

HORTUS AUDIO



AMPLIFIERS AP SERIES OWNER'S MANUAL



AP2: 2-CHANNEL SERIES

AP2-140 - AP2-280 - AP2-500 - AP2-800 - AP2-3000



AP4: 4-CHANNEL SERIES

AP4-140 - AP4-280 - AP4-500 - AP4-800

1. Welcome:

Welcome to use AP series professional audio power amplifier. For your safety, please read the caution before installing and operating the power amplifier.

AP series professional power amplifier has a stable circuit and reasonable cooling layout and the carefully selected components, concise manufacturing process, long time burning test to ensure that the amplifier has an excellent performance and reliability.

2. Features:

1. Power supply design (85-265 VAC)

Each unit contains a set of logical power. Adjust the power output level voltage through the logic power supply real-time dynamic control circuit and can real-time dynamically adapt to the signal and load equipments, which can achieve the optimal power matching under the wide load conditions and ensure the amplifier will not overheat.

2. Professional Speakon socket suit for the engineering and touring performance.

3. Adopt the precision CNC lathes to stamp the integrated steel plate to make the structure extremely strong and be able to withstand the maximum transient pressure without deformation.

4. XLR balanced input and output.

5. Cooling systems:

The cooling system is using the wind tunnel type, seal gas flow pass can strengthen the cooling effect and avoid the fault which cause by PCBA pollution which caused by the stage dust and smoke. Ensure when the unit is under the normal work conditions, the temperature can reach balance within a certain range.

6. Perfect interface:

Signal input: XLR input/signal parallel output.

Horn output: speakon professional output socket.

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Safety Operation

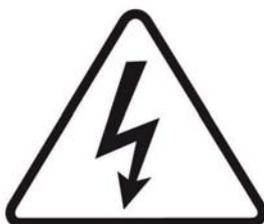
1. This amplifier only can plug in the AC power socket which the user's manual instructs or the specification is shown on this adaptater. Or else it may damage the amplifier and cause a fire or electric shock.
2. Do not place heavy objects (including this amplifier) on the power cord and then cause an electric shock or fire.
3. Do not expose the amplifier in the fume, high humidity, high temperature and dust accumulation place and use.
4. Do not put this amplifier sidelong or upside down, use it in a good air flow environment.
5. When abnormity happen in the operation process, such as smoke, odor, noise, or foreign bodies, liquid entering into the amplifier, please turn off the amplifier immediately and unplug the socket from the AC power socket.
6. When abnormity happen, please don't open the chassis and rebuilt or repair the amplifier by yourself, if the internal is sure to need repair and maintenance, please contact the dealers to deal with it.

Operation:

1. When the speaker is connected to the amplifier output socket, it only can use the speaker special cable and connect it in accordance with the provisions.
2. When connect the amplifier, please close all the instruments, audio equipments and speakers.
3. before turning on the amplifier, please turn down the volume at the minimum.
4. If you do not use this amplifier for a long time, please unplug the power cord from the AC mains socket.
5. When unplug the power plug from the AC power socket, please grasp the plug. Do not directly pull the cable. Otherwise it can damage the power cord and the lead to a fire or electric shock.



This equipment can create high sound levels.
Exposure without adequate protection
could cause permanent damage to hearing.





TECHNICAL SPECIFICATIONS

AP2 SERIES 2-CHANNELS		AP2-140	AP2-280	AP2-500	AP2-800	AP2-3000
SE MODE CH1 + CH2	RL: 4 Ω	2 x 140 W	2 x 280 W	2 x 490 W	2 x 810 W	2 X 3000 W
	RL: 8 Ω	2 x 140 W	2 x 280 W	2 x 245 W	2 x 410 W	2 x 1500 W
	RL: 2 Ω	-	-	-	2 x 900 W	2 x 1500 W
BTL MODE	RL: 4 Ω	140 W	280 W	1050 W	1400	-
	RL: 8 Ω	140 W	280 W	900 W	1500	-
	70 V RMS	140 W	250 W	1000 W	1500	-
	100 V RMS	120 W	240 W	1000 W	1500	-
Damping Factor (8Ω load)		> 225 (1 kHz)	> 350 (1 kHz)	> 1000 (1 kHz)	>350 (1 kHz)	>400 (20 - 500Hz)
Output Circuitry		Class D - full bandwidth PWM modulator with ultra low distortion				-
Signal To Noise-Ratio (20 Hz - 20 kHz, 8Ω load)		> 119 dB		> 120 dB	> 119 dB	-
THD+N (typical)		< 0.05 % (20 Hz - 20 kHz, 8Ω load, 3 dB below rated power)				
Frequency Response		20 Hz - 20 kHz (+0/-0.25 dB, 8Ω load, 3 dB below rated power)				-
Protection		Short circuit protection, DC protection, under voltage protection, temperature protection, overload protection				Turn-on transients, Over-heating, DC, RF, Short-circuit, mismatched loads, ICL™, PMS™
Operation Voltage		85 - 265V				
Dimensions (mm)		446,5 x 360,50 x 88 A vertical rack space of 2U (88mm high) is required, with an in rack depth of 17.58 inches (446,5mm).				

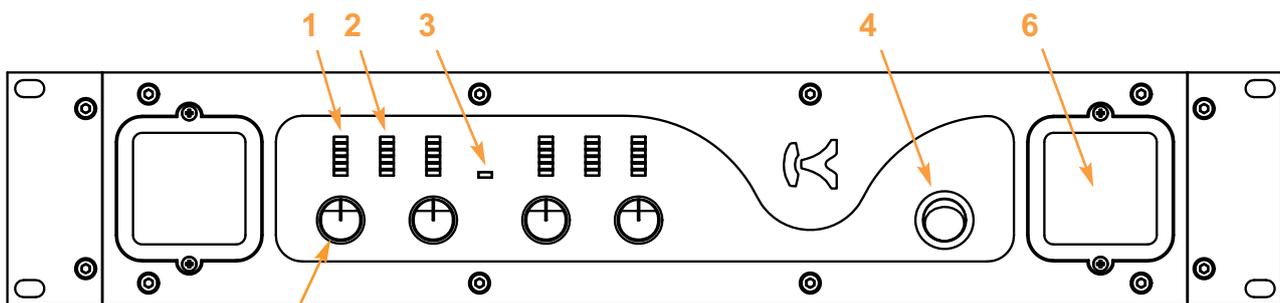
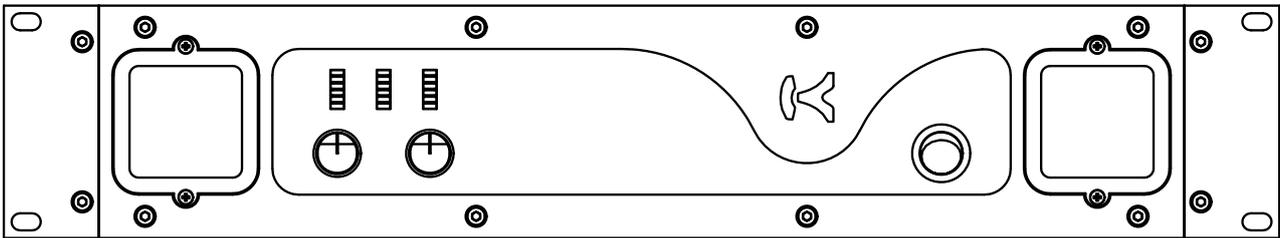
TECHNICAL SPECIFICATIONS



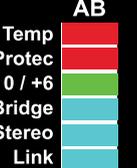
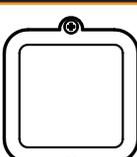
AP4 SERIES 4-CHANNELS		AP4-140	AP4-280	AP4-500	AP4-800
SE MODE CH1 + CH2	RL: 4 Ω	4 x 140 W	4 x 280 W	4 x 490 W	4 x 810 W
	RL: 8 Ω	4 x 140 W	4 x 280 W	4x 245 W	4 x 400 W
	RL: 2 Ω	-	-	-	4 x 900 W
BTL MODE	RL: 4 Ω	2 x 140 W	2 x 280 W	2 x 1050 W	2 x 1400
	RL: 8 Ω	2 x 140 W	2 x 280 W	2 x 900 W	2 x 1500
	70 V RMS	2 x 140 W	2 x 250 W	2 x 1000 W	2 x 1500
	100 V RMS	2 x 120 W	2 x 240 W	2 x 1000 W	2 x 1500
Damping Factor (8Ω load)		> 225 (1 kHz)	> 350 (1 kHz)	> 1000 (1 kHz)	>350 (1 kHz)
Output Circuitry		Class D - full bandwidth PWM modulator with ultra low distortion			
Signal To Noise-Ratio (20 Hz - 20 kHz, 8Ω load)		> 119 dB		> 120 dB	> 119 dB
THD+N (typical)		< 0.05 % (20 Hz - 20 kHz, 8Ω load, 3 dB below rated power)			
Frequency Response		20 Hz - 20 kHz (+0/-0.25 dB, 8Ω load, 3 dB below rated power)			
Protection		Short circuit protection, DC protection, under voltage protection, temperature protection, overload protection			
Operation Voltage		85 - 265V			
Dimensions		446,5 x 360,50 x 88 A vertical rack space of 2U (88mm high) is required, with an in rack depth of 17.58 inches (446,5mm).			

Front Panel

2-channel series

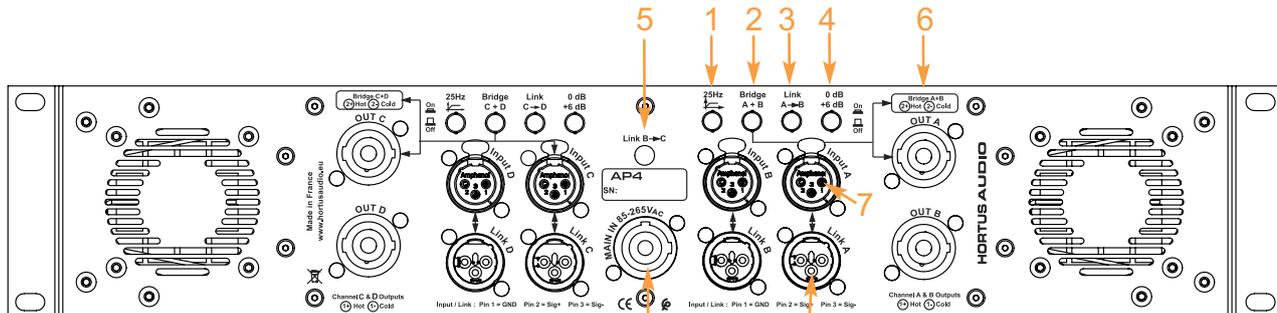
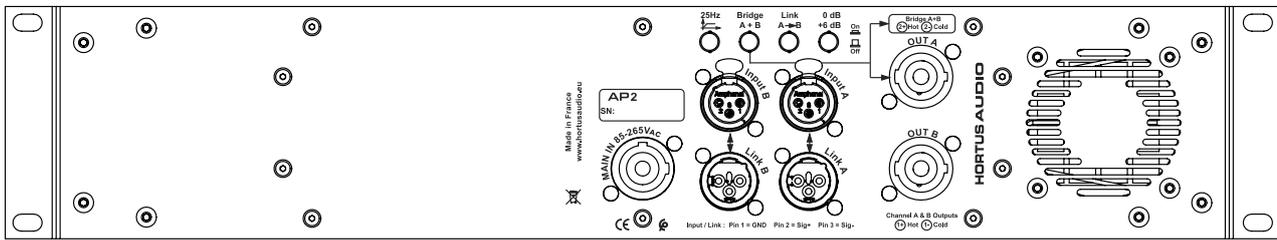


4-channel series

	<p>1. Clip LED: Lights red when amplifier reaches near maximum output and begins to clip the audio signal. In normal operation the clip indicator should be flashing often during dynamic parts of the music, this is normal. What is not normal is if the clip indicator is staying lit for long portions of time, then you need to reduce system volume or gain of the amplifier.</p>
	<p>2. TEMP: Lights red when amplifier internal temperature reaches 85° & turn off at 60°. PROTEC LED: Lights red if there is a problem with the audio system. For example, speaker wire gets pinched/shorted together, blown a voice coil or running too low of an impedance. 0/+6 (sensitivity mode) / BRIDGE (A+B bridge mode) / STEREO (A+B stereo mode) / LINK (A+B link mode) LED will light up if you select the corresponding mode by pressing the buttons on the back of the amplifier.</p>
	<p>3. LINK BC: Lights Blue when A+B link to C+D mode (only on 4 channels amplifier series)</p>
	<p>4. Power switch: This switches the amplifier on and off. When turned on, the power LED lights up behind the logo. Note that the amplifier will only switch the power supply on once it has assured that there are no internal faults. From the first application of AC power it takes a few seconds to complete these tests. While the power up sequence is being completed all amplifiers channels are muted.</p>
	<p>5. Gain control: Used to set the output level of each channel.</p>
	<p>6. The cooling system uses the tunnel type of ventilation and is also isolated from the electronic part to avoid any external pollution. Cleaning: the two protective foams on the front of the amplifier can be easily removed and cleaned when necessary (min 1/Year).</p> 

Rear Panel

2-channel series



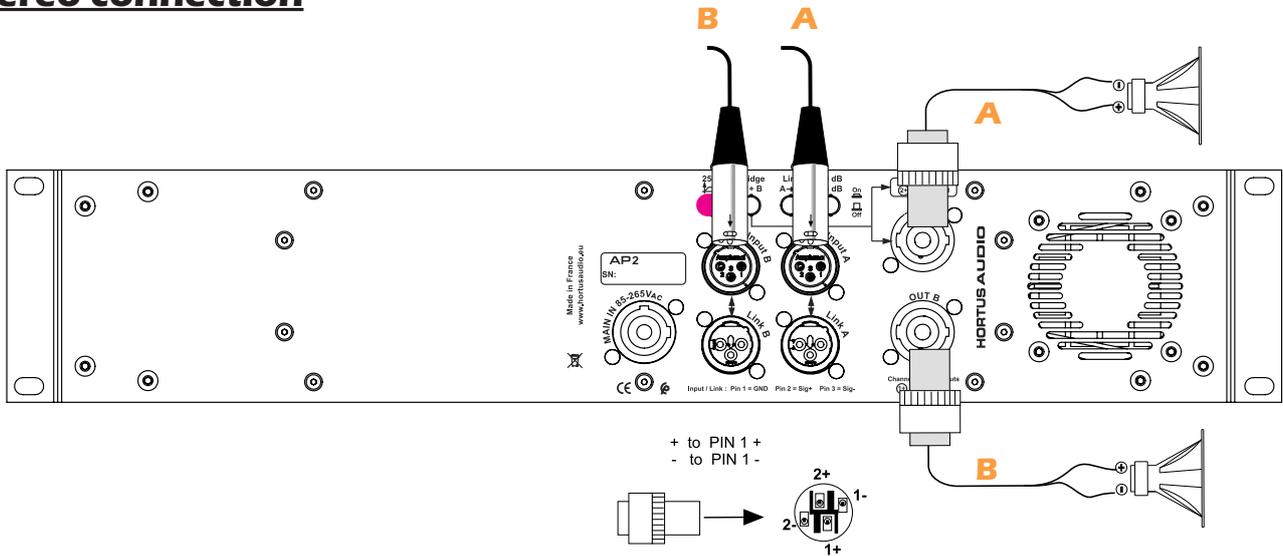
4-channel series

	<p>1. 25Hz Mode: press to activate Subsonic filter 25Hz amplifier mode. Is a HPF (high pass frequency) filter for subwoofers. A subsonic filter will attenuate frequencies so low that your subwoofer cannot reproduce them OR that humans are incapable of hearing. Subsonic filter is also a very important feature for vented enclosures.</p>
	<p>2. Bridge Mode: when it is switched on the two amplifier channels are internally connected in such a way that twice the output power is available. Only the input signal from channel A is amplified and loudspeakers are connected only to the correspondingly marked output. The volume is controlled via the control knob for channel A. 4 channel series: turn on C+D switch, the volume is controlled via the control knob for channel C. Warning in bridge mode +2 HOT / -2 COLD</p>
	<p>3. Link Mode: uses multiple amplifiers in parallel, two or more amplifiers operating in-phase into a common load. In this mode the available output current is doubled but the output voltage remains the same. The output impedance of the pair is now halved.</p>
	<p>4. Sensitivity Mode: 0 dB : normal standard (0.775V) gain switched on 6 dB to double the gain (1.4V) of sensitivity</p>
	<p>5. Link B ->C Mode: only on 4-channel series, switched on to link A+B audio signal with C+D audio signal</p>
	<p>6. Audio Output on speakon female chassis socket (A, B: 2-channel series) + (A, B, C, D: 4 channel series) +1 HOT / -1 COLD Warning in bridge mode +2 HOT / -2 COLD</p>
	<p>7. Balanced Signal Input on XLR female chassis socket (A & B: 2 channel series) + (A, B, C, D: 4-channel series) XLR plug (balanced): 1: Ground, shielding, 2: Signal (in phase, +), 3: Signal (out of phase, -), 4: Shielding on plug housing (option)</p>
	<p>8. Balanced Signal Output on XLR male chassis socket (A & B: 2-channel series) + (A, B, C, D: 4-channel series) Link Mode: uses multiple amplifiers in parallel XLR plug (balanced): 1: Ground, shielding, 2: Signal (in phase, +), 3: Signal (out of phase, -), 4: Shielding on plug housing (option)</p>
	<p>9. AC Power Input: lockable, robust and reliable 3 pole equipment (AC) powercon connector.</p>

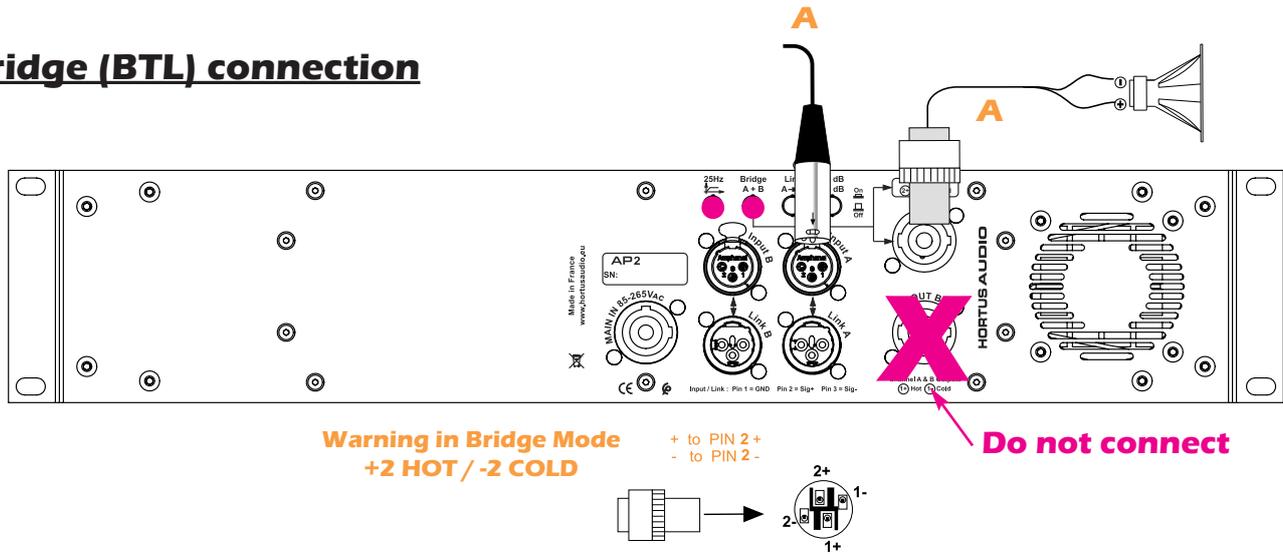


2-CHANNEL CONNECTION MODES

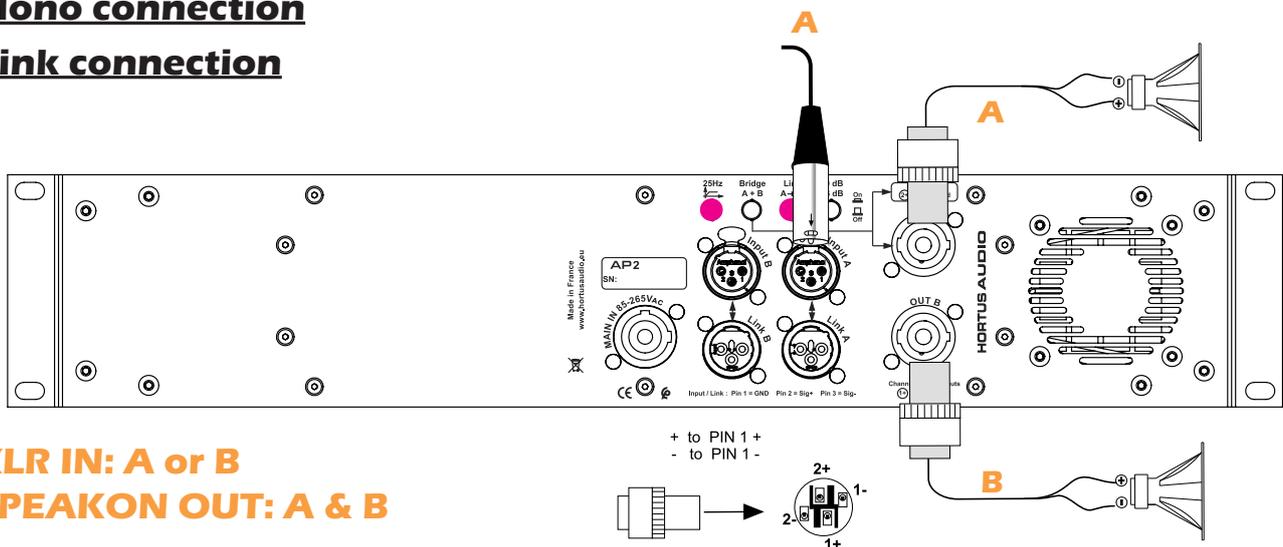
Stereo connection



Bridge (BTL) connection



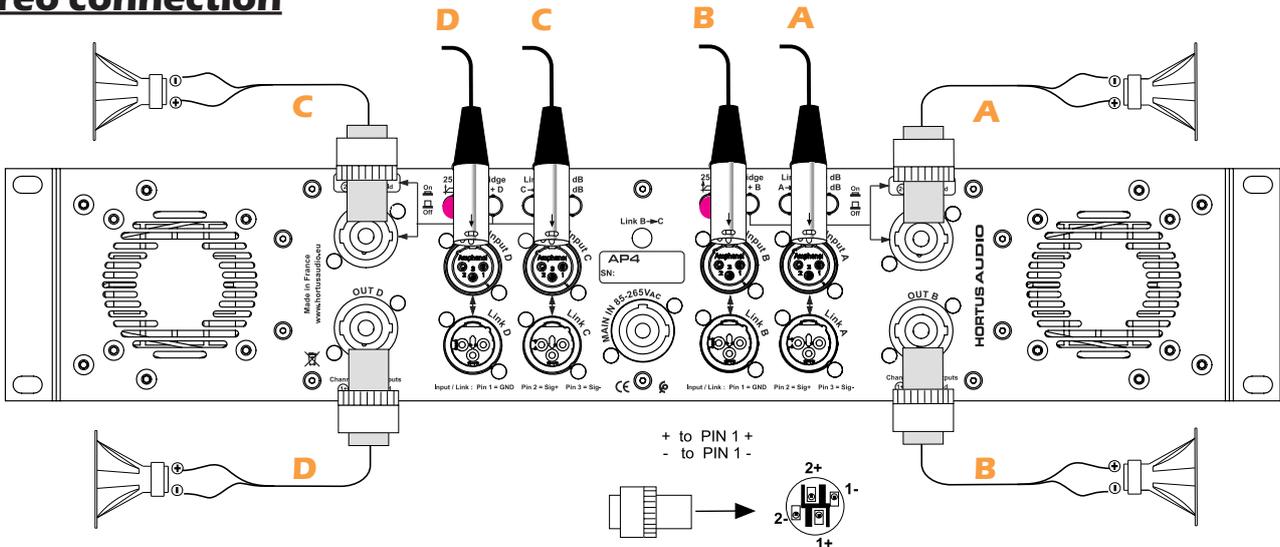
Mono connection Link connection



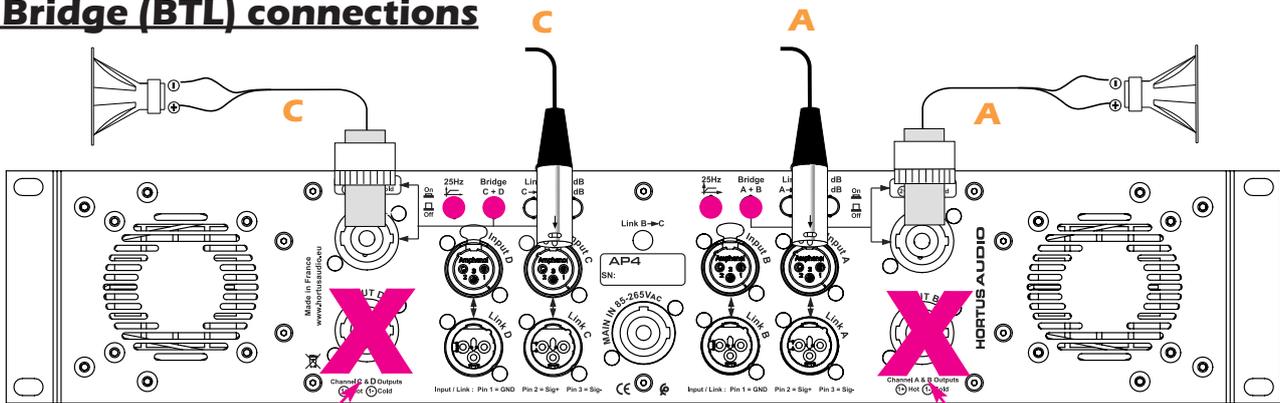
XLR IN: A or B
SPEAKON OUT: A & B

4-CHANNEL CONNECTION MODES

Stereo connection

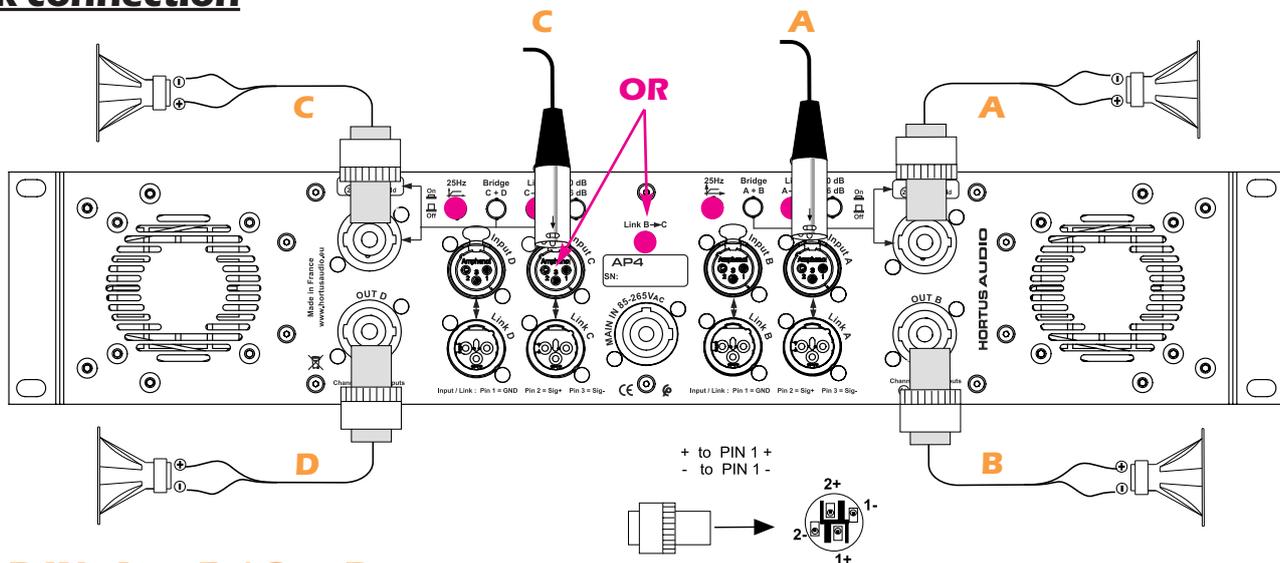


2 x Bridge (BTL) connections

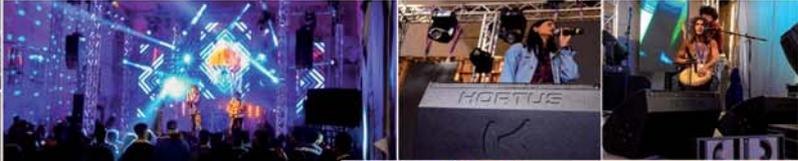


Mono connections

Link connection



XLR IN: A or B / C or D
SPEAKON OUT: A & B / C & D



LATZARRO
S.p.A.

PAMPA
CLUB



Over the legend



