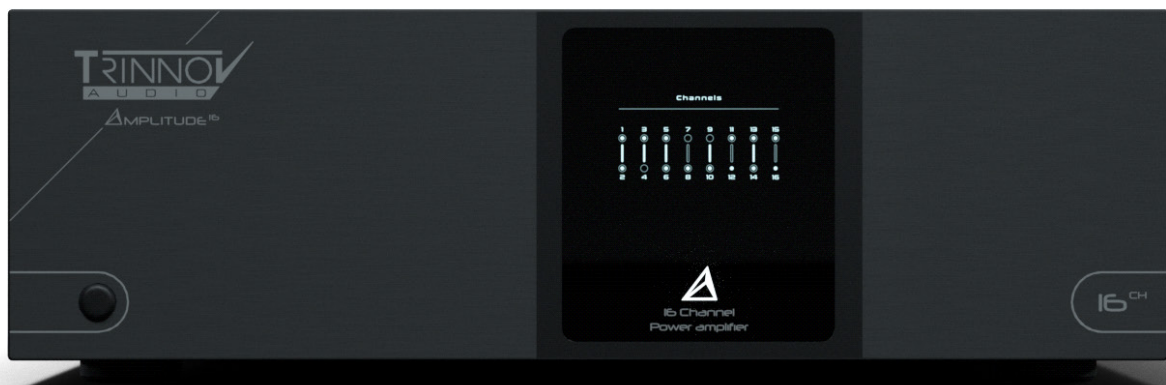




AMPLITUDE 16

USER MANUAL



THANK YOU FOR CHOOSING TRINNOV AUDIO

Designed in partnership with ICEpower according to our specifications, the Amplitude¹⁶ maximizes the performance of their class D modules to deliver the best possible immersive experience. With the Amplitude¹⁶, Trinnov Audio delivers the highest possible performance in a very cost-effective package, with unprecedented versatility.

AMPLITUDE¹⁶ OWNER'S MANUAL

Version 1.0 - Last update: June 2021

IMPORTANT SAFETY INSTRUCTIONS	4
ABOUT THE AMPLITUDE¹⁶	6
PRESENTATION	6
IMPORTANT RECOMMENDATION	6
SPECIFICATIONS	7
THE FRONT PANEL	9
THE REAR PANEL	10
ENVIRONMENTAL NOTICE	11
OPERATION	11
CHANNEL BRIDGING	12
REMOTE TRIGGERS	12
APPENDIX	13
PINOUT & WIRING	14
RACK EARS	14



CAUTION: TO REDUCE THE RISK OF ELECTRICAL SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of significant magnitude to constitute a risk of electric shock to persons.



The disconnect symbol, is intended to warn the user that it is required to disconnect all power sources in order to prevent any shock hazard.

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE.

CAUTION: TO PREVENT ELECTRIC SHOCK, DO NOT USE THE AC (POLARIZED) PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

EXTENSION CORDS ARE NOT RECOMMENDED FOR USE WITH THIS PRODUCT.

THIS UNIT CONTAINS VOLTAGES WHICH CAN CAUSE SERIOUS INJURY OR DEATH. DO NOT OPERATE WITH COVERS REMOVED. REFER ALL SERVICING TO YOUR AUTHORIZED TRINNOV AUDIO DEALER.

FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE FUSES ONLY WITH THE SAME TYPE AND RATING OF FUSES AS SPECIFIED.

Please carefully read each item of the operating instructions and safety precautions before installing and using this product. Use extra care to follow the warnings written on the product itself and/or in the operating instructions. Keep the operating instructions and safety precautions for future reference.

Install the Amplitude¹⁶ on a solid, flat, level surface that is dry, well ventilated and out of direct sunlight. Be sure that all four feet are supported.

Do not use this apparatus near water.

To prevent fire or shock hazard, do not allow liquids to spill or objects to fall into any openings of the product.

Clean only with a dry cloth. Do not use liquid solvent-based cleaners.

Protect the detachable power chords from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus. If the ac cord becomes damaged, do not use it. Immediately replace it with a new one of the same or better rating.

To prevent damage to the analog output circuitry, be certain not to short the output signal to ground. Ensure that your audio output cables do not have any internal shorts before connecting them to the Amplitude¹⁶.

Unplug this apparatus during lightning storms or when unused for long periods of time.

Do not open the equipment case or remove any of the cover panels. There is no serviceable part for this product. Refer all servicing to qualified service personnel.

To prevent fire or shock hazard, do not allow liquids to spill or objects to fall into any openings of the product. Use only attachments/accessories specified by the manufacturer.

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 is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

Before connecting the equipment, check that the main power supply voltage rating corresponds with the local main power supply. The rating of the main power supply voltage is printed on the equipment.

If replacement of the ac line fuses and/or any

internal fuses becomes necessary, replace only with same value and type of fuse: 2x t10a 5x20mm slow blow. Never bypass the fuses.

It is imperative that the Amplitude¹⁶ be operated in a well ventilated environment and the immediate external temperature be maintained as specified. Do not expose the Amplitude¹⁶ to humidity, steam, smoke or excessive dampness or dust. Maximum permissible operating conditions: 0°C to 40°C, 20-80% relative humidity. External cooling fans may be required in some cases.

Do not stack any equipment directly above or below the Amplitude¹⁶ as to protect it from overheating, as well as the continued functionality of any equipment near and around it.

When installing the Amplitude¹⁶ in your system, make certain to allow a minimum of ½ inch of ventilation on each side of the unit. Also, allow at least 2 inches of ventilation space above the unit. Improper ventilation of the unit may cause overheating, which may damage the unit and cause a fire. Place the unit on a solid surface only. I.E. Not on carpet, etc.

To completely disconnect the apparatus from the ac, disconnect all power sources.

Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as when the power-supply cord or plug is damaged, liquid has been spilled or object have fallen into the apparatus, or the apparatus has been exposed to rain or moisture, does not operate normally or has been dropped.

Do not expose this apparatus to dripping or splashing and ensure that no objects filled with liquids, such as vases, are placed on the apparatus.

The main plug of the power supply cord shall remain readily operable.

Aftermarket and third party modifications.

Please note that any aftermarket and/or third-party modifications will void the warranty.

PRESENTATION

Like all Trinnov power amplifiers, the Amplitude¹⁶ is designed to match the Altitude AV Processor range. This match is achieved both in aesthetics and performance. The input level sensitivity of the Amplitude¹⁶ matches perfectly the Altitude output level to maximize dynamic range and signal-to-noise ratio. To extract maximum performance, a custom dual power supply and a bespoke thermal dissipation design have been developed.



Feature rich, the Amplitude¹⁶ also provides unprecedented versatility. With the ability to bridge any pair of channels, the Amplitude¹⁶ meets the various requirements of immersive sound home theaters.

IMPORTANT RECOMMENDATION

Before turning on your Amplitude¹⁶, make sure you are using the right fuses: 2x 10A 5x20mm slow blow. Use both Power Inlets.

AUDIO POWER	
ONE CHANNEL 8Ω	200W - 1kHz, 0,1%< THD+N
ONE CHANNEL 4Ω	400W - 1kHz, 0,1%< THD+N
ONE CHANNEL BRIDGED 8Ω	800W - 1kHz, 0,1%< THD+N
ONE CHANNEL BRIDGED 4Ω	1000W - 1kHz, 0,1%< THD+N
TOTAL OUTPUT POWER (SE or BTL)	2800W all channels driven @40°C continuous, 120 VAC 3200W all channels driven @40°C continuous, 230 VAC
GAIN	16 dB single ended / 22 dB bridged

AUDIO INPUTS & OUTPUTS	
INPUT CONNECTOR	2x DB25 Female, Tascam Analog Pinout
INPUT IMPEDANCE	47kΩ, each phase
INPUT SENSITIVITY	6.16V (+18dBu) RMS balanced in = 200W into 8Ω single ended out
OUTPUT CONNECTOR	1x 5 way binding post per channel

AUDIO PERFORMANCE	
THD+N SINGLE ENDED	0.0015% - 8Ω, 5W (2dBu)
THD+N BRIDGED	0.0015% - 8Ω, 20W (8dBu)
FREQUENCY RESPONSE	+0/-0,6 dB 20 Hz to 20 kHz, load-independent
DAMPING FACTOR	2340 at 100Hz / 1820 at 1kHz / 354 at 10kHz
SIGNAL TO NOISE RATIO	126 dB referenced to rated 1% THD output (A-Weighted)
CROSSTALK	96 dB single ended 200W 8Ω

POWER SUPPLY	
POWER REQUIREMENTS	2x 100/240V (auto-selecting)
POWER CONSUMPTION	0,5W< at Standby; 125W at idle; Max 2x 2000W fully loaded
THERMAL CONVERSION	683 BTU/h MAX
MAINS FUSE	2x 10 Amp slow blow for different Voltages & Countries
TRIGGER INPUT	5-15 VDC; Steady State (mini-jack TS)
TRIGGER OUTPUT	8-10 VDC; Steady State (mini-jack TS)
MODES /PROCESS	Standby: Amplifier is ready to be turned on via front panel switch or remote trigger. Overcurrent, D.C., and/or thermal protection: Amplifier will cycle. Catastrophic D.C. or output stage failure: Amplifier will shut down.

PHYSICAL CHARACTERISTICS

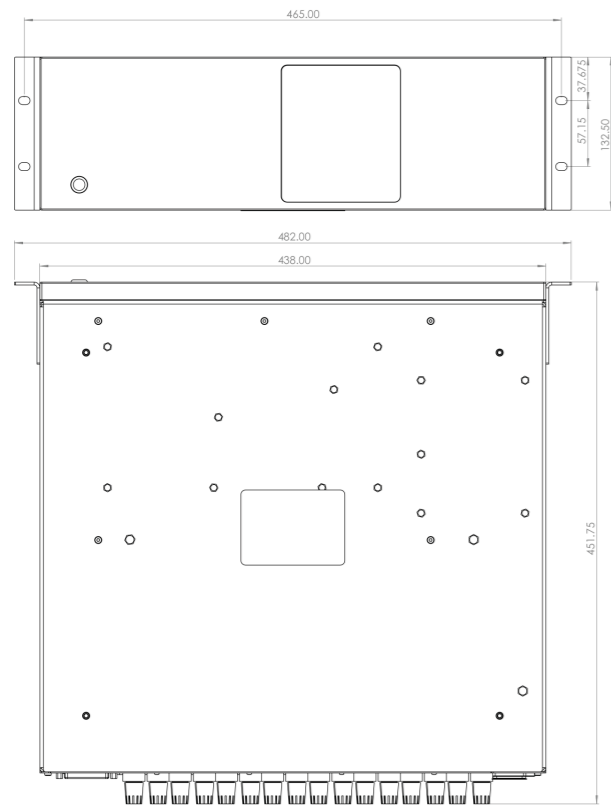
CHASSIS: 3 Rack Units

WEIGHT: 20.5 kg, above 45 lbs

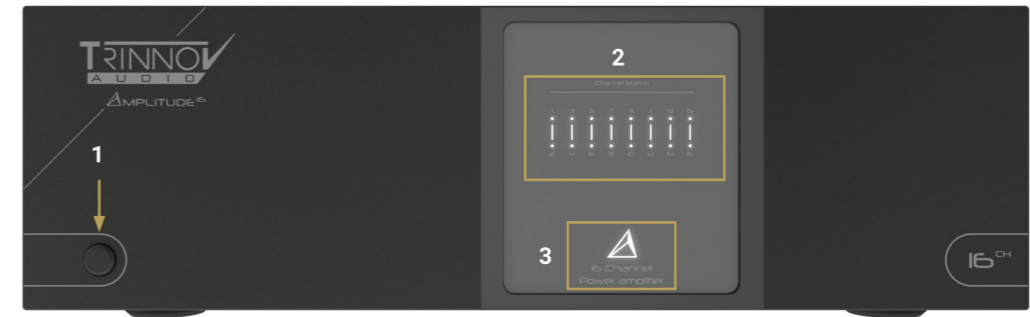
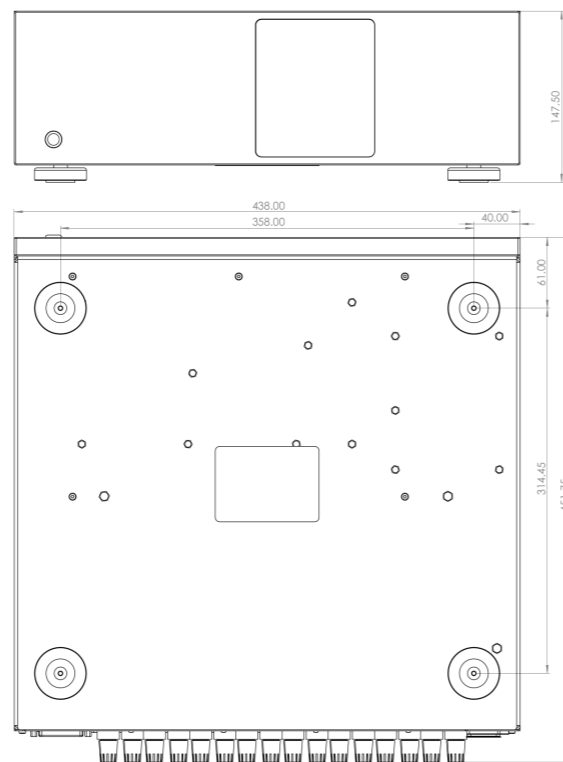
ENVIRONMENTAL CONDITIONS:

- Temperature: 0°C - 40°C / 32°F - 104°F
- Humidity: 20% - 80% relative humidity (without condensation)

Dimensions including rack ears



Dimensions including feet



1 - POWER BUTTON

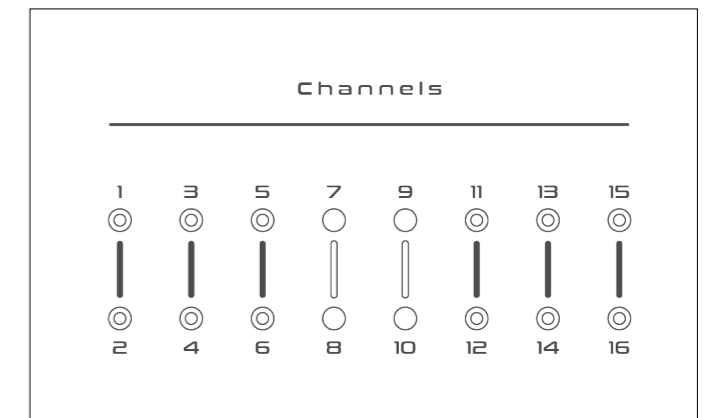
Press the front panel power button to exit the standby mode and start the amplifier.

2 - FRONT PANEL LEDs

They are indicating:

- Normal operation (white), clipping (red), protection (blinking red)
- Bridge Status for each pair of channels (vertical LED bar)
- With the optional AoIP input board, only channels routed through the audio network to the amplifier will be lit

Please refer to chapter 2.2 for more information on bridging.

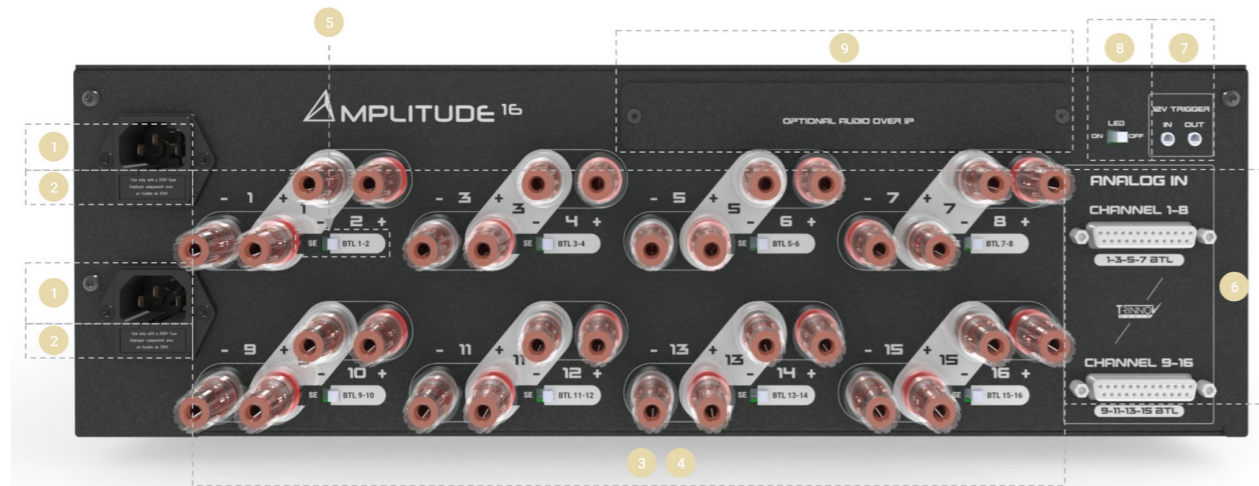


3 - POWER LED

The Power LED indicates when:

- The Amplitude¹⁶ is on standby (dimmed red)
- The Amplitude¹⁶ is booting (waving green)
- The Amplitude¹⁶ is powered on (full white)





1 - 2x AC INLETS

Use the 2x included power cords to connect your amplifier to an AC power source.

2 - 2x REAR PANEL FUSE

Use the same type and rating only: T10A 5x20mm slow blow.

3 - POSITIVE BINDING POST

Connect the + (plus) speaker connector. The binding posts can accept spade plugs, banana plugs or bare wire. In bridge (BTL) mode, connect the + (plus) connector of the odd channel output.

4 - NEGATIVE BINDING POST

Connect the - (minus) speaker connector. The binding posts can accept spade plugs, banana plugs or bare wire. In bridge (BTL) mode, connect the - (minus) connector of the even channel output.

5 - BRIDGING SWITCH

Each pair of speaker output can be bridged using the BTL switch: SE position: each pair of outputs is set as two individual speaker outputs BTL position: each pair of outputs is bridged and must be connected to a single speaker following the white marking for speaker connection.

Please refer to chapter 2.2 for more information on Bridging.

6 - ANALOG INPUTS

Two DB25 female connectors allow you to connect to the inputs of the amplifier. The Amplitude¹⁶ uses the DB25 Tascam Pinout standard described in the appendix of this document. Note: when Bridged mode is selected, it takes the odd-numbered channel in a mono format as the primary input, as indicated on the white marking below each DB25 connector.

7 - REMOTE TRIGGER INPUT & OUTPUT

The amplifier will power on with a Steady State 12V signal fed through the Trigger input. The same tension is passed onto the Trigger output to power on other devices.

8 - LED SWITCH

When switched off, the front panel LEDs will be turned off one minute after the amplifier is powered on.

9 - OPTIONAL INPUT BOARD

This is a slot for a future optional audio over IP input board.

Before turning on the Amplitude¹⁶, ensure that all precautions and warnings have been carefully reviewed and adhered to. Damage to the Amplitude¹⁶ caused by improper operation, wiring and/or ventilation will not be covered under warranty and Trinnov Audio will not be liable for any consequential damage or loss. When the amplifier is connected, it goes into Standby. The amplifier is completely off, save for a minimal (and low power) supply to power the soft-start circuit.

When the Standby button is pressed, the soft-start sequence begins and the Power LED turns white. Pressing the Standby button again takes the amp directly into the standby mode.

ENVIRONMENTAL NOTICE

Here are critical instructions to follow before you turn the power on your Amplitude¹⁶:

- I. It is imperative that the Amplitude¹⁶ is connected to the ground via its 2x three-wire AC power cords. It is important that the AC power outlets, which the Amplitude¹⁶ is plugged into, are actually grounded. Failure to do so will severely compromise the performance, reliability, and safety of use of the Amplitude¹⁶.
- II. Ventilation is an important issue when placing the Amplitude¹⁶ in a system. Make certain that the Amplitude¹⁶ is placed in a well-ventilated area or rack unit.
- III. Please take note that some power line conditioners defeat the AC power ground on their outlets. If the intention is to plug the Amplitude¹⁶ into a line conditioner, check with your dealer to make certain that the particular conditioner that is intended for use DOES NOT DEFEAT THE AC GROUND on its AC outlets. Only the highest-powered line conditioners should be considered for use with the Amplitude¹⁶. Otherwise, the amplifier's power output may be compromised.
- IV. DO NOT remove any cover panels from the Amplitude¹⁶, as there are no user serviceable components inside. Refer servicing and updating to qualified service personnel only.
- V. It is imperative that the Amplitude¹⁶ be operated in a well-ventilated environment and the immediate external temperature is maintained below 40°C. External cooling fans may be required in some cases. Do not stack any equipment directly above or below the Amplitude¹⁶, to protect it from overheating, as well as the continued functionality of any equipment near and around it.

CHANNEL BRIDGING

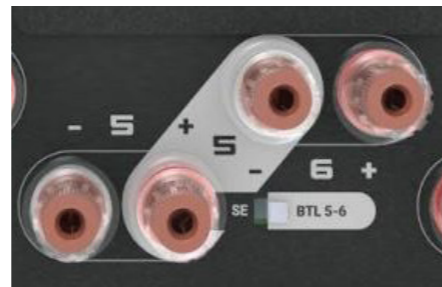
One of the key features of the Amplitude¹⁶ is the ability to bridge any pair of the amplifier channels. Bridging the channels allows you to increase the power output.

For example, you can combine two channels to power one subwoofer or four channels into powering two subwoofers.

To bridge two channels, move the bridging switch of the required channels to the BTL position.

Speaker connection must be done as follows:

- Connect the plus (+) of the speaker to the plus (+) of the odd output channel binding post
- Connect the minus (-) of the speaker to the minus (-) of the even output channel binding post



Common Practices:

- Avoid specifying the Amplitude¹⁶ to drive very low impedance drivers
- Avoid bridging adjacent channels
- Split bridged channels across the two circuits
- Example:
 - Power supply 1: outputs 1 & 2 bridged
 - Power supply 2: outputs 9 & 10 bridged

REMOTE TRIGGERS

Use the remote trigger to connect to a compatible preamplifier, source device or other product with 5 to 12 VDC output.

When so interconnected, the Amplitude¹⁶ will turn on and off in response to the signals received from the source device. The trigger circuit requires a steady-state signal. Units that send a pulse signal for turn-on and turn-off will not work with the Amplitude¹⁶.

The trigger output will pass through the steady-state signal received on the trigger input to switch downstream devices on and off.

NOTE: Make sure to use a mono TS 35mm mini-jack cable for 12V triggers

TROUBLESHOOTING SOLUTIONS

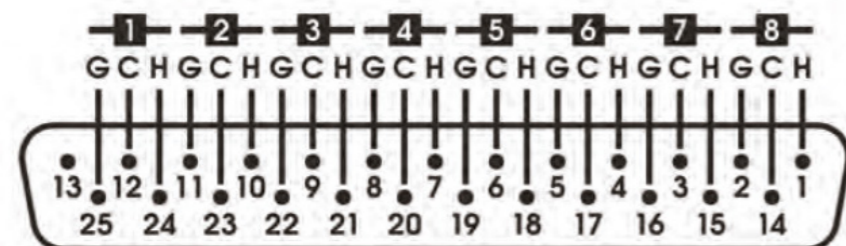
In case the Amplitude¹⁶ would function abnormally during operation, please review the items in the following checklist.

Please be sure to thoroughly check all other connected components such as speakers, preamplifiers, as well as cables.

SYMPTOM	POSSIBLE CAUSE(S)	LED ERROR PATTERN	REMEDY
No power or front panel lights and no sound.	Power cables are not inserted 100% into AC input connectors.	N/A	Ensure that both AC cords are inserted all the way into the Amplitude ¹⁶ and that the wall outlets are active.
	Rear panel fuse is open	N/A	Replace with same type and rating ONLY.
	Circuit breaker is open (AC outlet).	N/A	Check the AC outlet circuit breaker and reset, if necessary, or contact an authorized Trinnov dealer.
Startup Error	DC on every output or PSU not starting	Power LED will flash red	Contact an authorized Trinnov Dealer
No audio output on a pair of channels but the amplifier remains operational	Excessive current limitation and/or overheating	A pair of channel LED illuminates in red constant	Contact an authorized Trinnov Dealer
No audio output on any channel and the amplifier shuts down	Channel(s) heatsink module(s) overheating	Power LED will flash red and group(s) of 4 channels LEDs illuminate in red constant (channels 1-4, 5-8, 9-12 or 13-16)*	Shut down the Amplitude ¹⁶ until it cools. This should be a very rare occurrence. If it does happen, an external fan may be required.
	Power Supply overheating	Power LED will flash red and all upper or all lower channel LED's illuminate in red constant*	Shut down the Amplitude ¹⁶ until it cools. This should be a very rare occurrence. If it does happen, an external fan may be required.
	Fan Error	Power LED will flash red*	Please contact an authorized Trinnov dealer. Service may be required
	DC Error	Power LED will flash red	Contact an authorized Trinnov dealer. Attempting to manually restart the amplifier without solving the DC issue may permanently damage the device.**

* when encountering such errors, the amplifier may automatically attempt a new start up sequence (ie: if the temperature drops below a certain level in case of overheating). If after the restart, the error occurs again for 3 consecutive cycles, the amplifier will enter a permanent shut down mode with all LED (channel, bridge status and power LEDs) lit red constant until a manual reboot is done.

**manually restarting the amplifier in case of a DC error is dangerous. This will be indicated with all LEDs (channel, bridge status and power LEDs) lit in red constant.

PINOUT & WIRING**H** = Hot**C** = Cold**G** = Ground

The Amplitude¹⁶ may require custom cables when used in bridged mode:

- When Bridged mode is selected on any pair of channels, it takes the odd-numbered channel in a mono format as the primary input, as indicated on the white marking below each DB25 connector.
- Consequently, if you are using a 8x XLR to DB25 breakout to connect your preamplifier to the Amplitude¹⁶, you will lose one XLR on your cable for every pair of bridged channels.
- As an example, in case you bridge channels 1/2 and 9/10, you will not use the XLR #2 and #10 from your DB25/XLR Breakout to the processor.

RACK EARS

The total width of the amplifier including rack ears is 482 mm.

Thank you for your attention

Please enjoy your system



Trinnov Audio - 5 rue Edmond Michelet - 93360 Neuilly-Plaisance - France
+33 (0)1 84 23 40 34 - highend@trinnov.com