

# DPA616

## User Manual



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# Introduction

## Sixteen channel Class D Amplifier

The DPA616 is a professional sixteen channel power amplifier, which is capable of delivering a power of 60 Watt to 4 Ohm loads connected to the 16 output channels. When used in bridge mode, it can deliver a power of 120 Watt to 8 Ohm loads connected to the 8 bridged outputs. This way, the DPA616 is the perfect solution for installed Multi–Zone audio distribution systems with 8 or 16 zones.

It is designed as a no–nonsense amplifier with only the necessary controls and connections, which creates great simplicity in use and installation.

The input connections are all performed with 3–pin Terminal block connectors, allowing the connection of balanced input signals. Every channel is fitted with a separate gain control potentiometer and for every two input connectors is a Stereo / Bridge & Parallel switch provided whereby two channels can be bridged or linked in parallel, avoiding a cable clutter when multiple channels should be fed with the same input signal.

The output connections are performed with 4–pin Terminal block connectors allowing connections for separate or bridged output channels.

A built–in multipurpose protection circuit protects against DC malfunction, short circuit, overheating and overload.

This all is housed in a double rack space, steel 19” rack mount housing.



# 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 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



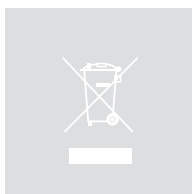
### CAUTION – SERVICING

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: 2004/108/EC (EMC) and 2006/95/EC (LVD)



### WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT (WEEE)

The WEEE marking indicates that this product should not be disposed with regular household waste at the end of its working life. 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 to 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 potential 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.

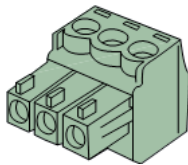
# Chapter 1

## Pin connections and connectors

### CONNECTION STANDARDS

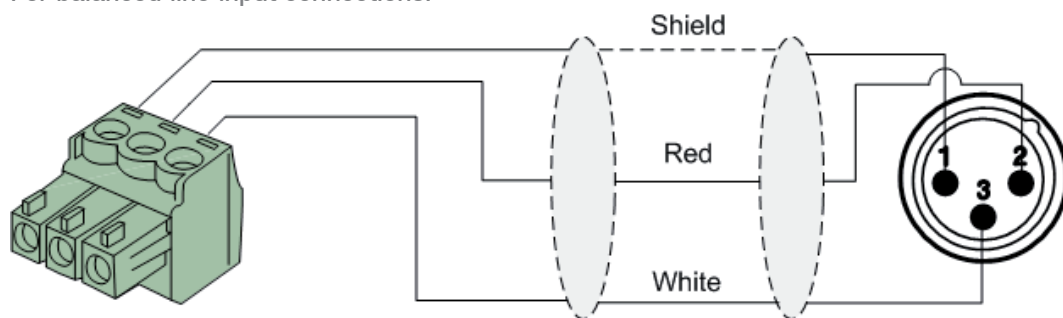
The in- and output connections for AUDAC audio equipment are performed corresponding to international wiring standards for professional audio equipment.

#### 3-Pin Terminal Block:

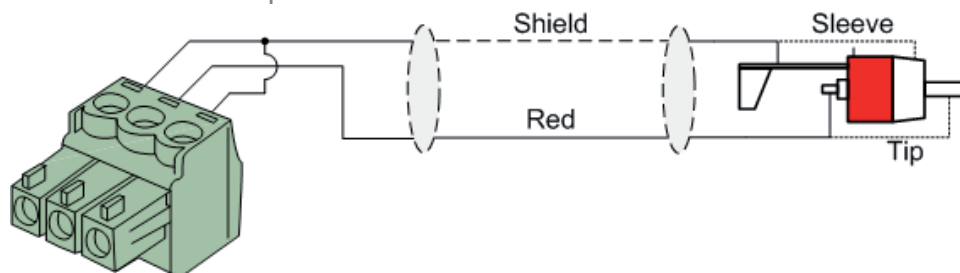


**Left:** Signal – (XLR Pin 3)  
**Center:** Signal + (XLR Pin 2)  
**Right:** Ground (XLR Pin 1)

For balanced line input connections:



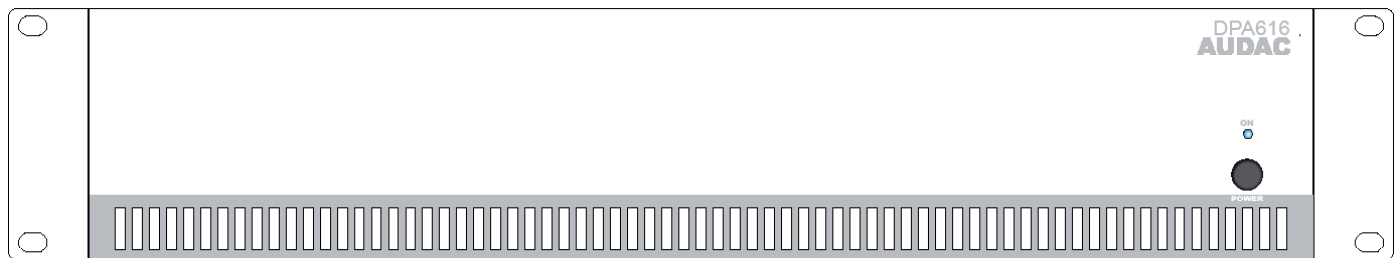
For unbalanced line input connections:



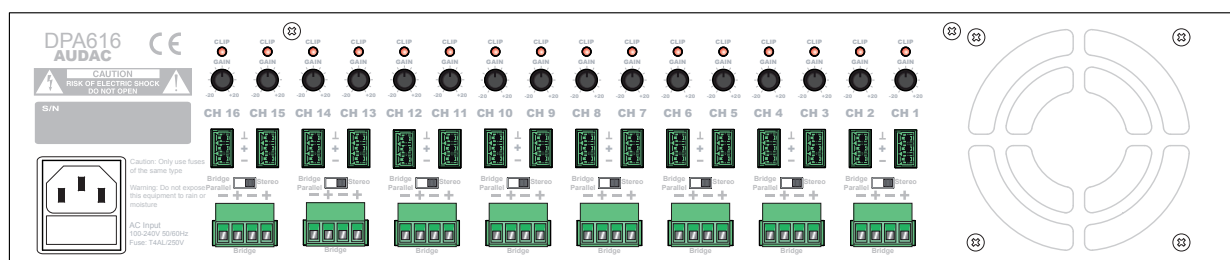
# Chapter 2

## Front & rear panel

### Front panel overview



### Rear panel overview



### Front panel description

The front panel only contains a power switch with power indicator LED. By means of this switch, the amplifier can be turned ON and OFF. When the power is switched ON, the blue LED located above the power button will illuminate.

### Rear panel description

The rear panel of the unit contains all the facilities for connecting, setting up and regulating the amplifier.

#### Input connections:

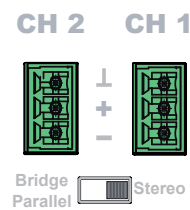
Each channel contains a balanced input connection which is performed using a 3-pin Terminal block connector. The signal coming from the signal source or mixer (e.g. matrix system) should be connected to these connectors. The connection way for both balanced and unbalanced signal sources is described in Chapter 1 of this manual.

### Operation mode switch:

The operation mode of the amplifier can be selected using this switch. The selectable modes are 'Stereo mode' or 'Parallel & Bridge mode'.

In Stereo mode, each channel is fed with the signal present on the input connector for the corresponding channel.

In Parallel & Bridge mode, the input signal for two subsequent channels is linked with each other. The signal present on the inputs of the channels with even numbers (2, 4, 6, 8, ... ) is always linked in pairs for two consecutive channels (Channels 1 & 2, Channels 3 & 4, ... ). Depending how the outputs are connected, the choice between Parallel or Bridge mode will be made. (One load for each separate output or one load connected for one pair of channels). How these connections should be made is described in Chapter 3 of this manual.



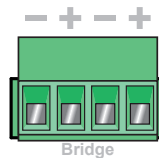
### Gain control with clipping LED:

Each channel is fitted with a gain control knob whereby the level for each individual channel can be adjusted. The sensitivity for each channel is individually adjustable within a range of  $-20$  dB and  $+20$  dB. The clipping LED illuminates when the signal reaches the clipping level.



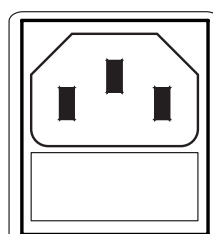
### Output connections:

Every two consecutive channels contain an output connector performed using a 4-pin Terminal block connector. Depending of the used operation mode, output connections can be made for each individual channel or two bridged channels together. How these connections should be made is described in Chapter 3 of this manual.



### Power inlet:

The mains power supply (110~240V AC / 50~60 Hz) has to be applied to this AC power inlet. The connection is made using an IEC 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 (T4AL/250V).



Caution: Only use fuses of the same type

Warning: Do not expose this equipment to rain or moisture

AC Input  
100-240V 50/60Hz  
Fuse: T4AL/250V

# Chapter 3

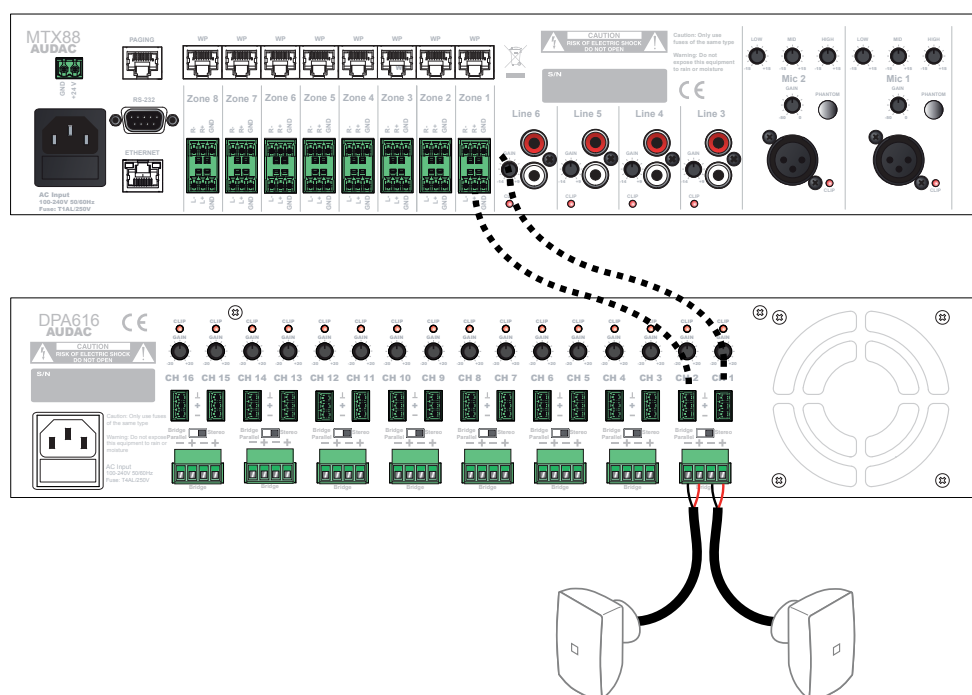
## Connecting the Amplifier

Depending on the desired operation mode of the amplifier, connections shall be made on the appropriate way. The right connection method for every operation method is described below.

### Stereo mode

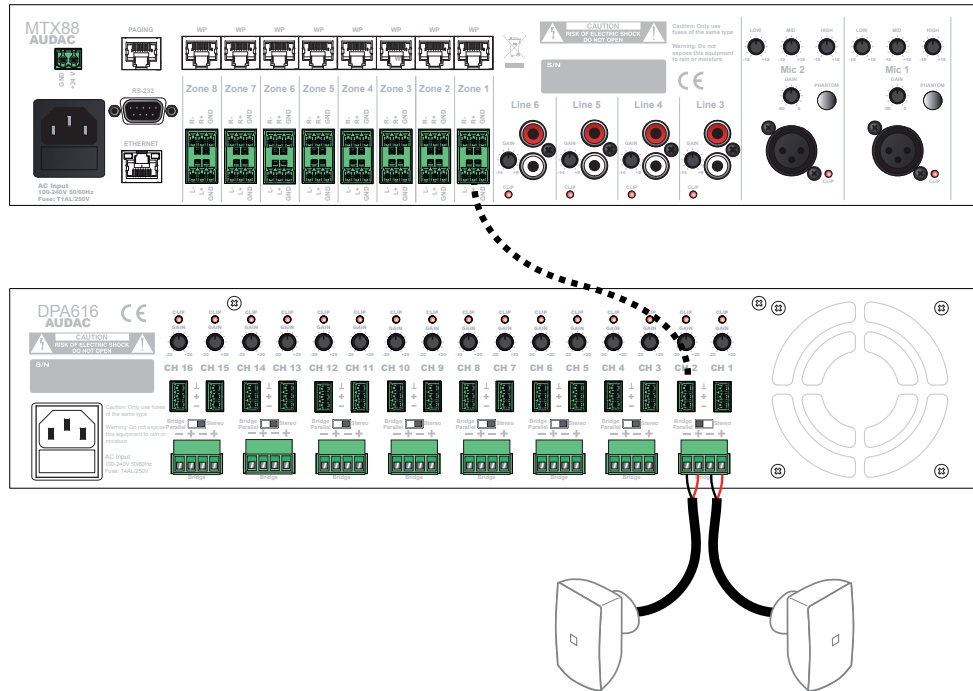
In Stereo mode, each channel shall be fed with an individual input signal coming from a source device, pre-amplifier or matrix system. The input signal shall be applied to the corresponding Terminal block connector, and the amplified signal will be available on the

Terminal block output connector for the corresponding channel.



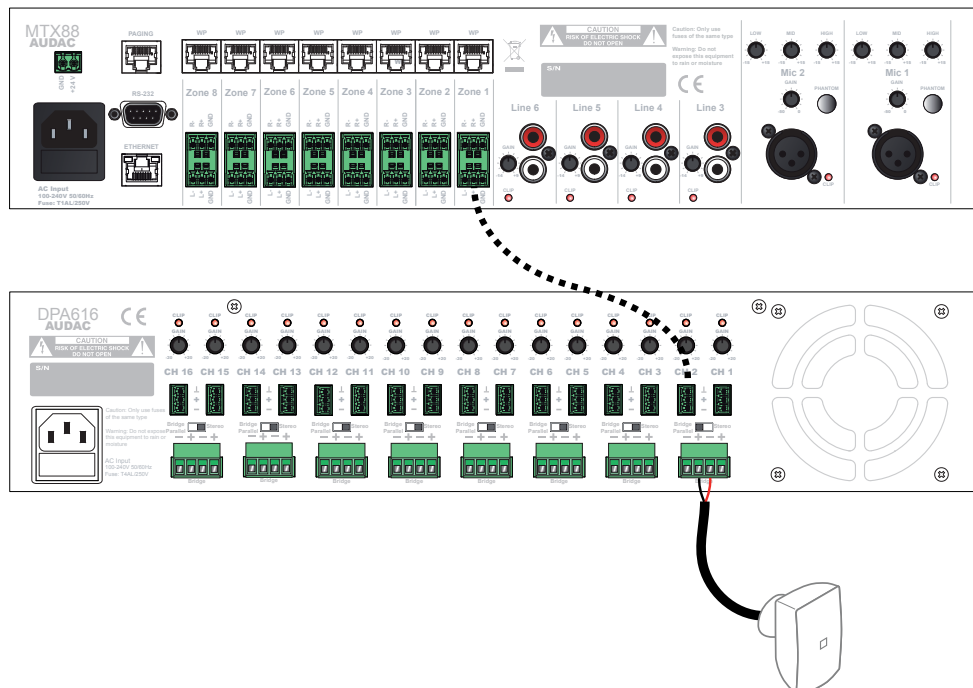
### Parallel mode

In Parallel mode, the input signal coming from the source device, pre-amplifier or matrix system shall be fed to the Terminal block signal inputs of the channels with even numbers (2, 4, 6, 8, ...). The signal applied to these inputs will be linked with the other related channels. These channels are always linked in pairs, in sequential order (Input 1 is linked to Input 2, Input 3 is linked to Input 4, ...). The signal for both consecutive channels is identical and will be available on the Terminal block output connectors for both corresponding channels.



## Bridge mode

In Bridge mode, the input signal coming from the source device, pre-amplifier of matrix system shall be fed to the Terminal block signal inputs of the channels with even numbers (2, 4, 6, 8, ...). The signal applied to these inputs will be linked with the other related channels, combining the power of both channels to one channel with double power capabilities. The bridged output signal will be available by connecting the negative terminal of the channel with the lower number and the positive terminal of the channel with the higher number (e.g. '–' of Channel 1 and '+' of Channel '2'). These are two center terminals of the 4-pole output Terminal block connector.



# Chapter 4

## Additional information

### Technical specifications

|                                   |                   |                                   |
|-----------------------------------|-------------------|-----------------------------------|
| Output Power<br>(1 kHz, THD 1%)   | Stereo @ 4 Ohm    | 16 x 60 Watt                      |
|                                   | Stereo @ 8 Ohm    | 16 x 30 Watt                      |
|                                   | Bridge @ 8 Ohm    | 8 x 120 Watt                      |
| Frequency response                |                   | 20 Hz – 20 kHz                    |
| Signal to Noise Ratio             |                   | > 100 dB                          |
| Total Harmonic Distortion + Noise |                   | < 0.1%                            |
| Damping factor (8 Ohm)            |                   | 110                               |
| Common Mode Rejection             |                   | > 65 dB                           |
| Crosstalk                         | Paired channels   | > 65 dB                           |
|                                   | Unpaired channels | > 110 dB                          |
| Inputs                            | Type              | 8 x Stereo Balanced Line (16 Ch)  |
|                                   | Sensitivity       | –20 dB ~ +20 dB                   |
|                                   | Impedance         | 20 k Ohm                          |
|                                   | Connectors        | 3–pin Terminal block – 3.81 mm    |
| Outputs                           | Type              | 8 x Stereo Loudspeaker (16 Ch)    |
|                                   | Connectors        | 4–pin Terminal block – 5.08 mm    |
| Controls                          |                   | Gain                              |
|                                   |                   | Stereo / Bridge & Parallel switch |
| Indicators                        |                   | Power                             |
|                                   |                   | Clip (rear)                       |
| Protection                        |                   | DC–Short circuit                  |
|                                   |                   | Over heating                      |
|                                   |                   | Over load                         |
| Cooling system                    |                   | Temperature controlled fan        |
| Amplifier technology              |                   | Class–D                           |
| Power supply                      | Type              | Switching mode                    |
|                                   | Range             | 100–240 V AC / 50–60 Hz           |
| Power consumption                 | Idle              | 47 Watt                           |
|                                   | 1/8 Rated power   | 200 Watt                          |
|                                   | 1/3 Rated power   | 400 Watt                          |
| Weight                            |                   | 8.2 Kg                            |
| Dimensions (W x H x D)            |                   | 482 x 88 x 322 mm                 |
| Unit height                       |                   | 2HE                               |

## Notes

## Notes