EPA152/252/502

User Manual

AUDAC

www.audac.eu

ADDITIONAL INFORMATION

This manual is put together with much care, and is as complete as could be on the publication date. However, updates on the specifications, functionality or software may have occurred since publication. To obtain the latest version of both manual and software, please visit the Audac website @ www.audac.eu.

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Introduction
Dual channel Class–D amplifiers

The EPA series are energy efficient Class–D power amplifiers designed for a wide variation of applications, ranging from standard stereo configurations to multi–zone distributed speaker systems. They come available in various models with different output configuration and power ratings.

An outstanding sound quality is combined with other known advantages of Class–D amplifiers such as high energy efficiency. Automatic signal detection switches the amplifier to standby mode when no input signal is detected. This makes the amplifier comply to international energy and environmental requirement standards.

The compact size and lightweight design only requires a single 19” rackspace, while making them suitable for both fixed rack and mobile applications. The convection cooled construction requires only a minimum maintenance while guaranteeing high reliability.

The dual channel models of the EPA series are containing two individually controllable channels with the possibility for bridging the outputs, merging their power to a single load. They are featuring advanced protection circuitry which protects against DC malfunctioning, short circuit, overheating and overload.

The signal input connections are implemented using balanced XLR connectors with link output connectors, allowing linkthrough to other amplifiers. Loudspeaker outputs are connected using both Speakon compatible and terminal block output connectors.

Precautions

READ FOLLOWING INSTRUCTIONS FOR YOUR OWN SAFETY

ALWAYS KEEP THESE INSTRUCTIONS. NEVER THROW THEM AWAY

ALWAYS HANDLE THIS UNIT WITH CARE

HEED ALL WARNINGS

FOLLOW ALL INSTRUCTIONS

NEVER EXPOSE THIS EQUIPMENT TO RAIN, MOISTURE, ANY DRIPPING OR SPLASHING LIQUID. AND NEVER PLACE AN OBJECT FILLED WITH LIQUID ON TOP OF THIS DEVICE.

DO NOT PLACE THIS UNIT IN AN ENCLOSED ENVIRONMENT SUCH AS A BOOKSHELF OR CLOSET. ENSURE THERE IS ADEQUATE VENTILATION TO COOL THE UNIT. DO NOT BLOCK THE VENTILATION OPENINGS.

DO NOT STICK ANY OBJECTS THROUGH THE VENTILATION OPENINGS.

DO NOT INSTALL THIS UNIT NEAR ANY HEAT SOURCES SUCH AS RADIATORS OR OTHER APPARATUS THAT PRODUCE HEAT

DO NOT PLACE THIS UNIT IN ENVIRONMENTS WHICH CONTAIN HIGH LEVELS OF DUST, HEAT, MOISTURE OR VIBRATION

THIS UNIT IS DEVELOPED FOR INDOOR USE ONLY. DO NOT USE IT OUTDOORS

PLACE THE UNIT ON A STABLE BASE OR MOUNT IT IN A STABLE RACK

ONLY USE ATTACHMENTS & ACCESSORIES SPECIFIED BY THE MANUFACTURER

UNPLUG THIS APPARATUS DURING LIGHTNING STORMS OR WHEN UNUSED FOR LONG PERIODS OF TIME

ONLY CONNECT THIS UNIT TO A MAINS SOCKET OUTLET WITH PROTECTIVE EARTHING CONNECTION

THE MAINS PLUG OR APPLIANCE COUPLER IS USED AS THE DISCONNECT DEVICE, SO THE DISCONNECT DEVICE SHALL BE READILY OPERABLE

CAUTION – SERVICING

This product contains no user serviceable parts. Refer all servicing to qualified service personnel. Do not perform any servicing (unless you are qualified to)

EC DECLARATION OF CONFORMITY

This product conforms to all the essential requirements and further relevant specifications described in following directives: 2014/30/EU (EMC) and 2014/35/EU (LVD)

WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT (WEEE)

The WEEE marking indicates that this product should not be disposed with regular houshold waste at the end of its life cycle. This regulation is created to prevent any possible harm to the environment or human health.

This product is developed and manufactured with high quality materials and components which can be recycled and/or reused. Please dispose this product at your local collection point or recycling centre for electrical and electronic waste. This will make sure that it will be recycled on an environmentally friendly manner, and will help to protect the environment in which we all live.

CAUTION

The symbols shown are internationally recognized symbols that warn about potentional hazards of electrical products. The lightning flash with arrowpoint in an equilateral triangle means that the unit contains dangerous voltages. The exclamation point in an equilateral triangle indicates that it is necessary for the user to refer to the users manual.

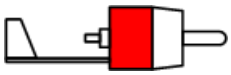
These symbols warn that there are no user serviceable parts inside the unit. Do not open the unit. Do not attempt to service the unit yourself. Refer all servicing to qualified personnel. Opening the chassis for any reason will void the manufacturer's warranty. Do not get the unit wet. If liquid is spilled on the unit, shut it off immediately and take it to a dealer for service. Disconnect the unit during storms to prevent damage.

Chapter 1
Pin connections and connectors

CONNECTION STANDARDS

The in– and output connections for AUDAC audio equipment are performed corresponding to international wiring standards for professional audio equipment.

Cinch (RCA):
For unbalanced line input connections

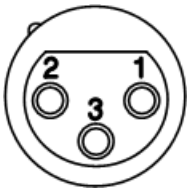


Tip:	Signal	**Sleeve:**	Ground
White:	Left	**Red:**	Right

XLR:
For balanced signal input connections

Pin 1: Ground
Pin 2: Signal +
Pin 3: Signal –

For balanced signal link–through connections



Pin 1: Ground
Pin 2: Signal +
Pin 3: Signal –

Wire up the system

The wiring of the system must be done according to the following rules, to guarantee a proper functioning of the system in all circumstances.

1. Speaker cable for amplified outputs:
   Minimum 2 x 1.5 mm²
   If distance > 15m: 2 x 2.5 mm²)

2. Audio signal inputs (inputs & signal linkthrough outputs)
   Must be connected with high–quality audio cable and high–quality connectors

Chapter 2
Front & rear panel

Front panel overview

Front panel description

Volume control knobs:
These volume control knobs allow level adjustment for each individual channel.

Indicator LED's:
These LED's indicate the operation of the corresponding amplifier channel. A signal indicator, clip indicator and protect indicator are available for each channel.

The signal indicator illuminates in green colour when the signal level exceeds the –20 dB level.

The clip indicator illuminates in yellow colour when the channel is working at maximum level. To ensure the best signal–to–noise ratio, illumination of this indicator should only occur at peak levels. When it illuminates frequently, the channel output will be overdriven and a distorted 'clipping' sound occurs on the output.

The protect indicator illuminates in red colour when any overload, thermal overheating or other fault is detected. It also illuminates for several seconds when powering on the amplifier and slowly fades out when switching off the amplifier. When the protect LED is illuminated, no signal will be available on the output.

Power switch with LED:
A power switch allows to turn the amplifier on and off. The indicator LED next to the power switch indicates the current status of the amplifier. When operational, it illuminates in blue colour. When switched to standby (energy–saving) mode, the power LED will illuminate in orange colour. The amplifier switches automatically to standby mode when no input signal is available for about 30 seconds and instantly switches back to operation when any signal is detected.

Rear panel overview

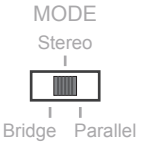
Rear panel description

AC Power inlet with fuse:
The mains power supply has to be applied to this AC power inlet. The connection is made by an IEC C14 power connector and is fitted with a fuse. When replacing the fuse, make sure that the value of the replacement fuse matches the value of the original fuse. (EPA152: T5AL/250V – EPA252: T6.3AL/250V – EPA502: T10AL/250V)

Loudspeaker connections:
The loudspeaker output connections for each channel are implemented using both Speakon compatible and terminal block connectors. Depending of the application requirements, the appropriate connection method can always be used. A detailed description for connecting loudspeakers in the most appropriate way for each application can be found in the next chapter ‘Connecting the amplifier’.

Input connections:
The signal input connections are implemented using balanced XLR connectors with link output connectors. Each channel is provided with an individual input connection whereto the signal coming from the audio source of pre–amplifier shall be fed, while the link output connectors can be used for linkthrough to other amplifiers.

Operation mode switch:
An operation mode switch allows switching between stereo, bridge and parallel mode.



It is default configured in stereo mode (center position) whereby each amplifier channel is fed with an individual input signal. In bridge mode (left position), the power of both channels is merged for delivering double power to a single load. In parallel mode (right position), the input is linked, feeding the identical signal to both channels.

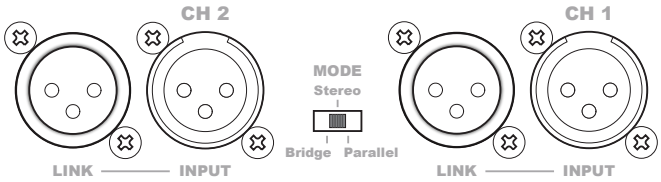
Chapter 3
Connecting the Amplifier

NOTE

Make sure the power is switched OFF when any change is made to the connections of the amplifier.

Input connections

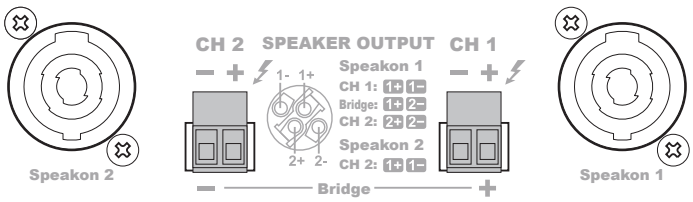
The signal input connections are implemented using balanced XLR connectors with link output connectors. Each channel is provided with an individual input connection whereto the signal coming from the audio source of pre–amplifier shall be fed, while the link output connectors can be used for linkthrough to other amplifiers.



An operation mode switch allows switching the channels between stereo, bridge and parallel mode.

Output connections

The loudspeaker output connections are implemented using both Speakon compatible and terminal block connectors. Depending of the application requirements, the appropriate connection method can always be used.



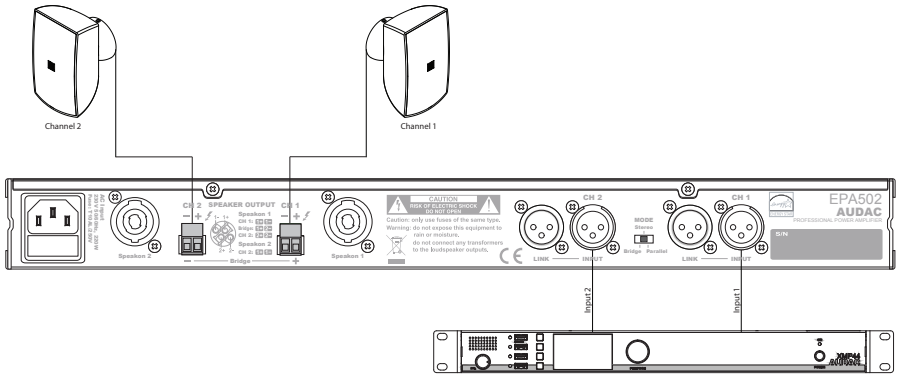
The ‘Speakon 1’ output connector carries signals for both both channels, allowing connection for both channels through a single 4–core cable or bridge mode connections.

ATTENTION

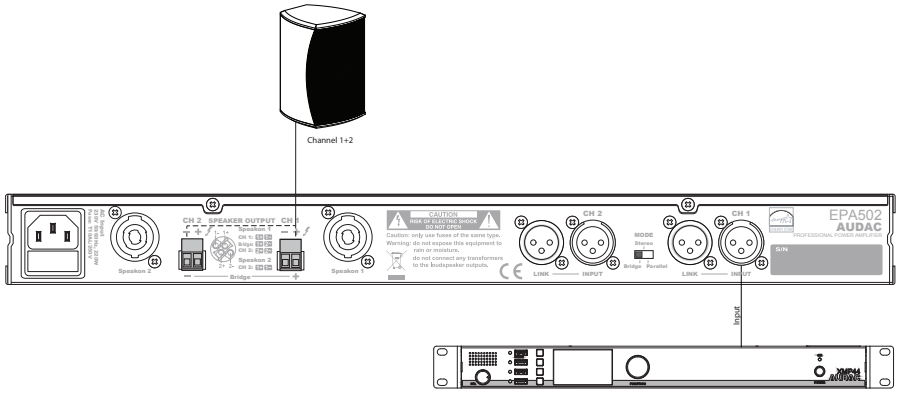
Do not make any direct connection with line transformers on the loudspeaker outputs of the amplifier. When using in combination with line transformers units, make sure the used transformers are designed for being used in combination with Class–D amplifiers (containing integrated decoupling network).

Connection modes

Stereo (2–Channel) mode:
In 2–Channel mode, each channel will be driven by a separate input signal with individual loudspeaker(s) connected to it. The operation mode switches shall be in stereo mode (center position). If both channels shall be fed with identical signals, the parallel mode (right position of operation mode switch) can be used. Loudspeaker cabling shall be connected to the + and – terminals for each individual loudspeaker output connection.



Bridged (mono) mode:
In bridged (mono) mode, both output channels will be merged for delivering double power to a single load. The bridged configuration can be enabled through placing the operation mode switches in bridge mode (left position). The input connections of channel 1 shall be used while loudspeakers are connected between + and – terminals of both separate channels.



Chapter 4
Additional information

Technical specifications

RMS Output power	EPA152	4 Ohm stereo	2 x 150 W
		8 Ohm stereo	2 x 80 W
		8 Ohm bridge	1 x 300 W
	EPA252	4 Ohm stereo	2 x 250 W
		8 Ohm stereo	2 x 130 W
		8 Ohm bridge	1 x 500 W
	EPA502	4 Ohm stereo	2 x 500 W
		8 Ohm stereo	2 x 300 W
		8 Ohm bridge	1 x 1000 W
Frequency response			20 Hz – 20 kHz
Signal to Noise ratio			> 90 dB
Total Harmonic Distortion + Noise			< 0.1%
Crosstalk			> 70 dB
Inputs		Type	Balanced line
		Connectors	Female XLR
			Male XLR linkthrough
		Impedance	12 k Ω
		Sensitivity	0 dB (1 V RMS)
Outputs		Type	Loudspeaker output
		Connectors	Speakon compatible
			2–pin terminal block ~ 5.08 mm pitch
Controls			Front panel control
Indicators			Power (& standby)
			Protect
			Clip
			Signal
Cooling system			Convection cooled
Amplifier technology			Class–D
Power supply	Type		Switching mode
	Range	EPA152	100–240V AC – 50/60 Hz
		EPA252	100–240V AC – 50/60 Hz
		EPA502	230–240V AC – 50/60 Hz

NOTE

The power supply range for EPA502 is default configured for use on 230–240V AC – 50/60 Hz (EU) mains network. Internal modification allows this model being used on 110–120V AC – 50/60 Hz (US) mains network. Contact your local service center for more information.

Power consumption	Standby	EPA152	0.8 W
		EPA252	0.8 W
		EPA502	0.7 W
	Idle	EPA152	24.1 W
		EPA252	19.2 W
		EPA502	26.1 W
	1/8 Rated power	EPA152	69 W
		EPA252	98.1 W
		EPA502	183 W
	1/3 Rated power	EPA152	145 W
		EPA252	224 W
		EPA502	426 W
Dimensions (W x H x D)			482 x 44 x 330 mm
Unit height			1 HE
Weight		EPA152	4.1 Kg
		EPA252	4.4 Kg
		EPA502	4.7 Kg

Notes