



PA 502 A

Active Speaker

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4 PA 502 A
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1 General information

This document contains important instructions for the safe operation of the product. Read and follow the safety instructions and all other instructions. Keep the document for future reference. Make sure that it is available to all those using the product. If you sell the product to another user, be sure that they also receive this document.

Our products and documentation are subject to a process of continuous development. They are therefore subject to change. Please refer to the latest version of the documentation, which is ready for download under www.thomann.de.

1.1 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 document.

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 – danger zone.

2 Safety instructions

Intended use

This device is designed for sound reinforcement. 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 as 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.



WARNING!

Possible hearing damage due to operating the device at a high volume!

The device can produce volume levels that, when operated at a high volume, may cause temporary or permanent hearing impairment. Over an extended period of time, even levels that seem to be uncritical can cause hearing damage. Avoid operating the device at excessively high volumes over an extended period of time. 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 adequate ear-muffs.



CAUTION!

Risk of injury due to heavy weight!

The device is heavy. Lifting and dropping it during transport and installation can cause injuries. Make sure at least two people work together when transporting and installing the device.



NOTICE!

Risk of fire due to covered vents and neighbouring heat sources!

If the vents of the device are covered or the device is operated in the immediate vicinity of other heat sources, the device can over-heat and burst into flames. Never cover the device or the vents. Do not install the device in the immediate vicinity of other heat sources. Never operate the device in the immediate vicinity of naked flames.

**NOTICE!****Damage to the device if operated in unsuitable ambient conditions!**

The device can be damaged if it is operated in unsuitable ambient conditions. Only operate the device indoors within the ambient conditions specified in the "Technical specifications" chapter of this user manual. Avoid operating it in environments with direct sunlight, heavy dirt and strong vibrations. Avoid operating it in environments with strong temperature fluctuations. If temperature fluctuations cannot be avoided (for example after transport in low outside temperatures), do not switch on the device immediately. Never subject the device to liquids or moisture. Never move the device to another location while it is in operation. In environments with increased dirt levels (for example due to dust, smoke, nicotine or mist): Have the device cleaned by qualified specialists at regular intervals to prevent damage due to overheating and other malfunctions.

**NOTICE!****Damage to the device due to high voltages!**

The device can be damaged if it is operated with the incorrect voltage or if high voltage peaks occur. In the worst case, excess voltages can also cause a risk of injury and fires. Make sure that the voltage specification on the device matches the local power grid before plugging in the device. Only operate the device from professionally installed mains sockets that are protected by a residual current circuit breaker (FI). As a precaution, disconnect the device from the power grid when storms are approaching or if the device will not be used for a longer period.

**NOTICE!****Risk of fire due to installation of a wrong fuse!**

Using fuses of a different type than compatible with the device may cause a fire and seriously damage the device. Only use fuses of the same type. Observe the labelling on the device casing and the information in the "Technical data" chapter.

**NOTICE!****Possible staining due to plasticiser in rubber feet!**

The plasticiser contained in the rubber feet of this product may react with the coating of the floor and cause permanent dark stains after some time. If necessary, use a suitable mat or felt slide to prevent direct contact between the device's rubber feet and the floor.

3 Features and scope of delivery

Special characteristics of this active 2-way full-range speaker:

- 1 × 15-inch mid-range speaker / woofer
- Horn tweeter, beam angle 50°...100° × 55°
- Power output 300 W (bass) + 100 W (treble)
- 2-band EQ
- XLR input/output
- Switchable low cut at 120 Hz
- Monitor feet for use as a floor monitor (included in scope of delivery)
- Stand flange 35 mm

4 Installation and starting up

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.



NOTICE!

Possible property damage to adjacent devices due to magnetic fields.

Speakers generate a static magnetic field. This magnetic field can affect other neighbouring units and in unfavourable cases damage them.

Ensure that speakers are always a sufficient distance away from sensitive equipment that may be affected by an external magnetic field.



NOTICE!

Potential property damage due to unsuitable stands!

If the device is mounted on an unsuitable stand, there is a risk that the stand will fall over and cause damage.

Only use stands whose maximum bearing capacity is at least as high as the weight of the device. Always ensure that the stand is stable.

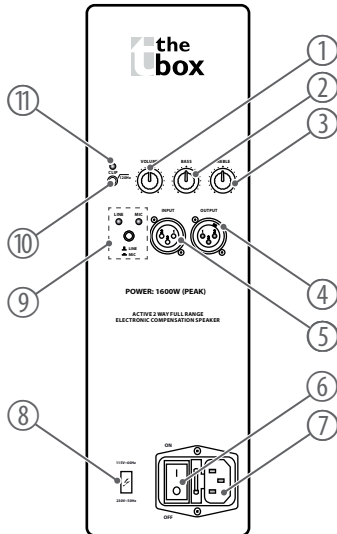
4.1 Tips on handling speakers

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 **[VOLUME]** | Control for adjusting the volume. Turn the control clockwise to increase the volume and anti-clockwise to decrease the volume.
- 2 **[BASS]** | Bass control. Turn the control clockwise for a more bassy sound. Turn the control anti-clockwise to decrease the bass.
- 3 **[TREBLE]** | Treble control. Turn the control clockwise for a sound with more treble. Turn the control anti-clockwise to decrease the treble.
- 4 **[OUTPUT]** | Line output for connecting further active speakers, designed as XLR panel plug.
- 5 **[INPUT]** | Signal input with switchable sensitivity, designed as XLR panel socket.
- 6 **[ON/OFF]** | Mains switch for turning the device on and off
- 7 Rubber panel plug with fuse holder for the power supply
- 8 **[115V/60Hz — 230V/50Hz]** | Selector switch for the supply voltage. Before switching on the device, make sure that the switch is in the right position for the local supply voltage.
- 9 **[LINE/MIC]** | Push-button to select the input sensitivity of the speaker (line or microphone level).
 - [MIC] LED** | The LED lights up in operation if the input sensitivity is set to MIC.
 - [LINE] LED** | The LED lights up in operation if the input sensitivity is set to LINE.

- | | |
|----|--|
| 10 | <i>[120Hz]</i> Low cut switch for lowering frequencies below 120 Hz. This function reduces impact noise and also extends the service life of the woofer. |
| 11 | <i>[CLIP]</i> Indicates overload. If the LED flickers or lights up, the input signal level is too high. |

6 Technical specifications

System	Active 2-way full-range speaker with built-in crossover	
Configuration	1 × 10-inch midrange speaker / woofer Horn tweeter, beam angle 50°...100° × 55°	
Input connections	Line/microphone	1 × XLR panel socket
	Power supply	Rubber panel plug C14
Input impedance	Line	20 kΩ
	Microphone	10 kΩ
Distortion	Line	0.02%
	Microphone	0.04%
Load impedance	Bass	8 Ω
	Treble	
Output connections	Line out	1 × XLR panel plug
Output power	Bass	300 W (RMS)
	Treble	100 W (RMS)

Technical specifications

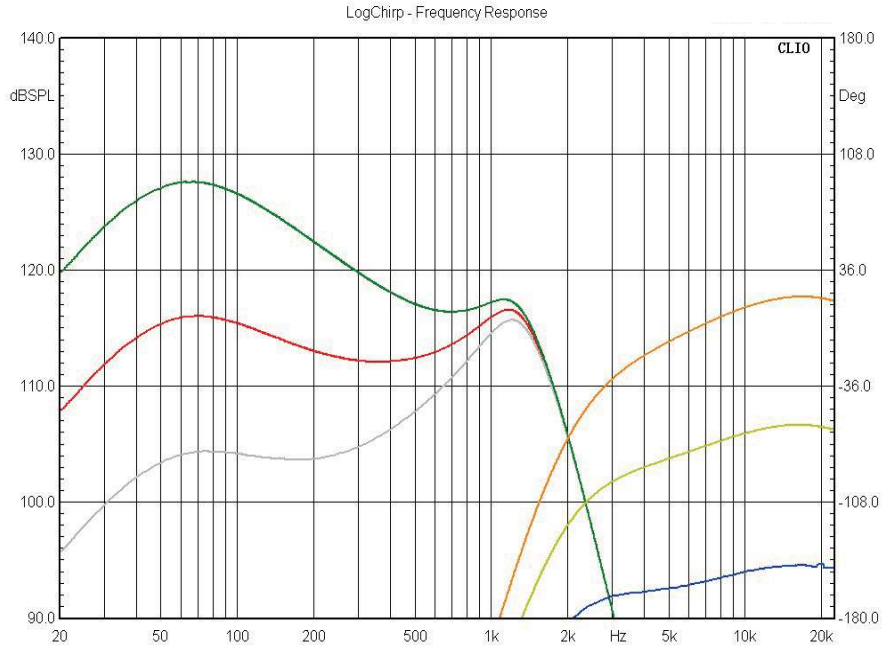
Frequency range	40 Hz...18 kHz, -3 dB	
	35 Hz...20 kHz, -10 dB	
Crossover frequency	2.3 kHz	
Sound pressure level (SPL), max.	120 dB	
Level adjustment	Bass	± 12 dB, 100 Hz
	Treble	± 12 dB, 10 kHz
Power consumption	400 W	
Supply voltage	115 - 230 V ~ 50/60 Hz	
Fuse	115 V	5 mm × 20 mm, 5 A, 250 V, slow blow
	230 V	5 mm × 20 mm, 2.5 A, 250 V, slow blow
Dimensions (W × H × D)	488 mm × 460 mm × 720 mm	
Weight	30.5 kg	
Ambient conditions	Temperature range	0 °C...40 °C
	Relative humidity	20%...80% (non-condensing)

Further information

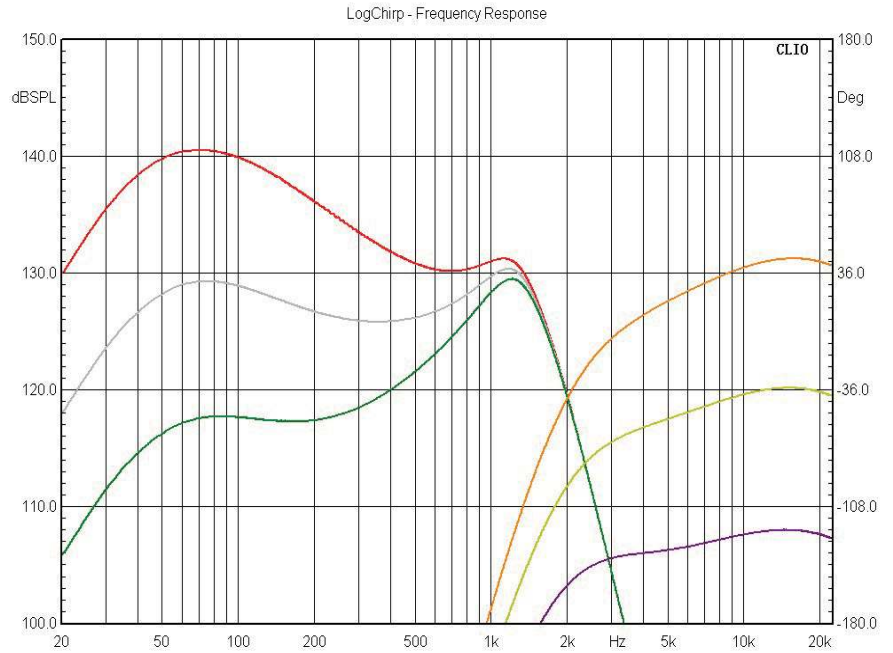
Housing	Polypropylene, trapezoid
Colour	Black
Media player	No
Effect	No
Monitor inclination	Yes
Rechargeable battery	No
Truss-capable	No
Wireless hand/head microphone	No
Ways	2-way
Remote control	No
Low cut	No
Stand flange	35 mm
Design	Standard

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

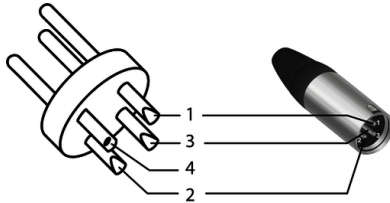
Unbalanced transmission is mainly used in semi-professional environment and in hifi use. Instrument cables with two conductors (one core plus shielding) are typical representatives of the unbalanced transmission. One conductor is ground and shielding while the signal is transmitted through the core.

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°.

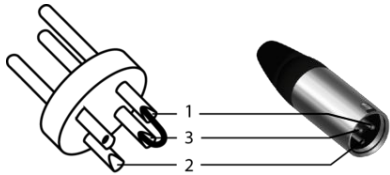
Since the interference affects both cores equally, by subtracting the phase-shifted signals, the interfering signal is completely neutralized. The result is a pure signal without any noise interference.

XLR plug (balanced)



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

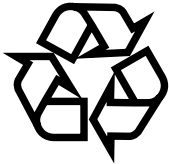
XLR plug (unbalanced)



1	Ground, shielding
2	Signal
3	Bridged to pin 1

8 Protecting the environment

Disposal of the packing material



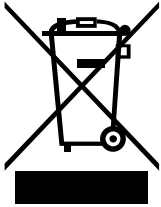
Environmentally friendly materials have been chosen for the packaging. These materials can be sent for normal recycling. Ensure that plastic bags, packaging, etc. are disposed of in the proper manner.

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



Observe the disposal note regarding documentation in France.

Disposal of your old device



This product is subject to the European Waste Electrical and Electronic Equipment Directive (WEEE) as amended.

Do not dispose of your old device with your normal household waste; instead, deliver it for controlled disposal by an approved waste disposal firm or through your local waste facility. When disposing of the device, comply with the rules and regulations that apply in your country. If in doubt, consult your local waste management facility. Proper disposal protects the environment as well as the health of your fellow human beings.

Also note that waste avoidance is a valuable contribution to environmental protection. Repairing a device or passing it on to another user is an ecologically valuable alternative to disposal.

You can return your old device to Thomann GmbH at no charge. Check the current conditions on www.thomann.de.

If your old device contains personal data, delete those data before disposing of it.

