



Voice-Acoustic Control

Speaker Management System

Operating Manual

Introduction

Safety Instructions	4
Definition Voice-Acoustic Control	5
Design	6
Warranty	6

Part 1 - First steps

1.1 Connection to the loudspeakers	7
1.2 Operation	9

Part 2 - Edition functions in the system menu

2.1 Browsing through the system menu	10
2.2 Menu tree	10
2.3 Preset Load	11
2.4 Preset Save	12
2.5 Access Level (Password protection)	13
2.6 Information	15
2.7 Routing	16

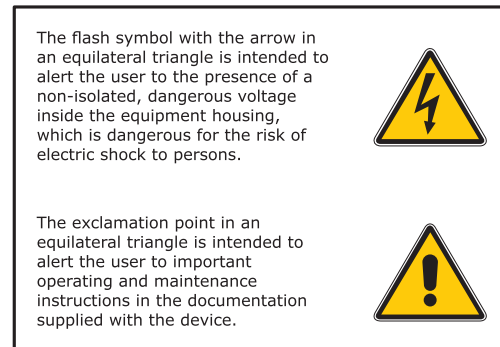
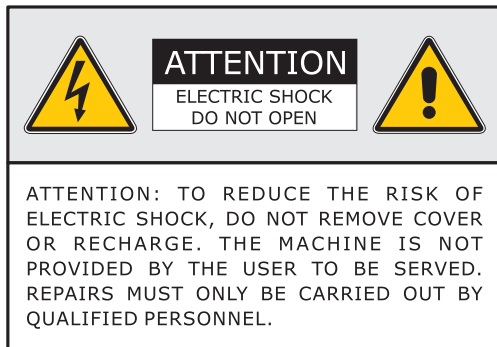
Part 3 - Edition functions of the channels

3.1 Browsing through the channel menu	17
3.2 Menu tree	17
3.3 Link (linking of channels)	18
3.4 Gain (Input level and output level)	19
3.5 Delay	19
3.6 LowPass	20
3.7 HighPass	22
3.8 PEQ (Parameter filter)	24
3.9 Compr.: (Input compressor)	26
3.10 Limiter (Output limiter)	28

Annex

Imprint	29
---------------	----

Safety Instructions



01. Read these instructions
02. Observe all warning instructions.
03. Follow all operating instructions.
04. To prevent fire hazard or risk of electric shock, do not use this device in the rain or in moist environments. Do not operate the unit nearby the water.
05. Clean the unit only with a dry cloth.
06. Observe the instructions from the manufacturer for the mounting of the unit.
07. Do not mount the unit in the proximity of heat sources, such as heating units, herds or other heat radiation devices.
08. Install the power cable at places where it cannot be damaged, especially at the sites of the socket, extension cables and where it leaves the unit.
09. Never remove the safety device from the two terminal or grounding-type plug. A two-pin plug has two different plug contact widths. An earth plug has two plug contacts and a third contact for earthing. The wider plug contact or additional earth contact is for your safety. If the supplied plug size does not fit in your socket box, please consult an electrician for exchanging the socket box.
10. Only use additional devices/accessory parts, that meet the manufacturer's instructions.
11. Pull the power plug out in case of storm or when you do not use your device for a longer period.
12. All maintenance works must be performed by qualified service staff. Maintenance is required when the unit has been damaged, objects or fluids have leaked or fallen inside, when the unit was exposed to rain or humidity, or in case of malfunctioning or when it has fallen on the floor.

Definition Voice-Acoustic Control

Today, modern acoustic systems are operated and controlled by so-called digital acoustic management systems. The main tasks, namely crossover, equalizer, delay and limiter are united in one device. Next to the actual crossover, the frequency-response correction (the soundman calls it equalize) as well as the timely adaptation of all components play an important role. Due to the great number of settings the speaker can be adapted to the room or to your own hearing requirements. Also, the protection of the speaker against mechanic and thermal overload is taken into account through the use of limiters.

VA-Control is a digital acoustic management system with matrix DSP-system controller. The High Performance 24 bit analog converter and a 64 bit Floating-Point-DSP-Processor with 96 kHz Sampling Rate guarantee the highest audio performance.

Precise frequency control is achieved by the 1 Hz solution. VA-Control with multiple parameters such as input and output level, delay, polarity, 10-band equalizer for each input and output, various crossovers and limiter, is a professional work unit for each sound engineer. Inputs and outputs can be freely defined in different configurations.

VA-Control is implemented in real-time via the console at the rear of the self-powered speaker. It can also be operated and programmed via the PC Software. For the latest firmware according to state-of-the-art technology, the VA-Control is upgraded via a Software Upgrade for CPU and DSP through the PC. Preset storage and system safety is achieved by the 2-level password protection.

Design

- Button and encoder wheel
- Background-lit double-spaced 16-Segment LCD Display
- 64 bit Floating Point DSP
- 96 kHz Sampling Rate
- High Performance 24 bit Analog converter
- 1 Hz Frequency solution
- 20 parameter EQ-filter per path
- Storage of up to 80 Presets per DSP
- USB, Ethernet in all self-powered loudspeakers
- Optional Industrial-W-LAN spark module 2.4 and 5GHz

Warranty

Voice-Acoustic provides a 2 year warranty for material and work remuneration and it is product-related, which means that when you transfer your device, your warranty will still be valid.

The warranty starts at the date of purchase upon proof from an official dealer.

No claims are accepted for new imports which have not purchased via the official commercial channels and authorized dealers. The product warranty is void if the series number is removed or unreadable.

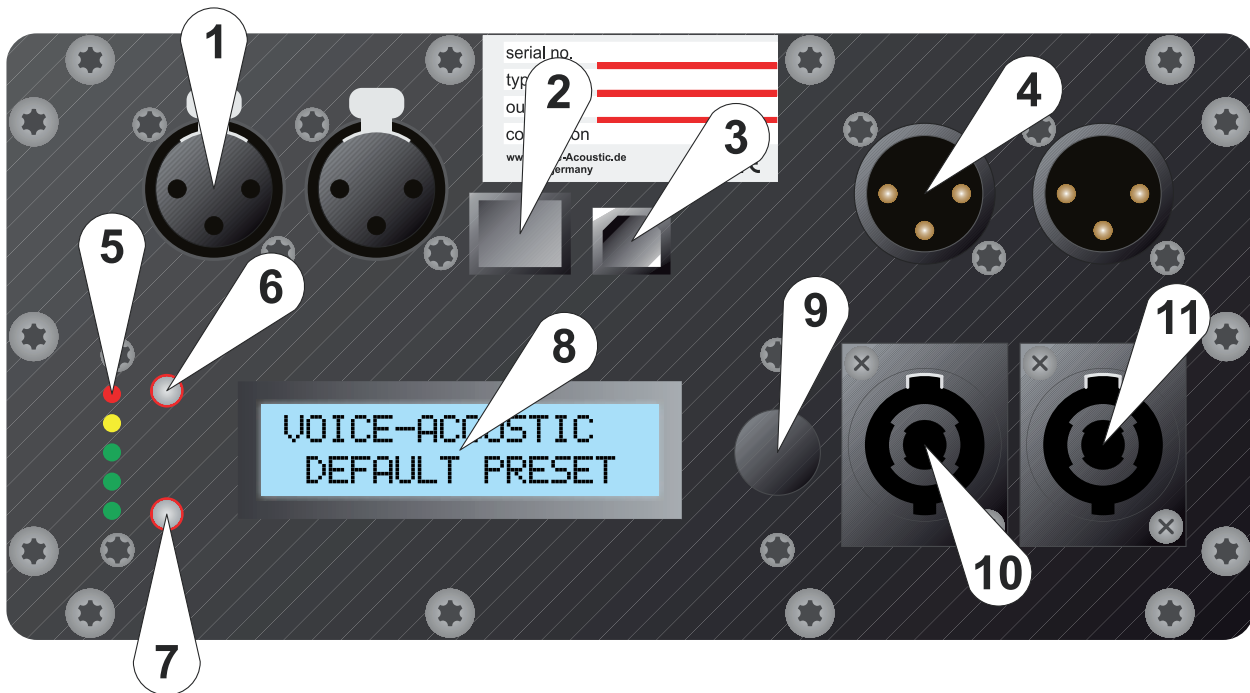
Voice-Acoustic will not be liable for any damages due to transport, improper treatment, operation with inadequate voltages, humidity, maintenance not according to the prescribed intervals, excessive dust or contamination, powder of fire extinguisher, operation with defective power aggregates, operation with defective peripherals, modification or modifications without the prior authorization by the manufacturer, service by a non-authorized worksite or normal wear.

The warranty is only applicable to the material and worktime for the repair of the defective product.

Devices in compliance with the terms of the warranty will be repaired or replaced by Voice Acoustic, as we deem fit. For service, please contact your dealer. Repairs under warranty claims are performed at D-27313 Dörverden, or upon appointment with an authorized local service partner. Any transport costs are borne by the owner for which Voice-Acoustic is not liable.

No warranty or liability will be accepted for damaged downstream or upstream devices due to faulty handling.

1.1 Connection to the loudspeakers



01. Analog input

2 x separate 3-Pin connector for Audio-input. Each input is a symmetric XLR-connector

02. Ethernet connection

RJ45 jack for network connection The unit can be connected to the PC via a router with a 1:1 CAT.5 cable.

03. Standard USB Jack Type B

The unit can be connected to the PC via a traditional USB-cable.

04. Analog output

2 x separate 3-Pin connector for Audio-output. Each output is a symmetric XLR-connector

05. Peak Level LEDs

Displays the current PEAK level in 5 levels: -18 dB, -12 dB, -6 dB (green), -3 dB (yellow), Limit (red).

06. Button top

To enter the system menu and browse between the configuration functions.

07. Button bottom

To leave the system menu or the configuration functions.

08. LCD Display

Background lit double-space 16-Segment LCD Display, for all important edition parameters.

09. Encoder wheel

The encoder wheel is used for changing the parameter values. By pressing you can select several parameter values and set these with a dial function.

10. & 11. Speaker outputs

The 4-pin speak-on jacks have dual functions. For the self-powered loudspeakers and both output jacks **10** and **11** the bass channel is assigned to configuration 2+/2- (Amplifier channel 1, Input Routing XLR 1 and 2 = Monosum).

For the left speak-on jack **10** the amplifier channel 2 is connected to configuration 1+/1- (Input Routing XLR 1 left). For the right speak-on jack **11** the amplifier channel 3 is connected to configuration 1+/1- (Input Routing XLR 2 right).

With a 4-pin cable the bass channel can be positioned on 2+/2- and the top channel on 1+/1-. The non-activated Voice-Acoustic Bases are always connected to 2+/2- and the passive tops to 1+/1-, so only a daisy-chain is required for the 4-pin cable, which has always the correct connection, receiving each loudspeaker the corresponding amplifier channel.

The 2.400 W channel (CH1) of the output stage module of the Paveosub-218sp is no longer routed out via the SpeakON® sockets of the 218sp, since the two 18" chassis are internally connected in parallel to 4 Ω and CH1 is already busy (input routing XLR 1 left).

Amplifier channel 2 is connected to 1+/1- on the left SpeakON® socket (input routing XLR 2 on the right). The amplifier channel 3 (Input Routing XLR 2 right) is connected to the right SpeakON® socket on 1+/1- and channel 2 to 2+/2-. Thus, both 800 W channels are available on the right SpeakON® sockets to connect bi-amping speakers in Half Power Mode with a 4-pin cable.

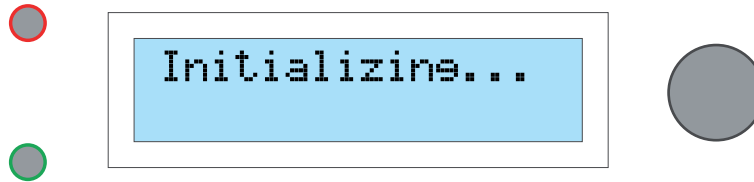
The audio signal for the subwoofer is connected to the left XLR IN1. The audio signal for tops powered by the subwoofer is connected to the right XLR IN2. If both 800 W channels are to receive the same audio signal as the 2.400 W channel from the subwoofer to XLR IN1, the routing in the DSP must be changed internally, or an XLR patch cable must be plugged from XLR OUT1 to XLR IN2.

For self-powered tops also the bi-amping amplifier signal is implemented for the speak-on jack, in order to feed a non-active top bi-amping from the self-powered top. This also requires a 4-pin speak-on cable. Configuration 2+/2- bass-midrange speaker, 1+/1- tweeter.

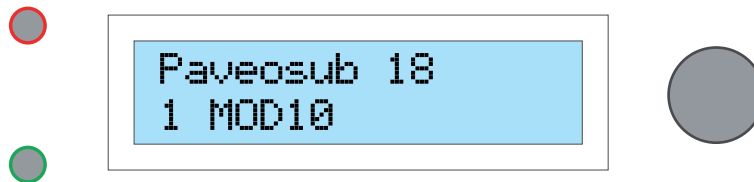
The position of the speaker output varies with the models!

1.2 Operation

When all audio connections are made, connect the device to the power supply. The initialization process takes some minutes. This time is required for starting up the unit.

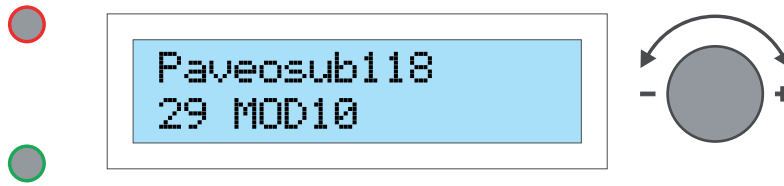


During the initialization process all inputs and outputs are muted automatically, in order to avoid undesired cracking sounds. When the controller has started up, it releases the programmed channels again, and the name of the model and the most recent preset are viewed on the LCD-display.



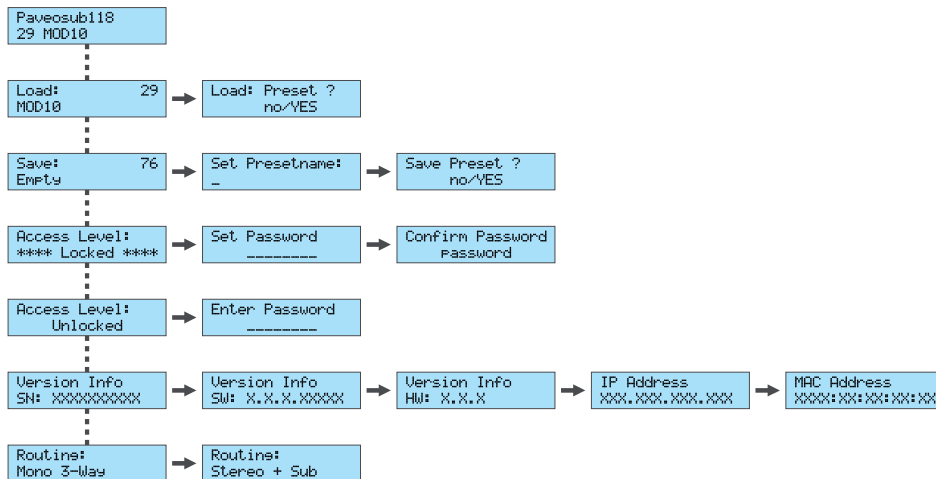
Now, VA-Control is ready for operation.

2.1 Browsing through the system menu



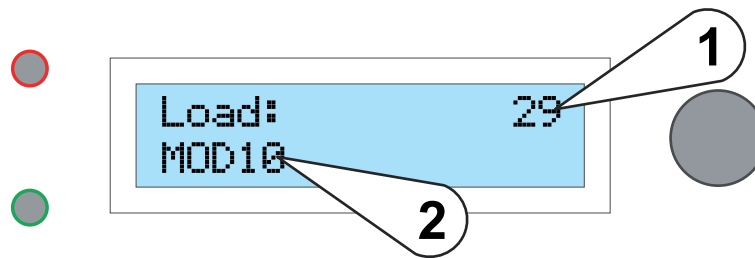
- When pressing the top **BUTTON** next to the LCD-display, the system menu is viewed.
- If you press again the top **BUTTON**, you are guided thought the configuration functions.
- Press the **Encoder wheel** for the desired configuration function.
- To browse through the modules of the selected function, turn the **Encoder wheel**.
- Press the **Encoder wheel** for the selection of the module.
- You can set the value in the module, by turning the **Encoder wheel**.
- To make modifications, press the **Encoder wheel**.
- Press the bottom **BUTTON** to leave the menu.

2.2 Menu tree



2.3 Preset Load

With the **Load** function in the system menu the stored presets are displayed.



01. Preset-ID

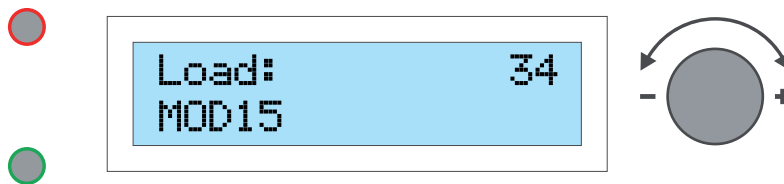
You can select out of 80 internal presets!

02. Preset designation

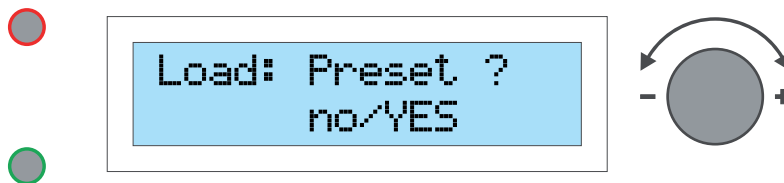
You can designate a maximum of 16 characters!

View preset

- Turn the **Encoder wheel** for viewing the desired preset.



- Press the **Encoder wheel** to select the preset.
- Turn the **Encoder wheel**, and select **YES**.



- Press again and confirm the **Encoder wheel**.

The preset has been loaded now and is ready for operation!

2.4 Preset Save

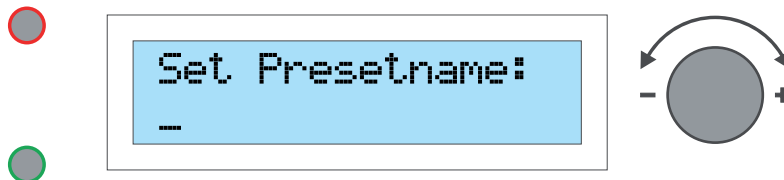
With the **Save** function in the system menu you can save your settings.

Save Preset

- Turn the **Encoder wheel** to select a storage site for your preset.



- Press the **Encoder wheel** to select the storage site.
- Turn the **Encoder wheel** to select a character.

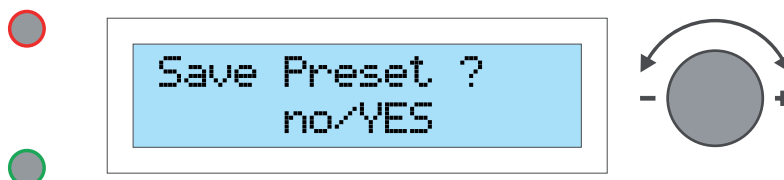


- Press the **Encoder wheel** to confirm a character.

Modify characters!

- Press the bottom **button** repeatedly, until you have reached the character for modification!
- Turn the **Encoder wheel** to select a new character.

-
- Press the top **BUTTON** to confirm the designation.
 - Turn the **Encoder wheel** to select **YES**.



- Confirm by pressing again the **Encoder wheel**.

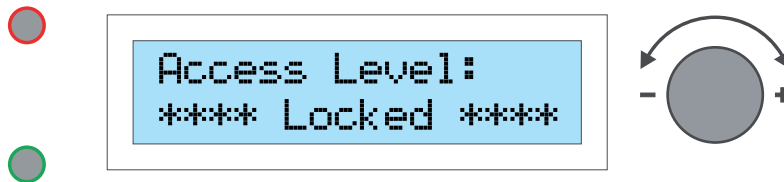
The preset has been saved now and is ready for operation!

2.5 Access Level (Password protection)

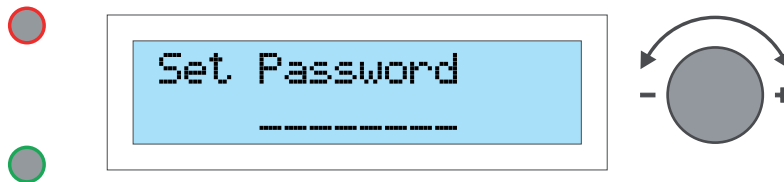
The **Access Level** in the system menu locks or unlocks your device through a password.

Locking the device

- Browse with the **Encoder wheel** to the module **Locked**.

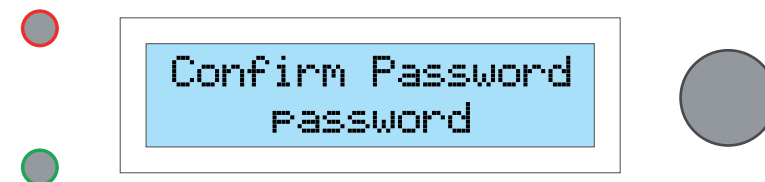


- Press the **Encoder wheel** to select the module.
- Press the **Encoder wheel** to select a character*.



* The password must contain at least 8 characters!

- Press the **Encoder wheel** to confirm a character.
- Press the **top BUTTON** to confirm the password.

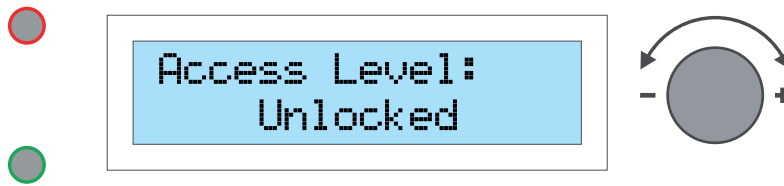


- Save the password with the **top BUTTON**.

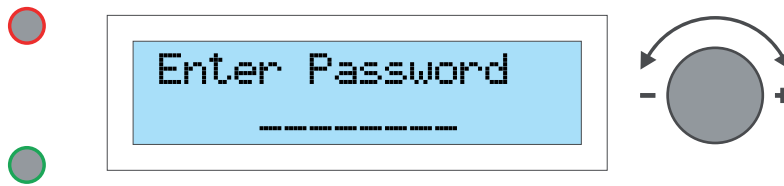
Now, the device is protected with a password against improper use!

Unlocking the device

- Browse with the Encoder wheel to the module Unlocked.



- Press the Encoder wheel to select the module.
- Turn the Encoder wheel for selecting a character.



- Press the Encoder wheel to confirm a character.
- Press the top BUTTON to confirm the password.

Now, the device is unlocked and you can make your settings!

2.6 Information

Here only information is displayed and no modifications can be made.

- For viewing the information, press the Encoder wheel.

VA-Control Series number	Version Info SN: XXXXXXXXXXXX
Firmware Version	Version Info SW: X.X.X.XXXXXX
Hardware Version	Version Info HW: X.X.X
IP Address	IP Address XXX.XXX.XXX.XXX
MAC Address	MAC Address XXXX:XX:XX:XX:XX

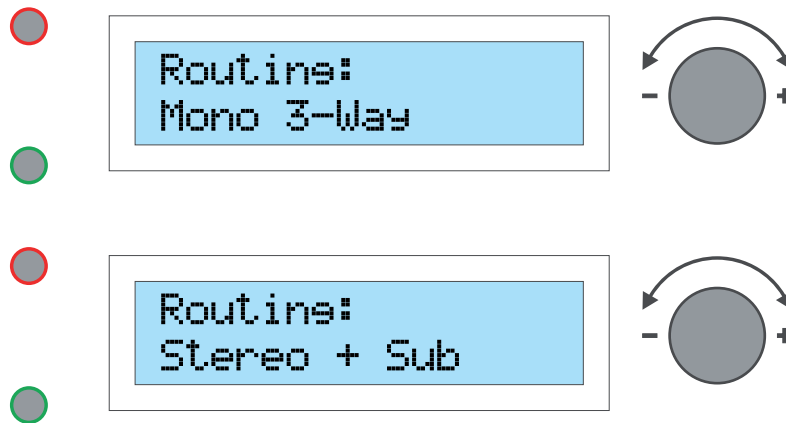
- Press the bottom **BUTTON** to leave the menu.

2.7 Routing

With the function **Routing** in the system menu you configure the signal source, if you wish to make your own presettings to operate other speakers/configurations.

For the implementation of a Voice-Acoustic Set and the display of a preset speaker, the router has already been determined and can not be altered, in order to avoid the occurrence of faults.

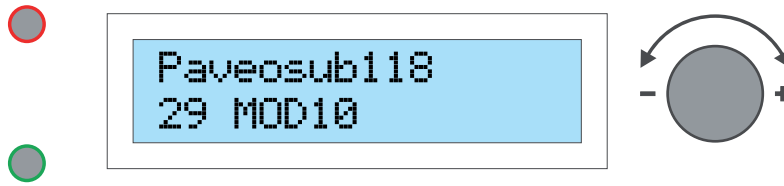
- Turn the **Encoder wheel** to select between **Mono 3-Way** or **Stereo + Sub**.



- Press the top **BUTTON** to confirm the selection.

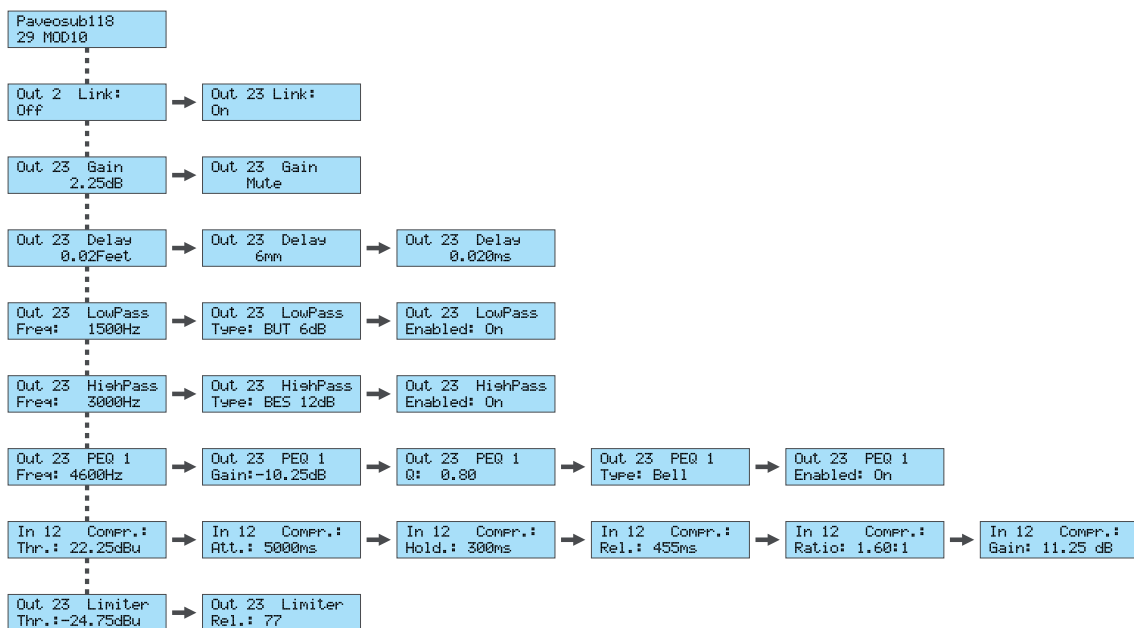
Now, the device is routed and you can make your settings!

3.1 Browsing through the channel menu



- To edit the selected presetting, press the **Encoder wheel**.
- Turn the **Encoder wheel** to search the channel for editing.
- Press twice the **Encoder wheel**, to select the channel.
- Turn the **Encoder wheel** to search a channel function.
- Press the **Encoder wheel** to view the channel function.
- Turn the **Encoder wheel** to search a channel module in the function menu.
- To make modifications, press the **bottom BUTTON**.
- Turn the **Encoder wheel** to select another function.
- Press twice the **bottom BUTTON** to leave the menu.

3.2 Menu tree

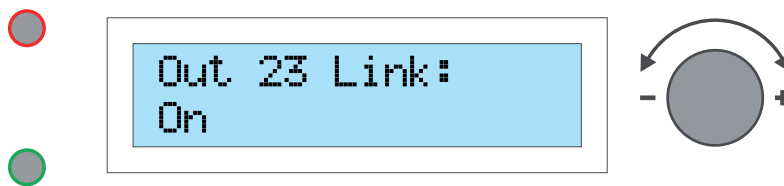


3.3 Link (linking of channels)

You can link input resp. output channels.

Linking of channels

- Press twice the **Encoder wheel**.
- Turn the **Encoder wheel** to search the channel for linking.
- Press the **Encoder wheel** and select the channel.
- Turn the **Encoder wheel**, and select **ON**.



- Press the bottom **BUTTON** to implement the change.

Each modification of the parameters is transferred automatically to the linked channel!

Cancel linking

- Press twice the **Encoder wheel**.
- Turn the **Encoder wheel** to search the channel canceling the linking.
- Press the **Encoder wheel** and select the channel.
- Turn the **Encoder wheel**, and select **OFF**.



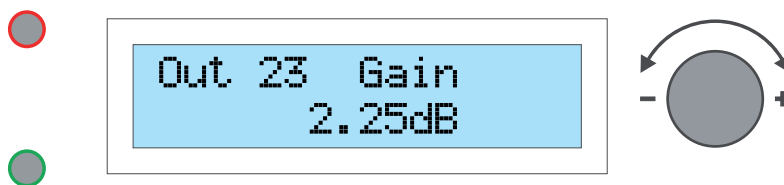
- Press the bottom **BUTTON** to implement the change.

Now, each channel can be configured individually!

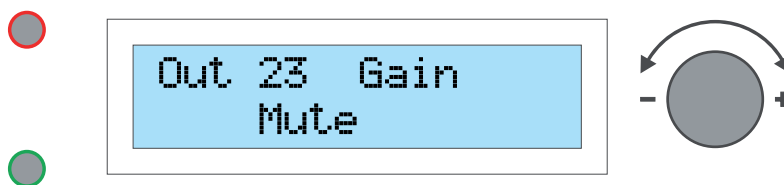
3.4 Gain (Input level and output level)

Here you can set the signal level (Gain) for the input and output channels.

- Turn the **Encoder wheel** for setting the desired level.
- Select within a range from **-47.75 dB** to **12.00 dB**.



- If you wish, you can switch the channel off by turning the **Encoder wheel** to **Mute**.

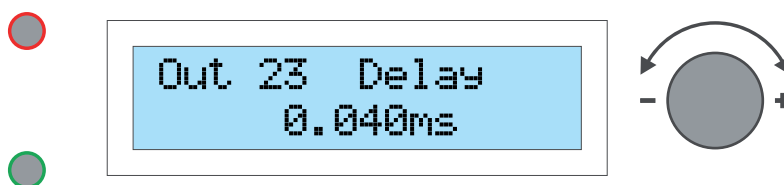


- Press the bottom **BUTTON** to implement the change.

3.5 Delay

Here you can define the delay for the input and output channels.

- Press the **Encoder wheel** to select from **Feet**, **mm** or **ms**.
- Turn the **Encoder wheel** for setting the delay.



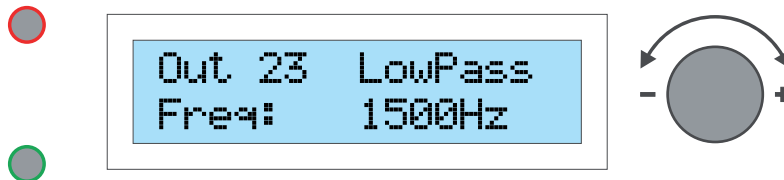
- Press the bottom **BUTTON** to implement the change.

3.6 LowPass

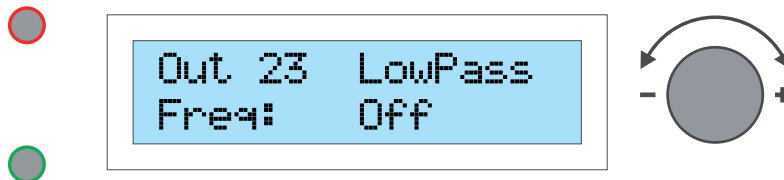
Here you set the Low Pass crossover. This function is subdivided into three modules.

Setting of LowPass

- Turn the **Encoder wheel** for setting the desired LowPass.
- Select within a range from **50 to 20,000 Hz**.



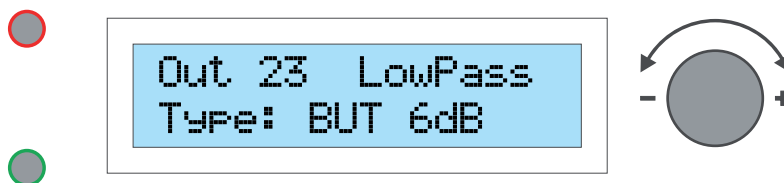
- If you wish, you can switch the LowPass off by turning the **Encoder wheel** to **Off**.



- Press the **Encoder wheel** to view the next module.

Set Filter Type

- Turn the **Encoder wheel** to search a filter.



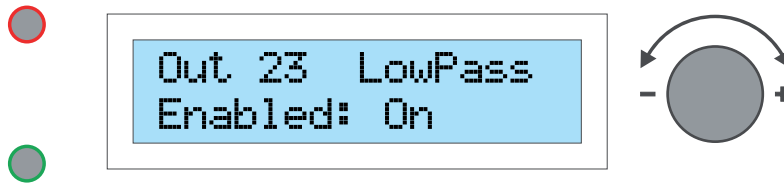
Here you can select from 10 different filters:

- BUT 6dB, 12dB, 18dB, 24dB = Butterworth 6dB, 12dB, 18dB, 24dB
- BES 6dB, 12dB, 18dB, 24dB = Bessel 6dB, 12dB, 18dB, 24dB
- LR 12dB, 24dB = Linkwitz-Riley 12dB, 24dB

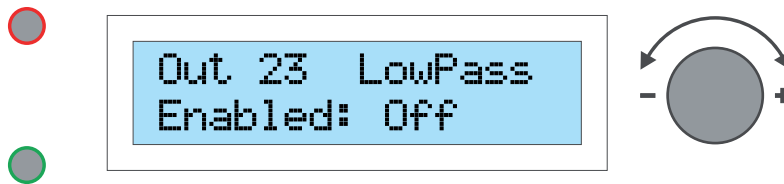
- Press the **Encoder wheel** to view the next module.

Switching on and off crossover

- Turn the **Encoder wheel** to **On** for switching on the crossover.



- Turn the **Encoder wheel** to **Off** for switching off the crossover.



- Press the bottom **BUTTON** to implement all changes.

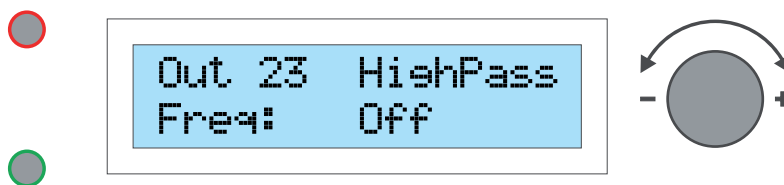
3.7 HighPass

Here you set the HighPass crossover. This function is subdivided into three modules.

- Setting of HighPass.
- Turn the **Encoder wheel** for setting the desired HighPass.
- Select within a range from **20** to **20,000** Hz.



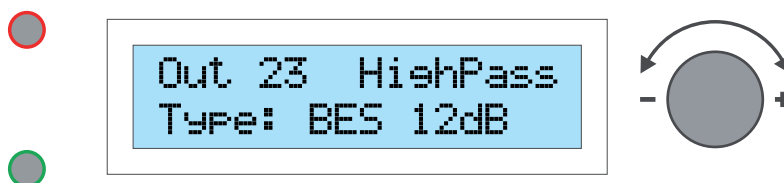
- If you wish, you can switch the HighPass off by turning the **Encoder wheel** to **Off**.



- Press the **Encoder wheel** to view the next module.

Set Filter Type

- Turn the **Encoder wheel** to search a filter.



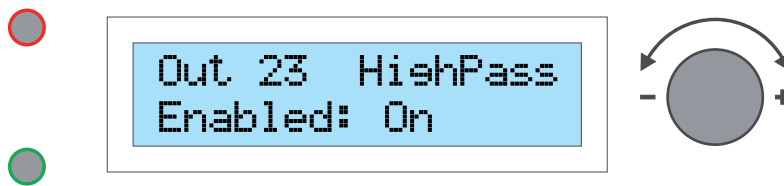
Here you can select from **10** different filters:

- BUT 6dB, 12dB, 18dB, 24dB = Butterworth 6dB, 12dB, 18dB, 24dB
- BES 6dB, 12dB, 18dB, 24dB = Bessel 6dB, 12dB, 18dB, 24dB
- LR 12dB, 24dB = Linkwitz-Riley 12dB, 24dB

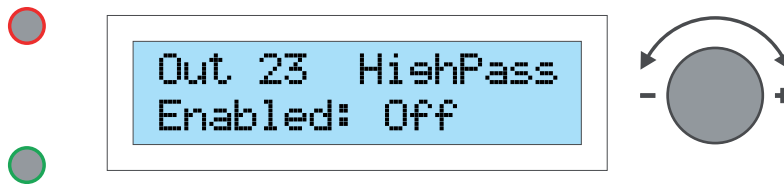
- Press the **Encoder wheel** to view the next module.

Switching on and off crossover

- Turn the **Encoder wheel** to **On** for switching on the crossover.



- Turn the **Encoder wheel** to **Off** for switching off the crossover.



- Press the bottom **BUTTON** to implement all changes.

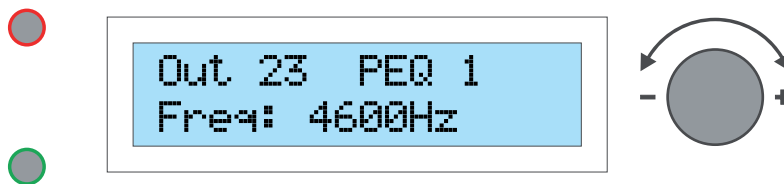
3.8 PEQ (Parameter filter)

Here you set the parameter filter. This function is subdivided into five modules.

Each input and output channel has 10 full parameter filters available!

Setting the frequency

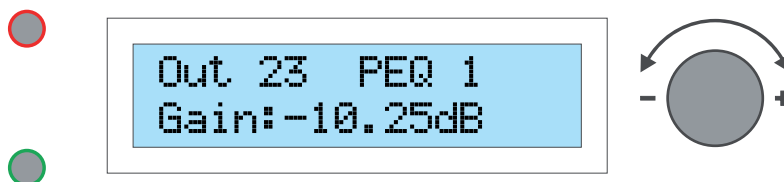
- Turn the **Encoder wheel** for setting the desired frequency.
- Select within a range from **20** to **20,000 Hz**.



- Press the **Encoder wheel** to view the next module.

Setting the EQ level

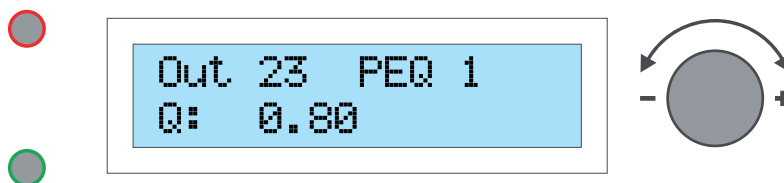
- Turn the **Encoder wheel** for setting the desired EQ level.
- Select within a range from **-12.00 dB** to **12.00 dB**.



- Press the **Encoder wheel** to view the next module.

Setting the edge steepness

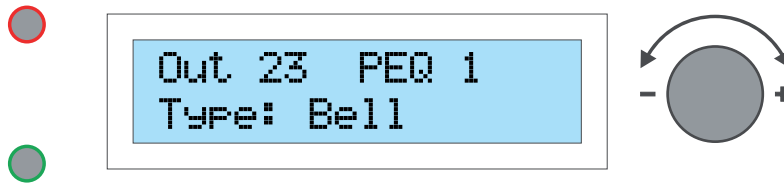
- Turn the **Encoder wheel** for setting the desired Q level.
- Select within a range from **0.10** to **25.00 Hz**.



- Press the **Encoder wheel** to view the next module.

Setting the Filter Type

- Turn the **Encoder wheel** to search a filter type.



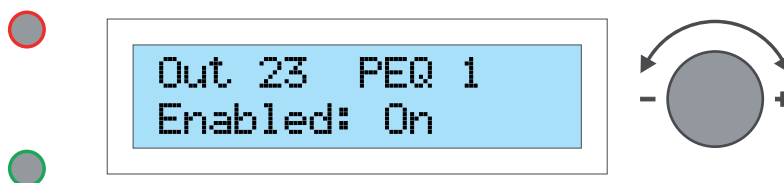
Here you can select from 8 different filters:

- Bell
- Notch
- AllPass
- Low Shelf and High Shelf
- Band
- High Pass and Low Pass.

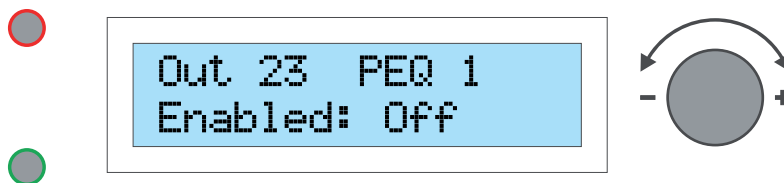
-
- Press the **Encoder wheel** to view the next module.

Switching on and switching off the parameter filter

- Turn the **Encoder wheel** to **On** for switching on the crossover.



- Turn the **Encoder wheel** to **Off** for switching off the crossover.



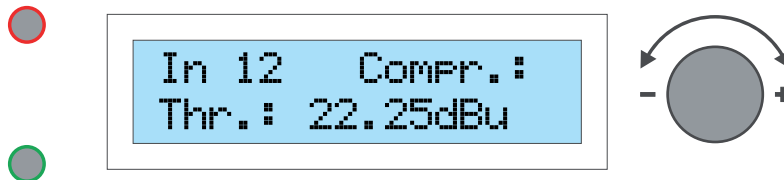
- Press the bottom **BUTTON** to implement all changes.

3.9 Compr.: (Input compressor)

Here you set the Input compressor. This function is subdivided into six modules.

Setting the threshold value

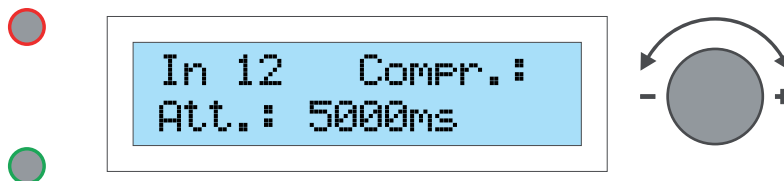
- Turn the **Encoder wheel** for setting the desired threshold value.
- Select within a range from **-48.00** to **24.00 dBu**.



- Press the **Encoder wheel** to view the next module.

Setting Attack

- Turn the **Encoder wheel** for setting the desired Attack.
- Select within a range from **1** to **10,000 ms**.



- Press the **Encoder wheel** to view the next module.

Setting hold

- Turn the **Encoder wheel** for setting the desired hold time.
- Select within a range from **1** to **10,000 ms**.



- Press the **Encoder wheel** to view the next module.

Setting the release time

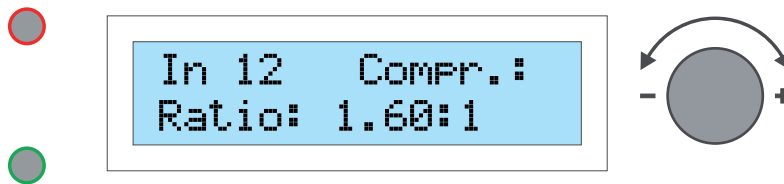
- Turn the **Encoder wheel** for setting the desired release time.
- Select within a range from **1** to **10,000 ms**.



- Press the **Encoder wheel** to view the next module.

Setting the compression rate

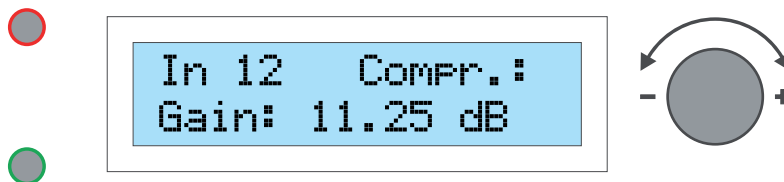
- Turn the **Encoder wheel** for setting the desired compression rate.
- Select within a range from **1.20:1** and **25.00:1**



- Turn the **Encoder wheel** to **Infinite** for a stepless compression rate.
- Press the **Encoder wheel** to view the next module.

Setting the signal level

- Turn the **Encoder wheel** for setting the desired signal level.
- Select within a range from **-12.00 dB** to **12.00 dB**.



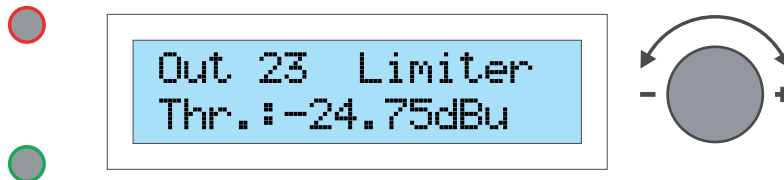
- Press the bottom **BUTTON** to implement all changes.

3.10 Limiter (Output limiter)

Here you set the Output limiter. This function is subdivided into two modules.

Setting the threshold value

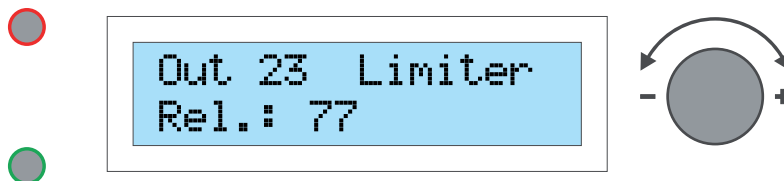
- Turn the **Encoder wheel** for setting the desired threshold value.
- Select within a range from **-48.00** to **24.00 dBu**.



- Press the **Encoder wheel** to view the next module.

Setting the release time

- Turn the **Encoder wheel** for setting the desired release time.
- Select within a range from **1** to **100 dB/s**.



- Press the bottom **BUTTON** to implement all changes.

Imprint

© SRV Licht- & Tonanlagen, all rights reserved.

All specifications in this manual are based on information available at the time of publishing for the features and safety guidelines of the described products. Technical specifications, measurements, weights and properties are not guaranteed.

The manufacturer reserves the right to make technical modifications according to legal regulations stipulating the continual improvement of product features. For the safe operation of the unit, this manual and all other required information must be available to all users at the time of assembly and disassembly of the unit, and during operation. Assemble or operate the unit only after reading and understanding this manual, and keeping it at hand at all times at the site.

We are happy to receive your suggestions and proposals for the enhancement of this manual.

Please send us your ideas to the following address:

SRV Licht- & Tonanlagen - Voice-Acoustic Headquarters
Gewerbegebiet Brocksfeld 3
D-27313 Dörverden

Tel.: + 49 (0) 4234 942 777

Fax: + 49 (0) 4234 942 427

Email: info@voice-acoustic.de