

**the
box**

PA 502 A
active 2-way-
full-range-speaker

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1 General information

This manual contains important instructions for the safe operation of the unit. Read and follow the safety instructions and all other instructions. Keep the manual for future reference. Make sure that it is available to all those using the device. If you sell the unit please make sure that the buyer also receives this manual.

Our products are subject to a process of continuous development. Thus, they are subject to change.

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.

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
 A yellow triangular warning sign with a black border, depicting a crane hook lifting a rectangular load.	Warning – suspended load.
 A yellow triangular warning sign with a black border, featuring a large black exclamation mark.	Warning – danger zone.

2 Safety instructions

Intended use

This device is intended to be used in a sound reinforcement system. This device is designed for professional and not household use. 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.

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.



CAUTION!

Risk of injury due to heavy weight

Due to the heavy weight of the device, at least two persons are required for transport and installation.



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.



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.

3 Features

The active two-way full-range loudspeaker is characterized by the following special features:

- 15" mid / bass speaker
- Horn 50°...100° × 55°
- Output power 300 W (bass) + 100 W (treble)
- 2-band EQ
- XLR in / output
- Switchable low cut @ 120 Hz
- Tripod mounting flange
- Trapezoid housing for use as floor monitor

4 Installation

Unpack and carefully check that there is no transportation damage before using the unit. Keep the equipment packaging. To fully protect the device 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

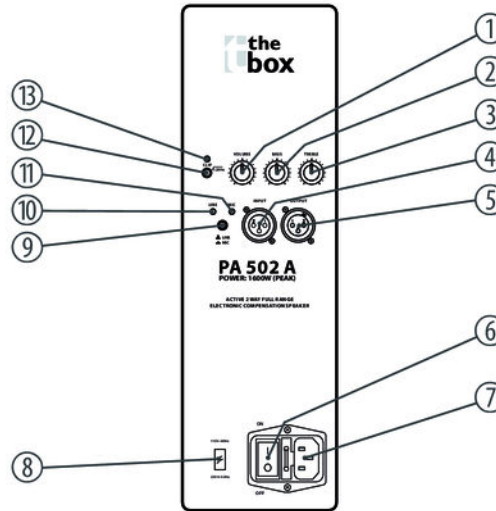
We recommend you to set up the speakers in a way, that the sound signals can reach the audience unobstructedly. It will often be helpful to mount the speakers on tripods. Thus, the sound will be evenly spread with maximum range throughout the audience area.

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

For optimum results both impedance and power handling of the speakers must match the requirements of the amplifier. Always follow the technical specifications of the speakers! The overall impedance of the connected loudspeakers must not exceed the minimum output impedance of the amp. The amp's max. RMS output power should be 50 % above the power handling capacity of the connected speakers.

If you notice distortion during operation, either the amp or the speaker is overloaded. This may permanently damage the amp or the speaker. Always reduce the volume when you hear distortion.

5 Connections and operating elements



1	<i>[VOLUME]</i> Volume control. Turn the knob clockwise to increase the volume or counterclockwise to decrease the volume.
2	<i>[BASS]</i> Bass control. Turn the knob clockwise for a more bassy sound. Turn the knob counterclockwise to decrease the bass.
3	<i>[TREBLE]</i> Treble control. Turn the knob clockwise for a brighter sound. Turn the knob counterclockwise to decrease the treble.
4	<i>[INPUT]</i> Signal input with switchable sensitivity, designed as XLR chassis socket.
5	<i>[OUTPUT]</i> Line output for connecting further powered speakers, designed as XLR chassis plug.
6	<i>[ON/OFF]</i> Mains switch to turn the device on/off.

7	IEC chassis plug with fuse holder for the power supply. Defective fuses must always be replaced by fuses of the same type.
8	<i>[115V/60Hz — 230V/50Hz]</i> Selector switch for the power supply. Make sure that, before activating the device, the switch position is set to the local supply voltage.
9	<i>[LINE/MIC]</i> Push-button to select the input sensitivity of the speaker (line or microphone level). Push the push-button with a suitable sharp tool, e.g. a ballpen.
10	LED <i>[LINE]</i> The LED lights in operation when the input sensitivity is set to LINE.
11	LED <i>[MIC]</i> The LED lights in operation when the input sensitivity is set to MIC.

12	<i>[120Hz]</i> Low cut switch to lower frequencies below 120Hz. This function reduces impact noise and maximize the lifetime of the woofer.
13	<i>[CLIP]</i> Indicates overload. If the LED flickers or is lit, the input signal level is too high.

6 Technical specifications

System	active 2 way-full-range-loudspeaker with built-in crossover
Configuration	1 × 15" woofer Horn tweeter, angle of radiation 50 to 100° × 55°
Connections	XLR input: XLR output:
Frequency range	40 Hz ... 18 kHz (−3 dB) 35 Hz ... 20 kHz (−10 dB)
Sound pressure level, 1 m distance	120 dB
Level adjustment	Bass: ± 12 dB, 100 Hz Treble: ± 12 dB, 10 kHz
Output power	Bass: 300 W (RMS) Treble: 100 W (RMS)

Distortion	Line: 0.02 % Microphone 0.04 %
Load impedance	Bass: 8, Ω Treble: 8, Ω
Input impedance	balanced: 20 k Ω unbalanced: 10 k Ω
Operating supply voltage	AC 115/230 V ~ 50/60 Hz
Fuse	115 V 5 mm \times 20 mm, 5 A, 250 V, slow blow 230 V 5 mm \times 20 mm, 2.5 A, 250 V, slow blow
Housing	Polypropylen, trapezoid
Dimensions (W \times H \times D)	488 mm \times 460 mm \times 720 mm
Weight	30.5 kg

7 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

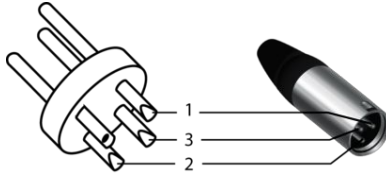
Unbalanced transmission is mainly used in semi-professional environment and in hifi use. Instrument cables with two conductors (one core plus shielding) are typical representatives of the unbalanced transmission. One conductor is ground and shielding while the signal is transmitted through the core.

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°.

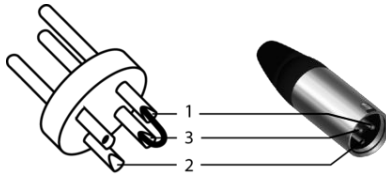
Since the interference affects both cores equally, by subtracting the phase-shifted signals, the interfering signal is completely neutralized. The result is a pure signal without any noise interference.

XLR plug (balanced)



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

XLR plug (unbalanced)



1	Ground, shielding
2	Signal
3	Bridged to pin 1

8 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). 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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