Owner´s manual

SDAI 2175
Semi Digital Amplifier Integrated
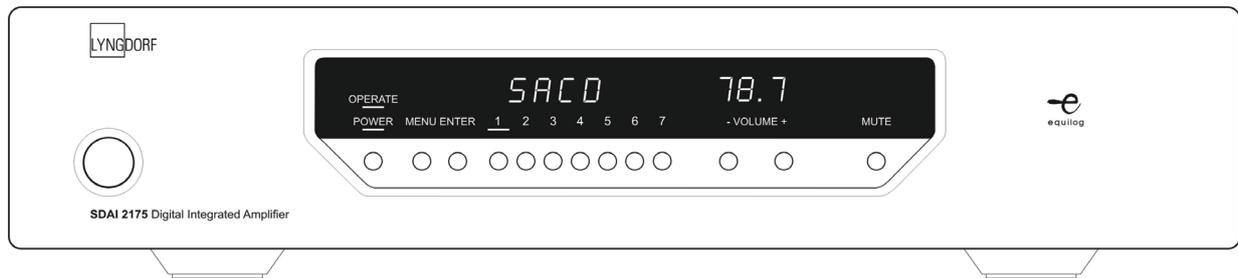
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Table of Contents

Operating Voltage

The SDAI 2175 is available in a version for 115V mains voltage and in a version for 230V mains voltage.

Check the label on the SDAI 2175 rear panel and verify you have the version with the proper voltage for your area.
The 115V version requires a mains voltage of 100V-120V at 50-60Hz with a current rating of 8A.
The 230V version requires a mains voltage of 200V-240V at 50-60Hz with a current rating of 4A.

The mains voltage setting for your SDAI 2175 can be changed ONLY BY A QUALIFIED ENGINEER.

⚡	Connect the power input only to the AC source printed on the label. The warranty will not cover any damage caused by connecting to the wrong type of AC mains.

Unpacking the SDAI 2175

Carefully remove the unit and accessory kit from the carton, visually check for shipping damage. Contact both the shipper and Lyngdorf Audio immediately if the unit bears any sign of damage from mishandling. All Lyngdorf Audio equipment is carefully inspected before leaving our factory.

⚠	Keep shipping carton and packing material for future use or in the unlikely event that the unit needs servicing. If this unit is shipped without the original packing, damage could occur and void the warranty.

Serial Number Registration

Please record the serial number of your amplifier here for future reference. The serial number is printed on the label on the SDAI 2175 rear panel. You will need this serial number, should you ever require service for your SDAI 2175 power amplifier.

SDAI 2175 serial number: _____

Introduction

Lyngdorf SDAI 2175 is a compact, high performance semi digital integrated switch-mode amplifier utilizing some of the circuit topologies originally developed for the Lyngdorf Millennium amplifier. Due to the switch-mode topology, with an efficiency of up to 85%, the SDAI 2175 will provide its output power with minimal heat dissipation. A massive power supply with a 650VA toroid transformer and more than 40000uF capacitors ensures that the SDAI 2175 can deliver the current to drive even the most demanding loudspeakers.

The SDAI 2175 has 2 gold-plated XLR connectors accepting balanced input signals and 6 stereo inputs with 2 gold-plated RCA connectors for unbalanced signals. The SDAI 2175 has a stereo tape out of the selected line level input signal and pre out of the selected input signal after the volume control as either balanced signal from the gold-plated XLR connectors or unbalanced from the gold-plated RCA connectors.

The volume control is implemented as a high precision digital controlled analog attenuation in 0.1 dB steps over a 100 dB range. Input selection is performed via precision relays with double gold plated construction of the contact set. These kind of relays are normally only used in expensive measurement equipment for high linearity and low losses.

All controls can be operated from the front panel via the logical user interface or by use of the remote control. Or as an option the setup and operation can be performed via a PC interface.

The input signal is fed to the volume control circuit via an AC coupled true instrumentation type input amplifier. Except for this AC coupling, the SDAI 2175 is fully DC coupled with no bypass capacitors or DC servos to degrade the performance. The protection circuitry in the SDAI 2175 shuts down the unit in case of over-temperature, DC voltage on the outputs and too high output current. The amplifier will resume normal operation when the fault condition is no longer present.

A trigger output on a 3.5mm jack connector allows the SDAI 2175 to control one or more SDA2175's power condition.

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Accessories

You should find the following accessories included:

Mains cord

Owner's manual

SDAI 2175
Semi Digital Integrated Amplifier

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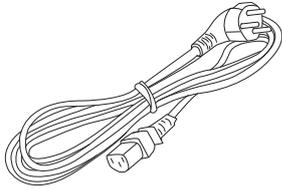
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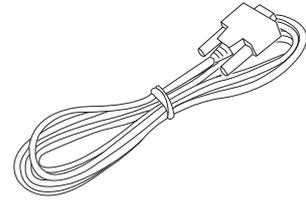


Programming cable

Remote control

Front Panel
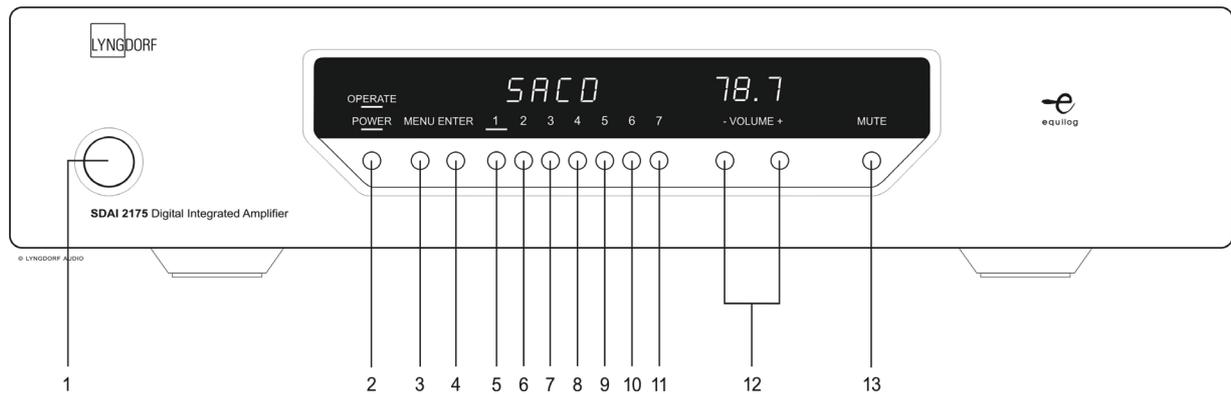
Controls

The buttons/controls on the front panel of the SDAI 2175 can all be used either with direct presses on the front or by operating the similar keys on the included remote control. All keys on the front except for the Mains switch (1) can be found on the remote control as well.

1. Mains switch
Turns the power to the unit On or Off.

2. Power
Changes the SDAI 2175 mode between Standby and Active.

3. Menu
Toggles Menu mode on/off.

4. Enter
Activates sub menus for active changes.

5-11. Input selectors
Selects active input, or in menu system select input to change.

12. Volume
-/+ indicates decrease and increase in volume control or in menu mode toggles sub menus, or in menu active mode toggles parameters.

13. Mute
Toggles mute for SDAI 2175.

Display

1. OPERATE
Indicates the operational status of the SDAI 2175.

- Off: The SDAI 2175 is in standby mode.
- Flashing: The SDAI 2175 is in the soft-start phase or the protection circuit is engaged.
- On: The SDAI 2175 is operating normally.

2. POWER
Illuminated whenever the power is applied to the SDAI 2175 and the mains switch is ON.

3. MENU
Indicates the Menu system is operative of the SDAI 2175.

- Off: The SDAI 2175 is in normal mode.
- Flashing: The SDAI 2175 is in menu active mode.
- On: The SDAI 2175 is in menu select mode.

Menu active mode indicates the menu button (3) have been pressed and the different menus can be either toggled by pressing -/+ (12) or selected for changes with enter (4).

4. 1-7
Illuminates active input

5. 14 Segment display
Main menu system information 6*14 segment display.

6. VOLUME
3 digits indicating Volume control setting from 00.0 to 99.9 – in dB's

7. MUTE
Illuminated when Mute is active

Rear Panel
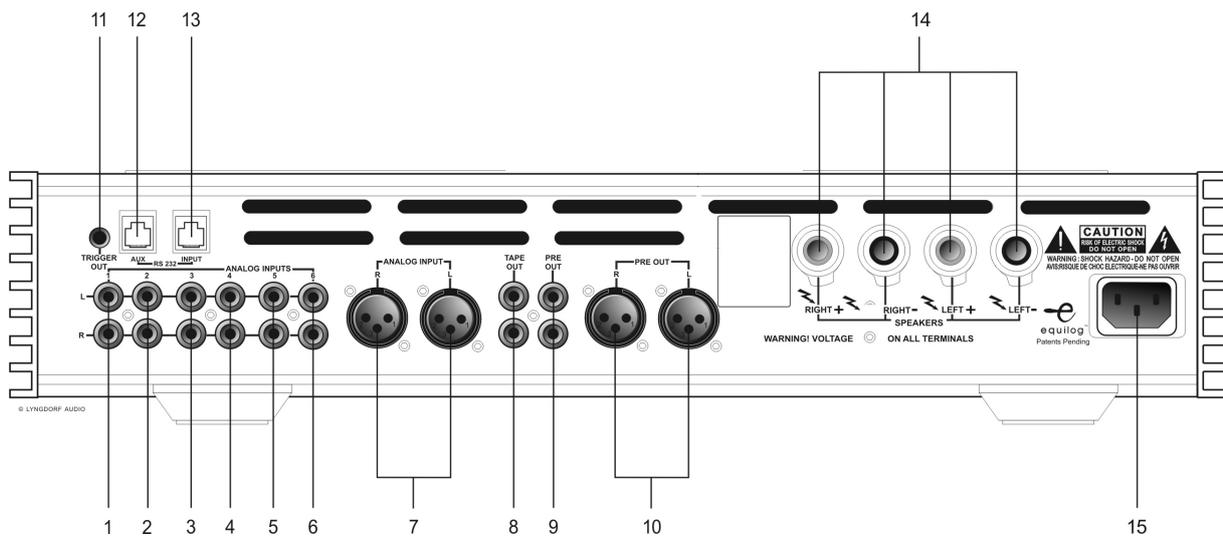
1-6.   Input
RCA unbalanced input channel 1-6.

7.   Input
Balanced stereo input channel 7.

8.   Tape Out
Line output of selected input.

9.   Pre Out
Regulated output after volume control of selected input.

10.   Pre Out Bal
Balanced regulated output after volume control of selected input.

11.   Trigger Out
DC Trigger out for remote start of SDA 2175 power amplifiers or similar equipment.

12-13. Input
RS232 communication connectors for communication with PC.

14.   Loudspeaker Connectors
Stereo Loudspeaker output

15.   Mains socket

Menu system

The Menu system of the SDAI 2175 can be used for setting up the amplifer for nearly all everyday situations. The only feature which can not be changed from the menu system is custom naming of the input texts which can only be performed from the SDAI Pack PC setup program available for download from www. lyngdorf.com.

The menu system of the SDAI2175 can be entered by pressing the Menu key (3) where after the menu indicator will be illuminated. The volume control keys (12) now changes status from being volume control keys to be sub menu selectors for the menu system. Pressing the keys changes between the different menus seen in fig.1.

When the wanted menu system is found, it can be activated with the Enter key (4). When active the menu LED starts blinking and the parameters for the active setting can be changed with the volume control keys (12). The changes can be confirmed and stored by pressing the Enter key (4) or the changes can be skipped by pressing menu which exit's the menu system again.

The menu system is shown on Fig. 1, and the different sub menus will be explained in the following.

Menu Tree
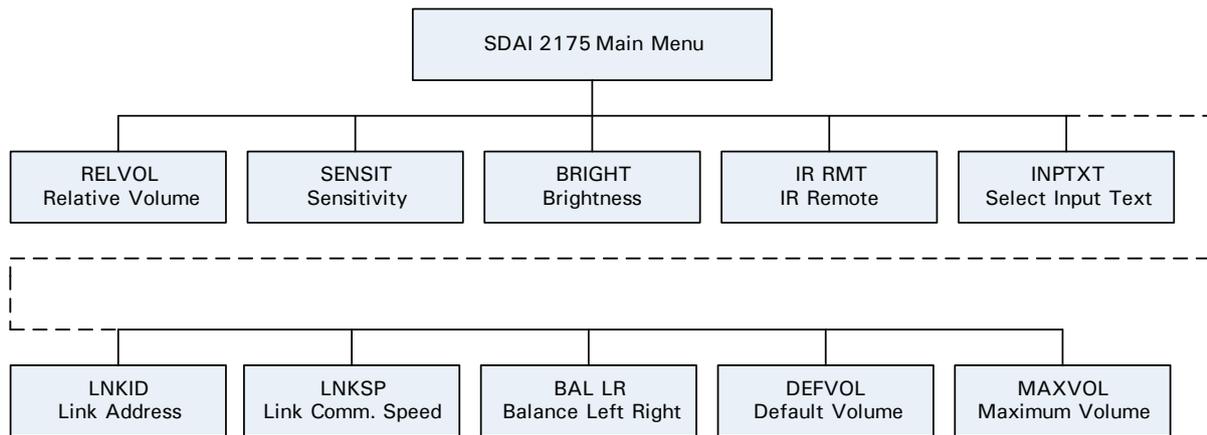
Fig. 1.

RELVOL - Relative Volume

Relative volume for the active input. Fine tuning of the volume control for each input relative to the global setting. The Sensitivity can be adjusted +/-6dB in 0.1 dB steps.

SENSIT - Sensitivity

Input amplifier sensitivity 0 or +6 dB for the active input. Used for increasing the sensitivity for weak sources in the preamplifier section without increasing noise level.

BRIGHT - Brightness

Brightness of Display from 0 (Display off) to max intensity 4.

IR RMT - IR Remote

Enable / Disable of remote control, Remote can be disabled if the SDAI 2175 is controlled over RS232 interface.

INPTXT - Select Input Text

Selection of input text for the active input. Selection can be chosen between a range of predefined strings or from 7 user defined strings which can be entered with the Lyngdorf SDAI 2175 Control software.

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LNKID - Link Address

```
        LNKID
      Lind Address
```

Link ID adress in the Lyngdorf network. Address 0 is reserved, address 1 is used for masters in the network, so applicable addresses are from 2-255.

LNKSP - Link Comm. Speed

```
        LNKSP
    Link Comm. Speed
```

Link Communication speed 9600/57600 Baud. Normal Lyngdorf interconnect speed is 57600 Baud.

BAL LR - Balance Left Right

```
        BAL LR
    Balance Left Right
```

Fine tunes balance of level from Left to Right speaker +/-6dB in 0.1 dB step.

DEFVOL - Default Volume

```
       DEFVOL
     Default Volume
```

Sets default volume when the amplifier comes out of standby.

MAXVOL - Maximum Volume

```
       MAXVOL
    Maximum Volume
```

Maximum volume the user can select, used as a safety feature to prevent excessive volume levels.

Software

Lyngdorf Audio supplies control software for remote control of the SDAI 2175 and setup of the Input text system. Please check the Lyngdorf audio web site for download of the newest version at http://www.Lyngdorf.com

The SDAI 2175 firmware can be upgraded using the 'Lyngdorf Serial Load, software upgrade tool' this is in the PC package available from www.Lyngdorf.com

Follow the upgrade steps to bring the product into boot mode. Only one device should be connected to the PC when upgrading the firmware.

Upgrade steps:
1. Make sure that a serial cable is connected between PC and amplifier or CD.
2. Select File to upload.
3. Check Comm Adress and COM port
4. Click ´Open Comm port´.
5. Start Amplifier or CD in boot mode.
6. Upload new software
7. Wait for Amplifier or CD to Initialize

Bootmode:
Turn power Off on the front button.
Press both volume buttons simultaneously and hold them while turning On the power.
Release both volume buttons and SDAI 2175 is in bootmode.
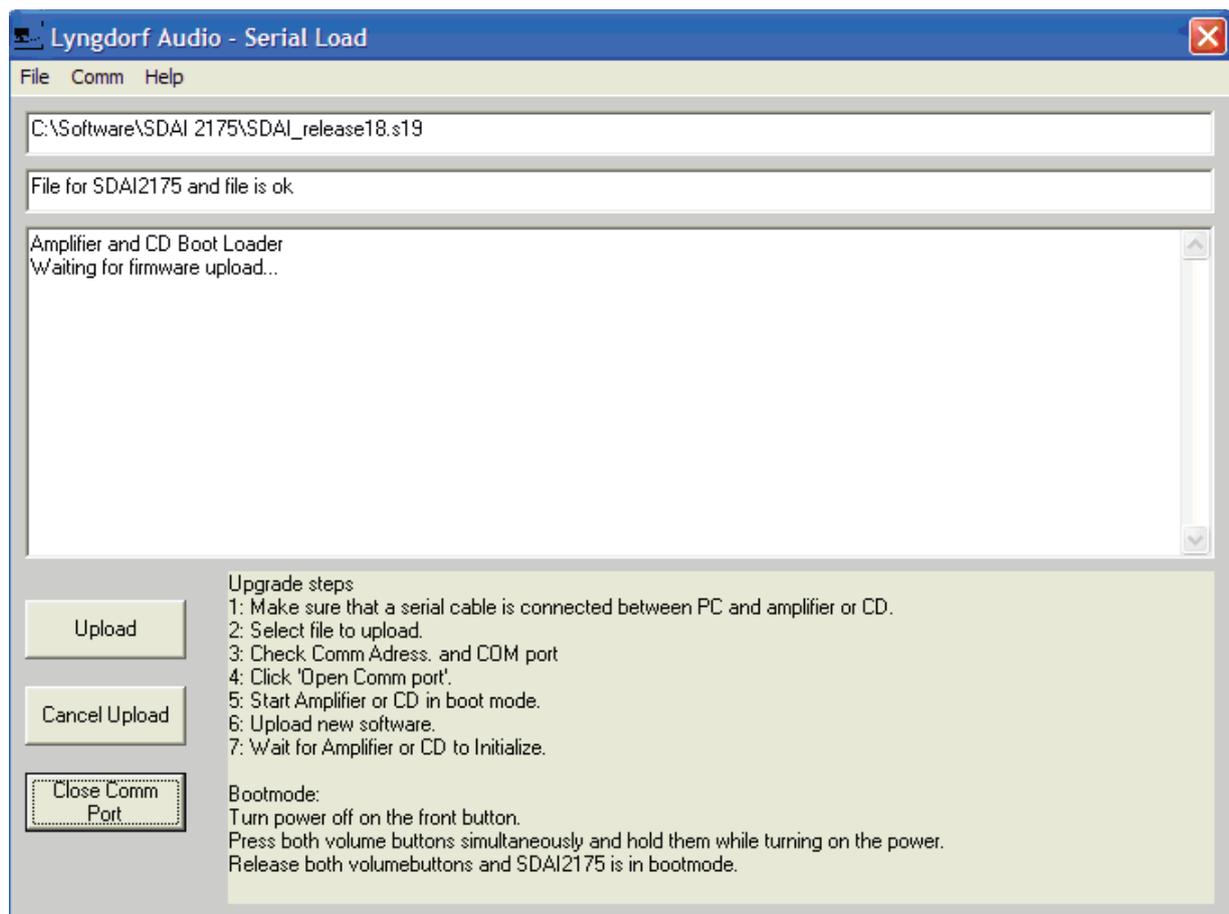
Connectors

Mains Connector
Mains voltage to the SDAI 2175 is applied via an IEC320 type connector. The supplied cable with safety ground should be used to connect the SDAI 2175 to a mains outlet.

⚡	Connect the power input only to the AC source printed on the label. The warranty will not cover any damage caused by connecting to the wrong type of AC mains.
⚡	Always disconnect the SDAI 2175 from the mains before changing any connections to its inputs or outputs.

Loudspeaker connectors
The SDAI 2175´s loudspeaker connectors accept banana plugs, spades or bare wire ends up to 5 mm in diameter. Connect the wires from each loudspeaker to each channel's + and – terminals. Do not make any other connections to the output terminals. The loudspeaker cable is inserted into the slot in the loudspeaker terminal, and the terminal is tightened firmly.

⚡	Always disconnect the SDAI 2175 from the mains before changing any connections to its inputs or outputs.
⚡	Make sure that no conductive part of the speaker wiring is accessible. Do not connect loudspeakers with uninsulated terminals.

When the SDAI 2175 is operating, there is 35V DC on its output terminals with reference to ground.

⚠	Do not connect the output from the amplifier to any other amplifier's output or any other voltage source. Do not attempt to operate the amplifier in bridged mono mode.

Input connectors
The SDAI 2175 has input connectors for both balanced (XLR) and unbalanced (RCA) signals. The input impedance of the balanced input 7 is 10 kOhm for the unbalanced input 1-6 the input impedance is 100kOhm.

Balanced inputs
The balanced XLR inputs are wired in accordance with IEC268:
Pin 1: Chassis and ground.
Pin 2: Hot (+).
Pin 3: Cold (-).
Shell: Chassis and ground.

Unbalanced inputs
The unbalanced RCA inputs are wired in accordance with normal practice:
Shell: Chassis and ground.
Pin: Hot (+).

Trigger connectors

The SDAI 2175 is equipped with a TRIGGER OUT 3.5mm mono jack connector. The Trigger signal is a 12V short circuit protected output signal for powering up external equipment when the SDAI 2175 is on, e.g. remotely connected SDAI 2175 power amplifiers or active subwoofers.

Cleaning and maintenance

⚠	Always unplug the unit from the electrical outlet before cleaning.
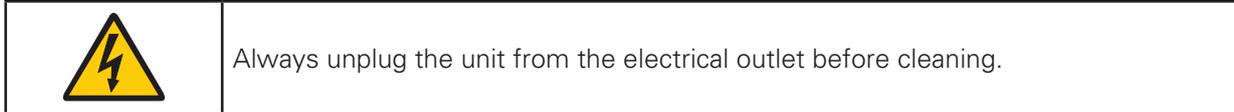
This unit does not require any regular maintenance except to keep its exterior clean. Simply wipe its exterior with a clean soft cloth. A small amount of non-abrasive cleaner may be used on the cloth to remove any excessive dirt or fingerprints. Do not use abrasive cleaners or cleaners containing liquid solvents.

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Technical specifications

Audio

Parameter	Value	Note
Balanced input connectors	3 pin XLR, gold-plated.	Case=Gnd, Pin1=Gnd, Pin2=Hot(+), Pin3=Cold(-)
Balanced input impedance	10kOhm	AC-coupled.
Balanced input CMRR	40dB	20Hz-20kHz.
Unbalanced input connectors	RCA (phono) jack, gold-plated.	Case=Gnd, Tip=Hot(+)
Unbalanced input impedance	100kOhm	AC-coupled
Tape Out output impedance	75 Ohm	Gain 0 dB ref. active input
Pre Out output impedance	75 Ohm unbalanced 100 Ohm balanced	Gain According to volume control setting. 88 dB = 0 dB with sensitivity 0 dB and rel. volume 0 dB
Max. input voltage	±12Vp AC, 0-20V DC.	
Input sensitivity	2V (1V with high sens.)	200W/8ohms
Voltage gain	26dB	
Output connectors	4 insulated binding posts, gold-plated.	Will accept bare wire ends of up to 5 mm diameter.
Output power, 8ohms	2*200W	1KHz, 1% THD+N
Output power, 4ohms	2*375W	1KHz, 1% THD+N
Nominal load impedance	4 Ohms-8 Ohms	It is safe to operate the amplifier with no load.
Frequency response	0.3Hz-33kHz	-3dB points, 8ohms load.
Frequency response	-0dB/+0.2dB	20Hz-20kHz, 8ohms load
Frequency response	-0.2dB/+0dB	20Hz-20kHz, 4ohms load
Output impedance	0.035 Ohms	20Hz-1kHz
Output impedance	0.4 Ohms	20kHz
THD+N, 1W/8ohms	0.004%	A-wgt.
THD+N, 1W/4ohms	0.006%	A-wgt.
THD+N, 100W/8ohms	0.01%	A-wgt.
THD+N, 180W/8ohms	0.07%	A-wgt.
THD+N, 375W/4ohms	0.07%	A-wgt.
S/N ratio	113dB	A-wgt. Ref. 200W/8ohms.
Channel separation	84dB	1kHz, 200W/8ohms.
Peak output current	±40A	
Output common mode voltage	35V DC	Ref. Ground. The amplifier can not be used in bridged mono mode.
Output DC voltage	±5 mV	

All audio measurements, except frequency response, are measured with a 20 kHz low-pass filter in accordance with AES-17.

Protection

Parameter	Value	Note
Grounding	Mains earth, chassis and audio ground are connected internally.	
Output short circuit current	±40A	
Output DC voltage	±5V @ <0.1Hz	
Over temperature	All heat sinks and mains-transformer.	Auto resetting thermal fuse in mains transformer.

Mains

Parameter	Value	Note
Mains input connector	IEC 320 cold type	Mains lead supplied.
Mains voltage range	100-120V AC, 50–60Hz	115V version
Mains voltage range	200-240V AC, 50-60Hz	230V version
Internal mains fuse	8 Amp	115V version
Internal mains fuse	4 Amp	230V version
Power consumption	1.5 W	STANDBY mode.
Power consumption	35 W	OPERATE mode, no output.
Power consumption	116 W	2*37.5W/4ohms.
Power consumption	820 W	2*300W/4ohms.

Trigger

Parameter	Value	Note
TRIGGER OUT connector	3.5mm (1/8") mono jack	Case=Gnd, Tip=Input
TRIGGER OUT Voltage	12V DC	Short circuit protected

Mechanical

Parameter	Value	Note
Width	450mm (17.72")	
Depth	355mm (13.98")	Including loudspeaker connectors.
Height	100mm (3.94")	Including feet.
Net weight	13.0Kg (28.66lb.)	
Shipping weight	16.0Kg (35.27lb.)	

Technical Assistance

For latest version of control software, newest version of this document and 'Questions and Answers', please check the 'Support' section on the Lyngdorf Audio website.

If you have any problems with or questions regarding your Lyngdorf Audio product, please contact your nearest Lyngdorf Audio representative or:

Lyngdorf Audio
Denmark

E-mail: info@lyngdorf.com
Web: http://www.lyngdorf.com

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