PANPHONICS

Manual

AA-160e / AA-160mm AMPLIFIER

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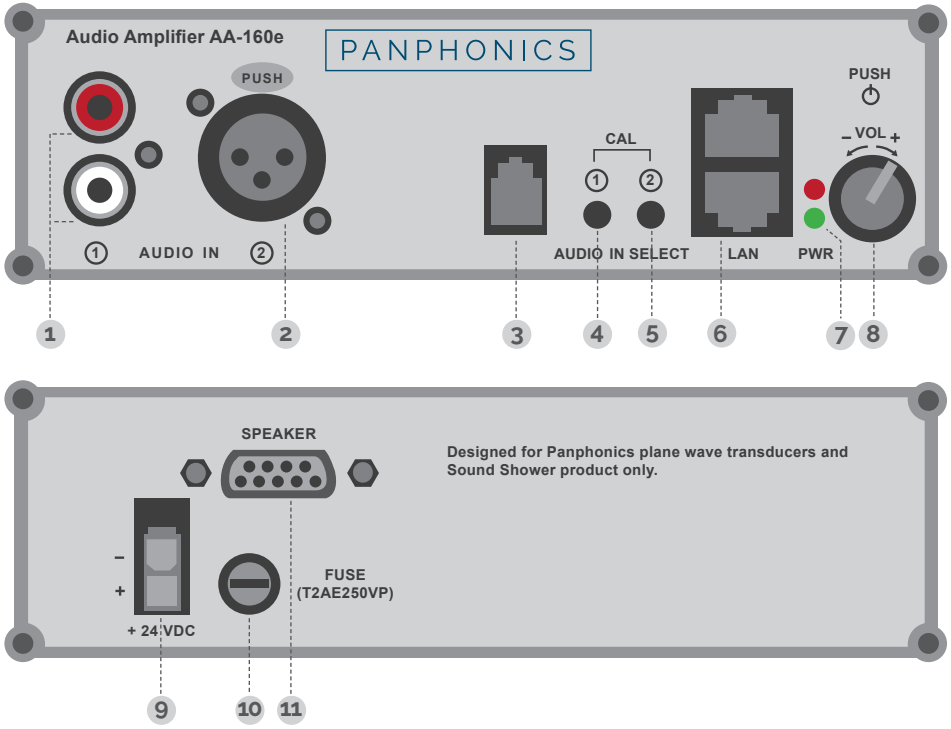
1. PRODUCT DESCRIPTION

The Panphonics AA-160e and AA-160mm audio amplifiers are capable of driving Panphonics speakers with high-quality audio. AA-160 amplifiers are designed to drive Panphonics directional audio elements at SPL levels of 85dBA. Amplifiers are optimized to handle the reactive load of the Panphonics audio elements. AA-160 amplifiers can be operated either manually or remotely over LAN. Panphonics Automatic Volume Control feature monitors the background noise level and starts to increase the output volume of the AA-160 amplifier after the noise exceeds a set base level. This feature keeps the audio at audible level in a changing environment. AA-160mm amplifier is internally equalized for more suitable music reproduction.

2. QUICK START INSTRUCTIONS



Make sure you have all the provided equipments (AA-160 amplifier/Power Supply/Power cord/Microphone cable).

Connect Panphonics speaker D-connector to amplifier (11). Connect ambient microphone to amplifier (3). Connect RCA or XLR cable to the media player and to amplifier (1). Connect Power Supply cables (9). Green LED (5) starts blinking when powered.

Select input source by pressing button 1 (4) to select RCA or by pressing button 2 (5) to select XLR. XLR is default source. Place the ambient microphone to a suitable place where it can measure the ambient noise level of the area where speakers are installed. Calibrate automatic volume control by pushing both selector buttons (4 & 5) at the same time (Please note that the calibration noise is played at high volume).

3. CONNECTIONS & CONTROLS IN AA-160e AMPLIFIER

1. RCA input
Input for unbalanced connections. The connector is summed to mono internally. When connecting a media player set the media players output volume (when adjustable) as high as possible without causing any distortion to the AA-160 amplifiers input stage. If the full volume setting causes distortion to the input of the AA-160 amplifier, lower the media players output volume. If the media players full volume setting does not provide high enough overall volume increase the AA-160 amplifiers input sensitivity by using a Telnet connection over LAN (see section 5,4). Set the final output volume by using the AA-160 amplifiers Volume Knob (8).

2. XLR input (Default)
Input for balanced connections. When connecting a media player set the media players output volume (when adjustable) as high as possible without causing any distortion to the AA-160 amplifiers input stage. If the full volume setting causes distortion to the input of the AA-160 amplifier, lower the media players output volume. If the media players full volume setting does not provide high enough overall volume increase the AA-160 amplifiers input sensitivity by using a Telnet connection over LAN (see section 5,4). Set the final output volume by using the AA-160 amplifiers Volume Knob (8).

3. Ambient Microphone Input
Input for the ambient microphone. The microphone monitors the ambient noise level when using the Automatic Volume Control feature. Use only the provided microphone. The microphone can be disconnected if the Automatic Volume Control feature is not in use.

4. Input selector for the RCA input
Press to choose the RCA input for the incoming signal.

5. Input selector for the XLR input
Press to choose the XLR input for the incoming signal.

6. Ethernet ports (bridged)
For connecting the AA-160 amplifier to the Local Area Network (LAN). Use a standard Ethernet cable (not provided). Bridged ports make linking other devices possible. Use a Telnet connection to operate the AA-160 over LAN (see section 5).

7. Power and command indicator LEDs
When powered Green LED starts to blink rapidly. When on standby, Green LED blinks slowly. Red LED blinks when the AA-160 receives a new command or setting.

8. Volume knob / standby switch
Rotate to adjust the output level of the AA-160 amplifier. Push to toggle between

standby mode on / off. The volume knob is a Digital rotary encoder- type.

9. Power input connector
Input for the provided power supply.

10. Fuse
To replace the fuse open the fuse holder by pushing it gently and turn counter-clockwise. Replace with a fuse type T2AE250VP.

11. Speaker out connector
Amplifier output for a speaker. Use only Panphonics speakers and audio elements.

12. Automatic Volume Control calibration
Press the buttons (4 & 5) simultaneously to calibrate the Automatic Volume Control feature manually.

4. AUTOMATIC VOLUME CONTROL FEATURE

Panphonics Automatic Volume Control feature monitors the background noise level and starts to increase the output volume of the AA-160 amplifier after the noise exceeds a set base level. This feature keeps the audio at audible level in a changing environment.

Before the Automatic Volume Control feature is ready to use the AA-160 amplifier must be calibrated. This can be made either directly from the unit or remotely over the LAN.

The ambient microphone and a speaker must be connected to the AA-160 amplifier and installed to their final positions. The ambient microphone needs to be placed in the same space as the speaker, with a maximum radius of 5 meters from the speakers. Do not install the microphone directly in to the speakers sound field.

Media player should be turned off during calibration.

Make sure that the sound field coverage is clear from any items during the calibration and the person calibrating the unit is not standing in front of or directly beneath the speaker. The calibration signal consists of a short bursting noise, which can be harmful for hearing.

The calibration should be made during the time of average background noise level.

The base level is automatically set during a calibration procedure. In some circumstances the automatic base level setting will not give the optimal results. It is sometimes more convenient to setup the parameter manually (over the LAN) e.g. when there is excessive non-stop noise during the installation. The correct base level setting can be found by using e.g. sound pressure level meter during the time of average background noise level. To set the base level manually, see section 5,6,2.

Please note that the calibration routine needs to be carried out again should there be any major changes in the installation environment!

5. OPERATION OVER LAN

AA-160 series amplifier can be connected to the standard Local Area Network (LAN) through the Ethernet port. To control the AA-160 amplifier a Telnet connection should be used. It is possible to adjust all the general functions through the network. There are also parameters for fine-tuning the Automatic Volume Control feature. The full command reference list is at the end of this section. The default IP address/network mask is 192.168.1.111/ 255.255.255.0. The default Telnet password is “passu” *. *If Mac OS X terminal Telnet client is used, the password might be asked twice because of the echoing defaults

1. Configuring the device's IP address.

1. Show current IP settings.
   Command: ip
   Response: IP #.#.#.# / #.#.#.# GW=#.#.#.#

2. Change current IP address.
   Command: ip #.#.#.#
   Response: OK

The new value does not take effect until "ip update" command is sent. After "ip update" a new connection must be made and settings saved by issuing "save setup". If the new settings are not saved after "ip update" the unit will reboot after about 5 minutes and return back to the old settings. Also, if power is lost before saving the new settings with “save setup” then unsaved settings will be returned back to the old settings.

3. Change current subnet mask settings.
   Command: ip mask #.#.#.#
   Response: OK

The new value does not take effect until "ip update" command is sent. After "ip update" a new connection must be made and settings saved by issuing "save setup". If the new settings are not saved after "ip update" the unit will reboot after about 5 minutes and return back to the old settings. Also, if power is lost before saving the new settings with “save setup” then unsaved settings will be returned back to the old settings.

4. Change current gateway settings.
   Command: ip gw #.#.#.#
   Response: OK

The new value does not take effect until "ip update" command is sent. After "ip update" a new connection must be made and settings saved by issuing "save setup". If the new settings are not saved after "ip update" the unit will reboot after about 5 minutes and return back to the old settings. Also, if power is lost before saving the new settings with “save setup” then unsaved settings will be returned back to the old settings.

5. Take new ip settings in use.
   Command: ip update
   Response: NA

After "ip update" a new connection must be made and settings saved by issuing "save setup". If the new settings are not saved after "ip update" the unit will reboot after about 5 minutes and return back to the old settings. Also, if power is lost before saving the new settings with “save setup” then unsaved settings will be returned back to the old settings.

6. Change password of the ip connection.
   Command: ip password xxxxx xxxxx
   Response: OK

New password must be repeated twice after the command. Passwords are to be separated by a space character. The default password is “passu”. Maximum length of the password is 16 characters.

7. Show MAC number of the unit.
   Command: mac
   Response: MAC #-#-#-#-#-#

2. Changing standby mode ON/OFF

1. Amplifier standby ON.
   Command: PWRON
   Response: STATUS##,ON

2. Amplifier standby OFF.
   Command: PWROFF
   Response: STATUS##,OFF

3. Amplifier status query.
   Command: STATUS Response: STATUS##,ON/OFF

Returns ON/OFF depending on the amplifier state.

3. Selecting Input.

The desired input can be selected by the following commands.

1. Select RCA input.
   Command: input rca
   Response: OK

2. Select XLR input.
   Command: input xlr
   Response: OK

4. Changing the input sensitivity.

The minimum is "PRE00" which corresponds the amplitude 1:1. The maximum is "PRE20" and it corresponds +20dB amplitude. If the setting should be permanent (even during the power failure), use the "PRESAVE" command to save the setting.

1. Read current gain setting from the unit.
   Command: PREREAD
   Response: PRE=##

2. Set input sensitivity.
   Command: PRE##
   Response: STATUS00,ON
   Range: 00-20 (default 10)

3. Save input sensitivity setting to Flash memory.
   Command: PRESAVE
   Response: OK

INPUT SENSITIVITY CHART:

RCA input PRE setting	Max in Vp-p
0	>4
10	1.32
15	0.8
20	0.45

XLR input PRE setting	Max in Vp-p
0	> 4
10	1.60
15	0.78
20	0.45

5. Adjusting Volume

Setting the volume corresponds directly to the AA-160 amplifiers volume encoder (see section 3,8). If the setting should be permanent (even during the power failure), use the "VOLSAVE" command to save the setting.

1. Read current volume setting from the unit.
   Command: VOLREAD
   Response: VOL=##

2. Set volume.
   Command: VOL##
   Response: STATUS##,ON
   Range: 00-37

3. Save volume to Flash memory.
   Command: VOLSAVE
   Response: OK

6. Adjusting the Automatic Volume Control feature

After the calibration procedure the feature can be switched on or off and the base level setting can be changed. The numerical base level value is given in decibels (dB) range. If the settings should be permanent (even during the power failure), use the "amb save" command to save the settings. If it's needed to restore the factory parameter settings for the Volume Control, use the "amb factory" command.

1. Run calibration routine for Volume Control.
   Command: amb calibrate
   Response: NA

2. Set the base level.
   Command: amb baselevel ##
   Response: OK: Value set
   Range: 31-69 (default 50dBA)

3. Set Volume Control active.
   Command: amb on
   Response: OK

4. Set Volume Control inactive.
   Command: amb off
   Response: OK

5. Save Volume Control parameters to Flash memory.
   Command: amb save
   Response: OK

6. Restore Volume Control factory settings and store parameters to Flash memory.
   Command: amb factory
   Response: OK

7. Fine-tuning the Volume Control feature

The following parameters and commands are used to change and monitor the behavior of the Automatic Volume Control. If the settings should be permanent (even during the power failure), use the "amb save" command to save the settings. If it's needed to restore the factory parameter settings for the Volume Control, use the "amb factory" command.

1. View last read rms values of line in and MIC.
   Command: adc
   Response: OK: ADC media=-##, mic=##

2. Change how much gain is increased according to ambient noise.
   Command: amb slope #.##
   Response: OK: Value set
   Range: 0.01-1.49 (default 0.8)

Increase in value equals increase in gain.

3. Maximum gain due to ambient noise.
   Command: amb maxgain ##
   Response: OK: Value set
   Range: 2-39 (default 20dB)

Increase in value equals increase in gain.

4. Step time for gain increases.
   Unit dB/100ms.
   Command: amb step_up #.####
   Response: OK: Value set
   Range: 0.0011-0.99 (default 0.15)

Smaller value equals longer response time.

5. Step time for gain decreases.
   Unit dB/100ms.
   Command: amb setup_down #.##
   Response: OK: Value set
   Range: 0.01-0.99 (default 0.3)

Smaller value equals longer response time.

6. Minimum target level change before adjustment (hysteresis).
   Command: amb hysteresis #.###
   Response: OK: Value set
   Range: 0.001-4.999 (default 1dB)

7. Save Volume Control parameters to Flash memory.
   Command: amb save
   Response: OK

8. Restore Volume Control factory settings.
   Command: amb factory
   Response: OK

9. View current parameters.
   Command: amb parameters
   Response: ##,*###,##,*###,*###,*####,##,##,#,*###,*##,*###,#,#,*###,*####,###

Show current ambient control parameters, all values printed as integers. Small float values are multiplied by 1000. These are marked with an asterisk. The values are printed in the following order: BaseLevel, Slope, MaxGain, StepUp, StepDown, Hysteresis, SpeakerGain, LineSquelchLevel, LinePeakTolerance, LinePeakDecay, SpeakerGainStepUp, SpeakerGainStepDown, AmbientMaskClearance, AmbientMaskDelay, AbientFollowStepUp, AmbientFollowStepDown, AmbientForceDownInterval

10. View current status
    Command: amb status
    Response: G,-8,0,71,F,0,0,1,0,L,4,48,0,0,M,50,-53,H,4268

Show current levels and ambient control status. The last value is a running average of the ambient flag during the last 20000 samples. To get the actual average divide the value by 20000. The data is printed out in the following order: LinePeakLevel, AdjustGain, SpeakerGain, LineAtPeak, LineOverSquelch, AmbientFlag, PeakPlot, MicMaskLevel, AmbientLevel, TargetGain, TargetErrInt, LastMic, LastLine, AmbientHistory

8. Commands Reference list

1. Show current IP settings.
   Command: ip
   Response: IP #.#.#.# / #.#.#.#
   GW=#.#.#.#

2. Change current IP address.
   Command: ip #.#.#.#
   Response: OK

3. Change current subnet mask settings.
   Command: ip mask #.#.#.#
   Response: OK

4. Change current gateway settings.
   Command: ip gw #.#.#.#
   Response: OK

5. Take new ip settings in use.
   Command: ip update
   Response: NA

6. Change password of the ip connection (max 16 characters).
   Command: ip password xxxxx xxxxx
   Response: OK

7. Show MAC number of the unit.
   Command: mac
   Response: MAC #-#-#-#-#-#

8. Select RCA audio input.
   Command: input rca
   Response: OK

9. Select XLR audio input.
   Command: input xlr
   Response: OK

10. Read current gain setting from the unit.
    Command: PREREAD
    Response: PRE=##

11. Set input sensitivity.
    Command: PRE##
    Response: STATUS00,ON
    Range: 00-20 (default 10)

12. Save input sensitivity setting to Flash memory.
    Command: PRESAVE
    Response: OK

13. Read current volume setting from the unit.
    Command: VOLREAD
    Response: VOL=##

14. Set volume.
    Command: VOL##
    Response: STATUS##,ON
    Range: 00-37

15. Save volume setting to Flash memory.
    Command: VOLSAVE
    Response: OK

16. Amplifier status query.
    Command: STATUS Response: STATUS##,ON/OFF

17. Amplifier power on command.
    Command: PWRON
    Response: STATUS##,ON

18. Amplifier power off command.
    Command: PWROFF
    Response: STATUS##,OFF

19. Turn mute on.
    Command: mute on
    Response: OK

20. Turn mute off.
    Command: mute off
    Response: OK

21. Restore factory defaults for setup data.
    Command: factory setup
    Response: OK

22. Save current setup data.
    Command: save setup
    Response: OK

23. Reboot the unit.
    Command: RESET
    Response: NA

24. Get Firmware version number.
    Command: VERSION
    Response: v1.0i

25. Run calibration routine for ambient control.
    Command: amb calibrate
    Response: NA

26. View last read rms values of line in and MIC.
    Command: adc
    Response: OK: ADC media=-##, mic=##

27. Set the base level.
    Command: amb baselevel ##
    Response: OK: Value set
    Range: 31-69 (default 50dBA)

28 Set Ambient Control active.
    Command: amb on
    Response: OK

29. Set Ambient Control inactive.
    Command: amb off
    Response: OK

30. Change how much gain is increased according to ambient noise.
    Command: amb slope #.##
    Response: OK: Value set
    Range: 0.01-1.49 (default 0.8)

Increase in value equals increase in gain.

31. Maximum gain due to ambient noise.
    Command: amb maxgain ##
    Response: OK: Value set
    Range: 2-39 (default 20dB)

Increase in value equals increase in gain.

32. Step time for gain increases.
    Unit dB/100ms.
    Command: amb step_up #.####
    Response: OK: Value set
    Range: 0.0011-0.99 (default 0.15)

Smaller value equals longer response time.

33. Step time for gain decreases.
    Unit dB/100ms.
    Command: amb setup_down #.##
    Response: OK: Value set
    Range: 0.01-0.99 (default 0.3)

Smaller value equals longer response time.

34. Minimum target level change before adjustment (hysteresis).
    Command: amb hysteresis #.###
    Response: OK: Value set
    Range: 0.001-4.999 (default 1dB)

35. Set new default value for speakergain.
    Command: amb speakergain ###
    Response: OK: Value set
    Range: 51-149 (default 72)

36. View current parameters.
    Command: amb parameters
    Response: ##,*###,##,*###,*###,
    ####,##,##,#,###,*##,*###,#,#,
    ###,####,###

Show current ambient control parameters, all values printed as integers. Small float values are multiplied by 1000. These are marked with an asterisk. The values are printed in the following order: BaseLevel, Slope, MaxGain, StepUp, StepDown, Hysteresis, SpeakerGain, LineSquelchLevel, LinePeakTolerance, LinePeakDecay, SpeakerGainStepUp, SpeakerGainStepDown, AmbientMaskClearance, AmbientMaskDelay, AbientFollowStepUp, AmbientFollowStepDown, AmbientForceDownInterval

37. View current status
    Command: amb status
    Response: G,-8,0,71,F,0,0,1,0,L,4,48,0,
    0,M,50,-53,H,4268

Show current levels and ambient control status. The last value is a running average of the ambient flag during the last 20000 samples. To get the actual average divide the value by 20000. The data is printed out in the following order: LinePeakLevel, AdjustGain, SpeakerGain, LineAtPeak, LineOverSquelch, AmbientFlag, PeakPlot, MicMaskLevel, AmbientLevel, TargetGain, TargetErrInt, LastMic, LastLine, AmbientHistory

38. Save ambient control parameters to Flash memory.
    Command: amb save
    Response: OK

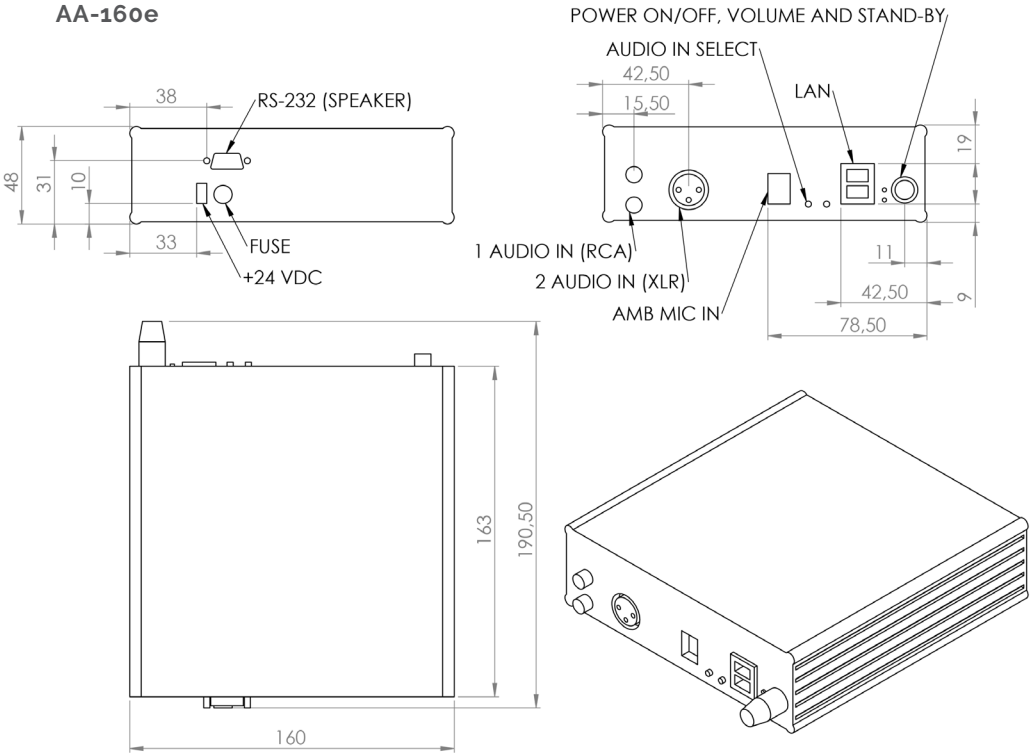
39. Restore Ambient Control factory settings and store parameters to Flash memory.
    Command: amb factory
    Response: OK

6. DIMENSIONS AND COLOURS

Amplifiers	AA-160e / AA-160mm
AA-160 Dimensions (HxWxD)	48 mm x 161 mm x 163 mm (1.89” x 6.34” x 6.42”)
AA-160 Weight (net)	0.8 kg (1.8 lbs)
Colour	Anodized Aluminium
Packing dimensions	40cm x 23cm x 6cm/1,5kg // 15.7” x 9.1” x 2.4” /3.3lbs

Packing: Single product packing on EPE and cardboard box, PSU included.

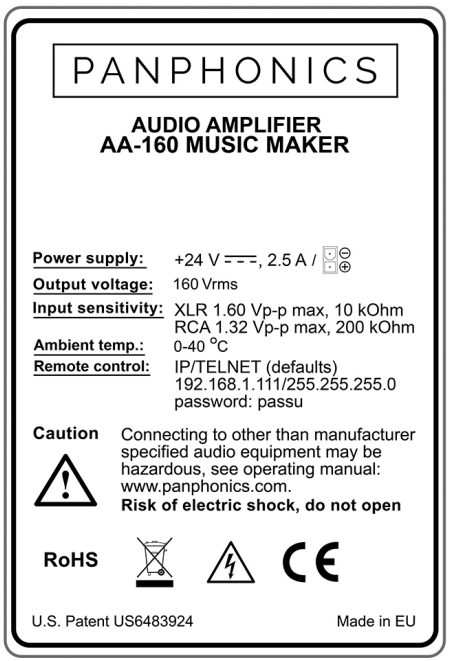
AA-160e



7. SPECIFICATIONS

Amplifiers	AA-160e	AA-160mm
Electrical Properties		
External Power Supply	+24 V DC, 2.5 A	
Input impedance, XLR	10 kOhm	
Input impedance, RCA	200 kOhm	
Input voltage, XLR	1.6 Vp-p	
Input voltage, RCA	1.32 Vp-p	
Rated Output	160 V rms (135 nF load)	
S/N Ratio	> 70 dB	
THD	< 0.05 @ 75% Rated Output	
Network Interface		
Physical Ethernet	100BASE-T, UTP cat 5E, 2 x RJ45 Ethernet (Bridged)	
Application	Telnet	
Default IP address	192.168.1.111	
Network mask	255.255.255.0	
Default Password	passu	
Audio Properties		
Output Frequency	min. 250 Hz – 16 kHz	Below 100 Hz – 16 kHz
Operational Conditions		
Temperature Range	0°C - 40°C (32°F - 72°F)	
IP Class	IP20	

Product lables of AA-160e and AA-160mm amplifiers



8. RESTORING FACTORY SETTINGS

Factory settings can be restored by keeping the standby button (#8) and both Input selector buttons (#4 & #5) pressed while connecting power supply to the unit.

9. TROUBLESHOOTING

If the sound cannot be heard,

- Make sure that the Power Supply is connected to the amplifier and the power is turned on (Green LED blinking rapidly)
- Make sure that the amplifiers volume level is not at its minimum level
- Make sure that all the cables have been connected correctly and the media player is turned on and it is functioning properly. If the media player has it´s own volume control, make sure the volume has been set at sufficient level
- Make sure that you have the right audio input channel selected
  - Audio in 1. (RCA)
  - Audio in 2. (XLR - default)

10. MAINTENANCE

The equipment is turned off by disconnecting mains power by removing the power supply unit from the mains socket. Notice that disconnecting the power plug only from the AA-160e does not disconnect the main power from the power supply unit. The Panphonics Sound Shower does not need periodical maintenance.

11. EU CONFORMITY

PANPHONICS

EU DECLARATION OF CONFORMITY

1. Product models: AA160-series

2. Panphonics Oy
   Luomannotko 3
   02200 Espoo
   Finland

3. This declaration of conformity is issued under the sole responsibility of the manufacturer.

4. Object of the declaration:
   Equipment: Amplifier for electrostatic loudspeaker
   Brand name: AA160
   Model/type: AA160e, AA160e MM, AA160 basic, AA160 basic MM

5. The object of the declaration described in point 4 is in conformity with the relevant Community harmonisation legislation:
   Low Voltage Directive (LVD) 2014/35/EU
   Electromagnetic Compatibility Directive (EMC) 2014/30/EU

6. References to the relevant harmonised standards used, or references to the specifications in relation to which conformity is declared:
   IEC 60065:2014 + A11:2017
   EN 55103-1:2009 + A1:2012
   EN 55103-2:2009

7. Signed for and on behalf of:

   Helsinki, 14th of May 2018

   Manufacturer: Panphonics Oy

   Matti Kontu, CEO

Directives and regulations involved:
2014/35/EU (LVD), 2014/30/EU (EMC), 2012/19/EU (WEEE), 2011/65/EU (RoHS)

2012/19/EU (WEEE):
Panphonics Oy is a member of the ICT Producer Co-operative -TY as of January 24th 2007. Panphonics Oy has been registered in the producer co-operative's membership register under the number 2306. Company's membership information has been forwarded to the Finnish Authorities. ICT Producer Co-operative-TY has been registered as a WEEE compliance scheme in the Pirkanmaa Centre for Economic Development, Transport and the Environment Producer register under the number PIRELY/555/07.00/2010.

2011/65/EU (RoHS):
Parts are defined and manufactured to meet RoHS-compliance.

Product Customs Codes:
cn-code 85184080

12. TERMS OF WARRANTY

Panphonics Oy warrants to the original purchaser that this Panphonics Oy's product (the "Product") will be free from defects in materials, design or workmanship, on the following terms and conditions:

Panphonics Audio Elements have been tested at the place of manufacture in accordance with the quality control of Panphonics Oy. Each notice of defects in the Product will be compared to the quality control record of the said Product. This Limited Warranty does not include deviations in audio performance characteristics of the Product if the performance characteristics entered into the quality control record have been correct and the purchaser cannot provide positive proof to the contrary, for example, inadequate transportation procedures.

1) The period of warranty will be twenty-four (24) months from the date the original purchaser took possession of the Product, or should have taken possession of the Product if the receipt of the Product was delayed due to a cause attributable to the purchaser. In case the original purchaser sells or otherwise assigns the Product to a new owner/user, the period of warranty will continue unaltered until the end of the original period of warranty.

2) This Limited Warranty is valid and enforceable only in the following states: European Community, Norway, Iceland and Switzerland.

3) During the period of warranty Panphonics Oy or its authorized maintenance service will either repair the defective Product or replace it with a new Product, at Panphonics Oy's option. Panphonics Oy will return the repaired Product or deliver a new Product to the purchaser in working order. All replaced parts and equipment will become the property of Panphonics Oy.

4) This Limited Warranty does include mechanical defects of the Product and significant deviations between technical data and performance characteristics of the Product.

5) The repaired or replaced Product will not be given extended or additional period of warranty.

6) This Limited Warranty does not include defects caused by normal tear and wear. In addition, this Limited Warranty will not be valid if:

I) The defect was due to
   a. The use of the Product either con trary to instructions or otherwise negligently;
   b. The Product being exposed to moisture, steam, extreme temperature or environment, or rapid changes in such, or corrosion or oxidation with corrosive materials, liquids or gasses or other way highly corrosive environment;
   c. The Product being altered, connected to another product, opened or repaired without authorization or the Product being repaired with spare parts not approved by Panphonics Oy;
   d. The Product being misused or installed incorrectly; or
   e. The Product having been in on an accident or been exposed to the elements or spilled over with food or liquid, or been affected by chemical substances or other events beyond the scope of influence of Panphonics Oy, including but without limitation to labour dispute and every other event Panphonics Oy cannot reasonably be expected to overcome, for example fire or other natural catastrophe, war, rebellion, seizure, monetary exchange control, mandatory legislation, orders of authorities, refusal of export license, scarcity of transportation, general scarcity, restrictions in the use of power, and defects and delays of subcontractor's delivery caused by the above-mentioned causes unless the damage has been direct consequence of a defect in material or design or workmanship;

II) The purchaser has not informed Panphonics Oy or its authorized maintenance service about the defect within thirty (30) days from the occurrence of the defect during the period of warranty;

III) The Product has not been returned to Panphonics Oy or its authorized maintenance service within thirty (30) days from the occurrence of the defect during the period of warranty;

IV) The serial number of the Product has been transferred, removed or damaged, or any number has been altered or is impossible to read;

V) The defect was caused by the malfunction of an electronic appliance not provided by Panphonics Oy;

VI) The defect was caused as a consequence of the Product being used with an accessory, which was not manufactured, approved or provided by Panphonics Oy, or the Product was connected to such accessory, or the Product was used for other purposes than instructed, or the Product has been connected to such electronic system, which does not operate customarily compared to the normal use of the Product;

VII) The defect was caused as a consequence of an acoustic or electric overloading of the Audio Element.

7) In order to be able to invoke this Limited Warranty, the purchaser must provide either

I) Readable and unaltered original sales receipt/warranty card, which clearly sets out the name and address of the seller, the date and place of the purchase, the type of the Product and serial number, or alternatively

II) Readable and unaltered original sales receipt, which brings out the same information if produced to the seller/ supplier of the Product.

8) The purchaser's rights against Panphonics Oy based on defects or defective functions of the Product are limited to this Limited Warranty. This Limited Warranty will supersede all ther oral, written, statutory (unless mandatory), contractual and other warranties and liabilities. In no event will Panphonics Oy be liable for unforeseen, incidental, consequential or indirect damages or expenses. Should the purchaser be a company or other legal person, Panphonics Oy will not be liable for direct damages or expenses. Unless it is contrary to mandatory provisions of law, the purchaser will be finally responsible for product liability.

9) Any amendment or supplement to the terms of this Limited Warranty is binding on Panphonics Oy only if Panphonics Oy has beforehand accepted in writing to the amendment or supplement. The defective Product must be shipped to Panphonics Oy on the purchaser's expense.

13. WARNINGS AND DISCLAIMERS

This symbol on the product means there is uninsulated, dangerous voltage within the product enclosure that may present a risk of electrical shock.

Only suitable for use at non-tropic climate areas

Only suitable for use at areas with altitude less than 2000m

This symbol means the product must not be discarded as household waste, and should be delivered to an appropriate collection facility for recycling

UK 14. IMPORTANT SAFETY INSTRUCTIONS

1. Panphonics speakers are designed to be used with supplied amplifier and power source only.
2. Disconnect unit from main voltage before making any connections.
3. Read all documentation before operating your equipment.
4. Follow all instructions.
5. Do not remove the rear cover. No user serviceable parts inside.
6. Make sure power outlets conform to the power requirements.
7. Do not operate the unit on a surface or in the environment what may impede the normal flow of air around the unit.
8. Do not use the unit near high heat or moisture-producing devices. Device is for inside use only.
9. When connecting a media player set the media players output volume (when adjustable) as high as possible without causing any distortion to the AA-160 amplifiers input stage.
10. Do not spill water or other liquids into or on to the power supply and amplifier. Do not place any objects containing liquid on or near the power supply or amplifier
11. **EQUIPMENT SHOULD BE INSTALLED AND SERVICED BY A SKILLED PERSON ONLY.**
12. The product label is located on the amplifier's rear plate.

FI 14. TÄRKEÄÄ TIETOA TURVALLISUUDESTA

1. Panphonics-kaiuttimet on suunniteltu käytettäväksi vain toimitetun vahvistimen ja virtalähteen kanssa.
2. Irroita laite seinästä ennen kytkentöjen tekemistä.
3. Lue kaikki oheistieto ennen laitteen käyttöönottoa.
4. Noudata annettuja ohjeita.
5. Älä poista takasuojaa. Sisällä ei ole käytettäviä osia.
6. Pidä huolta, että pistorasiasi virta vastaa määriteltyjä virtavaatimuksia.
7. Älä käytä laitetta pinnoilla tai ympäristöissä, jotka voivat haitata normaalia ilmavirtaa laitteen ympärillä.
8. Älä käytä laitetta voimakasta lämpöä tai kosteutta tuottavien laitteiden läheisyydessä. Laitetta tulee käyttää vain sisätiloissa.
9. Yhdistettäessä mediasoittimeen, säädä mediasoittimen ulostuleva äänenvoimakkuus (mikäli se on säädettävissä) mahdollisimman suureksi aiheuttamatta äänen särkymistä AA-160 vahvistimen sisääntulossa.
10. Älä läikytä vettä tai muita nesteitä kaiuttimen tai virtalähteen päälle tai sisälle. Älä aseta nestettä sisältäviä esineitä kaiuttimen tai virtalähteen päälle tai niiden läheisyyteen.
11. **LAITTEEN TULEE ASENTAA JA HUOLTAA ASIANTUNTEVA HENKILÖ.**
12. Tuote-etiketti löytyy vahvistimen takalevystä.

DUT 14. BELANGRIJKE VEILIGHEIDS-INFORMATIE

1. De Panphoncs speakers zijn ontworpen om enkel gebruikt te worden met de meegeleverde versterker en power supply.
2. Schakel de spanning uit vooraleer de kabels aan te sluiten
3. Raadpleeg eerst de documentatie vooraleer het materiaal in gebruik te nemen
4. Volg nauwgezet alle instructies
5. De achterkap niet verwijderen. Hier bevinden zich geen onderdelen die door de klant kunnen hersteld worden.
6. Zorg ervoor dat het gebruikte stopcontact conform is met de voorgeschreven vereisten van de power supply.
7. Gebruik de unit niet in afgesloten ruimtes die geen normale luchtcirculatie rond het toestel toelaten.
8. Gebruik de unit niet in de buurt van water of een warmtebron. Het toestel is enkel geschikt om binnen te gebruiken.
9. Bij het aansluiten van een media player zet je het volume van de media player (indien mogelijk) zo hoog mogelijk, zonder dat er vervorming van het geluid optreedt naar de AA-160 versterker
10. Zorg ervoor dat de versterker en power supply niet in contact komen met water en andere vloeistoffen. Geen vloeistoffen noch voorwerpen die vloeistoffen bevatten op of naast de voedingseenheid of versterker en power supply.
11. HET MATERIAAL DIENT GEINSTALLEERD EN ONDERHOUDEN TE WORDEN DOOR EEN GEQUALIFICEERD TECHNIEKER
12. Het product-label bevindt zicht op de achterkant van de versterker

POR 14. IMPORTANTE: INFORMAÇÃO DE SEGURANÇA

1. As colunas Panphonics são projectadas para serem usadas apenas com o amplificador e transformador de corrente fornecidos;
2. Desligar a unidade da corrente principal antes de fazer quaisquer ligações;
3. Ler toda a documentação antes de operar o equipamento;
4. Seguir todas as instruções;
5. Não remover a tampa traseira. Não existem partes utilizáveis no interior.
6. Certificar-se que as tomadas estão de acordo com a corrente necessária;
7. Não operar a unidade numa superfície ou ambiente que impeça um fluxo normal de ar à sua volta;
8. Não usar a unidade perto de fontes de calor ou dispositivos que possam produzir humidade. O equipamento é apenas para uso em interior;
9. Quando ligar a um leitor, ajuste o volume do leitor (se for ajustável) tão alto quanto possível, sem causar distorção na entrada do amplificador AA-160.
10. Não virar água ou outros liquídos no transformador ou amplificador. Não coloque líquidos ou objetos contendo líquidos encima ou próximo à fonte de energia ou amplificador
11. **O equipamento deve ser apenas instalada por pessoal técnico qualificado**
12. A etiqueta do produto está localizada na parte traseira do amplificador.

DAN 14. VIGTIG SIKKERHEDS- OG INSTALLATIONSINFORMATION

1. Panphonics højttalere er kun beregnet til brug sammen med medfølgende forstærker og strømforsyning.
2. Strømforsyningen må ikke være tilsluttet forstærkeren, når udstyr tilsluttes forstærkeren.
3. Læs alle brugsanvisninger inden ibrugtagning af udstyret.
4. Følg nøje alle instruktioner i brugsanvisningen.
5. Fjern ikke bagside skjoldet. Der er ikke adgang til udskiftelige komponenter.
6. Vær sikker på at strømforsyningen passer til netspændingen (i DK - 230V)
7. Installer ikke forstærkeren på en overflade, eller anden måde, der hindre almindelig luftcirkulation omkring forstærkeren.
8. Installer ikke forstærkeren i varme eller fugtige omgivelser. Forstærkeren er kun til indendørs brug.
9. Når der tilsluttes en justerbar lydkilde til forstærkeren, juster da lydkilden til den maximale volumen uden den forvrænger.
10 Apparatet må ikke udsættes for dryp eller sprøjt, og ingen genstande, der er fyldt med væske, so, t.eks. vaser, må anbringes på afspilleren
11. **Udstyret bør kun installeres af faglært personale.**
12. Produkt label er placeret på forstærkerens bagplade.

POL 14. WAŻNE INFORMACJE DOTYCZĄCE BEZPIECZEŃSTWA

1. Głośniki Panphonics mogą być używane jedynie z dostarczonym wzmacniaczem i zasilaczem.
2. Rozłącz urządzenie od zasilacza przed wykonaniem jakichkolwiek połączeń.
3. Przeczytaj uważnie całą dokumentację przed włączeniem twojego urządzenia.
4. Kieruj się zaleceniami zawartymi w instrukcji obsługi.
5. Nie otwieraj urządzenia. Do naprawy i wymiany części upoważniony jest jedynie serwis fabryczny
6. Upewnij się że gniazda sieciowe dostosowane są do wymaganego zasilania.
7. Nie podejmuj działań ograniczających naturalną cyrkulację powietrza wokół urządzenia.
8. Nie używaj urządzenia blisko źródeł ciepła albo wilgoci. Głośniki są przeznaczone tylko do pracy wewnątrz pomieszczeń.
9. Podczas łączenia odtwarzacza audio, ustaw poziom sygnału wyjściowego (jeśli jest to regulowane) na możliwie wysokim poziomie, który nie powoduje przesterowania wejścia wzmacniacza AA-160
10. Nie rozlewaj wody i innych płynów na wzmacniacz i zasilacz. Prosimy nie umieszczać płynów lub przedmiotów

zawierających płyny na/w pobliżu zasilacza i wzmacniacza

11. **URZĄDZENIE POWINNO BYĆ INSTALOWANE I NAPRAWIANE TYLKO PRZEZ WYKWALIFIKOWANY PERSONEL TECHNICZNY.**
12. Etykieta produktu znajduje się na tylnej pokrywie wzmacniacza.

RUS 14. ВАЖНЫЕ МЕРЫ ПРЕДОСТОРОЖНОСТИ

1. Динамики Panphonics (Панфоникс) предназначены для использования только с поставляемым усилителем и источником питания
2. Отсоедините питание устройства перед выполнением любого подключения
3. Внимательно прочитайте инструкции перед началом работ
4. Следуйте всем инструкциям
5. Не снимайте заднюю крышку, поскольку там нет частей обслуживаемых пользователем
6. Убедитесь что напряжение в сети соответствует потребляемой мощности
7. Не используйте прибор в местах, которые могут препятствовать нормальной работе оборудования
8. Не используйте динамик вблизи высоких температур и в условиях высокой влажности. Устройство предназначено для использования только внутри помещения
9. При подключении медиа плеера, установите настройки звука (если это возможно) как можно громче без изменения настроек усилителя AA-160
10. Не допускайте попадания воды или других жидкостей на оборудование. Вблизи источников питания, а также амплификаторов строго запрещается хранить жидкость и предметы, содержащие жидкости.
11. **ОБОРУДОВАНИЕ УСТАНАВЛИВАЕТСЯ И ОБСЛУЖИВАЕТСЯ ТОЛЬКО СПЕЦИАЛИСТОМ**
12. Этикетка с информацией о продукте находится на задней панели усилителя

FRA 14. INFORMATIONS IMPORTANTES SUR LA SéCURITé

1. Les haut-parleurs Panphonics sont conçus pour être utilisés avec l'alimentation et l'amplificateur fournis.
2. Coupez l'alimentation avant de connecter les câbles.
3. Reportez-vous à la documentation avant d'utiliser le matériel.
4. Suivez bien toutes les instructions.
5. Ne pas retirer le couvercle arrière. Ici se trouvent les pièces qui ne peuvent pas être réparés par le client.
6. Assurez-vous que la prise utilisée, sera conforme avec les exigences prescrites de l'alimentation.
7. N'utilisez pas l'appareil dans les espaces clos qui ne permettront pas la circulation d'air normale autour de l'appareil.
8. N'utilisez pas l'appareil près de l'eau ou d'une source de chaleur. L'appareil est adapté pour une utilisation en intérieur.
9. Lors de la connexion d'un lecteur multimédia vous mettez le volume sur le lecteur multimédia (si possible) aussi haut que possible sans qu'il y a se produit une distorsion à l'amplificateur AA-160.
10. Assurez-vous que l'amplificateur et l'alimentation ne sont pas en contact avec de l'eau et d'autres liquides. Ne pas placer de liquides ou d'objets contenant des liquides sur ou près de la source d'alimentation ou de l'amplificateur.
11. **Le matériel doit être installé et maintenu par un technicien qualifié.**
12. L'étiquette se trouve à l'arrière de l'amplificateur.

EST 14. TÄHTIS OHUTUSTEAVE

1. Panphonicsi kõlarid on mõeldud kasutamiseks ainult tootjapoolse võimendi ning toiteallikaga.
2. Eemaldage kõlar vooluallikast enne kui ühendate teisi juhtmeid
3. Lugege läbi kogu dokumentatsioon enne kui hakkate kasutama oma seadmeid
4. Järgige kõiki juhiseid
5. Ärge eemaldage tagumist paneeli. Seal ei ole kasutatavaid osi sees.
6. Veenduge, et pistikupesad vastavat võimsuse nõuetele
7. Ärge kasutage seadet pinnal või keskkonnas, mis takistab seadme ümber normaalset õhuliikuvust.
8. Ärge kasutage seadet kohtades, kus on kuum või niiske. Seade on ainult sisetingimustes kasutamiseks.
9. Kui ühendate meediapleierit, määrake meediapleieri väljundi helitugevus(kui võimalik) nii tugevaks kui võimalik, ilma et põhjustaks helimoonutusi AA-160 helivõimendile sisendis
10. Vältige vedelike sattumist toiteallikale või võimendile. Ärge asetage vedelikke või vedelikke sisaldavaid esemeid, toiteallika või võimendi peale ega nende lähedale.
11. **SEADMEID LASKE HOOLDADA JA PAI GALDADA AINULT ASJATUNDJATEL.**
12. Toote etikett asub helivõimendi tagumisel paneelil.

GER 14. WICHTIGE INFORMATIONEN ZUR SICHERHEIT

1. Panphonics Lautsprecher dürfen ausschließlich mit dem mitgelieferten Verstärker und Netzteil verwendet werden.
2. Trennen Sie die Einheit von der Stromquelle bevor Sie die Verbindung herstellen bzw. das Gerät anschließen.
3. Lesen Sie alle Bedienungsunterlagen aufmerksam, bevor Sie Ihre Geräte in Betrieb nehmen.
4. Bitte befolgen Sie alle Anweisungen.
5. Die hintere Abdeckung des Gerätes darf nicht entfernt werden. Die darin enthaltenen Bauteile können nicht durch den Benutzer repariert oder gewartet werden.
6. Stellen Sie sicher, dass die verwendete Steckdose dem spezifischen Spannungsbedarf und Strombedarf entspricht.
7. Lassen Sie um das Gerät ausreichend Platz, damit das Gerät gut belüftet und problemlos gewartet werden kann. Betreiben Sie das Gerät nicht in Bereichen oder auf Oberflächen, welche die Luftzufuhr behindern.
8. Stellen Sie das Geräte keinesfalls in Bereichen auf, die feucht oder nass

sind, ·starker Hitze oder Schwankungen in der Umgebungstemperatur und der Umgebungsfeuchte ausgesetzt sind. Das Gerät ist ausschließlich für den Gebrauch im Innenbereich bestimmt.
9. Wenn Sie einen Media Player an das Gerät anschließen, stellen Sie die Lautstärke (wenn einstellbar) am Media Player so hoch wie möglich, ohne am Eingang des AA-160 Verstärkers Verzerrung zu erzeugen.
10. Achten Sie darauf, dass kein Wasser oder andere Flüssigkeiten in oder auf das Netzteil oder den Verstärker gelangt. Legen Sie keine Flüssigkeiten oder Gegenstände, die Flüssigkeiten enthalten, auf oder in die Nähe des Netzteils oder des Verstärkers.
11. **Die Anlage sollte nur von einer Fachkraft installiert und gewartet werden.**
12. Die Produktkennzeichnung befindet sich auf der Rückseite des Verstärkers.

NOR 14. VIKTIG SIKKERHETS-INFORMASJON

1. Panphonics høyttalere er utviklet for kun å benyttes med tilhørende forsterker og strømforsyning.
2. Husk å koble enhet fra nettspenning før tilkobling av høyttaler.
3. Les all dokumentasjon før bruk av utstyret.
4. Følg alle instruksjoner.
5. Fjern ikke bakdeksel. Her finnes ingen deler som kan repareres.
6. Sørg for strømuttak i samsvar med kraftbehov.
7. Ikke bruk enheten på en overflate eller i miljø som kan hindre normal luftstrøm rundt enheten.
8. Ikke bruk enheten i nærheten av høy varme eller enheter som produserer fuktighet. Høyttaler er kun for innvendig bruk.
9. Ved tilkobling av en mediespiller sett mediespillere volumet (når justerbar) så høyt som mulig uten å forårsake noen forvrengning til AA-160 forsterkers inngang.
10. Apparat må ikke utsettes for dryppende vann eller vannsprut, og ingen gjenstander som inneholder væske, som eksempelvaser, må plasseres på apparatet
11. **UTSTYRET SKAL INSTALLERES OG VEDLIKEHOLDES AV KVALIFISERT PERSONELL.**
12. Produktetiketten er plassert på forsterkerens bakplate.

CZE 14. DŮLEŽITÉ BEZPEČNOSTNÍ INFORMACE

1. Reproduktory Panphonics jsou navrženy pro použití pouze s dodávaným zesilovačem a zdrojem energie.
2. Před provedením jakéhokoli propojení, odpojte zařízení od hlavního el. napětí.
3. Přečtěte si veškerou dokumentaci před zahájením provozu vašeho zařízení.
4. Dodržujte všechny pokyny.
5. Neodstraňujte zadní kryt. Uvnitř zařízení nejsou žádné opravitelné části.
6. Ujistěte se, že použité zásuvky jsou v souladu s energetickými požadavky zařízení.
7. Nepoužívejte zařízení na povrchu nebo v prostředí, které může narušit normální tok vzduchu okolo zařízení.
8. Nepoužívejte zařízení v blízkosti zdroje tepla nebo vlhkosti. Zařízení je pouze pro vnitřní použití.
9. Při připojení multimediálního přehrávače, nastavte výstupní hlasitost (při možnosti nastavení) na nejhlasitější, aby nebylo způsobeno žádné narušení vstupu zesilovače AA-160.
10. Vyvarujte se polití zesilovače a zdroje vodou, nebo jinými tekutinami. Nepokládejte tekutiny nebo objekty obsahující tekutinu na zařízení. Nepokládejte do blízkosti zdroje elektrického napájení nebo zesilovače.
11. **ZAŘÍZENÍ BY MĚLO BÝT NAINSTALOVÁNO A OBSLUHOVÁNO POUZE KVALIFIKOVANOU OSOBOU.**
12. Štítek produktu je umístěn na zadní desce zesilovače.

SWE 14. VIKTIG SÄKERHETS-INFORMATION

1. Högtalare från Panphonics är tillverkade för att endast användas med medföljande förstärkare och nätadapter.
2. Koppla ur strömmen från enheten innan du gör några anslutningar.
3. Läs all dokumentation innan du använder dig av din enhet.
4. Följ alla instruktioner.
5. Avlägsna ej höljet på baksidan. Det finns inga delar på insidan som kan justeras eller repareras av användaren.
6. Säkerställ att nätströmsuttag möter strömkraven.
7. Använd ej enheten på en yta eller i en miljö som kan hindra normalt luftflöde runt enheten.
8. Använd ej enheten i närheten av hög värme eller fuktproducerande apparater. Enheten får endast användas inomhus.
9. När du ska ansluta en mediaspelare, ställ mediaspelarens utgångsvolym (om den är reglerbar) så starkt som möjligt utan att orsaka distorsion i AA-160-förstärkarens ingång.
10. Spill ej vatten eller andra vätskor i eller på nätadaptern eller förstärkaren. Spelaren för inte utsättas för droppar eller fukt och därför skall inte föremål som innehåller vätska, exempelvis vaser, placeras på spelaren
11. **INSTALLATION OCH SERVICE FÅR ENDAST UTFÖRAS AV KVALIFICERAD SERVICEPERSONAL.**
12. Produktens märkning är placerad på förstärkarens baksida.

SPA 14. INFORMACIÓN IMPORTANTE DE SEGURIDAD

1. Las bocinas Panphonics están diseñadas para ser operadas con el amplificador y fuente de poder suministradas.
2. Desconecte el equipo de la red de alimentación antes de hacer cualquier conexión.
3. Lea toda la documentación incluida antes de operar el equipo.
4. Siga todas las instrucciones.
5. No retire la tapa trasera. No hay ningún tipo de reparación o ajuste dentro del equipo que el usuario pueda acceder.

6. Asegúrese de que la red eléctrica cumpla con los requisitos de alimentación del equipo.
7. No opere el equipo en una superficie o ambiente que impida el flujo normal de aire alrededor del mismo.
8. No use el equipo cerca de una fuente de calor o dispositivos que generen humedad. El equipo es para uso en interior únicamente.
9. Al conectar el reproductor de audio, ajuste el volumen del mismo (si se puede) lo más alto posible sin que esto cause ninguna distorsión a la entrada del amplificador AA-160.
10. No derrame agua o cualquier otro liquido en o dentro del amplificador o su fuente de alimentación. No colo que líquidos, tampoco objetos que contengan líquidos sobre o cerca de la fuente de alimentación o el amplificador.
11. **EL EQUIPO DEBE SER INSTALADO Y REPARADO POR PERSONAL CALIFICADO.**
12. Los datos de placa están localizados en la parte posterior del amplificador.

ITA 14. IMPORTANTI INFORMAZIONI DI SICUREZZA

1. I diffusori Panphonics sono progettati per essere impiegati solamente con l'amplificatore e l'alimentatore forniti.
2. Sconnettere l'unità dalla presa di alimentazione prima di effettuare le connessioni.
3. Leggere tutta la documentazione prima di mettere in funzione l'apparecchiatura.
4. Seguire tutte le istruzioni fornite.
5. Non rimuovere la copertura posteriore. Non ci sono parti modificabili all'interno.
6. Assicurarsi che le prese di corrente disponibili forniscano energia in modalità conforme a quanto richiesto.
7. Non usare l'unità ponendola su una superficie o in un ambiente che non permettano il normale flusso d'aria attorno alla stessa.
8. Non usare l'unità vicino a sorgenti di calore o dispositivi che producano umidità. Il dispositivo è progettato per l'esclusivo uso interno.
9. Connettendo un media player regolarne il volume al massimo livello possibile (se regolabile) evitando di causare distorsione allo stadio di ingresso dell' AA-160.
10. Non versare acqua o altri liquidi sull'alimentatore e sull'amplificatore. L'apparecchio non deve essere esposto a gocciolamenti o schizzi e non bisogna collocarvi sopra oggetti pieni di liquidi, come vasi
11. **L'apparecchiatura deve essere installata e mantenuta solamente da personale esperto.**
12. L'etichetta di prodotto è posizionata sul pannello posteriore

HUN 14. BIZTONSÁGI ELŐÍRÁSOK

1. A Panphonics hangszórók csak a hozzájuk tartozó erősítővel és tápegységgel használhatók.
2. Hangszóró és egyéb audio csatlakozás szerelése előtt győződjön meg arról, hogy az eszköz nincs tápfeszültség alatt.
3. Használat előtt olvassa el figyelmesen az eszköz használati útmutatóját.
4. Kövesse az útmutató leírását.
5. Az eszköz hátpanelét ne távolítsa el.
6. Győződjön meg a megfelelő tápfeszültségről az eszköz csatlakoztatása előtt.
7. Ne használja az eszközt olyan környezetben ahol nem biztosított az eszköz megfelelő hűtése. Biztosítsa az eszköz körüli szabad légáramlást.
8. Ne használja az eszközt magas hőmérsékletű, vagy párás környezetben. Az eszköz csak beltéri használatra való.
9. Médialejátszó csatlakoztatásakor ügyeljen arra, hogy a lejátszó kimeneti hangerejét úgy állítsa, hogy az ne okozzon torzítást az AA-160 erősítő bemenetén.
10. Fokozottan ügyeljen arra, hogy az erősítő és tápegység ne érintkezzen vízzel. Ne helyezzen folyadékot vagy folyadékot tartalmazó tárgyat az erőforrásra vagy az erősítőre, illetve ezek közelébe.
11. **Az eszközt csak megfelelő képesítésű szakember telepítheti és szervizelheti.**
12. A termék azonosítója az erősítő hátoldalán található.

ROM 14. IMPORTANTE INSTRUCTIUNI DE UTILIZARE IN SIGURANTA

1. Dispozitivele de sunet unidirectional Panphonics sunt proiectate spre utilizare, numai impreuna cu amplificator si sursa de alimentare.
2. Deconectati dispozitivul de la sursa de alimentare cu curent, inainte de orice conectare a cablurilor de transmitere a semnalui sonor.
3. Cititi cu atentie toate instructiunile, inainte de utilizarea dispozitivelor.
4. Urmati toate instructiunile.
5. Nu indepartati capacul dispozitivului. Nu exista elemente care necesita service in interior.
6. Asigurati-va ca sursa de curent electric este conform specificatiei.
7. Nu utilizati dispozitivul intru-un mediu care poate impiedica aerisirea naturala.
8. Nu utilizati dispozitivul intr-un mediu generator de umiditate.
9. Daca utilizati un media player, setati volumul la un nivel corespunzator astfel incat sa nu cauzati distorsiuni aplificatorului AA-160.
10. Evitati caderile accidentale de apa sau alte lichide, in zona de alimentare sau in aplificator. Nu puneti lichide, sau obiecte care contin lichide pe sau langa sursa de curent sau amplificator.
11. **Echipamentul trebuie instalat si remediat in caz de avarie, de catre persoane autorizate.**
12. Eticheta produsului este postata pe tablita din spatele amplificatorului.

JPN 14.安全性に関する重要な情報

1. パンフォニクス社のスピーカーは同社提供のアンプや AC アダプターと共に使用 してください。
2. アンプをスピーカーやメディアプレーヤーに接続する際や接続を外す際は、必ず 電源プラグを 抜いて から作業を行ってくださ い。
3. 機器を使用する前に、同梱されている説明書をよく読んでから使用ください。
4. 説明書の内容通りに使用してください。
5. アンプのカバーを外さないでください。ユーザーが独自に交換できる部品はあり ません。
6. 電源プラグを差す前に、お使いの地域の電源電圧仕様にて使用可能か確認くだ さい。
7. アンプを設置する際は、換気が妨げられるような場所は避けてください。
8. 高温または高湿な環境での仕様は避けてください。アンプは屋外での使用はでき ません。
9. メディアプレーヤーをアンプに接続する際は、 プレーヤー側の音量を最大に設定 してください（ただし、音の歪みが発生しない程度の音量の中で、最大になるよ う調整してください）。
10. アンプや電源アダプターには、水やその他の液体がかからないよう注意してくだ さい。液体や液体の入った物を電源装置やアンプの上または近くに置かないでく ださい。
11. アンプの設置は、専門の知識を有する者が行ってください。
12. 製品ラベルはアンプの裏側に貼付されています。

CN 14. 重要的安全信息

1. Panphonics扬声器被设计为只能与所提供的放大器和电源一起使用。
2. 在进行任何连接之前，断开本单元与主电源的连接。
3. 在操作设备之前请阅读所有文档。
4. 遵循所有的指示。
5. 请勿取下后盖。里面没有用户可维修的部件。
6. 确保电源插座符合电 力要求。
7. 请勿在可能会妨碍本单元周围的空气正常流动的表面上或环境中操作本单元。
8. 请勿在高温或产生湿气的设备附近使用本单元。本设备仅限于在室内使用。
9. 当连接媒体播放器时，在不会对AA-160 放大器输入级造成任何失真的情况下， 将媒体播放器的输出音量设置为尽可能高（当可调节时）。
10. 请勿将水或其它液体溅入电源和放大器。请勿将任何含有液体的物体放在电源或放 大器上或附近。
11. 设备只能由技术人员进行安装和维修。
12. 本产品标签位于放大器的后面板上。

15. CONTACT INFORMATION

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