

NV-D460 External Power Amplifier

Installation Guide

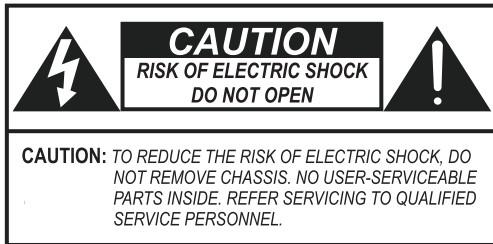
ENGLISH

Danger

Exposure to extremely high noise levels may cause a permanent hearing loss. Individuals vary considerably to noise induced hearing loss but nearly everyone will lose some hearing if exposed to sufficiently intense noise for a sufficient time. The U.S. Government's Occupational Safety and Health Administration (OSHA) has specified the following permissible noise level exposures:

DURATION PER DAY (HOURS)	8	6	4	3	2	1
SOUND LEVEL (dB)	90	93	95	97	100	103

According to OSHA, any exposure in the above permissible limits could result in some hearing loss. Ear plugs or protectors in the ear canal or over the ears must be worn when operating this amplification system in order to prevent a permanent hearing loss. If exposure in excess of the limits as put forth above, to insure against potentially harmful exposure to high sound pressure levels, it is recommended that all persons exposed to equipment capable of inducing high sound pressure levels, such as this amplification system, be protected by hearing protectors while this unit is in operation.



AVIS: RISQUE DE CHOC ELECTRIQUE-NE PAS OUVRIR.



THIS SYMBOL IS INTENDED TO ALERT THE USER TO THE PRESENCE OF NON-INSULATED "DANGEROUS VOLTAGE" WITHIN THE PRODUCT'S ENCLOSURE THAT MAY BE OF SUFFICIENT MAGNITUDE TO CONSTITUTE A RISK OF ELECTRIC SHOCK TO PERSONS.



THIS SYMBOL IS INTENDED TO ALERT THE USER TO THE PRESENCE OF IMPORTANT OPERATING AND MAINTENANCE (SERVICING) INSTRUCTIONS IN THE LITERATURE ACCOMPANYING THE UNIT.



APPARATUS SHALL NOT BE EXPOSED TO DRIPPING OR SPLASHING AND THAT NO OBJECTS FILLED WITH LIQUIDS, SUCH AS VASES, SHALL BE PLACED ON THE APPARATUS.

IMPORTANT SAFETY INSTRUCTIONS

1. Read all safety and operating instructions before using this product.
2. All safety and operating instructions should be kept for future reference.
3. Read and understand all warnings listed on the operating instructions.
4. Follow all operating instructions to operate this product..
5. This product should not be used near water, i.e. bathtub, sink, swimming pool, wet basement, etc.
6. Only use dry cloth to clean this product.
7. Do not block any ventilation openings, It should not be placed flat against a wall or placed in a built-in enclosure that will impede the flow of cooling air.
8. Do not install this product near any heat sources ; such as, radiators, heat registers, stove or other apparatus (including heat producing amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord being walked on or pinched, particularly at plugs, convenience receptacles and the point where they exit from the apparatus. Do not break the ground pin of the power supply cord.
11. Only use attachments specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer or sold with the apparatus. When a cart is used, use caution when moving cart/apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Care should be taken so that objects do not fall and liquids are not spilled into the unit through the ventilation ports or any other openings.
15. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way; such as, power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been

FRENCH

Danger

L'exposition a des niveaux eleves de bruit peut provoquer une perte permanente de l'audition, Chaque organisme humain reagit differemment quant a la perte de l'audition, mais quasiment tout le monde subit une diminution de l'acuite auditive lors d'une exposition suffisamment longue au bruit intense. Les autorites competentes en reglementation de bruit ont defini les expositions tolerees aux niveaux de bruits:

DURE EN HEURES PAR JOUR	8	6	4	3	2	1
INIVEAU SONORE CONTINU EN dB	90	93	95	97	100	103

Selon les autorites, toute exposition dans les limites citees ci-dessus, peuvent provoquer certaines pertes d'audition. Des bouchons ou protections dans l'appareil auditif ou sur l'oreille doivent etre portes lors de l'utilisation de ce systeme d'amplification afin de prevenir le risque de perte permanente de l'audition, Dans le cas d'expositions superieures aux limites precitees il est recommande, afin de se premunir contre les expositions aux pressions acoustiques eleves potentiellement dangeureu ses, aux personnes exposees aux equipements capables de delivrer de telles puissances, tels ce systeme d'amplification en fonctionnement, de proteger l'appareil auditif.



CE SYMBOLE A POUR BUT D'AVERTIR L'UTILISATEUR DE LA PRESENCE DE VOLTAGE DANGEREUX NON-ISOLE A L'INTERIEUR DE CE PRODUIT QUI PEUT ETRE DE PUISSANCE SUFFISAMMENT IMPORTANTE POUR PROVOQUER UN CHOC ELECTRIQUE AUX PERSONNES.



CE SYMBOLE A POUR BUT D'AVERTIR L'UTILISATEUR DE LA PRESENCE D'INSTRUCTIONS D'UTILISATION ET DE MAINTENANCE DANS LES DOCUMENTS FOURNIS AVEC CE PRODUIT.



AFIN DE REDUIRE LES RISQUÉ D'INCENDIE ET DE DECHARGE ELECTRIQUE, NE PAS EXPOSER CET APPAREIL A LA PLUIE OU A L'HUMIDITE.

IMPORTANTES INSTRUCTIONS DE SECURITE

1. Lire avec attention toutes les recommandations et précautions d'emploi avant d'utiliser ce produit.
2. Toutes les recommandations et précautions d'emploi doivent être conservées afin de pouvoir s'y reporter si nécessaire.
3. Lire et comprendre tous les avertissements énumérés dans les précautions d'emploi.
4. Suivre toutes les précautions d'emploi pour utiliser ce produit.
5. Ce produit ne doit pas être utilisé près d'eau, comme par exemple baignoires, éviers, piscine, sous-sol humides ... Etc.
6. Utiliser exclusivement un chiffon sec pour nettoyer ce produit.
7. Ne bloquer aucune ouverture de ventilation. Ne pas placer le produit tout contre un mur ou dans une enceinte fermée, cela gênerait le flux d'air nécessaire au refroidissement.
8. Ne pas placer le produit près de toute source de chaleur telle que radiateurs, arrivées d'air chaud, fourneaux ou autres appareils générant de la chaleur (incluant les amplificateurs producteurs de chaleur) .
9. Ne pas négliger la sécurité que procure un branchement polarisé ou avec raccordement à la terre, Un branchement polarisé comprend deux fiches dont l'une est plus large que l'autre. Un branchement à la terre comprend deux fiches plus une troisième reliée à la terre. Si la fiche secteur fournie ne s'insert pas dans votre prise de courant. consulter un 'électricien afin de remplacer votre prise obsolète.
10. Protéger le cordon d'alimentation de tout écrasement ou pincement, particulièrement au niveau des fiches, des réceptacles utilisés et à l'endroit de sortie de l'appareil. Ne pas casser la fiche de terre du cordon d'alimentation.
11. Utiliser uniquement les accessoires spécifiés par le constructeur.
12. Utiliser uniquement avec le chariot de transport, le support, le trépied, la console ou la table spécifiés par le constructeur ou vendus avec l'appareil. Lors de l'utilisation d'un chariot, bouger avec précaution l'ensemble chariot/appareil afin d'éviter les dommages d'un renversement.
13. Débrancher cet appareil lors d'orages ou s'il n'est pas utilisé pendant une longue période.
14. Des précautions doivent être prises afin qu'aucun objet ne tombe et qu'aucun liquide ne se répande à l'intérieur de l'appareil par les orifices de ventilation ou n'importe quelle autre ouverture.
15. Pour toutes interventions techniques s'adresser à un technicien qualifié. L'intervention technique est nécessaire lorsque l'appareil a été endommagé de n'importe quelle façon, comme par exemple si le cordon secteur ou sa fiche sont détériorés, si du liquide a coulé ou si des objets sont tombés à l'intérieur de l'appareil, si l'appareil a été exposé à la pluie ou à l'humidité, s'il ne fonctionne pas normalement ou s'il est tombé.
16. ATTENTION: Pour réduire le risque d'incendie ou de choc électrique ne pas exposer l'appareil à la pluie ou à l'humidité.

FCC Radio Frequency Interference Statement

This equipment has been tested and found to comply with the limits for Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, it may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for assistance.

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.



IC Statement

This class B digital apparatus complies with Canadian ICES-003.

Introduction

Congratulations on your purchase of the NuVo NV-D460 Digital Power Amplifier. This robust amplifier will provide 60 watts to each of its four speaker outputs, allowing for versatile uses powering any indoor or outdoor audio zone in multiple speaker configurations. With an outstanding energy efficiency rating, this single rack space mountable amplifier will provide quality audio to your speakers while consuming less power than other standalone amplifiers.

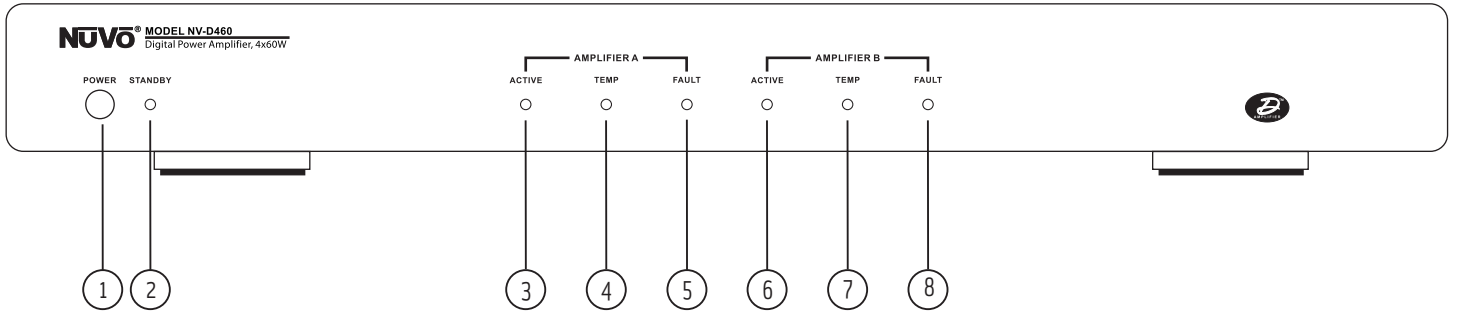
Stable at four or eight ohms, and with multiple trigger options, the NV-D460 offers the ultimate flexibility with the quality of construction you have come to expect from NuVo Technologies.

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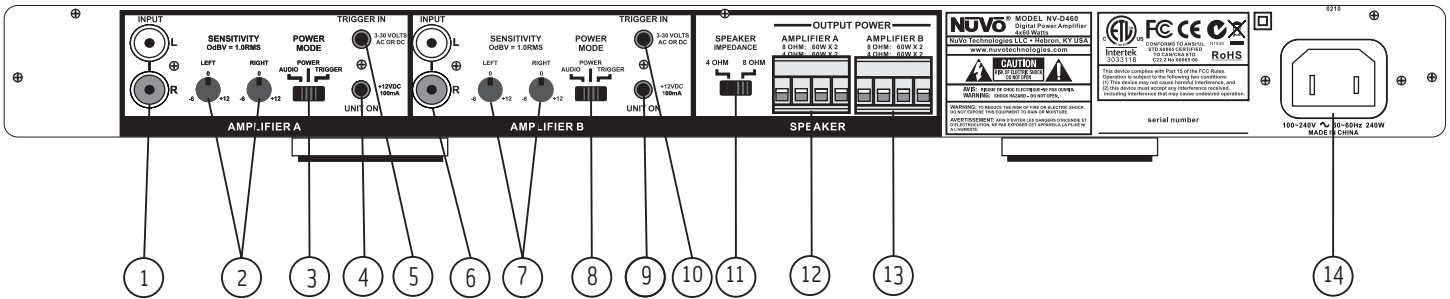
NV-D460 Package Contents

<u>SKU</u>	<u>Description</u>	<u>QTY</u>
NV-D460	Digital Power Amplifier	1
NV-CMRS3B	Mini to RCA Stereo Audio Cable	2
NV-REM1U	Single Space Rack Ear Mount (pair)	1
NV-PC2-NA	North American 2-wire Power Cable	1
NV-CMM3B	3.5MM Mini Mono Cable	2



Front Panel Features

- 1. Power Button:** Pushing this button will manually supply power to the amplifier. The amplifier is designed to remain in standby mode when not in use.
- 2. Standby:** This LED (light emitting diode) will light blue when the D460 is plugged into an A/C power supply.
- 3. Active:** This yellow LED lights to indicate that amplifier A is in normal amplification mode.
- 4. Temp:** This will light red to indicate that amplifier A has overheated.
- 5. Fault:** This will light red to indicate that amplifier A is experiencing issues not related to temperature/overheating.
- 6. Active:** This yellow LED lights to indicate that amplifier B is in normal amplification mode.
- 7. Temp:** This will light red to indicate that amplifier B has overheated.
- 8. Fault:** This will light red to indicate that amplifier B is experiencing issues not related to temperature/overheating.

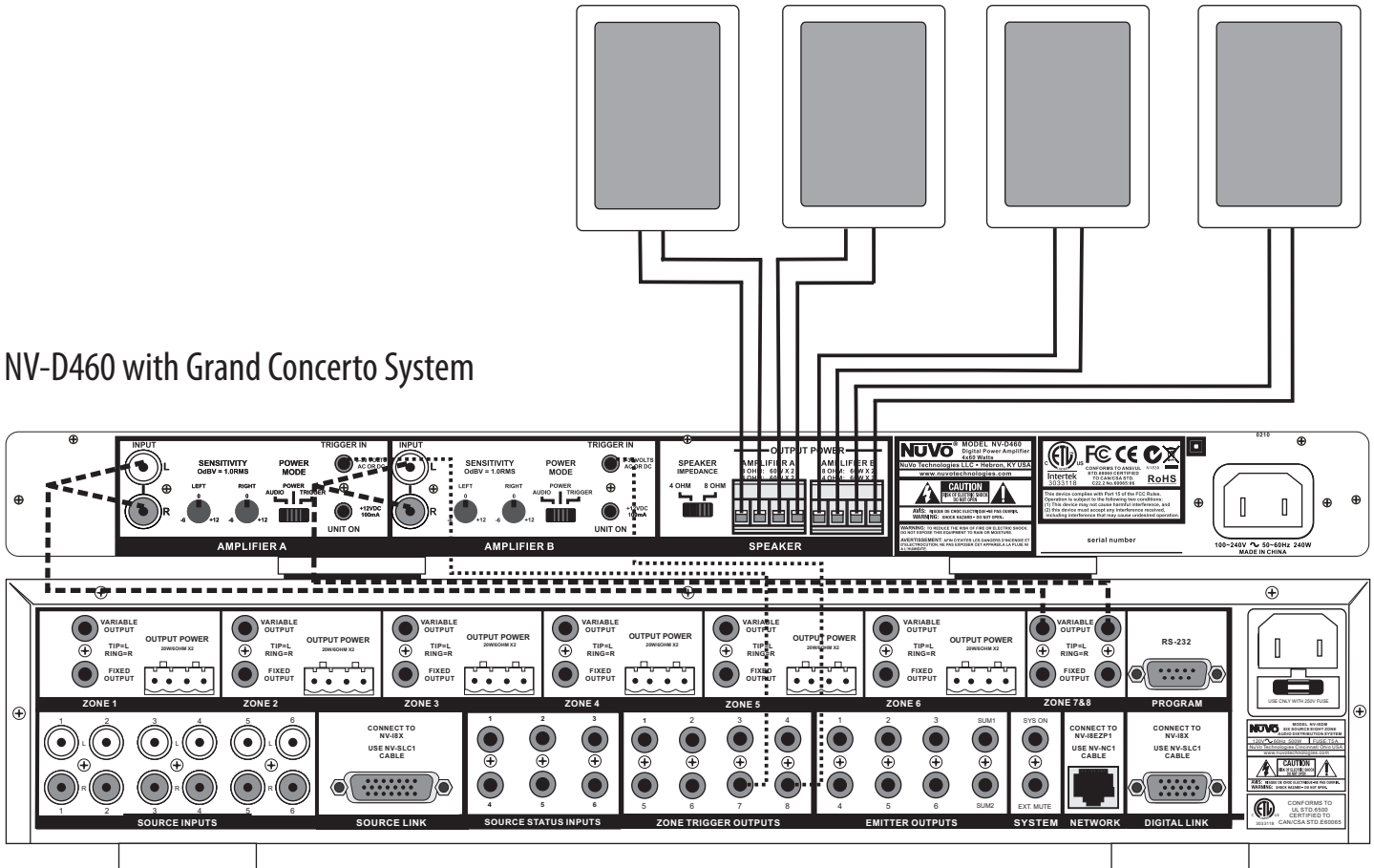


Back Panel Features

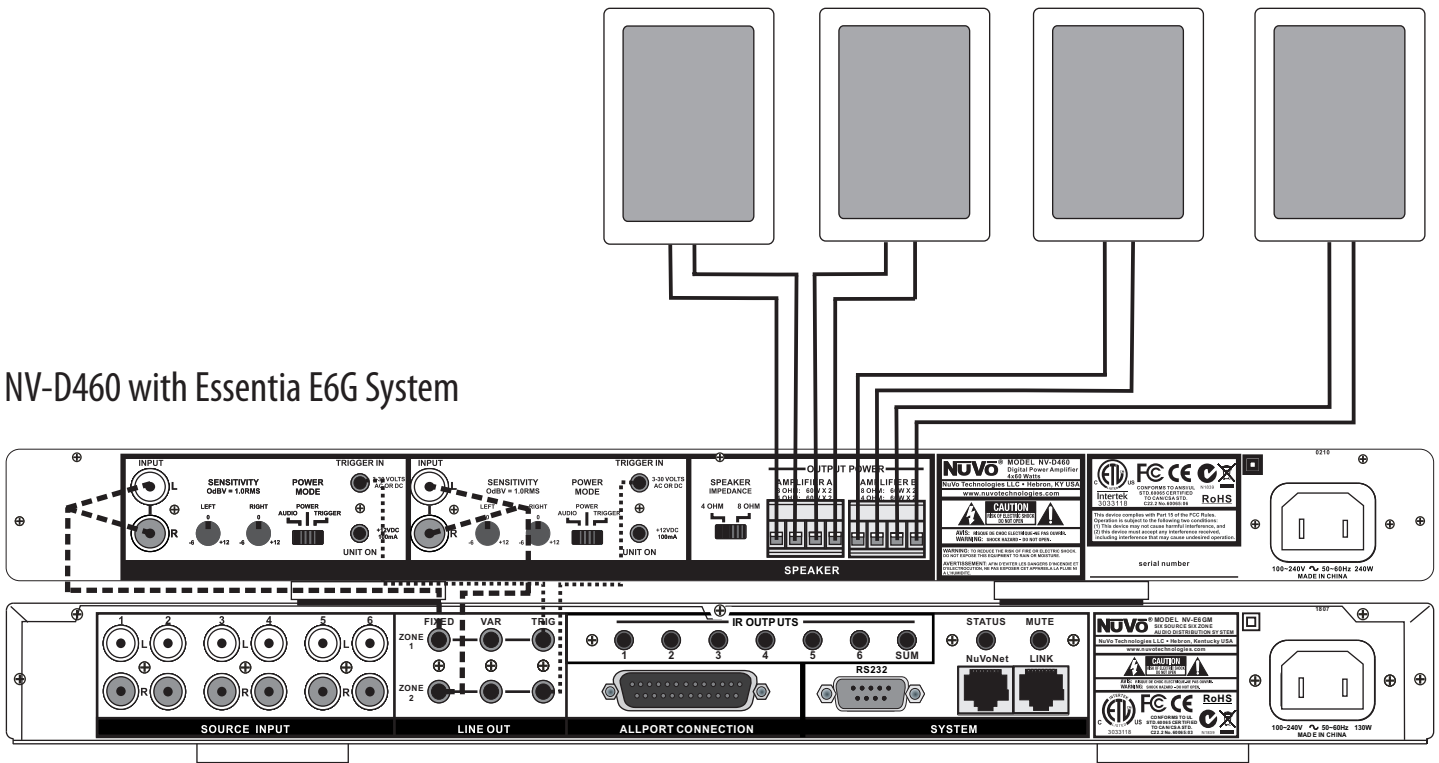
- 1. Audio Source Input A:** The D460 will accept any line level stereo audio signal. This can be from the preamp lineout of a multi-source, multi-zone whole house system such as the NuVo Simplese, Essentia E6G and Grand Concerto systems, or the audio output of any non-amplified source, such as an AM/FM tuner, CD player, or Satellite receiver.
- 2. Sensitivity Gain Control A:** Left and Right Channel Sensitivity trim pots allow the incoming signal to be increased or decreased to maximize the potential output of the audio source.
- 3. Power Mode A:** This switch dictates how the amplifier responds to external triggers. The D460 has 3 trigger methods: incoming audio signal, external voltage input, or the power button on the front of the amplifier.
- 4. Unit On A:** This provides a 12V trigger output when the amplifier is powered on. This can be used to turn on external audio equipment, daisy chain multiple external amplifiers, or trigger a relay switching power strip.
- 5. Trigger In A:** This voltage trigger input allows the D460 to power up whenever a voltage of 3-30 volts AC or DC is present.
- 6. Audio Source Input B:** The D460 will accept any line level stereo audio signal. This can be from the preamp lineout of a multi-source, multi-zone whole house system such as the NuVo Simplese, Essentia E6G and Grand Concerto systems, or the audio output of any non-amplified source, such as an AM/FM tuner, CD player, or Satellite receiver.
- 7. Sensitivity Gain Control B:** Left and Right Channel Sensitivity trim pots allow the incoming signal to be increased or decreased to maximize the potential output of the audio source.
- 8. Power Mode B:** This switch dictates how the amplifier responds to external triggers. The D460 has 3 trigger methods: incoming audio signal, external voltage input, or the power button on the front of the amplifier.
- 9. Unit On B:** This provides a 12V trigger output when the amplifier is powered on. This can be used to turn on external audio equipment, daisy chain multiple external amplifiers, or trigger a relay switching power strip.
- 10. Trigger In B:** This voltage trigger input allows the D460 to power up whenever a voltage of 3-30 volts AC or DC is present.
- 11. Speaker Impedance:** This switch sets the impedance stability at either 4 or 8 ohms.
- 12. Speaker Output A:** The speaker output attaches to the amplifier via a modular plug and provides 60 watts per channel output at either 4 or 8 ohms.
- 13. Speaker Output B:** The speaker output attaches to the amplifier via a modular plug and provides 60 watts per channel output at either 4 or 8 ohms.
- 14. AC Power:** The D460 is designed to plug into any AC power source.

NV-D460 Wiring Diagram

NV-D460 with Grand Concerto System

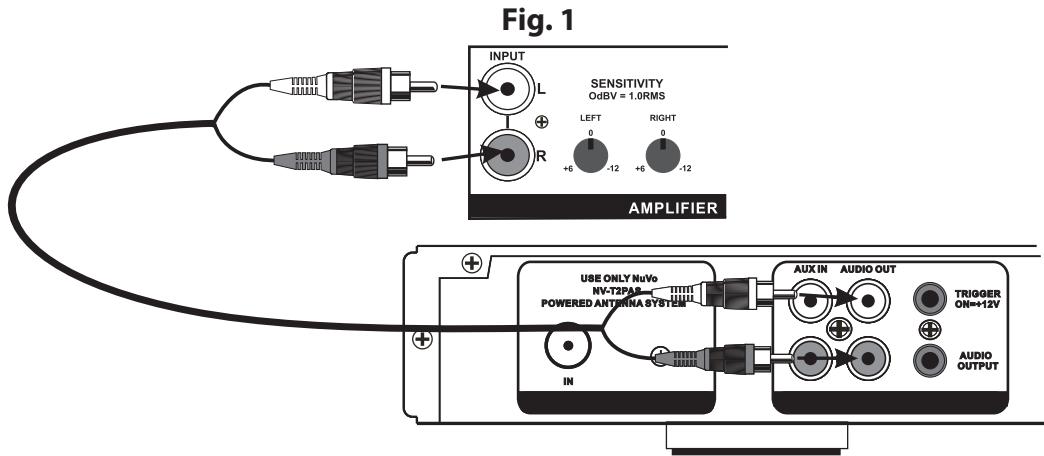


NV-D460 with Essentia E6G System

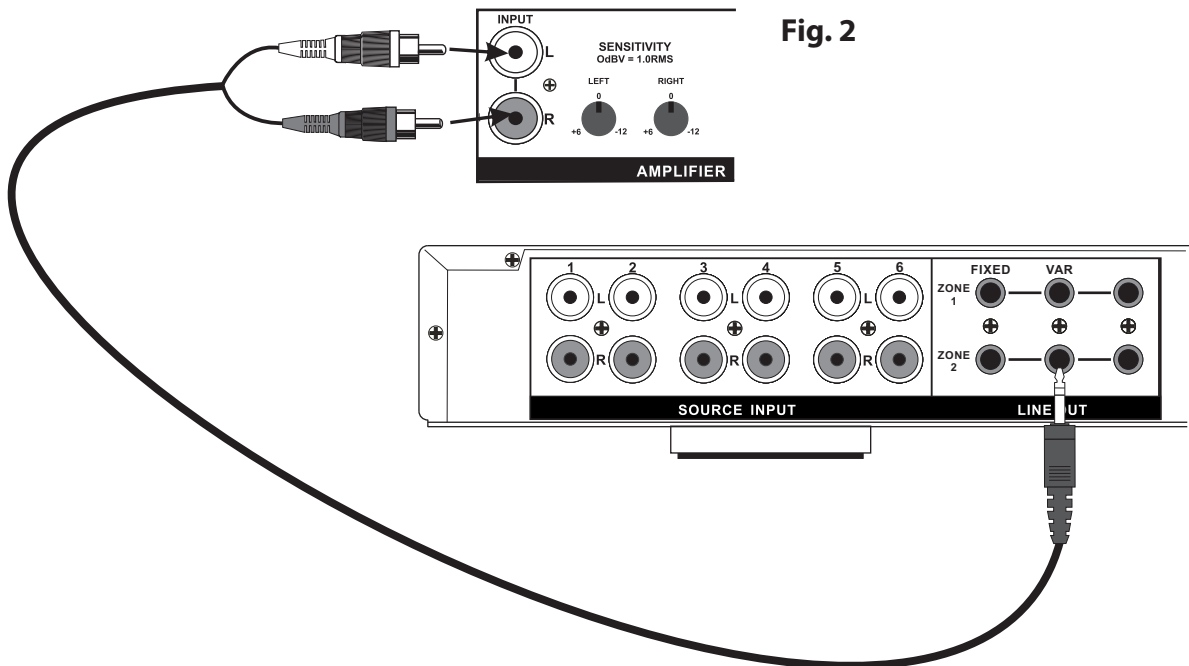


I. Audio Source Inputs

The D460 amplifier features dual stereo RCA audio inputs designed to accept a line level audio signal. Most audio equipment is equipped with a stereo RCA output that allows the audio signal to be taken directly to the D460's audio input. This is accomplished using a standard stereo audio cable with left and right audio jacks on each end (Fig. 1).



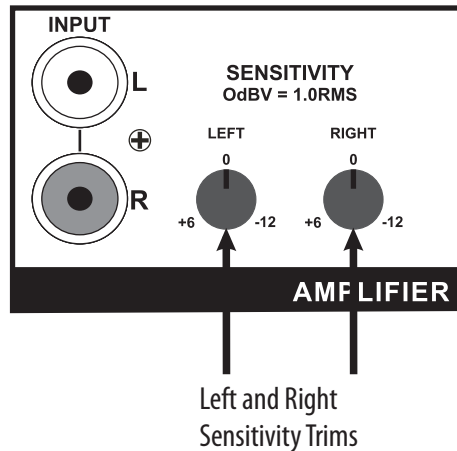
The D460 is a great complement to any NuVo Multi Room Audio System, where extra amplification may be desired for a particular zone. Zone 4 on the Simplese audio system has a fixed and variable RCA stereo audio output. Zones 1 & 2 on the Essentia E6G have fixed and variable 3.5mm stereo audio outputs, and all zones on the Grand Concerto have fixed and variable 3.5mm stereo audio outputs. To add the D460 to one of these systems, use a 3.5mm to Stereo RCA adapter cable to pass the audio signal from the NuVo Grand Concerto or Essentia E6G to the D460. Connect the 3.5mm end into the variable 3.5mm output for the chosen zone (Fig. 2) on the Grand Concerto or Essentia E6G, and connect the left and right RCA's into the input on the D460. For the Simplese system use a standard stereo RCA patch cable to connect the Simplese to the D460.



II. Audio Sensitivity Control

The D460 allows the flexibility of controlling the left and right channel gains for the incoming audio signal. The sensitivity allows a control of -12 dB up to +6 dB, and is an excellent tool for maximizing the full output potential of your source equipment (Fig. 3).

Fig. 3



To best utilize this feature, set the volume for the source at its fullest output level. Then adjust the left and right sensitivity trims on the amplifier to allow the fullest possible output from the speakers without distortion.

+6 or a counter-clockwise turn is used to reduce the gain. This would be the preferred setting for a distributed audio system with variable preamp line outputs, such as any of the NuVo systems. Reducing the gain can also be useful for limiting the maximum power going to the speakers.

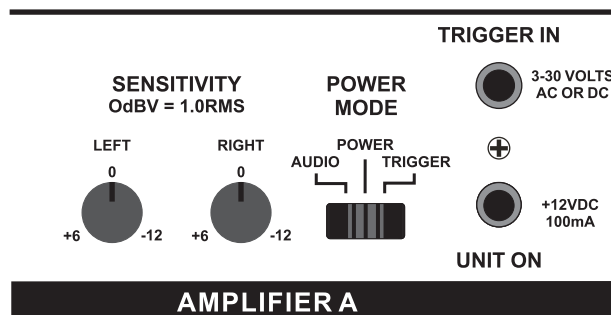
0 or straight vertically is the factory default. This is the preferred setting for an audio signal from a preamp, such as a distributed audio system with a fixed preamp line output, or the audio output of a music server or CD player.

-12 or a clockwise turn is a high gain position. This is typically used when the incoming audio signal is weak, such as a portable CD player or cable tv box.

III. Power Mode

The D460 provides three basic methods for supplying power to the amplifier. This can be accomplished by simply pushing the Power button on the front of the unit, by sensing an incoming audio signal, or by supplying a 3-30 volt AC or DC current. The Power Mode switch on the back of the amplifier (Fig. 4) sets the amplifier to respond to any of these three options. Note that the Power Mode is set independently for Amplifier A and B.

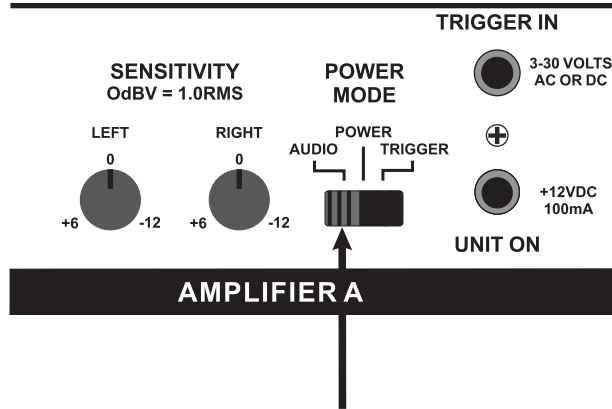
Fig. 4



Setting the power mode switch to the left in the Audio mode (Fig. 5) sets the amplifier to respond to the presence of an audio signal. If you are triggering the amplifier in this way, you should expect a slight delay before it turns on.

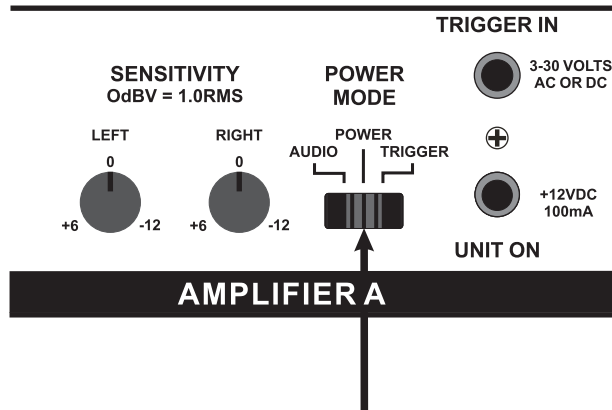
When the audio signal is removed, the amplifier will remain on for approximately three minutes after the incoming audio signal has ended before the unit turns off. This will prevent the unit from inadvertently turning off when the audio signal is very low or stops temporarily.

Fig. 5



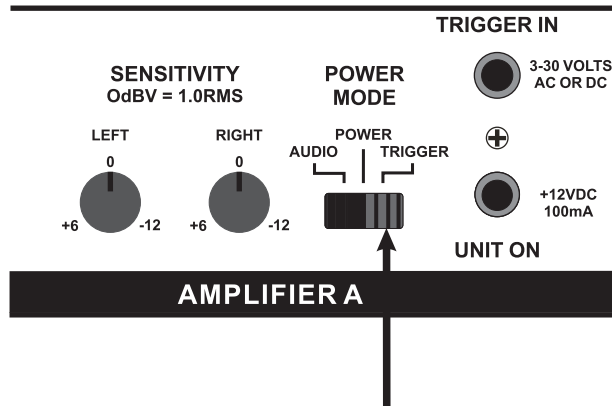
When setting the power mode switch to the center (Fig. 6), the amplifier will turn on or off only when the Power button on the front of the amplifier is pressed.

Fig. 6



Setting the power mode switch to the right (Fig. 7) sets the amplifier to respond to an incoming voltage. This voltage can be AC or DC and anything from 3-30 volts. This is very useful in conjunction with a multiroom audio system or preamp that has a voltage trigger output. In this mode the D460 will turn on or off with the source equipment.

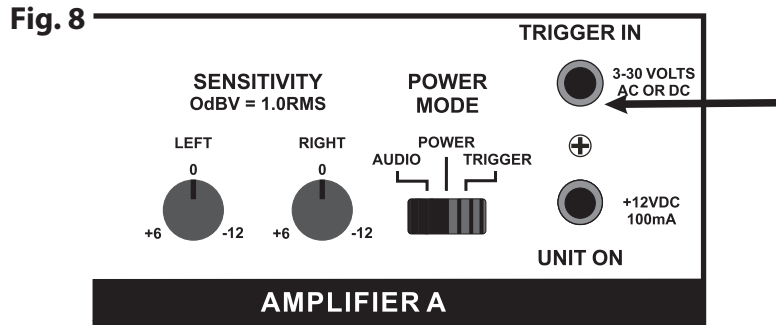
Fig. 7



IV. Trigger In

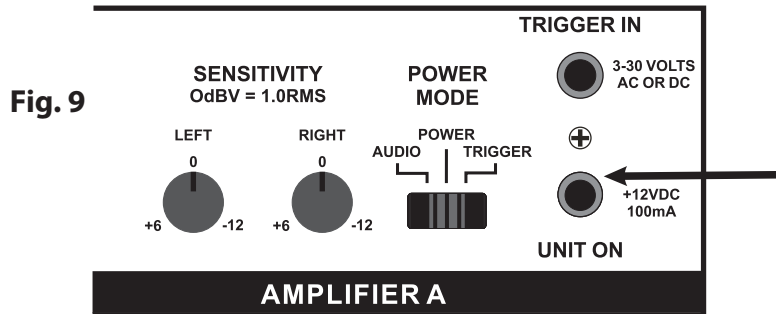
This input (Fig. 8) is designed for a mono 3.5mm plug to accept a trigger voltage coming in from an external source.

Any voltage ranging from 3-30 volts, AC or DC, will cause the amplifier to turn on when the Power switch is in the Trigger mode.



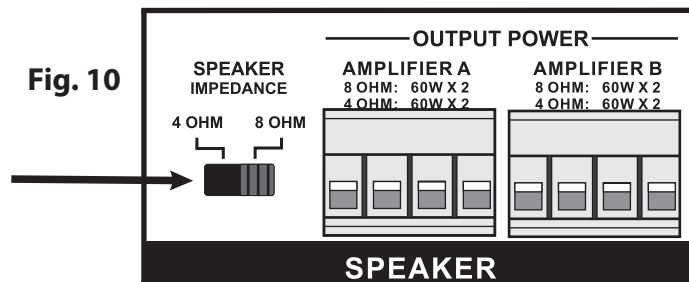
V. Unit On

This output (Fig. 9) provides a constant 12 volts DC when the amplifier is powered on. This is useful for powering on external equipment with the D460.



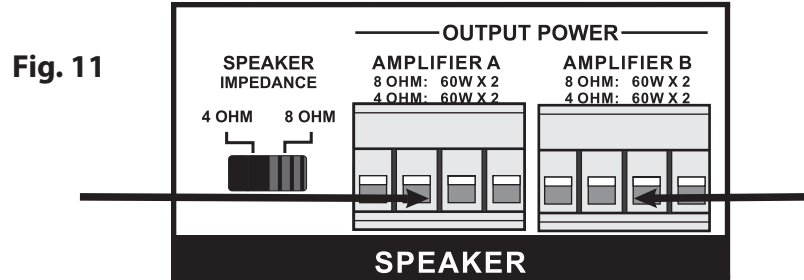
VI. Speaker Impedance

This switch (Fig. 10) allows for the adjusting of the impedance of the amplifier. By default the amplifier will be set at 8 ohms. This is fine if you are powering a pair of 8 ohm speakers, or a single stereo speaker rated at 8 ohms. In installations where 2 pairs of 8 ohm speakers will be used, or a pair of 4 ohm speakers are being utilized, the impedance of the amplifier should be set to 4 ohms.



VII. Speaker Outputs

The D460 provides 60 watts of power per channel at 4 or 8 ohms. It uses a modular plug (Fig. 11) that will accept up to 14 gauge, 4 conductor speaker wire. Stranded 4 conductor 16 gauge speaker wire is recommended.



The NV-D460 amplifier is designed to run at a maximum load of 4 ohms. Prolonged operation at less than 4 ohms could cause the amplifier to overheat and damage its internal components. Overheating the amplifier due to an excessive load will void the warranty.

Digital Power Amplifier Specifications

Power Output

Continuous Average Output Power	4 x 60W
Four channels driven 20-20kHz @1% THD	0.02%
Rated Distortion (1/2 power)	Switch Selectable 4 or 8 Ohms
Rated Impedance	50+
Damping Factor	±1 dB
Frequency Response (20-20kHz)	

Power-On Modes

Audio
Power
Trigger

System

Trigger Input	3-30V AC or DC
Unit On Output	+12VDC @100mA

Source Inputs

Input Impedance	22k ohm
Input Sensitivity for rated power	.3-2V RMS
Input Overload	2.4V RMS

Power Requirements

Power Supply	100-240VAC 50/60Hz
Power Consumption both channels at maximum available output	340W
Power Consumption average operating conditions	50W
Power Consumption no signal	12W
Standby Power Consumption	0.35W

CE EMC
CE LVD
USA FCC
ETL
Canada Safety Listing (CAN/CSA E60065.00)
Australia C-Tick

Physical Specifications

Unit Size Millimeters	44 H x 430 W x 250 D
Unit Size Inches	1 3/4 H x 17 W x 9 7/8 D
Shipping Size Millimeters	205 H x 515 W x 343 D
Shipping Size Inches	8 H x 20 1/4 W x 13 1/2 D
Unit Weight Kilograms	3.0
Unit Weight Pounds	6.6
Shipping Weight Kilograms	4.8
Shipping Weight Pounds	10.5

NuVo reserves the right to change specifications without notice.

