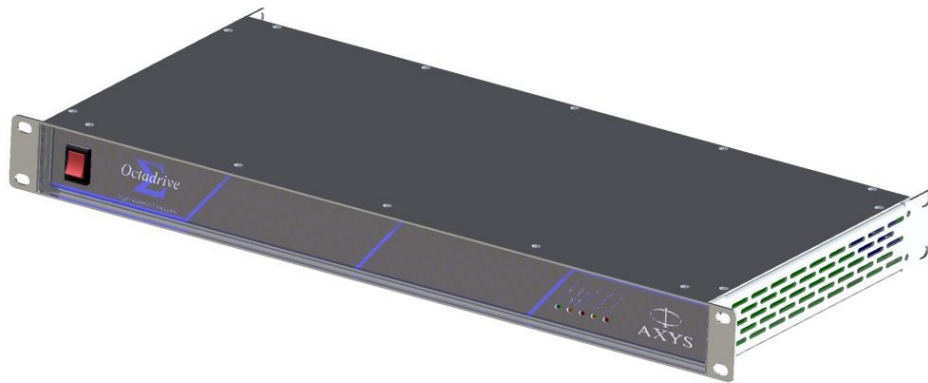


AXYS®
Octadrive
eight-channel line driver
User Manual



Contents.

1. DISCLAIMER.....	4
2. SAFETY PRECAUTIONS.....	5
2.1 GENERAL.....	5
2.2 IMPORTANT INFORMATION REGARDING SAFETY.....	5
3. INTRODUCTION.....	7
3.1 FEATURES.....	7
3.2 SYSTEM DESCRIPTION.....	7
3.3 BEFORE YOU START.....	8
3.4 UNPACKING.....	8
3.5 FRONT SIDE LAYOUT.....	9
3.6 REAR SIDE LAYOUT.....	9
4. OPERATING INSTRUCTIONS.....	10
4.1 INSTALLING THE UNIT.....	10
4.2 FRONT PANEL DESCRIPTION.....	10
4.3 REAR PANEL DESCRIPTION.....	10
5. BLOCK DIAGRAM.....	13
6. TECHNICAL SPECIFICATIONS.....	14
7. TROUBLE SHOOTING.....	15
8. MAINTENANCE & WARRANTY INFORMATION.....	16
8.1 MAINTENANCE.....	16
8.2 WARRANTY INFORMATION.....	16

1. DISCLAIMER

- The information in this manual has been carefully checked for accuracy, but no guarantee is given as to the correctness.
- The information in this manual is subject to change without notice, and does not represent a commitment on the part of the vendor. Duran Audio BV shall not be liable for any loss or damage whatsoever arising from the use of information or any error contained in this manual.
- No part of this manual may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, electrical, mechanical, optical, chemical, including photocopying and recording, for any purpose other than the purchaser's personal use without the express written permission of Duran Audio BV.
- The unit is designed to operate from AC 50/60 Hz, 115V or 230 V please, see the label on the rear of the unit. Never connect to any other voltage or frequency.
- Unplug the product before cleaning. Do not use liquid cleaners or aerosol cleaners but a damp cloth.
- Protect the product from overheating. Do not block ventilation slots. The product should not be built-in unless proper ventilation is provided.
- The purchaser should not attempt to service the product, as he or she may be exposed to dangerous voltages. All maintenance and service should be carried out by Duran Audio BV or its authorized agents. Duran Audio BV cannot accept any liability for any loss or damage caused by service, maintenance or repair by unauthorized personnel.

2. SAFETY PRECAUTIONS

2.1 General



The term and symbol “WARNING!” is used throughout this manual to alert the reader a potentially dangerous situation which **will** cause damage to the equipment or **will** lead to personal injury.



The term and symbol “CAUTION!” is used throughout this manual to alert the reader a potentially dangerous situation which **may** cause damage to the equipment or **may** lead to personal injury.

For your own safety and to prevent equipment failures read the manual carefully before you start using our products, and take note of all the safety precautions.

Keep this user manual in a safe place so you know where to find it for future reference.

If you supply or rent out **AXYS®** products please draw your customer's attention to these safety guidelines and enclose the relevant manuals always with the systems. If you need additional manuals for this purpose you will find a digital copy in the download section of our website.

2.2 Important information regarding safety



- KEEP THESE INSTRUCTIONS
- HEED ALL WARNINGS
- FOLLOW ALL INSTRUCTIONS
- CLEAN ONLY WITH A DAMP CLOTH.
- DO NOT BLOCK ANY OF THE VENTILATION OPENINGS.
- INSTALL IN ACCORDANCE WITH THE MANUFACTURERS INSTRUCTIONS.
- DO NOT INSTALL NEAR ANY HEAT SOURCES SUCH AS RADIATORS, HEAT REGISTERS, STOVES; OR OTHER APPARATUS (INCLUDING AMPLIFIERS) THAT PRODUCE HEAT.
- ONLY USE ATTACHMENTS/ACCESSORIES SPECIFIED BY THE MANUFACTURER.
- UNPLUG THIS APPARATUS DURING LIGHTNING STORMS OR WHEN UNUSED FOR LONG PERIODS OF TIME.

➤ **WATER AND MOISTURE:** Appliance should not be used near water (e.g. near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc). Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.



➤ **POWER SOURCES:** The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.

- **GROUNDING OR POLARIZATION:** Precautions should be taken so that the grounding or polarization means of an appliance is not defeated.
- **POWER CORD PROTECTION:** Power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.
- **SERVICING:** To reduce the risk of fire or electric shock, the user should not attempt to service the appliance beyond that described in the operating instructions. All other servicing should be referred to qualified service personnel.
- **FOR UNITS EQUIPPED WITH EXTERNALLY ACCESSIBLE FUSE RECEPTACLE:** Replace fuse with same type and rating only.
- **MULTIPLE-INPUT VOLTAGE:** This equipment may require the use of a different line cord, attachment plug, or both, depending on the available power source at installation. Connect this equipment only to the power source indicated on the equipment rear panel. To reduce the risk of fire or electric shock, refer servicing to qualified service personnel or equivalent.



3. INTRODUCTION

Welcome to the group of people that has chosen to work with the state of the art **AXYS®** audio devices. We are really honored you joined us and will do our utmost best to make sure you are satisfied with your new equipment. In order for you to get the most effective use of this product please take some time to carefully read this manual. It has been written to familiarize you with your new acquisition and contains a great deal of useful information that will help you to realize the best performance, operation, sound quality, and reliability from your new audio device.

We wish you a lot of pleasure using the **AXYS® Octadrive** !

3.1 Features

- Eight independent low impedance drive channels
- Eight transformer balanced outputs
- Two transformer balanced main inputs
- +20 dBV headroom @ 0 dBV nominal
- Eight impedance balanced direct inputs
- Integrated pilot tone detection on inputs
- On board pilot tone generator to feed the outputs
- Surveillance relay
- Universal power supply, 100 to 240 V

3.2 System description

The **AXYS® Octadrive** has been designed to provide high quality audio signals over long distances. Its two main inputs are internally distributed over eight separate balanced outputs. In addition to these main inputs, eight direct inputs are incorporated as well, each assigned solely to a corresponding output. The eight outputs feature a very low output impedance in order to drive high capacitive loads (long cables) without noticeable signal degradation or bandwidth limiting. The inputs feature very high CMMR and low noise, their gain is made adjustable by the user between -60 dB to +10 dB. All outputs as well as both main inputs are provided with professional grade audio transformers which are capable to withstand excessive conditions, a guarantee for reliable and bulletproof operation. The ability to handle +20 dBV signals throughout the signal path, combined with its very low distortion and noise levels emphasizes the fact that the **AXYS® Octadrive** has been designed for high quality professional applications.

A wealth of integrated surveillance functions provides seamless integration of the **AXYS® Octadrive** in installs which may have to comply to stringent standards. The status of the **AXYS® Octadrive** has been made user accessible by means of relay contacts. All internal power supply rails are monitored and mapped on this failure relay. In addition to this, two

sophisticated PLL (Phase Locked Loop) circuits provide tracking pilot tone detection on both main inputs. The outputs of the PLL detectors may be assigned to the failure relay as well.

Besides the pilot tone detection, the **AXYS® Octadrive** incorporates a pilot tone generator as well. The output of this low noise oscillator is assigned to all outputs, the level has been made adjustable by the user.

The status of this extensive surveillance circuitry is displayed by various indicators at the front of the unit.

The heavily over sized switch mode power supply ensures effortless and reliable operation over the years, augmented by its wide 100 to 240 V input range.

The world recognized phoenix connectors, which are used for all the **AXYS® Octadrive** signal connections, ensure easy and reliable installation of the device. The **AXYS® Octadrive** is accommodated in a robust, nickel finished 19" 1U enclosure.

3.3 Before you start



Before you start setting up and power up your new system it is strongly advised to read this manual first to familiarize yourself with its capabilities.

3.4 Unpacking

The following items are in the box:

- The **AXYS® Octadrive** Unit
- Phoenix plugs (MC 1,5/ 3-ST-3,81, 20 pcs)
- An IEC mains cord
- This User Manual

Make sure that you take all the accessories out of the box and remove all packaging materials. Save the packaging, the box and protection material, for repackaging and possible future shipment.

3.5 Front side Layout

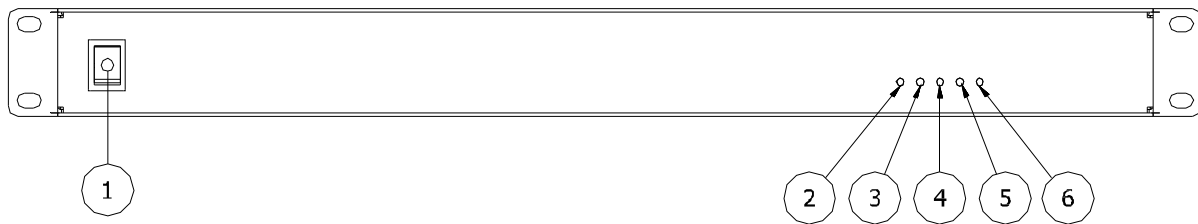


Figure 1: Front Side Layout

1. Power Switch
2. Green LED, Power Supply OK
3. Red / Green LED, Status External Failure Relay
4. Green LED, Pilot Tone Generator to feed the outputs Enabled
5. Yellow LED, Pilot Tone Input A detection
6. Yellow LED, Pilot Tone Input B detection

3.6 Rear side Layout

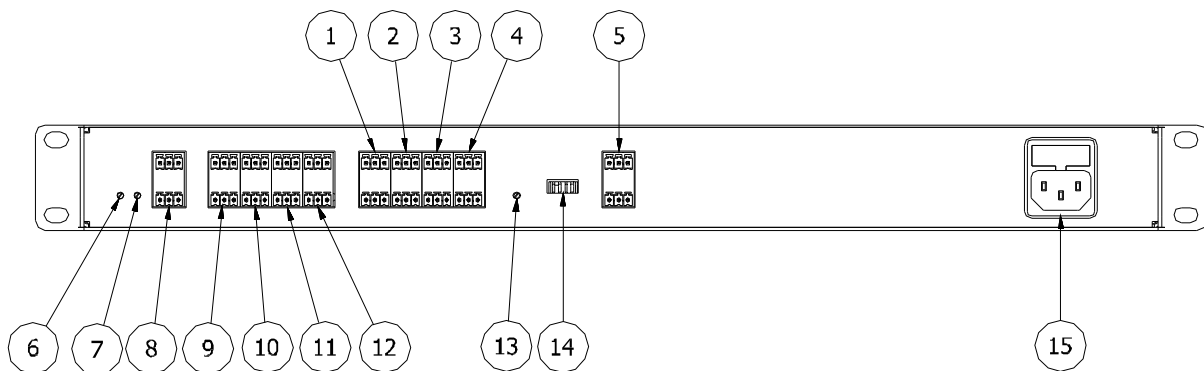


Figure 2: Rear Side Layout

1. Output Ch.1 & 5
2. Output Ch.2 & 6
3. Output Ch.3 & 7
4. Output Ch.4 & 8
5. Failure Relay A & B
6. Level Input 1
7. Level Input 2
8. Input 1 & 2
9. Direct Input Ch.1 & Ch.5
10. Direct Input Ch.2 & Ch.6
11. Direct Input Ch.3 & Ch.7
12. Direct Input Ch.4 & Ch.8
13. Pilot Tone Level
14. Pilot Tone Control
15. IEC Mains Inlet & Fuse holder

4. OPERATING INSTRUCTIONS

4.1 Installing the unit

Always keep the unit sufficiently ventilated, specially when you build the unit into a rack. The two inputs and eight outputs are transformer balanced, the eight direct inputs are impedance balanced, All in- and outputs are wired as follows: pin 1 positive, pin 3 negative and pin 2 chassis ground. Always use the cable plugs which come with the unit and use good quality cabling to ensure the best possible result.

4.2 Front Panel Description

Power Switch



After setting-up and connecting the **AXYS® Octadrive** and the mains plug has been connected to the wall outlet (check whether the local voltage corresponds with the voltage as stated on the label at the rear of the unit) this Power Switch will bring the **AXYS® Octadrive** alive.

LED's

The LED's situated on the front panel are showing the status of various functions of the **AXYS® Octadrive**.

We will describe each individual function from left to right;

The most left LED [2] lits green when the power supply is running in good condition.

LED [3] will turn from green (status OK) to red when a failure occurs and the failure relay has been deactivated.

LED [4] lits up when the internal pilot tone generator to feed the outputs has been enabled.

LED [5] and [6] will lit when a pilot tone on input 1 respectively input 2 has been detected. This is independent from the pilot tone control switch at the rear of the unit. Whenever a pilot tone has been detected on the inputs the associated LED will lit.

4.3 Rear Panel Description

Input sensitivity adjustment

At the most left hand side you will see two small holes [6] & [7] offering accessibility to the trim potentiometers mounted on the main-board of the unit. Gently use a small enough blade type screwdriver which can enter this hole without using any force, to adjust the input gain. Fully clockwise will be maximum gain while fully counterclockwise will be minimum gain. The gain is adjustable between -60 dB and +10 dB.

Input connectors

Connector block [8] provides the two transformer balanced inputs. The upper section is Input 1 and the lower section part is Input 2. Both input 1 and input 2 are mapped to all eight outputs and are used when signal distribution is required in a situation where a two way system feed is provided from a redundant front-end set-up. These inputs can handle signals up to +20 dB. It is strongly advised to connect the input wiring always using the original cable plugs which come with the unit to ensure maximum reliability.

Direct Inputs Connectors

Connector blocks [9] through [12] are the direct input channels 1 through 8. These inputs are provided in case the **AXYS® Octadrive** is meant to serve a multiple one to one operation. The input channel numbers are corresponding with the output channel numbers. These impedance balanced inputs also can handle signals up to +20 dBV. Use the original cable plugs to connect the wiring to the unit.

Output Connectors

Connector blocks [1] through [4] are the output channels 1 through 8. The transformer balanced low impedance output stages are capable to drive long distances while minimizing signal degradation. Use the original cable plugs to connect the wiring to the unit.

Pilot Tone Level

Next to the output section you will find a small hole [13] offering access to the trim potentiometer to adjust the pilot tone level according to the needs. Carefully use a small enough blade type screwdriver which can enter this hole without using any force, to adjust the level. Fully clockwise will be maximum level (-15 dBV) while fully counterclockwise will be minimum level (-80 dBV).

Pilot Tone Control

The 4-pole DIP switch bank allows configuration of the Pilot Tone set-up. Switch 1 enables (on) or disables (off) the pilot tone provided to the outputs. Switch 2 is not used. Switch 3 and 4 assign (on) the pilot tone detection of respectively input 1 and input 2 to the failure relay. In case the pilot tone disappears from the input(s) this fault will be mapped to the failure relay when detection is enabled.

Failure Relay

The failure relay connector block provides two independent change-over switches enabling the use of two separate surveillance circuits (A and B). Pin 1 is the common contact, pin 2 is the normally closed contact and pin 3 is the normally open contact. The maximum current and voltage are 100 mA respectively 24 V.

Mains Power Inlet and Fuse holder



The unit is provided with a IEC mains power inlet [15], combined with fuse holder, to supply the unit with mains power. The switch mode power supply used in the **AXYS® Octadrive** can accept mains voltage ranging from 100 V up to 240 V. In the event of a broken fuse always replace with a fuse with the value specified.

5. BLOCK DIAGRAM

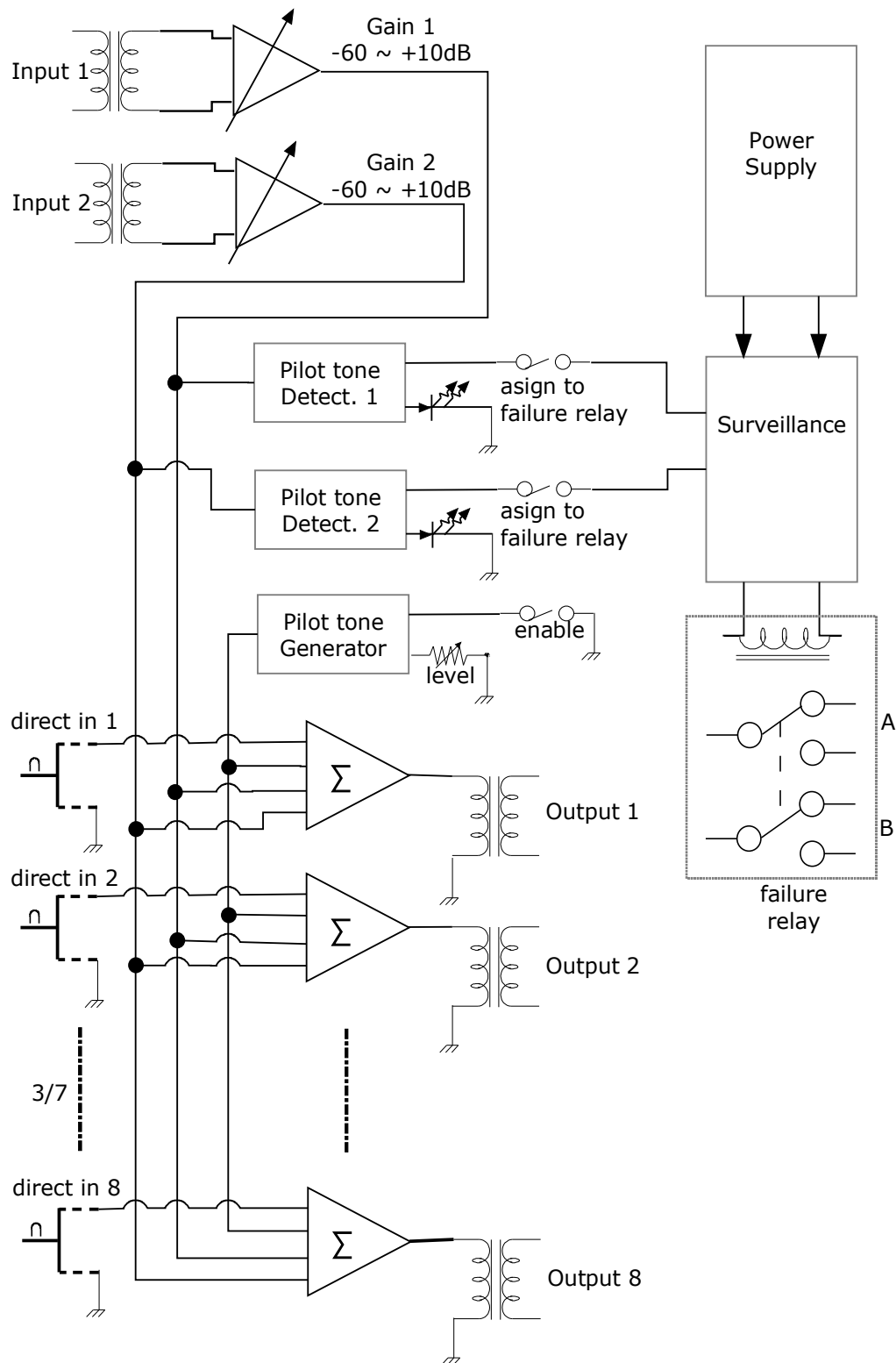


Figure 3: Block diagram *Octadrive*

6. TECHNICAL SPECIFICATIONS

Inputs 1 - 2

- type : transformer balanced
- max input level : +20 dBV
- CMRR : > 60 dB @ 1k Hz
- gain : adjustable between -60 dB and +10 dB
- connector : Phoenix type MC 1,5/ 3-ST-3,81

Direct Inputs 1 - 8

- type : unbalanced / impedance balanced
- max input level : +20 dBV
- input impedance : 2 x 20k Ohms
- gain : 0 dB
- connectors : Phoenix type MC 1,5/ 3-ST-3,81

Outputs 1 - 8

- type : transformer balanced
- max output level : +20 dBV
- output impedance : 220 Ohms typical
- connectors : Phoenix type MC 1,5/ 3-ST-3,81

Pilot Tone detection input A and B

- detection range : 20k Hz to 28k Hz
- detection threshold : -30 dBV typical

Pilot Tone generator outputs 1 - 8

- frequency : 27k Hz typical
- level : -80 dBV to -15 dBV, adjustable

Overall audio specifications

- residual output noise : < -100 dBV
- THD : < 0.2% 30 Hz to 20k Hz
- frequency range : 24 Hz to 27k Hz

Mains Power Supply

- power consumption : 6 W typical, 10 VA
- mains operating voltage : 100 V to 240 V, 50 to 60 Hz
- connector : IEC

Surveillance

- power supply internal voltage rail
- pilot tone detection input A and B
- surveillance output : 2x independent change-over contacts, 100 mA / 24 V
- connector : Phoenix type MC 1,5/ 3-ST-3,81

LED Indicators

- power supply OK : green
- failure relay status : red / green
- pilot tone generator : green
- pilot tone detection input A : yellow
- pilot tone detection input B : yellow

Enclosure

- 1U 19" rack enclosure
- dimensions (WxDxH) : 482x232x43.5 mm
- weight : 3.8 kg

7. TROUBLE SHOOTING

In the case the **AXYS® Octadrive** doesn't function properly here is a list with symptoms, their possible causes and resolutions.

Symptom	Solution
No Sound:	<ul style="list-style-type: none"> a) Mains Power presence? b) Signal presence? Check cabling and sound source.
Abrupt disappearance of output:	<ul style="list-style-type: none"> a) Check in- and output cables.
Unit becomes too hot:	<ul style="list-style-type: none"> a) Increase ventilation, check ventilation slots. b) Check mains voltage.
Output is too low or distorted:	<ul style="list-style-type: none"> a) Check cabling. b) Check whether the Input Level Control has been adjusted properly. c) Check if mains voltage is not too low.
Buzz / hum:	<ul style="list-style-type: none"> a) Is the input balanced? Is the cabling used of good quality? b) Are the connectors used of good quality? c) Are any input lines routed close to major power transformers? d) Is the unit located too close to a power amplifier? Increase the distance between units in a rack or insert mu-metal shields. e) Is the power supply 'clean'? Triac dimmers, refrigerators etc. are major sources of harmonics and transient voltages. Connect the AXYS® Octadrive to its own 'clean' power supply. f) Check the presence of ground loops.

In case of doubt contact your dealer. Leave repairs to qualified authorized personnel. Inexpert repairs void warranty.

8. MAINTENANCE & WARRANTY INFORMATION

8.1 Maintenance

Leave technical maintenance to qualified service personnel. In case of doubt always contact your dealer.

For cleaning you can use non-abrasive and non-aggressive household cleaning agents.

8.2 Warranty Information

Transferable Warranty (Limited).

AXYS® products are warranted to be free from defects in materials and workmanship for a period of two years, as determined by one of the following two methods, whichever is longer:

- a) Starting from the date of retail purchase, as noted on the sales receipt from an authorized **AXYS®** dealer,
- OR
- b) Starting from the date of manufacture, determined by the serial number, if the sales receipt is not available.

This warranty applies to the product; therefore, the remainder of the warranty period will be automatically transferred to any subsequent owner. This warranty applies only to failure of a **AXYS®** product caused by defects in materials and workmanship during the stated warranty period. It does not apply to a unit that has been subjected to abuse, accident, modification, improper handling/installation, or repairs made without factory authorization or by anyone other than authorized **AXYS®** Field Service Stations. This warranty is void if the serial number has been defaced, altered or removed. Products covered by this warranty will be repaired or replaced at the option of **Duran Audio BV**, without charge for materials or labor, provided all the terms of this warranty have been met.

Obtaining Warranty Service Warranty service may be obtained from the factory, or from an authorized Field Service Station.

To obtain factory or field warranty service return the product for inspection to your local dealer, **AXYS®** representation, or to the address below, freight prepaid, in the original packaging. If the original packaging is not available, call or write **AXYS®** Warranty Service to obtain proper packaging materials or hand carry the product to the nearest Field Service Station.

Factory Service Center:	Field Service Station:
Duran Audio BV Koxkampseweg 10 5301 KK Zaltbommel The Netherlands	Call +31 418 515583 for the nearest Authorized Field Service Station

For factory service, please call +31 418 515583 for a Return Authorization (R/A) number before shipping. If the product is shipped, the following information must be included in the package:

- a) Owner's complete name, daytime phone number, return street address and return authorization number.

- b) The serial number of the product being returned and copy of the retail sales receipt, if possible.
- c) A complete description of the problem(s) experienced, including a brief description of how the equipment is being used and with what brand, model and output power of amplifier.
- d) Upon receipt, the service center will determine if the problem is covered under warranty. If covered under this warranty, the product will be repaired or replaced, at Duran Audio BV's option, and returned to the owner freight prepaid. If the problem is not covered under this warranty, the owner will be notified of the problem with an estimate of the repair costs.

Consequential and Incidental Damages: Duran Audio BV shall not be liable for any consequential or incidental damages including, without limitation, injury to persons, property, or loss of use. Some states do not allow the exclusion or limitations of consequential or incidental damages, so the above limitations and exclusions may not apply.

This **AXYS**[®] warranty is not extended by the length of time which an owner is deprived of the use of the product. Repairs and replacement parts provided under the terms of this warranty shall carry only the remaining portion of the warranty.

Duran Audio BV reserves the right to change the design of any product from time to time, without notice and with no obligation to make corresponding changes in products previously manufactured.

While this warranty gives specific legal rights, there may also be other rights that vary from country to country. No action to enforce this warranty shall be permitted ninety days after expiration of the warranty period.

THIS STATEMENT OF WARRANTY SUPERSEDES ANY OTHERS FOR
DURAN AUDIO BV's PRODUCTS.

NOTES:

NOTES:


AXYS®
is a registered trademark
of

DURAN
AUDIO

Koxkampseweg 10
5301 KK Zaltbommel
the Netherlands

Phone: +31 418 515583

Fax: +31 418 518077

Url: www.duran-audio.com

Email: info@duran-audio.com