



PA 502A

## Active Speaker

Thomann GmbH  
Hans-Thomann-Straße 1  
96138 Burgebrach  
Germany  
Telephone: +49 (0) 9546 9223-0  
Internet: [www.thomann.de](http://www.thomann.de)

30.03.2023, ID: 160815 (V3)

## Table of contents

<b>1</b>	<b>General information.....</b>	<b>5</b>
1.1	Further information.....	6
1.2	Notational conventions.....	6
1.3	Symbols and signal words.....	7
<b>2</b>	<b>Safety instructions.....</b>	<b>9</b>
<b>3</b>	<b>Features.....</b>	<b>12</b>
<b>4</b>	<b>Installation.....</b>	<b>13</b>
4.1	Tips on handling speakers.....	14
<b>5</b>	<b>Connections and operating elements.....</b>	<b>15</b>
<b>6</b>	<b>Technical specifications.....</b>	<b>17</b>
<b>7</b>	<b>Plug and connection assignment.....</b>	<b>22</b>
<b>8</b>	<b>Protecting the environment.....</b>	<b>24</b>



# 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](http://www.thomann.de).

### 1.1 Further information

On our website ([www.thomann.de](http://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
<b>DANGER!</b>	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.
<b>WARNING!</b>	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.
<b>CAUTION!</b>	This combination of symbol and signal word indicates a possible dangerous situation that can result in minor injury if it is not avoided.
<b>NOTICE!</b>	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 – 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.

### Safety



#### **DANGER!**

##### **Risk of injury and choking hazard for children!**

Children can suffocate on packaging material and small parts. Children can injure themselves when handling the device. Never allow children to play with the packaging material and the device. Always store packaging material out of the reach of babies and small children. Always dispose of packaging material properly when it is not in use. Never allow children to use the device without supervision. Keep small parts away from children and make sure that the device does not shed any small parts (such knobs) that children could play with.



#### **DANGER!**

##### **Danger to life due to electric current!**

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 when covers, safety equipment or optical components are missing or damaged.



### **DANGER!**

#### **Danger to life due to electric current!**

A short circuit could lead to a fire hazard and risk of death. Always use proper ready-made insulated triple-core mains cable with a safety plug. Do not modify the mains cable or the plug. In case of isolation damage, disconnect immediately the power supply and arrange repair. If in doubt, seek advice from a qualified 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. 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.



## **NOTICE!**

### **Possible staining**

The plasticiser contained in the rubber feet of this product may possibly react with the coating of your surface and after some time cause permanent dark stains. In case of doubt, do not put the rubber feet directly on the surface and use a suitable underlay if necessary, i.e. felt pads or similar.

### 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 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**

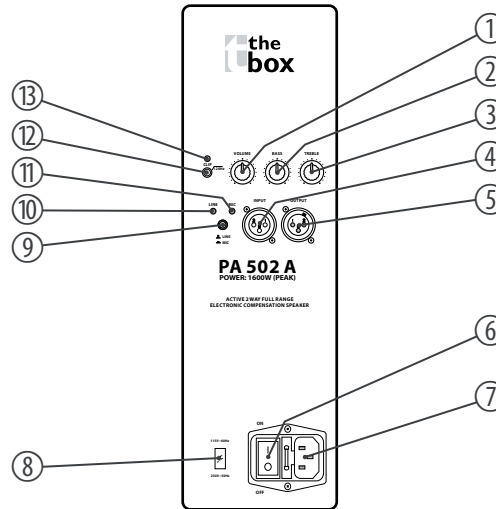
We recommend you to set up the speakers in a way, that the sound signals can reach the audience unobstructedly. It will often be helpful to mount the speakers on tripods. Thus, the sound will be evenly spread with maximum range throughout the audience area.

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

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 amps 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	[VOLUME]   control to adjust the volume. Turn the knob clockwise to increase the volume or counterclockwise to decrease the volume.
2	[BASS]   bass control. Turn the knob clockwise for a more bassy sound. Turn the knob counterclockwise to decrease the bass.
3	[TREBLE]   treble control. Turn the knob clockwise for a brighter sound. Turn the knob counterclockwise to decrease the treble.
4	[INPUT]   signal input with switchable sensitivity, designed as XLR chassis socket.
5	[OUTPUT]   line output for connecting further powered speakers, designed as XLR chassis plug.
6	[ON OFF]   mains switch to turn the device on and off.
7	IEC chassis plug for power supply with fuse holder
8	[115V/60Hz — 230V/50Hz]   toggle switch for the supply voltage. Make sure that, before activating the device, the switch position is set to the local supply voltage.
9	[LINE/MIC]   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 [LINE]   the LED lights in operation when the input sensitivity is set to LINE.
11	LED [MIC]   the LED lights in operation when the input sensitivity is set to MIC.
12	[120Hz]   low cut switch to lower frequencies below 120 Hz. This function reduces impact noise and maximize the lifetime of the woofer.
13	[CLIP]   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	
Speaker	1 × 15" woofer Horn tweeter, angle of radiation 50 to 100° × 55°	
Input connections	Power supply	IEC chassis plug C14
	Signal	XLR chassis socket, 3-pin
Input impedance	balanced: 20 kΩ unbalanced: 10 kΩ	
Output connections	Line	XLR chassis plug, 3-pin
Output power	Bass: 220 W (RMS) Treble: 100 W (RMS)	
Frequency range	40 Hz ... 18 kHz (–3 dB) 35 Hz ... 20 kHz (–10 dB)	
Crossover frequency	2.3 kHz	
Sound pressure level (SPL) @ 1 m, max.	120 dB	

## Technical specifications

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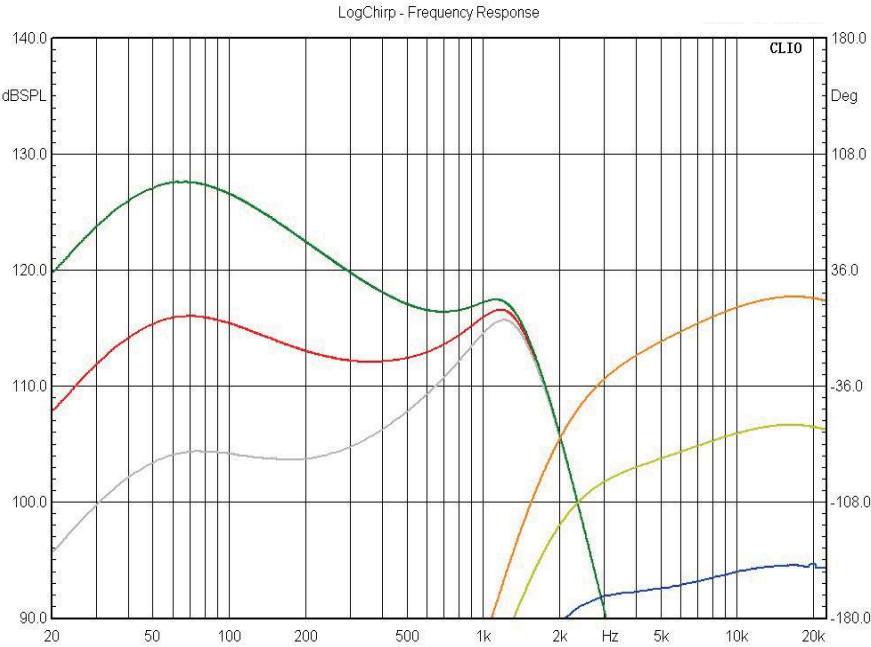
Level adjustment	Bass: $\pm 12$ dB, 100 Hz Treble: $\pm 12$ dB, 10 kHz	
Distortion	Line: 0.02 % Microphone: 0.04 %	
Load impedance	Bass: 8 $\Omega$ Treble: 8 $\Omega$	
Power consumption	max. 400 W	
Supply voltage	110/230 V $\sim$ 50/60 Hz	
Fuse	110 V: 5 mm $\times$ 20 mm, 5 A, 250 V, slow blow 230 V: 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	
Ambient conditions	Temperature range	0 °C...40 °C
	Relative humidity	20 %...80 % (non-condensing)

## Further information

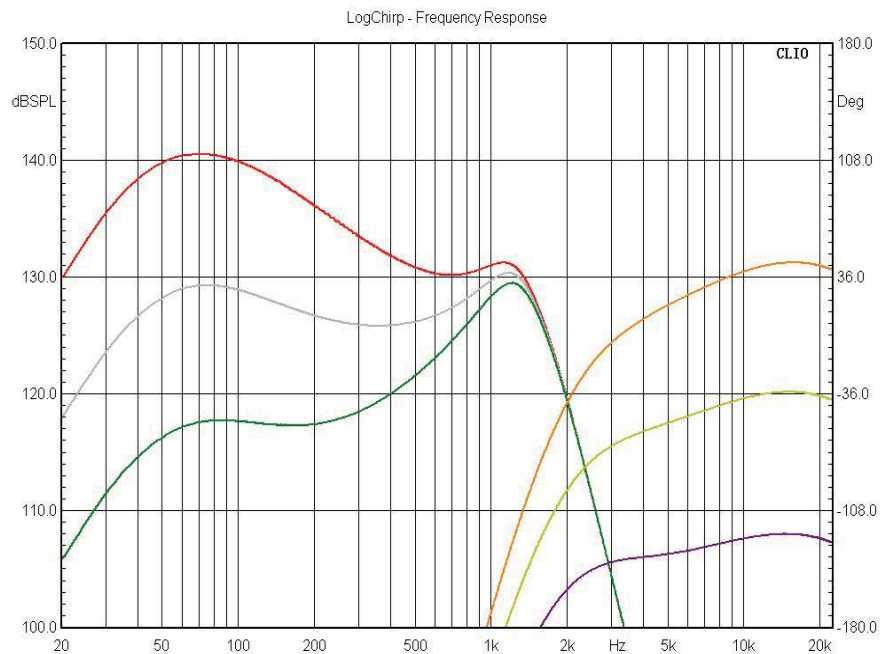
Ways	2-way
Monitor inclination	yes
Mic Preamp	1
Bluetooth Play	no
Low Cut	no
Design	Standard
Simultaneous inputs	1
Tone control / ch.	no
USB player	no
Fan	no

Frequency response

Line



# MIC



## 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

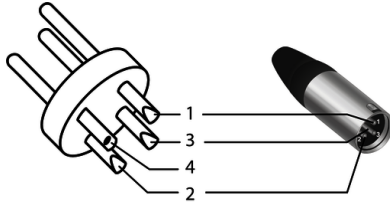
Unbalanced transmission is mainly used in semi-professional environment and in hifi use. Instrument cables with two conductors (one core plus shielding) are typical representatives of the unbalanced transmission. One conductor is ground and shielding while the signal is transmitted through the core.

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  $180^\circ$ .

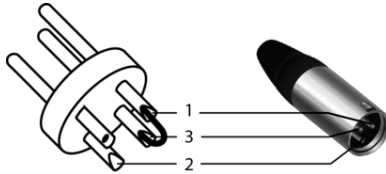
Since the interference affects both cores equally, by subtracting the phase-shifted signals, the interfering signal is completely neutralized. The result is a pure signal without any noise interference.

## XLR plug (balanced)



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

## 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) 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.









