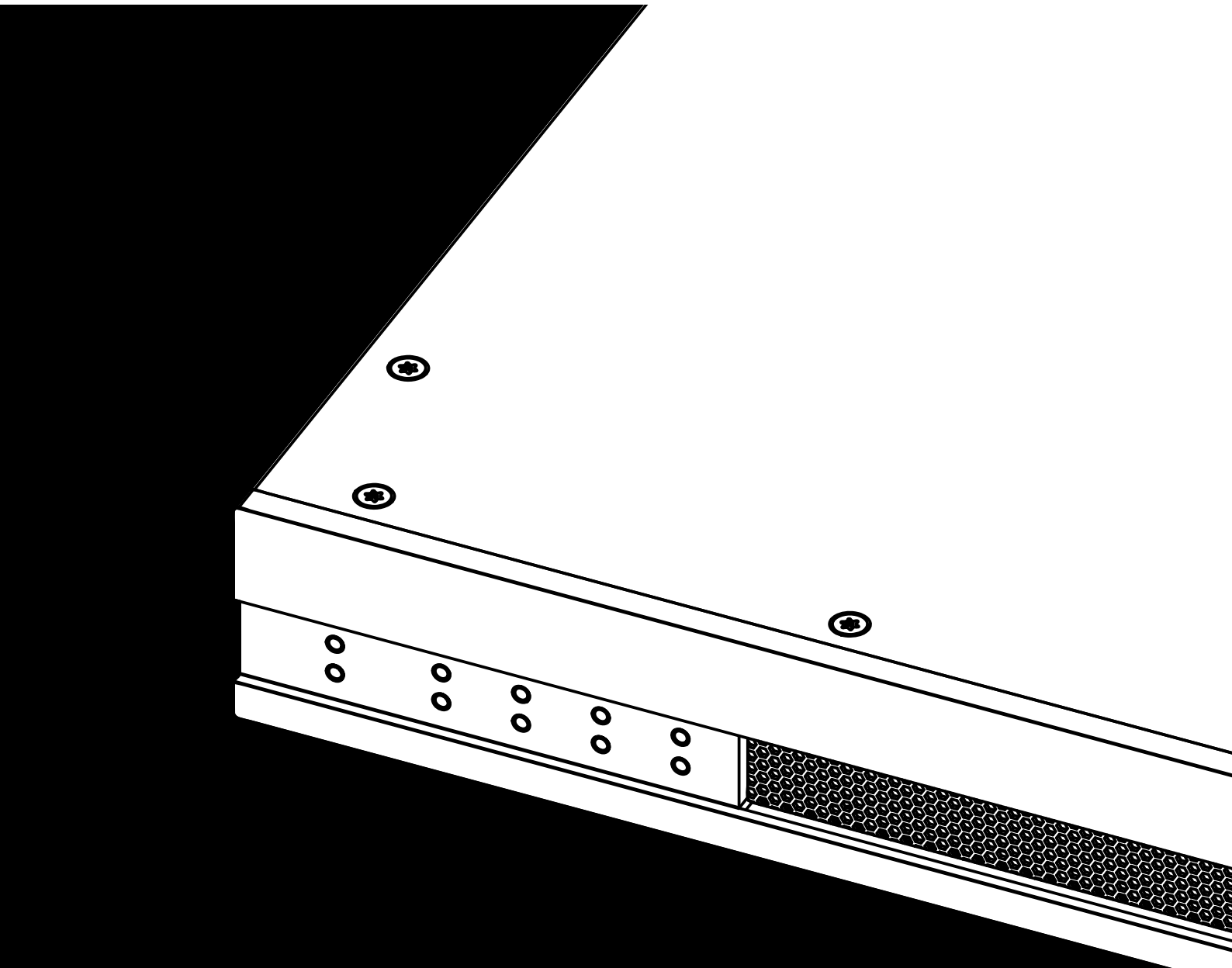
xD

5D
Start-up manual
1.3 en



d&b audiotechnik

General information

5D Start-up manual

Version: 1.3 en, 11/2022, D2766.EN .01

Keep this document with the product or in a safe place so that it is available for future reference.

We recommend you to regularly check the d&b website for the latest version of this document.

When reselling this product, hand over this document to the new owner.

If you supply d&b products, please draw the attention of your customers to this document. Enclose the relevant documents with the systems. If you require additional documents for this purpose, you can order them from d&b.

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IMPORTANT SAFETY INSTRUCTIONS

Explanation of graphical symbols

The lightning symbol within a triangle is intended to alert the user to the presence of uninsulated "dangerous voltages" within the unit's chassis that may be of sufficient magnitude to constitute a risk of electric shock to humans.

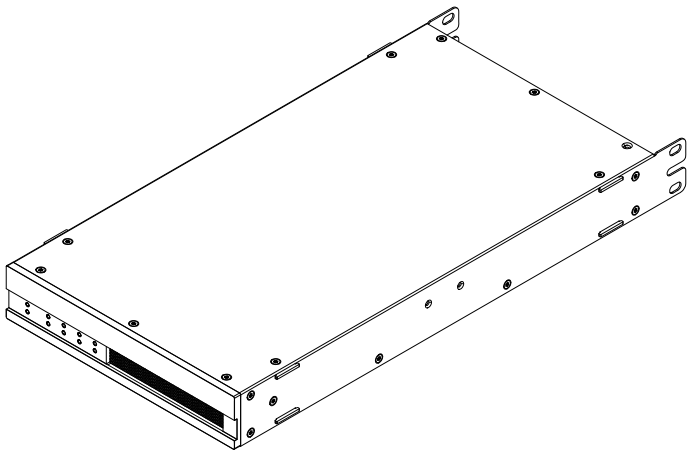
The exclamation point within a triangle is intended to alert the user to the presence of important operating and service instructions in the literature accompanying the product.

Before using this product, carefully read the applicable items of the following safety instructions.

1. Keep these instructions for future reference.
2. Read these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. **WARNING!** To reduce the risk of fire or electric shock:
   - Do not expose this unit to rain or moisture.
   - Keep water or other liquids away from the unit.
   - Do not place liquid filled containers, for example beverages, on top of the unit.
   - Do not operate the unit while it is wet or standing in liquid.
6. Always operate the unit with the chassis ground wire connected to the electrical safety earth.
   Do not defeat the safety purpose of a grounding-type plug.
   A grounding-type plug has two blades and a third grounding prong. 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.
7. Do not use this unit if the power cord is damaged or frayed. Protect the power cord from being walked upon or pinched, particularly at the plugs and the point where it exits from the apparatus.
8. The unit is intended for use in a 19" rack. Follow the mounting instructions. When a rack on wheels is used, exercise caution when moving the loaded rack to avoid injury from tipping over.
9. Unplug this apparatus during lightning storms or when unused for long periods of time.
10. Never connect an output pin to any other amplifier input or output pin or to the earth (ground). This may damage the unit or lead to electric shock.
11. Lay all cables connected to the unit carefully so that they cannot be crushed by vehicles or other equipment and that no one can either step on them or trip over them.
12. 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 into the unit.
    - An object has fallen into the unit.
    - The unit has been exposed to rain or moisture.
    - The unit does not operate normally.
    - The unit was dropped or the chassis is damaged.
    - Do not remove top or bottom covers. Removal of the covers will expose hazardous voltages. There are no user serviceable parts inside and removal may void the warranty.
13. Use the mains plug as the disconnecting device and keep it readily accessible. If the mains plug is not readily accessible due to mounting in a 19" equipment cabinet, then the mains plug for the entire rack must be readily accessible.
14. An experienced user must always supervise the equipment, especially if inexperienced adults or minors are using the equipment.

Contents

1 Intended use



The d&b 5D amplifier is designed for installation purposes and intended to be used with applicable d&b loudspeakers. A LINEAR setup is available allowing the amplifier to be used as a linear installation power amplifier.

NOTICE!

The device complies with the electromagnetic compatibility requirements of EN 55032:2019 (product family standard for audio, video, audio-visual and entertainment lighting control apparatus for professional use) for the environment Class B (residential).

Acoustic interference and malfunctions may occur if the unit is operated in the immediate vicinity of high-frequency transmitters (e.g. wireless microphones, mobile phones, etc.). Damage to the device is unlikely, but cannot be excluded.

1.1 About this manual

With respect to the vast functionality and high complexity of the device, this manual covers the basic safety instructions as well as the vital technical specifications and instructions for startup.

A full version of this manual (⇒ Reference manual) with comprehensive information is available for download on the related product page of the d&b website at www.dbaudio.com.

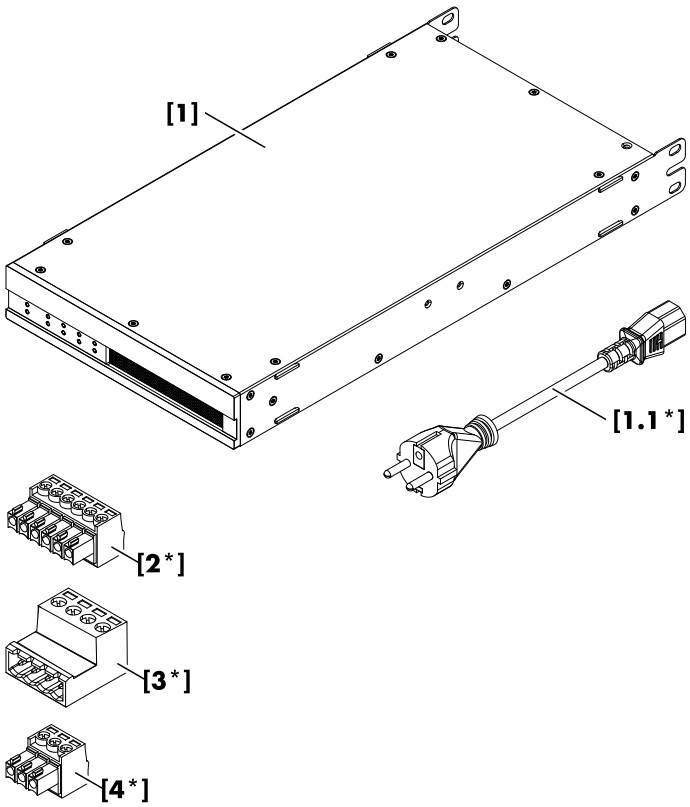
1.2 Loudspeaker types

The maximum number of cabinets driven by each channel varies depending on their nominal impedance. It can be found in the respective loudspeaker manual and also in the data section of each loudspeaker product page on the d&b website at www.dbaudio.com.

The minimum recommended impedance per channel is 4 ohms.

Nom. impedance	Cabinets per channel
4 Ω	1
8 Ω	2
12 Ω	3
16 Ω	4
20 Ω	5

A list of d&b loudspeakers supported by the amplifier is included in the Release notes of the amplifier firmware. The latest version can be found on the d&b website at www.dbaudio.com.



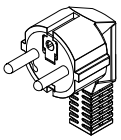
*__Euroblock:__ Similar illustrations, not in scale

Before starting up the device, please verify the shipment for completeness and proper condition of the items.

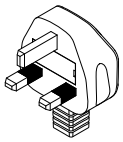
If there is any sign of obvious damage to the unit and/or the power cord, do not operate the unit and contact your local dealer from whom you received it.

Pos.	Qty.	d&b Code	Description
[1]	1	Z2880	d&b 5D Amplifier.
Including:			
[1.1*]	1	Z2611.xxx	Power cord (specific to country*).
[2]	3		6-pin Euroblock female: ▪ Intended for the analog input connector sockets and the GPI connector socket. ▪ Connector type: Euroblock 3.5 mm.
[3]	2		4-pin Euroblock male: ▪ Intended for the speaker OUTPUTS connector sockets. ▪ Connector type: Euroblock 5.08 mm.
[4]	1		3-pin Euroblock female: ▪ Intended for the FAULT connector socket. ▪ Connector type: Euroblock 3.5 mm.
		D2766.EN .01	d&b 5D Start-up manual.

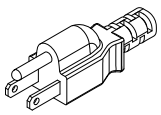
*Mains plug types and associated standards



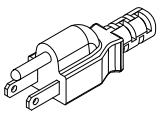
Z2611.001
3-pin Schuko
CEE 7/7



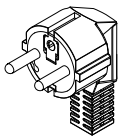
Z2611.011
3-pin UK
BS 1363A



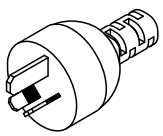
Z2611.021
3-pin U.S.
NEMA 5-15P



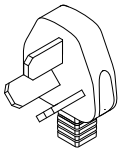
Z2611.041
3-pin Japan
NEMA 5-15P



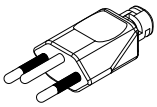
Z2611.051
3-pin South Korea
KS C8305



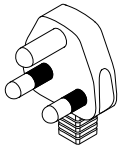
Z2611.081
3-pin Australia
AS 3112



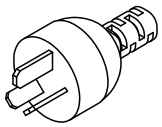
Z2611.071
3-pin China
GB 2099



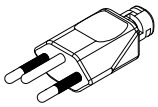
Z2611.031
3-pin Switzerland
SEV 1011



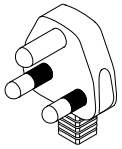
Z2611.121
3-pin South Africa
SANS 164-1



Z2611.061
3-pin Argentina
IRAM 2073

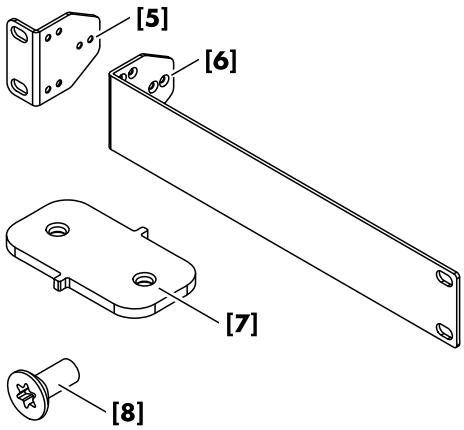


Z2611.111
3-pin Brazil
NBR 14136



Z2611.131
3-pin India
IS 1293

Note: Plugs are similar illustrations, not in scale



Rack mount kit

A dedicated rack mount kit, allowing various mounting options is included with the device.

Please also refer to ⇒ Chapter 5.1 "Rack mounting and cooling" on page 13.

Pos.	Qty.	d&b Code	Description
[5]	2		Rack ears.
[6]	1		19" Adapter (Bridge).
[7]	4		Connector plates.
[8]	10		Countersunk torx (#TX10) screws M3 x 5 Tuflock.

Operating conditions

Operating temperature (*continuous/**short-term) ..... –10 °C ... +40*/+50** °C (+14 °F ... +104*/+122** °F)

Storage temperature ..... –20 °C ... +70 °C (–4 °F ... +158 °F)

Humidity (rel.), non-condensing ..... < 70 %

Power supply

Wide range switched mode power supply with active Power Factor Correction (PFC).

Mains connector IEC-60320 C14

Rated mains voltage ..... 100 - 240 V, 50 - 60 Hz

Rated mains current ..... 5.7 A – 2.4 A

Mains fuse ..... internal

Protection circuits

Mains and power supply: Overvoltage, inrush current limiter, internal fuse.

Output: Overcurrent, DC offset, HF voltage limiter, pop-noise suppression.

Cooling: Temperature-dependent fan, self-resetting overtemperature protection.

Power consumption (typical values)

Standby ..... 5 W

Idling ..... 50 W

Peak output ..... 550 W

Audio power outputs*

OUTPUTS A/B/C/D ..... 2 x 4-pin Euroblock female

Maximum output voltage/current ..... 120 V_{peak}/20 A_{peak}

Output power rating EIA-426B noise CF 12 dB ..... 4 x 600 W/8 Ω

..... 4 x 600 W/4 Ω

Sinus 1 kHz, long term, +40 °C (+104 °F) ..... 4 x 37.5 W/4 Ω

Frequency response (–1 dB, Linear mode) ..... 35 Hz – 20 kHz

Gain (Linear mode @ 0 dB) ..... 31 dB

Output noise/Dynamic range

Output noise (BW 20 kHz)/dynamic range (BW 20 kHz, reference 120 V_{pk}) .....

Analog input, unweighted ..... 330 μV_{RMS}/108 dB

Analog input, A-weighting ..... 240 μV_{RMS}/111 dB

Dante input, unweighted ..... 240 μV_{RMS}/111 dB

Dante input, A-weighting ..... 180 μV_{RMS}/113 dB

THD+N / Crosstalk

THD+N (unweighted, 20 – 20 kHz) .....

4x 75 W/8 ohms ..... < –60 dB/0.1 %

4x 75 W/4 ohms ..... < –60 dB/0.1 %

Crosstalk (20 – 20 kHz) ..... < –50 dBr

..... 4x 75 W into 4 Ω

Analog inputs/link

INPUT A1 - A4 ..... 3-pin Euroblock male

Pin assignment ..... (⏚) GND, neg., pos.

Input impedance ..... 15 kΩ, electronically balanced

CMRR @ 100 Hz/1 kHz / 10 kHz ..... > 54/> 54/> 50 dB

Maximum input level (balanced/unbalanced) ..... +18/+12 dBu

Input level @ 0 dBFS ..... +27.3 dBu

Dante

Inputs ..... 4 RX channels

Sampling ..... 48 kHz/96 kHz

Synchronization ..... Sample Rate Converter (SRC)

Latency ..... ≥1 ms.

Network ..... Primary, 2 RX flows (Unicast or Multicast)

Digital Signal Processing

Time to tone (Off) ..... < 6 sec.

Conversion ..... 48 kHz

Latency analog/Dante input (48 kHz, incl. Dante latency) ..... 1.1/3 ms

Equalizer ..... user definable 8-band equalizer

..... Filter types: PEQ/Notch/HiShlv/LoShlv/Asym

Delay ..... 1.1 - 300 ms

Frequency generator ..... Pink noise or Sine wave 10 Hz – 20 kHz

Network

Connector type ..... 2 x RJ45

Switch ..... integrated 2-port, 1 Gbits/100 Mbits

GPI 4

High-level ..... 7 ... 30 VDC

Low-level ..... 0 ... 5 VDC

Input impedance ..... 100 kOhms

Connector type ..... 1 x 6-pin Euroblock 3.5 mm male

Pin assignment ..... GND (⏚), GPIs 1 – 4, DC

DC ..... 12 VDC, 50 mA

FAULT ..... NO - Normally Open | NC - Normally Closed

..... 1 x 3-pin Euroblock 3.5 mm male

Controls and indicators

Controls

POWER ..... Mains power switch (rear panel)

RESET ..... Recessed push-button (rear panel)

Indicators

POWER ..... Power indicator (green)

Data ..... Data stream indicator (yellow)

Mute A/B/C/D ..... Channel mute indicator (red)

..... Channel/Device error indication (red)

ISP A/B/C/D ..... Input Signal Present indicator (green)

GR A/B/C/D ..... Gain Reduction indicator (yellow)

OVL/Error A/B/C/D ..... Overload/Error indicator (red)

Fan noise emission

Rack mounted, measured on axis, 1 m (3.3 ft) to front panel, A-weighting.

Max. RPM ..... 42 dB(A)

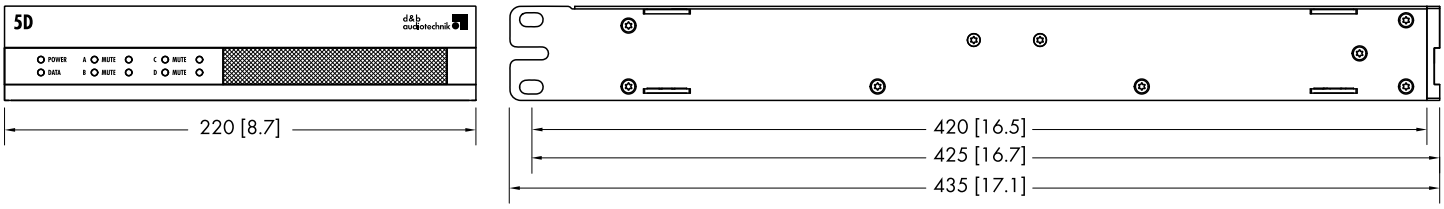
..... Ambient temperature 23 °C/73.4 °F

Dimensions and weight

Height x Width x Depth* ..... 1 RU x 9.5" x 405 mm (16")

..... *with rack ears 435 mm (17.1")

Weight ..... 4.6 kg/10 lb



5D enclosure dimensions in mm [inch]

*Audio power output – Measurement references:

All data is valid for 23 °C (73.4 °F) ambient temperature and 230 VAC/50 Hz mains supply.
The power rating of noise signals is defined as the maximum of the instantaneous output power divided by a factor of two.
The power of burst signals refers to the power during the "on" period.
The duration of the peak output of a sinewave signal is defined at a drop of 0.5 dB/10% relative to the maximum output power.

EIA-426B noise			
Crest factor	**Load**	**Power rating**	**Power average**
12 dB	4 ohms 8 ohms	4 x 600 W 4 x 600 W	4 x 75 W 4 x 75 W
9 dB	4 ohms 8 ohms	4 x 350 W 4 x 350 W	4 x 87.5 W 4 x 87.5 W
6 dB	4 ohms 8 ohms	4 x 175 W 4 x 175 W	4 x 87.5 W 4 x 87.5 W
1 kHz burst			
On/off time	**Load**	**Power single channel**	**Power all channels**
20 ms/0 dB 480 ms/–20 dB	4 ohms 8 ohms	1 x 800 W 1 x 600 W	4 x 250 W 4 x 250 W
200 ms/0 dB 600 ms/–20 dB	4 ohms 8 ohms	1 x 600 W 1 x 600 W	4 x 180 W 4 x 190 W
1 kHz sine wave			
Channels used	**Load**	**Max. output power**	**Duration of max. output**
1	4 ohms 8 ohms	1 x 600 W 1 x 600 W	1200 ms 1600 ms
4	4 ohms 8 ohms	4 x 600 W 4 x 600 W	7 ms 7 ms

3.1 Current/power draw and thermal dissipation

Measurement references

For all noise signals, the values are measured at the maximum level just before any amplifier limiter activity (no Gain Reduction).

Noise CF 12 dB: Noise signal according to EIA-426-B with a crest factor of 12 dB.
This represents the use case of live music or less compressed recorded music.

Noise CF 9 dB: Noise signal according to EIA-426-B with a crest factor of 9 dB.
This represents the use case of music with medium compression.

Noise CF 6 dB: Noise signal according to EIA-426-B with a crest factor of 6 dB.
This represents the use case of heavily compressed music.

Sine wave (100 ms): 1 kHz sine wave signal, 0 dBFS input level and a duration of 1 s.
The RMS current value is calculated over a 100 ms time window. This window is stepped in increments of 10 ms over the recording. The resulting value is the highest current within a window of 100 ms.

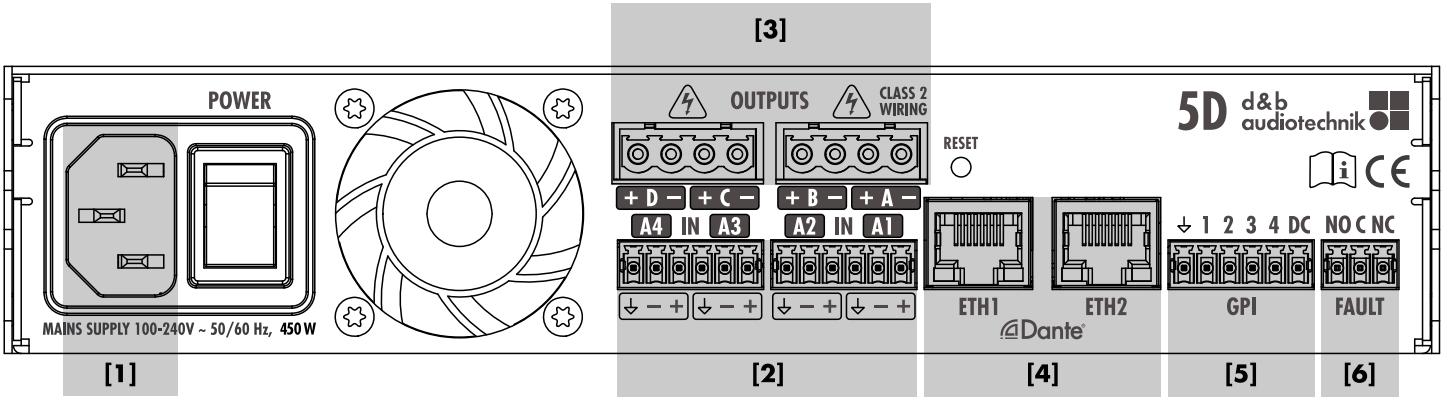
230 VAC / 50 Hz / 0.5 Ω Source impedance - all channels driven								
State	**Load [ohms]**	**Mains current [A RMS]**	**Power factor**	**Input power [W]**	**Output power [W]**	**Power loss [W]**	**BTU/hr**	**kCal/hr**
Standby	-	0.1	0.17	4	-	4	14	3
AutoWakeup	-	0.1	0.19	5	-	5	17	4
Idling	-	0.4	0.6	49	-	49	167	42
Noise CF 12 dB	8 ohms 4 ohms	1.9 2.1	0.92 0.92	410 450	300 300	110 150	375 512	95 129
Noise CF 9 dB	8 ohms 4 ohms	2.2 2.4	0.93 0.94	475 520	350 350	125 170	426 580	108 146
Noise CF 6 dB	8 ohms 4 ohms	2.2 2.4	0.94 0.95	475 525	350 350	125 175	426 597	108 151
Sinus max. 1 s	8 ohms 4 ohms	4.4 5.3	- -	- -	- -	- -	- -	- -

208 VAC / 60 Hz / 0.5 Ω Source impedance - all channels driven								
State	**Load [ohms]**	**Mains current [A RMS]**	**Power factor**	**Input power [W]**	**Output power [W]**	**Power loss [W]**	**BTU/hr**	**kCal/hr**
Standby	-	0.1	0.17	4	-	4	14	3
AutoWakeup	-	0.1	0.19	5	-	5	17	4
Idling	-	0.5	0.52	49	-	49	167	42
Noise CF 12 dB	8 ohms 4 ohms	2.1 2.3	0.93 0.93	410 450	300 300	110 150	375 512	95 129
Noise CF 9 dB	8 ohms 4 ohms	2.4 2.7	0.94 0.95	475 520	350 350	125 170	426 580	108 146
Noise CF 6 dB	8 ohms 4 ohms	2.4 2.7	0.95 0.95	480 525	350 350	130 180	444 614	112 155
Sinus max. 1 s	8 ohms 4 ohms	5.2 5.6	- -	- -	- -	- -	- -	- -

120 VAC / 60 Hz / 0.2 Ω Source impedance - all channels driven								
State	**Load [ohms]**	**Mains current [A RMS]**	**Power factor**	**Input power [W]**	**Output power [W]**	**Power loss [W]**	**BTU/hr**	**kCal/hr**
Standby	-	0.1	0.36	4	-	4	14	3
AutoWakeup	-	0.1	0.39	5	-	5	17	4
Idling	-	0.6	0.71	48	-	48	164	41
Noise CF 12 dB	8 ohms 4 ohms	3.7 4.1	0.95 0.95	425 460	300 300	125 160	426 546	108 138
Noise CF 9 dB	8 ohms 4 ohms	4.3 4.7	0.96 0.96	485 535	350 350	135 185	461 631	116 159
Noise CF 6 dB	8 ohms 4 ohms	4.3 4.7	0.97 0.97	490 540	350 350	140 190	478 648	120 163
Sinus max. 1 s	8 ohms 4 ohms	10.2 10.4	- -	- -	- -	- -	- -	- -

100 VAC / 60 Hz / 0.2 Ω Source impedance - all channels driven								
State	**Load [ohms]**	**Mains current [A RMS]**	**Power factor**	**Input power [W]**	**Output power [W]**	**Power loss [W]**	**BTU/hr**	**kCal/hr**
Standby	-	0.1	0.42	4	-	4	14	3
AutoWakeup	-	0.1	0.46	5	-	5	17	4
Idling	-	0.6	0.77	48	-	48	164	41
Noise CF 12 dB	8 ohms 4 ohms	4.5 5.0	0.95 0.95	430 470	300 300	130 170	444 580	112 146
Noise CF 9 dB	8 ohms 4 ohms	5.2 5.7	0.96 0.96	495 545	350 350	145 195	485 665	125 168
Noise CF 6 dB	8 ohms 4 ohms	5.2 5.7	0.97 0.97	500 550	350 350	150 200	512 682	129 172
Sinus max. 1 s	8 ohms 4 ohms	10.5 11.5	- -	- -	- -	- -	- -	- -

4.1 Connections



[1] Mains connector socket.
Refer to ⇒ Chapter 5.2.1 "Mains connection" on page 15.

[2] Audio INPUT connectors (analog).
Refer to ⇒ Chapter 5.2.2 "Analog audio inputs/link connectors" on page 16.

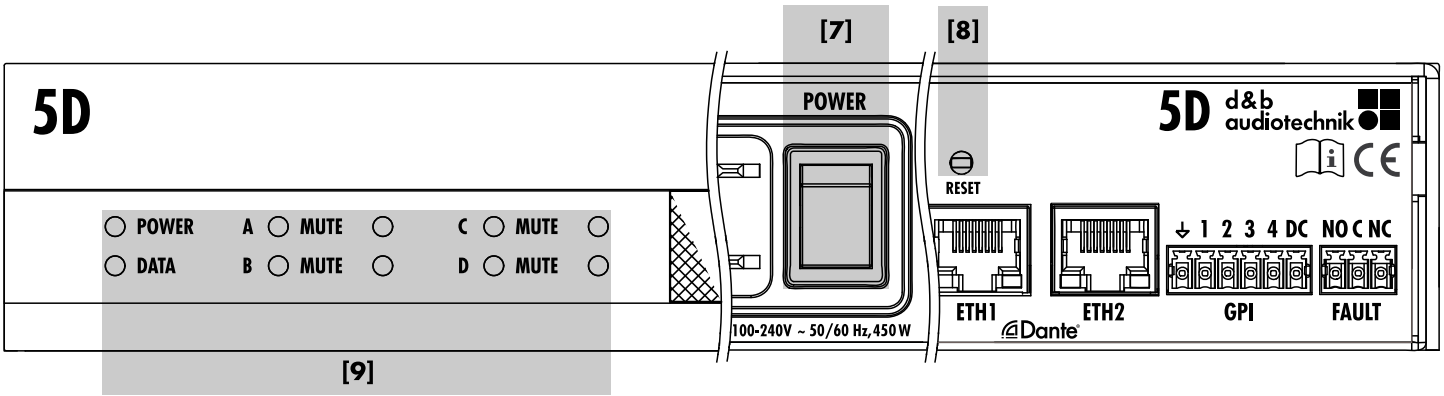
[3] Output connectors.
Refer to ⇒ Chapter 5.2.4 "OUTPUTS" on page 17.

[4] ETHERNET.
Refer to ⇒ Chapter 5.2.3 "ETH1/ ETH2 - Dante" on page 16.

[5] GPI/DC connector.
Refer to ⇒ Chapter 5.2.5 "GPI/DC (Hardware description)" on page 18.

[6] FAULT connector.
Refer to .

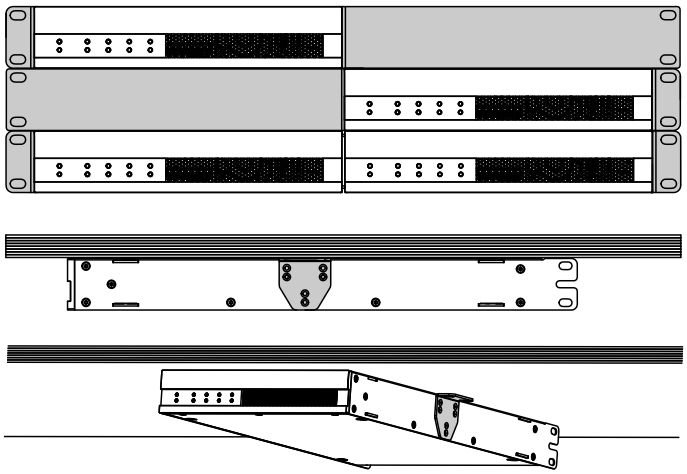
4.2 Controls and indicators - User interface



[9] Status indicators
Refer to ⇒ Chapter 5.3.3 "Status indicators (LEDs)" on page 20.

[7] POWER
Main power switch
Refer to ⇒ Chapter 5.3.1 "Mains power switch" on page 19.

[8] RESET
Refer to ⇒ Chapter 5.3.2 "RESET (System reset)" on page 19.



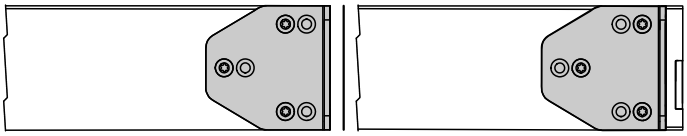
5.1 Rack mounting and cooling

Rack mounting kit

The enclosed rack mounting kit allows for various mounting options:

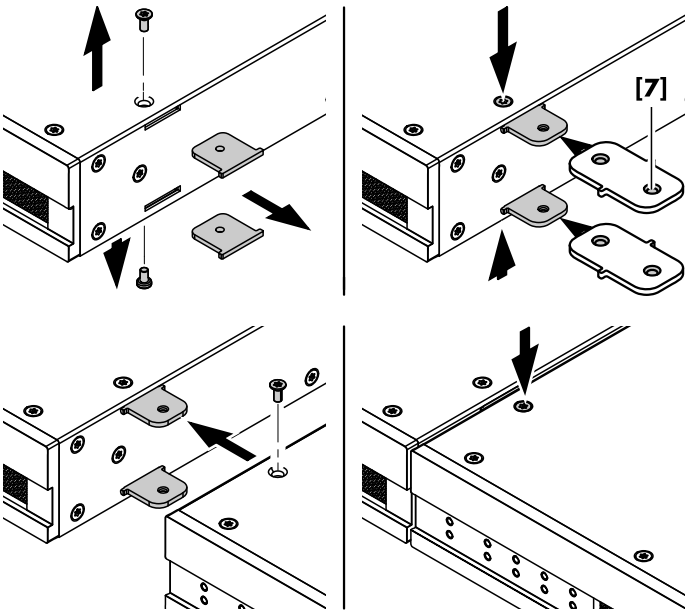
- Single device into 9.5" racks or cabinets or either left or right into 19" racks or cabinets.
- Two devices side-by-side into 19" racks or cabinets.
- Single device underneath tables or any other suitable surfaces.

When mounting the device into racks or cabinets, the rack ears allow for two options:



Flat

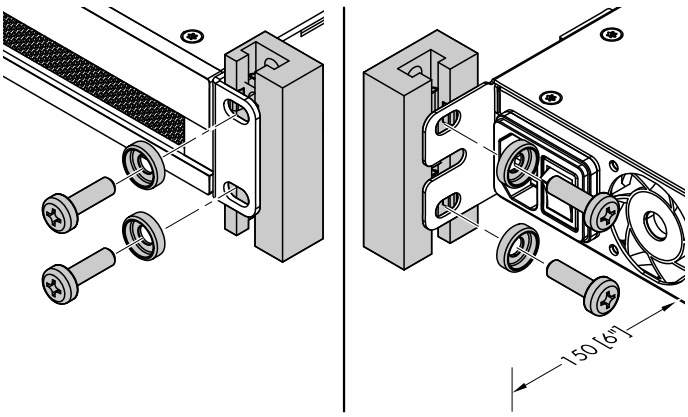
Offset
Mainly intended for mounting above or underneath d&b installation amplifiers.



Joining two devices

Tools required: Screw driver torx #TX10.

1. On both devices first remove the rubber covers at the inner sides of the devices at the top/bottom, front and rear.
2. On one device (no matter which one) attach the connector plates **[7]**.
   ↳ Ensure the countersinks faces to the top.
3. Join the devices together.
4. Reattach the remaining screws of the second device at the top/bottom, front and rear.



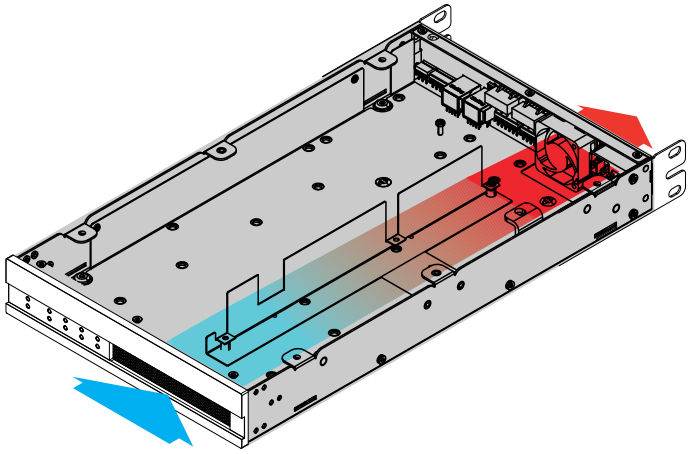
Rack mounting

NOTICE!

When mounting the device into 19" equipment racks or cabinets, it is strongly recommended that you:

- **Always** fix the device at its **front AND rear-mounted rack ears** using appropriate rack mounting screws and U washers, as shown in the graphic opposite.
- Alternatively use shelves fixed to the inner sides of the equipment rack or cabinet.

When specifying a rack or cabinet, be sure to allow extra depth (150 mm / 6" is usually sufficient) to accommodate the cables and connectors at the rear of the device.

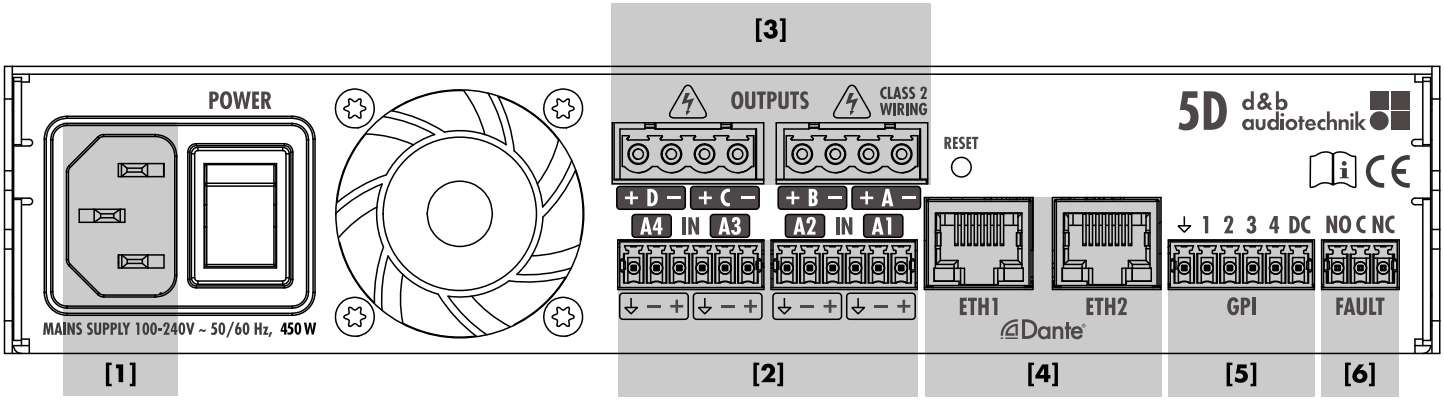


Cooling

Thermal conditions are a vital factor to ensure operational safety of the power amplifiers. The amplifier is equipped with an internal fan that draws cool air from the front into the housing and channel the warm air towards the back of the device.

- Please ensure that adequate cool airflow is provided.
- Do not block or cover the front panel air intake or the vents on the rear panel.
- If the amplifiers are installed in sealed cabinets (e.g. in fixed installations), use additional fan modules with filters that can be easily replaced without opening the sealed cabinets.
- Do not rack up the amplifiers together with other devices producing additional heat with opposing airflow.

5.2 Connections

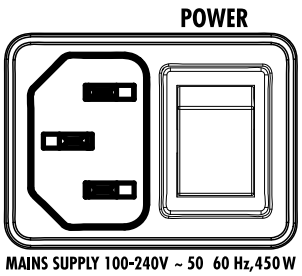


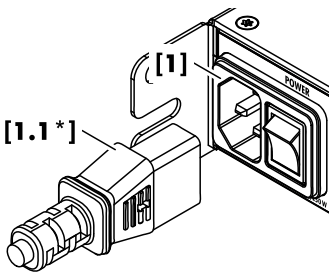
5.2.1 Mains connection

WARNING!
Potential risk of electric shock or fire.

The device is a protective class 1 unit. A missing earth (ground) contact may cause dangerous voltages in the housing and controls and may lead to electric shock.

- Connect the device to mains power supplies with protective earth only.
- If there is any sign of obvious damage to the power cord and/or mains plug, do not use the power cord and replace it before further use.
- Please ensure the mains connector is accessible at any time to disconnect the device in case of malfunction or danger.
  If the mains plug is not readily accessible due to mounting in a 19" rack or equipment cabinet, then the mains plug for the entire rack or cabinet must be readily accessible.
- Do not connect or disconnect the mains plug under load.

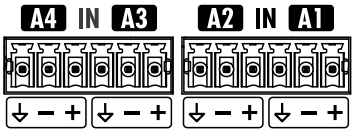




Before connecting the device to mains voltage, check that the mains voltage and frequency correspond to the specifications on the rating label next to the mains connector socket on the rear panel of the unit.

Mains voltage range:
100 to 240 VAC, ~50/60 Hz, 450 W.

A 3-pin IEC-60320 C14 mains connector socket **[1]** is fitted on the rear panel and an appropriate power cord **[1.1]** is supplied.



5.2.2 Analog audio inputs/link connectors

IN (A1 - A4)
A 6-pin Euroblock connector (male) is provided for each analog input pair to accept the supplied 6-pin Euroblock connector (female). To feed (link) the input signal on to the next device in the signal chain, the connector can also be used as a cable tap.

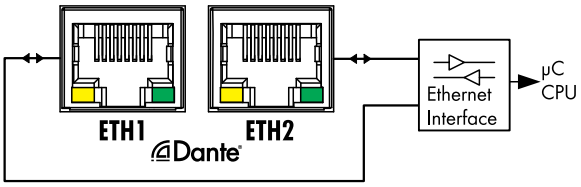
Technical specifications

INPUT A1 - A4	3-pin Euroblock male
Pin assignment	(⏚) GND, neg., pos.
Input impedance	15 kΩ, electronically balanced
CMRR @ 100 Hz/1 kHz / 10 kHz	> 54/> 54/> 50 dB
Maximum input level (balanced/unbalanced)	+18/+12 dBu
Input level @ 0 dBFS	+27.3 dBu

5.2.3 ETH1/ETH2 - Dante

NOTICE!

Only **shielded network** cables (**STP**) must be used!



LED indicators
The two LED indicators of the respective connector socket in use indicate the following states:

Green Illuminates permanently when the device is connected to an active network and flashes as long as a data stream is transmitted.

Yellow Is off when the speed is 100 Mbits and illuminates permanently when the speed is 1 Gbits.

ETH1/ETH2
A dual Ethernet port with a built-in 2-port Ethernet switch (1 Gbits/ 100 Mbits - peer-to-peer) is provided, enabling standard remote control via the d&b Remote network (OCA/AES70) and SNMP IP addressing (Auto (DHCP+LL) or Manual) as well as digital audio networking on either of the connector sockets.
It allows either daisy-chain or star-wiring topology. However, star-wiring topology is strongly recommended.

The device will subscribe to the network with two MAC addresses and will also (if DHCP is present in the network) get two IP addresses: 1x µC and 1x Dante chipset.

Dante
The device is Dante enabled and accepts four Dante RX channels - Primary only.
The chipset is configured using Dante Controller (IP mode and IP address are not synchronized between µC and Dante).
A Dante "Clear config." will only be effective for Dante and does not affect the device itself.

Technical specifications

Inputs	4 RX channels
Sampling	48 kHz/96 kHz
Synchronization	Sample Rate Converter (SRC)
Latency	≥1 ms.
Network	Primary, 2 RX flows (Unicast or Multicast)

5.2.4 OUTPUTS

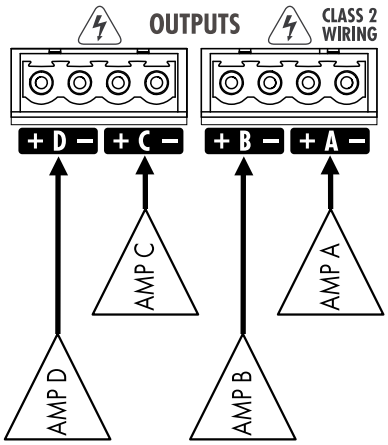
WARNING!
Potential risk of electric shock or fire.

Risk of electric shock
The amplifier output pins can carry dangerous voltages.

- Only use isolated loudspeaker cables with correctly fitted connectors.
- Never connect an amplifier output pin to any other input or output connector pin or protective earth (ground).
- **Bridge mode is not applicable.**

Risk of fire
To avoid any heating of the output connector terminal (glowing contact), the wires need to be properly fitted to the output connector terminal.

- Only use the enclosed Euroblock 5.08 mm connector terminals.
- Observe the maximum cross-section of 2.5 mm^2 (AWG 13).
- Ensure all contact screws are properly tightened.
  Rated **torque** settings (max): **0.5** N·m.
- Screw driver size Phillips PH1 (0.6 x 3.5 mm).

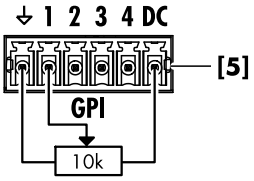


The amplifier is equipped with two Euroblock connector sockets (female), one for each pair of amplifier output channels (A/B, C/D).

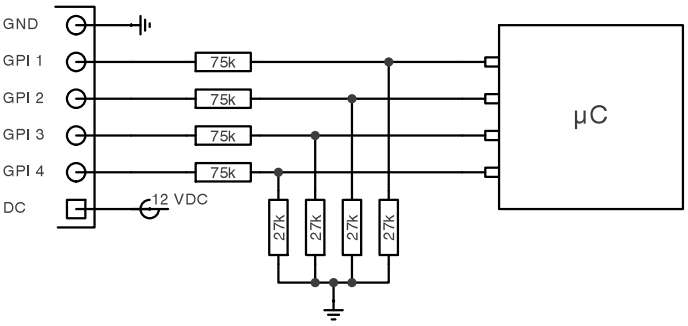
All pins of both output connectors are hardwired and permanently driven using the following pin assignment.

OUTPUTS A (B, C, D)
+ = Amp A (B, C, D) pos.
— = Amp A (B, C, D) neg.

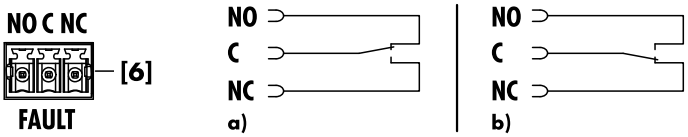
> **Note:** A detailed description of the applicable output modes and how to configure the appropriate output mode is given in the 5D Reference manual which can be downloaded from the related product page at www.dbaudio.com.
>
> For further information regarding the applicable output modes for each loudspeaker system, please refer to the relevant loudspeaker manual.



GPI
VCA functionality



GPI
Schematic circuit diagram



FAULT
Schematic circuit diagram and switching status:
a) Device is On and operating
b) Device is Off or general device error

5.2.5 GPI/DC (Hardware description)

Up to four GPI pins **[5]** (**G**eneral **P**urpose **I**nput) together with an onboard DC supply (12 VDC, 50 mA) are available as additional digital control lines.

Each GPI provides either level (Hi/Lo active - non-latching) or edge (rising/falling - latching) triggering.

A VCA functionality is incorporated to allow the connection of an external, linear potentiometer (10 kOhms).

Technical specifications

GPI	4
High-level	7 ... 30 VDC
Low-level	0 ... 5 VDC
Input impedance	100 kOhms
Connector type	1 x 6-pin Euroblock 3.5 mm male
Pin assignment	GND (⏚), GPIs 1 – 4, DC
DC	12 VDC, 50 mA

Note: A detailed description of how to configure the GPIs and assign the available software objects (Function) correspondingly is given in the 5D Reference manual, which can be downloaded from the related product page at www.dbaudio.com.

5.2.6 FAULT

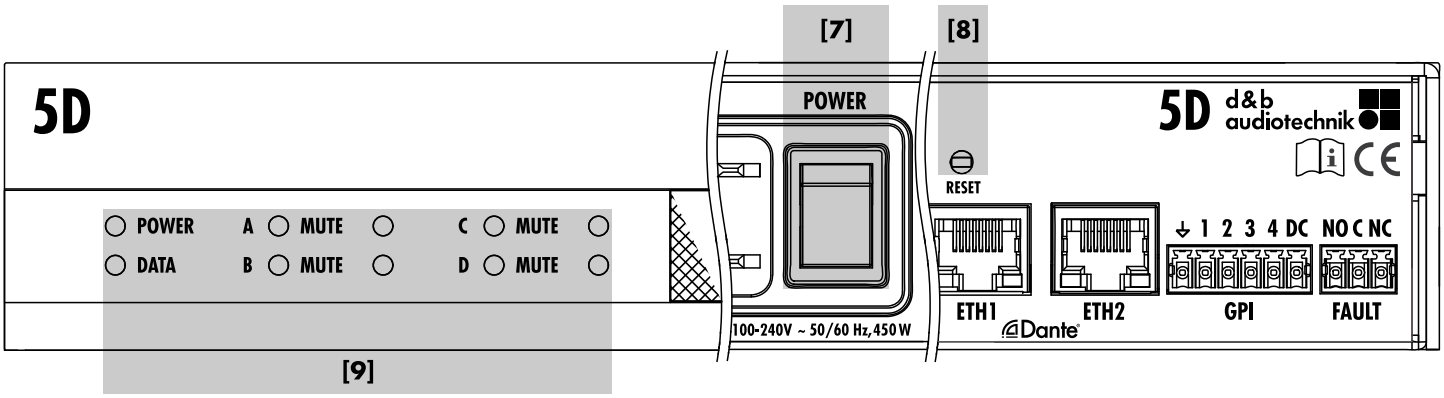
An additional 3-pin Phoenix Euroblock fault contact **[7]** is provided allowing a general device error to be remotely indicated.

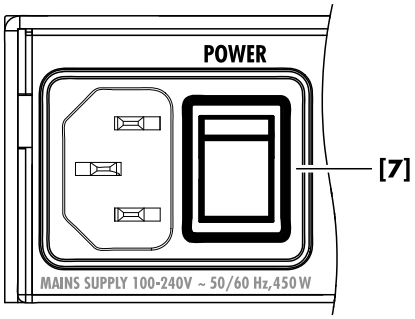
Note:

- The assignment of the corresponding software object is fixed and cannot be changed by the user.
- During a firmware update, the fault contact switches to status **b)**, as shown in the graphic opposite.

NO **N**ormally **O**pen
C **C**ommon
NC **N**ormally **C**losed

5.3 Controls and indicators



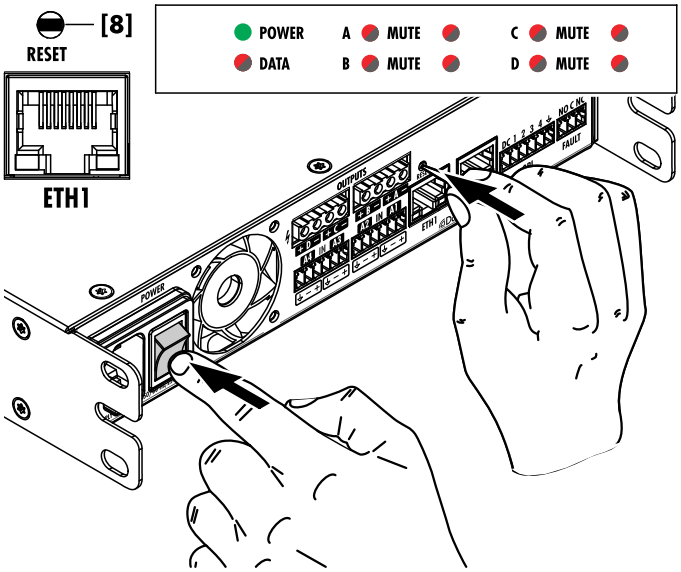


5.3.1 Mains power switch

The on/off rocker switch **[7]** is located on the left of the rear panel.

OFF Mains isolation is not provided. The internal power supplies are off but stay connected to the mains.

ON The unit is switched on and ready for operation.



5.3.2 RESET (System reset)

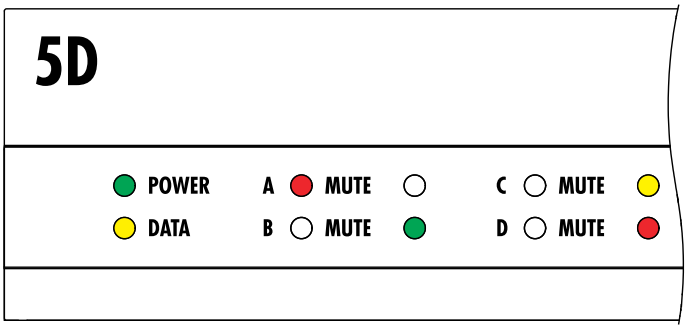
A recessed reset button (RESET **[8]**) is located on the rear panel above the ETH1 network connector.
To prevent accidental system reset, the button is slightly recessed.

To perform a system reset, proceed as follows:

Note: All device preferences will be set to factory defaults except for the network and fixed device settings.

1. Switch off the device.
2. Press and hold the «RESET» button using an appropriate pen.
3. While holding the «RESET» button pressed, repower the device.
   ↳ All LEDs will illuminate red for 1 second while the POWER LED will continue to illuminate green.
4. Release the «RESET» button and briefly press the button again within 2 sec.
   ↳ The device will reboot.

Further details on the different reset functions are described in the 5D Reference manual which can be downloaded from the related product page at www.dbaudio.com.



5.3.3 Status indicators (LEDs)

On the bottom left of the front panel the following status LEDs are provided:

POWER

Green: Indicates two states:

- **Permanent:** Power on.
- **Flashing (⎍‾‾⎍):** Standby.

DATA

Yellow: Indicates two states:

- **Permanent:** A network cable is connected to one of the ETHERNET (RJ 45) sockets of the device.
- **Flashing:** A data stream is transmitted.

MUTE

Red: Mute status of the respective channel.
In addition these LEDs also acts as Error indicators for either a channel or device error. In the case of an error the LEDs starts flashing according to the following flashing patterns:

Channel error: Single flash of the corresponding Channel mute LED.

Device Error: Double flash of all Channel mute LEDs.

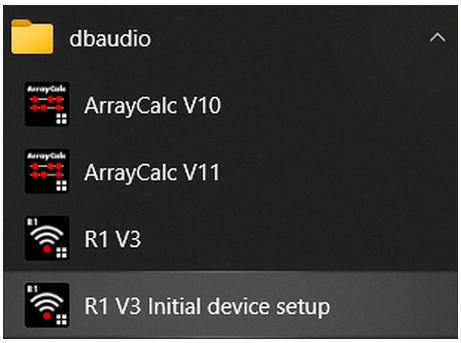
Signal LED

Multi color LED, indicates three states:

- **Off:** No signal present.
- **Green: ISP** (**I**nput **S**ignal **P**resent):
  Illuminates when the analog input signal exceeds –30 dBu or when the Dante input signal exceeds –57 dBFS.
- **Yellow: GR** (**G**ain **R**eduction):
  Illuminates when one limiter reduces the signal by a predefined level (GR ≥3 dB)
- **Red: OVL** (**Ov**er**l**oad):
  Illuminates when ...:
  - any signal within the channel exceeds –2 dBFS.
  - DSP suffers from an internal EQ filter overflow.
  - any limiter causes a gain reduction of 12 dB or more.
  - the output signal is limited to prevent distortion due to output peak current overload.

The device is mainly intended to be set up and operated via the d&b Remote network using the d&b R1 Remote control software.

Provided R1 is already installed and the device has been connected either directly or through the network, proceed as follows:

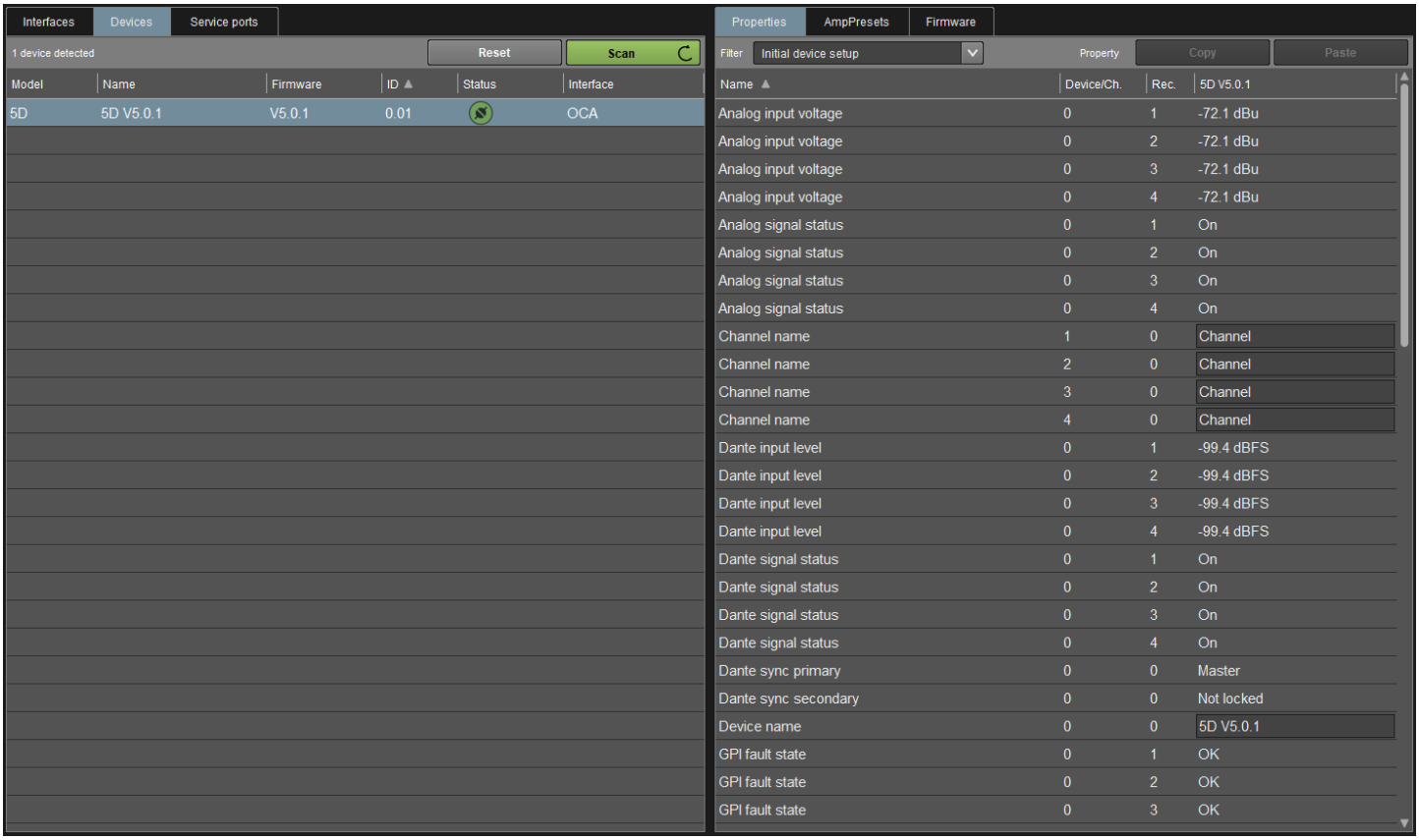


⇒ From the startup menu, choose the «R1 V3 Initial device setup» entry.

↳ R1 is launched and automatically switches to «Online» mode and the «Service» view is displayed.

In the left pane of the view, the connected device is listed.

In the right pane, the corresponding «Filter» ⇒ «Initial device setup» is set by default and provides you with basic parameters (in alphabetical order) to set up the device.



7.1 Service

CAUTION!
Potential risk of explosion.

The device incorporates a lithium battery which may cause danger of explosion if not replaced correctly.

Refer replacement only to qualified service personnel authorized by d&b audiotechnik.

Do not open the device. No user serviceable parts inside. In case of any damage do not operate the device under any circumstances.

Refer servicing only to qualified service personnel authorized by d&b audiotechnik. In particular if:

- objects or liquids have entered the device.
- the device does not operate normally.
- the device was dropped or the housing is damaged.

7.2 Maintenance and care

During normal operation, the amplifier provides maintenance-free service.

Due to the cooling concept, no dust filters are required. As a result, filter exchange or cleaning the filters is not necessary.

8.1 Declaration of Conformity

This declaration applies to:

d&b Z2880 5D Amplifier

by d&b audiotechnik GmbH & Co. KG.

All product variants are included, provided they correspond to the original technical version and have not been subject to any later design or electromechanical modifications.

We herewith declare that said products are in conformity with the provisions of the respective directives including all applicable amendments.

Detailed and applicable declarations are available on request and can be ordered from d&b or downloaded from the d&b website at www.dbaudio.com.

8.2 WEEE Declaration (Disposal)

Electrical and electronic equipment must be disposed of separately from normal waste at the end of its operational lifetime.

Please dispose of this product according to the respective national regulations or contractual agreements. If there are any further questions concerning the disposal of this product, please contact d&b audiotechnik.

WEEE-Reg.-Nr. DE: 13421928

8.3 Licenses and Copyright

This device includes software components released under different open source licenses. These components are supplied together with the d&b firmware.
A list of the components and a full-text version of all licenses and copyrights can be accessed using the Help system of the d&b R1 Remote control software by pressing **F1** on the keyboard (⇒ Refer to the «Licenses and credits» Help chapter for further information).

www.dbaudio.com

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