

Low-impedance Horn Speakers



NR-15KS
Order No. 16.0220



Horn speaker

- Aluminium version
- Humidity-proof
- 8 Ω speaker system



NR-12KS
Order No. 16.0210



Horn speaker

- Aluminium version
- For open-air events, industrial use, in workshops
- Humidity-proof
- 8 Ω speaker system



NR-18KS
Order No. 16.0990



Horn speaker

- Humidity-proof
- 8 Ω speaker system



DH-10
Order No. 16.0010



Horn speaker

- Humidity-proof
- 8 Ω speaker system



RUP-5
Order No. 16.0280



Horn speaker

- Humidity-proof
- 8 Ω speaker system



RUS-5
Order No. 16.0290



Horn speaker

- Humidity-proof
- 8 Ω speaker system

Model	NR-15KS	NR-12KS	NR-18KS	DH-10	RUP-5	RUS-5
Power rating	15 W _{MAX} /8 Ω	12 W _{MAX} /8 Ω	10 W _{MAX} /8 Ω	10 W _{MAX} /8 Ω	10 W _{MAX} /8 Ω	8 W _{MAX} /8 Ω
Frequency range	350-12,000 Hz	350-12,000 Hz	1,200-7,000 Hz	350-10,000 Hz	400-8,000 Hz	400-8,000 Hz
SPL (1 W/1 m)	100 dB	100 dB	98 dB	97 dB	102 dB	102 dB
Radiation angle (hor./vert.)	-	-	-	-	90°/90°	45°/110°
Admiss. ambient temp.	-	-	-	-	-	-
Dimensions	210x150x195 mm	ø 160 mm x 155 mm	80x100x60 mm	120x130x115 mm	ø 130 mm x 130 mm	90x105x125 mm
Weight	1.2 kg	1.0 kg	0.4 kg	0.6 kg	0.5 kg	0.5 kg
Special feature	aluminium	aluminium	plastic	plastic		plastic

Horn Drivers and Trumpets



KU-516

Order No. 16.0700



Weatherproof horn driver

- Diecast version, IP66
- Protected against powerful water jets
- Matching the horns SK-22 and SK-159
- 3.5 cm (1 3/8") mounting flange



KU-616T

Order No. 16.0710



Weatherproof horn driver

- 100 V line technique
- Protected against powerful water jets
- Power selector switch
- Matching the horns SK-22 and SK-159
- 3.5 cm (1 3/8") mounting flange
- 55 cm connection cable



KU-916T

Order No. 16.1610



Weatherproof horn driver

- 100 V line technique
- Protected against powerful water jets
- Power selector switch
- Matching the horns SK-22 and SK-159
- 3.5 cm (1 3/8") mounting flange
- 60 cm connection cable

Model	KU-516	KU-616T	KU-916T
Power rating	50 W _{RMS} /75 W _{MAX} (16 Ω)	60 W _{MAX} 40/30/20/10/5 W _{RMS}	90 W _{MAX} 60/50/40/30/20/10 W _{RMS}
Frequency range	160-6,500 Hz	160-6,500 Hz	160-7,000 Hz
SPL (1 W/1 m)	113 dB	112 dB	113 dB
Radiation angle (hor./vert.)	-	-	-
Admiss. ambient temp.	-20 °C to +50 °C	-20 °C to +50 °C	-20 °C to +50 °C
Dimensions	ø 125 mm x 100 mm	ø 150 mm x 136 mm	ø 150 mm x 158 mm
Weight	2.1 kg	2.3 kg	2.8 kg
Special feature	IP66	IP66	IP66
Replacement voice coil	KU-516/VC	KU-616T/VC	KU-916T/VC



SK-159

Order No. 16.0300

Trumpet, for horn drivers.

- 3.5 cm (1 3/8") mounting flange
- Dimensions: 375x222x300 mm (WxHxD)



SK-22

Order No. 16.0310

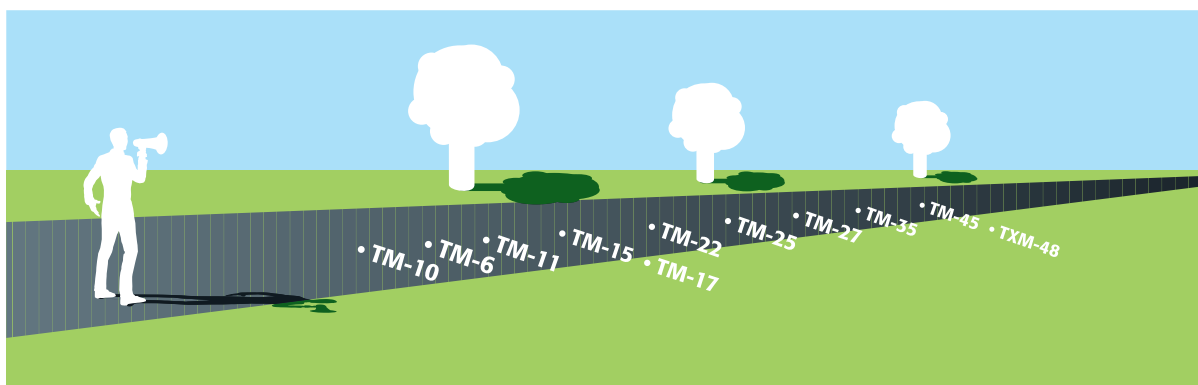
Trumpet, for horn drivers.

- 3.5 cm (1 3/8") mounting flange
- Dimensions: ø 565 mm x 460 mm

Megaphones

Attention guaranteed!

With our range of reliable megaphones, we provide the perfect solution for each application. A few basic selection criteria will help you to choose the right unit. The operating range is surely the most important one. Here, the following applies: with increasing sound pressure (in dB), the operating range of the megaphone increases, too. Furthermore, it is possible to choose between megaphones with integrated microphone, with hand-held microphone or units with an additional wireless microphone. Each megaphone from MONACOR is supplied with power by standard batteries. As an alternative, a few units also feature a 12 V connection. Size, weight and the power supply are further selection criteria for choosing the right megaphone. With these comparison criteria, you will surely find the ideal megaphone meeting your individual requirements very quickly.



TXM-48

Order No. 17.2380



Wireless megaphone, with microphone transmitter.

- Carrier frequency: 863.05-864.95 MHz, operating range: approx. 30 m
- Removable hand-held microphone with helix cable
- Lockable talk button and volume control at the cable-connected microphone
- Aux input with level control
- Jack for external 12 V battery operation
- Siren, switchable
- Connection cable for motor vehicles
- 8 mm threaded bushing for mounting onto a stand

Licence-free in the EU.



TM-45

Order No. 17.1000



Megaphone

- Hand-held microphone with removable helix cable
- Lockable talk button and volume control at the microphone
- Aux input with level control
- Jack for external 12 V battery operation
- Siren, switchable
- Connection cable for motor vehicles
- 8 mm threaded bushing for mounting onto a stand



Megaphones

TM-35

Order No. 17.0990



Megaphone

- Hand-held microphone with helix cable
- Lockable talk button and volume control at the microphone
- Jack for external 12 V battery operation
- Siren, switchable
- Connection cable for motor vehicles
- 8 mm threaded bushing for mounting onto a stand



TM-27

Order No. 17.0980



Megaphone

- Hand-held microphone with fixed helix cable
- Lockable talk button and volume control at the microphone
- Siren, switchable
- Jack for external 12 V battery operation
- Connection cable for motor vehicles



TM-17

Order No. 17.3500



Megaphone

- Hand-held microphone with helix cable
- Lockable talk button and volume control at the microphone
- Operating switch for siren, speech and whistling sound
- Jack for external 12 V battery operation
- Connection cable for motor vehicles



Model	TXM-48	TM-45	TM-35	TM-27	TM-17
Built-in microphone	-	-	-	-	-
Hand-held microphone	X	X	X	X	X
Wireless microphone	X	-	-	-	-
Lockable button microphone	X	X	X	X	X
Pistol grip	-	-	-	X	X
Carrying strap	X	X	X	-	-
Wrist strap	-	-	-	-	-
Shoulder strap	X	X	X	X	X
Connection cable for motor vehicles	X	X	X	X	X
Siren	X	X	X	X	X
Acoustic signal	-	-	-	-	-
Volume control	X	X	X	X	X
Battery status indication	-	-	-	-	-
8 mm thread	X	X	X	-	-
Aux input with level control	X	X	-	-	-
Output power	45 W _{MAX}	45 W _{MAX}	35 W _{MAX}	25 W _{MAX}	25 W _{MAX}
SPL (1 W/m)	124 dB	124 dB	122 dB	119 dB	110 dB
Power supply	10 x 1.5 V batt.	10 x 1.5 V batt.	8 x 1.5 V batt.	8 x 1.5 V batt.	8 x 1.5 V batt.
	D size	D size	C size	C size	C size
	not supplied, ext. 12 V=4 A	not supplied, ext. 12 V=4 A	not supplied, ext. 12 V=3 A	not supplied, ext. 12 V=2 A	not supplied, ext. 12 V=2 A
12 V connection	X	X	X	X	X
Dimensions	ø 350 mm x 505 mm	ø 350 mm x 505 mm	ø 300 mm x 460 mm	ø 230 mm x 340 mm	ø 230 mm x 340 mm
Weight	3.4 kg	3.3 kg	2.5 kg	1.7 kg	1.7 kg

Megaphones

TM-25

Order No. 17.0970



Megaphone

- Built-in microphone
- Siren, switchable
- Jack for external 12 V battery operation
- Volume control
- Connection cable for motor vehicles



TM-15

Order No. 17.3490



Megaphone

- Built-in microphone
- Volume control
- Operating switch for siren, speech and whistling sound



TM-22

Order No. 17.2140



Megaphone, with piezo converter.

- Low weight and low power consumption due to piezo technology
- Built-in microphone
- Siren and acoustic signal, switchable
- Volume control
- Battery status indication



TM-11

Order No. 17.3480



Megaphone

- Built-in microphone
- Siren, switchable
- Volume control



Megaphones

TM-6

Order No. 17.1800



Megaphone, in a plastic housing, small design.

- Built-in microphone
- Siren, switchable
- Volume control



TM-10

Order No. 17.3470



Megaphone

- Built-in microphone
- Siren, switchable
- Volume control



TM-12DC

Order No. 17.1030

Connection cable

- For megaphones with external power supply
- Fitted with low-voltage plug 5.5/2.1 mm and cigarette lighter plug with power LED
- Integrated fine-wire fuse 5 A
- Also suitable for general use
- Length: 6 m



Model	TM-25	TM-15	TM-22	TM-11	TM-6	TM-10
Built-in microphone	X	X	X	X	X	X
Hand-held microphone	-	-	-	-	-	-
Wireless microphone	-	-	-	-	-	-
Lockable button microphone	-	-	-	-	-	-
Pistol grip	X	X	X	X	X	X
Carrying strap	-	-	-	-	-	-
Wrist strap	X	X	X	X	X	X
Shoulder strap	-	-	-	-	-	-
Connection cable for motor vehicles	X	-	-	-	-	-
Siren	X	X	X	X	X	X
Acoustic signal	-	X	X	-	-	-
Volume control	X	X	X	X	X	X
Battery status indication	-	-	X	-	-	-
8 mm thread	-	-	-	-	-	-
Aux input with level control	-	-	-	-	-	-
Output power	25 W _{MAX}	25 W _{MAX}	20 W _{MAX}	15 W _{MAX}	8 W _{MAX}	10 W _{MAX}
SPL (1 W/m)	115 dB	110 dB	115 dB	100 dB	94 dB	90 dB
Power supply	8 x 1.5 V batt.	8 x 1.5 V batt.	8 x 1.5 V batt.	8 x 1.5 V battery	6 x 1.5 V batt.	8 x 1.5 V batt.
	C size	C size	AA size	AA size	AA size	AA size
	not supplied,	not supplied	not supplied	not supplied	not supplied	not supplied
	ext. 12 V=2 A					
12 V connection	X	-	-	-	-	-
Dimensions	ø 230 mm x 370 mm	ø 230 mm x 370 mm	ø 195 mm x 315 mm	ø 205 mm x 340 mm	ø 150 mm x 237 mm	ø 158 mm x 244 mm
Weight	1.7 kg	1.3 kg	850 g	1.1 kg	620 g	595 g

Voice Amplifiers

The WAP-7D system presents a new class of high-quality units for mobile voice amplification. The latest technology of rechargeable batteries, digital amplification and a perfect workmanship of high quality. The WAP-7D is even suitable as a miniature solution for background music due to the additional line input.

WAP-7D

Order No. 17.2830



Portable digital voice amplifier

Scope of delivery: 1 electret headband microphone, 1 mini electret microphone, 1 digital active speaker, 1 microphone extension cable, 1 line connection cable, 1 plug-in charger, 2 clips, 1 waist strap, 1 carrying strap and 1 transport bag.

- In proportion to the ultra-compact size, provides a high-quality sound for voice transmissions and a very high level stability
- For general mobile speech applications, e.g. at lectures and training sessions, sales events
- Suitable for general applications due to versatile carrying options
- Powerful 7 W digital amplifier
- Additional line input (3.5 mm jack) for external audio sources, e.g. MP3 players and laptops
- Built-in lithium-ion rech. batteries (2 x 3.6 V= / 2,200 mAh), charging of the rechargeable batteries via supplied plug-in charger
- Very long operating time of up to 30 hours with fully charged batteries



Model	WAP-7D
Frequency range	20-20,000 Hz
Output power	7 W _{MAX} /5 W _{RMS}
THD	0.3 %
Max. SPL	83 dB
Power supply	2 x 3.6 V lithium-ion rech. battery
Dimensions	85x130x26 mm
Weight	280 g

WAP-5USB

Order No. 17.3460



Waistband amplifier with integrated MP3 player

- Supplied with a high-sensitivity electret headband microphone
- For general mobile speech applications, e.g. lectures and training sessions, aerobics, sales events
- SD/MMC card slot for a card up to 32 GB, available at option
- Supports FAT16 and FAT32 data formats
- MP3 format: 48-192 kbps, 22/44.1 kHz
- MP3 recording function
- USB 2.0 interface
- 7 W amplifier with volume control
- Headphone output (3.5 mm jack)
- Illuminated LCD
- With adjustable waist strap
- Battery operation/rechargeable battery operation, charging of the optional rechargeable batteries via supplied plug-in charger, removal of the batteries not required
- Operating time with fully charged batteries: approx. 6-8 hours
- Power supply: 9 V= (6 x AA size)
- Supplied without batteries/rechargeable batteries

Do not connect the plug-in charger to the voice amplifier when using standard batteries!



Voice Amplifiers

WAP-5

Order No. 17.3200

A



Waistband amplifier with line input

- Supplied with a high-sensitivity electret headband microphone
- For general mobile speech applications, e.g. at lectures and training sessions, aerobics, sales events
- With adjustable waist strap
- 7 W amplifier with volume control
- Additional line input (3.5 mm jack) for external audio sources, e.g. MP3 player
- Battery operation/rechargeable battery operation, charging of the optional rechargeable batteries via supplied plug-in charger, removal of the batteries not required
- Operating time with fully charged batteries: approx. 6-8 hours
- Power supply: 9 V= (6 x AA size)
- Supplied without batteries/rechargeable batteries

Do not connect the plug-in charger to the voice amplifier when using standard batteries!



A

WAP-4

Order No. 17.2560

B



Waistband amplifier (dynamic microphone)

- Dynamic microphone cartridge, thus resistant to acoustic feedback
 - For general mobile speech applications, e.g. at lectures and training sessions, aerobics, sales events
 - Designed as a belt bag with adjustable snap-in strap
 - 5 W voice amplifier with volume control
 - Battery operation/rech. battery operation, charging of the optional rechargeable batteries via the supplied plug-in charger, removal of the batteries not required
 - Operating time with fully charged batteries: approx. 6-8 hours
 - Power supply 9 V= (6 x AA size)
 - Supplied without batteries/rechargeable batteries
- Do not connect the plug-in charger to the voice amplifier when using standard batteries!**



B

WAP-3

Order No. 17.0900

B



Waistband amplifier (electret microphone)

- Supplied with a high-sensitivity electret headband microphone
 - For general mobile speech applications, e.g. at lectures and training sessions, aerobics, sales events
 - Designed as a belt bag with adjustable snap-in strap
 - 5 W voice amplifier with volume control
 - Battery operation/rechargeable battery operation, charging of the optional rechargeable batteries via the supplied plug-in charger, removal of the batteries not required
 - Operating time with fully charged batteries: approx. 6-8 hours
 - Power supply 9 V= (6 x AA size)
 - Supplied without batteries/rechargeable batteries
- Do not connect the plug-in charger to the voice amplifier when using standard batteries!**

The pictures for WAP-4 and WAP-3 are identical.

Do not connect the plug-in charger to the voice amplifier when using standard batteries!

Audio Exciters

This exciter is both an innovative and amazing possibility to easily create a high-quality audio reproduction from practically nothing. Simply affix it to a surface capable of vibrating, drive it with a standard audio amplifier - and it's ready to be used.

EX-1

Order No. 16.2710



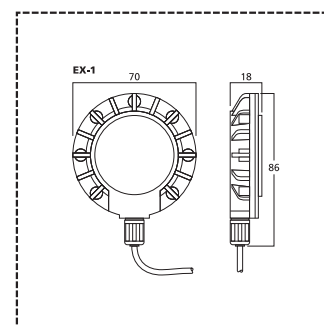
Weatherproof audio exciter/resonator, 8 Ω, 5 W

For audio reproductions via surfaces capable of vibrating. This resonator is simply affixed to doors, cabinet doors, windows, bath tubs, lightweight walls, ceiling panels, pictures or many other surfaces which are capable of vibrating and the vibration of these surfaces already create a partly impressive sound in the entire surrounding area. With doors and windows (double-glazed windows, too), this is done on both sides of the surface at practically the same quality.

- Very wide bandwidth reproduction with an amazing volume level, depending on the mounting surface
- High power capability, exceeds background volume levels
- Suitable for commercial PA applications such as background music in the entire indoor area and outdoor area and for the reproduction of info messages
- Suitable for home PA applications, e.g. terraces, adjoining rooms, bathrooms, etc.
- Waterproof (IP67)
- Supplied with adhesive pads
- 3 m connection cable
- Dimension: \varnothing 70 mm x 19 mm
- Weight: 115 g



The power capability of EX-1 allows for a pleasant indoor and outdoor PA sound when directed from a window to a terrace. However, the EX-1 is not suitable for a garden party with dance music due to its electrical power rating. Attention has to be paid to an admissible load. Amplifiers of higher power capability can be connected without any problems but must not be set to the maximum rating. Both the electric power rating and the acoustic power of the EX-1 can significantly be increased when connected in parallel and serial-to-parallel in dual and 4-way arrangements.



Weatherproof, robust exciters/resonators for music and voice reproductions via surfaces capable of vibrating. These resonators are simply screwed onto doors, cupboard doors, shelves, desktops, lightweight walls, ceiling panels or many other surfaces which are capable of vibrating. Vibration of these surfaces already create a partly impressive sound in the entire surrounding area. These resonators are not suitable for use on glass surfaces!

AR-50

Order No. 16.2800



AR-30

Order No. 16.2790



Weatherproof audio exciters/resonators, 8 Ω

- Depending on the mounting surface, very wide bandwidth reproduction with amazing volumes
- High power capability of 30 W_{MAX} (AR-30) or 50 W_{MAX} (AR-50)
- Very robust and weatherproof version, thus suitable for outdoor applications and in extra dirty conditions
- Suitable for home and outdoor PA applications, e.g. on doors, cupboards, shelves and on boats
- Waterproof (IP68)
- Supplied with screwable mounting plate



Model	AR-50	AR-30
Power rating	50 W _{MAX}	30 W _{MAX}
Impedance	8 Ω	8 Ω
Frequency range	depending on the installation	depending on the installation
Resonance frequency	500 Hz	600 Hz
Minimum mounting surface	\varnothing 80 mm	\varnothing 80 mm
Dimensions	\varnothing 90 mm x 55 mm	\varnothing 80 mm x 40 mm
Weight	0.95 kg	0.65 kg

Switch Boxes, Audio Converters



SPS-20S

Order No. 21.0670

Speaker switch box,

- for connecting up to 2 pairs of speakers (4-8 Ω) in any combination to 1 stereo amplifier output
- Music power: 200 W_{MAX}
- Dimensions: 176x50x100 mm
- Weight: 510 g



SPS-40S

Order No. 21.0390

Speaker switch box

- For connecting up to 4 pairs of speakers (4-8 Ω) in any combination to 1 stereo amplifier output
- With built-in power protective resistors
- Music power: 200 W_{MAX}
- Dimensions: 176x50x100 mm
- Weight: 615 g



SPS-80S

Order No. 21.1750

Speaker switch box,

- For connecting up to 8 pairs of speakers (4-8 Ω) in any combination to 1 stereo amplifier output
- With built-in power protective resistors
- Music power: 300 W_{MAX}
- Dimensions: 310x60x115 mm
- Weight: 1.1 kg



SPS-40A

Order No. 21.0590

Stereo line switch box, for 4 line sources to 1 amplifier line input.

Model	SPS-40A
Inputs	3 x L/R RCA 1 x 3.5 mm jack
Outputs	1 x L/R RCA
Dimensions	125x48x100 mm
Weight	350 g



MA-100/15

Order No. 23.1850

Microphone matching transformer, with Hi/Lo switch. With balanced XLR connection as well as 6.3 mm plug, unbalanced, with 1.5 cm microphone cable.

Model	MA-100/15
Frequency range	50-15,000 Hz
Input impedance	600 Ω
Transformation ratio	1:10/1:1 (1 kHz)



SMC-1

Order No. 21.1930

Stereo/mono converter

- 1 x stereo to 2 x mono
- Input impedance: 4.7 k Ω
- Connections: input 1 x RCA L/R, output 2 x RCA mono
- Dimensions: 65x22x37 mm



DH-95N

Order No. 23.0030

DH-95NP

Order No. 23.4100

Dynamic hand-held microphones, low impedance, with a push-to-talk button, especially suitable for CB and PA. Supplied with microphone holder.

300-6,000 Hz,
2.5 mV/Pa/1 kHz, 500 Ω

DH-95N: helix connection cable with bare cable ends

DH-95NP: helix connection cable with 6.3 mm stereo plug



ZM-100

Order No. 17.1950

Impedance meter, for measuring the impedance (Z) of individual speakers or speaker lines.

Measurement with pulsed 1 kHz signal. Processor-controlled and with independent selection of the most favourable measuring range. At the same time, the power received at the mains of the 100 V speaker is calculated and displayed. Range button and hold button. Measuring ranges:

200 Ω /2 k Ω /20 k Ω /200 k Ω . Power supply via 4 x 1.5 V battery AA size. Dimensions: 100x177x50 mm. Weight: 570 g.



MH-95

Order No. 23.0920

Push-to-talk microphone holder, screw-mounted.

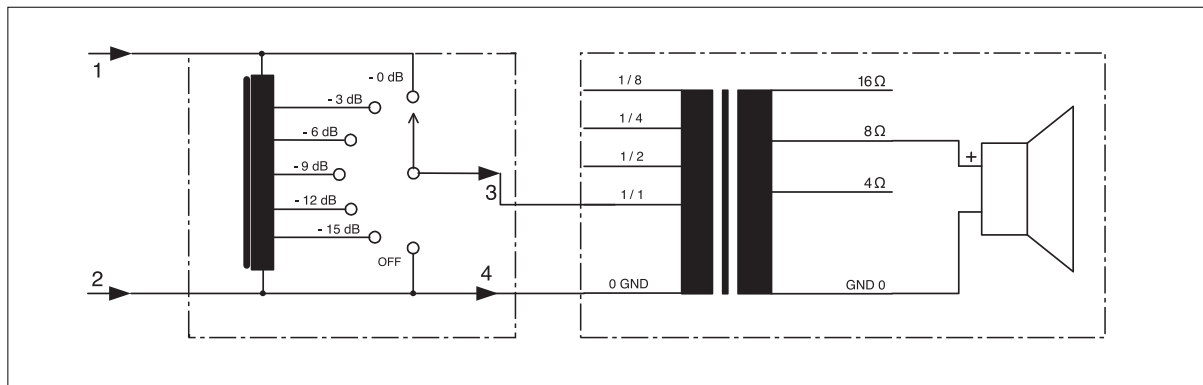
KNOW-HOW: 100 V Volume Control

Attenuators and Co.

In most cases, PA speakers will be capable of adjusting the power drawn and thus the volume at the speaker. This is made via cable ends led through, clamp terminals or selector switches directly at the speaker. This is quite sufficient for many applications. However, for the PA applications in different rooms with separate volume control in each case, 100 V attenuators are used.



These attenuators consist of a transformer in a saver circuit which stepwise attenuates the signal fed in. This volume control is inserted into the 100 V line. The 100 V speaker is connected to the output. A connection of low-impedance 4 Ω or 8 Ω speakers is not possible. The attenuator is available in different power classes. The maximum rating may be as high as the power of the attenuator.



The attenuators are available in different designs. Individual attenuators are available in a surface-mounted or flush-mounted version as well as in front plates for 19" installation.

Larger amplifiers have integrated attenuators already, thus allowing for a direct control of the different output circuits.

KNOW-HOW: 100 V Volume Control

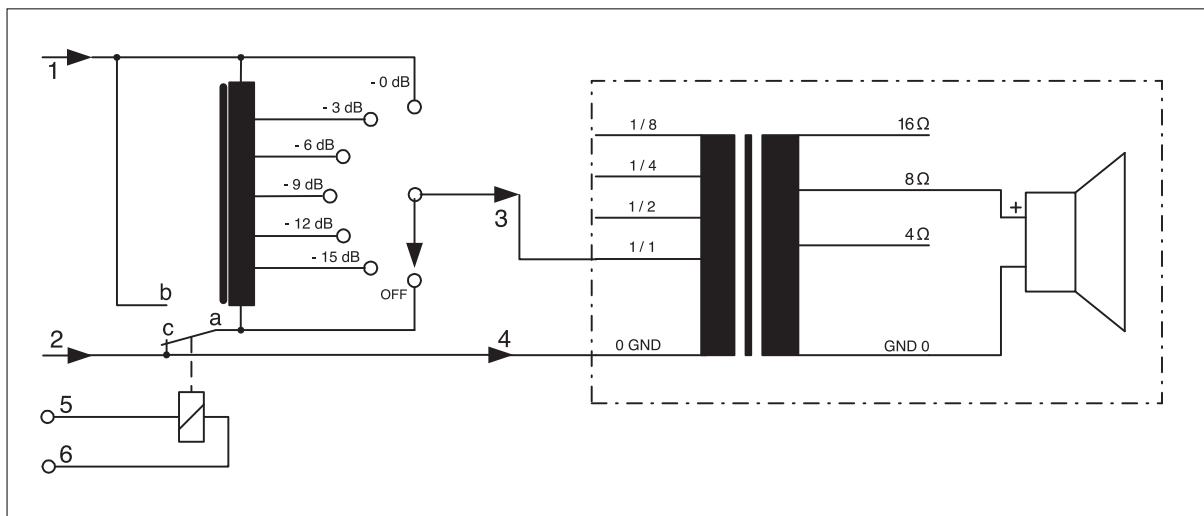
Attenuators with Emergency Priority Relay

Generally, attenuators have a switch position OFF, i.e. the speakers located behind them are switched off. An emergency announcement (in case of fire or alarm) would not be heard.

In this case, attenuators with an emergency priority relay are useful.

Thus, it is possible to switch on these attenuators from the distance and to make an announcement for these areas as well.

The 100 V speaker signal arrives at the attenuator via the connections 1 + 2 and at the speaker via the connections 3 + 4.



The connections 5 + 6 are new. The emergency priority relay is activated via a voltage of 24 V DC at these connections.

If the attenuator is in position OFF, the points a + c are connected.

Thus, the points 3 + 4 are also connected with each other and no signal arrives at the speaker. Now, if the emergency priority relay is activated, the points a + b are connected. The points 2 + 4 and 1 + 3 are thus connected directly with each other and the speaker receives the full speaker signal. After deactivating the relay, the speaker is muted again.

In case, the attenuator is at an intermediate stage, the volume of the signal is increased if the relay is activated.

There are also attenuators for which the points a + b + c are available via terminals. In that case, the relay can be installed directly at the amplifier, if required.

However, the line to the relay is between the points a and c. The line resistance of this line is located below the transformer as a base resistance. Thus, minimum remainders of the speaker signal arrive at the speaker.

KNOW-HOW: Programme Selectors

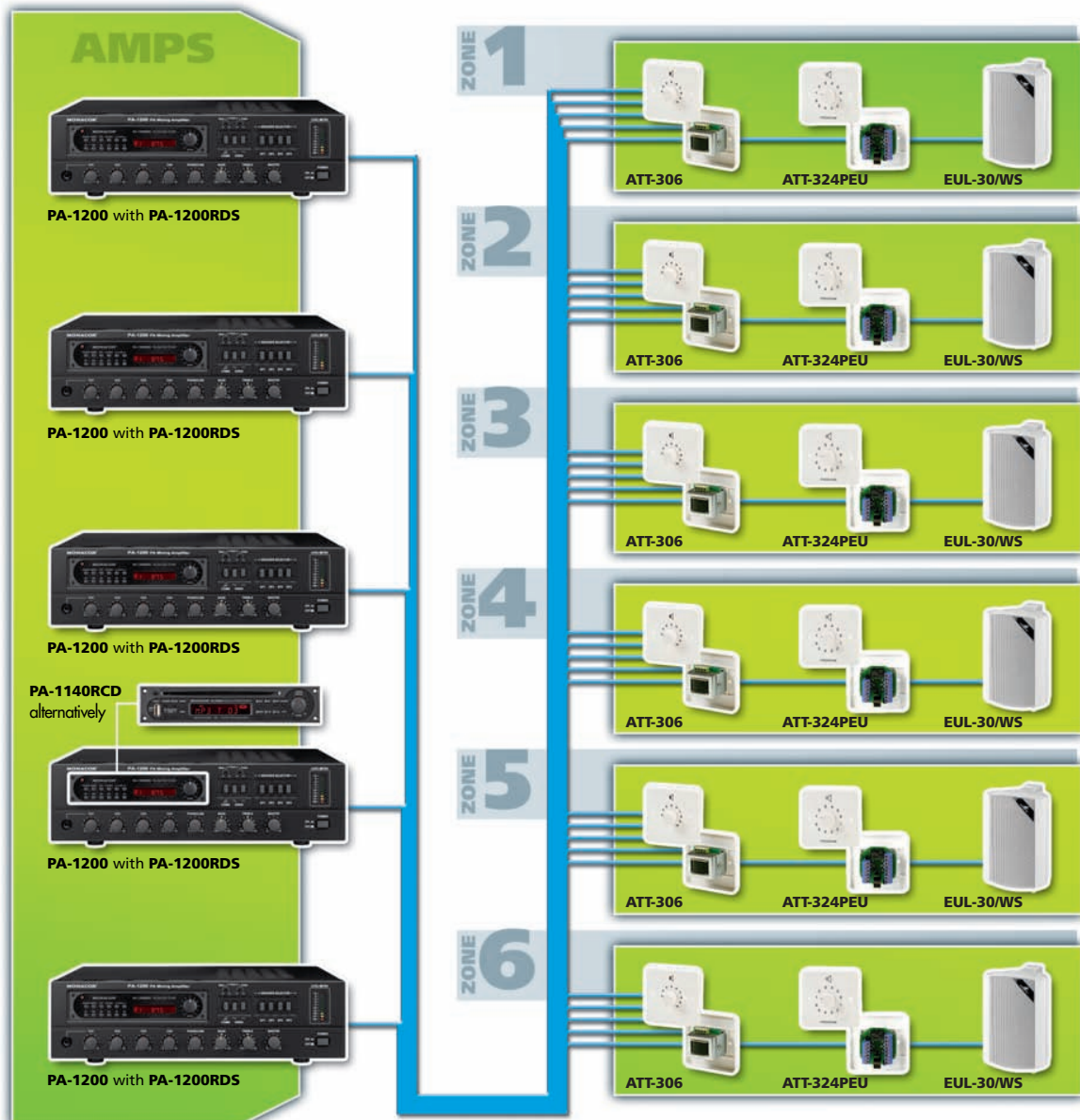
A PA System for Individual Rooms with Programme Selectors

A greater number of rooms, e.g. in a hotel or in a solarium, is to be supplied with 5 different music programmes respectively.

For this purpose, 5 individual amplifiers are equipped with a radio module each. Alternatively, CD insertions are possible, too. In each room, a selector switch with following attenuator is used to which a

speaker is connected. Thus, it is possible to select programme and volume in each room independently of the other.

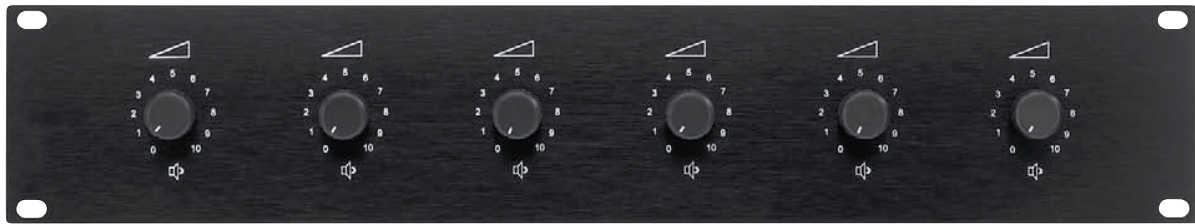
As it may theoretically be possible that all users have selected the same programme and the maximum volume, the power of the amplifier must be selected accordingly.



List of materials 5 x PA-1200 amplifier
 5 x PA-1200RDS tuner insertion
 PA-1140RCD alternatively radio/CD insertion

6 x ATT-306 programme selector
 6 x ATT-324PEU volume control
 3 x EUL-30/WS pair of wall speakers

Volume Controls



ATT-1950

Order No. 17.1370

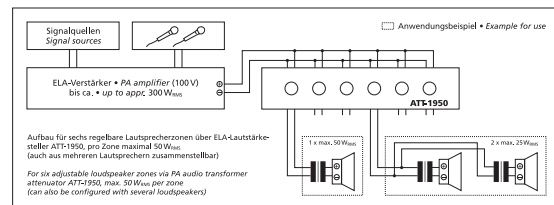
ATT-19100

Order No. 17.2640



6-way PA volume controls for 482 mm (19") rack installation

- 6 audio transformers for 100 V line technique
- Connection for priority circuit, 6 priority relays (24 V= / 20 mA)
- Attenuation in 10 steps, position 0 is OFF
- Aluminium front panel
- Available in 3 power classes
- Plug-in screw terminal



Model	ATT-1950	ATT-19100
Frequency range	50-18,000 Hz	50-18,000 Hz
Power rating	6 x 50 W _{RMS}	6 x 100 W _{RMS}
Priority facility	yes	yes
Dimensions	484x88x77 mm, 2 RS	484x88x77 mm, 2 RS
Weight	1.6 kg	1.8 kg

ATT-442ST

Order No. 17.1860

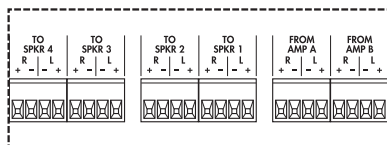
4-channel speaker volume control, stereo

Particularly high quality due to transformer technique with universal output assignment (4-16 Ω for each speaker), 20-20,000 Hz, attenuation in 10 steps for each pair, position 0 is OFF.

- 2 stereo inputs (100 W_{RMS} max. for each channel) and 4 stereo speaker outputs (18 W_{RMS} / 4-16 Ω each)
- Source selector switch for each speaker output
- Screw terminals
- Black metal housing
- Dimensions: 432x78x190 mm
- Weight: 3.4 kg



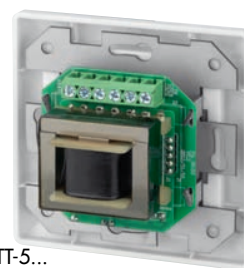
This unit finally allows to control the level of several pairs of speakers (up to 4) independently of each other even without 100 V line technique and to connect them together to basic amplifiers, too, without any difficulties. Even speakers with different impedances between 4 and 16 Ω can be mixed as desired. Ideally suited for applications in restaurants and bars.



Volume Controls, Programme Selectors

Wall-Mounted PA Volume Controls with 24 V Emergency Priority Relay

- Attenuation in 10 steps, position 0 is OFF
- For 100 V line technique
- White plastic front panel and knob
- Also suitable for already existing series of switches with standard cover frames (cutout: 50 mm or 55 mm)
- Flush mounting in standard 60 mm wall sockets (ATT-5100PEU in 65 mm wall socket)
- Plug-in screw terminal



ATT-5...

Model	Order No.	Frequency range	Power rating	Priority facility	Dimensions	Mounting depth	Weight	Surface-mounted housing
ATT-506PEU	17.3890	50-18,000 Hz	6 W _{RMS}	yes	80x80x67 mm	45 mm	165 g	-
ATT-512PEU	17.3900	50-18,000 Hz	12 W _{RMS}	yes	80x80x67 mm	45 mm	230 g	-
ATT-524PEU	17.3910	50-18,000 Hz	24 W _{RMS}	yes	80x80x66 mm	45 mm	230 g	-
ATT-536PEU	17.3920	50-18,000 Hz	36 W _{RMS}	yes	80x80x66 mm	45 mm	235 g	-
ATT-550PEU	17.3930	50-18,000 Hz	50 W _{RMS}	yes	80x80x68 mm	45 mm	240 g	-
ATT-5100PEU	17.3940	50-18,000 Hz	100 W _{RMS}	yes	80x80x70 mm	50 mm	350 g	-

Wall-Mounted PA Volume Controls with 24 V Emergency Priority Relay

- Attenuation in 10 steps, position 0 is OFF
- For 100 V line technique
- Snow-white plastic front panel and knob
- Flush mounting in standard 65mm wall sockets (except ATT-3100PEU)
- Surface mounting with matching housing ATT-300, available at option
- Plug-in screw terminal



ATT-3...

Model	Order No.	Frequency range	Power rating	Priority facility	Dimensions	Mounting depth	Weight	Surface-mounted housing
ATT-306PEU	17.3690	50-18,000 Hz	6 W _{RMS}	yes	80x80x67 mm	45 mm	190 g	ATT-300
ATT-312PEU	17.1380	50-18,000 Hz	12 W _{RMS}	yes	80x80x67 mm	45 mm	190 g	ATT-300
ATT-324PEU	17.1390	50-18,000 Hz	24 W _{RMS}	yes	80x80x67 mm	45 mm	190 g	ATT-300
ATT-336PEU	17.1400	50-18,000 Hz	36 W _{RMS}	yes	80x80x67 mm	45 mm	240 g	ATT-300
ATT-350PEU	17.1410	50-18,000 Hz	50 W _{RMS}	yes	80x80x67 mm	45 mm	240 g	ATT-300
ATT-3100PEU	17.2630	50-18,000 Hz	100 W _{RMS}	yes	80x80x67 mm	45 mm	295 g	ATT-300



ATT-306

Order No. 17.1420

PA programme selector

- Switches one of 6 signal sources to one speaker output
- For 100 V audio technique or other signals
- Built-in relay (24 V) for priority circuit
- Snow-white plastic front panel and knob
- Flush mounting in standard 65 mm wall sockets
- Surface mounting with matching housing ATT-300, available at option
- Mounting depth: 35 mm
- Plug-in screw terminal



ATT-325ST

Order No. 17.1430

Stereo volume control, of high-quality transmitting technology.

- 4 Ω amplifier input and 4 Ω speaker output
- Power rating: 25 W_{RMS} per channel
- Attenuation in 10 steps, position 0 is OFF
- Snow-white plastic front panel and knob
- Surface mounting with matching housing ATT-300, available at option
- Mounting depth: 50 mm
- Plug-in screw terminal

Volume Controls, Surface-mounted Housings

Wall-Mounted PA Volume Controls

- Attenuation in 10 steps, position 0 is OFF
- Audio transformer for 100 V line technique
- White plastic front panel and knob
- Flush mounting, surface mounting with matching housing ATT-200, available at option



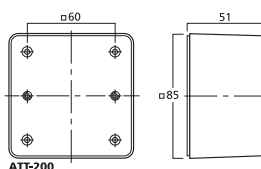
Model	Order No.	Frequency range	Power rating	Priority facility	Dimensions	Mounting depth	Weight	Surface-mounted housing
ATT-212/WS	17.3670	50-18,000 Hz	12 W _{RMS}	no	85x85x66 mm	42 mm	160 g	ATT-200
ATT-224/WS	17.3680	50-18,000 Hz	24 W _{RMS}	no	85x85x66 mm	38 mm	160 g	ATT-200
ATT-235/WS	17.0580	50-18,000 Hz	35 W _{RMS}	no	85x85x71 mm	42 mm	210 g	ATT-200
ATT-250/WS	17.0590	50-18,000 Hz	50 W _{RMS}	no	85x85x71 mm	42 mm	210 g	ATT-200
ATT-2100/WS	17.2610	50-18,000 Hz	100 W _{RMS}	no	85x85x71 mm	42 mm	210 g	ATT-200



ATT-200

Order No. 17.0550

Surface-mounted housing, for wall-mounted PA volume controls but also as protective housing for flush mounting.
White plastic, suitable for the 200 series with 2-hole fixing.



ATT-200P

Order No. 17.0870

Front panel, white, plastic

- For universal mounting in combination with surface-mounted housing ATT-200
- Without imprint
- With drill hole \varnothing 9.0 mm



ATT-20

Order No. 03.4500

Rotary knob, white

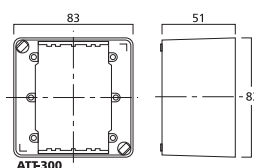
- For shafts \varnothing 6 mm, 18 teeth
- Suitable for PA volume controls ATT-.../WS
- Diameter: approx. 20 mm
- Height: approx. 17 mm



ATT-300

Order No. 17.1440

Surface-mounted housing, for wall-mounted PA volume controls of the series ATT-3...PEU. Snow-white plastic.



ATT-500PD

Order No. 17.3880

Mounting frame

- For all panel jacks of the D series from NEUTRIK
- Flush mounting in standard 60 mm wall sockets
- Also suitable for already existing series of switches with standard cover frame (50 mm or 55 mm cutout)
- Dimensions: 80x80x10 mm
- Supplied with mounting screws

KNOW-HOW: Panel Jacks for ATT-500PD

Recommended Panel Jacks for the Mounting Frame ATT-500PD



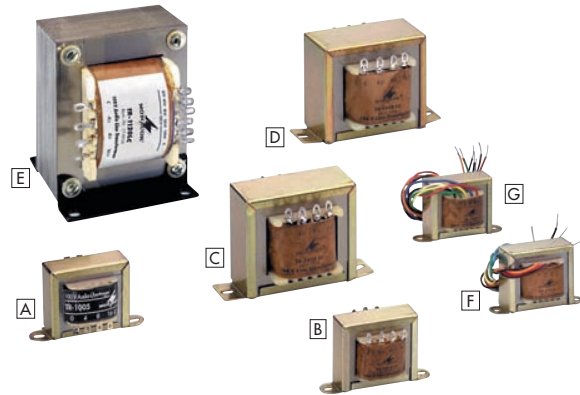
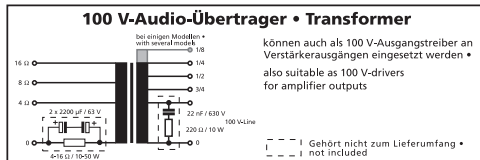
Jack	Model	Order No.	
BNC	<i>NBB-75DFI</i>	34.6450	
	<i>NBB-75DFIB</i>	34.6460	
RCA	<i>NF-2DB0</i>	34.7110	
	<i>NF-2DB2</i>	34.7120	
	<i>NF-2DB4</i>	34.8530	
HDMI	<i>NAHDMIW</i>	34.8630	
	<i>NAHDMIWB</i>	34.8640	
Stereo 6.3 mm	<i>NJ-3FP6C</i>	34.4730	
	<i>NJ-3FP6CBAG</i>	34.4560	
RJ-45, Cat. 5	<i>NE-8FDVYK</i>	34.6690	
RJ-45, Cat. 5 adapter	<i>NE-8FDP</i>	34.6890	
RJ-45, Cat. 6	<i>NE-8FDYC6</i>	34.4070	
	<i>NE-8FDYC6B</i>	34.4080	
Speakon, 2 poles	<i>NL-2MP</i>	34.5980	
	<i>NL-4MP</i>	34.4230	
USB	<i>NAUSBW</i>	34.8650	
	<i>NAUSBWB</i>	34.8660	
XLR jack, 3 poles	<i>NC-3FDL1</i>	34.4690	
	<i>NC-3FDL1BAG</i>	34.4540	
	<i>NC-3FDS1B</i>	34.0320	
XLR plug, 3 poles	<i>NC-3MDL1</i>	34.4700	
	<i>NC-3MDL1BAG</i>	34.4550	
	<i>NC-3MDS1B</i>	34.0330	
XLR jack, 5 poles	<i>NC-5FDL1</i>	34.6060	
XLR plug, 5 poles	<i>NC-5MDL1</i>	34.6070	

KNOW-HOW

100 V Transformers

100 V High-Performance Audio Transformers

An external 100 V transformer is necessary for an amplifier or speaker without installed 100 V audio transformer. Each of the offered 100 V audio transformers can be used.



Model	Order No.	Power	Primary	Secondary	Frequency range	Dimensions	Position
TR-1005	17.0230	10 V _{RMS}	10/5/2.5/1.25/0.625 W	4/8/16 Ω	40-30,000 Hz, -3 dB	71x43x41 mm	A
TR-1010LC	17.0250	10 V _{RMS}	10/7.5/5/2.5 W	4/8/16 Ω	35-20,000 Hz, -3 dB	71x43x38 mm	B
TR-1025LC	17.0270	25 V _{RMS}	25/20/12/6 W	4/8/16 Ω	25-20,000 Hz, -3 dB	92x60x52 mm	C
TR-1050LC	17.0290	50 V _{RMS}	50/37.5/25/12.5 W	4/8/16 Ω	30-15,000 Hz, -3 dB	92x60x58 mm	D
TR-1120LC	17.0310	120 V _{RMS}	120/100/90/60/30 W	4/8/16 Ω	20-20,000 Hz, -3 dB	72x99x78 mm	E
TR-175/6	17.0440	6 V _{RMS}	6/4/2/1 W	4/8/16 Ω	28-25,000 Hz, -3 dB	71x42x40 mm	F
TR-175/10	17.0450	10 V _{RMS}	10/6/4/2/1 W	4/8/16 Ω	35-25,000 Hz, -3 dB	71x42x40 mm	G

100 V Toroidal Audio Transformers

- Very high-quality version with a perfect frequency response and extra low THD
- Flat version
- Sealed



Model	Order No.	Primary	Secondary	Frequency range	Dimensions	Weight
TR-520	17.1920	5/10/15/20 W	4 Ω	80-18,000 Hz	ø 60 mm x 30 mm	400 g
TR-510	17.1910	2.5/5/7.5/10 W	4 Ω	80-18,000 Hz	ø 60 mm x 30 mm	300 g
TR-525	17.1210	2.5/5 W	4 Ω	80-18,000 Hz	ø 50 mm x 20 mm	160 g



PATL-100

Order No. 17.1180

100 V transformer, for the connection of a 100 V audio signal source to units with line input.

- Adjustable line output level (0-1.5 V at 100 V input voltage), can be switched internally for other output voltages
- 100 V input with plug-in screw terminal
- Balanced XLR output, impedance: 1 kΩ, XLR panel plug
- Insulated plastic housing
- Galvanically isolated input and output
- Dimensions: 171x81x61 mm
- Weight: 520 g

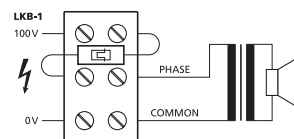


LKB-1

Order No. 16.1830

Connection terminal, for 100 V PA speakers.

- 3-pole ceramic screw terminal
- Thermal fuse 1 A/150 °C for disconnecting a faulty speaker in case of a short circuit (fire), so that the function of one speaker line is maintained
- Dimensions: 35x20x20 mm



KNOW-HOW: Example of Application

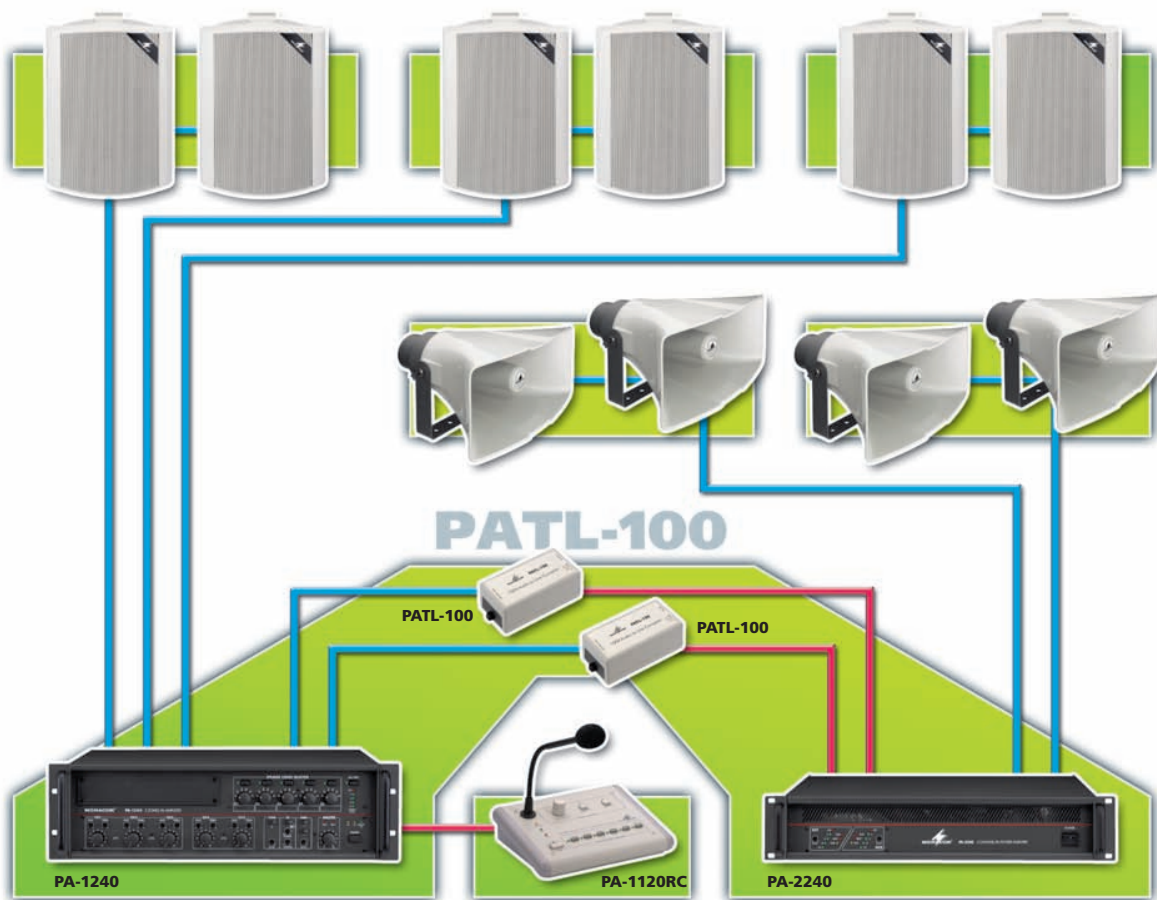
... for the 100 V to Line Converter PATL-100

With the **PATL-100**, a 100 V signal can be converted into a line signal. In this case, both signals are galvanically isolated from each other.

Example 1:

With the mixing amplifier **PA-1240**, 5 speaker circuits of 80 W each are to be operated. The total power of the amplifier alone is not sufficient for this.

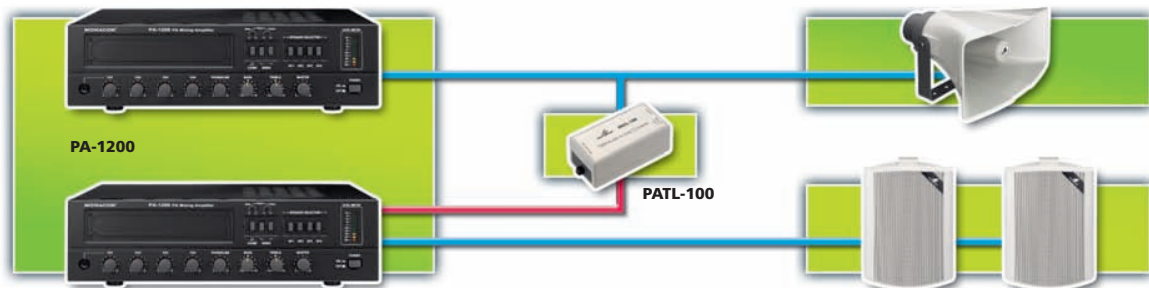
In the example, the zones 1 to 3 are directly operated from the mixing amplifier **PA-1240**. One **PATL-100** each is connected to the zone outputs 4 + 5 and thus the 100 V signal is converted into a line signal. With this line signal, further power amplifiers can be controlled which for their part supply the speakers of the zones 4 + 5. The full functionality of the zone control of the **PA-1240** amplifier is maintained, e.g. by the system microphone **PA-1120RC**.



Example 2:

A further amplifier is to be added to an existing system. This amplifier is located in another part of the building.

With the **PATL-100**, the signal can very easily be picked up from the existing 100 V line for feeding it to the new amplifier.



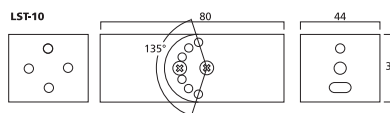
Universal Supports



LST-10

Order No. 12.9830

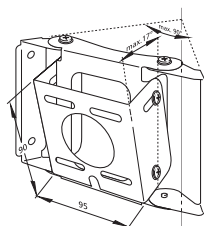
Universal support, black lacquered, for wall mounting or ceiling suspension of speaker systems, cameras, lights, etc., adjustable angle $\pm 60^\circ$ in 7 steps, to be secured with supplied screws. Supplied with 4 fixing screws. Maximum load: 10 kg.



LST-12

Order No. 12.4320

Wall support for speaker systems, black lacquered, also suitable for flexible corner mounting due to adjustable mounting brackets, movable mounting plate (approx. 17°), to be secured with supplied screws. Supplied with 4 fixing screws. Maximum load: 15 kg.



EBH-49

Order No. 12.0270

Stand adapter, for PA column speakers.

- Black lacquered steel version
- M8x15 mm threaded bolt
- For column speakers of the ETS-... series up to 7.5 kg max. and with M8 thread



LST-4

Order No. 12.6380



Pair of universal supports, solid version, black lacquered, for wall mounting or ceiling suspension of speaker systems, monitors, floodlights, etc. Can be moved in any direction and be secured with hexagon socket screws.



LST-6

Order No. 12.1680



Pair of universal supports, black lacquered, for wall mounting or ceiling suspension of lightweight speaker systems, cameras, lights, etc. Tilting to be adjusted via tooth locking mechanism, mounting plate can be turned and be secured with a setscrew. With safety rope.



LST-40

Order No. 11.0860



Pair of universal supports, robust plastic version, for wall mounting or ceiling suspension of speaker systems, movable and tiltable, tooth locking mechanism, to be secured with hexagon socket screws.

Model	LST-4	LST-6	LST-40
Max. load capacity at centr. weight concentration	11 kg	8 kg	8 kg
Dimensions			
Mounting flange	ø 110 mm	105x100 mm	82x58 mm
Mounting plate	175x110 mm	108x48 mm	82x58 mm
Tube length	100 mm	113 mm	-
Weight	2.3 kg (pair)	1 kg (pair)	280 g (pair)

Floor Stands, Accessories



MS-60/SW

Order No. 23.2930

Microphone floor stand, with movable boom of adjustable length and shock-absorbing folding feet. Thread: 16 mm ($\frac{5}{8}$ " and 9 mm ($\frac{3}{8}$ ").

- Mat black lacquered
- Adjustable boom length: 56-95 cm
- Adjustable height: 106-242 cm
- Storage dimensions: 10x98 cm
- Weight: 2.9 kg



MS-28

Order No. 23.5440

Microphone floor stand, mat black lacquered, with shock-absorbing black diecast base (ø 25 cm). Very robust and stable version.

- Thread: 9 mm ($\frac{3}{8}$ ")
- Adjustable height: 88-156 cm
- Weight: 4.5 kg



PAST-164/SW

Order No. 11.1960

Speaker stand, extra lightweight aluminium version, height can be adjusted in 6 steps, with locking pin.

- Aluminium, black
- Adjustable height: 140-200 cm
- Load capacity at central weight concentration: 30 kg



GN-40XLR

Order No. 23.0750

GN-40XLR/SW

Order No. 23.5700

Goosenecks, 500 mm (20").

- Chromium-plated or black (SW)
- 1 x XLR plug
- 1 x XLR inline jack
- 1:1 connection



GN-500

Order No. 23.3120

Gooseneck, 500 mm (20").

- Chromium-plated
- Inside thread: 16 mm ($\frac{5}{8}$ ")
- Outside thread: 9 mm ($\frac{3}{8}$ ")
- Incl. adapter, inside thread: 9 mm ($\frac{3}{8}$ "), outside thread: 16 mm ($\frac{5}{8}$ ")



MS-210/SW

Order No. 23.3240

Desktop microphone stand

- Diecast base
- Tiltable tube
- Adjustable height: 375-590 mm
- Thread: 16 mm ($\frac{5}{8}$ ") and 9 mm ($\frac{3}{8}$ ")
- Weight: 1.9 kg



MH-152

Order No. 23.3540

Microphone holder, ø 32-42 mm, black flexible plastic.

- Especially suitable for wireless hand-held microphones which generally feature a bigger handle
- 16 mm ($\frac{5}{8}$ ") standard thread



DMS-1

Order No. 23.3490

Desktop microphone base, for gooseneck microphones.

- On/off switch
- Non-slip diecast housing
- Microphone connection via XLR jack with latching device
- XLR output, balanced connection
- Dimensions: 135x55x145 mm
- Weight: 1.3 kg



XLR-703JSM

Order No. 34.8810

Shock-mount base with XLR socket, for the installation into lecterns, for gooseneck microphones.

- Attenuation of impact noise and structure-borne noise due to rubber-cushioned 3-pole XLR socket
- 1.2 m connection cable with 3-pole XLR plug

Cables



MCA-127J

Order No. 06.9030

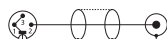
MCA-327J

Order No. 06.9050

Audio connection cables, for connecting e.g. a mixer or CD player to an amplifier
2 x RCA plug to 2 x XLR inline jack

MCA-127J = length: 1 m

MCA-327J = length: 3 m



MCA-127P

Order No. 06.9020

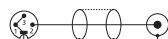
MCA-327P

Order No. 06.9040

Audio connection cables, for connecting e.g. a mixer or CD player to an amplifier
2 x RCA plug to 2 x XLR plug

MCA-127P = length: 1 m

MCA-327P = length: 3 m



MCA-129J

Order No. 06.7350

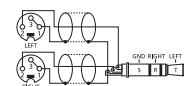
MCA-329J

Order No. 06.7120

Audio adapter cables, for connecting e.g. a PC sound card to a mixer or amplifier.
1 x 3.5 mm stereo plug to 2 x XLR inline jack.

MCA-129J = length: 1 m

MCA-329J = length: 3 m



MCA-129P

Order No. 06.7360

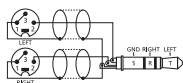
MCA-329P

Order No. 06.7130

Audio adapter cables, for connecting e.g. a PC sound card to a mixer or amplifier.
1 x 3.5 mm stereo plug to 2 x XLR plug.

MCA-129P = length: 1 m

MCA-329P = length: 3 m



ACA-1535

Order No. 06.2740

Stereo audio/video cable adapter

3.5mm stereo plug to 2 x RCA inline jack,
length: 0.15 m.



ACA-1635

Order No. 06.4390

ACA-1735

Order No. 06.5180

ACA-1935

Order No. 06.6740

Audio adapter cables, for connecting audio units with 3.5 mm stereo jack output, e.g. portable multimedia players.

Connectors:

1 x 3.5 mm stereo plug, 2 x RCA plug

ACA-1635 = length: 1.2 m

ACA-1735 = length: 2 m

ACA-1935 = length: 10 m



Stereo Audio Connection Cables

- With 2 x RCA plug on both ends
- Gold-plated contacts

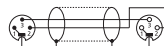
Model	Order No.	Length	Colour
AC-050G	06.6450	0.5 m	black
AC-122G	06.1890	1.2 m	black
AC-300G	06.2120	3 m	black
AC-600G	06.2130	6 m	black



XLR Cables

Line and microphone extension cables.

- 1 x XLR inline jack and 1 x XLR plug, balanced
- Shielded low-noise OFC cable material, ø 6.5 mm
- Different lengths and colours



Model	Order No.	Length	Outs. ø	Colour
MEC-50/BL	06.1680	0.7 m	ø 6.5 mm	blue
MEC-50/GE	06.1690	0.7 m	ø 6.5 mm	yellow
MEC-50/GN	06.1700	0.7 m	ø 6.5 mm	green
MEC-50/RT	06.1710	0.7 m	ø 6.5 mm	red
MEC-50/SW	06.1720	0.7 m	ø 6.5 mm	black
MEC-100/BL	06.1740	1 m	ø 6.5 mm	blue
MEC-100/GE	06.1750	1 m	ø 6.5 mm	yellow
MEC-100/GN	06.1760	1 m	ø 6.5 mm	green
MEC-100/RT	06.1770	1 m	ø 6.5 mm	red
MEC-100/SW	06.1780	1 m	ø 6.5 mm	black
MEC-190/BL	06.2520	2 m	ø 6.5 mm	blue
MEC-190/GE	06.2530	2 m	ø 6.5 mm	yellow
MEC-190/GN	06.2540	2 m	ø 6.5 mm	green
MEC-190/RT	06.2550	2 m	ø 6.5 mm	red
MEC-190/SW	06.2560	2 m	ø 6.5 mm	black
MEC-20/BL	06.0670	6 m	ø 6.5 mm	blue
MEC-20/GE	06.0680	6 m	ø 6.5 mm	yellow
MEC-20/GN	06.0690	6 m	ø 6.5 mm	green
MEC-20/RT	06.0700	6 m	ø 6.5 mm	red
MEC-20/SW	06.0710	6 m	ø 6.5 mm	black
MEC-1000/BL	06.2940	10 m	ø 6.5 mm	blue
MEC-1000/GE	06.2950	10 m	ø 6.5 mm	yellow
MEC-1000/GN	06.2960	10 m	ø 6.5 mm	green
MEC-1000/RT	06.2970	10 m	ø 6.5 mm	red
MEC-1000/SW	06.2510	10 m	ø 6.5 mm	black
MEC-1500/SW	06.2270	15 m	ø 6.5 mm	black
MEC-2000/SW	06.4320	20 m	ø 6.5 mm	black

Cables and Accessories

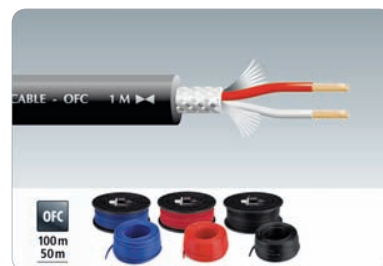
Microphone Cables

"TOP QUALITY"

- 50 m coil or 100 m reel
- 2 x 0.22 mm²
- Metre marking
- Shielded

- Outside diameter: ø 6.5 mm
- Capacitance: 110 pF/m
- Low-noise

Model	Order No.	Cores	Capacitance	Length	Outside diameter	Colour
MLC-52/BL	06.0840	2 x 0.22 mm ²	110 pF/m	50 m coil	ø 6.5 mm	blue
MLC-52/RT	06.0870	2 x 0.22 mm ²	110 pF/m	50 m coil	ø 6.5 mm	red
MLC-52/SW	06.0880	2 x 0.22 mm ²	110 pF/m	50 m coil	ø 6.5 mm	black
MLC-152/BL	06.5750	2 x 0.22 mm ²	110 pF/m	100 m reel	ø 6.5 mm	blue
MLC-152/RT	06.5770	2 x 0.22 mm ²	110 pF/m	100 m reel	ø 6.5 mm	red
MLC-152/SW	06.5780	2 x 0.22 mm ²	110 pF/m	100 m reel	ø 6.5 mm	black

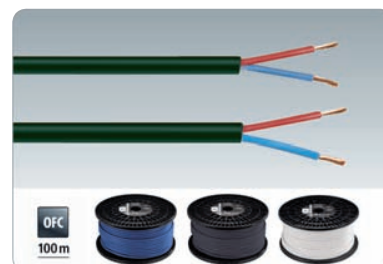


Speaker Cables

"TOP QUALITY, HIGH FLEXIBLE"

- 100 m reel
- Suitable for stage applications as well as for 100 V line technique

Model	Order No.	Cores	Length	Outside dimensions	Colour
SPC-515/BL	12.9680	2 x 1.5 mm ²	100 m reel	ø 7.4 mm	blue
SPC-515/SW	12.9690	2 x 1.5 mm ²	100 m reel	ø 7.4 mm	black
SPC-515/WS	12.9700	2 x 1.5 mm ²	100 m reel	ø 7.4 mm	white
SPC-525/SW	12.9710	2 x 2.5 mm ²	100 m reel	ø 8.2 mm	black

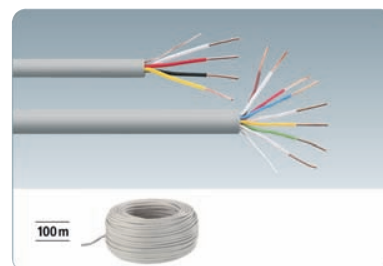


Signal Cables

For alarm, PA and communication technology.

- 100 m coil
- Type J-Y(S)tY acc. to VDE 0815
- Common foil shield
- Copper wires with coloured insulation

Model	Order No.	Cores	Length	Outside diameter	Colour
JYSTY-2208	11.1340	4 x ø 0.8 mm	100 m coil	ø 7 mm	grey
JYSTY-2206	19.2310	4 x ø 0.6 mm	100 m coil	ø 5.5 mm	grey
JYSTY-4206	19.2320	8 x ø 0.6 mm	100 m coil	ø 6.5 mm	grey



FGA-202

Order No. 25.1660

Professional 2-channel line transformer, for reducing signal interference and hum loops.

- 2 inputs via balanced comb. jacks XLR/6.3 mm (600 Ω)
- 2 galvanically isolated XLR outputs (600 Ω) with ground lift switch
- Frequency range: 20-20,000 Hz
- Robust metal housing with very good shielding qualities, suitable for stage applications
- Dimensions: 125x55x75 mm
- Weight: 650 g



FGA-40HQ

Order No. 06.6380

High-end ground isolator, for preventing signal interference and hum loops which may occur, e.g. when connecting the car radio to an amplifier.

- Gold-plated RCA jacks
- Input/output impedance: 12 kΩ
- Frequency range: 20-30,000 Hz
- THD: < 0.001 %
- Transmission ratio: 1:1
- 42x29x96 mm, 110 g



FGA-30

Order No. 21.2430

Ground isolator, compact design, for preventing signal interference and hum loops which may occur, e.g. when connecting PC sound cards or laptops to an amplifier.

- Galvanically isolated inputs and outputs
- 2 RCA jacks
- 3.5 mm stereo plug
- Input/output impedance: 20 kΩ
- Frequency range: 20-30,000 Hz
- THD: < 0.01 %
- Transmission ratio 1:1
- ø 24 mm x 38 mm, 32 g
- Length including connection cable: approx. 40 cm

Racks

RACK-42

Order No. 24.4510

RACK-33

Order No. 24.4500

RACK-21

Order No. 24.4490



Racks for 482 mm (19") units

- Sheet steel version
- Light grey powder coating (RAL 7035)
- Lockable front door with safety glass and swivel handle lock
- Door can alternatively be opened to the left or right
- Side walls and rear wall can be removed and locked
- Max. mounting depth behind the front plate: 480 mm
- Supplied with earthing set, 4 adjustable feet and set of 28 mounting screws

RACK-42: 42 RS

RACK-33: 33 RS

RACK-21: 21 RS



Height in mm w/o feet, please add
16-45mm for feet.

Model	RACK-42	RACK-33	RACK-21
Max. load capacity at	300 kg	300 kg	300 kg
centr. weight concentration			
Dimensions	600x1,988x600 mm	600x1,588x600 mm	600x1,055x600 mm
Weight	93 kg	78 kg	59 kg



RACK-12W

Order No. 24.4520

RACK-6W

Order No. 24.4540



Wall-mounted housings for 482 mm (19") units

- Sheet steel version
- Light grey powder coating (RAL 7035)
- Lockable front door with safety glass
- Door can alternatively be opened to the left or right
- Maximum mounting depth behind the front plate: 370 mm
- Supplied with earthing set and 16 sets of mounting screws

RACK-12W: 12 RS

RACK-6W: 6 RS



RACK-12WP

Order No. 24.4530

RACK-6WP

Order No. 24.4550



Wall-mounted housings for 482 mm (19") units, with movable middle part of the housing.

- Sheet steel version
- Light grey powder coating (RAL 7035)
- Lockable front door with safety glass
- Door can alternatively be opened to the left or right
- Maximum mounting depth behind the front plate: 470 mm
- Supplied with earthing set and 16 sets of mounting screws

RACK-12WP: 12 RS

RACK-6WP: 6 RS

Model	RACK-12W	RACK-6W	RACK-12WP	RACK-6WP
Max. load capacity at	40 kg	40 kg	40 kg	40 kg
centr. weight concentration				
Dimensions	600x655x400 mm	600x388x400 mm	600x655x500 mm	600x388x500 mm
Weight	24 kg	17 kg	29 kg	21 kg

Racks



RACK-20/SW

Order No. 24.8860

RACK-12/SW

Order No. 24.8850



Professional studio racks for 482 mm (19") units

- Sheet steel
- Mat black textured coating
- Folding carrying handles
- 4 castors
- Supplied with 50 (RACK-20/SW) or 30 (RACK-12/SW) sets of mounting screws

RACK-20/SW: 20 RS

RACK-12/SW: 12 RS



RACK-20GT/SW

Order No. 24.1100

RACK-12GT/SW

Order No. 24.1090



Professional studio racks for 482 mm (19") units

- Lockable front door of tinted, shock-proof acrylic glass
- Sheet steel
- Mat black textured coating
- Folding carrying handles
- 4 castors
- Supplied with 50 (RACK-20GT/SW) or 30 (RACK-12GT/SW) sets of mounting screws

RACK-20GT/SW: 20 RS

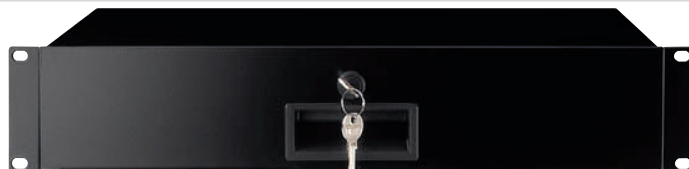
RACK-12GT/SW: 12 RS

Model	RACK-20/SW	RACK-12/SW	RACK-20GT/SW	RACK-12GT/SW
Max. load capacity at centr. weight concentration	80 kg	65 kg	80 kg	65 kg
Dimensions	548x1,055x435 mm	548x700x435 mm	675x1,150x500 mm	675x725x500 mm
Weight	18 kg	12 kg	24 kg	20 kg

482 mm (19") Drawers

Professional Quality.

- Mat black textured coating
- Steel housing
- Lock and recessed grip
- Supplied with 2 keys



Model	Order No.	Height (RS)	Inside dim. (WxHxD)	Outside dim. (WxHxD)	Weight
RCS-32/SW	33.3710	2	409x79x355 mm	482x89x368 mm	8.3 kg
RCS-33/SW	33.3720	3	409x123x355 mm	482x134x368 mm	10.3 kg



RH-20

Order No. 11.1160



482 mm (19") mounting tray, 2 RS

- Easy installation of units due to two adjustable supporting brackets
- Suitable for rack installation of units incapable of being installed into a rack (e.g. hi-fi components)
- Black lacquered steel version
- Support area: 365x435 mm
- Maximum load: 10 kg



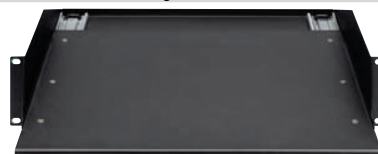
RH-210

Order No. 12.0350



482 mm (19") mounting plate, 2 RS

- Suitable for rack installation of units incapable of being installed into a rack (e.g. hi-fi components)
- Version with various mounting holes
- Black lacquered steel version
- Support area: 375x440 mm
- Maximum load: 20 kg



RCB-2HE/SW

Order No. 12.9090



Pull-out mounting plate, for rack installation, 2 RS.

- Solid steel version
- Ball-bearing complete pull-out, max. load: up to 20 kg
- Mat black textured coating
- Inside dimensions: 437x73x365 mm
- Outside dimensions: 482x89x373 mm

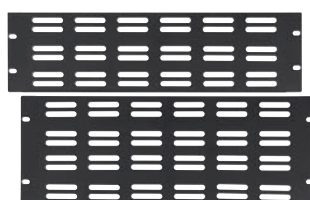
Rack Panels

482 mm (19") Rack Panels

Closed.

1.5 mm steel, black plastic coating. Upper and lower edges 8 mm angled in different configurations. Ideally suited for the individual compilation of 482 mm (19") systems.

Model	Order No.	Size (RS)	Width	Height
RCP-8701U	12.2760	1	483 mm	44.5 mm
RCP-8702U	12.2770	2	483 mm	89 mm
RCP-8703U	12.2780	3	483 mm	132.5 mm
RCP-8704U	12.2790	4	483 mm	177 mm



RCP-8726U

Order No. 11.1230

Rack panel, 3 RS, for fan mounting.

- Suitable for 2 fans, e.g. CF-220, CF-220BB
- Ventilation slots
- Dimensions: 483x133.5x8 mm



RCP-8723U

Order No. 11.0650

RCP-8724U

Order No. 11.0660

Rack panels, with ventilation slots.

RCP-8723U: 3 RS, 483x133.5 mm
RCP-8724U: 4 RS, 483x178 mm



RCP-8721U

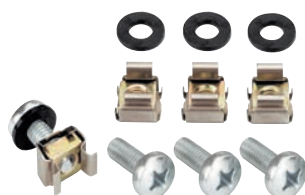
Order No. 12.2810

RCP-8722U

Order No. 12.2820

Rack panels, with ventilation slots.

RCP-8721U: 1 RS, 483x44.5 mm
RCP-8722U: 2 RS, 483x89 mm



MZF-8648

Order No. 12.9410

Set of cage nuts and screws, matching rack rail MZF-8019.

For mounting 482 mm (19") inserts into racks and flight cases. The set consists of:
4 x cage nut M6
4 x Phillips head screw M6 x 15 mm
4 x plastic washer



MZF-8645

Order No. 12.3500

Set of cage nuts and screws, for mounting 482 mm (19") inserts into racks and flight cases. The set consists of:
4 x cage nut M6
4 x Phillips head screw M6 x 15 mm
4 x plastic washer

RCP-8732U

Order No. 12.9990

Rack panel, 1 RS

- Punched holes:
- 8 x D series, e.g. NC-3MDL1, NC-3FDL1, NL-2MP, NL-4MP
- Dimensions: 482x44.5 mm



MZF-312/SW

Order No. 12.8790

Set of mounting screws, for mounting panel connectors into rack panels of the RCP-... series.

The set consists of:
16 x recessed countersunk head screw M3 x 12 mm, 16 x nut M3 6K, 16 x tooth lock washer, 16 x washer



DBA-1/SW

Order No. 11.0570

Cover plate, for rack panels. To cover punched holes which are unused, for XLR jacks of the D series.



MFD-1

Order No. 11.1250

Mounting frame, with M3 thread.

- Suitable for panel connectors of the standard D series
- For mounting with M3 screws (not supplied)



Power Strips

MCS-180

Order No. 05.0002



Rack-mount power strip, with 8 earthed sockets.

- Sockets can be switched individually via illuminated switches
- Black sheet steel housing
- 1.8 m connection cable with earthed plug
- Cable specification: H05VV-F3G1.5 mm², 3,600 VA max.
- Dimensions: 482x89x110 mm, 2 RS



RCS-92/SW

Order No. 11.1410



Rack-mount power strip, with 9 earthed sockets.

- Sockets turned by 45°
- Black aluminium housing
- Removable mounting brackets
- 2 m connection cable with earthed plug
- Cable specification: H05VV-F3G x 1.5 mm², 3,600 VA max.
- Dimensions: 482x44x45 mm, 1 RS



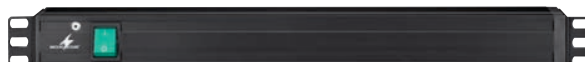
RCS-85/SW

Order No. 11.1850



Rack-mount power strip, with an illuminated main switch at the front panel and 8 earthed sockets at the rear panel.

- Sockets turned by 45°
- Black aluminium housing
- Removable mounting brackets to allow for reversed mounting
- 2 m connection cable with earthed plug
- Cable specification: H05VV-F3G x 1.5 mm², 3,600 VA max.
- Dimensions: 482x44x52 mm, 1 RS



RCS-18

Order No. 11.1200



Rack-mount power strip, with 8 earthed sockets and overvoltage protection.

- Child safety sockets
- Sockets turned by 45°
- Illuminated main switch
- Black plastic housing
- 1 m connection cable with earthed plug, cable inlet can be turned by 90° via flexible joint
- Cable specification: H05VV-F3G x 1.5 mm², 3,600 VA max.
- Dimensions: 482x44x60 mm, 1 RS



AAC-100IEC

Order No. 05.9711

AAC-200IEC

Order No. 05.0097

Mains cables

- 3-pin IEC inline jack with IEC LOCK
- Cable specification: H05VV-F3G x 1 mm²

AAC-100IEC: length: 1 m

AAC-200IEC: length: 2 m

MC-60/WS

Order No. 05.0542

MC-62/SW

Order No. 05.0044

Tabletop multi-socket power strips, with 6 earthed sockets.

- White (WS) or black (SW)
- Sockets turned by 45°
- Cable specification: H05VV-F3G x 1.5 mm²
- 1.5 m connection cable with earthed plug



MCS-15MS

Order No. 05.9713

Master/slave multi-socket power strip

When the connected appliance is switched on or off, the other sockets are also switched on or off via the master socket.

- Protection against overvoltage and lightning up to 15,000 A, functional test via indicating light
- 1 earthed master socket (550 W max.), 5 earthed slave sockets
- Adjustable switching threshold
- Child safety sockets
- Sockets turned by 45°
- Cable specification: H05VV-F3G x 1.5 mm², 3,500 VA max.
- 3 m connection cable with earthed plug

KNOW-HOW: Speaker Cables

Speaker Cables

The power in W of a 100 W amplifier arriving at the speaker, depending on the cable length and the cross section.

Cable length	4 Ω Speaker					8 Ω Speaker					100 V Speaker system				
	Cable cross section in mm²					Cable cross section in mm²					Cable cross section in mm²				
	0.75	1	1.5	2.5	4	0.75	1	1.5	2.5	4	0.75	1	1.5	2.5	4
10 m	79.9	84.3	89.1	93.2	95.7	89.1	91.6	94.3	96.5	97.8	99.1	99.3	99.5	99.7	99.8
20 m	65.2	72.0	79.9	87.1	91.6	79.9	84.3	89.1	93.2	95.7	98.1	98.6	99.1	99.4	99.6
25 m	59.4	66.8	75.8	84.3	89.7	75.8	80.9	86.6	91.6	94.6	97.7	98.2	98.8	99.3	99.6
40 m	45.9	54.3	65.2	76.6	84.3	65.2	72.0	79.9	87.1	91.6	96.3	97.2	98.1	98.9	99.3
50 m	39.3	47.8	59.4	72.0	80.9	59.4	66.8	75.8	84.3	89.7	95.4	96.5	97.7	98.6	99.1
100 m	20.8	27.9	39.3	54.3	66.8	39.3	47.8	59.4	72.0	80.9	91.1	93.2	95.4	97.2	98.2
200 m	8.7	12.9	20.8	34.0	47.8	20.8	27.9	39.3	54.3	66.8	83.4	87.1	91.1	94.5	96.5
250 m	6.3	9.6	16.2	27.9	41.2	16.2	22.3	32.9	47.8	61.1	79.9	84.3	89.1	93.2	95.7
300 m	4.8	7.4	12.9	23.3	35.9	12.9	18.3	27.9	42.4	56.1	76.6	81.6	87.1	91.9	94.9
400 m	3.0	4.8	8.7	17.0	27.9	8.7	12.9	20.8	34.0	47.8	70.6	76.6	83.4	89.5	93.2
500 m	2.1	3.3	6.3	12.9	22.3	6.3	9.6	16.2	27.9	41.2	65.2	72.0	79.9	87.1	91.6
1,000 m	0.6	1.0	2.1	4.8	9.6	2.1	3.3	6.3	12.9	22.3	45.9	54.3	65.2	76.6	84.3

Loss on Speaker Cables

Long cable distances can easily occur when planning and building more complex PA systems for which speakers are distributed in several rooms or at places covering greater distances. In this case, lengths of 100 m or 200 m between amplifier and speaker are no exception. In buildings like e.g. warehouses or places like e.g. sports facilities, this can quickly result in line lengths of 500 m or more.

With these cable lengths, great losses may occur along the cable runs. To understand why problems are possible and how to solve them, a little bit of theory is inevitable.

The resistance of a cable essentially depends on 3 factors: material, length and cross section.

The line length is double the cable length, as the way to the speaker and back to the amplifier determines the resistance of the line. Other influences like temperature and transition resistances at the places of contact have not been considered.

Example:

Supposing that an 8 Ω speaker system has to be connected to a power amplifier of 100 W output power. The cable length is 225 m at a cross section of 1 mm². (These are model values and result in values in the model calculation which are easy to understand).

The resistance is calculated as follows:

$$R = \frac{l}{k \times A}$$

$R (\Omega)$ = the resistance
 $l (m)$ = total line length of the individual cores
 k = specific conductivity (kappa), this value is 56 for copper
 $A (mm^2)$ = cross section of the line

$$R = \frac{l}{k \times A} = \frac{450 \text{ m}}{56 \times 1 \text{ mm}^2} = 8 \Omega \text{ line resistance}$$

The amplifier supplies the following output values with 100 W at 8 Ω:

$$\begin{aligned} \text{Output voltage} &= 28.3 \text{ V} \\ \text{Output current} &= 3.53 \text{ A} \end{aligned}$$

Thus, the total resistance is composed of 8 Ω for the speaker system and 8 Ω for the speaker cable.

This means, that the load impedance at the amplifier is doubled and thus the output current is halved.

As the line resistance and the speaker impedance are of the same value in our example, only half the voltage is available at the speaker in this case.

Thus, only 25 W or 25 % of the possible amplifier power arrive at the speaker.

By using lines with a cross section of 4 mm² this value can certainly be raised to 44 %, however, this is generally not done as it is not costefficient.

If a 100 V system is used, the power output changes considerably. With 100 W output power, the load impedance of the speaker system is 100 Ω. The line resistance remains 8 Ω, it has a much minor influence on the total resistance in relation to the speaker impedance.

The calculation is as follows:

The total current is

$$100 \text{ V} / (100 \Omega + 8 \Omega) = 926 \text{ mA}$$

The power on the speaker is

$$P = I^2 \times R = 0.926 \text{ A}^2 \times 100 \Omega = 85.75 \text{ W}$$

The power output is 85.75 W or 85.75 % and with the same line cross section it is thus considerably beyond that of low-impedance systems.

To obtain the same output in an 8 Ω system, a line cross section of 16 mm² would be required.

Index

A

AAC-100IEC	E 172
AAC-200IEC	E 172
AC-050G	E 167
AC-122G	E 167
AC-300G	E 167
AC-600G	E 167
ACA-1535	E 167
ACA-1635	E 167
ACA-1735	E 167
ACA-1935	E 167
ADRW-900	E 43
AKB-160	E 32
AKKU-12/120	E 6
AMP-1UP	E 50
AR-30	E 154
AR-50	E 154
ARM-880	E 40
ARM-880RC	E 41
ARM-880RCE	E 41
ARM-880WP1	E 41
ARM-880WP2	E 41
ARM-880WP3	E 41
ATS-10BAG	E 60
ATS-10PS	E 61
ATS-10R	E 60
ATS-10TM	E 60
ATS-12C	E 61
ATS-12CB	E 57
ATS-12HT	E 60
ATS-162C	E 58
ATS-162CORD	E 58
ATS-162PS	E 58
ATS-162R	E 58
ATS-162T	E 58
ATS-16BAG	E 59
ATS-16CORD	E 59
ATS-16PS	E 59
ATS-16R	E 59
ATS-16T	E 59
ATS-20R	E 57
ATS-20T	E 57
ATS-25C	E 56
ATS-30C	E 61
ATS-35CB	E 57
ATS-36C	E 59
ATS-40R	E 62
ATS-40T	E 62
ATS-42R	E 62
ATS-42T	E 62
ATS-50R	E 56
ATS-50T	E 56
ATT-19100	E 159
ATT-1950	E 159
ATT-20	E 161
ATT-200	E 161
ATT-200P	E 161
ATT-2100/WS	E 161
ATT-212/WS	E 161
ATT-224/WS	E 161
ATT-235/WS	E 161
ATT-250/WS	E 161
ATT-300	E 161
ATT-306	E 160
ATT-306PEU	E 160
ATT-3100PEU	E 160
ATT-312PEU	E 160
ATT-324PEU	E 160
ATT-325ST	E 160
ATT-336PEU	E 160
ATT-350PEU	E 160
ATT-442ST	E 159
ATT-500PD	E 161
ATT-506PEU	E 160
ATT-5100PEU	E 160
ATT-512PEU	E 160
ATT-524PEU	E 160
ATT-536PEU	E 160
ATT-550PEU	E 160

B

BTR-55	E 50
--------	------

C

CD-112	E 45
CD-112/BT	E 45
CD-112RDS/BT	E 44
CD-112TRS	E 44
CD-113DPR	E 46
CD-122	E 45
CDP-650	E 43
CRB-130/WS	E 105
CRB-165/WS	E 105
CRB-230/WS	E 105
CRB-265/WS	E 105
CS-100CU	E 83
CS-100DU	E 83
CS-100MU	E 83
CS-100YC	E 83
CS-200CCD	E 82
CS-200CCDC	E 82
CS-200CCDF	E 82
CS-200CU	E 81
CS-200CUF	E 81
CS-200DC	E 82
CS-200DU	E 81
CS-200DUB	E 81
CS-200DUF	E 81
CS-200FA	E 82
CS-200MU	E 80
CS-200YC	E 82
CS-48EMG	E 81
CS-50CH	E 84
CS-50CU	E 84
CS-50DU	E 84
CS-56EMG	E 81
CS-88EXTC	E 83
CS-98EXTC	E 83

D

DBA-1/SW	E 171
DH-10	E 146
DH-95N	E 155
DH-95NP	E 155
DM-2500	E 52
DM-5000LN	E 52
DMG-400	E 52
DMG-600	E 52
DMP-100	E 49
DMP-100T	E 49
DMP-12CC	E 49
DMP-130MIX	E 46
DMP-200	E 49
DMP-230	E 46
DMP-250	E 49
DMS-1	E 166
DPR-10	E 48
DPR-110	E 47
DRM-880LAN	E 42
DRM-880WP	E 42

E

EBH-48	E 74
EBH-49	E 165
ECM-10/SW	E 52
ECM-10/WS	E 52
ECM-16N	E 60
ECM-200	E 53
ECM-302B/WS	E 52
ECM-304BD/WS	E 52
ECM-310P	E 53
ECM-450	E 53
ECM-500	E 53
EDL-10TW	E 96
EDL-110/WS	E 116
EDL-112/WS	E 117
EDL-113	E 115
EDL-115/WS	E 117
EDL-11TW	E 93
EDL-11TW/SI	E 93
EDL-11TW/SW	E 93
EDL-150/WS	E 98
EDL-155	E 94

EDL-156	E 94
EDL-158	E 94
EDL-165C/WS	E 86
EDL-204	E 98
EDL-206	E 98
EDL-213	E 115
EDL-22/WS	E 99
EDL-220/WS	E 117
EDL-222/WS	E 117
EDL-224ABC	E 86
EDL-24	E 95
EDL-240/WS	E 117
EDL-25	E 95
EDL-250/WS	E 116
EDL-250C/WS	E 86
EDL-255/WS	E 116
EDL-26	E 95
EDL-28	E 95
EDL-300L	E 108
EDL-310L	E 108
EDL-33	E 92
EDL-35	E 92
EDL-35AB/WS	E 90
EDL-35ABC/WS	E 87
EDL-36C/WS	E 87
EDL-36TW	E 92
EDL-38TW	E 92
EDL-412/WS	E 114
EDL-420/WS	E 114
EDL-430/WS	E 114
EDL-603	E 97
EDL-605	E 97
EDL-606	E 97
EDL-606EN	E 87
EDL-612	E 97
EDL-612EN	E 87
EDL-620	E 97
EDL-620EN	E 87
EDL-65TW	E 91
EDL-68/WS	E 96
EDL-8	E 94
EDL-82/WS	E 99
EDL-84/WS	E 99
EMG-330P	E 52
EMG-400P	E 52
ES-16	E 61
ESP-130/WS	E 112
ESP-15/WS	E 100
ESP-152/WS	E 111
ESP-17/WS	E 100
ESP-215/WS	E 119
ESP-22/WS	E 100
ESP-230/WS	E 119
ESP-232/SW	E 119
ESP-232/WS	E 119
ESP-250/WS	E 119
ESP-270P	E 132
ESP-315/SW	E 120
ESP-315/WS	E 120
ESP-32/WS	E 100
ESP-35AB/WS	E 89
ESP-360/WS	E 112
ESP-40/WS	E 110
ESP-50AB/WS	E 88
ESP-50EN/WS	E 88
ESP-5U	E 109
ESP-60/WS	E 110
ESP-62/WS	E 111
ESP-62/WS	E 88
ESP-70/WS	E 110
ESP-72/WS	E 110
ESP-76AB/WS	E 90
ESP-78AB/WS	E 90
ESP-80/WS	E 113
ESP-8U	E 109
ESP-90/WS	E 113
ET-16	E 61
ETS-210TW/WS	E 128
ETS-215/WS	E 129
ETS-215TW/WS	E 129
ETS-220TW/WS	E 128

Index

ETS-230/WS	E 129	KU-616T	E 147	MKS-34/WS	E 125
ETS-230TW/WS	E 129	KU-616T/VC	E 144	MKS-42/SW	E 127
ETS-240TW/WS	E 128	KU-916T	E 147	MKS-42/WS	E 127
ETS-340TW/BN	E 131	KU-916T/VC	E 144	MKS-48/WS	E 126
ETS-340TW/WS	E 131	L		MKS-64/SW	E 125
ETS-360TW/BN	E 131	LA-200	E 54	MKS-64/WS	E 125
ETS-360TW/WS	E 131	LA-40	E 55	MKS-6PRO	E 126
ETS-422TW/WS	E 128	LA-400	E 54	MKS-88/SW	E 125
ETS-432TW/WS	E 128	LKB-1	E 163	MKS-88/WS	E 125
ETS-442TW/WS	E 128	LR-200	E 55	MKS-8PRO	E 126
ETS-515TW/SW	E 130	LST-10	E 165	MLC-152/BL	E 168
ETS-515TW/WS	E 130	LST-12	E 165	MLC-152/RT	E 168
ETS-530TW/SW	E 130	LST-4	E 165	MLC-152/SW	E 168
ETS-530TW/WS	E 130	LST-40	E 165	MLC-52/BL	E 168
ETS-840TXS	E 79	LST-6	E 165	MLC-52/RT	E 168
EUL-10	E 120	M		MLC-52/SW	E 168
EUL-10/WS	E 120	M-32CD	E 48	MMX-602/SW	E 33
EUL-2	E 132	M-34CDP	E 48	MPX-4PA	E 33
EUL-2SUB	E 132	MA-100/15	E 155	MS-210/SW	E 166
EUL-30/SW	E 118	MC-60/WS	E 172	MS-28	E 166
EUL-30/WS	E 118	MC-62/SW	E 172	MS-60/SW	E 166
EUL-42/WS	E 121	MCA-127J	E 167	MZF-312/SW	E 171
EUL-60/SW	E 118	MCA-127P	E 167	MZF-8645	E 171
EUL-60/WS	E 118	MCA-129J	E 167	MZF-8648	E 171
EUL-75/WS	E 121	MCA-129P	E 167	N	
EUL-80/SW	E 118	MCA-327J	E 167	NAHDMIW	E 162
EUL-80/WS	E 118	MCA-327P	E 167	NAHDMIWB	E 162
EVA-16FP	E 3	MCA-329J	E 167	NAUSBW	E 162
EVA-16IO	E 3	MCA-329P	E 167	NAUSBWB	E 162
EVA-16MEN	E 2	MCS-15MS	E 172	NBB-75DFI	E 162
EVA-16SEN	E 2	MCS-180	E 172	NBB-75DFIB	E 162
EVA-16TER	E 3	MEC-100/BL	E 167	NC-3FDL1	E 162
EVA-24/54	E 6	MEC-100/GE	E 167	NC-3FDL1BAG	E 162
EVA-24CON	E 6	MEC-100/GN	E 167	NC-3FDS1B	E 162
EX-1	E 154	MEC-100/RT	E 167	NC-3MDL1	E 162
F		MEC-100/SW	E 167	NC-3MDL1BAG	E 162
FGA-202	E 168	MEC-1000/BL	E 167	NC-3MDS1B	E 162
FGA-30	E 168	MEC-1000/GE	E 167	NC-5FDL1	E 162
FGA-40HQ	E 168	MEC-1000/GN	E 167	NC-5MDL1	E 162
FM-100DAB	E 47	MEC-1000/RT	E 167	NE-8FDP	E 162
G		MEC-1000/SW	E 167	NE-8FDVYK	E 162
GLS-200/GR	E 137	MEC-1500/SW	E 167	NE-8FDVYC6	E 162
GLS-201/GR	E 137	MEC-190/BL	E 167	NE-8FDVYC6B	E 162
GLS-251/BN	E 136	MEC-190/GE	E 167	NF-2DB0	E 162
GLS-301/GR	E 136	MEC-190/GN	E 167	NF-2DB2	E 162
GLS-351/GR	E 136	MEC-190/RT	E 167	NF-2DB4	E 162
GLS-400/GN	E 137	MEC-190/SW	E 167	NJ-3FP6C	E 162
GN-40XLR	E 166	MEC-20/BL	E 167	NJ-3FP6CBAG	E 162
GN-40XLR/SW	E 166	MEC-20/GE	E 167	NL-2MP	E 162
GN-500	E 166	MEC-20/GN	E 167	NL-4MP	E 162
I		MEC-20/RT	E 167	NL-90	E 55
ICM-20	E 26	MEC-20/SW	E 167	NR-10M	E 143
IT-10M	E 143	MEC-2000/SW	E 167	NR-100KS	E 143
IT-100	E 139	MEC-50/BL	E 167	NR-12KS	E 146
IT-100TW	E 138	MEC-50/GE	E 167	NR-15KS	E 146
IT-110	E 142	MEC-50/GN	E 167	NR-18KS	E 146
IT-115	E 142	MEC-50/RT	E 167	NR-20KS	E 145
IT-130	E 142	MEC-50/SW	E 167	NR-22KS	E 145
IT-15EN	E 89	MEVAC-1CON	E 4	NR-24KS	E 145
IT-20	E 141	MEVAC-1FH	E 4	NR-25KS	E 144
IT-230/VC	E 144	MEVAC-1FT	E 4	NR-25KS	E 145
IT-250TV	E 139	MEVAC-1PTT	E 4	NR-33KS	E 145
IT-30	E 141	MEVAC-2CON	E 4	NR-35KS	E 145
IT-300TW	E 138	MEVAC-4	E 4	NR-40KS	E 144
IT-32EN	E 89	MEVAC-4PTT	E 4	NR-60KS	E 143
IT-33	E 141	MFD-1	E 171	P	
IT-35	E 140	MFE-212	E 35	PA-100	E 26
IT-40	E 140	MH-152	E 166	PA-100ANC	E 36
IT-40/VC	E 144	MH-95	E 155	PA-1120	E 13
IT-400TW	E 138	MKA-40SET/SW	E 124	PA-1120DM	E 16
IT-50	E 140	MKA-60/SW	E 124	PA-1120RC	E 17
IT-50/VC	E 144	MKA-60/WS	E 124	PA-1122	E 30
IT-60	E 139	MKA-60SET/SW	E 123	PA-1140RCD	E 16
J		MKA-60SET/WS	E 123	PA-1200	E 15
JYSTY-2206	E 168	MKA-80SET/SW	E 123	PA-1200C	E 16
JYSTY-2208	E 168	MKA-80SET/WS	E 123	PA-1200EX	E 16
JYSTY-4206	E 168	MKS-232/SW	E 127	PA-1200M	E 34
K		MKS-232/WS	E 127	PA-1200RDS	E 16
KU-516	E 147	MKS-248/WS	E 127	PA-12040	E 11
KU-516/VC	E 144	MKS-34/SW	E 125	PA-1204EX	E 16

Index

PA-1240	E 13	RCB-2HE/SW	E 170	TM-25	E 150
PA-1242	E 30	RCB-870	E 51	TM-27	E 149
PA-1250D	E 30	RCP-8701U	E 171	TM-35	E 149
PA-1412MX	E 34	RCP-8702U	E 171	TM-45	E 148
PA-1450D	E 27	RCP-8703U	E 171	TM-6	E 151
PA-1480	E 29	RCP-8704U	E 171	TR-1005	E 163
PA-1850D	E 27	RCP-8721U	E 171	TR-1010LC	E 163
PA-1960	E 29	RCP-8722U	E 171	TR-1025LC	E 163
PA-2240	E 28	RCP-8723U	E 171	TR-1050LC	E 163
PA-24AD	E 34	RCP-8724U	E 171	TR-1120LC	E 163
PA-24ESP	E 6	RCP-8726U	E 171	TR-175/10	E 163
PA-24FMU	E 39	RCP-8732U	E 171	TR-175/6	E 163
PA-24FR	E 35	RCS-18	E 172	TR-510	E 163
PA-24RCD	E 44	RCS-32/SW	E 170	TR-520	E 163
PA-302	E 26	RCS-33/SW	E 170	TR-525	E 163
PA-312	E 24	RCS-85/SW	E 172	TR-650	E 43
PA-312Z	E 15	RCS-92/SW	E 172	TXA-1000	E 64
PA-324	E 24	RDS-RADIO	E 50	TXA-1000BAG	E 66
PA-4000FMP	E 10	RH-20	E 170	TXA-1000CD	E 64
PA-4000PTT	E 17	RH-210	E 170	TXA-1000WPB	E 66
PA-4000RC	E 17	RUP-5	E 146	TXA-1002CD	E 64
PA-40120	E 10	RUS-5	E 146	TXA-100HSE	E 74
PA-402	E 25	S		TXA-100HT	E 74
PA-4040	E 11	SINUS-10	E 5	TXA-1015ACCU	E 66
PA-4040MPX	E 33	SINUS-20	E 5	TXA-110	E 73
PA-4120	E 28	SINUS-220	E 5	TXA-110USB	E 73
PA-4240	E 28	SK-159	E 147	TXA-12C	E 63
PA-4300PTT	E 17	SK-22	E 147	TXA-140HT	E 72
PA-5000PTT	E 17	SLA-35	E 39	TXA-140USB	E 72
PA-5240	E 14	SMB-130/WS	E 112	TXA-15USB	E 68
PA-5480	E 14	SMC-1	E 155	TXA-36C	E 63
PA-6000RC	E 17	SOUND-21SET	E 122	TXA-380USB	E 71
PA-6240	E 12	SOUND-4C	E 122	TXA-450USB	E 68
PA-6480	E 12	SOUND-65/SW	E 122	TXA-600	E 71
PA-6600	E 12	SOUND-6C	E 122	TXA-620CD	E 69
PA-6FD	E 12	SPC-515/BL	E 168	TXA-800	E 65
PA-6FM	E 12	SPC-515/SW	E 168	TXA-800BAG	E 66
PA-6FR	E 12	SPC-515/WS	E 168	TXA-800CD	E 65
PA-702	E 25	SPC-525/SW	E 168	TXA-800HSE	E 66
PA-802CD	E 21	SPE-110P/SW	E 103	TXA-800HT	E 66
PA-802USB	E 21	SPE-110P/WS	E 103	TXA-800PS	E 63
PA-8120RCD	E 20	SPE-130/WS	E 105	TXA-800R	E 63
PA-888	E 25	SPE-140/WS	E 106	TXA-800ST	E 63
PA-890RCD	E 20	SPE-15/WS	E 100	TXA-800WPB	E 66
PA-900	E 23	SPE-150/WS	E 106	TXA-802CD	E 65
PA-900S	E 32	SPE-158/WS	E 106	TXA-802MBT	E 67
PA-906	E 23	SPE-15F/WS	E 104	TXA-802MR	E 67
PA-930CD	E 21	SPE-165/WS	E 105	TXA-802MT	E 67
PA-940	E 22	SPE-16F/WS	E 104	TXA-815ACCU	E 66
PA-940S	E 31	SPE-17/WS	E 100	TXA-850CD	E 65
PA-980	E 22	SPE-22/WS	E 100	TXA-900CD	E 67
PA-980S	E 31	SPE-230/WS	E 105	TXB-600	E 70
PAB-120WP/SW	E 133	SPE-24/WS	E 104	TXM-48	E 148
PAB-12WP/SW	E 133	SPE-25/WS	E 104	TXS-871	E 51
PAB-52WP/WS	E 134	SPE-254/WS	E 103	TXS-871HSE	E 51
PAB-6WP/WS	E 135	SPE-26/WS	E 104	TXS-871HT	E 51
PAB-82WP/WS	E 134	SPE-264/WS	E 103	TXS-872	E 51
PAB-8WP/WS	E 135	SPE-265/WS	E 105	TXS-872HSE	E 51
PAM-10	E 26	SPE-284/WS	E 103	TXS-872HT	E 51
PAS-250	E 75	SPE-32/WS	E 100	TXS-875	E 51
PAST-164/SW	E 166	SPE-70/WS	E 107	TXS-875HSE	E 51
PATEL-1	E 39	SPE-72/WS	E 107	TXS-875HT	E 51
PATL-100	E 163	SPE-82/CR	E 107	U	
PDM-300	E 53	SPE-82/WS	E 107	UHC-30	E 144
PDM-302	E 53	SPE-85/WS	E 113	V	
PREAMP-1UP	E 50	SPE-8U	E 109	VCA-202	E 36
R		SPEECH-100	E 78	VCA-202RN	E 36
RACK-12/SW	E 170	SPEECH-200	E 77	W	
RACK-12GT/SW	E 170	SPEECH-500	E 76	WAP-100	E 47
RACK-12W	E 169	SPS-20S	E 155	WAP-3	E 153
RACK-12WP	E 169	SPS-40A	E 155	WAP-4	E 153
RACK-20/SW	E 170	SPS-40S	E 155	WAP-5	E 153
RACK-20GT/SW	E 170	SPS-80S	E 155	WAP-5USB	E 152
RACK-21	E 169	T		WAP-7D	E 152
RACK-33	E 169	TM-10	E 151	X	
RACK-42	E 169	TM-11	E 150	XLR-703JSM	E 166
RACK-625/42	E 3	TM-12DC	E 151	XLR-703JSM	E 78
RACK-625/42ST	E 3	TM-15	E 150	Z	
RACK-6W	E 169	TM-17	E 149	ZM-100	E 155
RACK-6WP	E 169	TM-22	E 150		

Important Information

Important Notes - please read very carefully!

All products of MONACOR INTERNATIONAL are tested continuously to ensure a constant quality level and to maintain quality standards. All products which are subject to the CE guidelines as well as the electric and electronic subassemblies which are subject to the directive for motor vehicles, are tested according to the respective standards and carry the CE mark. In consequence, these products can be sold in all EC countries without further tests or approvals.

General Information

- All rights reserved by MONACOR INTERNATIONAL GmbH & Co. KG. All contents of this catalogue serve as information as to the products by MONACOR INTERNATIONAL only. No part of this catalogue including text, photos of products, graphics or any parts thereof may be reproduced in any form or by any means for any commercial use without our express prior written consent.
- * Windows is a registered trademark of Microsoft Corporation in the United States and other countries.
- HDMI™ is a registered trademark of HDMI Licensing L.L.C.
- We cannot be held responsible for printing errors, should they occur. We reserve the right to make technical changes without prior notice.
- The technical specifications stated are according to the information of the manufacturer.
- Due to production tolerances, technical data may vary slightly.
- Damage resulting from unauthorised servicing of the products thus causing changes, as well as improper handling resulting in consequential damage are excluded from the warranty. We will not be liable for changes of the state of the products resulting from improper storage, other interventions or improper use.
- If the units are interfered with, the CE approval will no longer apply. All products are always suitable for indoor use only unless stated otherwise. The products are not suitable for installations into aircrafts or surface mounting onto aircrafts.
- The products do not correspond to the medical products directive 2007/47/EC.
- If the products are to be put out of operation definitively, they must be taken to a local recycling plant for disposal which is not harmful to the environment.

Technical Information

- Before first use of the products please read the instruction manual carefully!
- The products correspond to the directive for electromagnetic compatibility 2004/108/EC, the directive 2011/65/EU (RoHS) and where applicable to the low voltage directive 2006/95/EC with the directive 2009/125/EC (ErP).
- When operating with voltages of over 42 V, please always observe the respective safety measures.
- Before opening any products operated with 230 V mains voltage, disconnect the products from the mains!
- Make sure that the supply voltage is disconnected before working on components and modules. Existing capacitors must be discharged.
- Mains cables and test cables have to be examined for damage regularly. Never pull on the cable to disconnect the plug from the socket.
- Mains cables and fuses must only be replaced by skilled personnel.
- Unless otherwise stated:
 - protect the products from moisture and heat,
 - always observe the admissible ambient temperature of 0-40 °C.
- Do not use a very high volume level when using headphones. Permanent high volume may damage your hearing!
- A soldering process which is too long and too hot may cause damage to the corresponding products. Choose a soldering temperature that is suitable for the material used. No liability can be assumed for damage to the product or consequential damage caused by improper handling.
- The plugs, jacks, switches rotary switches and potentiometers shown in this catalogue are only suitable for connection to safety extra low voltage (SELV) or signal voltage unless the item is designed for a higher voltage (see text or table).
- If the fixing nuts of panel jacks or panel plugs are overtightened, this may cause damage to the whole component. In case of improper handling, no liability can be assumed for this or consequential damage.
- The heat must be eliminated by air circulation. Therefore, do not cover ventilation slots with anything. Do not put or drop anything through the ventilation slots. Otherwise, there will be danger of an electric shock.
- Only use a dry, soft cloth for cleaning the products. Chemicals must not be used in any case.

Information on the German Product Liability Act

According to the law dated 15 December 1989 governing product liability which was last amended by the law dated 19 July 2002, manufacturers, importers and dealers are obliged to compensate for damage caused by a faulty product under certain prerequisites.

A product can already be considered faulty if its presentation leaves a private, non-commercial end user with a wrong impression as to its safety in use or if it is to be expected that the private end user will not observe the required safety regulations when using the product or will apply an excessive operating voltage to it, except if this user has been informed as to the necessity to observe the safety regulations and specified voltages, etc.

In your own interest and for your customers' safety, therefore please draw your non-commercial customers' attention to the following:

The products listed in this catalogue may only be used for the stated purpose. If there are any doubts as to the purpose of the goods, questions must be clarified with an authorised expert or with the service department of MONACOR INTERNATIONAL.

The following EN standards and VDE (Verband Deutscher Elektrotechniker = Association of German Electrical Engineers) regulations must be observed:

Electromagnetic compatibility:

EN300422, EN301489, EN55013, EN55020, EN61000-3-2, EN61000-3-3, EN61000-6-1, EN61000-6-3

Low voltage directive:

DIN VDE 0100, DIN VDE 0532, EN60065, EN60742, EN60570, EN60335, EN60598, EN60950, EN61010, EN62471

Motor vehicles directive:

directive 72/245/EEC, changed by the directive 2004/104/EC

In Germany, the above-mentioned regulations can be obtained from:

VDE-Verlag GmbH Bismarckstraße 33 10625 Berlin - Germany Phone: +49 (0) 30 / 348001-0 Fax: +49 (0) 30 / 3417093	VDE-Verlag GmbH Merianstraße 29 63069 Offenbach - Germany Phone: +49 (0) 69 / 840006-0 Fax: +49 (0) 69 / 84000655
---	---

Notes Regarding the Approval of Wireless Systems

The wireless microphone systems in the frequency ranges 823 MHz to 832 MHz, 863 MHz to 865 MHz, 1,785 MHz to 1,805 MHz and 2,400 MHz to 2,483.5 MHz are generally approved and licence-free! These systems are licence-free in the EU!

Every wireless system has been examined by a notified body and has been approved in the EU according to the R+TTE directive. However, a frequency assignment for the systems in the frequency range 506 MHz to 542 MHz, 518 MHz to 542 MHz, 672 MHz to 697 MHz and 740 MHz to 776 MHz for the corresponding area in which the unit is to be used must be applied for at the respective national authority. These systems require a licence in the EU!

In Germany, the frequency assignment has to be applied for at the corresponding branch of the Federal Network Agency (BNetzA, Germany).

The declaration of conformity can be found on our website: www.imgstageline.de. The forms for the frequency assignment as well as the ruling 91/2005 can be found on the website of the Federal Network Agency www.bundesnetzagentur.de. For countries outside of Europe, please consult the authorities of the corresponding country.

Please observe the notes in the operating instructions!

MONACOR INTERNATIONAL - Your reliable partner - worldwide.



www.monacor.com

PA TECHNOLOGY

PA Technology from
MONACOR INTERNATIONAL

Your Retailer



HEADQUARTERS MONACOR INTERNATIONAL

Zum Falsch 36 • 28307 Bremen • Germany
Phone: +49 (0) 4 21/48 65-0 • info@monacor.com
Fax: +49 (0) 4 21/48 84 15 • www.monacor.com

K-808.02.01.02.2014
Item No.: K14-143PAGB
Order No.: 46.3000



MONACOR is a brand of the company group MONACOR INTERNATIONAL.