Mezzo Series

Serie Mezzo / Mezzo-Serie / Mezzo Série
Serie Mezzo / Série Mezzo
سلسلة Mezzo / Mezzo シリーズ
Mezzo系列

USER GUIDE

GUIDA UTENTE / BENUTZERHANDBUCH / MODE D'EMPLOI
GUÍA DEL USUARIO / GUIA DE USARIO
دليل المستخدم / ユーザーガイド
快速指南

Mezzo 322, Mezzo 602 A/AD
Mezzo 324, Mezzo 604 A/AD

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DO000239.1 R0

Keep this manual
for future reference

EN

Important Safety Instructions

THE TRIANGLE WITH THE LIGHTNING BOLT IS USED TO ALERT THE USER TO THE RISK OF ELECTRIC SHOCK.

THE TRIANGLE WITH THE EXCLAMATION POINT IS USED TO ALERT THE USER TO IMPORTANT OPERATING OR MAINTENANCE INSTRUCTIONS.

THE CE-MARK INDICATES THE COMPLIANCE OF THE PRODUCT TO ALL THE APPLICABLE EUROPEAN DIRECTIVES

SYMBOL FOR EARTH/GROUND CONNECTION.

SYMBOL INDICATING THAT THE EQUIPMENT IS FOR INDOOR USE ONLY.

SYMBOL FOR CONFORMITY WITH DIRECTIVE 2012/19/EC OF THE EUROPEAN PARLIAMENT ON WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT (WEEE).

DO NOT USE THE UNIT AT ALTITUDES ABOVE 2000 M.

DO NOT USE THE UNIT IN TROPICAL ENVIRONMENT.

WARNING: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT ATTEMPT TO OPEN ANY PART OF THE UNIT. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

CONNECTION TO THE MAINS SHALL BE DONE ONLY BY A ELECTROTECHNICAL SKILLED PERSON ACCORDING THE NATIONAL REQUIREMENTS OF THE COUNTRIES WHERE THE UNIT IS SOLD.

DO NOT USE THIS AMPLIFIER IF THE ELECTRICAL POWER CORD IS FRAYED OR BROKEN.

TO AVOID ELECTRICAL SHOCK, DO NOT TOUCH ANY EXPOSED SPEAKER WIRING WHILE THE AMPLIFIER IS OPERATING.

DO NOT SPILL WATER OR OTHER LIQUIDS INTO OR ON THE AMPLIFIER.

NO NAKED FLAME SOURCES SUCH AS LIGHTED CANDLES SHOULD BE PLACED ON THE AMPLIFIER.

WARNING TO PREVENT INJURY, THIS APPARATUS MUST BE SECURELY ATTACHED TO THE FLOOR/WALL IN ACCORDANCE WITH THE INSTALLATION INSTRUCTIONS.

THIS DEVICE MUST BE POWERED EXCLUSIVELY BY EARTH CONNECTED MAINS SOCKETS IN ELECTRICAL NETWORKS COMPLIANT TO THE IEC 364 OR SIMILAR RULES

DISCONNECT THE AC MAINS SOURCE BEFORE ATTEMPTING TO CLEAN ANY PART OF THE AMPLIFIER

POWERSOFT SUGGESTS TO PLUG THE T SERIES TO A 16 A RATING, C OR D CURVE, 10 KA SECTIONING BREAKER.

IT IS HIGHLY RECOMMENDED TO UNPLUG THE OUTPUT CONNECTORS BEFORE PROCEEDING WITH THE SELF CHECK PROCEDURE

THE TESTING SIGNALS MIGHT CAUSE LOUDSPEAKER IMPAIRMENTS.

CLASS3 WIRING

OUTPUT TERMINALS ARE HAZARDOUS: WIRING CONNECTION TO THESE TERMINALS REQUIRES INSTALLATION BY AN INSTRUCTED PERSON AND THE USE OF READY MADE LEADS.

PROPERLY FIT THE AC MAINS PLUG TO THE AMPLIFIER INLET.
BEFORE POWERING THIS AMPLIFIER, VERIFY THAT THE CORRECT VOLTAGE RATING IS BEING USED.

VERIFY THAT YOUR MAINS CONNECTION IS CAPABLE OF SATISFYING THE POWER RATINGS OF THE DEVICE.

TAKE CARE TO LOCK THE OUTPUT TERMINAL BEFORE SWITCHING THE DEVICE ON.

This unit has been engineered and manufactured to ensure your personal safety. But IMPROPER USE CAN RESULT IN POTENTIAL ELECTRICAL SHOCK OR FIRE HAZARD.

In order not to defeat the safeguards incorporated into this product, observe the following basic rules for its installation, use and service. Please read these “Important Safeguards” carefully before use.

- Read these instructions.
- Keep these instructions.
- Heed all warnings.
- Follow all instructions.
- Do not use this equipment near water.
- Clean only with a dry cloth.
- Do not block any ventilation openings. Install in accordance with the manufacturer’s instructions.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus that produce heat.
- Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- Only use attachments/accessories specified by the manufacturer.
- Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
- Unplug this apparatus during lightning storms or when unused for long periods of time.
- Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
- The apparatus shall be connected to a MAINS socket outlet with a protective earthing connection
- Where the MAINS plug or an appropriate coupler is used as the disconnect device, the disconnect device shall remain readily operable.

THE MANUFACTURER CANNOT BE HELD RESPONSIBLE FOR DAMAGES CAUSED TO PERSONS, THINGS OR DATA DUE TO AN IMPROPER OR MISSING GROUND CONNECTION.

CONTACT THE AUTHORIZED SERVICE CENTER FOR ORDINARY AND EXTRAORDINARY MAINTENANCE.

IT IS ABSOLUTELY NECESSARY TO VERIFY THESE FUNDAMENTAL REQUIREMENTS OF SAFETY AND, IN CASE OF DOUBT, REQUIRE AN ACCURATE CHECK BY QUALIFIED PERSONNEL.

WEEE Directive

If the time arises to throw away your product, please recycle all possible component.

This symbol indicates that when the end-user wishes to discard this product, it must be sent to separate collection facilities for recovery and recycling. By separating this product from other household-type waste, the volume of waste sent to incinerators or land-fills will be reduced and natural resources will thus be conserved.

The Waste Electrical and Electronic Equipment Directive (WEEE Directive) aims to minimise the impact of electrical and electronic goods on the environment. Powersoft S.p.A. comply with the Directive 2012/19/EU of the European Parliament on waste electrical finance the cost of treatment and recovery of electronic equipment (WEEE) in order to reduce the amount of WEEE that is being disposed of in land-fill site.

All of our products are marked with the WEEE symbol; this indicates that this product must NOT be disposed of with other waste. Instead it is the user's responsibility to dispose of their waste electrical and electronic equipment by handing it over to an approved reprocessor, or by returning it to Powersoft S.p.A. for reprocessing. For more information about where you can send your waste equipment for recycling, please contact Powersoft S.p.A. or one of your local distributors.

EC Declaration Of Conformity

Manufacturer:
Powersoft S.p.A.
via E. Conti 5
50018 Scandicci (Fi)
Italy

CE

We declare that under our sole responsibility the products:
Model Names:

Intended use: Professional Audio Amplifier

Are in conformity with the provisions of the following EC Directives, including all amendments, and with national legislation implementing these directives:

2014/35/EU	Low Voltage Directive
2014/30/EU	Electromagnetic Compatibility Directive
2011/65/EU	RoHs Directive

The following harmonized standards are applied:
EN 55032: 2012
EN 55035: 2017
EN 60065: 2014 /AC: 2016

Scandicci,
November 2018

Luca Lastrucci
Managing Director

For compliance questions only: compliance@powersoft.it

In an effort to reduce the quantity of printed material while enhancing the quality of content, we have decided to adopt a new approach for the production of this user guide.

All vital informations have been condensed in two pages, and all illustrations and tables are now found in the newly implemented fold out cover.

Colored bars are there to guide you to the right section of the amplifier:

White numbers are there to guide you to specific elements of the section: 2

All warnings and safety instructions are now located on the first page of each language, please do take the time to read these.

Less pages printed, less watts in, more power out.

Thank you for choosing Powersoft as your purveyor of Green Audio Power.

EN

Preliminary operations

Package list

The box contains the following:
1 Mezzo amplifier
Block connectors
4 rubber feet
2 Bracket A
2 Bracket B
6 screws (for attaching the brackets)
Mains power cable

Location

Install your amplifier in location that allows some exchange of air.
Amplifier comes with mounting accessories for the following mounting options
Surface mount – Using 2 “bracket B” it’s possible to mount an amplifier vertically on a wall or upside down under a table or in a ceiling.
Tandem 19” rack mount – Using the 2 “bracket B” it’s possible to mount two Mezzo side to side and then mount them using the 2 “bracket A” in 1 RU in a 19” rack.
Single 19” rack mount – Using the 2 “bracket A” it’s possible to mount a single amplifier in a 19” rack.
Single half rack mount – Using the 2 “bracket A” it’s possible to mount a single amplifier in a half width rack.
On a shelf – Attach the rubber feet to the bottom of the amplifier and place it on the desired surface.
Plenum mount – 320 W models are approved for placement in air handling spaces above the ceiling if the mains cable is mounted inside the plenum mount accessory (sold separately).
Custom mount – It’s possible to custom design fittings for poles and other applications using screws fitting the threaded holes in the amplifier. These screws must not be longer than XX mm. The safest way to avoid mistakes is to use the provided screws.

Cooling

The 600W models implement a temperature controlled forced-air cooling system. Air enters from the front and exists at the back of the amplifier. The fan has 3 modes:
STILL - if the temperature of the space surrounding the amplifier is ≤35C and the average power out is ≤1 W per channel. (≤84 dB SPL*)
WHISPER - if the average output is ≤4 W per channel. The fan noise at 1 m is ≤30 dBA in this mode. (≤90 dB SPL*)
REGULATED - Mezzo adapts the speed of the fan to stay cool. The fan noise at 1 m is ≤45 dBA in this mode. (≤105 dB SPL* depending on model and power sharing)
In the rare event of overheating the amplifier will mute all channels and run the fans to reach a safe temperature and start operating again.
It’s ok to stack amplifiers on top of each other in a rack, but it’s recommended to put them in banks of 4 RU and then leave a 1 RU space.

*(SPL at 2 m with 90 dB1W1m sensitivity)

This amplifier does not have a power switch. It will turn on automatically when AC power is connected and it will go to standby mode if no signal is present for 25 minutes.
When input signal exceeding -60 dB relative the level needed for full power is applied the amplifier will go back on within 2 seconds.

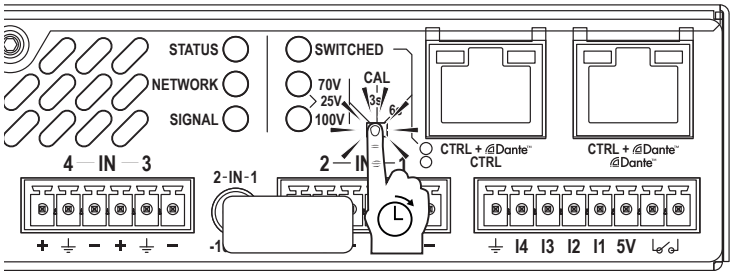
DSP and matrix configuration

The amplifier comprises a comprehensive range of functions that can be setup in two ways.

- Automatic - without the use of any app or software.
- Advanced - use the software to set more parameters and optimize the functionality.

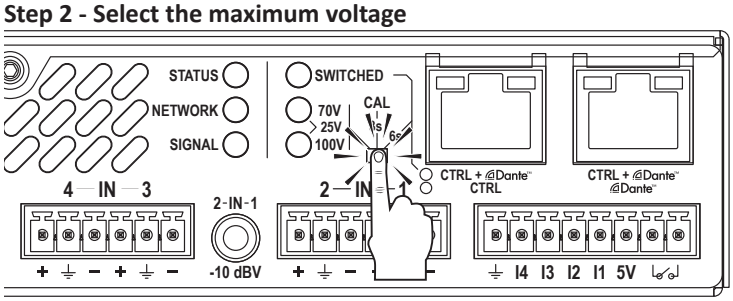
This is a very easy way to configure the amplifier that doesn’t require any software. It is ideal if all you want is an amplifier with a flat frequency response that can monitored and if it is an AD model get audio routed to it with third party software.
The automatic setup will set limiters so that a channel reaches the maximum capacity of the power supply with -4 dBu balanced analog input (or -6 dBFS for Dante/AES67). This means that it also adjusts the gain so that the amplifier has the gain needed for all channels. The way to “assign power” is then simply done by adjusting the level of the content to the different channels.
It will also set the high pass filters automatically. The cutoff will be selected so that frequencies below the resonance frequency as well as frequencies that saturate transformers in Hi-Z loudspeakers will be attenuated.
Note! Automatic configuration is only possible when the amplifier is in its factory default mode. Factory default is indicated by 5 seconds long blinks of the 70V and 100V LEDs. In order to restore Mezzo's factory default mode, press and hold the mode button on the rear panel for 10 s.

Step 1 – Calibrate



Press the mode button until it fast blinks twice after 2 s, release it within 2 s after it has blinked. This will trigger an automatic impedance measurement taking 1 s per channel. This will be made at a level that is high enough to properly measure an 8 ohm loudspeaker. If the impedance is higher the measurement might be deemed to be too noisy and it will then repeat itself automatically. Please note that it may generate an SPL exceeding 95 dB if the loudspeakers are sensitive enough.
The impedance measurement will automatically set warning thresholds monitoring change. It will also set the limiters so that the channel can play as loud as the design and model allows, without distortion.

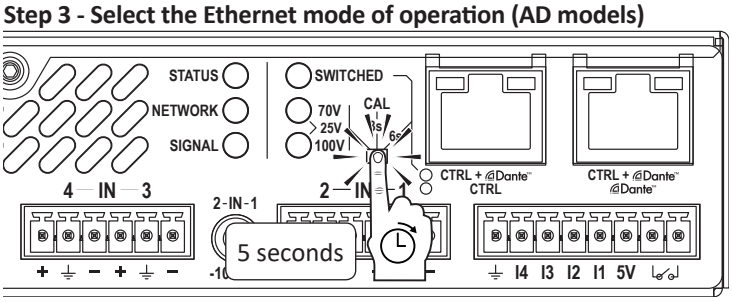
Step 2 - Select the maximum voltage



No channel will ever be assigned limiters that exceed the power of the power supply. The main reason for selecting the maximum voltage is to ensure that 25/70/100V loudspeakers will get the power selected on their tapping if a channel is using less power than it can deliver.
If the application is 25V or 70V, then there is a risk that the limiters get set too high if the connected load isn’t requiring full power. This is fixed with short presses on the mode button until it shows the desired maximum voltage:

70V LED	100V LED	Max Peak Voltage	Max RMS Voltage	Description
Unlit	Lit	141.4 V_{peak}	100 V_{rms}	Also works in mixed 100V and low impedance configurations
Lit	Unlit	100 V_{peak}	70.7 V_{rms}	Also works in mixed 70V and low impedance configurations
Lit	Lit	35.4 V_{peak}	25 V_{rms}	Also works in mixed 70V and low impedance configurations
Unlit	Unlit	Custom Settings		This can’t be selected on the rear panel. The limiters have been set manually in the software and can’t be changed without a reset to factory defaults

Step 3 - Select the Ethernet mode of operation (AD models)



Press the mode button until it fast blinks (3 times) after 5 s, release it within 2 s after it has blinked. This will reset the amplifier to auto-IP and it will toggle the Ethernet mode and update the “Switched” indicator:

- Unlit: This is the default “split mode”. The internal Ethernet switch is disabled => the two ports are not connected and the right port is then internally assigned for Dante/AES67. The left port is only for control/monitoring.
- Lit: The internal Ethernet switch is enabled => the two ports are connected and will both work for Dante and control/monitoring. It means that you only need to connect with one cable for control and audio. It also means that the product can be inserted in a daisy chain of other Gigabit Ethernet products as long as there is enough bandwidth.

Step 4 - Routing and control via GPI

Dante/AES67 (AD models)

Dante &/ AES67 is enabled and it has priority over the corresponding analog input if there is an audio signal coming over the network. This could be configured in the Dante Controller or in a third party plug-in.

4 Channel models

The analog 1 is always a mix on the unbalanced and the balanced analog 1; same with analog 2. The unbalanced input will get a 6 dB boost so that normal unbalanced sources will deliver enough level to drive the amplifier to full power.

Otherwise the amplifier will have straight 4 in 4 out routing and the 4 GPI inputs can be used with a 10kohm passive pot to attenuate the levels. If a different routing or a different functionality of the GPI pins is desired, then the software needs to be used redefine the functionality of the GPI pins. Please look at the Advanced configuration (with software) instead.

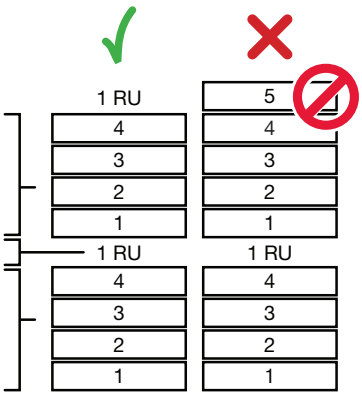
2 Channel models

The default here is that

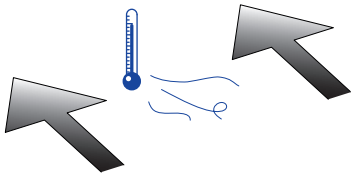
- Whatever signal is delivered to output 1 is also delivered to output 3 (but without the highpass filter). The level of these outputs can be attenuated with GPI1.
- Whatever signal is delivered to output 2 is also delivered to output 4. The level of these outputs can be attenuated with GPI2.

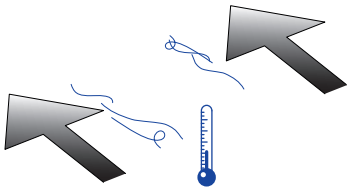
Inputs 1 and 3 are mixed. Inputs 2 and 4 are mixed. This means that a balanced or unbalanced source can be used. It’s possible to defeat this mixing by connecting GPI3 to GND. When this is done GPI4 defines which input signal pair is used with an external contact closure between GPI4 and GND. Open → the balanced inputs are used; Closed → the unbalanced inputs are used.

Location

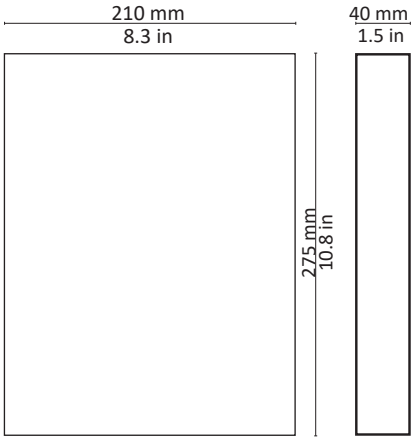


Cooling



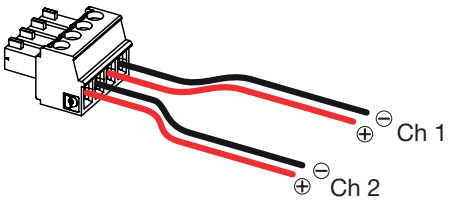


Dimensions

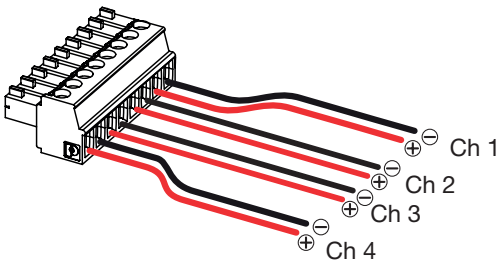


Pinouts

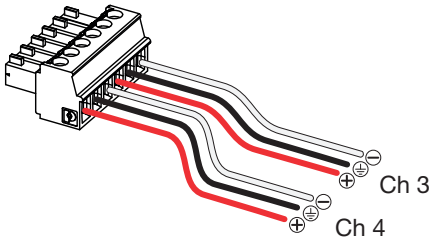
Outputs (2 Channel Versions)



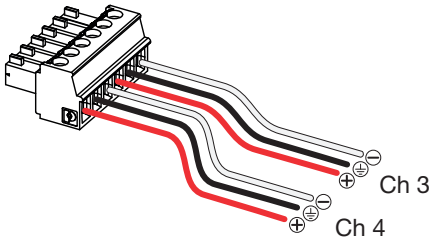
Outputs (4 Channel Versions)



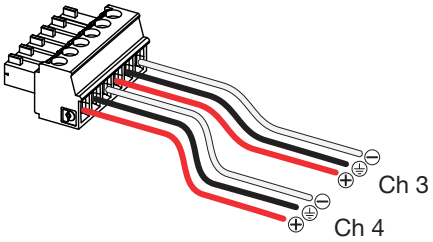
CH4 - CH3 Balanced Inputs



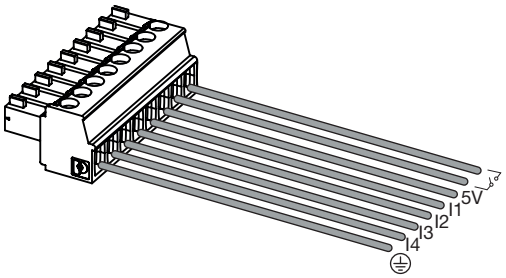
CH2 - CH1 Balanced Inputs (4 Channel Version)



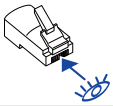
CH4 - CH3 Line Level Outputs (2 Channel Version)

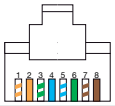


GPI



Network Connector RJ45 pinout

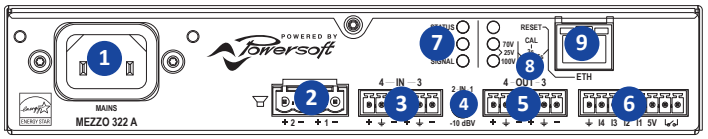




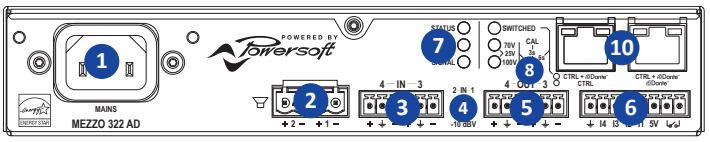
Color code (TIA/EIA-568-B)	Pin
ORANGE / WHITE	1
ORANGE	2
GREEN / WHITE	3
BLUE	4
BLUE / WHITE	5
GREEN	6
BROWN / WHITE	7
BROWN	8

Rear Panels

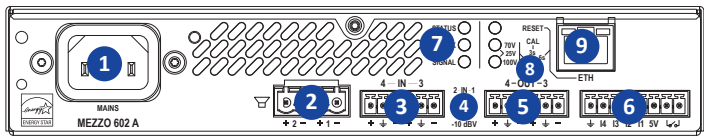
Mezzo 322 A



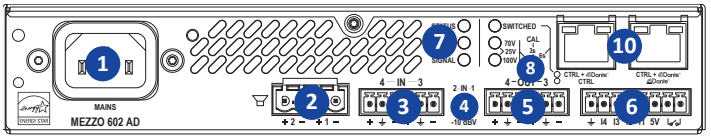
Mezzo 322 AD



Mezzo 602 A



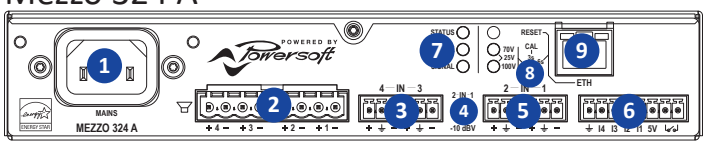
Mezzo 602 AD



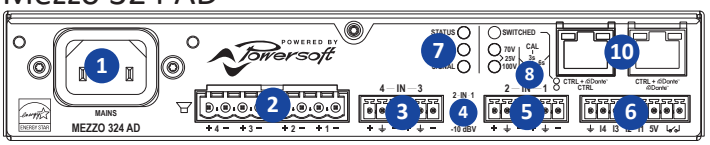
Rear panel - 2 Channel

1. AC Mains Connector / IEC 10A
2. CH2 -CH1 Outputs
3. CH4 - CH3 Balanced In puts
4. CH2 - CH1 Unbalanced Inputs
5. CH4 -CH3 Line Level Balanced Outputs
6. GPI
7. Amplifier State LEDs
8. Load setting LEDs
9. RJ45 Fast Ethernet connector (Mezzo A Version)
10. 2 X RJ45 Fast Ethernet connector (Mezzo AD Version)

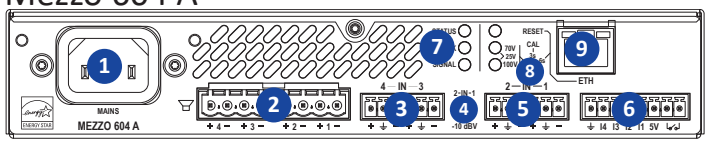
Mezzo 324 A



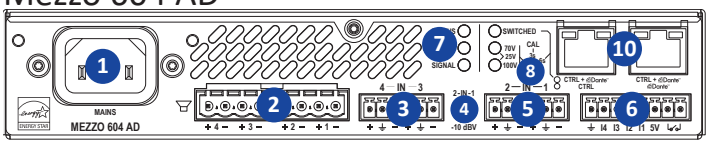
Mezzo 324 AD



Mezzo 604 A



Mezzo 604 AD



Rear panel - 4 Channel

1. AC Mains Connector / IEC 10A
2. CH4 - CH3 - CH2 - CH1 Outputs
3. CH4 - CH3 Balanced Inputs
4. CH2 - CH1 Unbalanced Inputs
5. CH2 -CH1 Balanced Inputs
6. GPI
7. Amplifier State LEDs
8. Load setting LEDs
9. RJ45 Fast Ethernet connector (Mezzo A Version)
10. 2 X RJ45 Fast Ethernet connector (Mezzo AD Version)

DRIVING HUMAN AUDIO EXPERIENCE

POWERSOFT S.P.A.
Via E. Conti, 5 - Scandicci (FI) 50018 - Italy
support@powersoft.com
+39 055 73 50 230
+39 055 73 56 235

POWERSOFT.COM