



# **Model S**

S/PDIF D/A Converter

## User Manual

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## IMPORTANT PRECAUTIONS

1. Do not expose this device to rain or moisture, excessive heat or mechanical force.
2. Use this device exclusively with specified mains voltages.
3. Unplug the device from the wall outlet during a lighting storm.

To prevent the risk of electric shock, do not remove the cover!  
This device contains no user serviceable parts inside.  
Refer servicing to qualified servicing personnel only.



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 in the literature accompanying the product.

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Thanks for choosing the Model S. We hope its sound quality will satisfy you for years to come.

This User Manual comprises introducing information on use and performance of the Model S. For more data please refer to the Audial site, [www.audialonline.com/html/model-s/](http://www.audialonline.com/html/model-s/), or send your questions to [info@audialonline.com](mailto:info@audialonline.com).

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# Getting started

Other than the D/A converter itself, a packing box should comprise:

1. Mains cord
2. RCA female to BNC male adapter
3. Printed copy of this manual
4. Invoice (if sold directly by Audial).

RCA to BNC adapter is supplied to help experimenting with different S/PDIF cables since these, per rule, come fitted with RCA connectors. This adapter is not a long term solution. The S/PDIF transmission line is supposedly 75 Ohm line, and hence it is highly recommend to use the real 75 Ohm BNC plugs. Regardless of what you may be told from time to time, the RCAs don't belong here.

Use of mains cable of higher quality than the one supplied is also highly recommended, whether an after market or DIY one. Solid core cable is suggested.

## Connections

No special knowledge is required to connect the Model S into the system.

Mains connector is standard IEC C14 (cable is supplied, as stated above), located at the back plate.

Two S/PDIF inputs (BNC connectors) are also located at the back plate, and can be used either for connection with dedicated CD transport, or appropriate digital output found on the integrated CD players, or any other device comprising adequate S/PDIF output (PC soundcards, different music servers etc.). The S/PDIF inputs are transformer coupled.

The Model S has two sets of the outputs, unbalanced RCA and balanced XLR.

Regularly both outputs convey the same signal, and are transformer coupled. In

addition, an RCA output can be coupled directly, or by capacitors, on request. If both outputs are transformer coupled, their simultaneous use is limited, as the ground of the downstream device connected to the RCA output will ground the negative pole of the XLR output.

The Model S comprises external connector to the internal ground. (Units produced before August 2009 had this GND terminal connected to the audio ground, however later units have this GND terminal connected to the chassis/earth ground.) Connector like this can help proper system grounding and/or earthing, or it can be used for the shields of the interconnect cables.

## Everyday use

The Model S is easy to use device. It achieves claimed technical performance (distortion, frequency response etc.) right from the start, however it normally needs a couple of weeks of burning in to perform the best in subjective sonic terms (this is mostly due to the Black Gate capacitors). Because employed D/A converter chip (TDA1541A) uses a classic TTL architecture, and since the output circuits of the Model S run in the healthy class A, this unit dissipates somewhat more power than is usual for devices of this kind. Hence leaving it constantly on is not recommended, nor is it really needed. After initial weeks of burning in, it is generally enough to leave the unit powered on for about one hour before critical listening.

The Model S comprises three switches. The front plate comprises the mains switch, and the input selector. The third switch is located at the back plate of the unit, and it (dis)connects the S/PDIF line ground from the DAC ground. This will be explained in the next page of this manual.

Two green LE diodes indicate selected input. The third LE diode indicates lock onto the S/PDIF source. The red diode

shows the incoming S/PDIF data error. With most sources the green light will light so long as the source is powered on. "Error" diode is normally on when transport is stopped, and it is normal if it flashes while transport is paused.

## S/PDIF ground

The third switch, located at the back plate, controls the way the ground of the S/PDIF line/cable is connected to the DAC ground.

Since the S/PDIF input is transformer coupled, and since the shield of S/PDIF line is usually grounded (whether directly or capacitively) at the source, keeping the shield of the cable at stable voltage and thus preventing the cable to emit the RF around, it may be redundant to couple the S/PDIF ground also at DAC side. Consequently, in some cases breaking completely the path between the ground of the S/PDIF and the ground of the DAC may give the best results.

However, for a couple of reasons, certain coupling between these grounds in some systems works better, so the switch connecting these two grounds by 100nF capacitor is provided. Since the best option depends on the system actually used ("the system" includes but is not limited to the S/PDIF source, the way the safety earth issues are handled, as well as a home electric installation), it is recommended to check which position works the best in your system.

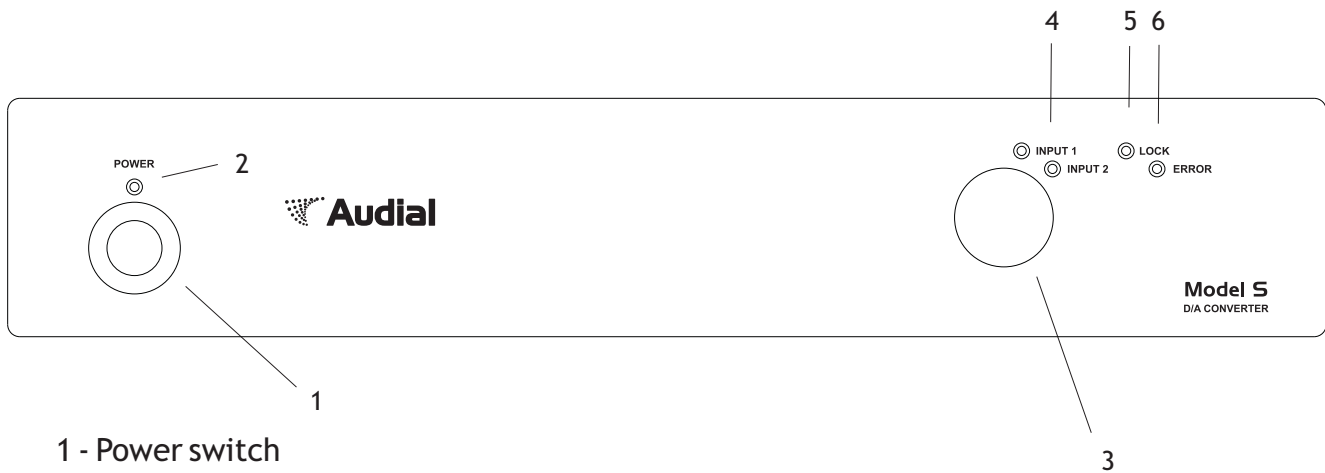
Direct coupling of S/PDIF ground is not provided because, as the experiments confirmed, this achieved almost always inferior results.

## Warranty

Audial claims proper working of this product for two years. Audial is obliged to correct any malfunction within this period, at no charge, either by competent repair service, or by swapping the sold unit by the new one.

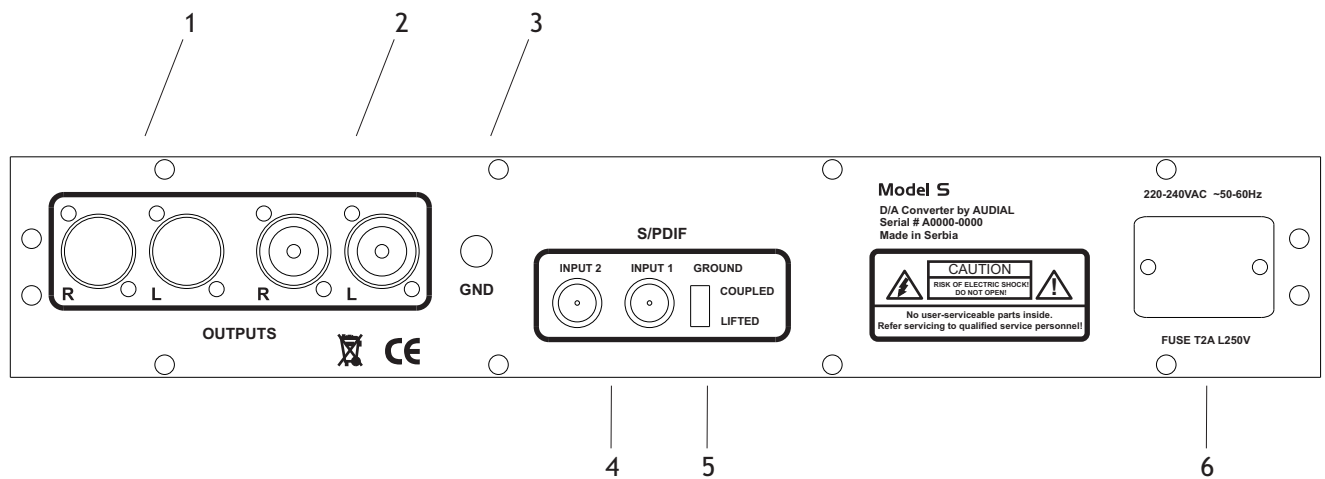
For the units sold directly by Audial, invoice is also guarantee certificate. Since Audial maintains own data base of directly sold units, the original buyers in most cases won't need it. Warranty is still fully transferrable from original to subsequent owner(s), however in this case we will probably ask for the invoice.

# Front Panel



- 1 - Power switch
- 2 - Power indicator
- 3 - Input selector
- 4 - Input indicators
- 5 - S/PDIF lock indicator
- 6 - S/PDIF data error indicator

# Rear Panel



- 1 - Balanced output connectors (XLR)
- 2 - Unbalanced output connectors (RCA)
- 3 - GND connector
- 4 - S/PDIF input connectors (75 Ohm BNC)
- 5 - S/PDIF ground switch
- 6 - Mains connector (IEC C14) with fuse

# Specifications

## INPUTS:

75 Ohm S/PDIF electrical, BNC connector

## SAMPLING FREQUENCY:

up to 96kHz

## OUTPUTS:

Unbalanced RCA and balanced XLR,  
2.1V RMS both

## OUTPUT IMPEDANCE:

Transformer coupled:  $\leq 90$  Ohm  
Directly coupled:  $\leq 4$  Ohm

## FREQUENCY RESPONSE:

Sin(x)/x equivalent:

@ fS=44.1kHz: -3.2dB @ 20kHz

@ fS=88.2kHz: -0.8dB @ 20kHz

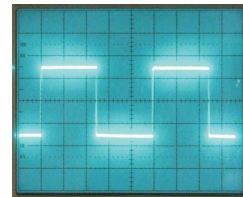
## TRANSIENT RESPONSE:

Clean with no overshoot or ringing



## ABSOLUTE PHASE:

Correct



1kHz square wave

## HARMONIC DISTORTION (@ 1kHz)\*:

0.002% @ -6dBFS (I/V dominated)

0.012% @ -20dBFS (D/A dominated)

0.87% @ -60dBFS (D/A dominated)

## INTERMODULATION DISTORTION (CCIR)\*:

0.0097%

## MAINS VOLTAGE:

220-240VAC/50-60Hz

110-120VAC/50-60Hz is also available

## OUTER DIMENSIONS (W x D x H):

431.5 x 320 x 102 mm

## WEIGHT:

Approx. 9 Kg

\* - each sample of the Model S is supplied  
with its own lab report



