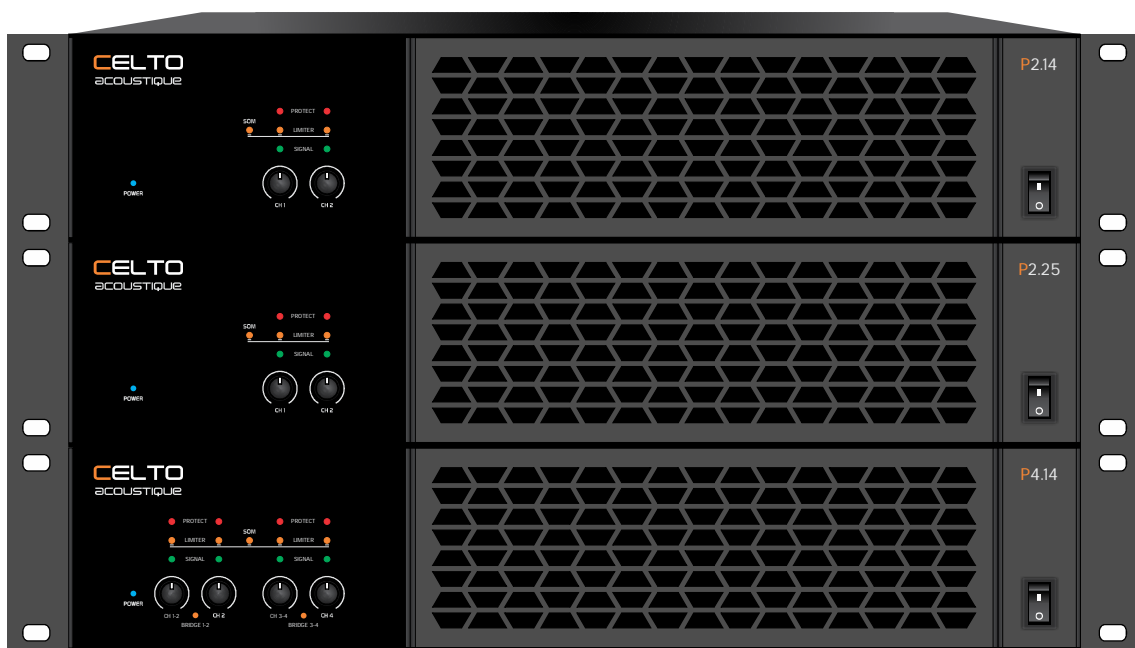


# CELTO

ACOUSTIQUE



## PERFORMANCE SERIES

Professional Class D Amplifiers

User Manual



## CONTENT

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1. Introduction.....	1
2. Features at a glance.....	1
3. Safety Precautions.....	2
4. Functions	
4.1 Front Panel.....	3
4.2 Rear Panel.....	4
5. Technical Specifications.....	5
6. Connections	
6.1 Signal Input.....	5
6.2 Speaker Output.....	5

## 1. INTRODUCTION

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Congratulations on the purchase of your new **PERFORMANCE** amplifier and sincere **THANK YOU** for your confidence on **CELTO Acoustique**. This premium piece of equipment was designed with quality, performance and reliability in mind. We hope it will become an enjoyable companion for many years.

**CELTO PERFORMANCE** amplifiers feature innovative solutions, not found in any other products like our proprietary **TrueSound** high-current high-resolution class D output stage. We also have spent countless hours to tune the preamp with Studio grade TrueRMS VCA limiters, high voltage low distortion OP-Amps, optimized PCB layout with short signal path, independent ground planes, and audiophile capacitors for pristine sound quality.

With long term current capacity, **CELTO PERFORMANCE** amplifiers reproduce intense organic deep bass tones and smooth high frequencies, comparable to an old school oversized pure Class A design, but with the efficiency needed in modern applications. In fact, **CELTO PERFORMANCE** amplifiers are able to reproduce infra-bass like no other high power class D amplifiers. Turn it ON, feed it with great music and Enjoy !

## 2. FEATURES AT A GLANCE

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- A-Class Hybrid main transformer
- Studio grade preamp with TrueRMS VCA limiters
- 3D-Guard **SOM** (Smart Overheat Management)
- FEM optimized **R:Cool** radial heat sinks
- Genuine parts exclusively from world class suppliers
- **TrueSound** Class D with High-Speed High-Current MOSFETs
- SuperCharged 105°C long life capacitors
- Simple layout and assembly for easy servicing
- Compact and Lightweight 2U low depth format
- 3 years warranty



## 3. SAFETY PRECAUTIONS

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### Caution!

Keep this device away from rain and moisture!



### Health hazard

By operating and amplifying system, you can produce excessive sound pressure levels that may lead to permanent hearing loss.

**This device has left our premises in perfect condition. In order to maintain this state and to ensure a safe operation, it is necessary for the user to follow the safety instructions and warning notes written in this user manual.**

**Damages caused by the disregard of this user manual are not subject to warranty.**

### Unpacking

- Please make sure that there are no obvious transport damages. Should you notice any damages on the connection panel or on the casing, do not take the device into operation and immediately consult your local dealer.
- Keep the packaging. To protect the device against vibration, dust and moisture during transport or storage, use the original packaging, or better use it inside a rack.

### Protection Class

- This device falls under protection class I. The power plug must only be plugged into a protection class I outlet. The voltage and frequency must be the same as stated on the device. Wrong voltages or power outlets can lead to destruction of the device and to mortal electrical shock.

### Power Cord

- Always plug in the power plug last. Make sure that the plug is tightly connected with the outlet.
- Never let the power cord come into contact with other cables! Handle the power cord and all connections with the mains with particular caution! Never touch them with wet hands, as this could lead to mortal electrical shock.
- Never modify, bend, strain mechanically, put pressure on, pull or heat up the power cord. Never operate next to sources of heat or cold. Disregard can lead to power damages, fire or mortal electrical shock.
- The cable insert or the female part in the device must never be strained. There must always be sufficient cable to the device.
- Make sure that the power cord is never crimped or damaged by sharp edges. Check the device and the power cord from time to time.
- If extension cords are used, make sure that the cord diameter is sufficient for the required power consumption of the device. All warnings concerning the power cords are also valid for possible extension cords.
- Always disconnect from the mains, when the device is not in use or before cleaning it. Only handle the power cord by the plug. Never pull out the plug by tugging the power cord. Otherwise, the cable or plug can be damaged, leading to mortal electrical shock. If the power cord or the power switch is not accessible, the device must be disconnected via the mains.

### Serial Number

- Never remove the serial number from the device as this would make the guarantee void.

### Liquids

- There must never enter any liquid into power outlet, extension cords or any holes in the housing of the device. If you suppose that even a minimal amount of liquid have entered the device, it must be immediately disconnected. This is also valid, if the device was exposed to high humidity. In any doubt, it must be checked by a specialist if the liquid has reduced any insulation. Reduced insulation can cause mortal electrical shock.

### Foreign Objects

- There must never be any objects entering into the device. Malfunction or short-circuits caused by metal parts may cause mortal injuries.

### Avoiding Hum

- Never install the amplifier next to highly sensitive devices like tape-decks, as the strong magnetic field of the amplifier can produce hum in these devices.

### Ambient Conditions

- The ambient temperature must be always be between  $-5^{\circ}\text{C}$  and  $+45^{\circ}\text{C}$ . Keep away from direct insulation (particularly in cars) and heaters. The relative humidity must not exceed 50% with an ambient temperature of  $45^{\circ}\text{C}$ .
- This device must only be operated in an altitude between  $-20$  and  $2000$  meters over NN. Never use the device during thunderstorms. Over voltage could destroy the device. Always disconnect the device during thunderstorms.
- This device must never be operated or stockpiled in surroundings where splash water, rain, moisture or fog may harm the device.

### Cleaning and Maintenance

- Disconnect from mains before cleaning. Never use solvents or aggressive detergents in order to clean the device! Rather use a soft and damp cloth.
- They are no serviceable parts inside the device. Maintenance and service operations are only to be carried out by authorized dealers. Should you need any spare parts, please use genuine parts.
- Please note that damages caused by manual modification on the device or unauthorized operation by unqualified persons are not subject to warranty.

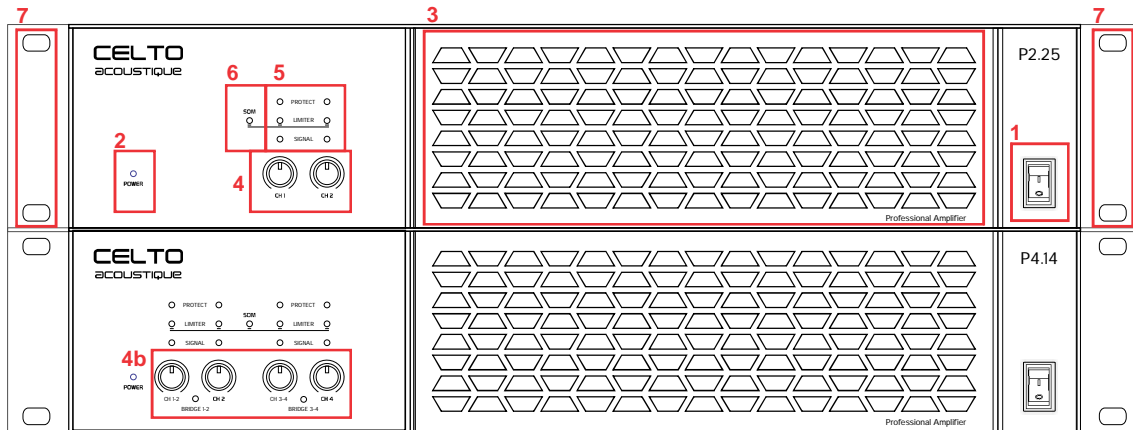
### WEEE Directive



When to be definitively put out of operation, take the unit to a local recycling plant for a disposal which is not harmful to the environment. Do not dispose of as municipal waste. Contact your retailer or local authorities for more information.

## 4. FUNCTIONS

### 4.1 Front panel



#### 1. Power Switch

The power switch turns the amplifier ON and OFF.

#### 2. Power LED (blue)

The Power LED turns ON when the amplifier is ON.

#### 3. Removable Panel / Airflow Vent

The amplifier is equipped with a removable panel, attached to the chassis by neodymium magnets. Behind it, a dust filter avoids particles to enter the device internals. It is recommended to clean the filter at least once a year, more if the device is used in a dusty place.

**Important:** The airflow goes from front (air intake) to back (air exit). In other words, cool air is pulled from front panel airflow vent and is expelled out the rear airflow vents. This device is equipped with variable speed controlled fans.

#### 4. Gain Control

Depending on the model, there are two (on P2.14 and P2.25) or four (on P4.14) independent gain knobs. Fully turned to the right, the amplifier is at its nominal gain of 34dB (50 times voltage). It is good practice to set your gain to maximum in order to minimize the risk of overloading the input stage. Setting the gain to a lower level WILL NOT limit nor protect your amplifier or loudspeaker.

#### 4b. Gain Control on P4.14

P4.14 has the ability to work in bridge mode (Channel 1-2 and Channel 3-4). In this mode, the dedicated LED turns ON. Only knobs 1 and 3 are active when in bridge mode.

#### 5. Status LEDs

- PROTECT (red): Turns ON when protective circuit is active.  
Cause may be DC, temperature or overload.
- LIMITER (orange): Turns ON when the TrueRMS VCA limiter and SOM enters into action
- SIGNAL (green): Turns ON when -40dB input signal is present

#### 6. SOM LED (orange)

SOM (Smart Overheat Management) is a circuit that monitors the temperature of both the output stage and the power supply. The behavior is showed by the SOM LED status:

- OFF: Normal condition. Temperature below 90°C. Full Output power available,
- BLINKING: Temperature is between 95°C and 100°C. Output power is reduced by 1.5dB,
- ON: Temperature is between 100°C and 105°C. Output power is reduced by 3dB.

**Note:** If the temperature continues to rise and goes above 105°C, then the protection shutdown circuit mutes the amplifier. During this state, the fans work at full speed to decrease the temperature as fast as possible. The amplifier returns automatically into working condition when the temperature goes below 90°C.

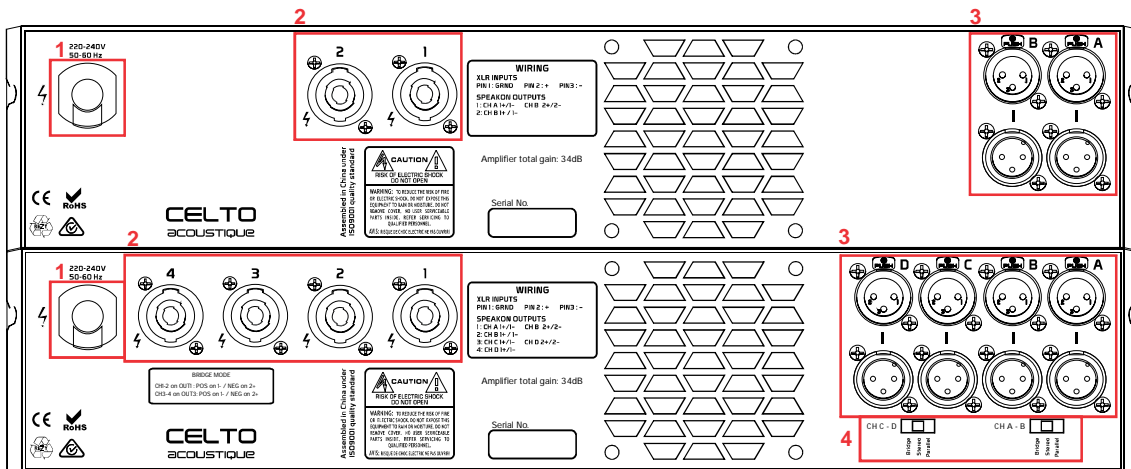
#### 7. Rack Mount Holes

Four rack mount holes are provided to install the device in industry standard 19" rack case.

**Note:** It is recommended to use M6 cage nuts, machine screws and plastic washers to avoid scratching the face plate.

## 4. FUNCTIONS (CONTINUED)

### 4.2 Rear Panel



#### 1. Power input

The amplifier has a power supply that accepts voltages from 190 to 250 V at frequencies from 50 to 60 Hz. A power cord is included. The power plug must be wired as below:

Cable	Pin	International
Brown	Live	L
Blue	Neutral	N
Yellow/Green	Earth	⊕

The earth has to be connected! The device must only be connected with an electric installation carried out in compliance with the IEC standards. The electric installation must be equipped with a Residual Current Device (RCD) with a maximum fault current of 30 mA.

The amplifier is equipped with an internal fuse of 15A for P2.14 and 20A for P2.14 and P2.25. DO NOT attempt to bypass the fuse in any manner!

#### 2. NEUTRIK® Speakon outputs

Speaker outputs are done by NEUTRIK® Speakon lock-on connectors.

#### 3. NEUTRIK® XLR Inputs with feed-through

The input section of the amplifier offers electronically balanced NEUTRIK® XLR connectors with feed-through (link) outputs.

#### 4. Mode Selector

Select the operating mode: Stereo, Parallel or Bridge. In Parallel and bridge mode, only channels 1 and 3 inputs are operative.

P4.14 WIRING	P2.14 / P2.25 WIRING
<b>XLR INPUTS</b> PIN 1: GRND    PIN 2: +    PIN 3: -  <b>SPEAKON OUTPUTS</b> 1: CH A 1+ / 1-    CH B 2+ / 2- 2: CH B 1+ / 1- 3: CH C 1+ / 1-    CH D 2+ / 2- 4: CH D 1+ / 1-	<b>XLR INPUTS</b> PIN 1: GRND    PIN 2: +    PIN 3: -  <b>SPEAKON OUTPUTS</b> 1: CH A 1+ / 1-    CH B 2+ / 2- 2: CH B 1+ / 1-
<b>P4.14 BRIDGE MODE</b> CH1-2 on OUT1 : POS on 1- / NEG on 2+ CH3-4 on OUT3: POS on 1- / NEG on 2+	

#### Process for setting up your amplifier:

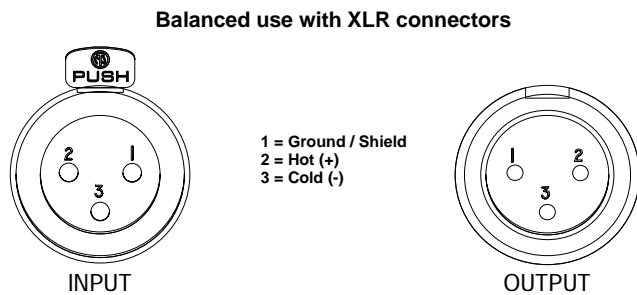
- Always make input connections prior to applying power to the amplifier.
- Connect the outputs from the signal sources (e.g. preamplifier, mixer) to the XLR inputs.
- For parallel connection of further amplifiers, the feed-through XLR Links can be used.
- Connect the speakers to the Speakon connectors. When connecting multiple speakers, always insure correct polarity and total load impedance of at least 4Ω per channel.
- Finally connect the amplifier to the mains with the mains cable.
- Always make sure that power amplifiers are the last items turned ON and the first turned OFF.

## 5. TECHNICAL SPECIFICATIONS

	<b>P2.14</b>	<b>P2.25</b>	<b>P4.14</b>
<b>Long term RMS Output Power (1kHz, 1% THD, EIA standard)</b>	2 x 1400W / 4Ω 2 x 800W / 8Ω	2 x 2500W / 4Ω 2 x 1300W / 8Ω	4 x 1400W / 4Ω and 2Ω 4 x 800W / 8Ω
<b>Bridge Mode</b>	N/A	N/A	2 x 2800W / 4Ω
<b>Power supply</b>	Hybrid toroidal transformer		
<b>Output stage</b>	High-Speed High-Current 4th generation Class D		
<b>Frequency response</b>	5~20,000Hz (-1dB)		
<b>Typical THD (half power, 1kHz, 8 ohms)</b>	<0.05%		
<b>Signal to noise ratio</b>	>110dB(A)		
<b>Crosstalk (1kHz)</b>	>75dB		
<b>Input Impedance</b>	20 kΩ (Balanced)		
<b>Amplifier slew rate</b>	>50V/us		
<b>Amplifier damping factor (8 ohms, 500Hz)</b>	>800		
<b>Nominal Voltage gain</b>	x50 (34dB)		
<b>Maximum input</b>	+22dBu		
<b>Protections</b>	Short-circuit, Over and Under-voltage, Over-current, Over-load, Temperature		
<b>Cooling</b>	Temperature regulated 2pcs long life fans		
<b>Input connectors</b>	Balanced NEUTRIK® XLR IN + XLR LINK		
<b>Output connectors</b>	NEUTRIK® SPEAKON NL4MP		
<b>Operating Voltage</b>	190~250V AC		
<b>Size (WxHxD)</b>	483x88x388mm		
<b>Weight</b>	P2.14: 15kg / P2.25: 17kg / P4.14: 18.5kg		

## 6. CONNECTIONS

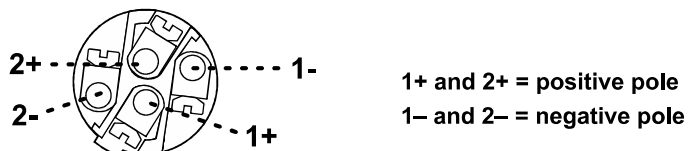
### 6.1 Signal Input



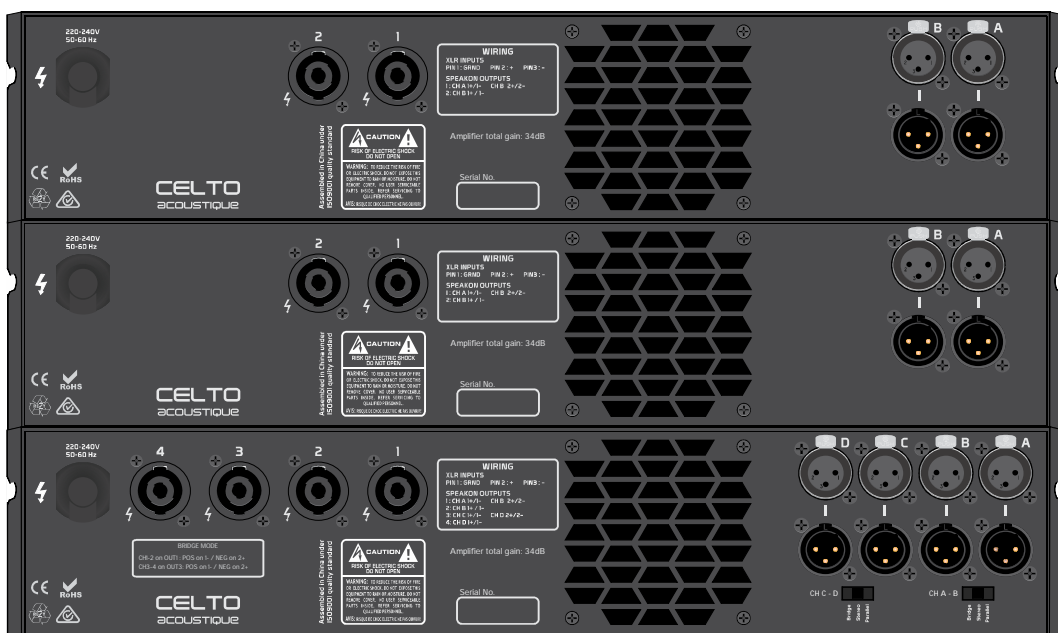
**Note:** For unbalanced use, Pin 1 and 3 have to be bridge

### 6.2 Speaker Output

NEUTRIK® Speakon connector wiring diagram



# CELTO ACOUSTIQUE



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