

**the  
box**

PA10 DSP, PA12 DSP,  
PA15 DSP

active speaker

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# 1 General notes



This user manual contains important information on 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, include the manual for the next owner.

Our products are subject to a process of continuous development. We therefore reserve the right to make changes without notice.

## **Symbols and signal words**

This section provides an overview of the symbols and signal words used in this user 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 signs	Type of danger
 A yellow triangular warning sign with a black border. Inside the triangle, there is a black silhouette of a crane hook lifting a rectangular load.	Warning – suspended load.
 A yellow triangular warning sign with a black border. Inside the triangle, there is a black exclamation mark.	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.



**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

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

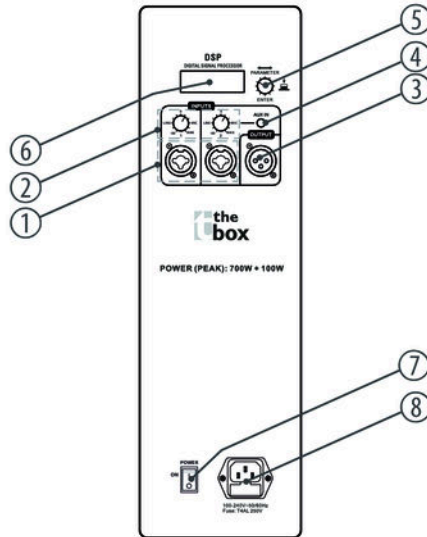
## 4.1 Tips on handling speakers

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	<i>[INPUTS]</i> Balanced XLR / ¼-inch combo sockets for signal inputs.
2	<i>[1], [2]</i> 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 <i>[LINE]</i> . When using the input for a microphone, you can turn the knob up to position <i>[MAX]</i> .
3	<i>[OUTPUT]</i> Line output for connecting further speakers, designed as XLR chassis plug.
4	<i>[AUX IN]</i> ¼-inch socket for connecting line level devices, e.g. laptop, mobile phone, if necessary, with appropriate adapter.
5	<i>[PARAMETER]</i> 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 | <i>[POWER]</i><br>Main switch. Switches the device on and off.   |
| 8 | IEC chassis plug with fuse holder for the power supply. Should the fuse have blown, disconnect the unit from the power supply and replace the fuse with a new fuse of the same type. |

## 6 Operating

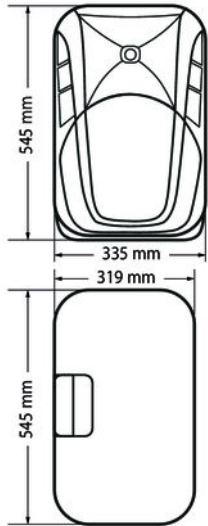
The following table shows the setting options.

MODE	Selecting an EQ preset: <ul style="list-style-type: none"> <li>■ 'DJ'</li> <li>■ 'MUSIC'</li> <li>■ 'LIVE'</li> <li>■ 'SPEECH'</li> </ul>
LOCATION	Selecting a location preset: <ul style="list-style-type: none"> <li>■ 'NORMAL': Standard</li> <li>■ 'MONITOR': Operation as stage monitor with feedback reduction</li> </ul>
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 <ul style="list-style-type: none"><li>■ 'OFF': Off</li><li>■ '80Hz', '100Hz', '120Hz', '150Hz': Crossover frequency selection</li></ul>
DELAY	Signal delay settings <ul style="list-style-type: none"><li>■ 'OFF': Off</li><li>■ 0 ms ... 16 ms: Delay time selection</li></ul>
LCD DIM	Automatic switch off of the display light <ul style="list-style-type: none"><li>■ 'OFF': Display light remains permanently on</li><li>■ 'ON': Display light turns off after 8 seconds without operation</li></ul>
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)



System	Active speaker box with built-in crossover and DSP
Speaker	10" woofer, 1" horn
Output power	800 W (peak)
Sound pressure level	126 dB max.
Frequency range	60 Hz ... 20 kHz
Dispersion angle (H × V)	90° × 60°
Operating supply voltage	100 – 240 V ~ 50/60 Hz
Fuse	5 mm × 20 mm, 4 A, 250 V, slow-blow

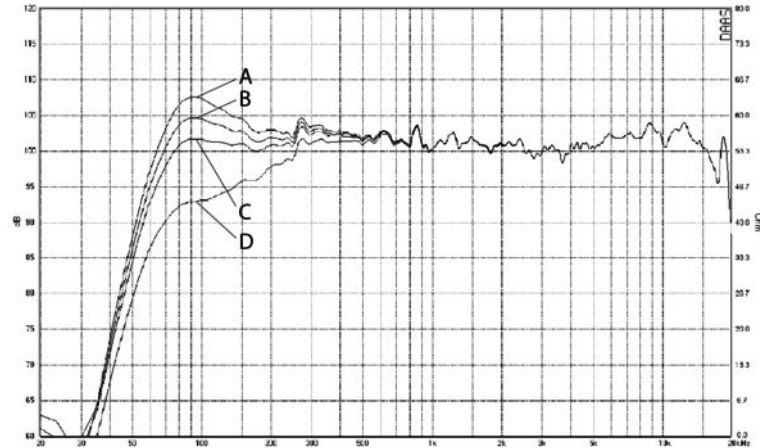
PA10 DSP, PA12 DSP, PA15 DSP

Dimensions (W × H × D)	335 mm × 545 mm × 319 mm
Weight	14 kg

## Frequency response

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

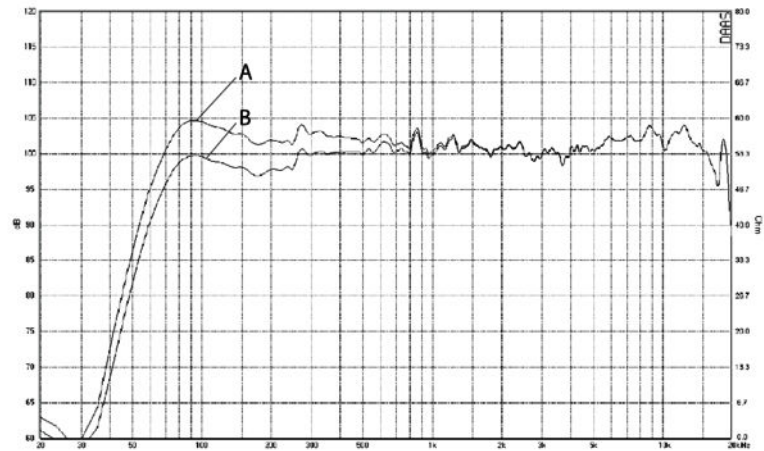
- A: 'DJ'
- B: 'MUSIC'
- C: 'LIVE'
- D: 'SPEECH'



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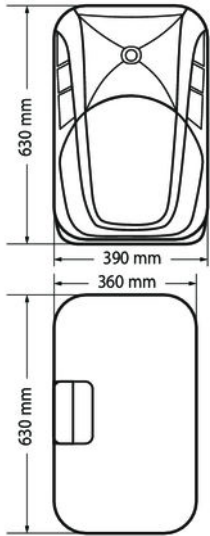
The following figure shows the frequency response depending on the setting in menu item 'LOCATION':

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





**PA 12 DSP (item no. 415599)**



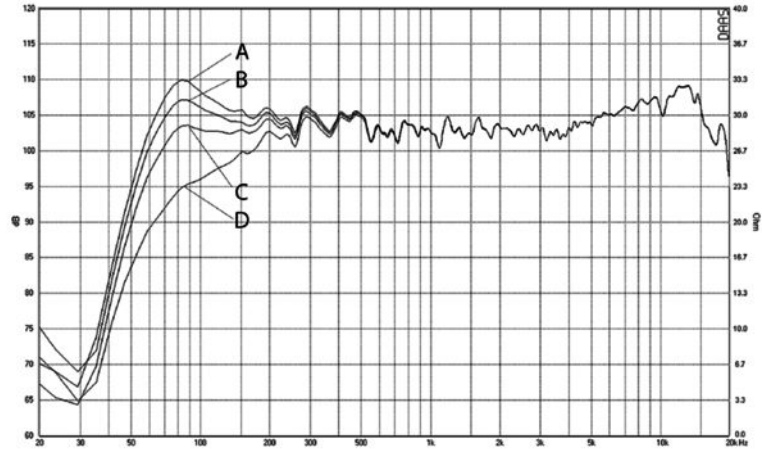
System	Active speaker box with built-in crossover and DSP
Speaker	1 × 12" woofer, 1 × 1 1/3" tweeter
Output power	800 W (peak)
Sound pressure level	128 dB max.
Frequency range	50 Hz ... 20 kHz
Dispersion angle (H × V)	90° × 60°
Operating supply voltage	100 – 240 V ~ 50/60 Hz
Fuse	5 mm × 20 mm, 4 A, 250 V, slow-blow
Dimensions (W × H × D)	390 mm × 630 mm × 360 mm
Weight	17 kg

PA10 DSP, PA12 DSP, PA15 DSP

## Frequency response

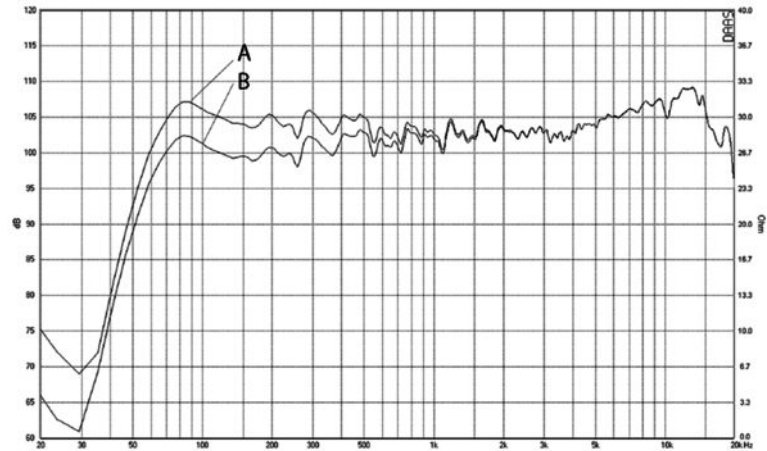
The following figure shows the frequency response depending on the setting in menu item 'MODE':

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



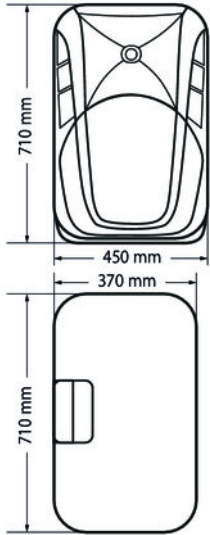
The following figure shows the frequency response depending on the setting in menu item 'LOCATION':

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



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**PA 15 DSP (item no. 441079)**

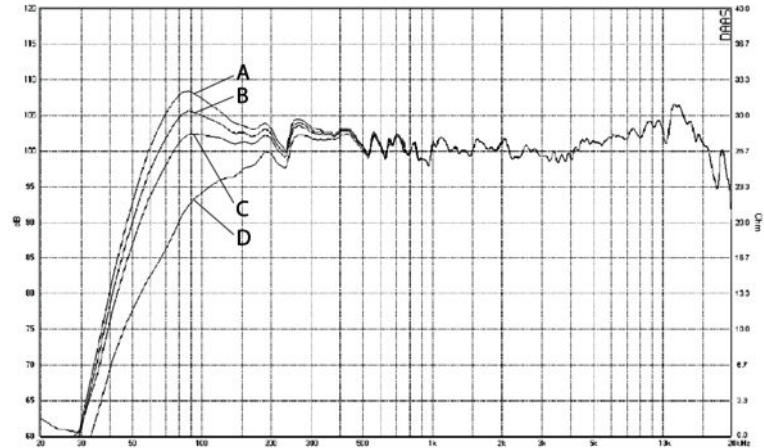


System	Active speaker box with built-in crossover and DSP
Speaker	15" woofer, 1" horn
Output power	800 W (peak)
Sound pressure level	129 dB max.
Frequency range	45 Hz ... 20 kHz
Dispersion angle (H × V)	90° × 60°
Operating supply voltage	100 – 240 V ~ 50/60 Hz
Fuse	5 mm × 20 mm, 4 A, 250 V, slow-blow
Dimensions (W × H × D)	450 mm × 710 mm × 370 mm
Weight	20 kg

## Frequency response

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

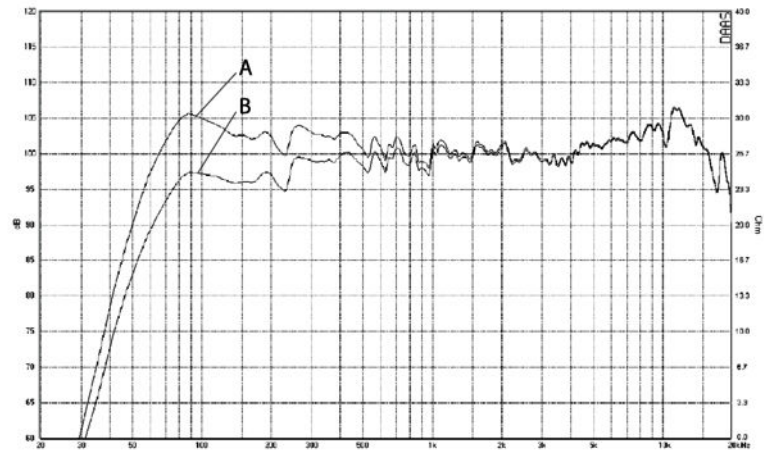
- A: 'DJ'
- B: 'MUSIC'
- C: 'LIVE'
- D: 'SPEECH'



PA10 DSP, PA12 DSP, PA15 DSP

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.

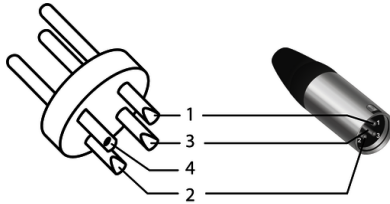
### 1/4" TRS phone plug (mono, balanced)



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.



