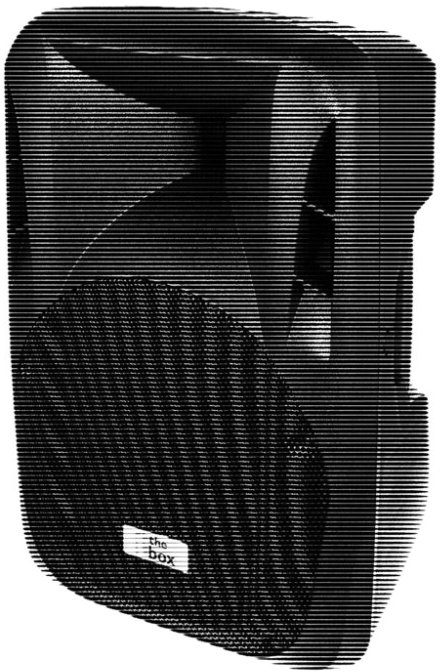

the box

PA10 DSP, PA12 DSP, PA15 DSP

active speaker

th•mann
MUSIC IS OUR PASSION

user manual

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11.04.2019, ID: 415599, 441076, 441079 (V4)

Table of contents

1 General information

This user manual contains important information on the safe operation of the device. Read and follow all safety notes and all instructions. Save this manual for future reference. Make sure that it is available to all persons using this device. If you sell the device to another user, be sure that they also receive this manual.

Our products and user manuals are subject to a process of continuous development. We therefore reserve the right to make changes without notice. Please refer to the latest version of the user manual which is ready for download under *www.thomann.de*.

1.1 Further information

On our website (*www.thomann.de)* you will find lots of further information and details on the following points:

Download	This manual is also available as PDF file for you to download.
Keyword search	Use the search function in the electronic version to find the topics of interest for you quickly.
Online guides	Our online guides provide detailed information on technical basics and terms.
Personal consultation	For personal consultation please contact our technical hotline.
Service	If you have any problems with the device the customer service will gladly assist you.

1.2 Notational conventions

This manual uses the following notational conventions:

Letterings

The letterings for connectors and controls are marked by square brackets and italics.

Examples: *[VOLUME]* control, *[Mono]* button.

Displays

Texts and values displayed on the device are marked by quotation marks and italics.

Examples: *'24ch'*, *'OFF'*.

1.3 Symbols and signal words

In this section you will find an overview of the meaning of symbols and signal words that are used in this manual.

Signal word	Meaning
DANGER!	This combination of symbol and signal word indicates an immediate dangerous situation that will result in death or serious injury if it is not avoided.
WARNING!	This combination of symbol and signal word indicates a possible dangerous situation that can result in death or serious injury if it is not avoided.
CAUTION!	This combination of symbol and signal word indicates a possible dangerous situation that can result in minor injury if it is not avoided.
NOTICE!	This combination of symbol and signal word indicates a possible dangerous situation that can result in material and environmental damage if it is not avoided.

Warning signs	Type of danger
	Warning – high-voltage.

Warning signs	Type of danger
	Warning – suspended load.
	Warning – danger zone.

2 Safety instructions

Intended use

This device is designed as a PA system. The device is designed for professional use only and is not suitable for use in households. Use the device only as described in this user manual. Any other use or use under other operating conditions is considered to be improper and may result in personal injury or property damage. No liability will be assumed for damages resulting from improper use.

This device may be used only by persons with sufficient physical, sensorial, and intellectual abilities and having corresponding knowledge and experience. Other persons may use this device only if they are supervised or instructed by a person who is responsible for their safety.

DANGER!

Danger for children

Ensure that plastic bags, packaging, etc. are disposed of properly and are not within reach of babies and young children. Choking hazard!

Ensure that children do not detach any small parts (e.g. knobs or the like) from the unit. They could swallow the pieces and choke!

Never let children unattended use electrical devices.

DANGER!

Electric shock caused by high voltages inside

Within the device there are areas where high voltages may be present. Never remove any covers.

There are no user-serviceable parts inside.

Do not use the device if covers, protectors or optical components are missing or damaged.

DANGER!

Electric shock caused by short-circuit

Always use proper ready-made insulated mains cabling (power cord) with a protective contact plug. Do not modify the mains cable or the plug. Failure to do so could result in electric shock/death or fire. If in doubt, seek advice from a registered electrician.

CAUTION!

Possible hearing damage

The device can produce volume levels that may cause temporary or permanent hearing impairment. Over an extended period of time, even levels that seem to be uncritical can cause hearing damage.

Decrease the volume level immediately if you experience ringing in your ears or hearing impairment. If this is not possible, keep a greater distance or use sufficient ear protectors.

NOTICE!

Risk of fire

Do not block areas of ventilation. Do not install the device near any direct heat source. Keep the device away from naked flames.

NOTICE!

Operating conditions

This device has been designed for indoor use only. To prevent damage, never expose the device to any liquid or moisture. Avoid direct sunlight, heavy dirt, and strong vibrations.

Only operate the device within the ambient conditions specified in the chapter 'Technical specifications' of this user manual. Avoid heavy temperature fluctuations and do not switch the device on immediately after it was exposed to temperature fluctuations (for example after transport at low outside temperatures).

Dust and dirt inside can damage the unit. When operated in harmful ambient conditions (dust, smoke, nicotine, fog, etc.), the unit should be maintained by qualified service personnel at regular intervals to prevent overheating and other malfunction.

NOTICE!

Power supply

Before connecting the device, ensure that the input voltage (AC outlet) matches the voltage rating of the device and that the AC outlet is protected by a residual current circuit breaker. Failure to do so could result in damage to the device and possibly injure the user.

Unplug the device before electrical storms occur and when it is unused for long periods of time to reduce the risk of electric shock or fire.

NOTICE!

Possible damage due to installation of a wrong fuse

The use of different types of fuses can cause serious damage to the unit. Fire hazard!

Only fuses of the same type may be used.

3 Features

- Active full-range speaker with the following equipment:
  - PA 10 DSP (item no. 441076): 10-inch woofer, 1-inch horn
  - PA 12 DSP (item no. 415599): 12-inch woofer, 1 1/3-inch horn
  - PA 15 DSP (item no. 441079): 15-inch woofer, 1-inch horn
- Built-in digital signal processor for a wide range of settings
- Mounting options:
  - PA 10 DSP (item no. 441076): 2 × M10 mounting points, tripod flange
  - PA 12 DSP (item no. 415599): 5 × M10 mounting points, tripod flange
  - PA 15 DSP (item no. 441079): 5 × M10 mounting points, tripod flange

4 Installation

Unpack and check carefully there is no transportation damage before using the unit. Keep the equipment packaging. To fully protect the product against vibration, dust and moisture during transportation or storage use the original packaging or your own packaging material suitable for transport or storage, respectively.

Create all connections while the device is off. Use the shortest possible high-quality cables for all connections. Take care when running the cables to prevent tripping hazards.

WARNING!

Risk of injury caused by falling objects

Make sure that the installation complies with the standards and rules that apply in your country. Always secure the device with a secondary safety attachment, such as a safety cable or a safety chain.

NOTICE!

Possible property damage by magnetic fields

Loudspeakers produce a static magnetic field. Therefore, maintain an appropriate distance to devices that can be adversely affected or damaged by an external magnetic field.

NOTICE!

Use of stands

When mounting the device onto a stand, ensure that the stand is in a safe and stable position and that the weight of the device does not exceed the maximum permissible load capacity of the stand.

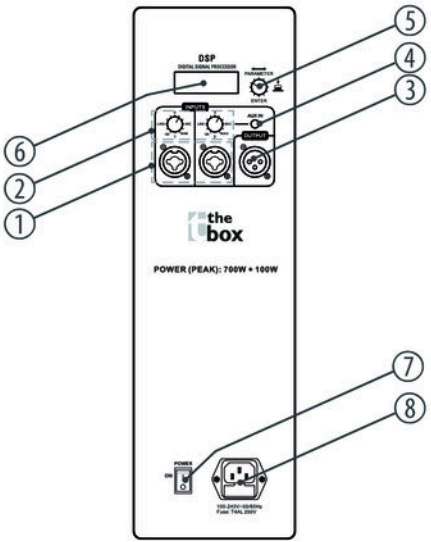
4.1 Tips on handling speakers

We recommend you to set up the speakers in a way, that the sound signals can reach the audience unobstructedly. It will often be helpful to mount the speakers on tripods. Thus, the sound will be evenly spread with maximum range throughout the audience area.

Always use high grade cable to connect your equipment. Otherwise you won't reach maximum sound quality.

If you notice distortion during operation, the active speaker is overloaded. This may permanently damage the device. Always reduce the volume as soon as you hear distortion.

5 Connections and controls



1	*[INPUTS]* Balanced signal inputs, designed as XLR / ¼" jack combo sockets
2	*[1]*, *[2]* One volume control for each signal input. Turn the volume control clockwise to increase the volume. Turn it counter-clockwise to reduce the volume. When using the input for a line signal, turn the knob no further than to position *[0]*. When using the input for a microphone, you can turn the knob up to position *[MAX]* .
3	*[OUTPUT]* Line output for connecting further speakers, designed as XLR chassis plug.
4	*[AUX IN]* 3.5 mm mini jack socket for connecting line level devices, e.g. laptop, mobile phone, if necessary, with appropriate adapter.
5	*[PARAMETER]* Rotary and push button for setting the overall volume and for navigating the menu. Push the button to open the menu. Rotate it to select a menu item or to set a value. Press the button again to confirm the selection.

6	Display In basic state, the set output volume and the input signal levels are displayed. The clip indicator in the right part of the display shows overload. In this case, reduce the input level.
7	*[POWER]* Main switch. Turns the device on and off.
8	IEC chassis plug with fuse holder for the power supply.

6 Operating

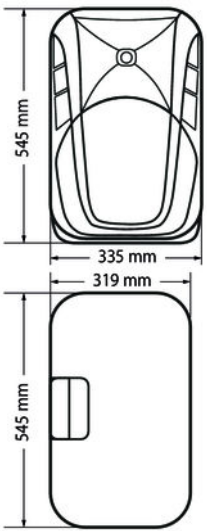
The following table shows the setting options.

MODE	Selecting an EQ preset: ■ *'DJ'* ■ *'MUSIC'* ■ *'LIVE'* ■ *'SPEECH'*
LOCATION	Selecting a location preset: ■ *'NORMAL'*: Standard ■ *'MONITOR'*: Operation as stage monitor with feedback reduction
HIGH EQ	Raising / lowering the high EQ frequencies in a range –12 dB … +12 dB
MID EQ	Raising / lowering the mid EQ frequencies in a range –12 dB … +12 dB
LOW EQ	Raising / lowering the low EQ frequencies in a range –12 dB … +12 dB

SUB	High Pass Filter (low cut) settings ■ *'OFF'*: Off ■ *'80Hz'*, *'100Hz'*, *'120Hz'*, *'150Hz'*: Crossover frequency selection
DELAY	Signal delay settings ■ *'OFF'*: Off ■ 0 ms … 16 ms: Delay time selection
LCD DIM	Automatic switch off of the display light ■ *'OFF'*: Display light remains permanently on ■ *'ON'*: Display light turns off after 8 seconds without operation
BRIGHT	Setting the display light brightness in the range 0 … 10
CONTRAST	Setting the display contrast in the range 0 … 10
RESET	Resetting to factory defaults
INFO	DSP software version display
EXIT	Closing the menu

7 Technical specifications

PA 10 DSP (item no. 441076)



Speaker	10-inch woofer, 1-inch horn	
Input connections	Signal transmission	2 × XLR / ¼" jack combo sockets
	Playback devices with line level	1 × 3.5 mm phone socket
	Voltage supply	IEC chassis plug C14
Input impedance	10 kΩ	
Output connections	Signal transmission	1 × XLR chassis plug
Output power	800 W (peak)	
Frequency range	60 Hz … 20 kHz	
Crossover frequency	2,4 kHz	
Signal-to-noise ratio	85 dB (typical, A-weighted)	

Sound pressure level (SPL), max.	126 dB max.	
Dispersion angle (H × V)	90° × 60°	
Power consumption	260 W + 40 W	
Operating supply voltage	AC 100 – 240 V~ 50/60 Hz	
Fuse	5 mm × 20 mm, 4 A, 250 V, slow-blow	
Dimensions (W × H × D)	335 mm × 545 mm × 319 mm	
Weight	14 kg	
Ambient conditions	Temperature range	0 °C…40 °C
	Relative humidity	50 %, non-condensing

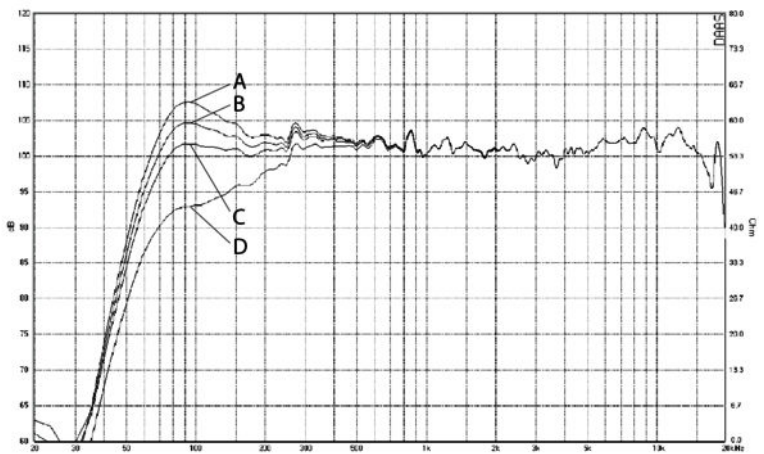
Further information

Multifunctional housing	No
Tripod flange	Yes
Truss-capable	No

Frequency response

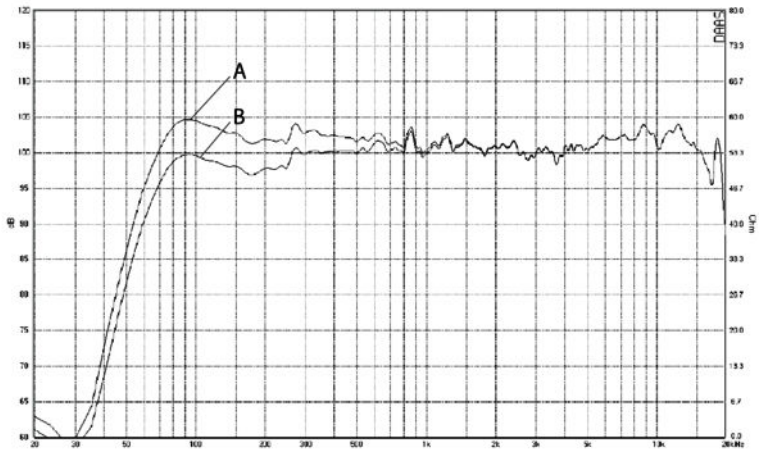
The following figure shows the frequency response depending on the setting in menu item *'MODE'*:

- A: *'DJ'*
- B: *'MUSIC'*
- C: *'LIVE'*
- D: *'SPEECH'*

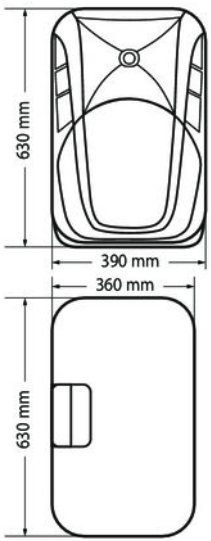


The following figure shows the frequency response depending on the setting in menu item *'LOCATION'*:

- A: *'NORMAL'*
- B: *'MONITOR'*



PA 12 DSP (item no. 415599)



Speaker	1 × 12-inch woofer, 1 × 1 1/3-inch horn	
Input connections	Signal transmission	2 × XLR / ¼" jack combo sockets
	Playback devices with line level	1 × 3.5 mm phone socket
	Voltage supply	IEC chassis plug C14
Input impedance	10 kΩ	
Output connections	Signal transmission	1 × XLR chassis plug
Output power	800 W (peak)	
Frequency range	50 Hz … 20 kHz	
Crossover frequency	2,4 kHz	
Signal-to-noise ratio	85 dB (typical, A-weighted)	
Sound pressure level (SPL), max.	128 dB max.	

Dispersion angle (H × V)	90° × 60°	
Power consumption	260 W + 40 W	
Operating supply voltage	100 – 240 V ~ 50/60 Hz	
Fuse	5 mm × 20 mm, 4 A, 250 V, slow-blow	
Dimensions (W × H × D)	390 mm × 630 mm × 360 mm	
Weight	17 kg	
Ambient conditions	Temperature range	0 °C…40 °C
	Relative humidity	50 %, non-condensing

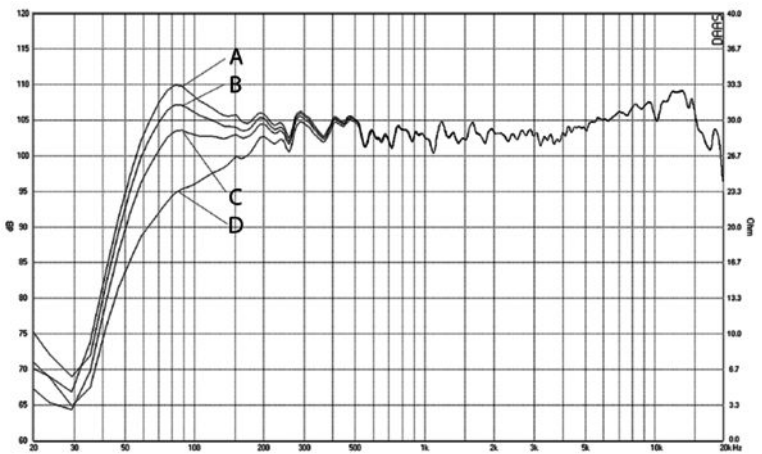
Further information

Multifunctional housing	No
Tripod flange	Yes
Truss-capable	No

Frequency response

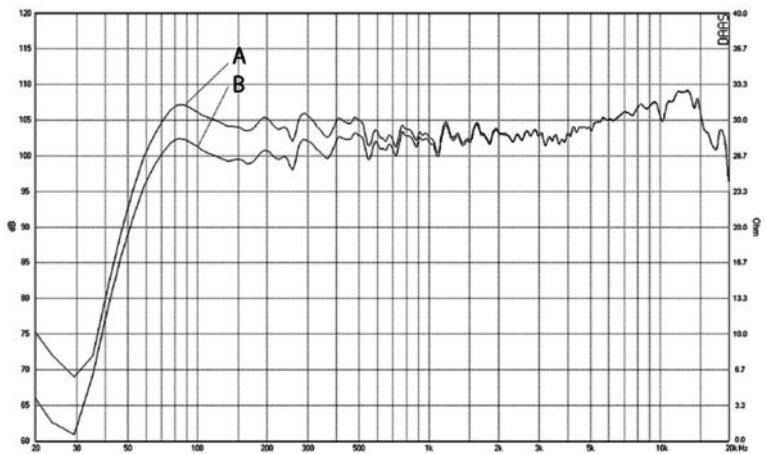
The following figure shows the frequency response depending on the setting in menu item *'MODE'*:

- A: *'DJ'*
- B: *'MUSIC'*
- C: *'LIVE'*
- D: *'SPEECH'*

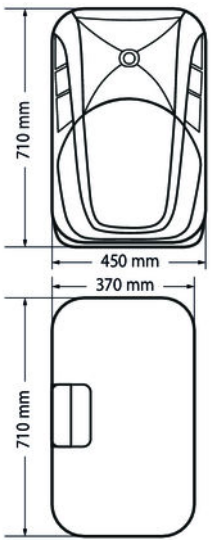


The following figure shows the frequency response depending on the setting in menu item *'LOCATION'*:

- A: *'NORMAL'*
- B: *'MONITOR'*



PA 15 DSP (item no. 441079)



Speaker	15-inch woofer, 1-inch horn	
Input connections	Signal transmission	2 × XLR / ¼" jack combo sockets
	Playback devices with line level	1 × 3.5 mm phone socket
	Voltage supply	IEC chassis plug C14
Input impedance	10 kΩ	
Output connections	Signal transmission	1 × XLR chassis plug
Output power	800 W (peak)	
Frequency range	45 Hz … 20 kHz	
Crossover frequency	2,4 kHz	
Signal-to-noise ratio	85 dB (typical, A-weighted)	
Sound pressure level (SPL), max.	129 dB max.	

Dispersion angle (H × V)	90° × 60°	
Power consumption	260 W + 40 W	
Operating supply voltage	AC 100 – 240 V~ 50/60 Hz	
Fuse	5 mm × 20 mm, 4 A, 250 V, slow-blow	
Dimensions (W × H × D)	450 mm × 710 mm × 370 mm	
Weight	20 kg	
Ambient conditions	Temperature range	0 °C…40 °C
	Relative humidity	50 %, non-condensing

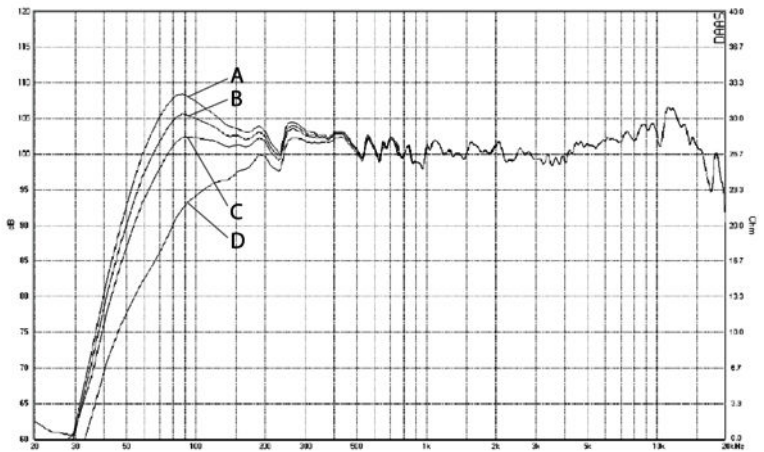
Further information

Multifunctional housing	No
Tripod flange	Yes
Truss-capable	No

Frequency response

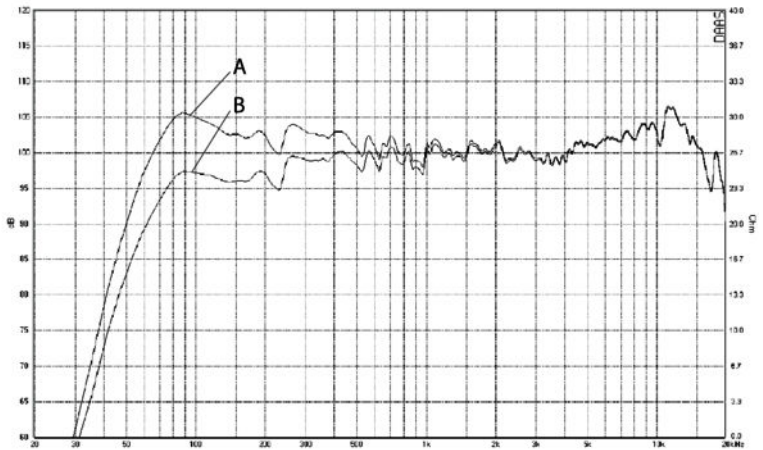
The following figure shows the frequency response depending on the setting in menu item *'MODE'*:

- A: *'DJ'*
- B: *'MUSIC'*
- C: *'LIVE'*
- D: *'SPEECH'*



The following figure shows the frequency response depending on the setting in menu item *'LOCATION'*:

- A: *'NORMAL'*
- B: *'MONITOR'*



8 Plug and connection assignment

Introduction

This chapter will help you select the right cables and plugs to connect your valuable equipment in such a way that a perfect sound experience is ensured.

Please note these advices, because especially in 'Sound & Light' caution is indicated: Even if a plug fits into the socket, an incorrect connection may result in a destroyed power amp, a short circuit or 'just' in poor transmission quality!

Balanced and unbalanced transmission

Unbalanced transmission is mainly used in semi-professional environment and in hifi use. Instrument cables with two conductors (one core plus shielding) are typical representatives of the unbalanced transmission. One conductor is ground and shielding while the signal is transmitted through the core.

Unbalanced transmission is susceptible to electromagnetic interference, especially at low levels, such as microphone signals and when using long cables.

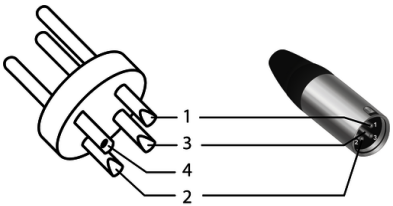
In a professional environment, therefore, the balanced transmission is preferred, because this enables an undisturbed transmission of signals over long distances. In addition to the conductors 'Ground' and 'Signal', in a balanced transmission a second core is added. This also transfers the signal, but phase-shifted by 180°.

Since the interference affects both cores equally, by subtracting the phase-shifted signals, the interfering signal is completely neutralized. The result is a pure signal without any noise interference.

1/4" TRS phone plug (mono, balanced)

1	Signal (in phase, +)
2	Signal (out of phase, –)
3	Ground

XLR plug (balanced)



1	Ground, shielding
2	Signal (in phase, +)
3	Signal (out of phase, –)
4	Shielding on plug housing (option)

RCA connection

Drawing and table indicate the pin assignment of an RCA plug.

1	Signal
2	Ground, shielding

9 Protecting the environment

Disposal of the packaging material

For the transport and protective packaging, environmentally friendly materials have been chosen that can be supplied to normal recycling.

Ensure that plastic bags, packaging, etc. are properly disposed of.

Do not just dispose of these materials with your normal household waste, but make sure that they are collected for recycling. Please follow the notes and markings on the packaging.

Disposal of your old device

This product is subject to the European Waste Electrical and Electronic Equipment Directive (WEEE) in its currently valid version. Do not dispose with your normal household waste.

Dispose of this device through an approved waste disposal firm or through your local waste facility. When discarding the device, comply with the rules and regulations that apply in your country. If in doubt, consult your local waste disposal facility.

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