



# Operation Manual

## Compact Amplifiers with/without DSP

**pa**series





## Operation Manual

# Compact Amplifiers with/without DSP or DANTE Interface

Our new compact amplifiers from the **PA-SERIES** are intelligent 2-channel power amplifiers in 1/4 19 inch format with output powers of 50 to 200 watts per channel.

The PA-S model range includes versions with and without DSP or DANTE interface.

For optimal adaptation to different signal sources, the inputs are designed as RCA sockets as well as symmetrically. The DSP versions also have an optical 2-channel SPDIF input or a DANTE interface, which is combined with the 4 x 2 DSP matrix to get managed.

The analog models can be remotely controlled via VCAs and remote ON/OFF contacts, the DSP versions are configured with our browser-based **LB AUDIO CONTROL App** and controlled with network commands, e.g. via media controls.

The circuit design is designed for very high sound quality and longevity with minimal energy consumption and low heat generation.

The processor-controlled power amplifiers deliver the nominal output power stably to load impedances from 2 ohms.

In Auto On/Off mode, amplifier channels that are not currently in use switch to an energy-saving sleep mode. Further features include LEDs for standby/power, sleep, signal, limit and protect, a ground lift switch to avoid ground loops and DIP switches to switch the input sensitivity.

The devices are manufactured in Feldkirchen/Munich and enable optimal maintenance and service thanks to their modular design. We offer a 5-year guarantee for all amplifier models.



**LB AUDIO  
CONTROL**

Browser-based  
App for our  
new DSPs

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Detailed technical information can be found in the product-specific data sheets and on our website:  
<https://www.lb-lautsprecher.de/en/Amplifiers>

## Important Safety Information

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**Please read the following information and these instructions carefully before installation and be sure to follow them!**



Components inside the device may contain high voltages which, if touched, can result in life-threatening electric shocks.



### CAUTION!

Service and repair work must only be carried out by qualified personnel. Do not open the case as there is a risk of electric shock. There are no controls or components inside the device that require you to open the case. If the case has to be opened by qualified personnel, make sure that the device is completely disconnected from the power supply.

**THIS UNIT MUST  
BE EARTHED!**

The connection to the mains supply is made using the included power cable. A damaged connection cable may not be repaired. The device must be grounded! Never insulate the protective contact of the power plug.

The mains fuse is located inside the device. The mains fuse may only be replaced with a replacement fuse of the same value. Under no circumstances should you bypass the mains fuse or replace it with a higher value.

The operating voltage must match the local power supply.



The device should be shielded from moisture and wet conditions. It must not be operated in rain or close to water, baths, washbasins, sinks, swimming pools or in damp environments. Do not place any objects filled with water such as vases, glasses or bottles on the device.

Avoid direct sunlight and do not install it in the direct vicinity of radiators or other heat sources.

Upon sudden change of climatic conditions (e. g. transfer from a cold place to a warm room) water may condense inside the device, which may lead to malfunction or damage. Before switch-on wait until the amplifiers have reached room temperature.

Unplug the mains plug to protect the device during a thunderstorm or if it is going to be left unsupervised or unused for a longer period of time. This prevents the device being damaged by lightning strikes or voltage surges in the mains grid. Do not touch the case when the device is in use as it may heat up during operation. Make sure that the device is ventilated sufficiently.

### **Improper use will invalidate the warranty!**

#### Disclaimer

LB is not liable for damage to speakers or other equipment caused by negligence or in cases where the product has been used for something other than its intended purpose. In particular, lb is not liable for lost earnings or other financial losses incurred by the purchaser. This limitation also applies to the personal liability of employees, representatives and agents.

These products meet the requirements of European Directive 2002/96/EC (WEEE) and 2002/95/EC (RoHS).

# Performance Features

Models	Cinch Input	Sym. Input	SPDIF Input	DANTE Input	DSP	Control via Network-commands	Ext. ON/OFF	VCA Inputs	Output Power		
									2 Ohms	4 Ohms	8 Ohms
PA-S 230	•	-	-	-	-	-	•	-	-	2 x 30 W	2 x 30 W
PA-S 250	•	•	-	-	-	-	•	•	2 x 50 W	2 x 50 W	2 x 30 W
PA-S 2100	•	•	-	-	-	-	•	•	2 x 100 W	2 x 100 W	2 x 60 W
PA-S 2200	•	•	-	-	-	-	•	•	2 x 200 W	2 x 200 W	2 x 120 W
PA-S 250 DSC	•	•	•	-	•	•	•	•	2 x 50 W	2 x 50 W	2 x 30 W
PA-S 2100 DSC	•	•	•	-	•	•	•	•	2 x 100 W	2 x 100 W	2 x 60 W
PA-S 2200 DSC	•	•	•	-	•	•	•	•	2 x 200 W	2 x 200 W	2 x 120 W
PA-S 250 DSC DANTE	•	•	-	•	•	•	•	•	2 x 50 W	2 x 50 W	2 x 30 W
PA-S 2100 DSC DANTE	•	•	-	•	•	•	•	•	2 x 100 W	2 x 100 W	2 x 60 W
PA-S 2200 DSC DANTE	•	•	-	•	•	•	•	•	2 x 200 W	2 x 200 W	2 x 120 W

## without DSP

## with DSP or DANTE



PA-S 230



PA-S 250 DSC  
PA-S 2100 DSC  
PA-S 2200 DSC

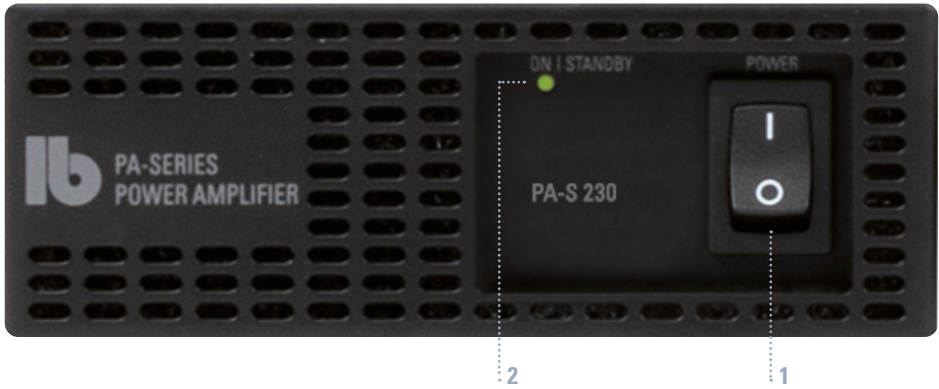


PA-S 250  
PA-S 2100  
PA-S 2200



PA-S 250 DSC DANTE  
PA-S 2100 DSC DANTE  
PA-S 2200 DSC DANTE

PA-S 230

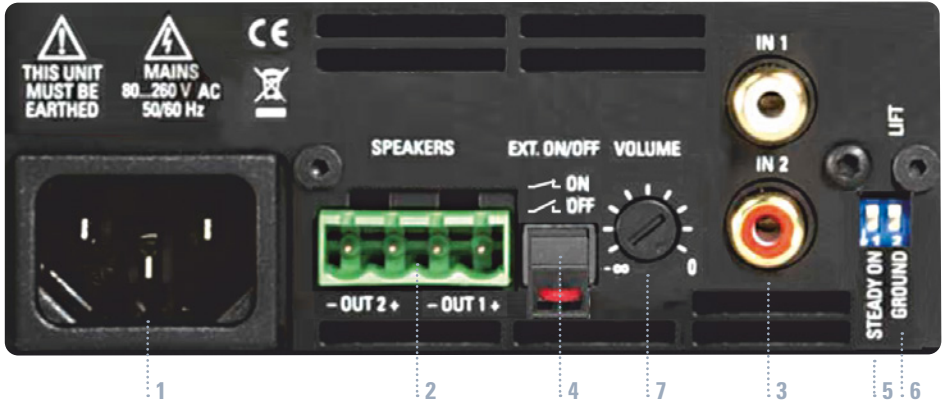


**1 Power switch**

The amplifier switches on with a delay of approx. 3 seconds.

**2 LED STANDBY / ON**

The LED lights up red in STANDBY, green when the amplifier is switched on and yellow in Sleep.



**1 IEC Connector** (Power cord is included)

**2 Speaker outputs**

Fix the speaker cables to the screw-type terminals.  
The speaker impedance should not fall below 4 ohms.

**3 Cinch Inputs**

**4 EXT. ON/OFF** – N/C (short circuit plug).

The EXT. ON/OFF-contact must be closed to activate the amplifier. It may either be closed by a shorting bridge (delivery condition) or by an external potential-free switch or contact.

With this contact one or multiple amplifiers in parallel can be switched on and off via media control or voice alarm systems.

**5 AUTO ON/STEADY ON** – DIP switch

In the upper position the channel pair operates in AUTO-ON/OFF mode and switch into an idle state (SLEEP) automatically if the input signal is absent for over 10 min. This reduces power consumption significantly. In the lower position the channel pair is active permanently (STEADY ON).

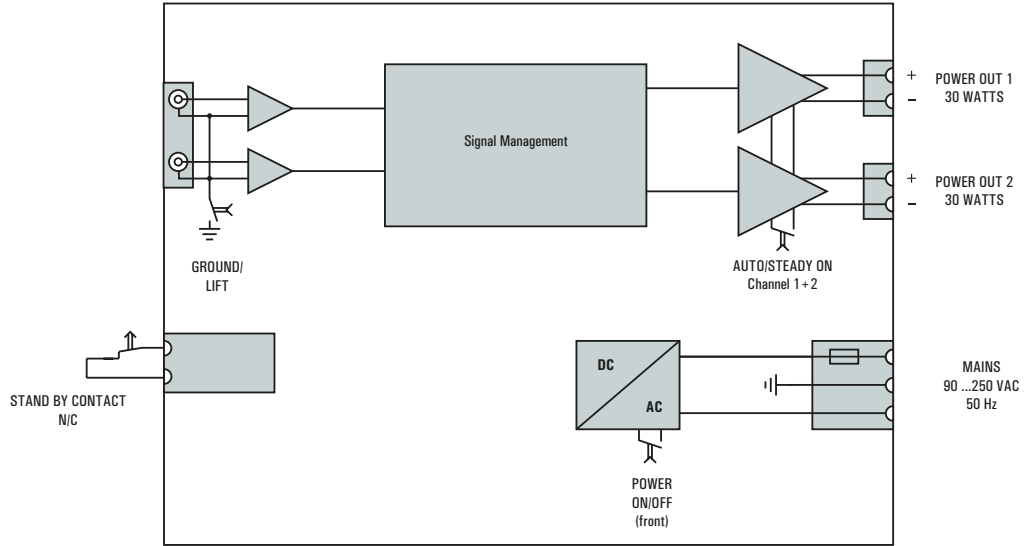
**6 GROUND LIFT-Switch**

In the GROUND position (down) audio ground is directly connected to the mains ground. If the signal source is also grounded this may cause humming noise. In this case the Input connector can be separated from mains ground (LIFT position)

**7 VOLUME** control

# Block Diagram

## PA-S 230





## Technical Data

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### PA-S 230

Inputs.....	2 × Line In Cinch
Nom. input level .....	0 dBu
Max. input level .....	+ 20 dBu
Input impedance .....	20 kOhms
Load impedance .....	≥ 4 Ohms
Outputs .....	2 × Speaker Out bis 2 × 2,5 mm <sup>2</sup> , (screwtype terminals, pluggable)

#### Output power

2 Ohms .....	-
4 Ohms .....	2 × 30 Watts
8 Ohms .....	2 × 30 Watts
Frequency range .....	15 Hz – 22 kHz
Dynamic range .....	> 95 dB
Display .....	LEDs for ON/STANDBY/SLEEP
Controls .....	Power switch at front. At back VOLUME control, DIP switches for AUTO ON/ STEADY ON
Additional connectors .....	ON/OFF contact N/C
Cooling .....	fanless
Protective circuits .....	Peak limiter, power limiter, short circuit and overtemperature protection
Power supply .....	90 up to 260 VAC
Main connector .....	IEC connector

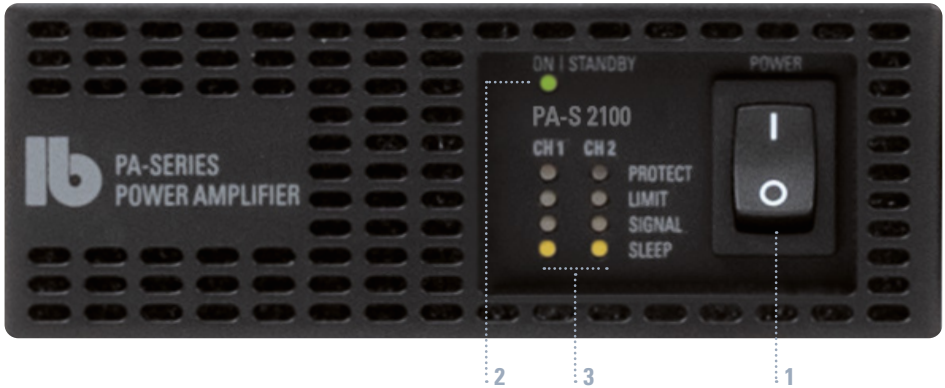
#### Power consumption

Standby .....	< 0,5 Watts
All channels SLEEP .....	2,4 Watts
All channels active .....	4,1 Watts
1/8 Nominal power .....	12 Watts
Max. average consumption .....	25 Watts
Peak power .....	70 Watts
Dimensions (W × H × D) .....	¼ 19", 1 U, 110 × 42 × 233 mm
Weight .....	1,1 kg
Warranty .....	5 years

## Front: Controls (Compact Amplifier without DSP)

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PA-S 250 / PA-S 2100 / PA-S 2200



### 1 Power switch

The amplifier switches on with a delay of approx. 3 seconds.

### 2 LED STANDBY / ON

The LED lights up red in STANDBY and green when the amplifier is switched on.

### 3 LED displays

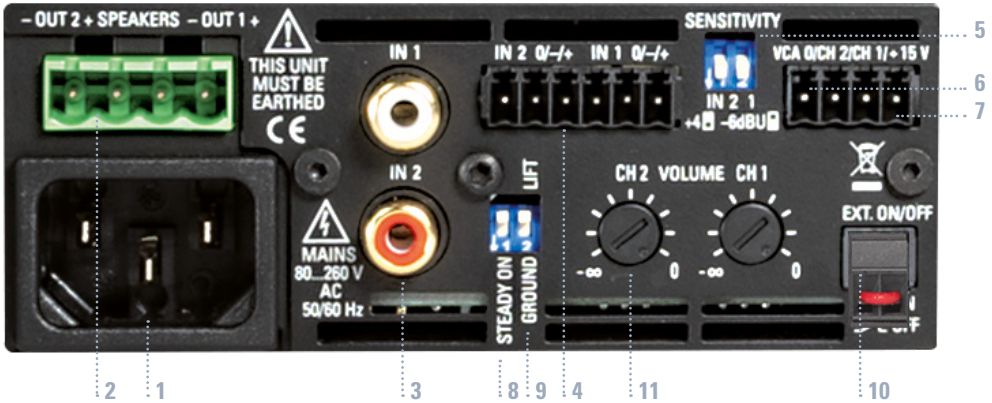
**SLEEP** – the corresponding power amplifier channel is in power-saving mode and is automatically reactivated when there is a signal.

**SIGNAL** – there is a signal at the output of the corresponding power amplifier channel.

**LIMIT** – the corresponding output stage channel limits. (Peak Voltage, Peak Current, Peak Power or Average Power).

**PROTECT** – the corresponding output stage channel switches off: short circuit at the output, overtemperature or defect.

A flashing LED indicates that the power of the channel is reduced due to excessive operating temperature.



**1 IEC Connector** (Power cord is included)

**2 Speaker outputs**

Fix the speaker cables to the screw-type terminals. The speaker impedance should not fall below 2 ohms.

**3 Cinch Inputs**

**4 Symmetrical Inputs**

**5 SENSITIVITY** – DIP switch +4/-6 dB per channel.

In the lower switch position, the input sensitivity of the respective channel is switched from +4 dBu (pro level) to -6 dBu for home audio and PC applications.

**6 VCA-INPUTS** – (Voltage Controlled Amplifier) Inputs for external volume control via our WP-V and RP-V control panels, with the DV-Module (digital volume control) plus up/down contacts or with 0 – 10 V dimmer actuators (0 V = nom. Gain, 10 V = -80 dB) At 15 V the respective power amplifier channel is set to SLEEP.

**7 DC OUT 15 V**

Power supply for our volume controls WP-V and RP-V or the DV module (60 mA max.)

**8 AUTO ON/STEADY ON** – DIP switch

In the upper position the channel pair operates in AUTO-ON/ OFF mode and switch into an idle state (SLEEP) automatically if the input signal is absent for over 10 min. This reduces power consumption significantly. In the lower position the channel pair is active permanently (STEADY ON).

**9 GROUND LIFT-Switch**

In the GROUND position (down) audio ground is directly connected to the mains ground. If the signal source is also grounded this may cause humming noise. In this case the Input connector can be separated from mains ground (LIFT position)

**10 EXT. ON/OFF** – N/C (short circuit plug).

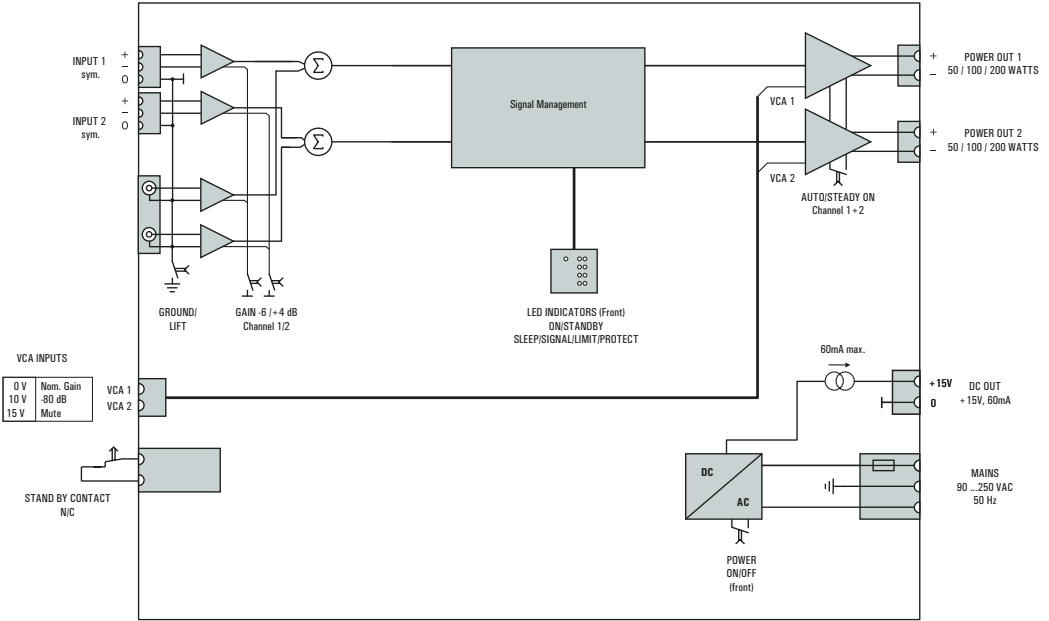
The EXT. ON/OFF-contact must be closed to activate the amplifier. It may either be closed by a shorting bridge (delivery condition) or by an external potential-free switch or contact.

With this contact one or multiple amplifiers in parallel can be switched on and off via media control or voice alarm systems.

**11 Volume control per channel**

# Block Diagram

## PA-S 250 / PA-S 2100 / PA-S 2200



## Technical Data

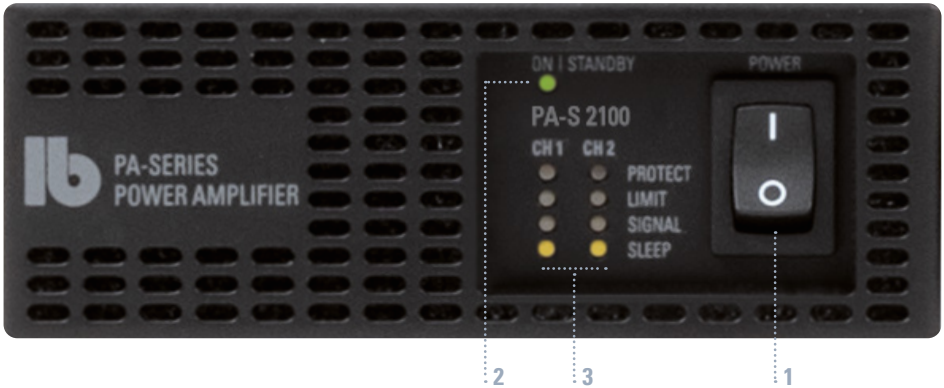
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### PA-S 250 / PA-S 2100 / PA-S 2200

Inputs.....	2 × Line In sym. + 2 × Line In Cinch
Nom. input level .....	+4/-6 dBu, switchable
Max. input level .....	+20 dBu
Input impedance .....	20 kOhms
Load impedance .....	≥ 2 Ohms
Outputs .....	2 × Speaker Out up to 2 × 2,5 mm <sup>2</sup> , (screwtype terminals, pluggable)
<b>Output power</b> .....	<b>PA-S 250 / PA-S 2100 / PA-S 2200</b>
2 Ohms .....	2 × 50 / 100 / 200 Watts
4 Ohms .....	2 × 50 / 100 / 200 Watts
8 Ohms .....	2 × 30 / 60 / 120 Watts
Frequency range .....	15 Hz – 22 kHz
Dynamic range .....	> 100 dB
Display .....	LEDs for ON/STANDBY; LEDs per channel for PROTECT, LIMIT, SIGNAL, SLEEP
Controls .....	Power switch at front. At back VOLUME control per channel, DIP switches for AUTO ON/STEADY ON, GROUND/LIFT and SENSITIVITY +4/-6 dBu
Additional connectors .....	VCA inputs 0 -10 V for each channel (also for DV modules), ON/OFF contact N/C
Cooling .....	PA-S 250: fanless, PA-S 2100 / PA-S 2200: Regulated fan, Airflow from front to back
Protective circuits .....	Peak limiter, current limiter and power limiter for each speaker output, short circuit and multilevel overtemperature protection
Power supply .....	90 up to 260 VAC
Main connector .....	IEC connector
<b>Power consumption</b> .....	<b>PA-S 250 / PA-S 2100 / PA-S 2200</b>
Standby .....	< 0,5 Watts
All channels SLEEP .....	2,7 / 3,3 / 3,7 Watts
All channels active .....	4,4 / 7,4 / 8,4 Watts
1/8 Nominal power .....	20 / 38 / 75 Watts
Max. average consumption .....	42 / 80 / 152 Watts
Peak power .....	125 / 240 / 480 Watts
Dimensions (W × H × D) .....	¼ 19", 1 U, 110 × 42 × 233 mm
Weight .....	1,3 kg
Warranty .....	5 years

## Front: Controls (Compact Amplifier with DSP)

PA-S 250 DSC / PA-S 2100 DSC / PA-S 2200 DSC



### 1 Power switch

The amplifier switches on with a delay of approx. 3 seconds.

### 2 LED STANDBY / ON

The LED lights up red in STANDBY and green when the amplifier is switched on.

### 3 LED displays

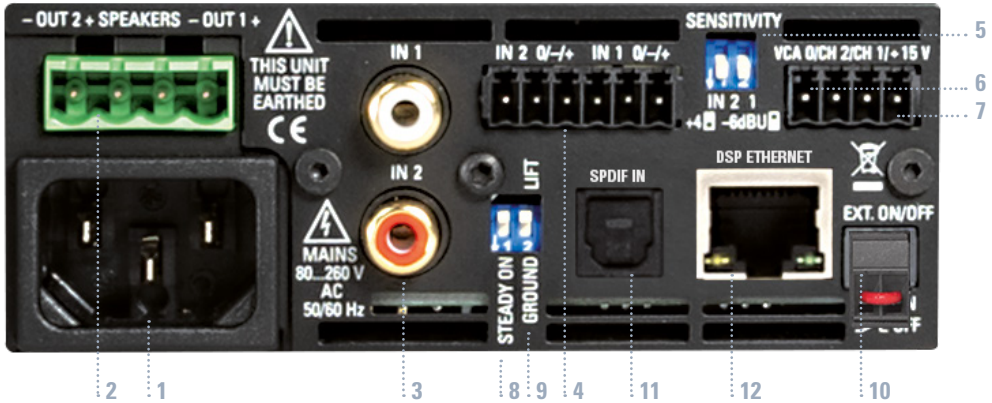
**SLEEP** – the corresponding power amplifier channel is in power-saving mode and is automatically reactivated when there is a signal.

**SIGNAL** – there is a signal at the output of the corresponding power amplifier channel.

**LIMIT** – the corresponding output stage channel limits. (Peak Voltage, Peak Current, Peak Power or Average Power).

**PROTECT** – the corresponding output stage channel switches off: short circuit at the output, overtemperature or defect.

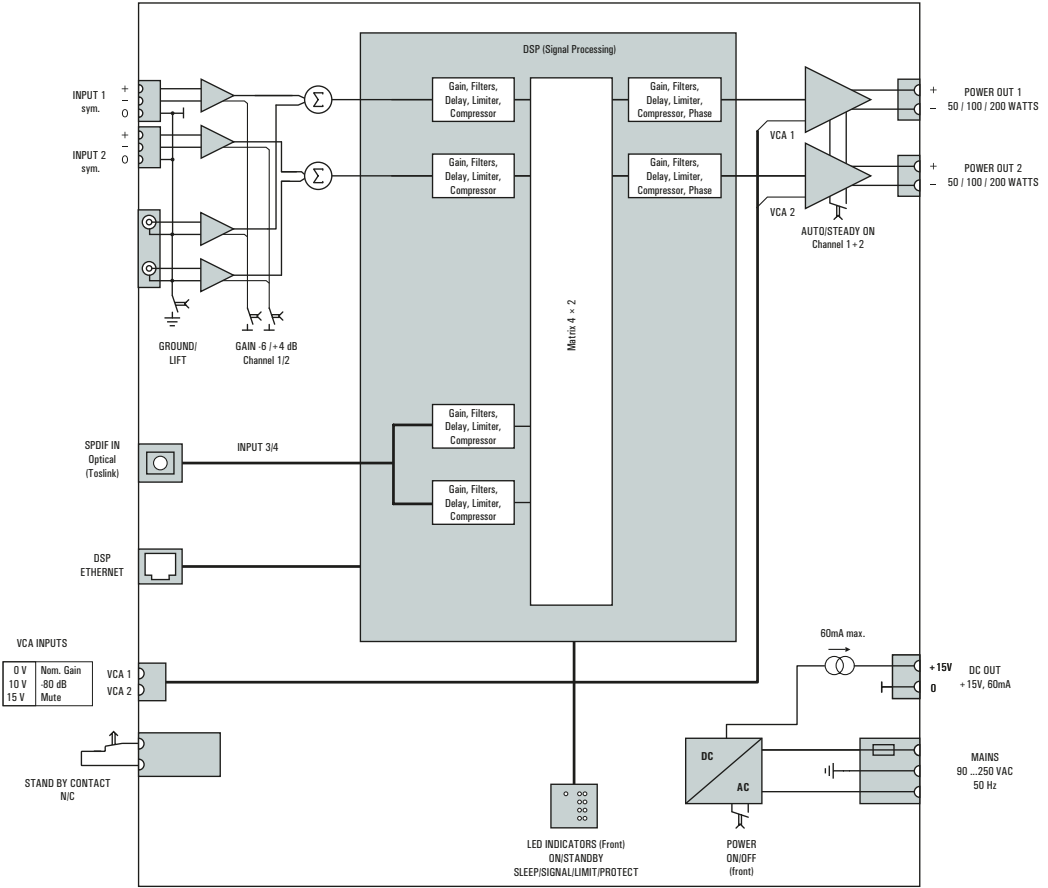
A flashing LED indicates that the power of the channel is reduced due to excessive operating temperature.



- 1 IEC Connector** (Power cord is included)
- 2 Speaker outputs**  
Fix the speaker cables to the screw-type terminals. The speaker impedance should not fall below 2 ohms
- 3 Cinch Inputs**
- 4 Symmetrical Inputs**
- 5 SENSITIVITY** – DIP switch +4/-6 dB per channel.  
In the lower switch position, the input sensitivity of the respective channel is switched from +4 dBU (pro level) to -6 dBU for home audio and PC applications.
- 6 VCA-INPUTS** – (Voltage Controlled Amplifier) Inputs for external volume control via our WP-V and RP-V control panels, with the DV-Module (digital volume control) plus up/down contacts or with 0 – 10 V dimmer actuators (0 V = nom. Gain, 10 V = -80 dB) At 15 V the respective power amplifier channel is set to SLEEP.
- 7 DC OUT 15 V**  
Power supply for our volume controls WP-V and RP-V or the DV module (60 mA max.)
- 8 AUTO ON/STEADY ON** – DIP switch  
In the upper position the channel pair operates in AUTO-ON/ OFF mode and switch into an idle state (SLEEP) automatically if the input signal is absent for over 10 min. This reduces power consumption significantly.  
In the lower position the channel pair is active permanently (STEADY ON).
- 9 GROUND LIFT-Switch**  
In the GROUND position (down) audio ground is directly connected to the mains ground. If the signal source is also grounded this may cause humming noise. In this case the Input connector can be separated from mains ground (LIFT position)
- 10 EXT. ON/OFF** – N/C (short circuit plug).  
The EXT. ON/OFF-contact must be closed to activate the amplifier. It may either be closed by a shorting bridge (delivery condition) or by an external potential-free switch or contact.  
With this contact one or multiple amplifiers in parallel can be switched on and off via media control or voice alarm systems.
- 11 SPDIF IN**  
Optical input (input channel 3/4)
- 12 ETHERNET**  
RJ 45 port for configuring and controlling the amplifier.

# Block Diagram

## PA-S 250 DSC / PA-S 2100 DSC / PA-S 2200 DSC



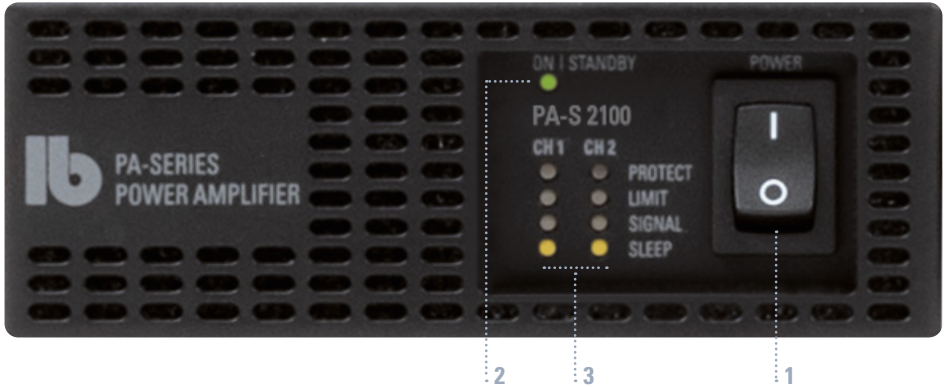


### PA-S 250 DSC / PA-S 2100 DSC / PA-S 2200 DSC

Inputs analog / digital .....	2 × Line In sym. + 2 × Line In Cinch, optical 2-channel SPDIF-input
Nom. input level .....	+ 4/-6 dBu, switchable
Max. input level .....	+ 10 dBu
Input impedance .....	20 kOhms
Load impedance .....	≥ 2 Ohms
Outputs .....	2 × Speaker Out up to 2 × 2,5 mm <sup>2</sup> , (screwtype terminals, pluggable)
<b>Output power</b> .....	<b>PA-S 250 DSC / PA-S 2100 DSC / PA-S 2200 DSC</b>
2 Ohms .....	2 × 50 / 100 / 200 Watts
4 Ohms .....	2 × 50 / 100 / 200 Watts
8 Ohms .....	2 × 30 / 60/ 120 Watts
Frequency range .....	15 Hz – 22 kHz
Dynamic range .....	> 100 dB
Display .....	LEDs for ON/STANDBY; LEDs per channel for PROTECT, LIMIT, SIGNAL, SLEEP
Controls .....	Power switch at front. At back DIP switches for AUTO ON/STEADY ON, GROUND LIFT and SENSITIVITY +4/-6 dBu per channel
DSP .....	24 Bit, 48 kHz
Latency .....	0,64 ms
Functions .....	4 × 2 mixer matrix, Lowpass, Highpass and 10 fully parametric filters per input/output: bell, high shelf, low shelf, high-pass, low-pass. Delay up to 400 ms, limiter and compressor per input/output, 40 presets
App .....	LB AUDIO CONTROL Download Website: <a href="http://www.lb-lautsprecher.de/Download-Software">www.lb-lautsprecher.de/Download-Software</a>
Remote control .....	Via network commands
Interface .....	Ethernet
Additional connectors .....	VCA inputs 0 -10 V for each channel (also for DV modules), ON/OFF contact N/C
Cooling .....	PA-S 250 DSC: fanless, PA-S 2100 DSC / PA-S 2200 DSC: Regulated fan, Airflow from front to back
Protective circuits .....	Peak limiter, current limiter and power limiter for each speaker output, short circuit and multilevel overtemperature protection
Power supply .....	90 up to 260 VAC
Main connector .....	IEC connector
<b>Power consumption</b> .....	<b>PA-S 250 DSC / PA-S 2100 DSC / PA-S 2200 DSC</b>
Standby .....	< 0,5 Watts
All channels SLEEP .....	5 / 5,6 / 7 Watts
All channels active .....	6,7 / 9,7 / 10,7 Watts
1/8 Nominal power .....	20 / 40 / 78 Watts
Max. average consumption .....	44 / 82/ 155 Watts
Peak power .....	127 / 242 / 482 Watts
Dimensions (W × H × D) .....	¼ 19", 1 U, 110 × 42 × 233 mm
Weight .....	1,3 kg
Warranty .....	5 years

## Front: Controls (Compact Amplifier with DSP and DANTE interface)

PA-S 250 DSC DANTE / PA-S 2100 DSC DANTE / PA-S 2200 DSC DANTE



### 1 Power switch

The amplifier switches on with a delay of approx. 3 seconds.

### 2 LED STANDBY / ON

The LED lights up red in STANDBY and green when the amplifier is switched on.

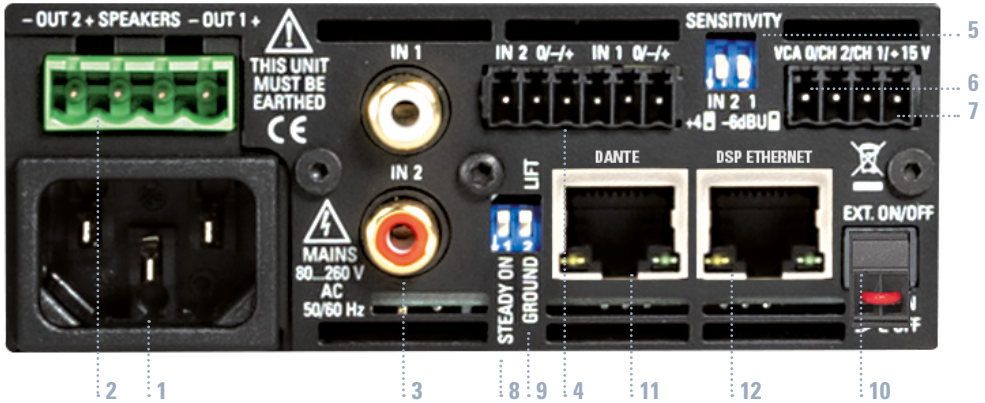
### 3 LED displays

**SLEEP** – the corresponding power amplifier channel is in power-saving mode and is automatically reactivated when there is a signal.

**SIGNAL** – there is a signal at the output of the corresponding power amplifier channel.

**LIMIT** – the corresponding output stage channel limits. (Peak Voltage, Peak Current, Peak Power or Average Power)

**PROTECT** – the corresponding output stage channel switches off: short circuit at the output, overtemperature or defect. A flashing LED indicates that the power of the channel is reduced due to excessive operating temperature.



**1 IEC Connector** (Power cord is included)

**2 Speaker outputs**

Fix the speaker cables to the screw-type terminals. The speaker impedance should not fall below 2 ohms.

**3 Cinch Inputs**

**4 Symmetrical Inputs**

**5 SENSITIVITY** – DIP switch +4/-6 dB per channel.

In the lower switch position, the input sensitivity of the respective channel is switched from +4 dBu (pro level) to -6 dBu for home audio and PC applications.

**6 VCA-INPUSH** – (Voltage Controlled Amplifier) Inputs for external volume control via our WP-V and RP-V control panels, with the DV-Module (digital volume control) plus up/down contacts or with 0 – 10 V dimmer actuators (0 V = nom. Gain, 10 V = -80 dB) At 15 V the respective power amplifier channel is set to SLEEP.

**7 DC OUT 15 V**

Power supply for our volume controls WP-V and RP-V or the DV module (60 mA max.)

**8 AUTO ON/STEADY ON** – DIP switch

In the upper position the channel pair operates in AU-TO-ON/ OFF mode and switch into an idle state (SLEEP) automatically if the input signal is absent for over 5 min. This reduces power consumption significantly. In the lower position the channel pair is active permanently (STEADY ON).

**9 GROUND LIFT-Switch**

In the GROUND position (down) audio ground is directly connected to the mains ground. If the signal source is also grounded this may cause humming noise. In this case the Input connector can be separated from mains ground (LIFT position)

**10 EXT. ON/OFF** – N/C (short circuit plug).

The EXT. ON/OFF-contact must be closed to activate the amplifier. It may either be closed by a shorting bridge (delivery condition) or by an external potential-free switch or contact. With this contact one or multiple amplifiers in parallel can be switched on and off via media control or voice alarm systems.

**11 DANTE IN**

DANTE-Interface for Audio over Ethernet (input channel 3/4).

With the routing software DANTE CONTROLLER

All devices with a DANTE interface that are integrated into the network can be routed.

Download on the Audinate website:

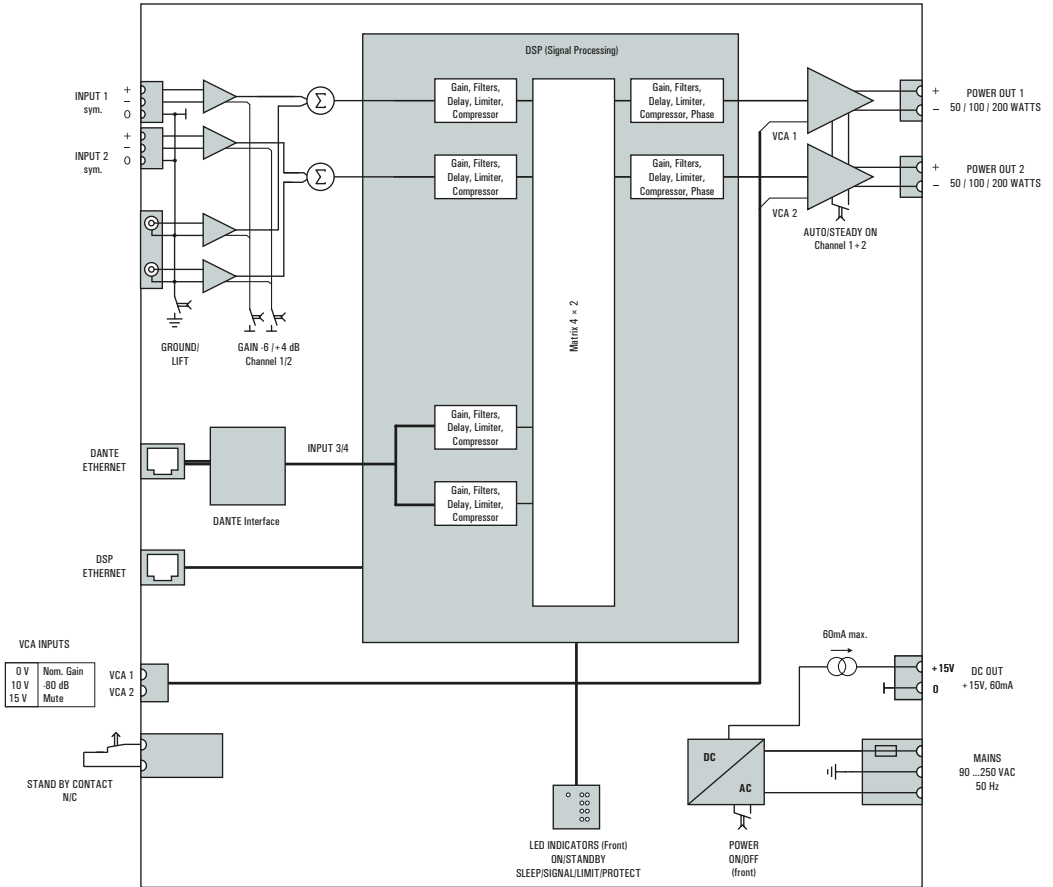
<https://www.audinate.com/support/dante-controller>

**12 ETHERNET**

RJ 45 port for configuring and controlling the amplifier.

# Block Diagram

## PA-S 250 DSC DANTE / PA-S 2100 DSC DANTE / PA-S 2200 DSC DANTE



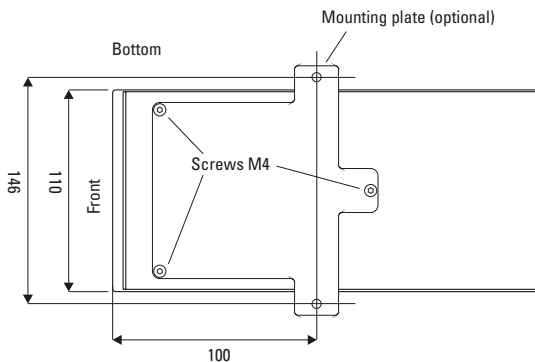
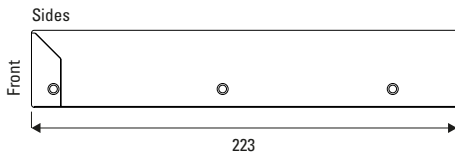
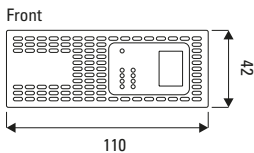
## Technical Data

### PA-S 250 DSC DANTE / PA-S 2100 DSC DANTE / PA-S 2200 DSC DANTE

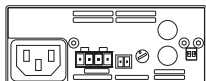
Inputs analog / digital .....	2 × Line In sym. + 2 × Line In Cinch, 2-channel DANTE-interface
Nom. input level .....	+4/-6 dBu, switchable
Max. input level .....	+10 dBu
Input impedance .....	20 kOhms
Load impedance .....	≥ 2 Ohms
Outputs .....	2 × Speaker Out up to 2 × 2,5 mm <sup>2</sup> , (screwtype terminals, pluggable)
<b>Output power</b> .....	<b>PA-S 250 DSC DANTE / PA-S 2100 DSC DANTE / PA-S 2200 DSC DANTE</b>
2 Ohms .....	2 × 50 / 100 / 200 Watts
4 Ohms .....	2 × 50 / 100 / 200 Watts
8 Ohms .....	2 × 30 / 60/ 120 Watts
Frequency range .....	15 Hz – 22 kHz
Dynamic range .....	> 100 dB
Display .....	LEDs for ON/STANDBY; LEDs per channel for PROTECT, LIMIT, SIGNAL, SLEEP
Controls .....	Power switch at front. At back DIP switches for AUTO ON/STEADY ON, GROUND LIFT and SENSITIVITY +4/-6 dBu per channel
DSP .....	24 Bit, 48 kHz
Latency .....	0,64 ms
Functions .....	4 × 2 mixer matrix, Lowpass, Highpass and 10 fully parametric filters per input/output: bell, high shelf, low shelf, high-pass, low-pass. Delay up to 400 ms, limiter and compressor per input/output, 40 presets
App .....	LB AUDIO CONTROL Download Website: <a href="http://www.lb-lautsprecher.de/Download-Software">www.lb-lautsprecher.de/Download-Software</a>
Remote control .....	Via network commands
Interface .....	2 x Ethernet
Additional connectors .....	VCA inputs 0 -10 V for each channel (also for DV modules), ON/OFF contact N/C
Cooling .....	PA-S 250 DSC DANTE: fanless, PA-S 2100 DSC DANTE/ PA-S 2200 DSC DANTE: Regulated fan, airflow from front to back
Protective circuits .....	Peak limiter, current limiter and power limiter for each speaker output, short circuit and multilevel overtemperature protection
Power supply .....	90 up to 260 VAC
Main connector .....	IEC connector
<b>Power consumption</b> .....	<b>PA-S 250 DSC DANTE / PA-S 2100 DSC DANTE / PA-S 2200 DSC DANTE</b>
Standby .....	< 0,5 Watts
All channels SLEEP .....	6 / 6,6 / 8 Watts
All channels active .....	7,7 / 10,7 / 11,7 Watts
1/8 Nominal power .....	21 / 41 / 79 Watts
Max. average consumption .....	45 / 83 / 156 Watts
Peak power .....	128 / 243 / 483 Watts
Dimensions (W × H × D) .....	¼ 19", 1 U, 110 × 42 × 233 mm
Weight .....	1,3 kg
Warranty .....	5 years

# Dimensions

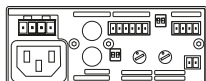
## all Models



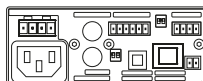
### Backsides



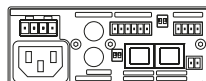
PA-S 230



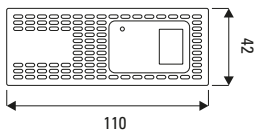
PA-S 250  
PA-S 2100  
PA-S 2200



PA-S 250 DSC  
PA-S 2100 DSC  
PA-S 2200 DSC



PA-S 250 DSC DANTE  
PA-S 2100 DSC DANTE  
PA-S 2200 DSC DANTE



Front PA-S 230

## Accessories

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**MP-PA-S**



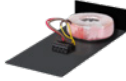
Mounting plate for PA-S Series

**PA-T 2050**



100 V transformer module, 2 x 50 Watts, toroidal core

**PA-T 100**



100 V transformer module, 100 Watts, toroidal core

**PA-T 200**



100 V transformer module, 200 Watts, toroidal core

**PA-T 1U**



Rack cradle 19", 1 U for 4 x PA-S 230 - 2200,  
4 x PA-T 2050, 4 x PA-T 100, 2 x PA-T 200

**WP-V**



Wall Panel (Volume control and ON/MUTE) and LED

**RP-V**



Rack Panel (Volume control and ON/MUTE) and LED

**DV-Module**



Digital volume control (UP/DOWN contacts)

**RP-1U**



19" Rack mount, 1U, for 6 x RP panels

# LB AUDIO CONTROL

Browser-based app for controlling and programming LB devices with digital signal processors (DSPs), (PA-DSC Series power amplifiers, PA-S DSC Series mini power amplifiers, DL-A DSC active display speakers, ZL-A DSC active line arrays)

## Installation

You can find the LB AUDIO CONTROL app on our website: <https://www.lb-lautsprecher.de/en/download-software>



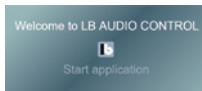
Software for our products from September 2022

LB AUDIO CONTROL for Windows 64 Bit + Mac OS

Follow the steps during setup. If Windows wants to prevent the installation, click "install anyway"

## Open the LB AUDIO CONTROL App

After opening the app, the start window is displayed in the browser. The application starts with a click on the welcome screen. In order for the app to start, pop-ups must be allowed for this application.



## OVERVIEW Window

When opening the LB AUDIO CONTROL app, the OVERVIEW window opens first. All LB devices present in the network are displayed here. In addition, virtual demo devices can also be inserted via the menu. Changes to the device name or the IP configuration must be confirmed using the save button.

Device Name	Model	IP Address	Auto	MAC Address						
LB	C 808	192.168.0.124	<input checked="" type="checkbox"/>	44 6f d8 43 0 0						
PA 4100 DSC	PA 4100 DSC	192.168.0.103	<input checked="" type="checkbox"/>	44 6f d8 41 1 17						
PA-S Series	PA-S 250 DSC	192.168.0.119	<input checked="" type="checkbox"/>	44 6f d8 42 0 0						

Assign device names    Device type    If necessary, fixed IP addresses can be assigned    Open device    Remove device    Discard changes    Save settings    Firmware Update

## Menu in the OVERVIEW Window

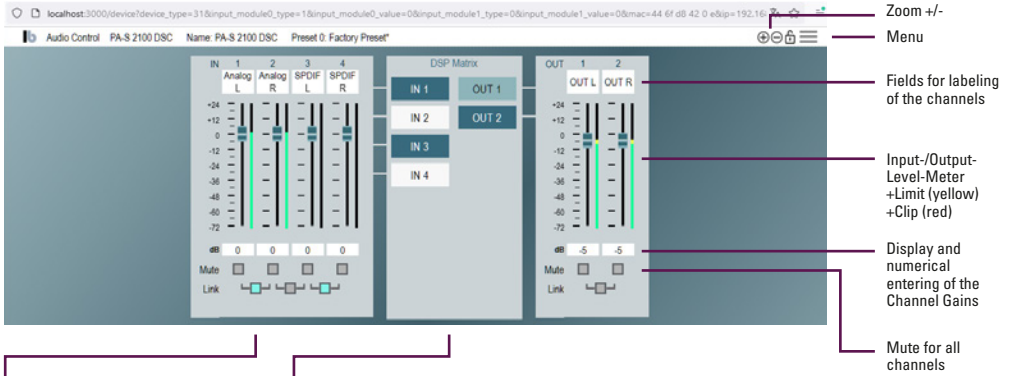
**Connect to IP Address**  
To address a device in a different subnet, you can enter the IP address directly.

Insert new demo device



# DEVICE Window

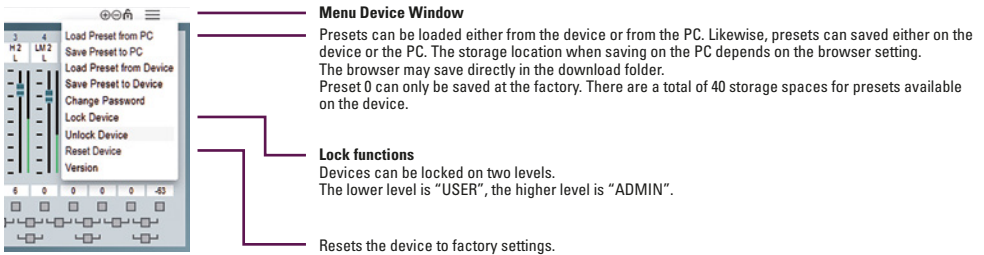
The open device with all inputs and outputs is displayed in the DEVICE window. The input and output settings can be made here.



**Link** For linked channels the Settings for the left channel are transferred to the right one. The right channel is displayed white in the DSP matrix and cannot be edited separately.

**DSP Matrix** In the DSP matrix, the input and output channels can be opened and changed with a click. With Alt + click the respective channel will be opened in a new window. Open windows are displayed brightly.

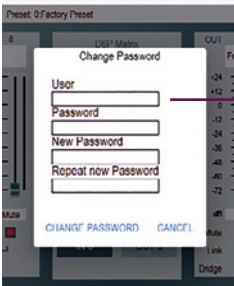
**Copy/Paste** With the right mouse button the channel settings can be copied and pasted into another channel.



## LOCK Functions

### Change Password

14 6f d8 41 0 34&ip=192.168.0.121&unit\_name=...



Devices can be locked on two user levels. The lower user level is called "USER", the higher level "ADMIN".

Factory-fitted passwords are set as following: USER for "USER" level and ADMIN for the "ADMIN" level. Via Change Password you can assign own project-related passwords.

### Lock Device

6f d8 41 0 34&ip=192.168.0.121&unit\_name=...



When locking a device (Lock), next to operating via the app, the network commands for the settings of the device are blocked as well.

With "Allow Net Commands" network commands remain still permitted.

# CHANNEL Windows

The settings of the individual channels can be made in the CHANNEL windows.

## Input Window



Delay up to 400 ms per channel

Limiter per channel

Compressor per channel

Input Gain + Level Meter

## Output Window



Output Gain + Level Meter

Invert: rotates the phase of the channel by 180°

Parametric filters: for each channel 10 filter types are available:

Input mixer: for each output the inputs can be mixed as desired

High Pass / Low Pass: for each channel various filter types are available:

- 6dB
- Butterworth 12dB
- Butterworth 24dB
- Bessel 12dB
- Bessel 24dB
- Linkwitz-Riley 12dB
- Linkwitz-Riley 24dB

- Low Pass
- High Pass
- Low Pass 6dB
- High Pass 6dB
- Low Shelf
- High Shelf
- Bell
- Notch

# LB AUDIO CONTROL Network commands

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## SETTINGS

FUNCTION	URL	EXAMPLE URLS
MUTE	<DSC IP>/cmds/mute/<CH>/<i/o>	Mute output 2: <a href="http://192.168.0.100/cmds/mute/2/o">http://192.168.0.100/cmds/mute/2/o</a>
UNMUTE	<DSC IP>/cmds/unmute/<CH>/<i/o>	Unmute input 3: <a href="http://192.168.0.100/cmds/unmute/3/i">http://192.168.0.100/cmds/unmute/3/i</a>
GAIN	<DSC IP>/cmds/gain/<CH>/<i/o>/<value>	Gain input 1 auf -4,8 dB: <a href="http://192.168.0.100/cmds/gain/1/i/-4.8">http://192.168.0.100/cmds/gain/1/i/-4.8</a>
MIXER	<DSC IP>/cmds/mixer/<CH OUT>/o/<CH IN>/<value>	Input mixer output 1, input 3 + 4 to -30 dB: <a href="http://192.168.0.100/cmds/mixer/1/o/3/-30">http://192.168.0.100/cmds/mixer/1/o/3/-30</a> <a href="http://192.168.0.100/cmds/mixer/1/o/4/-30">http://192.168.0.100/cmds/mixer/1/o/4/-30</a>
PRESET	<DSC IP>/cmds/preset/<num>	Select preset 10: <a href="http://192.168.0.100/cmds/preset/10">http://192.168.0.100/cmds/preset/10</a>
POWER	<DSC IP>/cmds/power/<on/off>	Switch device on/off <a href="http://192.168.0.100/cmds/power/on">http://192.168.0.100/cmds/power/on</a> <a href="http://192.168.0.100/cmds/power/off">http://192.168.0.100/cmds/power/off</a>

## READ OUT JSON FORMAT

STATUS	<DSC IP>/status	Overall status (power, preset, gain, mute, mixer) <a href="http://192.168.0.100/status">http://192.168.0.100/status</a>
--------	-----------------	--

```
{ „power“: „sleep“, „preset“: 1, „channels“: [
{ „channel“: 1, „type“: „i“, „gain“: -12.0, „muted“: true},
{ „channel“: 2, „type“: „i“, „gain“: -12.0, „muted“: true},
{ „channel“: 3, „type“: „i“, „gain“: -12.0, „muted“: false},
{ „channel“: 4, „type“: „i“, „gain“: -12.0, „muted“: false},
{ „channel“: 1, „type“: „o“, „gain“: -3.0, „muted“: false, „mixer“: [0.0, -36.0, 0.0, -36.0]},
{ „channel“: 2, „type“: „o“, „gain“: -3.0, „muted“: false, „mixer“: [-36.0, 0.0, -36.0, 0.0]}
```

STATUS CH	<DSC IP>/status/<CH>/<i/o>	Channel status (gain, mute, output mixer) <a href="http://192.168.0.100/status/1/o">http://192.168.0.100/status/1/o</a>
-----------	----------------------------	--

```
{ „channel“: 1, „type“: „o“, „gain“: -3.0, „muted“: false, „mixer“: [0.0, -36.0, 0.0, -36.0]}
```

LEVELS	<DSC IP>/levels	Read out all levels and gain reductions (limit) <a href="http://192.168.0.100/levels">http://192.168.0.100/levels</a>
--------	-----------------	--

```
{ „channels“: [
{ „channel“: 1, „type“: „i“, „level“: 4.0, „limit“: -3.2 },
{ „channel“: 2, „type“: „i“, „level“: 4.0, „limit“: -1.6 },
{ „channel“: 3, „type“: „i“, „level“: -72.0, „limit“: -0.0 },
{ „channel“: 4, „type“: „i“, „level“: -72.0, „limit“: -0.0 },
{ „channel“: 1, „type“: „o“, „level“: -7.0, „limit“: -0.0 },
{ „channel“: 2, „type“: „o“, „level“: -7.0, „limit“: -0.0 }]
```

LEVELS CH	<DSC IP>/levels/<CH>/<i/o>	Channel read out level and gain reduction (limit) <a href="http://192.168.0.100/levels/2/i">http://192.168.0.100/levels/2/i</a>
-----------	----------------------------	--

```
{ „channel“: 2, „type“: „i“, „level“: 4.0, „limit“: -1.6 }
```



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Photo: Nationalmuseum Munich / Multi-zone sound  
system for gastronomy and events

2/2024. Changes and errors excepted.  
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