



# Operation Manual



**TDA Series**

Digital Advanced Amplifier

*Keep these important operatin instructions.  
Check [www.tecnare.com](http://www.tecnare.com) for updates*



## **General Information**

### **TDA Series Operation Manual**

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The information contained in this manual has been carefully checked for accuracy, at the time of going to press, however no guarantee is given with respect to the correctness.

Exel Acoustics SL accepts no responsibility for any errors or inaccuracies that may appear in this manual or the products and software described in it. Technical specifications, dimensions, weights and properties do not represent guaranteed qualities. As manufacturers we reserve the right to make alterations and modifications within the framework of legal provisions, as well as changes aimed at improving quality.

### ***EXEL ACOUSTICS SL***

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## IMPORTANT SAFE INSTRUCTIONS

Before using our product, be sure to carefully read the manual and safe Instructions. Keep this document with the device all time.

1. Read these instructions
2. Keep these instructions.
3. Heed all warnings.
4. Follow all SAFETY INSTRUCTIONS as well DANGER and OBLIGATION warnings.
5. Only use attachments / accessories specified by Exel Acoustics SL.
6. Do not use this apparatus near water.
7. Clean only with dry cloth.
8. Do not block any ventilation openings. Install in accordance with Exel Acoustics' instructions.
9. Do not install near any heat sources such as radiators, heat registers, stoves or other apparatus (including amplifiers) that produces heat.
10. Do not defeat the safety purpose of the polarized or grounding type plug. A polarized plug has two blades with one wide than the other. A grounding type plug has two blades and a third pin are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
11. Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles and the point where they exit from the apparatus.
12. Unplug this apparatus during lightning storms or when unused for long periods of time.
13. Refer all servicing to qualified service personnel. Service is required when the apparatus has been damaged in any way, such as power-supply cord or plug damaged, liquid has been spilled or objects have fallen into the apparatus, this apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
14. Use the mains plug to disconnect the device from mains.

**CAUTION: To reduce the risk of fire of electric shock, do not expose this device to rain or moisture.**

15. Do not expose this equipment to dripping or splashing and ensure that no objects filled with liquids, such as vases, are placed on the equipment.
16. The mains plug of the power supply cord shall remain readily operable.
17. Do not connect the unit's output to any other voltage source, such as battery, main source, or power supply, regardless of whether the unit is turned on or off.
18. Do not remove the top (or bottom) cover. Removal of the cover will expose hazardous voltages. There are no user serviceable parts inside and removal may void warranty.

**CAUTION: Do not remove any covers, loosen any fixings or allow items to enter any aperture.**

**CAUTION: The rear of the product may get hot. Avoid direct skin contact during operation and for at least 5 minutes after power has been isolated.**

**CAUTION: The product must only be positioned at floor level when operated in a horizontal position.**

19. If the equipment is used in a manner not specified by the Exel Acoustics, the protection of the equipment may be impaired.

## IMPORTANTES INSTRUCCIONES DE SEGURIDAD

Antes de usar este producto, asegúrese de leer cuidadosamente el manual y las instrucciones de seguridad.

1. Lea estas instrucciones.
2. Conserve estas instrucciones.
3. Respete y siga todas las advertencias.
4. Siga todas las INSTRUCCIONES DE SEGURIDAD, así como las advertencias de PELIGRO y OBLIGACIÓN.
5. Utilice solo accesorios autorizados por Exel Acoustics SL.
6. No use este aparato cerca del agua.
7. Limpiar solo con un paño seco.
8. No bloquee las aberturas de ventilación e instalar de acuerdo con las instrucciones de Exel Acoustics.
9. No instale el aparato cerca de fuentes de calor tales como radiadores, calefactores estufas u otros aparatos que produzcan calor.
10. Esta unidad debe ser conectada mediante un cable de alimentación de 3 hilos. Por razones de seguridad, LA CONEXIÓN A TIERRA NO DEBE DESCONECTARSE EN NINGUNA CIRCUNSTANCIA.
11. Proteja el cable de alimentación de ser pisado o aplastado, especialmente los enchufes, receptáculos y en el punto en el que salen del aparato.
12. Desconecte este aparato durante tormentas eléctricas, terremotos o cuando no vaya a emplearse durante largos periodos.
13. Confíe las reparaciones a personal cualificado. Se requiere servicio cuando el aparato ha sido dañado de alguna manera como por ejemplo si el cable de alimentación o el enchufe está dañado, se ha derramado líquido o han caído objetos dentro del aparato, el aparato ha sido expuesto a lluvia o a la humedad, no funciona con normalidad o se ha caído.
14. Desconecte completamente este aparato de la red eléctrica desconectando el cable de alimentación.
15. No exponga este equipo a salpicaduras ni coloque sobre él objetos que contengan líquidos, tales como vasos o botellas. Equipo IP20.
16. El enchufe o la conexión a red debe ser fácilmente accesible.
17. No conecte la salida de la unidad a ninguna otra fuente de voltaje, como batería o fuente de alimentación independientemente de si la unidad está encendida o apagada.
18. No retire la cubierta superior (o inferior). La retirada de la cubierta lo expondrá a voltajes peligroso. No hay piezas reparables por el usuario en el interior y su extracción podría anular la garantía.
19. Si el equipo se utiliza de la forma no especificada por Exel Acoustics, la protección del equipo puede verse afectada.

**PRECAUCIÓN:** Para reducir el riesgo de incendio por desgarga eléctrica, no exponga este aparato a la lluvia o a la humedad.

**PRECAUCIÓN:** No retire la cubierta, afloje tornillos o permita la entrada de elementos por ninguna abertura.

**PRECAUCIÓN:** La parte trasera del equipo puede calentarse. Evite el contacto directo con la piel durante su funcionamiento y durante, al menos, 5 minutos después de que se haya apagado.

**PRECAUCIÓN:** El equipo solo debe colocarse en el suelo cuando se opera en posición horizontal.

## SYMBOL USED



### Warning

This symbol indicate **Risk of injury**. It is essential to observe this warning. Non-compliance can lead to serious injury or death.

*Este símbolo indica **Riesgo de lesiones**. Es fundamental observar esta advertencia. Su incumplimiento puede provocar lesiones graves o la muerte.*



### Caution

This symbol indicate **Personal injuries**. It is essential to observe this warning. Non-compliance can lead to minor or slight injury.

*Este símbolo indica **Lesiones personales**. Es fundamental observar esta advertencia. Su incumplimiento puede provocar lesiones leves.*



### Notice

This symbol indicate **Damage to the devices** or environment. It is essential to observe this warning. Non-compliance can lead to damage to property or equipment or environmental damage.

*Este símbolo indica **Daños a los dispositivos o al medio ambiente**. Es fundamental observar esta advertencia. Su incumplimiento puede provocar daños al equipo o daños al medio ambiente.*



### tip or pointer

This symbol indicate **information** that contributes to better understanding.

*Este símbolo indica **Información** que contribuye a una mejor comprensión del producto.*



**CAUTION**

**RISK OF ELECTRIC SHOCK  
DO NOT OPEN**

**DO NOT EXPOSE TO  
RAIN OR MOISTURE**

**ATTENTION**

**RISQUE DE CHOC ELECTRIQUE  
NE PAS ENLEVER**

**NE PAS EXPOSER A LA  
PLUIE NI A L'HUMIDITE**



## AVERTISSEMENT DE SECURITE

Pour déconnecter l'appareil de l'alimentation principale de façon permanente, débranchez le connecteur du câble fourni à l'arrière de l'appareil.

Ne retirez pas les couvercles, ne desserrez pas les fixations et ne laissez aucune pièce s'introduire dans les ouvertures.

Ne placez pas d'objets contenant du liquide à proximité de l'appareil.

Ne remplacez le fusible de réseau principal que par un fusible du même type.

Le radiateur arrière de cet appareil devient chaud. Evitez tout contact direct avec la peau pendant le fonctionnement et au moins 5 minutes après la mise hors tension de l'appareil.

## STANDARDS

### FOR CUSTOMERS IN EUROPE



This product complies with both the LVD (electrical safety) 73/23/EEC and EMC (electromagnetic compatibility) 89/336/EEC directives issued by the commission of the European community.

Compliance with these directives implies conformity with the following European standards:

EN60065	Product safety
EN55103-1	EMC emissions
EN55103-2	EMC immunity

This product is intended for the following electromagnetic environments: E1, E2; E3 & E4.

**THIS PRODUCT MUST BE EARTHED.** Use only a flexible cable or cord with a green and yellow core which must be connected to the protective earthing terminal of a suitable mains plug or the earthing terminal of the installation. The cord must be a maximum of 2m long, have a 2.5mm<sup>2</sup> CSA, a 300/500V rating and comply with EN50525-2-11 / H05W-F.

**THIS PRODUCT IS DESIGNED FOR PERMANENT INSTALLATION.** It must be fitted in to a 19" rack enclosure and not operated unless so installed. The rack enclosure should be open at the front and back to allow free ventilation and movement of air through the product.

### FOR CUSTOMERS IN THE USA

This product has been tested for electrical safety and complies with UL60065 7th edition.

**THIS PRODUCT MUST BE EARTHED.** Use only a flexible cable or cord with a green or green / yellow core which must be connected to the protective earthing terminal of a suitable mains plug or the earthing terminal of the installation. The cord must be a maximum of 6' long, be 14AWG, have a rating SJ, SJT, SJE or 300/500V H05W-F and be marked VW-1.

**THIS PRODUCT IS DESIGNED FOR PERMANENT INSTALLATION.** It must be fitted in to a 19" rack enclosure and not operated unless so installed. The rack enclosure should be open at the front and back to allow free ventilation and movement of air through the product.

### DECLARATION OF CONFORMITY WITH FCC RULES

We, EXEL Acoustics SL, CL Encinar 282, Pol. Ind. Monte Boya, 45950 - Casarrubios del Monte (Toledo), España, declare under our sole responsibility that this family of devices, 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.

### FEDERAL COMMUNICATIONS COMMISSION NOTICE

An example of this equipment has been tested and found to comply with the limits for a 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 and commercial installation.

This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, 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 and correct the interference by one or more of the following measures:

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

**FCC Caution:** Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

#### **FOR CUSTOMERS IN THE CANADA**

This product complies with CA /CSA C22.2 No.60065-03  
Ce produit est conforme avec CA /CSA C22.2 No.60065-03

**THIS PRODUCT MUST BE EARTHED.** Use only a flexible cable or cord with a green or green / yellow core which must be connected to the protective earthing terminal of a suitable mains plug or the earthing terminal of the installation. The cord must be a maximum of 6' long, be 14AWG, have a rating SJ, SJT, SJE or 300/500V H05W-F and be marked VW-1.

**CE PRODUIT DOIT ÊTRE MIS À LA TERRE.** Utilisez uniquement un câble souple avec un noyau vert ou vert / jaune qui doit être relié à la borne de terre de connecteur d'alimentation ou la borne de terre de l'installation. Le cordon doit être un maximum de 6' (2m) de long, 14 AWG (2.5mm<sup>2</sup> CSA), être classé SJ, SJT, SJE ou 300/500V H05W-F et être marquée VW-1.

**THIS PRODUCT IS DESIGNED FOR PERMANENT INSTALLATION.** It must be fitted in to a 19" rack enclosure and not operated unless so installed. The rack enclosure should be open at the front and back to allow free ventilation and movement of air through the product.

**CE PRODUIT EST CONÇU POUR UNE INSTALLATION PERMANENTE.** Il doit être installé dans un boîtier rack 19-in. Le rack devrait être ouvert à l'avant et l'arrière pour permettre la ventilation et le mouvement d'air libre à travers le produit .

#### **DECLARATION OF CONFORMITY WITH CANADIAN ICES-003**

This Class B digital apparatus complies with Canadian ICES-003.  
Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.



## **DECLARACIÓN DE CONFORMIDAD**

### **DECLARATION OF CONFORMITY**

#### **EXEL ACOUSTICS SL**

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CL Encinar, 282. Polígono Industrial Monte Boyal. 45950 – Casarrubios del Monte (Toledo), España (Spain).

Declara que la serie de amplificadores TDA y sus respectivas opciones, cumple con los objetivos de las Directivas:

*Declare under our sole responsibility that the TDA Series amplifier products comply with relating Directives:*

- (1) Directiva de Baja Tensión - 2014/35/UE
- (2) Directiva de Compatibilidad Electromagnética - 2014/30/UE
- (3) Directiva RoHS - 2011/65/UE
- (4) Directiva RAEE - 2012/19/UE



- (1) Low Voltage Directive 2014/35/EU*
- (2) EMC 2014/130/EU*
- (3) RoHS Directive 2011/65/EU*
- (4) WEEE Directive 2012/19/EU*

Y es conforme a las siguientes Normas Armonizadas Europeas:  
*In compliance with these Harmonized European Norms:*

- (1) EN60065 8th. Audio, video and similar electronic apparatus. Safety requirements.
- (2) EN55032:2012. EMC emissions & immunity.
- (3) EN55035-2017

## Table of Contents

IMPORTANT SAFE INSTRUCTIONS _____	4
IMPORTANTES INSTRUCCIONES DE SEGURIDAD _____	5
SYMBOL USED _____	6
STANDARDS _____	7
DECLARACIÓN DE CONFORMIDAD _____	9
DECLARATION OF CONFORMITY _____	9
1. Welcome and unpacking _____	11
1.1. Welcome to Tecnare _____	11
1.2. Unpacking _____	11
1.3. The User Guide _____	11
2. Installation Instructions _____	12
2.1. Mechanical Installations _____	12
2.2. AC Power Connection _____	13
2.3. Audio Connections _____	13
2.4. Cooling _____	15
3. Technologies and Key features _____	16
3.1. Main Features _____	16
4. Panel Interface User Guide _____	17
4.1. Front Panel _____	17
4.2. The Rear Panel _____	18
5. Technical Specifications _____	19

# 1. Welcome and unpacking

## 1.1. Welcome to Tecnare

Thank you for choosing a Tecnare® **TDA Series *Digital Advanced Amplifier*** for your application.

Please spare a little time to study the contents of this manual, so that you obtain the best possible performance from this unit.

All Tecnare® products are carefully engineered for world-class performance and reliability.

If you would like further information about this or any other Tecnare® product, please contact us. We look forward to helping you in the near future.

As part of a continuous evolution of techniques and standards, Exel Acoustics SL as manufacturer of Tecnare® products reserve the right to change the specifications of its products and the content of its documents without prior notice.

Updates and supplementary information are available on the Tecnare® website:

<http://www.tecnare.com>

Tecnare Technical Support is available at:

- (T): +34 918 170 110 - +34 918 171 001
- (e-mail): [support@tecnare.com](mailto:support@tecnare.com)

Thank you again for placing your confidence in Tecnare® products.

## 1.2. Unpacking

After unpacking the unit, please check carefully for damage. Every Tecnare product is tested and inspected before leaving the factory and should arrive in perfect condition. If damage is found, please notify the carrier concerned at once. You, the consignee, must instigate any claim. Please retain all packaging in case of future re-shipment.

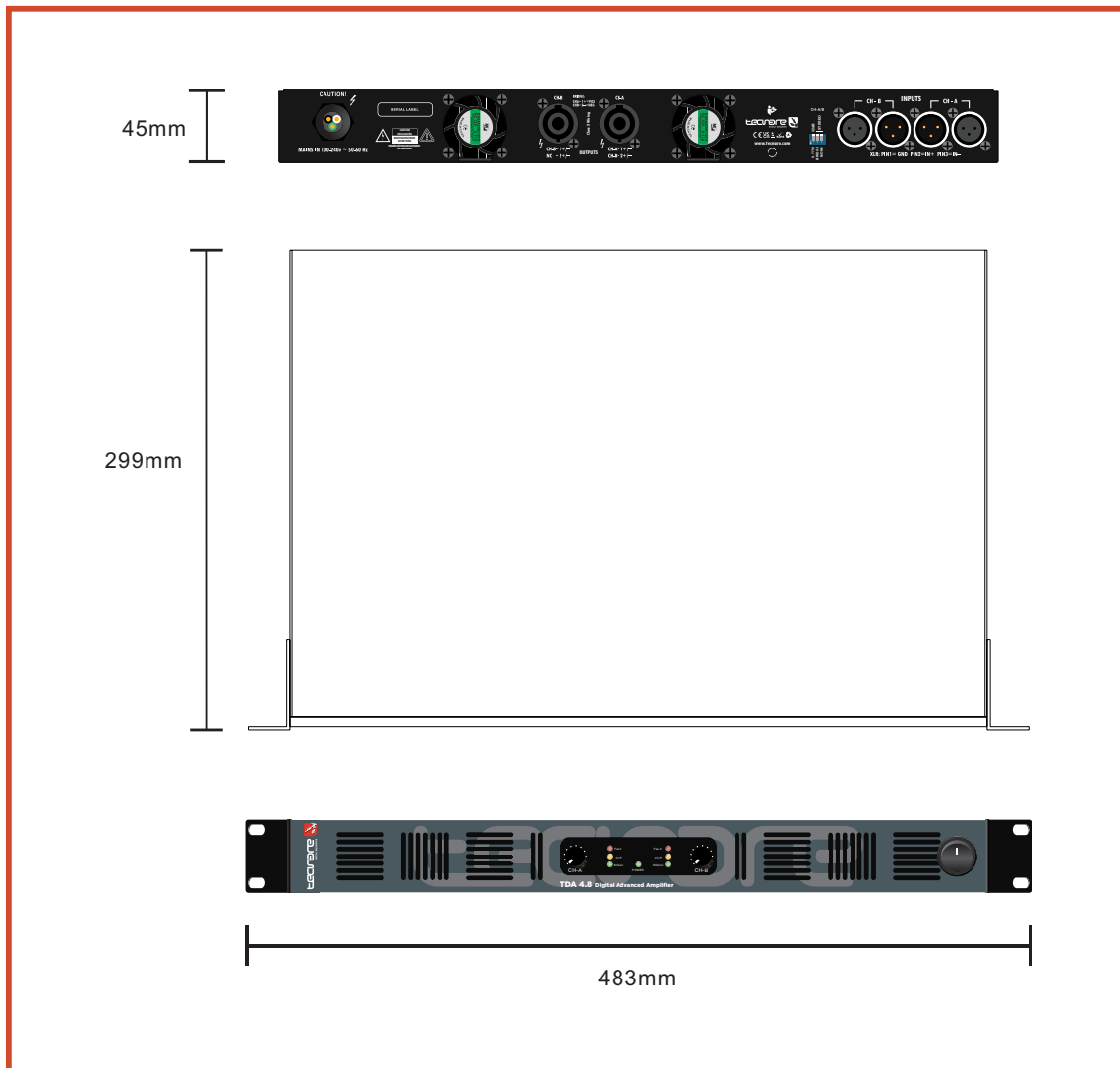
## 1.3. The User Guide

This user manual gives a progressively more detailed description of the functions of the Tecnare TDA Series Digital Advanced Amplifier. A detailed explanation of the front and rear panel controls, in conjunction with Installation section, contains the basic information needed to safely install the amplifier and place it in service.

To complete the manual a reference section is included, describing the technical performance and mechanical drawing of the device.

## 2. Installation Instructions

### 2.1. Mechanical Installations



The TDA Series Amplifier system is designed to be mounted in a standard 19" rack enclosure

Where the amplifier is used in a fixed installation, as long as the bottom unit is supported and there are no gaps between units, it is acceptable to use only the front panel 19" rack holes when fitting it in a standard rack enclosure. If the amplifier is mounted in a mobile rack it is important that the rear is supported with a rear rack mounting kit (part number TDK-TS). Damage caused by insufficient support is not covered by the warranty.

To prevent damage to the front panel it is recommended that plastic cups or washers are fitted underneath the rack mounting bolt heads.

It is possible to mount multiple TDA Series amplifiers without ventilation gaps between them, but it is essential that an unobstructed flow of clean air is available from the front of the unit to the rear (cooling mode of the TDA Amplifiers, *also see "2.4. Cooling" on Page 15*). It is important that neither the air intakes on the front of the unit or the exhaust vents at the rear are covered. Steps must be taken to ensure that hot air does not continually circulate through the amplifier from the back of the rack to the front.

The amplifier should never be exposed to rain or moisture during operation or storage. If the unit does come into contact with moisture, disconnect the AC power cord immediately and leave it in a dry and warm location to dry out.

Note that when any equipment is taken from a cold location into a hot humid one, condensation may occur inside the device. Always allow time for the equipment to attain the same temperature as its surrounding environment before connecting the AC power cord.



**IMPORTANT:** *It is the responsibility of the user to ensure that dirt, liquids and vapour from theatrical smoke and fog machines is not ingested by the amplifier. Damage so caused is not covered by the manufacturer's warranty.*

## 2.2. AC Power Connection

The amplifier is fitted with a 3 x 2.5mm<sup>2</sup> power cord and a 3-pin Shucko (CEE 7/7) power connector.

If the power plug mounted at the factory is not appropriate for your country, it can be removed and the proper connector wired in its place as follows:

BLACK or BROWN	LIVE
WHITE or BLUE	NEUTRAL
GREEN or GREEN&YELLOW	EARTH (GROUND)



**CAUTION:** *If you are not 100% confident of your competence to replace the mains plug, engage qualified personnel to do the job.*

The amplifiers are designed to operate on 50/60 Hz AC power ( $\pm 10\%$ ). The power supply sections automatically configure themselves for either 115V or 230V nominal voltage at turn on. The amplifiers will operate over an extended range of supply voltages (please refer to the technical specifications). The threshold of these ranges are: [115V range = 100-126Vrms]; [230V range = 207 - 253Vrms].

Note that whilst the amplifier will operate correctly at voltages indicated, the specified output power will only be achieved when operating with the stated nominal voltages.

## 2.3. Audio Connections

### 2.3.1. Input connections

For each input channel there is a female XLR-3 connector for analogue inputs. The TDA Series can be fed with up to two balanced analogue audio signals.

The analogue input panel also features two XLR-3 male link connectors passively wired to the input connectors. They allow transmitting the input signal to daisy-chained amplifier.

The HOT, + or 'in phase' connection should be made to pin 2 of the XLR connector.  
The COLD, - or 'out of phase' connection should be made to pin 3 of the XLR connector.  
Pin 1 of the XLR connectors is internally connected to the chassis.

The shield of the input cable should always be connected Pin 1 of the XLR to ensure the EMC performance and regulations are met.

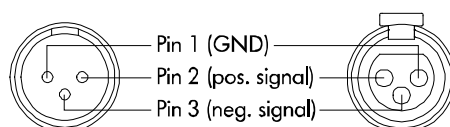


Fig. 02: PIN out assignment TDA Series Analogue Input/Link - Balanced connection

### 2.3.2. Using unbalanced connection

Please note that the use of unbalanced connections is not recommended, however, when connecting the amplifier to an unbalanced audio source, the signal conductor should be connected to XLR pin2. The 'Cold' conductor or cable screen should be connected to XLR pin 1 with a short connection made between pin 1 and pin3 as shown in Figure 03.

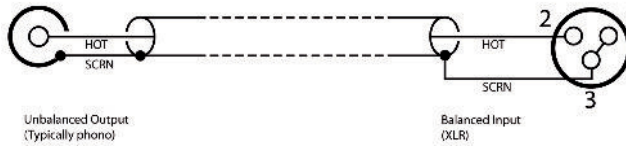


Fig. 03: Balanced to Unbalanced Analogue wiring and PIN out

### 2.3.3. Amplifier Output Connections

The TDA amplifiers are fitted with one SpeakON™ NL4 connector per amplifier channel. The appropriate conductor terminations are shown below and on the rear panel of the unit.

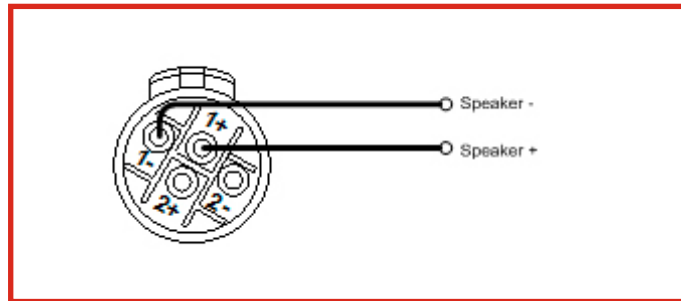


Fig. 04 Amplifier output connections - TDA Series

Additionally, the SpeakON™ NL4 connector for amplifier channel 1 carries the output for amplifier channels 1 and 2. This can be useful for making a connection to two loudspeakers with one 4-core cable (i.e. Bi-amp).

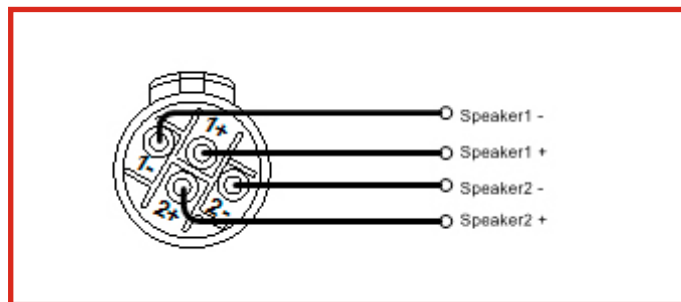
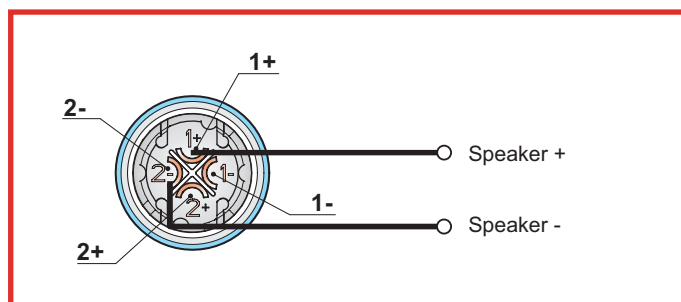


Fig. 05 Amplifier Output Bi-amp connexion (CH1) - TDA Series

In addition, the channel 1 can also be used if the pair of amplifier channels is being operated in bridged mode. It must be done, using the connection pin: 1+/2-



Bridge mode		
Pin No.	NL4#	CHA
1+	CH1	o/p +
2-	CH2	o/p -

Fig. 06 Amplifier Output Bridge connexion (CH1)

### 2.3.4. Load Matching

Each output of the device can be optimised to drive either a low-impedance load (e.g. 2, 4 or 8 Ohms). The TDA Series amplifiers have adequate current capability to fully drive loads up to two ohms, however, many high-performance “8-ohm” loudspeakers, especially multi-way systems with passive crossover network, have impedances at some frequencies which are far lower than the average rating. An impedance minimum of 2 ohms or less is not uncommon. For this reason, speaker impedance curves should be consulted before connecting speaker in parallel.

The TDA Series amps will do an outstanding job with any 8-ohm, full-range loudspeaker system, and we expect equally outstanding performance when driving 4-ohm load. The 2-ohm load should be approached with caution, as there is not further margin for impedance dips. The amp should not be damaged, but high-power operation into reactive 2-ohm loads may result in overheating or excessive AC current consumption, causing shutdowns. In addition, some power may be lost at those frequencies where the impedance dips below 2 ohms. For these reason the operation with 2-ohm load should be tested thoroughly before putting into use.

## 2.4. Cooling

The TDA Series devices use a force-air cooling system as follow: the cold air is sucked through the ventilation hole of the front panel, and the heat is taken out from the rear panel. It allows high continuous power levels without thermal problems.



**CAUTION:** ever attempt to reverse the airflow.



Make sure an adequate air supply is provided in front of the TDA, and that the rear of the TDA has sufficient space to allow air to escape. If the TDA is rack-mounted, never operate the unit with any front or rear rack doors or covers in position. It is recommended to keep the ambient temperature in the 0°~45°C (32°~113°F). An increased temperature can have a significant negative impact on the expected life-time on the components inside the TDA.

### 2.4.1. Temperature Sensing and Protection

The TDA is equipped with a sophisticated temperature sensing system which protects it from any overheating which may occur as a result of inadequate ventilation. If the temperature exceeds 85 degrees, the output voltage will be reduced, avoiding an excessive temperature rise. If the temperature continues to increase up to 90 degrees, the power amplifier will be shunted down. Once the temperature has fallen to a safe temperature, the equipment will reboot automatically. After working for a while, if the cooling effect is not enough, please turn off the equipment and remove the dust net cover to clean up the dust. If even doing this, the device still unable to recover on its own, please contact our support team.

## 3. Technologies and Key features

TDA series is a high quality digital power amplifier developed for both fixed installation and portable market. It incorporates a number of sophisticated technologies to ensure the best possible performance and many years of reliable operation.

This series combines the exceptional efficiency of a Class-D amplifier with the unique circuit architecture of the multi-loop control technology. According to the characteristics required in professional audio environments, the chassis structure is optimized, the operation is more intuitive, and can better meet the use of the narrow space.

According to the characteristics of digital power amplifier, the TDA Series design offers a set of scientific protection mechanism to ensure that the power amplifier works stably in various complex environments.

### 3.1. Main Features

- *High efficiency, energy-saving and emission-reduction*
- *Small size, light weight, 1U rack space;*
- *Active Power Factor Correction (APFC)*
- *High reliability, meeting the requirements for high-quality audio system and engineering products*
- *Low noise of the power amplifier and the mute fan*
- *The output background noise of the power amplifier is small, and the fan noise is small, which meets the requirements of near-field use.*
- *Stereo/mono/bridge selectable*
- *0.775V and 32dB, 2 grades gain selectable*
- *Balanced XLR input, Speakon output*
- *Clipper limiter: prevent the output square wave damaging the speaker*
- *Amplifier output DC protection*
- *Output overload/short-circuit protection*
- *High temperature power compression, over-temperature protection*
- *Undervoltage protection for power supply*



## 4. Panel Interface User Guide

### 4.1. Front Panel

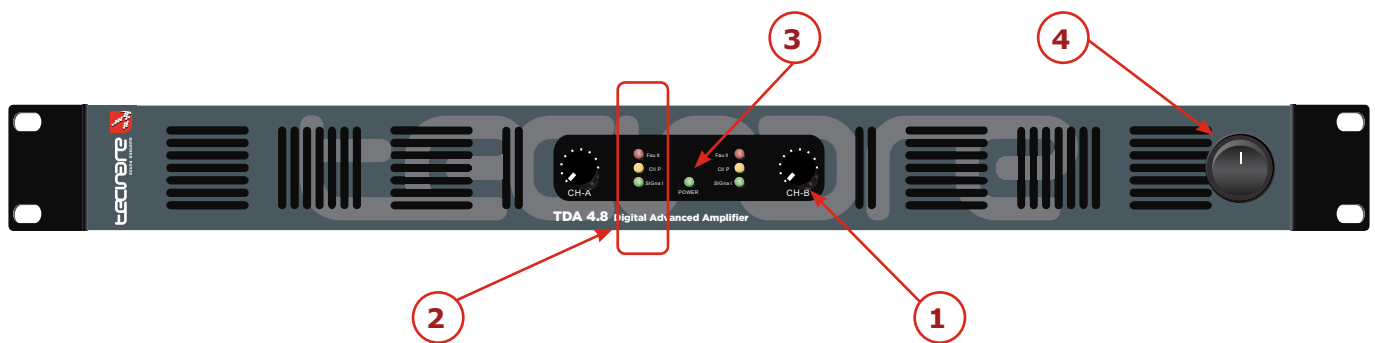


Fig. 7 Front panel

#### 4.1.1. The Front Panel Layout

##### 1. Volumen Control

Calibrated potentiometers provide individual attenuation for each amplifier channel. Range is 0 (infinite) to 11. The 12 o'clock position indicates 6 level.

##### 2. Front-Panel LEDs

Front-panel LED area includes a set of three indicators show "Signal", "Clip" and "Fault" for each of amplifier channels:

**Green LED - Signal:** Signal levels. The signal present Indicators operate at approximately  $-32$  dBu..

**Yellow LED - CLIP:** Current peak limiter. The Clip Indicators- warn the user of input overload and operate at distortion by more than 1%. The power is compressed.

**Red LED - Fault:** Protection mode. Please turn down the unit.

##### 3. LED Power

**Green LED:** Power on.

**Yellow LED:** Temperature warning.

##### 4. Power Switch

Applies mains power to the device.

## 4.2. The Rear Panel

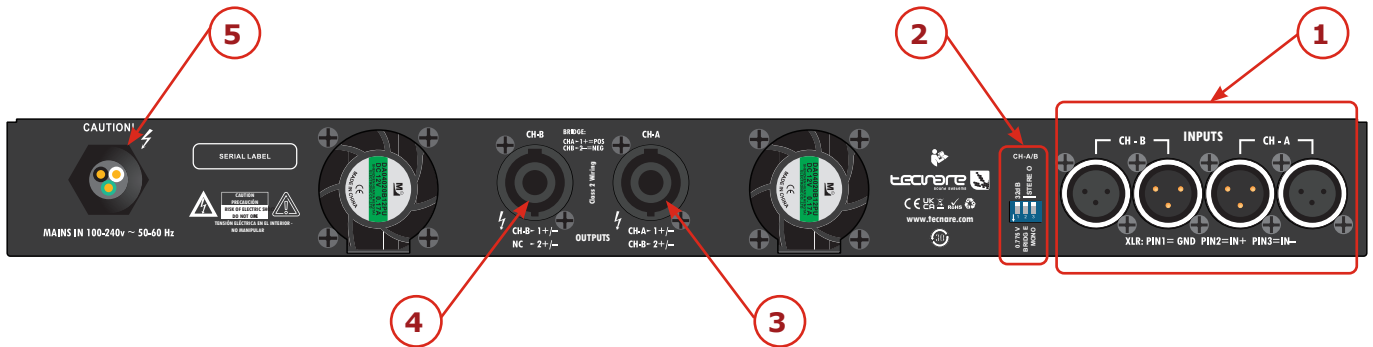


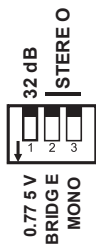
Fig.8 Rear panel

### 1. Audio Input Connectors

Analogue Audio Input Connectors- All audio connections are fully balanced and wired: pin-1 to ground (as required by the AES48 standard), pin-2 hot & pin-3 cold. At the left of each input there is an Analogue Audio Link Connectors. It carries a duplicate (parallel) connection (to another amplifier for example).

### 2. DIP Switches

The following features may be adjusted using the DIP-Switches on the rear panel of the amplifier.



- **Sensitivity Switch:** Globally set for the two channels at 0.775V or +32dB (26dB in TDA1.3 amplifier)
- **MODE Switch:**
  - **STEREO Mode:** Channel A and Channel B work independently. The output Channel A is from the CHA input signal, and the output Channel B is from CHB input signal.
  - **MONO Mode:** Channel A and Channel B work independently. CHA input signal, feeds output CHA and CHB.
  - **BRIDGE:** Channel A+B; Switch the channel pair into a bridge mode operation.

tion.

### 3. Loudspeaker Connector CH1

The amplifier NL4 SpeakON™ outputs. Connect the loudspeaker to the 1+ and 1- terminals. Output socket 1 also carries the (duplicated) loudspeaker output for channel 2 on terminals 2+ and 2-. For Bridged mode, use terminals 1+ and 2- on CH1.

### 4. Loudspeaker Connector CH2

Connect the loudspeaker to the 1+ and 1- terminals. Terminals 2+ and 2- are not connected.

### 5. Power Supply Input

Main input 100-240V operation. Not selectable. 3 x 2.5 mm<sup>2</sup> Power cord.



**IMPORTANT:** The device must be earthed to a suitable power earth; failure to do so may affect performance and/or operation and will invalidate warranty and could be potentially hazardous.

## 5. Technical Specifications

General	
<b>Number of input channels</b>	2
<b>Input types</b>	2 x Analogue + 2 x link
<b>Max ambient temperature (full power, no limiting)</b>	45degC (113degF)
<b>Number of output channels</b>	2

Audio	
<b>Amplifier modulation scheme</b>	Proprietary Multi-Loop control technology architecture - Class D
<b>Dynamic range (analog input to speaker output)</b>	>100dBA typ (20Hz - 20kHz, 8Ω)
<b>Frequency response</b>	±0.2dB (10% Rate Power, 20Hz-20kHz, 8Ω)
<b>Total harmonic distortion, THD+N</b>	Typical: 0.05% (10% Rated Power, 1kHz, 8Ω)
<b>Inter-channel crosstalk (worst combination of channels)</b>	>75dB (Below Rated Power, 20Hz - 1kHz, 8Ω)
<b>Damping factor (Ref 8 Ohms)</b>	Typical: 1000(20Hz-200Hz)
<b>Maximum analog input level</b>	+21dBu
<b>Analog input sensitivity Rated output Power, 1kHz</b>	0.775Vrms or 32dB
<b>Analog input impedance</b>	20k Ohm, electronically balanced
<b>Analog link</b>	Directly connected to the analog input
<b>Analog ground scheme</b>	AES48 standard compliant

Power Output			
Model	TDA1.3	TDA3.6	TDA4.8
<b>Power specification</b>	RMS output power per channel, all channels driven @1kHz continue sine wave and a nominal ambient temperature of 40degC / 105degF, THD+N=1%		
<b>Crest Factor of 7.8 (18dB), 2-Ω nominal load (Note 1)</b>	700W	1.800W	2.400W
<b>Crest Factor of 4.8 (14dB), 4-Ohm nominal load</b>	450W	1.200W	1.800W
<b>Crest Factor of 2.8 (9dB), 8-Ohm nominal load (Note 1)</b>	300W	800W	1.200W
<b>Bridged, per channel pair, 4 Ohm load (Note 1)</b>	1.300W	3.600W	4.800W
<b>Bridged, per channel pair, 8 Ohm load (Note 1)</b>	900W	2.400W	3.600W
<b>RMS Voltage</b>	49.0V	80.0V	98.0V

Note 1: Test condition=20ms

Gain Comparison			
Model	TDA1.3	TDA3.6	TDA4.8
Rated Power 8Ω nominal load	300W	800W	1.200W
32dB Gain correspond to input sensitivity (26dB in TDA1.3)	2.45Vrms	2.0Vrms	2.45Vrms
	10dBu	8.23dBu	10dBu
Gain corresponding to 0.775v input sensitivity	900W	2.400W	3.600W
RMS Voltage	36.0dB	40.3dB	42.0dB

Power supply	
Topology (main power supply)	3rd generation Series Resonant
Mains input voltage range (automatically configured)	100V to 253V AC
Mains input frequency range	47Hz to 63Hz.

Protection System	
System protection	Speaker protection
Excessive output current	Audio soft-clip limiter
Excessive Voltage Limit	DC offset protection
Over Temperature	
Overload Protection	
Mains voltage out of range	

Physical			
Cooling	Variable speed fans		
Airflow	Front to back		
Air filtration	PPI5 Washable media.		
Analog IN and LINK connectors	XLR Connector		
Audio output connector	NL4 SpeakON®		
Mains input	3 x 2.5mm <sup>2</sup> Power cord		
Front panel pot	Two, lineal pot		
LED indicators	Bright, easily differentiated		
Enclosure	Standard 19"/ 1HU (45mm) and optional rear support system		
Depth	296mm / 11,6-in		
Net Weight	TDA1.3	TDA3.6	TDA4.8
	4,25kg. / 9.37lbs	4,9kg. / 10.8lbs	5,1kg. / 11,24lbs

Options	
<b>Rear rack support kit</b>	TDK-TS
<b>T-Rack3U</b>	Modular 19"/3HU Slim & Slam Rack, 600P, four collapsible handles
<b>T-Rack6U</b>	Modular 19"/6HU, Pro-Rack Side Sliding door (Front & Rear). Made of black PVC
<b>TS-Rack10U</b>	Modular 19"/10HU, Pro-Rack Side Sliding door (Front & Rear). Made of black PVC
<b>TRBP1U</b>	Blank panel 19"/1HU
<b>TP-B1U</b>	19"/1HU connection panel for the connection of two TDA Series Amplifier with 2 Analogue IN /Link, 2 single Analogue IN port, 1 AES3 IN/Link port, 1 Ethernet port, 4 SpeakON® NL4 and 1 SpeakON® NL8 and 1 PowercON® 32A
<b>TPD32</b>	Power distribution panel, 19"/2HU with 3 16A schuko socket, 3 discrete 32A circuit breaker, 1 P17 Plug In and CEE32A out socket, 3 Neon light on the front and 3 3 16A schuko socket and 3 PowercON® 32A on the back.







**Reinventing The Rules**

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***TDA Series Operation manual***

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