SOUND PERFECTED

PROCELLA®

USER MANUAL V3.0
(40 PRESETS MODEL)

https://procella.audio
contact@procella.audio

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TECHNICAL AND SAFETY NOTICES

Please read the following important technical, safety and environmental notices before installing and using your amplifier.

Technical Notices

Your Procella power amplifier has been designed to provide a high level of performance when properly installed, configured and operated. In order to ensure this performance and maintain the product warranty, please note and follow these instructions.

1. These amplifiers are Class-I products and must be installed with a mains cable with a ground connnection.
2. These amplifiers should always be installed by competent and qualified personnel. Amplifier damage or failure caused by installation or operational errors may invalidate the warranty or guarantees of performance.These amplifiers are not suitable for use in locations where they may be accessible to minors.
3. Do not install the amplifier in locations where they may be accessible to children.
4. These amplifiers should only be used within professionally installed and configured audio systems utilizing ancillary components of commensurate quality. Any damage to, or unsatisfactory performance from, these amplifiers caused by inadequate or failed input or output ancillary equipment may invalidate support, warranty or guarantees of performance.
5. These amplifiers are intended to be installed and operated indoor in a controlled environment within an ambient temperature range of 0°C to 40°C. These amplifiers are not intended for use above 2000 meters above sea level. Amplifiers installed or operated in environments outside these limits may invalidate support, warranty or guarantees of performance.

Safety and Environmental Notices

Note: *The intent of the lightning flash with arrowhead symbol in a triangle is to alert the user to the presence of uninsulated "dangerous" voltage within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to humans.*

Note: The intent of the exclamation point within an equilateral triangle is to alert the user to the presence of important safety, and operating and maintenance instructions in this manual.

WARNING

TO PREVENT FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE.

Ambient Temperature Note: If this equipment is operated in a confined or multiple rack installation, the internal ambient operating temperature may exceed the external ambient temperature. It is important to ensure in these circumstances that the published maximum operating temperature for the equipment is not exceeded.

Reduced Air Flow: Ensure that rack or other closed installation does not restrict the cooling airflow required for safe and reliable operation of the equipment.

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TECHNICAL AND SAFETY NOTICES

Important Safety Instructions

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Do not submerge the equipment in water or liquids.
7. Do not use any aerosol spray, cleaner, disinfectant or fumigant on, near or into the equipment.
8. Clean only with a dry cloth.
9. Do not block any ventilation opening. Install in accordance with the manufacturer's instructions.
10. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
11. To reduce the risk of electrical shock, the power cord shall be connected to a mains socket outlet with a protective earthing connection.
12. Do not defeat the safety purpose of the polarized or grounding type plug.
13. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
14. Do not unplug the unit by pulling on the cord, use the plug.
15. Only use attachments/accessories specified by the manufacturer.
16. Unplug this apparatus during lightning storms or when unused for long periods of time.
17. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as damage to the power supply cord or plug; liquid has been spilled or objects have fallen into the apparatus; the apparatus has been exposed to rain or moisture; or does not operate normally.
18. The appliance coupler, or the AC Mains plug, is the AC mains disconnect device and shall remain readily accessible after installation.
19. Adhere to all applicable, local codes.
20. Consult a your dealer or Procella Audio when any doubt or questions arise regarding a physical equipment installation.
21. Consult a your dealer or Procella Audio when any doubt or questions arise regarding a physical equipment installation.

Environmental Statement

This product complies with international directives, including but not limited to the Restriction of Hazardous Substances (RoHS) in electrical and electronic equipment, the Registration, Evaluation, Authorization and restriction of Chemicals (REACH) and the disposal of Waste Electrical and Electronic Equipment (WEEE). Consult your local waste disposal authority for guidance on how properly to recycle or dispose of this product.

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OVERVIEW

1. Introduction

The Procella DA03-DSP and DA08-DSP power amplifiers have been designed to provide configurable, consistent and reliable high performance audio power amplification for residential and commercial applications. Please read this manual fully before installing and using the amplifier. If you have any questions regarding amplifier configuration, installation or operation please contact us.

Following this introduction, the manual is divided into sections covering the following topics:

2. Overview
3. Carton Contents
4. Installation
5. Connections
6. Operating Instructions
7. Specifications

2. Amplifier Overview

The Procella Audio power amplifier is a 1U format power amplifier that can drive conventional low impedance 4Ω to 8Ω loudspeakers. The amplifier supports constant resistance and constant voltage output, provides built-in DSP, has built-in switch capability, supports UDP protocol, and offers amplifier monitoring through a network cable. The amplifier adopts the multi loop regulation technology independently developed by the company and has excellent technical performance and stability, with greater than 90% efficiency, due to its proprietary power amplification technology. The switching power supply adopts active Power Factor Correction and soft switching technology, and is optimized for audio amplification.

Bridge pairs of channels (1+2 and/or 3+4) to increase power by a factor of four.

2.1 Software

The Procella DSP controller software is available in the download section of our website: https://procella.audio/downloads

2.2 Dimensions

The DA03-DSP and DA08-DSP amplifiers are primarily intended for installation in an equipment rack. It is fan-cooled and must be installed such that ventilation apertures are not obstructed.

The menu and preset selection is done on the front of the amplifier by using the knob and the display for information.

WxHxD 483 x 45 x 370 mm (1U)
19" x 1.7" x 14.6" (1U)

2.3 Firmware

This manual describes the features, functions and user interface of the DA03-DSP and DA08-DSP amplifier:

Firmware Version
34464B0F-006118 (March 2024)

Updates to the firmware will be announced on our website.

2.4 DSP functions

- The input delay of each channel is 30ms, the output delay is 20ms, and the step is 0.01ms
- Audio input level matching + - 18db
- 4x4 audio route mixing, mixing ratio - 80dB ~ + 18db
- 8-segment input parametric EQ, 5-segment output parametric EQ, high-low pass filter

- Support FIR filters of order 512 and below
- Volume, mute, phase adjustment, mode selection
- Output average, peak voltage limiter
- Parameter saving / retrieval between machines
- Speaker parameter configuration
- User / Debug / Factory permission setting

3. Carton Contents

Both DA03-DSP and DA08-DSP amplifiers are shipped in a cardboard carton containing the amplifier unit, a mains cable appropriate for the sales territory and a document pack.

The full contents are listed below.

Procella Audio DA03-DSP or DA08-DSP amplifier
Mains power cable
Eurblock output connectors
Adhesive rubber feet x 4
Document pack

4. Installation

The installation and equipment rack should be configured to provide appropriate ventilation airflow space around the front and rear of the amplifier as illustrated **Diagram 1b**. A ventilation airflow space of at least 25 mm (1 inch) should be maintained along at least one side of the amplifier at all times. Ventilation apertures are located on the rear panel of the amplifier and must not be obstructed. It is important to retain at least 80 mm (3.1 inch) free space for airflow behind the amplifier rear panel.

The amplifier works in a 0°C~40 environment. Airflow goes from the front of the amplifier (ventilation holes) through the rear panel to ensure effective heat dissipation. Please ensure that the air can flow from the front to rear panels.

Note: *If the internal temperature exceeds 85 degrees C, the output voltage will be reduced, to avoid excessive temperature rise. If the temperature continues to rise to 90 degrees C, the power amplifier will shut down. Once the temperature has dropped to a safe temperature, the amplifier will restart automatically.*

Maintenance

After operating for some time, if the airflow and cooling become less effective, please turn off the amplifier. Clean the dust filter.

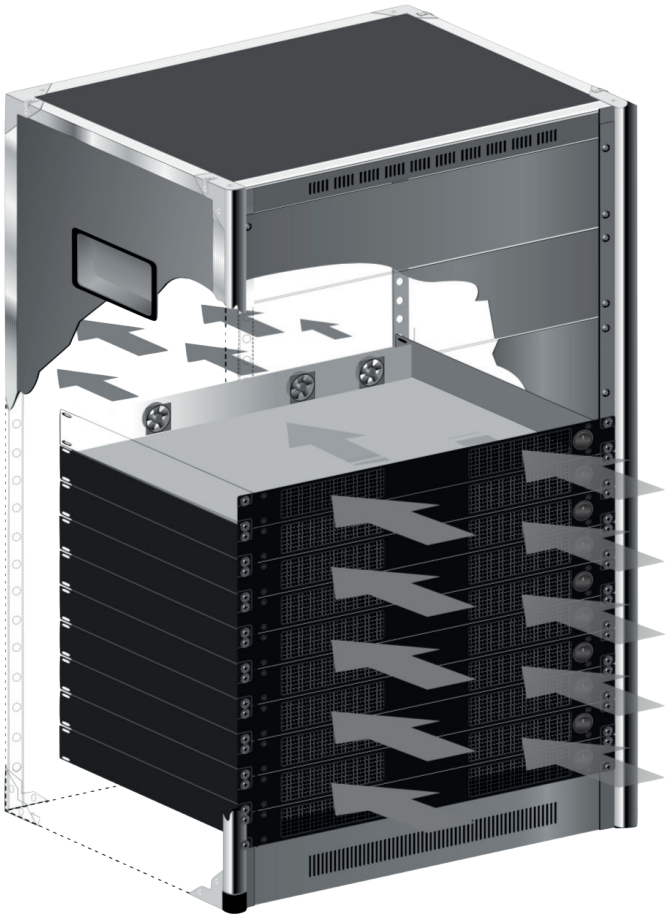

Diagram 1b

5. Connections

Input connection to the amplifier is through balanced XLR connectors or unbalanced digital AES3 through the Euroblock connector.

Output connection is through heavy duty Euroblock connectors. An RJ45 Ethernet network connection is provided as well as a 12V On/Off remote connection*.

The amplifier has a mains power switch and is operational as soon as mains power is connected and the switch is switched to the On position.

A standby function is available remotely by an IP command.

For the 2024 version a 12V remote for switching On/Off has been added.

**Not be be confused with a 12V trigger*

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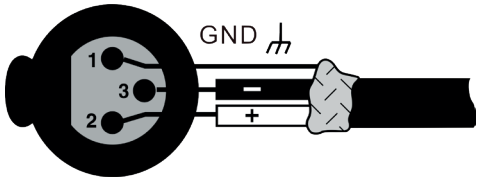
INPUTS / OUTPUTS

5.1 Inputs / Outputs

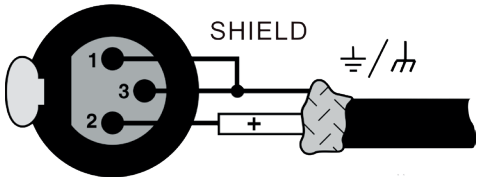
Use only shielded cables. We strongly recommend balanced connections for the lowest noise floor.

Note: *If a single-ended connection must be used, the shortest possible cable is preferred to minimize potential noise*

Before changing any connections, please switch the amplifier off.



Balanced analog input



Unbalanced analog input

5.2 Attention

In order to achieve the best performance and the highest reliability, please pay attention to the following:

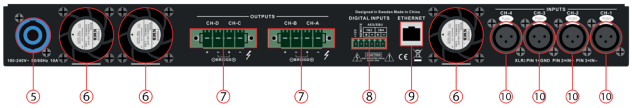
1. Before use, you need to configure the amplifier inputs and outputs.
2. Be careful when connecting, selecting the input signal and controlling the output level. This can avoid unnecessary issues.
3. Do not connect the ground wire of the input and output cable together. This will form a ground loop and cause oscillations
4. Without authorization, modifying the circuit will be dangerous, and the agents will not provide any services.
5. If the SIG LED flashes yellow continuously, shut the amplifier down.
6. Do not use the amplifier under the condition of lower than the nominal load. Too low load may cause amplifier output protection and premature clipping, damage the speaker.
7. When the amplifier is turned on, the output port may be fatal.

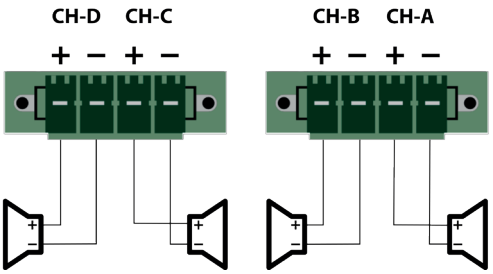
Important note: ***our company is not responsible for the damage caused by excessive use.***

5.3 Operation

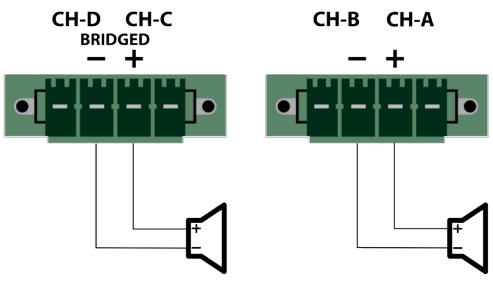
1. Cooling Vents: Front-to-rear forced airflow through foam dust filter.

2. LCD Display Screen
3. Control Button: turn for previous and next, push for enter.
4. Power Switch: ON / OFF. It is ON to press “I” down.
5. Power cord: Configuration 3×1.5mm2 cord according to power.
6. Fans: Provide front-to-back forced airflow for cooling.
7. Output sockets.
8. unbalanced digital AES3 inputs, 12V remote On/ Standy
9. Ethernet connection
10. XLR inputs





Two wire stereo or mono speakers to the output sockets.



Two wire Bridge speakers to the output sockets:

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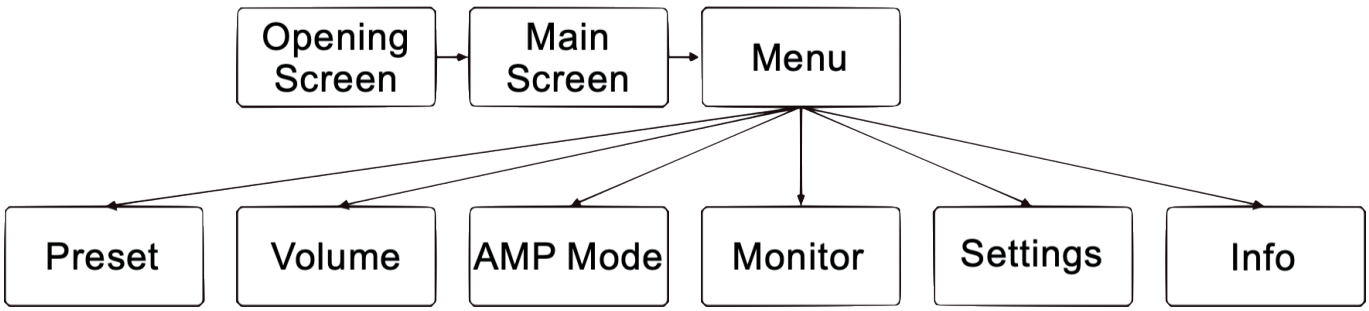
6. Menu structure of screen display



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6.1 Menu

Opening screen

- Turn the power on and the LCD screen will display the logo.
- After a few seconds the main screen will be automatically displayed.

Main screen

The following functions can be controlled through the main screen.

Press the rotary encoder to enter the Operation Menu:

- The volume/mute function of this amplifier can be controlled
- Display the volume / output level / output clipping / output compression of each channel.
- Display the machine operating temperature, network status and current selected preset.

Menu

1. Preset

Current:V21 (=example)

Current is the active preset
Presets by Procella Audio
total of 40 preset modes available

See seperate sheet for the preset list or check our website

2. Volume

Volume	The volume of each output can be controlled individuatly
Mute	The mute function is available for each output
Noise Gate	The noise gate switch of each output can be controlled individually
Back	

OPERATING INSTRUCTIONS

3. Amp Mode

Bridge	Bridge two output channels (1+2 or/and 3+4) Low-Z
Hi-Z 70V	
Hi-Z 100V	
Back	

4. Settings

Standby	Normal/Standby	
Contrast	30-100	Screen contrast 30-100 / default 75
Backlight:	Always/Saving/Off	Saving = close after 2 minutes
IP Mode	Auto-DHCP/User-set	DHCP or maual settings
Amp-IP	192.168.1.10	Can be changed in manual mode
Factory Reset		

5. Monitor

V	Output voltage of each channel
I	Output current of each channel
Temp	Operating temperature of each power module
State	Whether all channels are protected

6. Info

Model	Power amplifier model name
Run time	Total working time
Communication	Communication interface type
Sn	Factory serial numberd
FW	Firmware version

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7. Technical Specifications

• Model	• DA03-DSP	• DA08-DSP
Output Power **(THD+ N=1%, 1kHz continue sine wave, all channel driving)**	4x 280W @ 8Ω 4x 500W @ 4Ω	4x 800W @ 8Ω 4x 1.600W @ 4Ω 4x 2.900W @ 2Ω
Output Power @ 4/ 8Ω **(Bridged)**	2x 1.050W @ 8Ω	2x 3.200W @ 8Ω 2x 5.800W @ 4Ω
Max. Output current	25A peak	45A peak
Dimensions (W xH X D)	483 x 45 x 370 mm (19 x 1.7 x 14.6 in)	483 x 45 x 370 mm (19 x 1.7 x 14.6 in)
Weight	9.0kg (19,8 lbs)	9.0kg (19,8 lbs)
DSP for all channels	Level Parametric eq Delay, matrix limiter FIR filter	Level Parametric eq Delay, matrix limiter FIR filter
Presets available	40	40
Signal To Noise-Ratio	>104 dB (default gain, A-weighted, 20 Hz-20 kHz, 8 Ω)	>105 dB (default gain, A-weighted, 20 Hz-20 kHz, 8 Ω)
THD+N (typical)	<1% (1kHz continue sine wave, all channels driving)	<0,05% (1kHz continue sine wave, all channels driving)
Frequency Response	20Hz-20kHz (+0/-0.5dB (8Ω load, 3dB below rated power)	20Hz-20kHz (+0/-0.5dB (8Ω load, 3dB below rated power)

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PROCELLA AUDIO LIMITED WARRANTY

- Procella Audio components are warranted to be free from original manufacturing defects as follows:
- For all amplifier components, for a period of two years from date of delivery to the original purchaser from an authorized dealer.
- The Procella Audio obligation under this warranty is limited to repairing or replacing any component which it shall find defective in material or workmanship under normal non- commercial conditions of use. This warranty shall not apply to products which have been abused, modified, disassembled or repaired by anyone other than Procella Audio or one of its appointed service centers.
- Products to be repaired under this warranty must be returned to the factory or designated service center with all transportation and insurance charges prepaid.
- All warranties of whatever character are void and unenforceable if the component or any part thereof is not purchased from an authorized dealer.
- This warranty is in lieu of all other warranties, expressed or implied, and of all other obligations or liabilities on our part, and Procella Audio neither assumes nor authorizes any other person to assume for it, any other liability in connection with the sale, repair, or return of any product.
- We encourage all Procella owners to register their components. While this is not required to receive warranty benefits, it will allow you to receive warranty coverage without providing proof of purchase, and it will enable us to keep you advised of Procella product information, new products, and updates.
- Please contact your local Procella Audio dealer or Procella Audio directly should you have any further questions. We love to hear from our customers, especially with feedback on our loudspeaker products.
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