

NYQUIST

NQ-A4060, NQ-A4120, NQ-A4300 Audio Power Amplifiers Installation and Use



The Nyquist Power Amplifiers decode audio content distributed by the Nyquist application and levels for loudspeaker drive. The amplifiers act as paging and public address endpoints for any source on the network.

Each networked audio power amplifier is a 2RU high enclosure containing four Class D audio power amplifier channels, a universal switched-mode power supply, a USB port, one RJ45 network jack, and pluggable Phoenix style terminals for both low and high impedance loudspeakers and Line-Out connections. Optionally, the Line-Out can be connected using the available XLR connector.

This equipment is not suitable for use in locations where children are likely to be present.

Equipment is intended for use only in a restricted access area.

WARNING: To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.

Avertissement: pour réduire le risque d'incendie ou de choc électrique, ne pas exposer cet appareil sous la pluie et l'humidité.

The apparatus shall not be exposed to dripping or splashing and that no objects filled with liquids, such as vases, shall be placed on apparatus.

L'appareil ne doit pas être exposé aux écoulements ou aux éclaboussures et aucun objet ne contenant de liquide, tel qu'un vase, ne doit être placé sur l'objet.


The mains plug is used as disconnect device. The mains plug of apparatus should not be obstructed OR should be easily accessed during intended use. To be completely disconnect the power input, the mains plug of apparatus shall be disconnected from the mains.


La prise du secteur est utilisé pour déconnecter le système. La prise du secteur ne doit pas être obstruée ou doit être facilement accessible pendant son utilisation. Pour être complètement déconnecté de l'alimentation d'entrée, la prise doit être débranchée du secteur.

CAUTION

RISK OF ELECTRIC SHOCK DO NOT OPEN

CAUTION: TO PREVENT THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE ANY FRONT/BACK COVERS OR PANELS. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED PERSONNEL.

 The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

 The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions.

When rack-mounted, allow 1RU spacing (1.75 inches) between units for proper ventilation.

- Lorsqu'il est monté en rack, permettez l'espace de 1RU (1.75 pouces) entre les unités pour une ventilation adéquate.

The ventilation should not be impeded by covering the ventilation openings with items, such as newspapers, table-cloths, curtains, etc.

- il convient que l'aération ne soit pas gênée par l'obstruction des ouvertures d'aéra

No naked flame sources, such as lighted candles, should be placed on the apparatus.

- il convient de ne pas placer sur l'appareil de sources de flammes nues, telles que des bougies allumées

The use of apparatus in moderate climates.

- si l'appareil est destiné à être utilisé sous un climat tempéré.

Important Safety Information

WARNING: To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.

Always comply with the following basic safety precautions when installing and using the unit:

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Clean only with dry cloth.

6. DO NOT install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
7. 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.
8. Protect the power cord from being walked on and/or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
9. Only use attachments/accessories that are specified by the amplifiers) that produce heat.
10. Unplug this apparatus during lightning storms or when unused for long periods of time.
11. 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 exposed to rain or moisture, does not operate normally, or has been dropped.

WARNING:

The apparatus shall be connected to a mains socket outlet with a protective earthing connection.



To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.



The apparatus shall not be exposed to dripping or splashing and no objects filled with liquids, such as vases, shall be placed on the apparatus.

Where the mains plug or an appliance coupler is used as the disconnect device, the disconnect device shall remain readily operable.

Installation

To install the Power Amplifier:

1. Ensure the POWER switch is in the off position.
2. Connect the universal mains power line cord into the amplifier.
3. Connect a Cat5 type cable into the amplifier's Ethernet port and ensure the other end of the cable is correctly connected to your network.
4. Set the Amplifier Mode switch to either 70/25V 8Ω (Bridged), or 25V, 8Ω or 4Ω (2 Channel mode). The default is 2 Channel mode.

Bridged mode is typically used when higher power, single channel operation with a high impedance loudspeaker load is desired. A typical use-case would be for 70V or 25V loudspeaker runs, where the total load is no less than 8Ω.

2 Channel mode is typically used for 8Ω or 4Ω loudspeakers or 25V loudspeaker runs. This mode allows the two amplifier channels to run independently.

5. Connect the loudspeaker wires to the Amplifier Output Terminals, which are labeled A +/-, B +/-, C +/-, and D +/-, as appropriate for the desire mode of operation (see Figures 1 & 2.).

Bridged mode operation requires the speaker wires to be connected across a single, different terminal on each channel (A+ and B- and/or C+ and D-). (See Figure 1.) If two channel mode is used, then Channel A is connected to A+ and A- terminals, Channel B is connected to B+ and B- terminals, Channel C is connected to C+ and C- terminals, and Channel D is connected to D+ and D- terminals. (See Figure 2.)

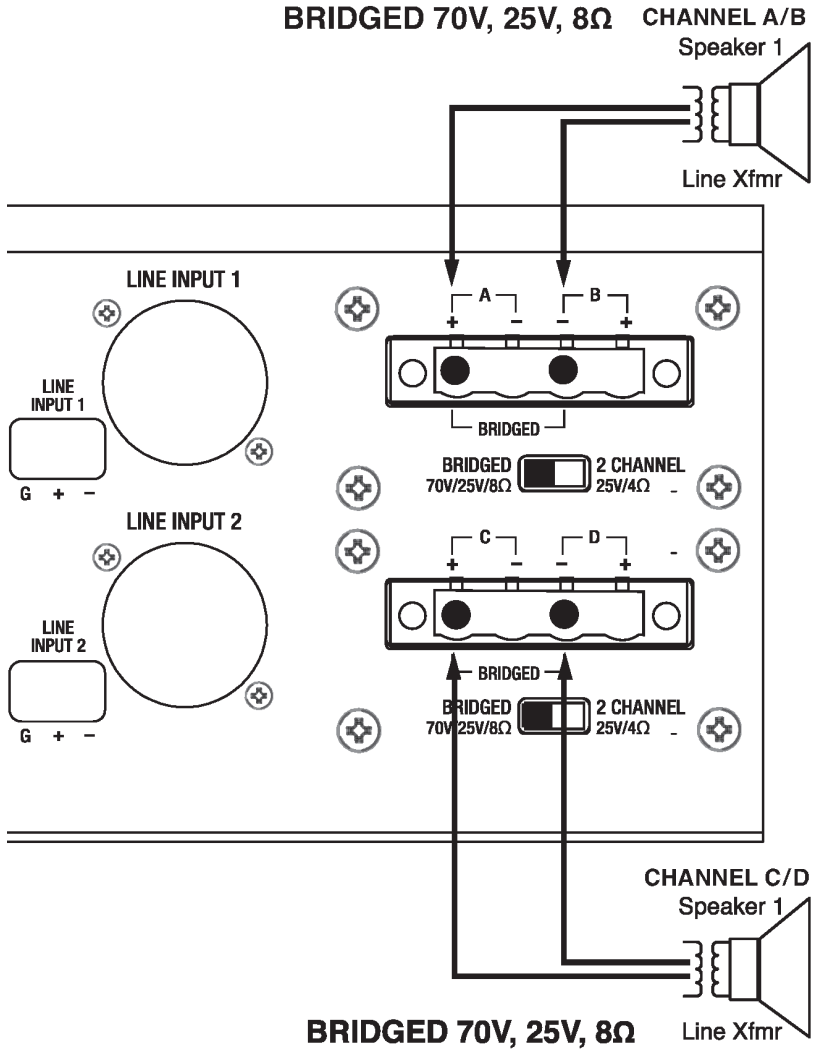


Figure 1. Bridged Wiring

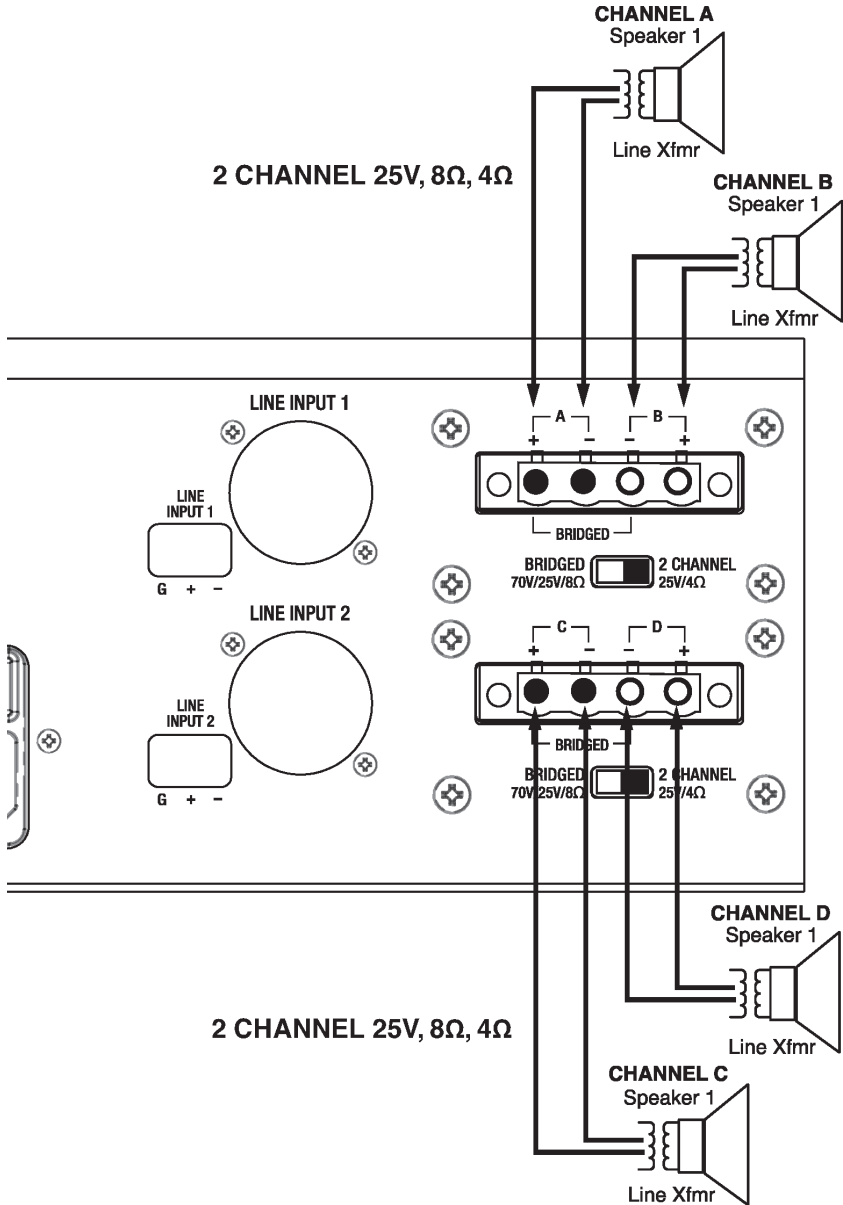


Figure 2. Two-Channel Wiring

Notice

Failure to observe minimum speaker impedance will cause the amplifier to self protect until the speaker configuration is corrected.

6. If using the Line Input, you can route the signal to any paging zone or station.

This balanced line level input can accept analog inputs up to 2V RMS. You can use either XLR or Phoenix (but not both) as the input.

7. Plug the power line cord into the power source.
8. Toggle the Power switch to the On position.

For information about configuring the amplifier for the Nyquist system, refer to the *Nyquist Power Amplifiers Configuration Manual*.

Power Ratings

The NQ-A4300 can provide 300 Watts by four channels (A, B, C, and D) into 25V, 8Ω, or 4Ω loads, or 600 Watts Bridged (two channels – A+B Bridged and/or C+D Bridged) into 70V, 25V, or 8Ω load configurations.

The NQ-A4120 can provide 120 Watts by four channels (A, B, C, and D) into 25V, 8Ω, or 4Ω loads, or 120 Watts Bridged (two channels – A+B Bridged and/or C+D Bridged) into 70V, 25V, or 8Ω load configurations.

The NQ-A4060 can provide 60 Watts by four channels (A, B, C, and D) into 25V, 8Ω, or 4Ω loads, or 120 Watts Bridged (two channels – A+B Bridged and/or C+D Bridged) into 70V, 25V, or 8Ω load configurations.

Viewing and Understanding LEDs

Two LEDs appear on the front of the amplifier. One is labeled POWER and appears as solid red during initial power up, flashes green during a boot sequence, and appears solid green when fully booted.

The STATUS LED uses the following indicators to provide information about the appliance:

- Flashing red – No network connection found.
- Solid blue – The amplifier is in an uninitialized state and is not associated to a server. (The server may be in a discovery mode.)
- Solid green – The amplifier is registered to a Nyquist server and is in normal operation.
- Flashing green – The amplifier has an IP address but is not registered with the Nyquist server.
- Solid red – The amplifier needs to be rebooted or reset so that the Nyquist application can resume.
- Flashing blue – The amplifier is updating.



Clipping, Protection, and Temperature Indicators

In addition to the LEDs that appear on the actual appliance, separate amplifier module signal clipping, protection mode, and temperature status indicators appear in the Nyquist amplifier's web-based user interface. For more information about these status indicators, refer to the *Nyquist Audio Power Amplifiers Configuration Manual*.

Using the Reset Button

The Reset button allows you to restart the appliance or to reset the appliance's configuration settings to the factory default settings. For more information about resetting configuration settings, refer to the *Nyquist Audio Power Amplifiers Configuration Manual*.



Notice

Every effort was made to ensure that the information in this manual was complete and accurate at the time of printing; however, all information is subject to change.

Compliance

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Limited Warranty, Exclusion of Certain Damages

The NQ-A4120, the NQ-4060, and the NQ-4300 are warranted to be free from defects in materials and workmanship for five (5) years from the date of sale to the original purchaser. Any part of the product covered by this warranty that, with normal installation and use, becomes defective (as confirmed by Bogen upon inspection) during the warranty period will be repaired or replaced by Bogen, at Bogen's option, with new or refurbished product, provided the product is shipped insured and prepaid to: Bogen Factory Service Department: 4570 Shelby Air Drive, Suite 11, Memphis, TN 38118, USA. Repaired or replacement product(s) will be returned to you freight prepaid. This warranty does not extend to any of our products that have been subjected to abuse, misuse, improper storage, neglect, accident, improper installation or have been modified or repaired or altered in any manner whatsoever, or where the serial number or date code has been removed or defaced.

THE FOREGOING LIMITED WARRANTY IS BOGEN'S SOLE AND EXCLUSIVE WARRANTY AND THE PURCHASER'S SOLE AND EXCLUSIVE REMEDY. BOGEN MAKES NO OTHER WARRANTIES OF ANY KIND, EITHER EXPRESS OR IMPLIED, AND ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED AND EXCLUDED TO THE MAXIMUM EXTENT ALLOWABLE BY LAW. Bogen's liability arising out of the manufacture, sale or supplying of products or their use or disposition, whether based upon warranty, contract, tort or otherwise, shall be limited to the price of the product. IN NO EVENT SHALL BOGEN BE LIABLE FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, LOSS OF PROFITS, LOSS OF DATA OR LOSS OF USE DAMAGES) ARISING OUT OF THE MANUFACTURE, SALE OR SUPPLYING OF PRODUCTS, EVEN IF BOGEN HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES OR LOSSES. Some States do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from State to State.

Products that are out of warranty will also be repaired by Bogen Factory Service Department -- same address as above or call 201-934-8500, at owner's expense. Returned products which do not qualify for warranty service, may be repaired or replaced at Bogen's option with a previously repaired or refurbished items. The parts and labor involved in these repairs are warranted for 90 days when repaired by the Bogen Factory Service Department. All parts and labor charges as well as shipping charges will be at the owner's expense.

All returns require a Return Authorization number. For most efficient warranty or repair service, please include a description of the failure.

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