



Amp400.12

Reference Manual

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Amp400.12 In-The-Box:

1 pc Amphion Amp400.12 Power amplifier

1 pc IEC Power cord

1 pc Amp400.12 Reference manual

Safety warnings

1. Please read and follow these instructions before using the amplifier.
2. Do not use this apparatus near water.
3. Clean only with a dry cloth.
4. Do not block any ventilation openings.
5. Install in accordance with the manufacturer's instructions.
6. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
7. The unit generates heat especially during prolonged operation at intensive levels. Please do not cover or place objects on top. When rack mounting it is recommended to leave space above the unit to allow free circulation of air.
8. 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.
9. Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
-  10. 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.
-  11. Any terminals marked with the preceding symbol are HAZARDOUS LIVE and any wiring connected to these terminals must be installed by an INSTRUCTED PERSON or with ready-made leads or cords.
12. Unplug this apparatus during lightning storms or when unused for long periods of time.
13. 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.

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPARATUS TO RAIN OR MOISTURE. 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. TO COMPLETELY DISCONNECT THIS EQUIPMENT FROM THE AC MAINS, DISCONNECT THE POWER SUPPLY CORD PLUG FROM THE AC RECEPTACLE. THE MAINS PLUG OF THE POWER SUPPLY CORD SHALL REMAIN READILY OPERABLE.



Amphion Create products come with a two-year warranty against defects in materials and our workmanship. For warranty or out-of-warranty service, in the first instance please contact your original dealer and provide a copy of the original sales receipt. If you require additional assistance, please contact your local sales representative or distributor. If you have difficulty making contact with either of the above, please contact our headquarters. Please do not return or ship any product to Amphion Loudspeakers Ltd. nor its resellers without prior authorisation. For proper unpacking, installation, positioning, and maintenance instructions, please first check the manual thoroughly.



This symbol indicates that there are important operating and maintenance instructions in the literature accompanying this unit.



This symbol indicates that dangerous voltage constituting a risk of electric shock is present within this unit.

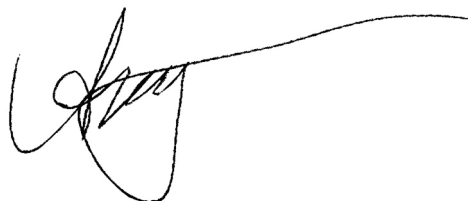
Introduction

Thank you for choosing Amphion Amp400.12

Amphion's philosophy is to develop innovative products with high-performance and longevity. The Amphion Amp400.12 is a highly synergistic pairing of the very latest in Class-D engineering and Amphion's in-house designed buffer stage. The buffer stage brings a touch of magic to an already excellent multi-channel platform. Exceptionally high price/performance ratio was achieved by focusing on the sonics and omitting everything which was not totally necessary.

We hope you enjoy listening to your new amplifier as much as we enjoyed developing it.

Anssi Hyvönen
Founder, CEO
Amphion Loudspeakers Ltd.

A handwritten signature in black ink, consisting of a stylized 'A' followed by a long, sweeping horizontal line that curves upwards at the end.

The Amp400.12

The Amp400.12 provides an exceptional level of multichannel amplification. It is built on the highly advanced Class-D platform, which offers abundant, fast, controlled, and low distortion power. To reach the needed sonic character and performance, an in-house designed buffer-stage was added to complement the merits of the latest Class-D technology. The buffer stage improves the impedance characteristics and cohesion between the channels, so that speed, control, neutrality, and ultra-low distortion can come across in an emotionally involving manner.

Though Amp400.12 was mainly developed for immersive audio, nothing prevents using it for other multichannel applications as well. As all 12 channels are identical and discreet they can also be used to power up to 6 stereo pairs of passive speakers. It will equally drive both 8 ohm and 4 ohm loads, and partners perfectly with all Amphion models. Though Amp400.12 was developed and optimized for Amphion monitors, it provides excellent results with wide range of passive speakers. Neutrik XLR and Speakon connectors offer a convenient and secure way to connect the amplifier to the rest of the system.

Front & Side panels



1 Rack mounting

Use four screws and washers to secure the amplifier to the equipment rack rails. Support the weight of the amplifier while securing it to the rails to avoid bending or distorting the mounting ears. The amplifier may be used in an equipment rack or as a stand-alone unit. Rack mounting is optional. Screw-mounted rubber feet are provided for non-rack mount applications.



2 Cooling vents

Amplifier draws cool air from each the side of the amplifier case, with hot air exhausted from the top vents of the enclosure. To ensure uninterrupted airflow and the lowest possible operating temperature, it is advisable to leave at least 1U of space on top of the unit. Ultra low noise fans are used to minimize noise. Keep the side vents clear to allow full air flow

Back panel connections



① Line level signal inputs

Balanced 3-pin XLR female line level signal in for each channel. Always use the matching input channel to output.

② Speaker outputs

The speaker terminals are equipped with Speakon terminals. For best results use a good speaker cable and terminate them with Neutrik Speakon NL2 FX, which houses cable diameters from 6 to 10 mm. Each channel is active when cables are inserted. Always use the matching input channel to output.

③ Power input

Amplifier automatically selects the correct voltage in the 100-240V range, and is internally fused. Connect the AC line cord by orienting the IEC plug correctly, and pushing the plug firmly into the IEC receptacle. It should seat tightly. It can only be inserted when it is properly oriented.



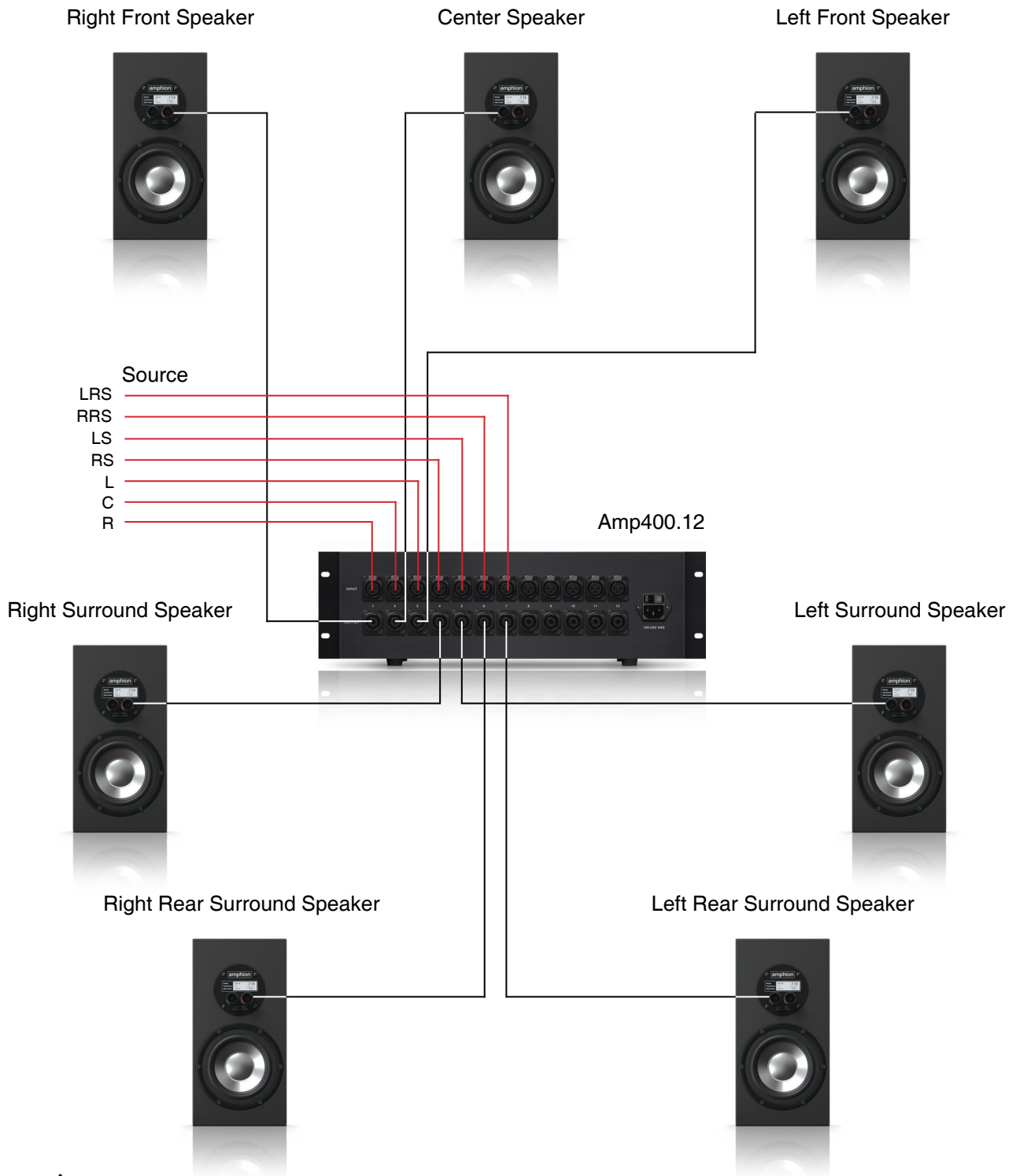
PLEASE NOTE! Always turn power off before inserting or removing cables.



PLEASE NOTE! Use the best possible connection to the AC power source. Avoid extension cords as they will cause some voltage drop between the AC source and your amplifier. If the use of an extension cord is required, ensure that it is the shortest length possible and is at least #14 AWG. Ensure that all grounding connections are maintained. NOTE: Excessive length or inadequate gauge may result in short muting episodes if all channels are driven to full power

Connectivity diagram 7.0

! Rear view



PLEASE NOTE! Any number of channels and configurations between 1~12 can be used. A sample routing configuration is shown only. For further advice, please contact your Amphon reseller or Amphon HQ.

Technical specifications

Power rating	410 W @ 1 % THD+N, 20 Hz – 20 kHz, 4 Ω (2 channel driven) 205 W @ 1 % THD+N, 20 Hz – 20 kHz, 8 Ω (2 channel driven)
Dynamic range	121.5 dB(A)
Peak output current	20A
THD+N	0.001 % @ 10 W (4 Ω , 100 Hz) SE
Load independent frequency response	34 μ V (A-weighted)
Minimum load impedance	3.5 Ω
Amp + power supply efficiency (max)	>90 %
Mains	Universal mains, auto select (100-240 V, 50-60 Hz)
Certification	Safety EN/IEC/UL 62368-1 EMC EN/IEC 55032 (CISPR 32)
Inputs	Balanced 3-pin XLR female
Speaker connectors	Neutrik Speakon (NL2FX) 2-pole cable
Casing	19" rack mountable (3U), high quality aluminium
Power switch	Back panel, rocker switch
Measurements (W x H x D)	483 mm x 133.3 mm x 320 mm (19" x 5½" x 12½")
Weight	8 kg (17.7 lbs)

Troubleshooting

PROBLEM: No Sound

- Check both ends of the AC line cord for proper connection. Both ends should be fully seated in their connectors.
- Check that the AC outlet works by plugging in a known-good device or by testing with a voltmeter. If too many amplifiers are used on one outlet, the building's circuit breaker may trip and shut off power. If this is the case, unplug some of the amplifiers from the outlet, reset the building's breaker and try again. For the other amps, use an outlet that is connected to another circuit breaker to distribute the load current.
- An amplifier which keeps tripping the AC circuit breaker may have a serious internal fault. Turn it off, remove AC power, and have the amplifier serviced by a qualified technician.

PROBLEM: HISS

- Unplug the input cables to the amplifier. If the hiss goes away, then the problem is with the equipment or cables leading to the amplifier.
- If the hiss is present with no audio input cables connected, check that the AC line cord is properly grounded at its connection to the line. If the ground connection is OK and the hiss continues with no input cables connected, then the amplifier requires servicing.
- To keep the normal noise floor low, operate the primary signal source at full level, without clipping, and avoid boosting the signal further between the source and the amplifier.

PROBLEM: HUM

- Use a common AC ground connection for all audio equipment.
- Check the input cables for broken ground (shield) connection.
- Use balanced connections for the entire signal chain.
- The design of the amplifier eliminates internal hum fields, but external transformers or other magnetic devices may cause hum. Move cabling and signal sources to identify "hot spots" in the system; then avoid those spots. Cables with faulty shielding are a common entry point for hum. Use top quality cabling. Another common source of magnetic fields are "wall warts" or pluggable transformers; keep input wiring away from them



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