LINNENBERG

VS30

PRE-AMPLIFIER & DAC

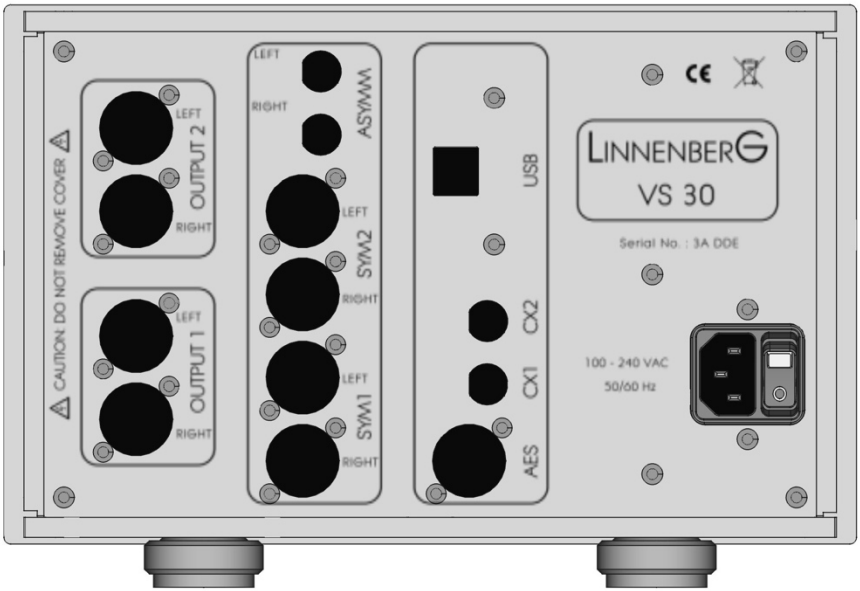
Owner's Manual

VS 30 is a preamplifier for all common signal sources, be it digital, analogue, symmetrical (balanced) or single-ended. Signal processing inside the VS 30 is strictly balanced, making VS 30 the ideal control center for a fully balanced audio system.

Placement

Place the device on a stable, flat surface, such as a shelf, where it is comfortable to use. Since you will be using the IR remote control most of the time, please make sure that the VS30 remains freely accessible to the IR signal (infra-red light).
As it is common practice, disconnect VS 30 from the mains during a thunderstorm or when going on vacation.

Connections:



Connecting the Analog Output:

Connect the left and right interconnect cables from the VS 30 output 1 or output 2 to your power amplifier / active speaker inputs. There are two decoupled outputs available, each of them with a low 10Ω output impedance and +/- 0.5A current capability, enabling long cable runs. Both outputs are active all the time. To maintain best sound quality, it is strongly recommended that balanced audio connections to be used.

Connecting the Line Inputs:

3x analog inputs (2x symmetric XLR, 1x asymmetric, Cinch) are offered. Whenever possible choose a balanced connection, however, the asymmetric Cinch (RCA) input is a perfect choice when nothing else is available. An incoming asymmetric signal via the Cinch socket is converted to fully balanced directly at the beginning of the signal processing chain, maximizing the sound quality.

Connecting the Digital Inputs:

Various inputs are available for digital signals. Use the USB input for computer and server applications that offer the full HIGH-RES range of up to 384 kHz PCM or 512x DSD. The S/PDIF format is supported by 2 x Cinch and XLR. The utmost quality and bandwidth (192 kHz) is achieved by using the AES/EBU input (XLR). Please note, that this input is configured for 2 channel, single speed mode only.

Pushbutton operation

Volume and input selection can be controlled via the front panel of the VS 30. Secondary functions such as filter setting, balance and mute are not accessible here; only volume up, down and inputs up, down.

Remote control operation

Conveniently, all functions of the VS 30 are remote controllable. The unit responds to the remote provided with the unit. Should you experience the failure of an action subsequent to a button pressing, please press the button again. Flat batteries, too long distance / angle or an obstructed light path may be the reason.

Besides controlling the volume, the remote enables the user to mute the output; select the input source; choose the digital filter mode; and last but not least, alter the stereo balance.

Mute
Pressing the <Mute> button on the remote mutes the output. Releasing the mute action is by pressing <Mute> again.

Select
Press the <Select> button to navigate through the various submenus. Top-Level -> Input -> Balance -> PCM-Filter-> Top-Level Important: if no button is pressed for 3 seconds, the VS30 returns to the top level, engaging the last chosen option. It is very convenient to use this feature for selection any possible option and not pressing <SELECT> again to reach the top level.

Submenu: Input
The first and most important submenu is the source selection. Press <VOL+> to select the following sources: USB->AES/EBU->CX1->CX2->SYMM.1->SYMM.2->ASYMM. You can also use <VOL-> to go in the opposite direction.

Submenu: Balance
By default, the balance is set to zero. By pressing the <VOL+> button on the remote control, the right channel can be made louder and the left channel quieter (shift to the right). By pressing the <VOL-> button, a shift to the left can be achieved. If the balance is not set to zero, an apostrophe will appear in front of the volume value in the top display.

Submenu: PCM-Filter
The PCM Filter submenu selects between different filter options in DAC mode. The selected filter therefore only has an effect if neither analogue nor DSD is being played. The last point in particular is often forgotten. There are 6 filter variants available. 3 are frequency response optimized and 3 more are impulse response optimized. With <VOL+> you can go from filter 1 to 6: Linear->Smooth->Apodizing->MinPh1->MinPh2->Minph3. With <VOL-> you go in the opposite direction. "Linear" is the so-called standard filter with a flat frequency response and maximum alias suppression, but with pre- and post-ringing. "Smooth" has less

pre- and post-ringing, but much less alias suppression. The "Apodizing" filter is a good alternative to "Linear". The minimum-phase filters 1…3 produce no pre-ringing at all on an impulse, but have disadvantages in other disciplines. Choose what you like.

Volume -, Volume +
The volume control works simultaneously for both analog and digital inputs. The control range spans from -85 (0%) … +10dB (100%)

Display

Some users prefer a muted listening environment where too much light from the display could disturb the peace and quiet. For this reason, only the volume level is shown permanently. Pressing any button on the remote control will temporarily show the full display. This also happens with the push buttons on the front panel or when the sample rate changes during DAC playback.

Driver installation

Installing process (Mac & Linux)

No drivers are required for a Mac computer running Mac OSX or a so-called audio steamer with a Linux distribution. Your VS30 will be immediately recognized by the system and is ready to use. Be sure to select the VS30 (Combo768 Amanero) as the output device.

Installation process (Windows)

No drivers are required for Windows 10/11 either. You must select the VS30 (Combo768 Amanero) as output device and use the exclusive mode in Windows. For best sound quality and native DSD playback, installing the ASIO driver is recommended. We happy to provide the Driver, although ASIO4ALL will work too.

Remote control battery change

The remote control supplied with the VS 30 is equipped with a CR2032 lithium battery. The battery life is usually more than a year, probably much longer. To replace the battery, the 4x screws on the bottom must be unscrewed. The actual battery is fixed in the holder. (See picture above)

Specifications

Preamp section:

Gain	11,3dB (3.7x)
Max. input level:	7V rms (single ended) 12V rms (balanced)
Input impedance:	47 kΩ per phase
Output impedance:	10 Ω per phase
Max. output current:	0,5A per phase
Freq. response:	DC – 3.5 MHz (-3dB)
Slew Rate:	60V / µs (symmetric)
Distortion and noise:	<0,002% 10Hz - 20kHz
Signal – Noise:	>108dB(A), ref. 0dBV (=1V) "VOLUME=100"
Max. output level:	18,5V rms balanced

DAC section:

Sampling frequencies PCM :	44.1, 48, 88.2, 96, 176.4, 192, 352.8 kHz, 384kHz; S/PDIF – inputs limited to 192 kHz.
Resolution PCM :	32bit
Resolution DSD :	DSD64, DSD128 and DSD256 available over DoP protocol and native (ASIO)
Frequency response: (20Hz – 20kHz)	-0.1 dB
Distortion and noise: (16Bit, 44.1kHz) @ 20Hz – 20kHz	<0.003% @ 0dB
Distortion and noise: (16Bit, 44.1kHz) @ 1kHz	<0.015% @ -20dB
Crosstalk:	120dB @ 20kHz
Output level:	17,4V rms balanced @ 0dB and "VOLUME = 100"
	4V rms balanced, 2V rms single ended @ 0dB and "VOLUME = 83"

General:

Dimensions (W x H x D) :	260 x 170 x 310mm
Weight:	8kg

CE declaration of conformity

Product Type: Digital–Analog – Preamplifier

Model: VS 30

Linnenberg-Elektronik declares that this product complies with the Low Voltage Directive 2014/35/EU and the Electromagnetic Compatibility Directive 2014/30/EU as well as the Ecodesign Directive 2009/125/EC.

The unit meets all currently valid regulations only in its original condition. The original, unaltered factory serial number must be present on the outside of the unit and must be clearly legible! The serial number is an essential part of our conformity declaration and therefore of the approval for operation of the VS 30. The serial numbers on the unit and in manual, must not be removed or modified, and must correspond.

Furthermore, the unit has been found to comply with the limits for a Class B digital device, pursuant to Part 15, subpart B (unintentional radiators) of the FCC rules.

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