



PentaClass

hear. understand.

Certes PentaClass A, AB, ABM

Users manual

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NOTES

- The contents of this user's manual shall not be reprinted in part or whole without permission.
- The contents of this user's manual are subject to change without a notice.

Important Safeguards

READ INSTRUCTIONS

All the safety and operating instructions should be read before the appliance is operated.

RETAIN INSTRUCTIONS

The safety and operating instructions should be retained for future reference.

HEED WARNINGS

All warnings on the product and in the operating instructions should be adhered to.

FOLLOW INSTRUCTIONS

All operating and maintenance instructions should be followed.

CLEANING

Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.

ATTACHMENTS

Do not use attachments that are not recommended by the product manufacturer as they may cause hazards.

WATER AND MOISTURE

Do not use this product near water - for example, near a bath tub, wash bowl, kitchen sink, or laundry tub, in a wet basement, or near a swimming pool, and the like.

GROUNDING OR POLARIZATION

For US only: This product may be equipped with either a polarized 2-wire AC line plug (a plug having one blade wider than the other) or a 3-wire grounding type plug, a plug having a third (grounding) pin. The 2-wire polarized plug will outlet, try reversing the plug. If the plug still fails to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug. The 3-wire grounding type plug will fit into a grounding type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the grounding type plug.

For UK only: In UK, a BS approved power cord with moulded plug has a Black (five Amps) fuse installed for use with this equipment. If a power cord is not supplied with this equipment please contact your supplier.

POWER-CORD PROTECTION

Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the product.

LIGHTNING

For added protection for this product during a lightning storm, or when it is left unattended and unused for a long time, unplug it from the wall outlet and disconnect cable system. This will prevent damage to the product due to lightning and power-line surges.

OVERLOADING

Do not overload wall outlets, extension cords, or integral convenience receptacles as this can result in a risk of fire or electric shock.

OBJECT AND LIQUID ENTRY

Never push objects of any kind into this product through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.

SERVICING

Do not attempt to service this product yourself as opening or removing covers may expose dangerous voltage or other hazards. Refer to qualified service personnel.

DAMAGE

Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:

- When the power-supply cord or plug is damaged.
- If liquid has been spilled, or objects have fallen into the product.
- If the product has been exposed to rain or water.
- If the product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to its normal operation.
- If the product has been dropped or damaged in any way.
- When the product exhibits a distinct change in performance - this indicates a need for service.

REPLACEMENT PARTS

When replacement parts are required, be sure that the service technician uses only spare parts approved by Certes Industry SIA. If you are uncertain, contact Certes Industry SIA. Unauthorized substitutions may result in fire, electric shock or other hazards.

SAFETY CHECK

Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition.

Before Operating

- Be sure to use the power cord and the AC adapter attached to this product.
- Be sure to use the power cord applicable to your local power specifications.
- When storing the product, do not leave it under direct sunlight or near heaters. It may become discoloured, deformed, or damaged.
- Do not place this product in any humidity, dusty, salt bearing wind, or vibrating locations. Use it only under the following environmental conditions: temperature: 0°C - 40°C (32°F - 104°F), humidity: 30% - 85% (No condensation).
- Use a soft, dry cloth for cleaning. Do not use any volatile solvent such as thinner or benzene.

FOLLOW THE GUIDELINES BELOW TO PREVENT THE UNIT FROM DROPPING

- Use the product on a stable base, desk, or table. Do not place the product on an unstable base or slanted surface.
- Please install the product as recommended in this user manual, always attach safety strap.
- Place or wire the unit to prevent the AC adapter cord or video cable from pulling.
- Carry the product by holding the lower part of the main unit in both hands. Never hold the product by the tubes and top part.
- If this product is used for longer period than the warranty period, its performance and quality may deteriorate due to the lifetime of its parts. To purchase replacement parts, consult the dealer from whom you purchased this product or our branch/office near your location.

REMOTE CONTROL BATTERY PRECAUTIONS

- If this product is not going to be used for a long time, take the batteries out of the remote control.
- Do not use rechargeable batteries (e.g., Ni-Cd (NiCad batteries)).
- Do not try to recharge or short-circuit the batteries.
- When disposing of used batteries, follow the instructions of your local government.
- Insert batteries from one side and pay particular attention to the polarity (+/- directions).
- Be sure to use CR2025 type batteries.
- If any liquid from a battery leaks onto your skin or clothes, flush the area with clean water immediately. If it gets into your eyes, flush immediately with clean water and then contact a doctor.

MICROPHONE BATTERY PRECAUTIONS

- Do not charge the microphone when it is placed near heat source or in direct sunlight or another places where temperature exceeds +40°C (104°F).
- Do not store or leave Microphone near the heat source or in direct sunlight or another places where temperature exceeds +40°C (104°F).
- Do not store or leave Microphone in a cold places under -20°C (-4°F).
- Do not try to recharge microphone using inappropriate charger, please use USB charger attached to this product.
- Do not place microphone in a liquids, rain and other moister places.
- In case of any physical damage of microphone, please do not try to charge it. Contact dealer or repair service.
- If any liquid from a microphone leaks onto your skin or clothes, flush the area with clean water immediately. If it gets into your eyes, flush immediately with clean water and then contact a doctor.

PRECAUTIONS REGARDING THE MICROPHONE LANYARD

To prevent unexpected accidents, please note the following:

- This lanyard is for the microphone only and should not be used for any other purposes.
- Do not wrap the lanyard around parts of your body such as your neck, arm, or finger.
- Do not leave it within reach of small children.
- For safety reasons, the break-away section of the lanyard has been designed to separate if too much force is applied. Therefore, please avoid any overly strenuous movements and do not apply excessive force.
- The lanyard length adjustment feature is designed to be simple and supportive. Excessive force or strenuous movements may change the length.
- Do not use excessive force when adjusting the lanyard. This could damage the lanyard.
- Be careful using lanyard in environment where rotating or other movements appear.

PRECAUTIONS REGARDING PACKING PARTS

To prevent unexpected accidents, please note the following points:

- Keep all small parts as plastic bags, braces away from reach of small children.
- Do not put the plastic bags on the head, keep them away from reach of small children.
- Do not eat or put in mouth braces, cardboard parts, plastic bags, screws or any another parts supplied with the product and keep away them from reach of small children.

OTHER SAFETY PRECAUTION

- Servicing and maintenance must be carried out by authorised service staff only.
- Use only spare parts approved by Certes Industry SIA. If you are uncertain, contact Certes Industry SIA.
- Make sure the device is securely mounted and installed in accordance with instructions before starting it.
- Regularly check the screws and other attachment devices.
- In the event of abnormal noise- stop it and consult the supplier.
- Electrical installation must be carried out by an authorised electrician only.
- Take special care to not drop the equipment while mounting it to the ceiling.
- Never force anything into the openings or source inputs of the speaker equipment.
- Do not use this equipment if it shows obvious signs of damage from shipping or dropping.
- Make sure equipment is properly mounted according to the Mount Instructions found in this guide. This is the only approved method of installation; any other may cause a loss in warranty.



NOTATION CONVENTIONS

Warning! Indicates a potentially hazardous situation which, if instructions are not followed, could result in death or serious injury.

Confirmation of compliance

Certes Industry SIA declares that PentaClass models A, AB, and ABM has been manufactured in accordance with following directive:

- 2004/108/EG EMC Directive Electromagnetic Compatibility (EMC-directive).
- 2006/95/EC Low Voltage Directive (LVD).

It has been manufactured in accordance with the following harmonised standards, or parts therefore:

- EN 60950; EN 60065; EN 55032.

SAFETY

The device is labelled with CE label, which means that the device and its associated documentation meet the requirements of Low Voltage Directive (LVD).

CONVERSION OF THE DEVICE

If the device is converted or supplemented with parts that the manufacturer does not approve, this declaration of conformity will not apply to the parts which alter the function of the device.

If the device is upgraded or converted, it is very important to ensure that this instruction is completed/ adjusted immediately to include the necessary illustrations, photographs and texts.

DEVICE IDENTITY

The device identity plate with serial number and CE label is placed underneath the chassis.

Martins Pikss

SIA "Certes Industry" manager



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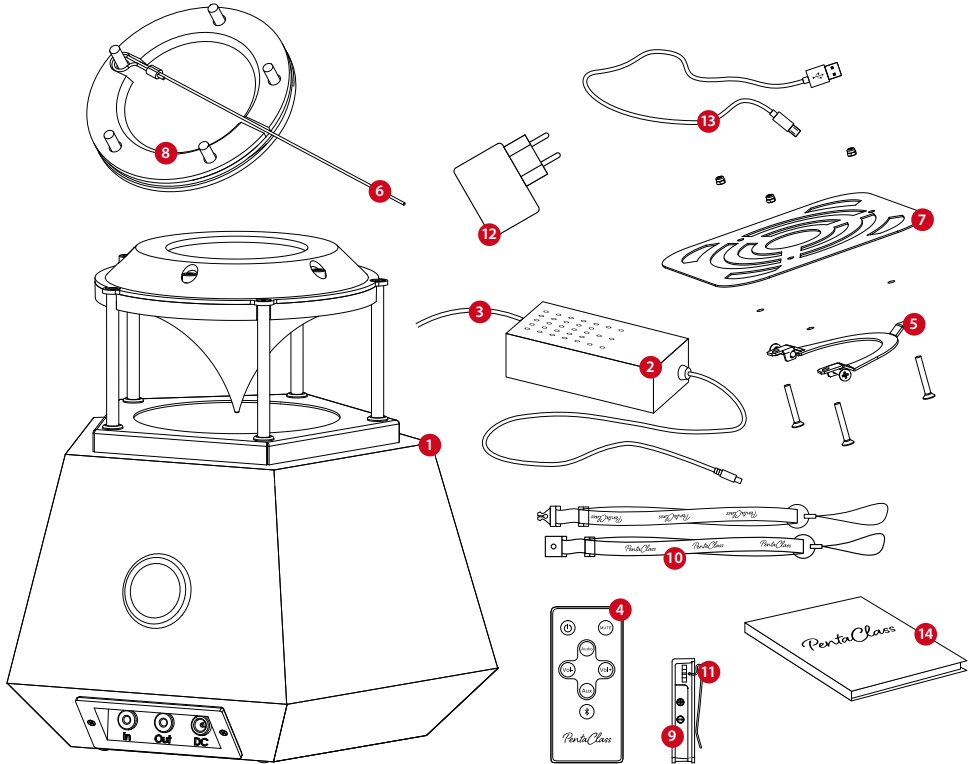
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Introduction

What's in the Box?

Make sure your box contains everything listed. If any pieces are missing, contact your dealer.



- 1 Certes PentaClass speaker
- 2 Power supply 19V 2A
- 3 Power cord
- 4 Remote control with battery
- 5 Fixation bracket with screws
- 6 Safety wire
- 7 Plate for false ceiling
- 8 Flange
- 9 Microphone*
- 10 Lanyard*
- 11 Microphone clip*
- 12 USB charger 5V1A*
- 13 Micro USB cable 1 m*
- 14 User's manual

* comes with Certes PentaClass ABM version

Introducing Certes PentaClass

Thank you for purchasing one of the best classroom audio systems available today. The Certes PentaClass enables you to transmit pristine voice clarity from the microphone meanwhile giving you the opportunity to enjoy full classroom multimedia audio sounding using one device.

Features for all PentaClass models

ALL-IN-ONE DEVICE

Certes PentaClass combines the speaker, amplifier and mixer all in one.

360 OMNIDIRECTIONAL SOUNDFIELD

Enjoy the truly rich sounds whenever you are seated in the classroom.

ONE CLASSROOM – ONE SPEAKER

Thanks to its special design, just one Certes PentaClass speaker is able to spread the sound evenly in the classroom and is suitable for room sizes of up to 120 m² (1300 ft²). In case you have an auditorium bigger than 120 m² (1300 ft²), you can daisy chain up to 3 PentaClasses.

SIMPLE INSTALLATION

In a matter of minutes you can install PentaClass using the mount on the ceiling or wall.

SYSTEM STATUS INDICATION

Depending on the PentaClass status, it will illuminate a specific light.

POWER-SAVING MODE

The automatic power-saving mode switches on if there is no incoming signal for more than 20 minutes.

AUDIO PRESETS

This allows you to choose the audio mode by switching between voice, multimedia and music presets.

BIG AUDITORIUMS WELCOMED

Thanks to adapted audio in/out, you can daisy chain up to 3 Certes PentaClasses and cover auditoriums up to 360m² (3875.01 ft²).

HI-FI ACOUSTIC DESIGN

The PentaClass design ensures sound clarity on voice, the full range for multimedia and a rich bass for music.

ROBUST DESIGN

The plywood box, aluminium speaker protector and durable plastic parts combine to ensure a long-term lifespan for PentaClass. Thanks to its simple and elegant design, it will fit into any interior.

BUILT-IN MIXER

The built-in mixer allows you to mix analog input with Bluetooth or microphone channels without unplugging the cables or disconnecting the wireless connection.

REMOTE CONTROL

All PentaClass versions come with a remote control for the easy operation of devices.

DYNAMIC RANGE COMPRESSION

Whether you are listening at a low or high volume, the DRC ensures the quality of non-distorted sound.

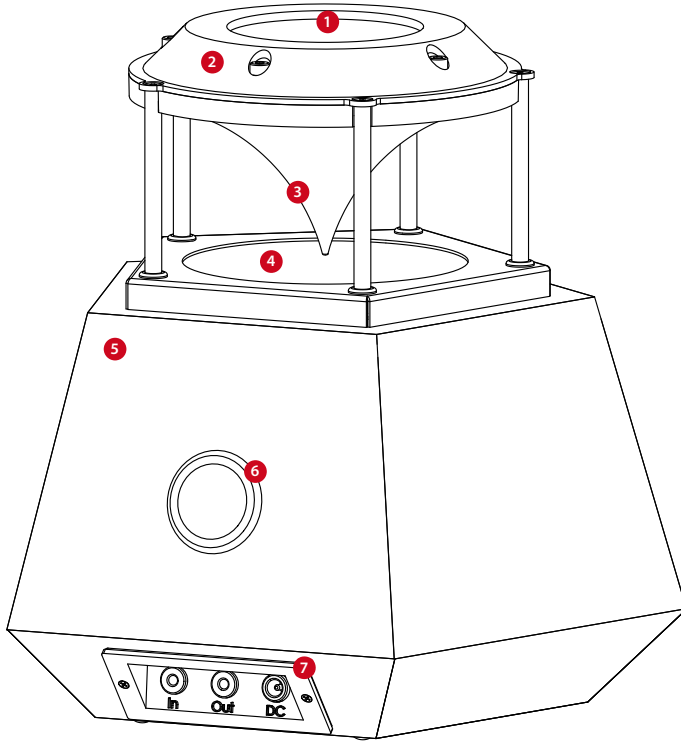
HEARING LOOP DEVICES READY

Thanks to the mixed Aux output, you can connect Certes PentaClass to any hearing loop device.

Names of Certes PentaClass parts

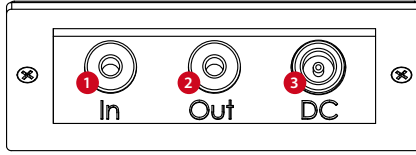
Operation of the main unit

Make sure your box contains everything listed. If any pieces are missing, contact your dealer.



- 1 System status indication window and IR sensor location
- 2 Main Board housing
- 3 Sound reflector cone
- 4 Speaker grill with protective frame
- 5 Plywood soundbox
- 6 Phase inverter
- 7 Connector panel

Rear panel and cable connection



- 1 Aux in - Audio in (3,5mm mini Jack). An audio cable is not supplied with this product.
- 2 Aux out - Audio out (3,5mm mini Jack). An audio cable is not supplied with this product.
- 3 DC - Plug-in for the AC adapter.

Connecting the AC adapter. Before inserting the AC adapter in an outlet, connect the DC plug of the supplied AC adapter to the terminal on the rear panel.

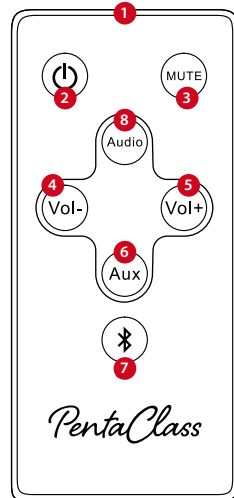
Connecting the unit to another PentaClass (daisy chain), Induction loop devices or another audio preamplified devices with an audio line input terminal on the connector panel.

To connect the unit to a device with an audio line output as:

- Mobile phone
- Tablet
- Projector
- Microphone
- DVD / VHS
- Computer

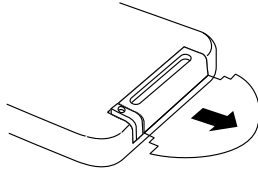
Names of Remote Control parts

- 1 Infrared Transmitter
- 2 Power ON/OFF Button
- 3 Mute Button
- 4 Volume down Button
- 5 Volume up Button
- 6 AUX channel ON/OFF Button
- 7 Bluetooth channel activation Button
- 8 Audio Preset

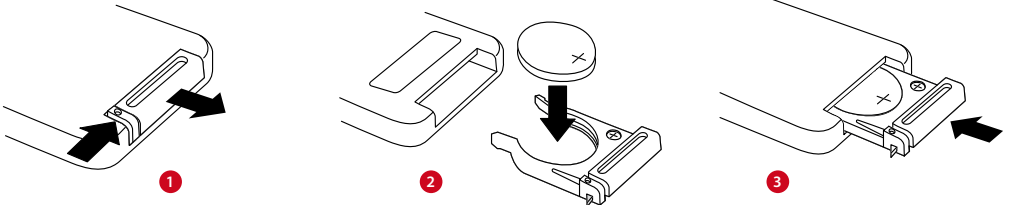


Preparation of remote control

Remove plastic insulating sheet located at the bottom of battery.



Replacement Battery Installation



- 1 Remove the battery compartment cover by sliding the cover. Pull out the cover.
- 2 Insert the battery with the polarity "+" facing up.
- 3 Replace the cover.

CAUTION

- Use only a 3V lithium battery (CR2025).
- Ensure that you have the batteries' polarity (+/-) aligned correctly.
- If the remote control gets wet, wipe it dry immediately.
- Avoid excessive heat and humidity.
- Do not short, heat, or take apart batteries.
- Do not throw batteries into fire.
- If you will not be using the remote control for a long time, remove the batteries.
- Dispose of used batteries according to your local regulations.
- Children may ingest small batteries; always keep batteries safe and out of reach. WARNING: If a battery is swallowed, consult a doctor immediately as this could result in asphyxiation or be an obstacle to digestion, etc.

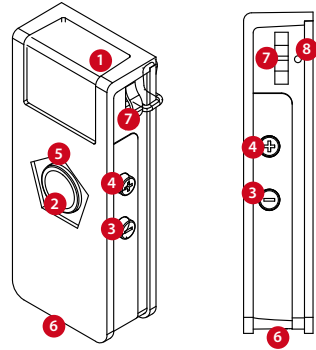
Remote control operating range

The remote control uses infrared transmission to control the PentaClass. It is necessary to point the remote directly at the PentaClass. The remote will function well within a radius of about 7 meters (23 feet) and in 140 degrees angle from the PentaClass IR sensor location level. If the PentaClass does not respond to the remote control, move it a little closer.

PentaClass Microphone

Microphone parts and buttons command description

- 1 Infrared Transmitter
- 2 Power ON/OFF
Hold Power ON/OFF button for a 3 seconds - Pairs microphone with already paired PentaClass speaker
Hold Power ON/OFF button for a 10 seconds - Pairs microphone with a new (non paired) PentaClass speaker
- 3 Volume up Button
- 4 Volume down Button
- 5 LED Indication light
- 6 Micro USB charging slot
- 7 Lanyard holes
- 8 Clip-holes



Hold Volume up button together with Power ON/OFF button for a 3 sec - Bluetooth channel activates.

Hold Volume down button together with Power ON/OFF button for a 3 sec - AUX channel ON/OFF activates.

Preparation of the Microphone

Take out microphone from the packaging and charge it before using it for the first time - described in next paragraph.

Microphone Battery Charging

CHARGING PROCEDURE FOR MICROPHONE UNIT

Before using it for the first time, the microphone should be charged accordingly:

- Connect one end of USB cable to Micro USB charging slot, and connect other end of USB cable to USB charger, or your computer.
- If USB charger is used connect it to power supply outlet 100-240V.

A fully charged microphone will last up to 6 hours of use. If microphones are used daily, they should be charged frequently.

It will take up to 3-4 hours for the microphone to obtain a full charge.

MICROPHONE STATUS INDICATION WHILE IT'S CHARGING

- **Steady orange** - microphone is charging
- **Steady green** - microphone is fully charged

MICROPHONE STATUS INDICATION WHILE IT'S PAIRED TO THE PENTACLASS

- **Blinking green** - microphone is paired to the PentaClass
- **Blinking red** - microphone is paired to the PentaClass, but the battery is running out and it will last up to 30 minutes
- No status indication - microphone is disconnected from PentaClass (is not paired) or Battery has fully discharged

MICROPHONE BATTERY STATUS INDICATION CHECK

It is possible to check battery level by pushing any button on the microphone:

- If the status indication is **green** - battery is charged.
- If the status indication is **red** - battery is running out of power.
- If there is no status indication - battery is fully discharged.

HOW TO STORE MICROPHONE

The microphone unit has Lithium-polymer battery. Do not store it in unfavourable temperatures, including, but not limited to, leaving it in the hot sun. Elevated temperature and allowing the battery to sit at the 100% maximum charge voltage for extended periods of time explains the shorter than expected battery life.

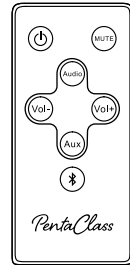
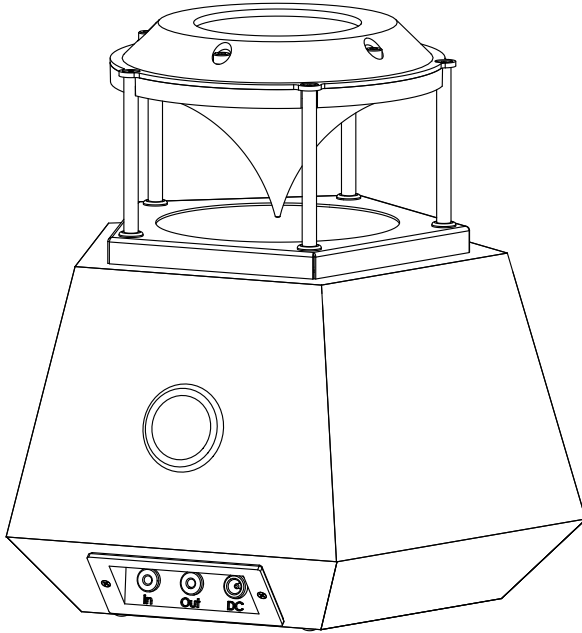
Microphone IR Remote Control Operating Range

As the microphone is multifunctional device, it can also be operated as remote control using infrared transmission to control the PentaClass. It is necessary to point the remote directly at the PentaClass.

The remote will function well within a radius of about 7 meters (23 feet) and in 140 degrees angle from the PentaClass IR sensor location level. If the PentaClass does not respond to the remote control, move a little closer.

Certes PentaClass Models

PentaClass A



PentaClass A is a specially designed multimedia system for classrooms with an omnidirectional 360° soundfield. This solution involves creating simple audio connections by using audio cables. It is suitable for classrooms or meeting rooms where there is no need for voice amplification or wireless Bluetooth connectivity.

PentaClass A also is perfect for daisy chain as slave speaker.

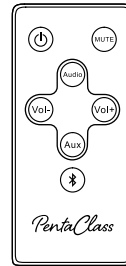
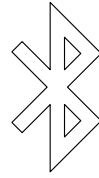
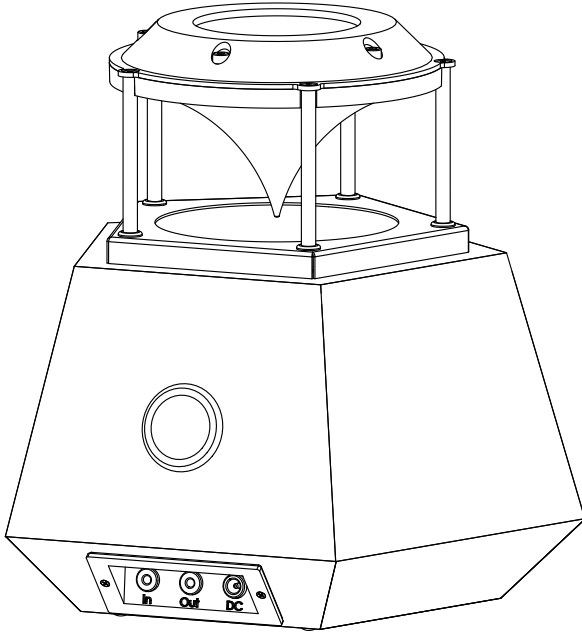
Thanks to the modular system, you can make the following upgrades:

- Certes PentaClass A upgrade to Certes PentaClass AB (Bluetooth version) by additionally ordering Bluetooth Kit (part no. 100111 Bluetooth module).
- Certes PentaClass A upgrade to Certes PentaClass AM (Microphone version with Bluetooth). Simply purchase the upgrade pack (part no. 106100 Microphone)
- Certes PentaClass A upgrade to Certes PentaClass ABM (Microphone version with Bluetooth). Simply purchase the Microphone upgrade pack (part no. 106100 Microphone) and Bluetooth Kit (part no. 100111 Bluetooth module).

NOTE

* Bluetooth and RF modules for the upgrade packs should be installed by trained personal of dealer or repair service.

PentaClass AB



PentaClass AB is a multimedia classroom system with omnidirectional 360 degree soundfield. It has been designed for both wired and wireless audio connectivity with a Bluetooth audio-ready device. PentaClass AB is the perfect solution for contemporary teachers using Bluetooth-enabled devices. PentaClass AB is recommended for rooms where voice amplification is unnecessary.

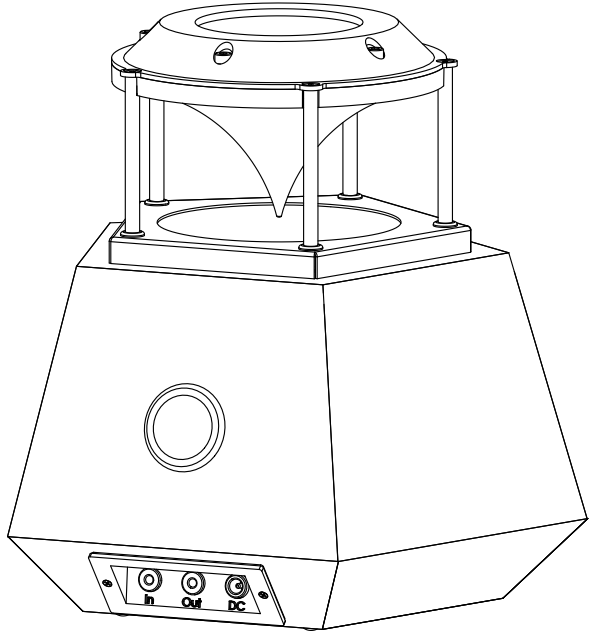
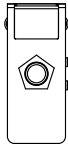
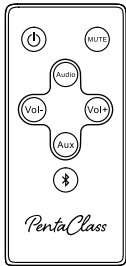
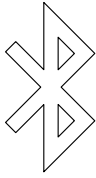
Thanks to the modular system, you can make the following upgrades:

- Certes PentaClass AB upgrade to Certes PentaClass ABM (Microphone version with Bluetooth). Simply purchase the Microphone upgrade pack (part no. 106100 Microphone).

NOTE

Bluetooth and RF modules for the upgrade packs should be installed by trained personnel of dealer or repair service.

PentaClass ABM



PentaClass ABM is a fully equipped omnidirectional classroom audio system with built-in Bluetooth and teachers / presenters microphone.

The wireless 2.4 GHz microphone (which is designed for comfortable all day use), the Bluetooth connectivity and all the many other features allow you to experience all the benefits offered by PentaClass.

Certes PentaClass AB upgrade to Certes PentaClass ABM (Microphone version with Bluetooth). Simply purchase the Microphone upgrade pack (part no. 106100 Microphone).

PentaClass microphone

Certes PentaClass ABM comes with the smallest teacher's microphone on the market available today, which is not bigger than a thumb, with a size of 60x25x13mm (2,36"x0,79"x0,39"), it weighs just 20 grams (0,71 ounces).

MICROPHONE FEATURES

2-in-1

The microphone has dual functionality - the microphone and a remote control. When it is not used for voice transmitting, it serves as a remote control.

FREQUENCY HOPPING

This ensures that only the cleanest frequency bands are automatically selected for the connection between the microphone and PentaClass.

UN-COMPRESSED VOICE

The PentaClass microphone uses a state-of-the-art transmitter and receiver that operate in the 2.4 GHz worldwide license-free band. Thanks to digital transmission, you get pristine, high-definition voice reproduction.

ACOUSTIC FEEDBACK CANCELLATION

The dual microphone system with AGC (automatic gain control) minimises the possibility of getting acoustic feedback.

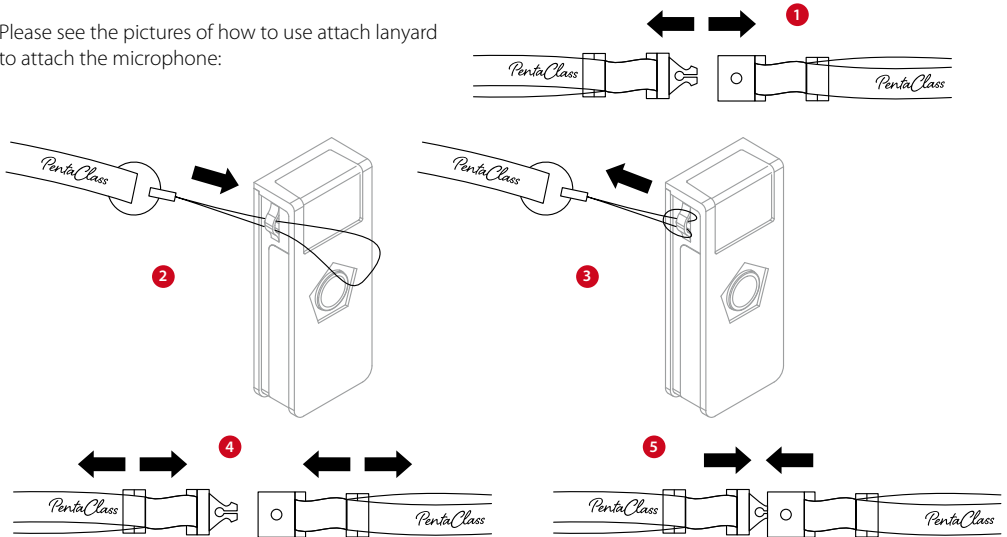
TWO WEARING OPTIONS

Thanks to its size, the microphone can be worn with a lanyard or clip. Just choose the option that suits you the most.

MICROPHONE LANYARD

Certes PentClass microphone lanyard is designed for everyday comfortable use. It has adjustable length from 55cm – 85cm, soft nylon material with safety break-away clip.

Please see the pictures of how to use attach lanyard to attach the microphone:



- 1 Split lanyard into two pieces using safety break-away clip.
- 2 Loop the lanyard strap through the lanyard holes located on both sides of the microphone.
- 3 Pull the strap through until it is tight.
- 4 Adjust length using 2 clips located in each side of lanyard.
- 5 Connect breakaway safety clip.

Safety break-away clip also can be used as everyday clip for easiest lanyard taking off your neck.

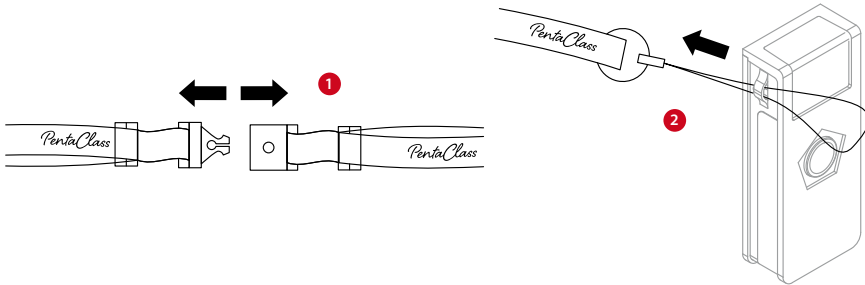
For better microphone performance adjust microphone lanyard length as short as possible to get microphone closer to your mouth.

MICROPHONE CLIP

Thinking of our user comfort we have also designed microphone clip what can be used when the lanyard is not so suitable for use.

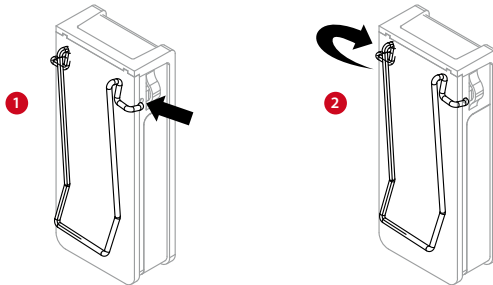
For a better result, before you attach microphone clip, please take off lanyard from the microphone:

- 1 Split lanyard into two pieces by using safety break-away clip.
- 2 Unloop the lanyard strap through the lanyard holes located on both sides of the microphone.



Please see the pictures of how to attach microphone clip:

- 1 Put the one end of the clip in a clip-hole located on the side of microphone and gently push until it fits into place.
- 2 Take other end of clip, gently stretch it and put the another end of the clip in a clip-hole what is located on the opposite side of microphone and gently push until it fits into place.



To reattach clip from the microphone - gently pull microphone clip to the sides so you can take it off from one and another clip-hole.

For better microphone performance please try to clip it on the clothes as near as possible to the mouth.

NOTE

Be careful when attaching clip - try to not scratch the plastic parts of microphone.

Operational Description

Turning on the PentaClass

- 1 Plug in the power adapter to the DC - Plug-in.
- 2 Plug in power cord to wall outlet 100-240V AC.
- 3 To start speaker push On/Off button on the remote control.

Connectivity

All versions of PentaClass have different connectivity options, so depending on the PentaClass system you have purchased, please choose the right one that fits you.

Connecting to Device Using Aux Input

This type of connectivity is available for all PentaClass versions:

- 1 Connect audio device (phone, PC or another) using 3.5mm mini Jack male/male cable to the AUX input located on speakers connector plate.
- 2 Start the speaker.
- 3 Playback the sound from your device. Please note - it is recommended to set sound level up to 60% on your device to avoid sound distortion! Control volume by using volume up/down buttons of units remote control.

Connecting to Device Using Bluetooth

Only PentaClass AB and PentaClass ABM versions have Bluetooth connectivity. PentaClass A version has no Bluetooth connectivity unless you have upgraded PentaClass A version with Bluetooth Kit (part no. 100111 Bluetooth module).

COMMON BLUETOOTH SIGNAL SOURCES

- Mobile phone
- Computer
- Tablet
- Other device incorporating Bluetooth technology.

To activate Bluetooth by units remote control please do the following:

- 1 Turn on the speaker.
- 2 Press Bluetooth button to activate Bluetooth channel.
- 3 **PentaClass speaker Status indication should start blinking in blue.** This command will activate Bluetooth channel and it will become visible for the Bluetooth devices for 1,5 minutes.
- 4 Via Bluetooth settings of your device please find Bluetooth device called PentaClass-000000.... (last 6 symbols may differ as they shows mac address of the module) in your phone/PC BT settings.
- 5 Connect your device to Bluetooth channel.

NOTE

- Bluetooth channel is closed by default due to security reasons.
- Bluetooth channel cannot be opened while PentaClass is linked to the microphone.

- There is no password for the Bluetooth connection.
- Once Bluetooth device has established connection to the PentaClass, it will be held inside memory and you don't need to reopen Bluetooth channel as long as you have no need to connect another audio source device.
- Due to security reasons Bluetooth connection must be activated from your Bluetooth device every time you restart PentaClass.
- In case someone has connected to PentaClass without permission, You can erase paired Bluetooth by following these steps: While PentaClass is turned ON, open Bluetooth channel, and then push mute button, - PentaClass should Indicate white light.
- When PentaClass is connected to the audio source via Bluetooth, the Bluetooth connection stops when the microphone sends pairing command.

Connecting Microphone to the PentaClass

MICROPHONE PAIRING

The microphone pairing is designed to make it as easy as possible – one press of the button and the system is ready to use. You can use your own microphone with any PentaClass system in your school or facility so all you need to do is to follow these steps:

If you pair microphone with the same PentaClass you were paired last (Pairing Method1):

- A** Regardless of PentaClass status whether it is turned On or Off you can pair it with microphone.
- B** By turning microphone towards the PentaClass HOLD On/Off button on the microphone for THREE seconds – Microphone LED Indication will light green for 3 seconds and will change to orange light what confirms that the command has been sent to the PentaClass.
- C** Release microphones On/Off button.
- D** Status indication on the PentaClass will light Violet and then Orange or Yellow (depending on Aux input status – see Mixer description, followed by 3 short sound beeps, what means that microphone is paired successfully.

If you pair microphone with new PentaClass (Pairing Method 2):

- A** Regardless of PentaClass status whether it is turned On or Off you can pair it with microphone.
- B** By turning microphone towards the PentaClass HOLD On/Off button on the microphone for TEN seconds – Microphone LED Indication will light green for 3 seconds and will change to orange light what last for 7 seconds and the short Red light confirms that the command has been sent to the PentaClass.
- C** Release microphones On/Off button.
- D** Status indication on the PentaClass will light Violet and then Orange or Yellow (depending on Aux input status – see Mixer description, followed by 3 short sound beeps, that means the microphone is paired successfully.

NOTE

- Microphone can keep in its memory only last PentaClass pairing data, so if you use multiple PentaClasses with one microphone, please note to use Pairing Method 2 in case you are not pairing the last paired PentaClass.
- When PentaClass is connected to the audio source via Bluetooth, the Bluetooth connection stops when the microphone sends pairing command.
- You can use multiple PentaClass microphones per building as there are no interference between two classrooms next to each other and every microphone pairs point-to-point to exact PentaClass speaker.
- PentaClass microphone range is 15m and it has frequency hooping feature but in Wi-Fi busy environments range can be decreased. Please carefully check if the Wi-Fi don't interfere with paired PentaClass before installation.
- In case of loosing the link between microphone and PentaClass, radio module will try to re-establish connection within 15 seconds.

DISCONNECTING MICROPHONE

To disconnect microphone from the PentaClass just push the On/Off button on the microphone -> microphone will loose the link and PentaClass will remain turned On.

Power Saving Mode

Certes PentaClass audio system has automatic switching function after 20 minutes of inactivity. Microphone also has automatic sleep function when it is not linked to the PentaClass for a 1 minute.

Channel Mixer and Status Indication

System status indication

System status indication is feature that allows user to determine PentaClass status – rather it is turned ON or OFF or simply gets the signal from the remote control. Indication light is located on top of the PentaClass.

LIST OF SYSTEM STATUS INDICATION LIGHTS:

- None - PentaClass is turned OFF.
- Any colour - PentaClass is tuned ON.
- White - indicates status when the PentaClass resets settings or has just been plugged to Power outlet but is not turned ON yet.
- Green - default indication that shows that PentaClass is turned ON and AUX channel is opened.
- Red - Indicates that AUX channel is turned off. It is recommended to close AUX channel when PentaClass is connected to the long run audio cable which makes buzzing sound when the cable on one end is not connected to the audio source.
- Blue - PentaClass is connected to the Bluetooth device and AUX channel is turned Off.
- Orange - Microphone is connected to the PentaClass and Aux channel is turned Off.
- Bright Blue - PentaClass is connected to the Bluetooth device and AUX channel is turned On.
- Yellow - Microphone is connected to the PentaClass and Aux channel is turned On.
- Violet - Indicates that PentaClass receive IR signal from remote control unit.
- Blinking any colour - Mute function is activated.

There is also Audio preset illumination described on (⌋ page 24).

Channel Mixer




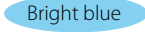

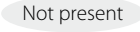

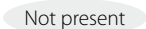

MIXER STATUS INDICATION

PentaClass can mix 2 channels simultaneously:

- Aux in + Bluetooth (AB and ABM models only)
- Aux in + Microphone (ABM model only)

Aux in channel can be turned off by pressing the AUX button on remote control (⌋ page 12).

To show the status of channel activity, every channel has its own colour indication showed on top of PentaClass:

	Aux	BT	Mic
Aux	 Green	 Bright Blue	 Yellow
BT	 Bright blue	 Blue	 Not present
Mic	 Yellow	 Not present	 Orange

NOTE

Bluetooth and microphone signal channels cannot be operated together at the same time to eliminate disturbances from each other.

Volume Adjustment

There are 2 different ways how to adjust volume:

- 1 Main PentaClass amplifier volume adjustment - can be controlled by using remote control or microphone volume up and down buttons
- 2 Audio source and microphone volume adjustment - can be controlled by the audio source device or the microphone.

NOTE

- When the PentaClass amplifier exceeds 80% of it's volume, there are bass cut-down to prevent sound from distortion.
- It's recommended to set source audio volume on 60% and then control volume using remote control.
- When the PentaClass is turned On for the first time or after reconnecting to power outlet, volume goes up to a default level, so be careful to decrease source volume level to prevent speaker damage.
- PentaClass has DRC - dynamic range compression what helps to prevent speaker from the damage if the music has been listened too loud.

CAUTION

Do not listen PentaClass in full volume for a long period of time, it can harm your hearing!

Feedback Cancellation

The system has 2 built in microphones for feedback cancellation. It means that when acoustic feedback appears, microphone tries to cancel feedback, but if the volume level is too high you will anyway hear squeezing sound. If that sound appears, please lower the microphone Volume by using Volume down buttons rather on remote control or microphone it self.

For a better performance it is recommended to locate speaker as far as possible away from the person who will be using the microphone.

Audio Presets

This function allows you to select pre-equalised audio settings as PentaClass has 4 audio presets for more functionality and better sound performance:

- Multimedia - is default preset tuned for multimedia as videos, clips or movies
- Voice - tuned for voice frequency
- Music - tuned for music listening
- Bass - tuned to emphasize low frequencies

To indicate active preset PentaClass status indication will flash exact times when you are switching between presets:

- Multimedia x 1
- Music x 3
- Voice x 2
- Bass mode x 4

System Reset

Bluetooth Reset

You can erase paired Bluetooth by following these steps:

- While PentaClass is turned ON, open Bluetooth channel (↪ page 20) - System indications should blink blue
- Then push mute button (↪ page 11), - PentaClass should Indicate white light what confirms that Bluetooth reset has been made

After resetting Bluetooth settings no one of the previously paired devices will stay in Bluetooth module memory. So after Bluetooth reset you will be needed to Erase or forget device for previously paired PentaClass in your Mobile phone, iPad or other Bluetooth ready device.

To pair your Bluetooth ready device once again, please repeat Bluetooth pairing steps (↪ page 20).

System Setting Reset

You scan reset system settings to default following these steps:

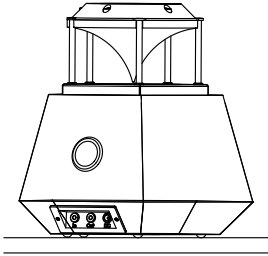
- Be sure that PentaClass is turned OFF (Status indicator is not illuminating), but PentaClass is connected to Power outlet.
- While PentaClass is turned OFF push mute button (↪ page 11), - PentaClass should Indicate white light.

Default system settings means that system resets volume, preset settings to factory default.

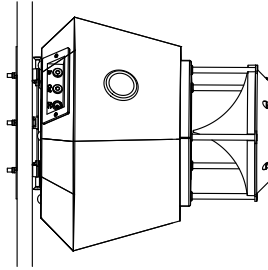
Installation

Determine Speaker Location

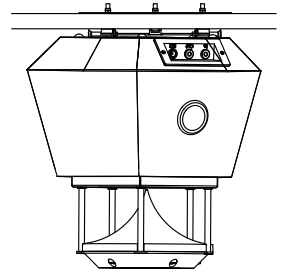
The speaker has three options for installation:



Place it on the table.

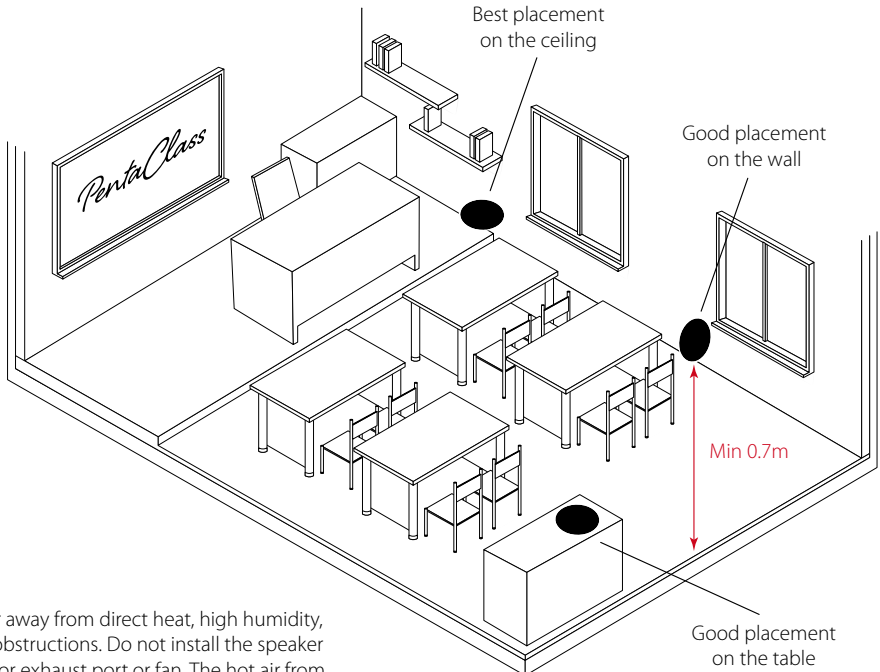


Mount it on the wall.



Or most common is to mount it on the ceiling.

First, consider that PentaClass should be placed on a surface min 0,7 meter off the ground. Find location as far as possible away from the teacher who will be using the microphone (PentaClass Model ABM). Choose location with maximally clear direct line of sight without obstacles (such as furniture, walls, people/listeners, etc.) between PentaClass speaker and Microphone for best performance (PentaClass Model ABM). The recommendation is to place/ mount PentaClass in the middle of the room where people/listeners are seated. Typically, installers choose a location near the projector in order to share the same power source.



NOTE

Install speaker away from direct heat, high humidity, and physical obstructions. Do not install the speaker near a projector exhaust port or fan. The hot air from the projector can cause overheating and fail.

Installation materials / tools needed

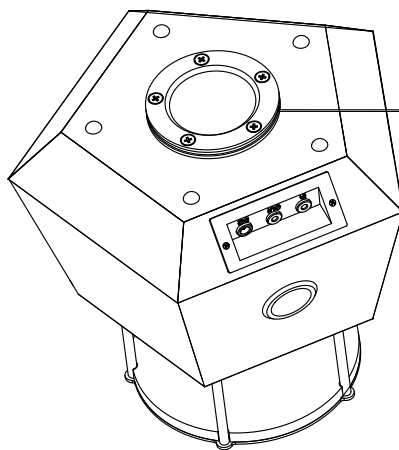
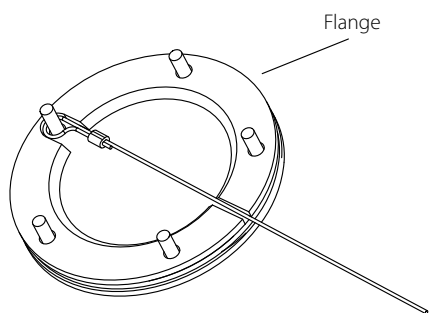
- Drill with 4 and 6mm bit
- Screw driver
- Flange and Ceiling Bracket
- Safety wire
- Anchors: Needed for mounting on drywall (3x)
- Screws: M4x14, Countersunk head screw DIN 965 (5x).
- Screws: wood screws or screws appropriate for anchors (3x)
- For False ceiling: Plate for false ceiling, M4x30, Countersunk head screw DIN 965 (3x) and M4 ISO7040 Nylon (5x).

Safety Rules for Installation



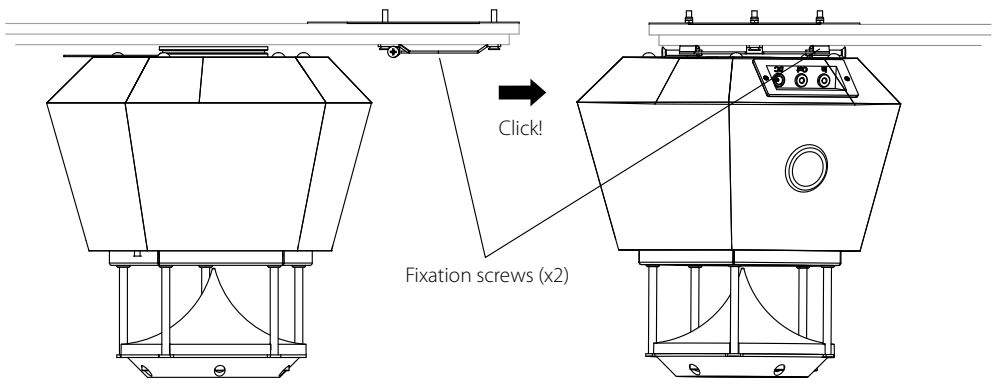
Use the suspension wire to make sure that it is safe to install the speaker.

Always attach the safety wire to the speaker as shown in the picture below. Fix carefully the other end of the safety wire to secure.



Mounting on the ceiling

- 1 Use the ceiling bracket as a template to mark the holes on the surface.
- 2 If concrete, drill three holes with 6mm diameter drill and plug in dowels (anchors).
- 3 Fasten ceiling bracket using the appropriate screws for the ceiling surface material with wood or plaster screws.
- 4 Use screws M4x14, Countersunk head screw DIN 965 (5x) to fasten flange to the speaker.
- 5 Insert the groove of the flange into bracket.
- 6 When the PentaClass is inserted into the bracket, turn the PentaClass to the necessary position according to your cable position.
- 7 Tighten two fixation screws from sides.
- 8 Use the safety wire to make sure it is safe to install the speaker.



Always attach the safety wire to the speaker as shown in the picture below. Fix carefully the other end of the safety wire to secure surface with proper fixation screw.

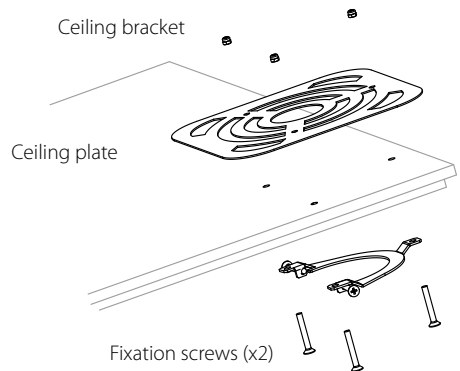
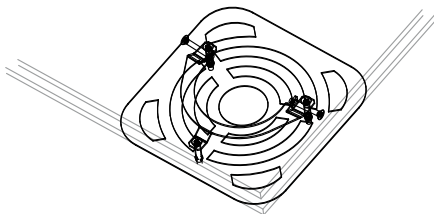
Mounting Procedure for Suspended Ceiling

- 1 Use Ceiling Plate as a template to mark hole locations on suspended ceiling tile.

PLEASE NOTE

Place the Ceiling plate along the corner of the ceiling tile.

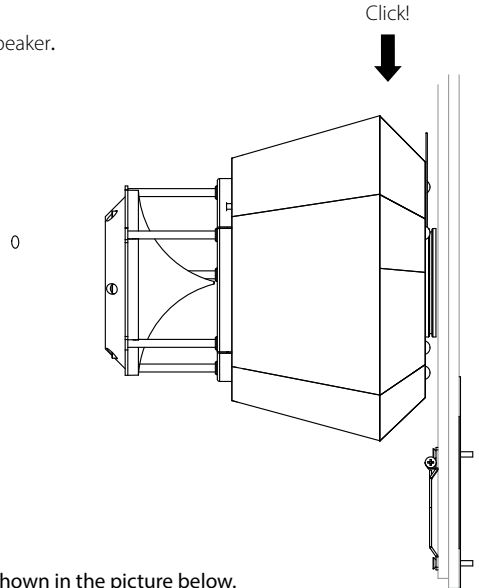
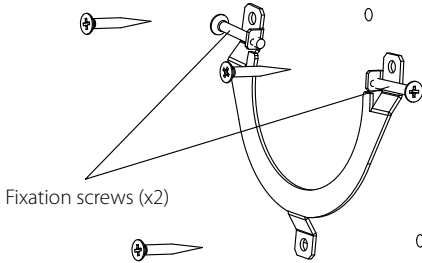
- 2 Drill three holes in ceiling tile with 4mm diameter drill.
- 3 Fasten ceiling bracket to the ceiling plate by using screws M4x30.
- 4 Use screws M4x14, Countersunk head screw DIN 965 (5x) to fasten flange to the speaker.
- 5 Put the suspended ceiling tile back to its original place.
- 6 Insert the groove of the flange into bracket.
- 7 When the PentaClass is inserted into the bracket, turn the PentaClass to the needed position according to your cable.
- 8 Tighten two fixation screws from the sides.
- 9 Use the safety wire to make sure safe installation of the speaker.



Always attach the safety wire to the speaker as shown in the picture below. Fix carefully the other end of the safety wire to secure surface with proper fixation screw.

Mounting procedure for wall

- 1 Use the ceiling bracket as a template to mark the holes in the surface.
- 2 If concrete, drill three holes with 6mm diameter drill and plug in dowels (anchors).
- 3 Fasten ceiling bracket using the appropriate screws for the ceiling surface material with wood or plaster screws.
- 4 Use screws M4x14, Countersunk head screw DIN 965 (5x) to fasten flange to the speaker.
- 5 Insert the groove of the flange into bracket (pic. below).
- 6 When the PentaClass is inserted into the bracket, turn the PentaClass to the necessary position according to your cable.
- 7 Tighten two fixation screws from sides.
- 8 Use the safety wire to make sure safe installation of the speaker.



Always attach the safety wire to the speaker as shown in the picture below. Fix carefully the other end of the safety wire to secure surface with proper fixation screw.



Low Voltage Connection

The speaker has AUX IN and AUX OUT 3,5 mm connectors and DC connector. First the low power barrel connector is plugged into the speaker DC connector. Plug-in audio signal cables if needed. PentaClass can be hooked up to a variety of different A/V devices. Please use high quality stereo/mono cables (3.5 mm mini jacks) when connecting your source equipment. Input voltage for the device: 18-19VDC, 2.2 A. Use only PentaClass original power supply unit.



High Voltage Connection

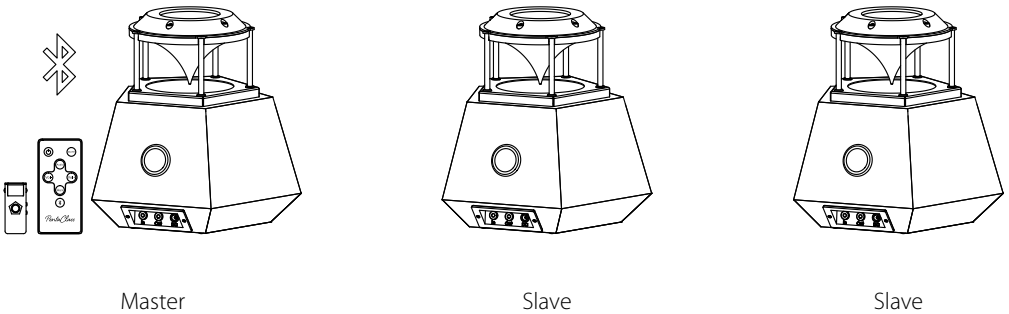
If applicable do not connect speaker to power supply until ceiling installation is completed! Use only PentaClass original power supply unit. The supply unit input voltage: 100-240VAC, 1A.

Daisy Chain

It is an option to connect several PentaClass speakers in Daisy Chain by using AUX channel. The signal input unit is Master PentaClass. It is recommended to connect not more than 3 speakers in Daisy chain.

CONNECTING PROCEDURE FOR DAISY CHAIN

- Use Audio cables to connect the speakers internally between each other. Use in and out connector outlets on speakers like shown in picture.
- Each speaker also needs a separate DC power adapter for power supply.
- Make reset of all speakers (see the resetting procedure).
- Turn on the speakers by using remote control unit.



CONTROL OF DAISY CHAIN UNITS

To control daisy chain units you can use the same remote control for all of them. Please note that if you turn remote control towards the one PentaClass, it can send IR commands also to another PentaClass.

The MAIN volume of all PentaClasses connected in daisy chain can be simultaneously adjusted via source volume that has been connected to Master PentaClass.

Troubleshooting

Most common Problems and Solutions

No sound is coming out of the PentaClass

- Please make sure the system is turned on and the Status indicator on the top of the PentaClass illuminates light.
- Make sure that the power supply of the speaker is connected appropriate.

Cannot connect the microphone

- Please check the battery status Most problems are related to low battery power in the microphone.

Low volume

- Check volume level on the speaker. Increase the signal strength from the source.

Feedback

- Decrease the Volume level.
- Increase distance between the speaker and microphone locations.

Signal Connection Problems

- Check the AUX connection cables and connectors.

Lack of Bass

- As PentaClass has specially tuned audio frequencies in full amplifier volume lower frequencies are cut down to hear bass better, decrease Main volume of PentaClass and increase source volume.
- Try different PentaClass presets.

Remote control doesn't work

- Check the batteries of the remote control - replace to new one if necessary.
- Check the battery status of the microphone - charge if necessary.

Pentaclass Technical specification

INPUT SOURCE SPECIFICATIONS

Stereo Sources	Maximum input voltage should not exceed 300 mV in AUX input. Do not use any multi-channel sources like 3-channel, Dolby Digital 5-channel, etc.
Mono Sources	Maximum input voltage should not exceed 150 mV per input channel.
Line Level Sources	Although preamps, projector outputs, and music mixers are popular, it is possible to "overdrive" the PentaClass with these devices, leading to premature failure and a loss of warranty coverage.

SPEAKER SPECIFICATION

Frequency Response	80 Hz - 20 kHz
Output	45 W @ 8 Ω
Loudness	86 dB
Signal to noise ratio (typical)	106 dB
Total harmonic distortion + noise (typical)	0.07% @ PO = 1 W
Inputs	1 x AUX, 3.5 mm stereo
Output	1 x AUX, 3.5 mm stereo, mixed
Bluetooth (only in AB and ABM models)	Range up to 15 m (depends on wireless environment)
Microphone receiver (only in ABM model)	2.4 GHz radio frequency with frequency hopping
Power Requirements	110V/240V AC 50-60Hz 1A
Power saving mode	Turning off system after 20 min. inactivity
Amplifier	Class D, 44 100 kHz sample rate, 24 bit resolution, digital audio processor (DAP), dynamic range compression (DRC), soft mute
Mixer	Built in AUX, Bluetooth (AB and ABM models), and AUX, microphone (ABM model)
Control	Infrared remote control with 7 buttons (Speaker power on/off, Mute, Audio presets, Speaker volume up, Speaker volume down, AUX on/off, Bluetooth on/off (enabled for AB and ABM models))
Built in equalizer presets	Speech, multimedia, music
Acoustics	Omni-directional, plywood sound box, fine tuned port. Designed for rooms up to 120 m ² (1291 sq ft).
Dimensions (W x H x D)	24 x 24 x 23 cm (9.45 x 9.45 x 9.06 in)
Weight	3 kg (6.61 lbs)
Mounting	Universal wall/ceiling mount supplied
Included accessories	Power supply, power cord, remote control, wall/ceiling mount, user manual

MICROPHONE SPECIFICATION (only in ABM model)

Signal transmitter	2.4 GHz radio frequency with frequency hopping
Built in microphone	Dual microphone system with feedback cancellation
Level control	AGC (Auto Gain Control)
Total harmonic distortion (typical)	0.004 % @ 1 KHz
Signal to noise ratio (typical)	92 dB
Power	Built in rechargeable Li-Po battery
Battery life with full charge (active mode)	up to 6 hours
Recharging time	up to 4 hours
Dimensions (W x H x D)	2.5 x 6.0 x 1.3 cm (0.79" x 2.36" x 0.40")
Weight	20 g (0.71 ounces)
Charger	Micro USB supplied. Power Requirements 110V/240V AC 50-60Hz 1A
Control in remote control mode	Infrared remote control built in with 3 multifunctional buttons (Speaker power on/off, Mute, Audio presets, Speaker volume up, Speaker volume down, AUX on/off, Bluetooth on/off)
Control in microphone control mode	3 multifunctional buttons (Microphone on/off, Mute, Microphone volume up, Microphone volume down)
Wearing options	Lanyard or clip (both included)
Included accessories	Charger, lanyard, clip

Features and specifications are subject to change without prior notice.

PentaClass

hear. understand.

www.pentaclass.com