output I. +6 dBm/24 Ohms.
   Output II. +12 dBm/1 Ohm, unbalanced.

Dimensions: 540 x 520 x 1780 mm
Power supply: 220 V, 50/60 Hz



AUDIO LINE DISTRIBUTING AND CHECKING RACK

KMC 116

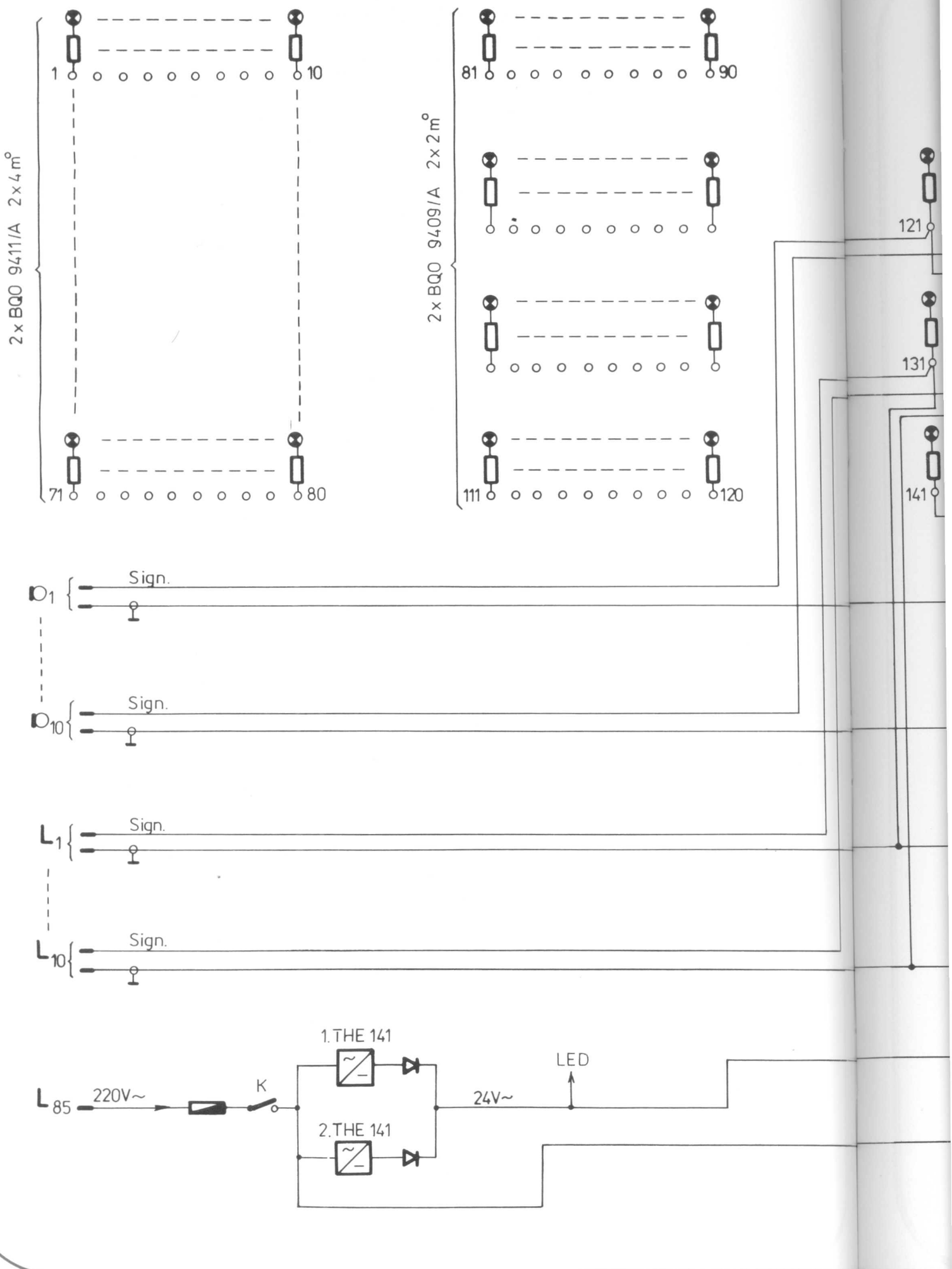
Utilization

The rack ensures the distributing and checking of audio-lines of radio and television studios.

Construction

1. Checking section: 8-line intercom system, PPM from LEDs, monitoring loudspeaker.
2. 2 x 16 separating amplifiers.
   Input level: −42, −32, −22, −12, +6 dBm/20 kOhms, balanced.
   Output I. +6 dBm/24 Ohms.
   Output II. +12 dBm/1 Ohm unbalanced.
3. 100 crossbar sockets for commutation of the lines.

Dimensions: 540 x 520 x 1780 mm
Power supply: 220 V, 50/60 Hz


2 x BQO 9411/A 2 x 4 m°
1
10
71
80
2 x BQO 9409/A 2 x 2 m°
81
90
111
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131
141
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D10
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Sign.
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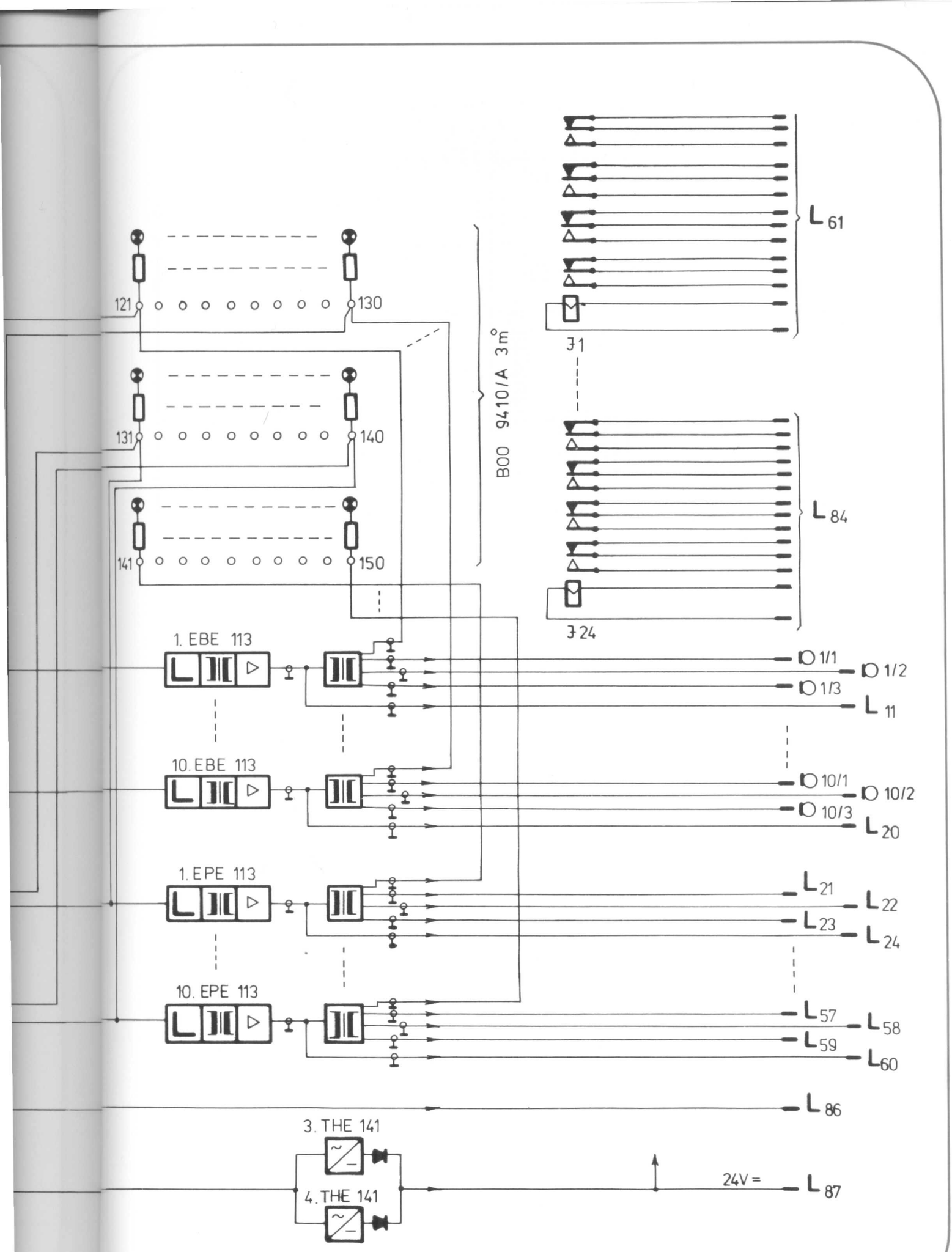
K
1. THE 141
2. THE 141
24V~
LED


121
130
131
140
141
150
B00 9410/A 3m°
J1
J24
L61
L84
1. EBE 113
10. EBE 113
1. EPE 113
10. EPE 113
1/1
1/2
1/3
L11
10/1
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L60
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3. THE 141
4. THE 141
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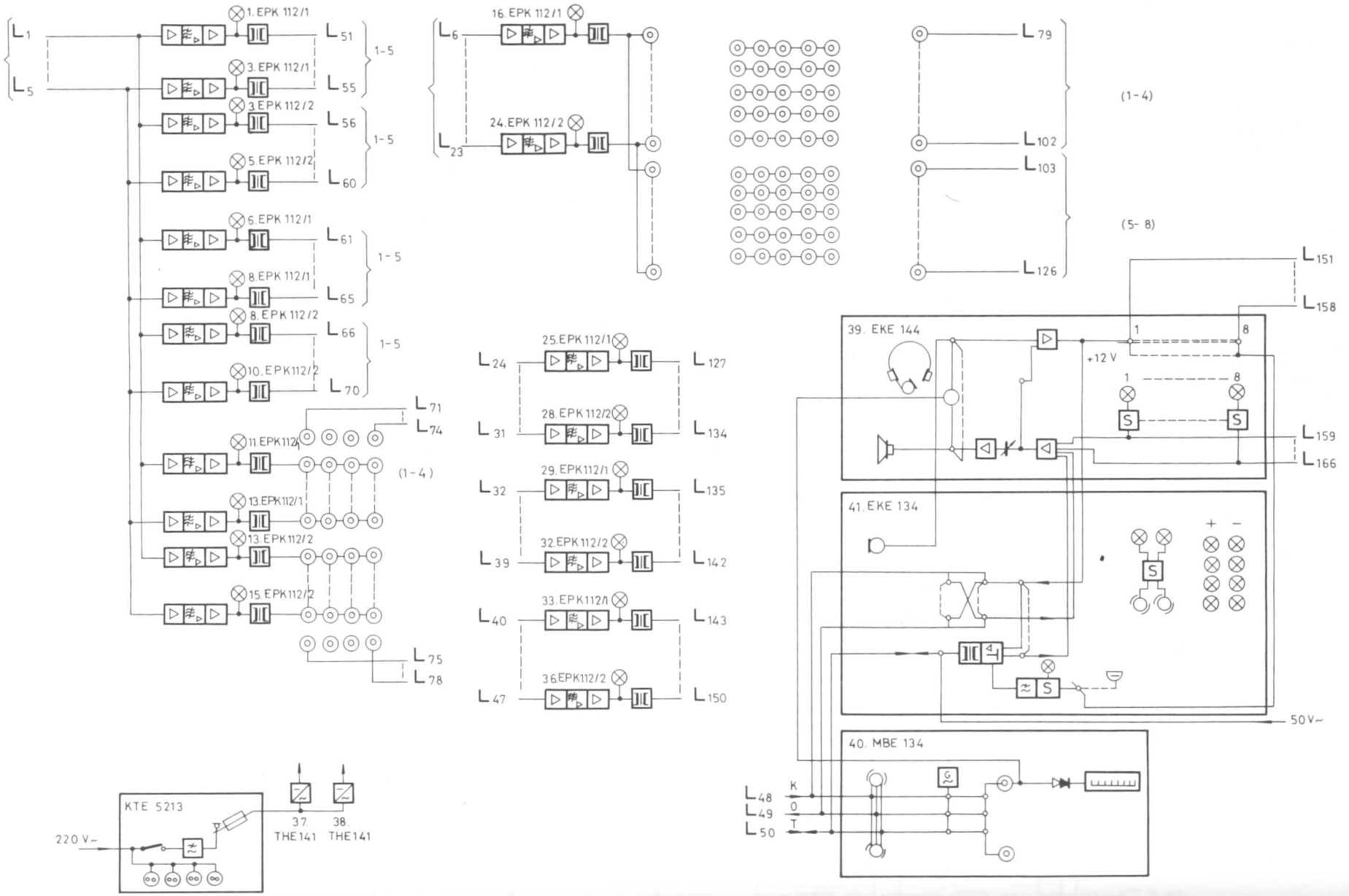
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3. EPK 112/2
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8. EPK 112/1
8. EPK 112/2
10. EPK 112/2
11. EPK 112/1
13. EPK 112/1
13. EPK 112/2
15. EPK 112/2
16. EPK 112/1
24. EPK 112/2
25. EPK 112/1
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29. EPK 112/1
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L103
L126
(1-4)
(5-8)
1-5
(1-4)
39. EKE 144
+12 V
41. EKE 134
40. MBE 134
50 V~
L151
L158
L159
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L48
L49
L50
K
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KTE 5213
220 V~
37. THE 141
38. THE 141

AUDIO LINE DISTRIBUTING AND CHECKING RACK

KMC 117

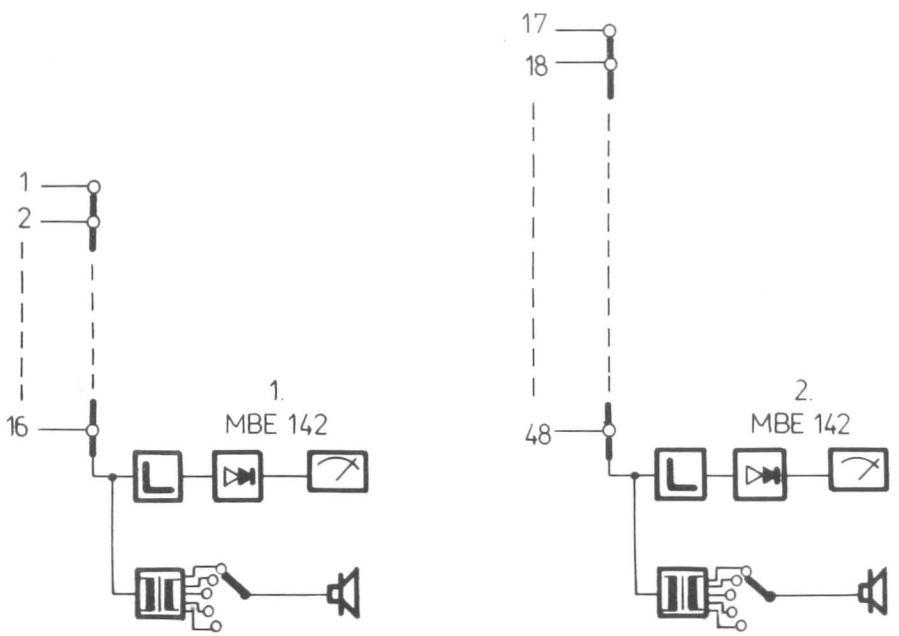
Utilization

The rack ensures the distribution, commutation and checking of triad audio-lines of local subcentres.

Construction

1. (The rack from the front) Checking section: 8-line intercom system, PPM from LEDs, monitoring loudspeaker.
2. Switch board serving for checking of max. 79 lines.
3. 150 crossbar sockets for commutation of the lines.
4. (The rack from the rear) 2 x 18 separating amplifiers.
   Input level: −42, −32, −22, −12, +6 dBm/20 kOhms, balanced.
   Output: +6 dBm/24 Ohms, balanced.

Dimensions: 540 x 520 x 1780 mm
Power supply: 220 V, 50/60 Hz



Block diagram of KMC 117

UNIVERSAL A.F. COMMUTATOR RACK

KMP 01/1

This is an universally applicable commutator rack for radio and different sound studios. The rack is constructed from modules, it is possible to leave or substitute some elements (e.g. crossbar sockets, and relays).

The rack consists of 3 sections:

- Commutator sockets
- Microphone and line amplifiers with power supply unit
- Relay unit

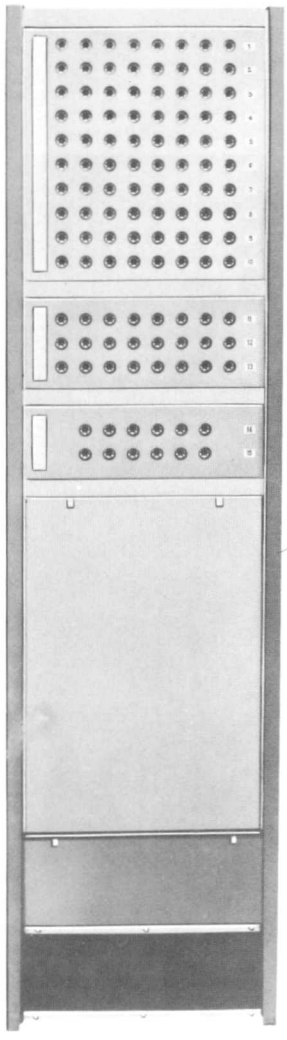
Construction

1. The rack consists of 10 microphone amplifiers, each with 5 separated outputs, i.e. 50 outputs are provided.
2. The lines can be distributed to 10 x 5 points by the 10 line amplifiers.
3. The output of each of above-mentioned amplifier (a total 20) is led out to a commutator-socket, each ensuring distribution of the output. Inputs of 10 line amplifiers are also connected to the commutating sockets.
4. 150 crossbar sockets are provided for commutation by plugs with cable. LEDs are placed near the crossbar sockets to indicate the active connections.

Technical specifications

Line amplifier (type EPE 113) Input	differential
Rated input level	−42 to +6 dBm
Source impedance	600 Ohms
Rated output level	+6, +9, +12, +15, +18 dBm/600 Ohms
Frequency response in the range of 31.5 to 16,000 Hz	±0.5 dB
Harmonic distortion (THD) in the range of 31.5 to 16,000 Hz	0.3%
Microphone amplifier (type EBE 113)	
Input	differential
Rated input level	−72, −62, −52, −42 dBm
Source impedance	600 Ohms
Rated output level	+6 dBm/600 Ohms
Frequency response in the range of 31.5 to 16,000 Hz	±0.5 dB
Harmonic distortion (THD) in the range of 31.5 to 16,000 Hz	0.3%
Mains supply	220 V, 50/60 Hz

The rack is constructed according to the 19'' system



AUDIO LINE DISTRIBUTING RACK

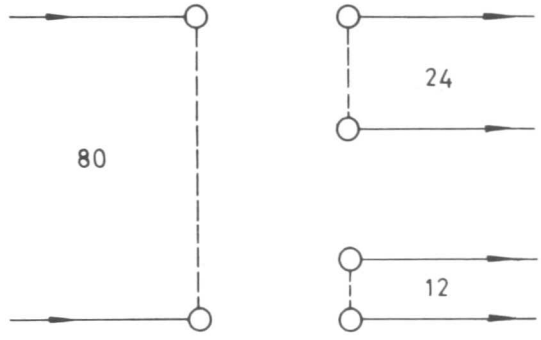
KMP 05

Construction

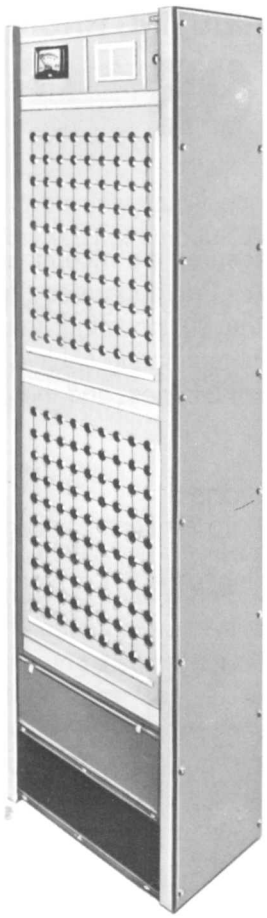
The distributing rack ensures the reception and distribution of A.F. lines. Two separated groups can be formed from the 80 incoming lines by crossbar sockets and commutating cables. One of the groups consists of 24 lines, and the other 16 lines.

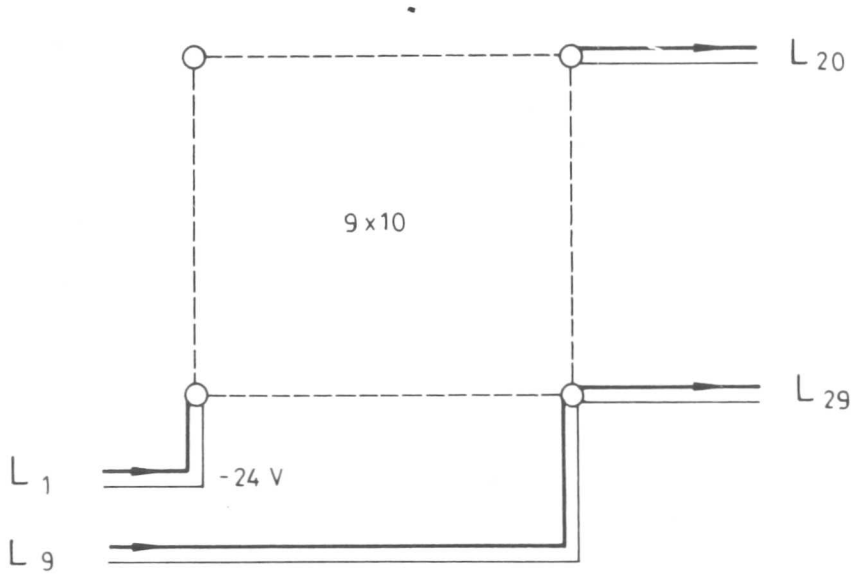
Technical specifications

Switchable voltage max. 125 V
The rack is built according to the FIT systems.



Block diagram of KMP 05





Block diagram of KMP 06

AUDIO LINE DISTRIBUTING RACK

KMP 06

Construction

The distributing rack ensures the reception and distribution of A.F. lines. This can advantageously be applied in those cases, when the fixed connection of the power amplifier to the output loudspeaker-lines is undesirable, but these are connected to an output patch panel for the greater possibility of selection. This construction provides a wide opportunity for variation by plugging in the corresponding plugs. The lines can be measured and monitored by the built-in PPM and loudspeaker.
Circuit layout

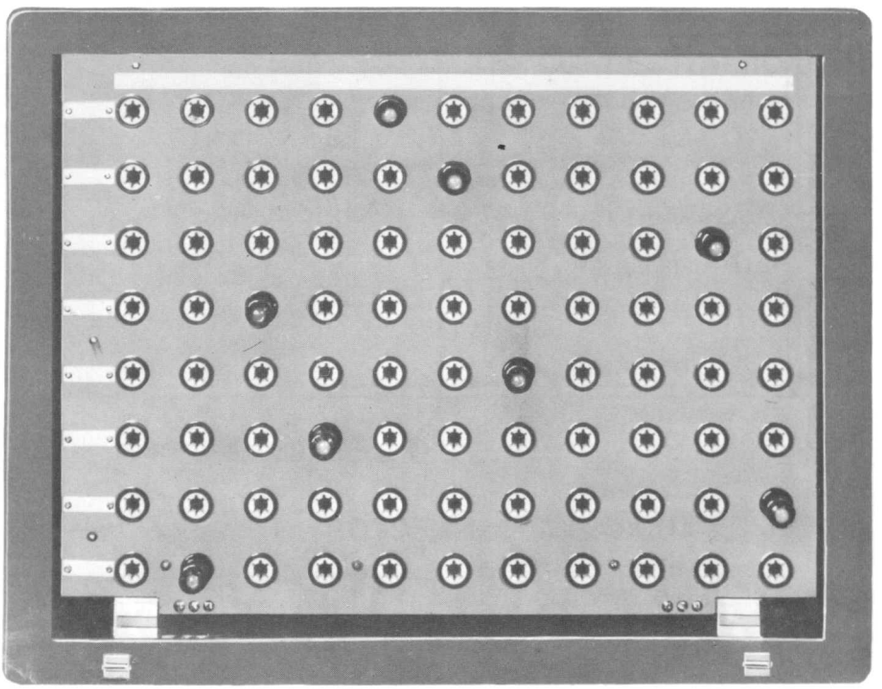
There are 9 connectable inputs (outputs of power amplifiers, and effect outputs).

There are 20 output audio lines. The voltage of the switched audio lines can be max. 30 to 100 V.
The 24 V DC supply voltage is also switched by the plugs and the active state is indicated by an indicator lamp placed in the plug.

Technical specifications

Switchable voltage	max. 125 V
Switchable power	125 VA
Number of the switchable lines	
9 lines	toward 20 points

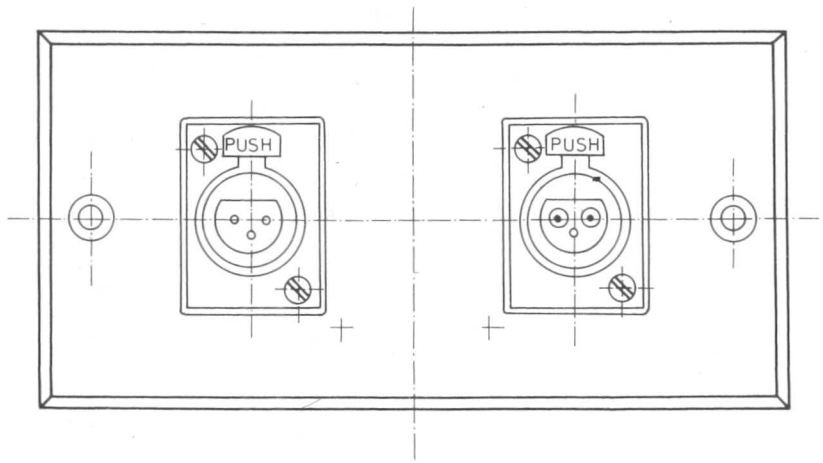
The rack is built according to the FIT system.



CROSS-BAR DISTRIBUTOR BOARD

PK 010

- Designed for communication of incoming and outgoing lines up to 100 V line voltage
- Made of metal, with lockable door
- Flush-mounted model
- Tilt-out mounting panel with cross-bar sockets
- 8 x 11 matrix field
- Light signal in active position of plugs
- Signalling voltage: 24 V
- Dimensions: 180 x 450 x 570 mm
- Weight: approx. 8 kg



AUDIO LINE CONNECTOR BOARDS

TKC 109, TKP 22

Types TKC 109 and TKC 109/A for loudspeakers
Types TKP 22 and TKP 22/A for microphones
TKC 109
The connector boards types TKP 109 and TKP 22 are made of aluminium and can be fixed on the wall. Both contain two cannon type connector sockets.

TKC 109
Comprise 1 line connector socket
1 mains connector socket
(Cannon XLR-3-31 and Cannon XLR-LNE-31)

Utilization: for studio
monitoring loudspeakers

TKC 109/A: corresponds to the TKC 109,
but also contains plugs:
1 type XLR-3-12-C and 1 type XLR-LNE-12-C
as accessories

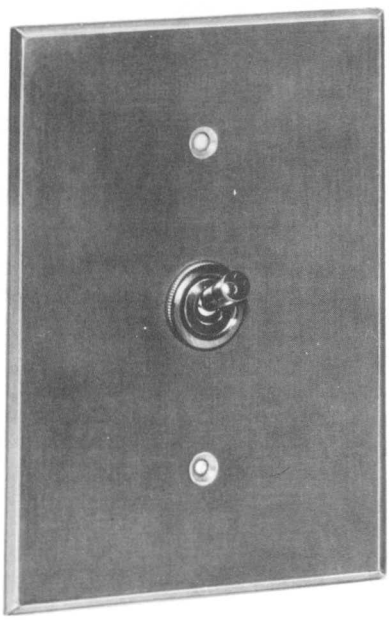
TKP 22
Comprise 2 line/microphone connector sockets
(Cannon XLR-3-31)

Utilization: for connecting
microphones, audio lines

TKP 22/A: corresponds to the TKP 22,
but also contains 2 plugs:
type XLR-3-12-C
as accessories

Technical specifications

Rated voltage	max. 250 V RMS
Rated current	5 A
Insultation resistance	5 MOhms
Dimensions	140 x 70 x 40 mm depth



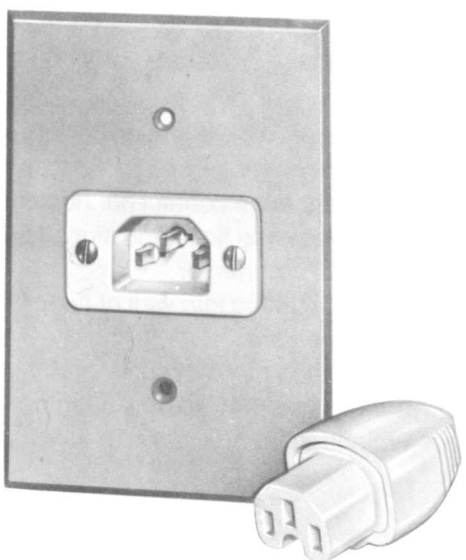
TKP CONNECTOR BOARDS

TKP 12

It containes 1 pc tumbler switch type Kbmc 56. In can be utilized in cases, when switching over of mains or A.F. voltage up to the loadability limit is required.

Technical specifications

Rated voltage	max. 250 V
Rated current	max. 5 A
Dimensions	70 x 140 x 57 mm
Weight	0.125 kg



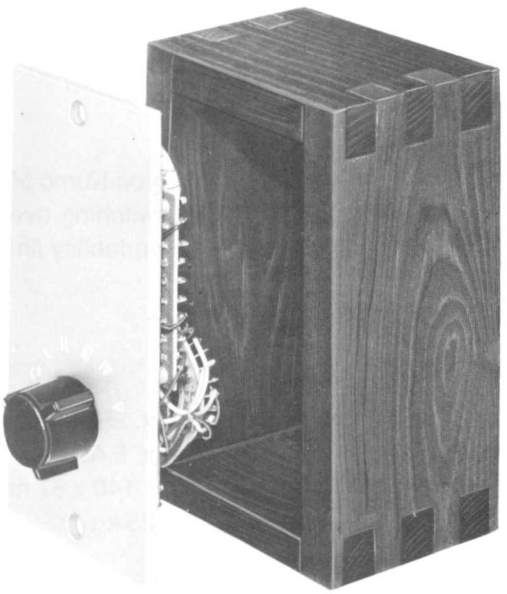
CONNECTOR BOARD

TKP 13

This type consists of a fixed case type DS 121-108.3 containing one 8-pole edge contact connector socket type DS 121-108.1 for 8-pole edge contact connector plug.

Technical specifications

Rated voltage	350 V RMS
Rated current (contact pair)	6 A
Rated loadability (contact pair)	100 W/250 VA
Contact resistance	max. 5 MOhms
Insulation resistance	min. 10^5 MOhms
Dimensions	70 x 140 x 70 mm
Weight	0.3 kg



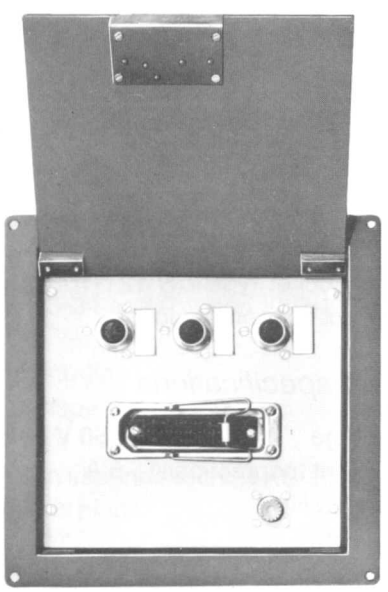
CONNECTOR BOARD

TKP 14

This volume control unit is recommended for decentralized sonorization systems. It can be utilized in that cases, where 80 W loadability sound radiator or sound system is connected to a 100 V audio line. The volume is controlled in steps. The unit comprises 1 ratio switch and 1 matching transformer.

Technical specifications

Rated loadability	80 VA
Rated e.m.f. level	100 V
Rated impedance	125 Ohms
Load impedance	125 Ohms
Rated pass band	60 to 20,000 Hz
Dimensions	70 x 140 x 65 mm
Weight	0.35 kg



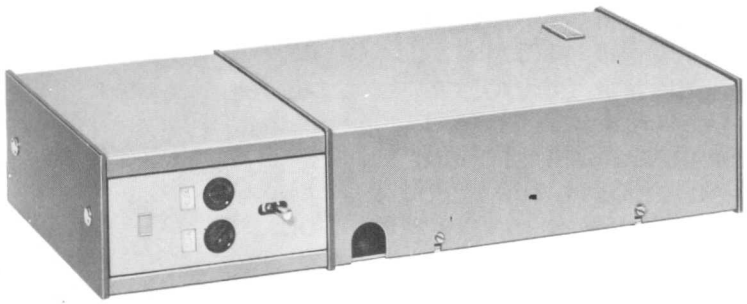
CONNECTOR BOX

TKP 21

- Connector for reception of three audio-frequency lines
- A 30-pole edge contact connector for reception of two-way lines and signalizing lines
- One UHF connector
- Flush mounting into wall of floor
- Lockable door
- Connection by soldering
- Dimensions: 240 x 240 x 50 mm
- Weight: 2 kg

AUXILIARY UNITS (POWER SUPPLY UNITS, STABILIZERS, LIGHT SIGNAL BOARDS, MATCHING TRANSFORMERS)

ETC 02 Power supply unit, 24 V/125 mA
ETC 04 Power supply unit, 24 V/1 A
ETC 09 Power supply unit, 24 V/0.5 A
TTC 01 Double-field light signal board
TCC 03 Three-colour light signal board
THP 01 Mains stabilizer unit, 180 to 250 V
TY 218 D, TY 219 D Universal matching transformer



POWER SUPPLY UNIT

ETC 02

- Wall-mounting model
- Also contains cable distributing board
- Cable connections via soldering
- Usable to command units
- Mains supply voltages: 220 V, 50 Hz approx. 25 VA
- Output voltage: 24 V DC stabilized
- Loadability: 125 mA
- Dimensions: 190 x 370 x 80 mm
- Weight: 1.8 kg

POWER SUPPLY UNIT

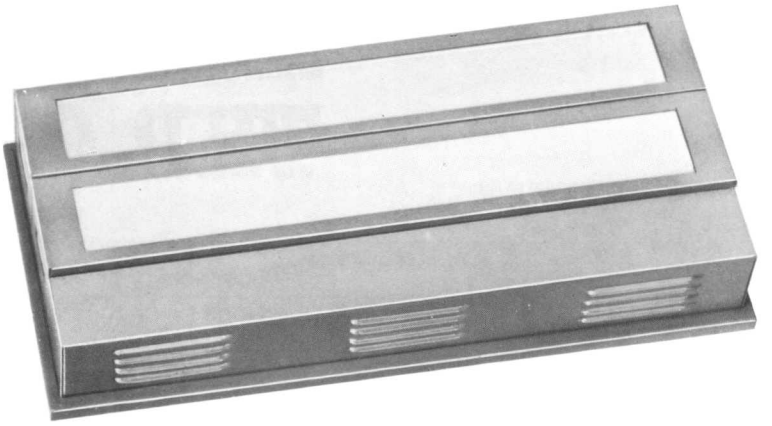
ETC 09

- Wall-mounting model
- Also contains a cable distributing board (eight 6 point terminal strips)
- Cable connections via soldering
- The controls are placed behind a lockable door
- Mains supply voltage: 220 V, 50 Hz approx. 35 VA
- Output voltage: 24 V DC, stabilized
- Loadability: max. 0.5 A
- Dimensions: 490 x 200 x 80 mm
- Weight: 5 kg

STABILIZED POWER SUPPLY

ETC 04

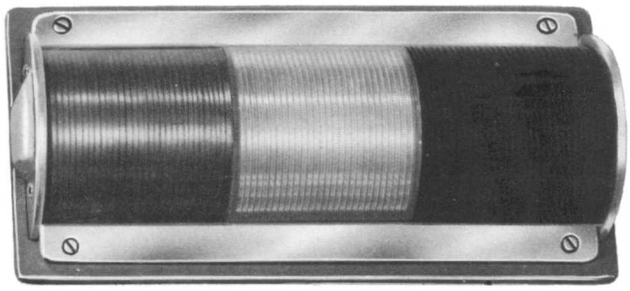
- Provides stabilized D.C. voltage
- Desk-top unit
- Connection by plugging
- Mains supply voltage: 220 V, 50 Hz
- Power consumption: 50 VA
- Output voltage: ±24 V
- Loadability: 1 A
- Dimensions: 320 x 170 x 190 mm
- Weight: 3.5 kg



DOUBLE-FIELD LIGHT SIGNAL BOARD

TCC 01

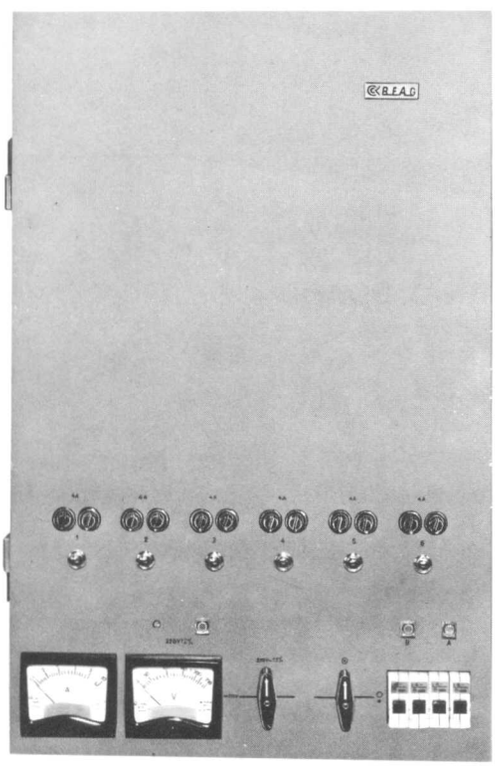
- Two independent light signal fields
- Inscriptions according to requirements
- Wall mounting
- Connection by soldering
- Operating voltage: 24 V
- Illuminating lamp voltage: 220 V
- Power consumption of each light signal field: 80 VA
- Dimensions: 500 x 250 x 100 mm
- Weight: 5 kg



THREE-COLOUR LIGHT SIGNAL BOARD

TCC 03

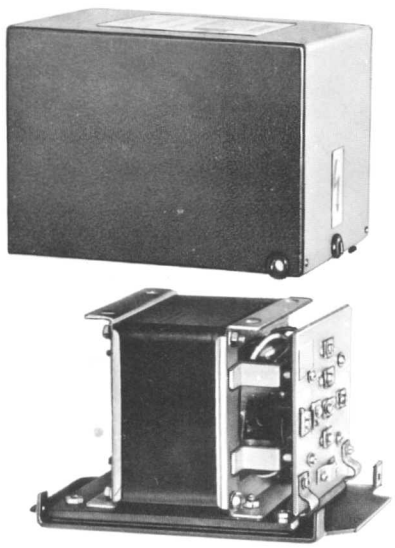
- Lighting surfaces in three different colours
- Acoustical signalling by buzzer
- Wall mounting
- Connection through soldering
- Illuminating lamp voltage: 24 V
- Power consumption by each bulb: 5 VA
- Dimensions: 100 x 200 x 60 mm
- Weight: 0.5 kg



MAINS STABILIZER UNIT

THP 01

- Flush mounted model
- Lockable door
- Controls on the front panel
- Provides automatic stabilization
- Automatic switch-over unit in case of phase-failure
- Two independent mains inputs
- In case of failor the stabilizer unit can be switched-off
- The stabilizer operates with thyristors, contains no moving parts
- Slew rate: 20 V/sec.
- Adjustable stabilizing voltage level
- Mains voltage: 180–250 V 1 phase
- Mains frequency: at THP 01 50 Hz
  at THP 02 60 Hz
- Loadability: 0–7.5 A
- Stabilized output voltage: 220 V ±2%
- Max. current consumption: 10 A
- Dimensions: 645 x 420 x 130 mm
- Weight: 43 kg



UNIVERSAL MATCHING TRANSFORMERS

TY 218 D

Matching transformers type TY 218 D and TY 219 D serve for matching of loudspeakers of different loadability and of different rated impedance to the 100 to 120 V audio line. As a result of high efficiency the full power is transmitted practically. Sound quality is practically not effected, due to the low distortion. Connecting of the audio line and of the loudspeaker can be performed by fixing screws.

Technical specification

TYPE		TY 218 D			TY 219 D		
Audio line voltage to be connected (V)		100 to 120			100 to 120		
Rated impedance of the loudspeakers (Ohms)		4	8	16	4	8	16
Loadability of the loudspeakers to be matched vs. the load impedance (VA)		100	100	–	–	–	–
		50	50	50	–	–	–
		25	25	25	25	25	25
		–	12.5	12.5	12.5	12.5	12.5
		–	–	6	6	6	6
		–	–	–	–	3	3
Rated input impedance vs. power consumption (Ohms)	(100 VA)	100	100	–	–	–	–
	(50 VA)	200	200	200	–	–	–
	(25 VA)	400	400	400	400	400	400
	(12.5 VA)	–	800	800	800	800	800
	(6 VA)	–	–	1.6 k	1.6 k	1.6 k	1.6 k
	(3 VA)	–	–	–	–	3.2 k	3.2 k
Rated pass-band (Hz)		20 to 20,000			20 to 20,000		
Dimensions (mm)		150 x 110 x 105			140 x 88 x 84		
Arrangement of fixing holes (the distances in mm)							
Weight (kg)		2.2			1		

ELECTRO-ACOUSTICAL FACTORY, HUNGARY

Hungexpo – Budapest