

User Manual



VSS 28



SD 1



SD X



1. Introduction

Thank you for choosing a K.M.E. product!

VERSIO has consistently been developed for portable requirements. With these compact and ergonomic loudspeaker systems, you will be able to master flexibly your sound reinforcement situations (main PA, monitoring, fill system, etc.).

This User Manual will provide you with a general overview over your new product including warning notes to allow a safe and professional use of the VSS 28. **Before** switching on the VSS 28 for the first time read these instructions carefully, making yourself familiar with the technical requirements. If you have any questions about this product please contact the K.M.E. Support Team.

Within our extensive production processes, we only use certified materials and high-quality components. Share with us the enthusiasm for good sound. The K.M.E. Team hopes you enjoy your new PA-system without any difficulties!

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This User Manual corresponds to the software version V1.0

3. Digital System Unit VSS 28

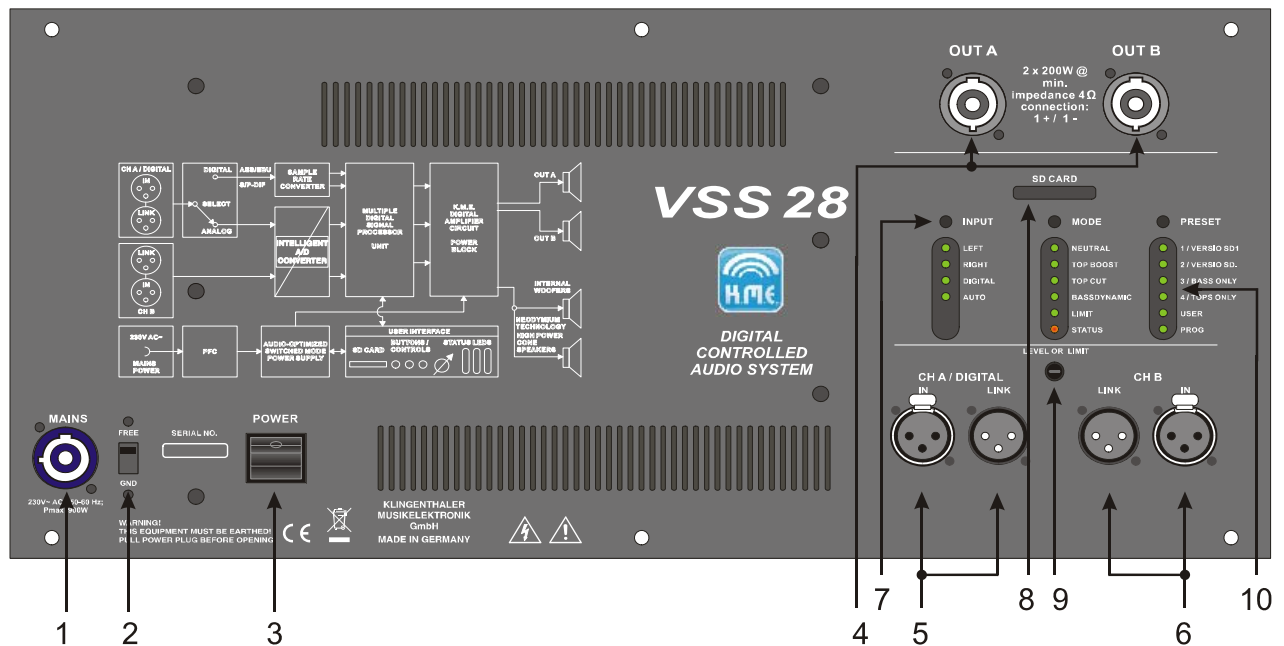
The VSS 28 is a fully digital system unit including an integrated 2 x 8" hybrid subwoofer, a 24 bit / 48 kHz audio DSP and three class D amplifiers (1 x 400 W subwoofer + 2 x 200 W tops). The VSS 28 is extremely compact and very light-weight (21.5 kg). The VSS 28 is the heart and control centre for compact and freely configurable PA- and installation systems. The integrated 8" neodymium speakers with a hybrid shell offer powerful and precise bass sound reproduction starting at 45 Hz up to 160 Hz. The optimized tunnel geometry allows a high sound pressure level at a low power compression and reduces the air flow noise to a minimum. The high-quality scratch- and impact-resistant black polyurethane coating offers optimal road suitability. An additional protection of the loudspeaker offers the sound-permeable comb-grid with acoustic foam. Further, a special impregnation protects the loudspeaker membrane against moisture impacts. A 24 bit audio DSP and three powerful class D amplifiers which are powered by switch mode with PFC (Power Factor Correction) work on the inside. For the first time the analogue input signal is digitalized directly inside the input amplifier using an intelligent 24 bit AD converter and remains digital until amplified in the class D amplifiers. Thanks to newest digital technology the dynamic range of the audio signal increases in reducing conversion losses to a minimum. The result is a sophisticated crystal-clear audio reproduction. The digital input is based on an AES EBU & S PDIF signal with a sample rate of max. 192 kHz. The powerful audio DSP provides an optimal signal routing and controlling of all adjustable parameters by using a PC software. There, the Gain, the digital Crossovers with 12 dB 24 dB per octave, the subsonic Filter, the full parametrical EQ's, the peak RMS Limiter and the Delays can be adjusted. By using the three menu item buttons you can adjust the system settings and load Factory or User Presets (also from SD Card). Every Factory Preset already offers a wide range of solutions for diverse operating options and user applications.

4. Delivery Status

When powering up the VSS 28 for the first time the following default parameters are preset:

- Factory Preset 2 „VERSIO SD X“ is loaded
- User Presets 1 – 4 are identical with Factory Presets 1 – 4
- Inputs switched to analogue
- Menu Item “Mode” switched to “Neutral”
- Input level can be adapted from $-\infty$ to +6 dB

5. Connection And Control Panel



Power

- 1) Mains connector – PowerCon In (blue); **Note:** usage of the correct mains voltage of 90 - 250 V AC / 50 - 60 Hz
- 2) Ground/ Free switch – disconnects the ground of the input channels from chassis to avoid ground loops
- 3) Power switch

Connections

- 4) Speaker Output – 2x Speakon NL 4 (2x 200 W @ 4 ohm (min. impedance), depending on preset); **Note:** When connecting one or more passive loudspeakers please always take into consideration their nominal load and impedance
- 5) Line In & Link Out - XLR balanced, analogue/ digital switchable, Link Out is only active when the VSS 28 is powered on
- 6) Line In & Link Out - XLR balanced, analogue, Link Out is only active when the VSS 28 is powered on

Operation

- 7) Menu Items – by using the three Menu Item buttons “Input“, “Mode“ and “Preset“ the system setting can be changed (see 7.1)
- 8) SD Card slot – serves as an interface to load presets and firmware updates; it works with an FAT format which can also be read and formatted on an usual PC (see 7.3) **Note:** only SD Cards in FAT32 format can be read.
- 9) System Volume Control (from $-\infty$ to +6 dB) or adjustable Limiter (from -24 dB to 0 dB) – control can be adjusted with a suitable tool (see 7.2)
- 10) LED indicator – indicates the chosen settings and the operating status of the VSS 28 (see 7.1)

6. General Overview Over Presets (UPDATE)

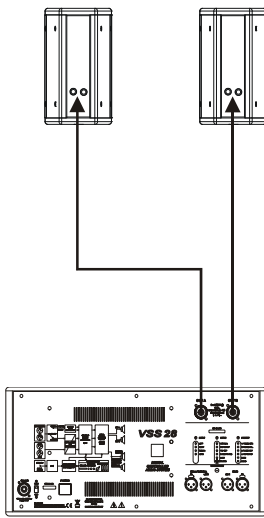
The VSS 28 has four Factory Presets and four User Presets. The Menu Item “Preset” provides you with a preset selection and the possibility to load files from an SD Card. How to load Factory Presets and how to adjust the settings, see chapter 7 “Operation”. In the User Presets different adjustable parameters can be adjusted, for example: Limiter, EQ, Delay, etc. Thus, the sound can be adjusted perfectly to every environment.

The preset numbers correspond to the numbering on the device.

• 6.1 Factory Presets

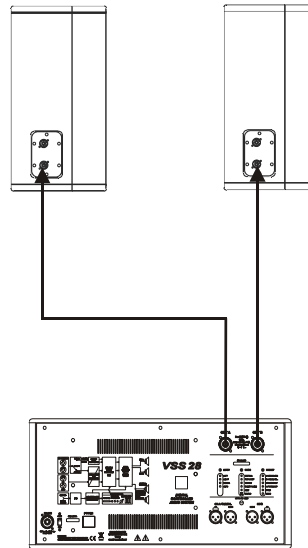
⇒ are not adjustable and erasable

Preset 1: VERSIO SD1



1x VSS 28 + 2x VL 3 i:
analogue audio signal to Input A + B
or digital audio signal to Input A

Preset 2: VERSIO SDX (Example 1)

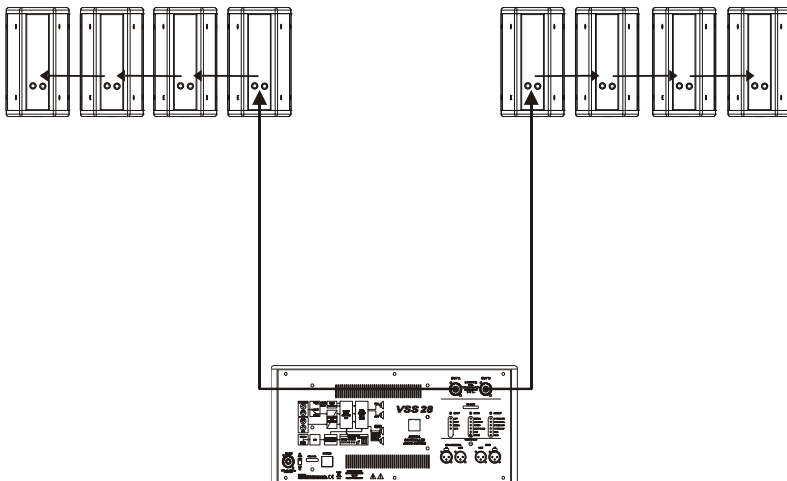


1x VSS 28 + 2x VL 4:
analogue audio signal to Input A + B
or digital audio signal to Input A

Note:

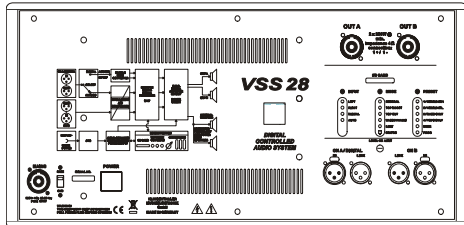
Please use Factory preset 2 with system Versio SDX.

Preset 2: alternative VERSIO System (Example 2)



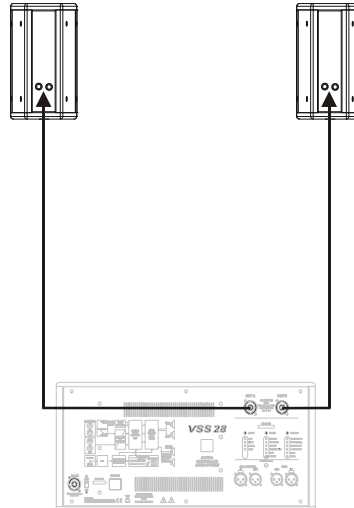
1x VSS 28 + 8x VL 3 i:
analogue audio signal to Input A + B
or digital audio signal to Input A

Preset 3: BASS ONLY



1x VSS 28 (speaker outputs are inactive):
analogue audio signal to Input A + B or digital
audio signal to Input A

Preset 4: TOPS ONLY



2x top units full range (subwoofer is muted):
analogue audio signal to Input A + B or digital
audio signal to Input A

• **6.2 User Presets**

⇒ *are adjustable and programmable*

These four User Presets will always be saved in the background. In the Delivery Status, the factory presets 1 – 4 are identical with the user presets 1 – 4. Personalised presets can also be created which overwrite the default User Presets. The presets can be programmed with the K.M.E. preset editor software. For more details about programming a preset, see 7.3.

7. Operation

The system unit VSS 28 offers a simple and comprehensive menu navigation. The menu can be operated by using the three Menu Item buttons (“Input”, “Mode” and “Preset”) and the control (System Volume or Limiter). The LED menu indicators and the multicolor LED of the operating status give an exact overview over the current operating mode and the chosen settings. The next sections provide you with important information on operating the device. **Please read this section carefully in order to prevent damage to the device and to people!**

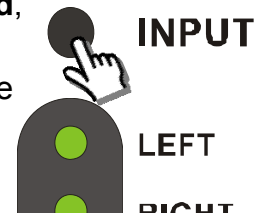
• 7.1 Menu Items

ADJUST THE PARAMETER

Push the chosen Menu Item button for **approx. 1 second**, until LEDs are flashing.

Now, **push** the Menu Item button briefly and choose the desired parameters.

Save your new settings by **pushing** the menu item button again for **approx. 1 second**.



MODE

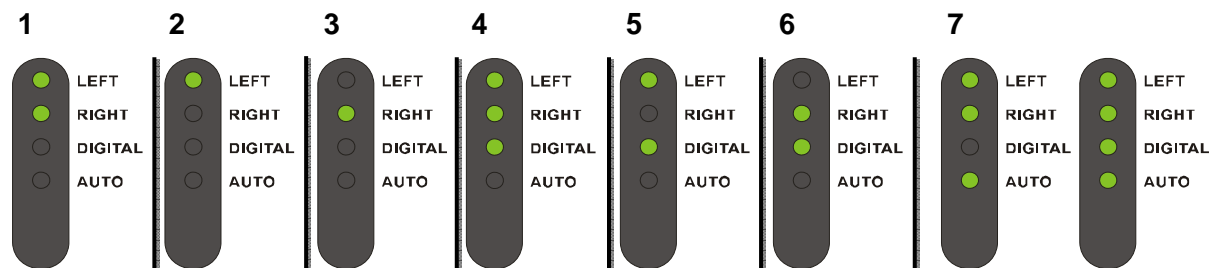
indicator LEDs continuously light up – Operating Mode enabled

indicator LEDs flashing – Configuration Mode enabled

The options you have in adjusting the respective menu items are explained in the following sections.

Input

To use the VSS 28 flexibly and efficiently, the signal input and the channel operating mode (Mono or Stereo) can be chosen in this Menu Item. The following settings are possible:



ANALOGUE INPUT SIGNAL

- 1) *Default setting* – stereo mode with the analogue input signals on Channel A and B
- 2) Mono mode with the analogue input signal on Channel A
- 3) Mono mode with the analogue input signal on Channel B

DIGITAL INPUT SIGNAL

- 4) Stereo mode with the digital Input signal on Channel A
- 5) Mono mode with the left audio channel of the digital Input signal on Channel A
- 6) Mono mode with the right audio channel of the digital input signal on channel A

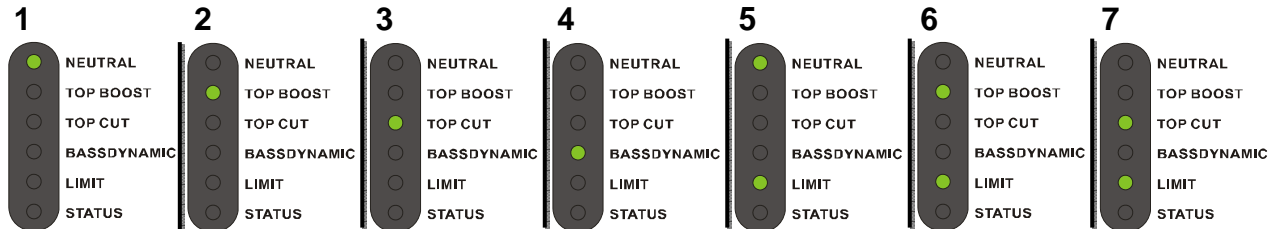
AUTOMATIC

- 7) Automatic input signal detection – LED indicator signalizes the applied input signal (analogue or digital)

Mode

In this setting you can adjust the sound to the environment by using the default EQ, Filter, Limiter etc. **Note:** *this Menu Item is only available when using a FACTORY PRESET! User Presets are personalized by you for your own purpose, so that further sound adjustments are not necessary.*

The following parameters can be selected as sound characteristics of the Factory Presets:



SYSTEM VOLUME CONTROL ENABLED (see 7.2)

- 1) *Default setting* – the audio signal is reproduced without changes
- 2) The high frequencies increase slightly producing more boost in deep-toned rooms
- 3) The top unit level reduce slightly producing a powerful sound
- 4) Is the sound reproduced at low level the deep frequencies increase slightly; at a loud level the deep frequency volume boost reduces slightly again


LIMITER ENABLED (see 7.2)

- 5) The audio signal is reproduced without changes
- 6) The high frequencies increase slightly producing more boost in deep-toned rooms
- 7) The top unit level reduce slightly producing a powerful sound

Note: *The setting “Basodynamic” is not available when the Limiter is enabled because the Limiter and the Boost of the audio signal eliminate each other.*

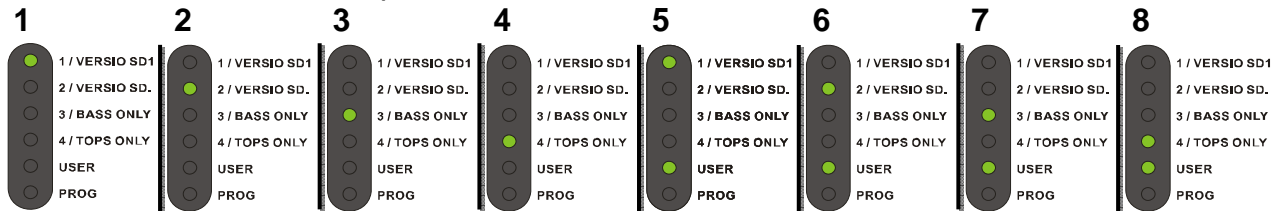
STATUS MULTICOLOR LED

signals different parameters:

 STATUS	LED is off	- there is no input signal
	LED lights up green	- there is an input signal
	LED lights up yellow	- the Limiter is working (see 7.2)
	LED lights up red	- there is a malfunction; the VSS 28 has to be restarted
	LED lights up cyan	- the SD Card User Preset was successfully loaded and saved on the device (see 7.3)
	LED lights up purple	- the User Preset could not be loaded from the SD Card; read error due to faulty file (see 7.3)

Preset

To operate the respective system efficiently, the correct preset has to be chosen. Please choose and load your current setup in this Menu Item of the VSS 28. You have the possibility to choose the Factory Presets for a VERSIO system of K.M.E. (see 6.) or to create, adapt or personalize User Presets for your own audio system. The following LEDs indicate the chosen preset:



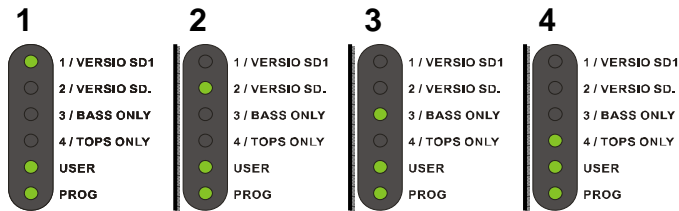
FACTORY PRESETS

- 1) Preset for the audio system Versio SD 1
- 2) Preset for a alternative Versio system
- 3) Preset for operating without top units; **Note:** signal Output „Out A“ and „Out B“ are not active
- 4) Preset for operating without subwoofer; **Note:** the loudspeakers of the VSS 28 are muted

USER PRESETS (see 7.3)

Note: Parameter selection in the Menu Item „Mode“ are NOT available.

- 5) User Preset 1
- 6) User Preset 2
- 7) User Preset 3
- 8) User Preset 4



USER PRESET PROGRAMMING

Note: **ONLY available when an SD Card with valid files has been inserted (see 7.3)**

- 1) Save User Preset 1 from the SD Card to the device (**old preset will be DELETED!**)
- 2) Save User Preset 2 from the SD Card to the device (**old preset will be DELETED!**)
- 3) Save User Preset 3 from the SD Card to the device (**old preset will be DELETED!**)
- 4) Save User Preset 4 from the SD Card to the device (**old preset will be DELETED!**)

For more information about User Preset programming, see 7.3.

• 7.2 Volume And Limiter Control

LEVEL OR LIMIT



If you would like to change the volume of your system you can adjust it directly on the VSS 28 by using the System Volume Control (Level Control). You also have the possibility to activate and use the Limiter. **The control has two different operating modes/functions** which can be adjusted under the Menu Item “Mode” (see 7.1). In the first four sound settings only the System Volume Control can be used while in the following settings only the Limiter Control can be used. In the Menu Item “Mode” the LED “Limit” indicates whether the Limiter is enabled or disabled.

SYSTEM VOLUME CONTROL

Is the LED “Limit” not light up, the Volume Control is active. The input level of the audio system can be adjusted from $-\infty$ to +6 dB. If the adjusting slot is in the vertical position the input level is adjusted to 0 dB.

LIMITER

If the LED “Limit” lights up, the Limiter Control is active. You can limit the level of the audio system from -24 dB to 0 dB. Is the control adjusted to 0 dB the Limiter is disabled. In the fully clockwise position the control is adjusted to 0 dB. In the User Presets the Limiter Control is **not** available.

Note: You can not turn the control by using your hands as the control is recessed in the chassis. The control can only be adjusted by using a slotted screwdriver or another suitable tool.

• 7.3 User Presets

You have the possibility to create four different User Presets or to change them for your own purposes. All sound settings, changes of parameters and system adjustments are editable with the K.M.E. preset editor software (for PC only). It offers a wide range of resources to design the sound of your audio system. For more details about indicators and choosing a preset, see 7.1. **Note:** *The Menu Item “Mode” is not available in a User Preset.*

SOFTWARE AND FILE FORMAT

The preset editor software saves the finished preset as a KPX file. These User Preset files are named “VSS28UP1.kpx”, “VSS28UP2.kpx”, “VSS28UP3.kpx” or “VSS28UP4.kpx” **and are NOT to be renamed.**

Please save the files on an **SD Card (FAT32)** and insert it into the VSS 28. Now, the User Presets can be loaded and used.

Note: *The system unit reads the SD Card and recognizes a maximum of 4 User Presets (as mentioned above) which you can choose. However, only the existing User Presets on the SD Card are displayed! It is **not** possible to choose a User Preset in the Menu Item “Preset” to save on the device if the VSS 28 finds none of the above file names on the SD Card.*

FIRMWARE UPDATE

If you want to update the firmware please read the enclosed User Manual for updates.

8. Quickstart

In this part of the Manual you will find an overview on how to do the first steps at the startup and adjust the necessary settings and its functions. In complying with these procedures, a safe use of the VSS 28 is guaranteed.

After setting up the PA system and connecting the cables (SD X or a alternative Versio system; see 6.) and switching on the VSS 28 you should initially check the adjusted parameters of the Menu Items and change them if necessary. To control the respective system optimally, the correct preset has to be loaded. Therefore, you should choose and load your current setup under the Menu Item "Preset". Please follow the instructions of 7.1 for operating the system.

For a defined and optimum signal level the System Volume Control may to turned to 0 dB (the adjusting slot is in the vertical position) by using a suitable tool (see 7.2). This adjustment is a recommendation!

If you use an analogue input audio signal for your PA system ***you can start immediately!***

If you want to use a digital input signal for your audio system you have to switch the Input of the VSS 28 to "Digital" (LED indicator: "left", "right" and "digital"; see 7.1). In the Delivery Status, the Inputs of the VSS 28 are switched to analogue.

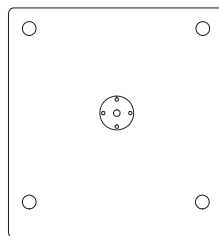
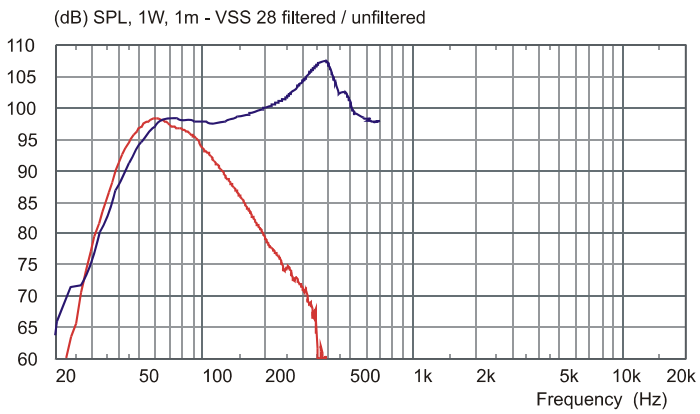
Note! When you power up the VSS 28 for the first time the Preset 2 "VERSIO SD X" is loaded! For more information on the Delivery Status see Page 3.

9. Specifications

	VSS 28
<i>Speaker:</i>	
Components	2 x 8" Neodymium
Frequency range	45 Hz – 160 Hz (fx), depending on preset
SPL nominal	98 dB
SPL maximal	123 dB
<i>Electronics:</i>	
Amplifiers	three fully digital amplifiers with high efficiency $\geq 90\%$
Power output RMS	400 W subwoofer + 2 x 200 @ 4 Ohm
Features	Ground Free switch, navigation pad, LCD display, adjustable digital Crossovers, subsonic Filter, parametrical EQs, peak / RMS Limiter, Delays
Protective circuits	short circuit, overload, temperature, DC on output
Connectors	analogue: line in 2 x XLR, line out 2 x XLR, digital: AES/EBU input and link (XLR), speaker out 2 x Speakon NL 4 Neutrik
Power requirements	90 - 250 Volt / 50 - 60 Hz
Power consumption	750 W
Control panel	3 selection buttons, multicolor LED, 1 potentiometer, SD Card slot
<i>Processor:</i>	
DSP	24 bit, 48 MHz clock
Unit delay	< 1,5 ms
Sampling	24 bit
Digital input & output	AES/EBU / S/PDIF with format/ sample rate converter (max. 192 KHz)
Preset memory	4 factory presets, 4 user presets
Finish	PU coating black
Special features	1 side-mounted recessed handle, M20 fixing plate, stacking elements
Dimensions in mm (B x H x T)	500 x 250 x 600
Weight	21,5 kg
Recommended units	top units / monitors: VL 3 i, VL 4 / VL 4 i, VL 6 i, VL 8 / VL 8 i
Optional accessory	protective cover

MESSUNGEN / MEASUREMENTS

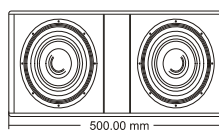
Frequenzgang / Frequency range



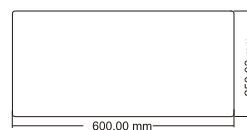
Draufsicht M20 Flanschbuchse
Top side M20 fixing plate



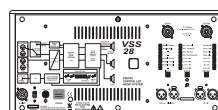
Seitenansicht rechts
Right side



Front
Front side



Seitenansicht links
Left side



Rückansicht
Rear side

10. Active PA Systems

The active 3-way full-range PA system VERSIO SD 1 and alternative VERSIO systems are professional and powerful PA systems with an extraordinarily compact design and a breath-taking sound. The different formats/ combinations of the VERSIO PA systems are the functional answer to a multiplicity of tasks in mobile use as well as in the area of installation. Simple speech reproduction, fill or delay systems, presentations, music reinforcement with or without subwoofers as main PA, supported by a versatile accessory assortment enable an accurate to the respective requirements adapted solution. Various solutions for diverse control options are available thanks to the well-engineered and easy to use system settings of the VSS 28. The extension of these PA-systems is always possible.

Specifications

	VERSIO SD 1*	VERSIO SD X*
Components	2 x VL 3 i (3" + 1"), 1 x VSS 28 (2 x 8")	2 x VL 4 (4 x 4" + 1") 1 x VSS 28 (2 x 8")
Preset No.	Preset 1: VERSIO SD1	Preset 2: VERSIO SD.
Power output	Total: 650 W	Total: 800 W
Frequency range	40 Hz – 19 KHz	50 Hz - 60 Hz
Connectors	audio signal: Line In XLR & Link Out XLR (analogue or digital), Power requirements: PowerCon 90 - 250 Volt / 50 - 60 Hz, Speaker output: 2x Speakon NL 4 (1+/1-)	audio signal: Line-In XLR, Line-Out XLR, digital input & -output; Power requirements: PowerCon 90 - 250 Volt / 50 - 60 Hz, Speaker output: Top 1 x Speakon NL 4 Neutrik (1+/1-)
Weight of components	Top unit: 2 x 2 kg Subwoofer active: 1 x 22 kg	Top unit: 2 x 6 kg Subwoofer active: 1 x 22 kg
Recommended for	Entertainer, Duos, Installations	Entertainer, Duos
Optional accessories	Plug & Play Pack Cover Pack	Plug & Play Pack Cover Pack

**Delivery without distance elements resp. high stands and cables*

11. EC declaration of conformity

EC declaration of conformity

This is to certify:

Article	Product		Series	Group
1-120-027	VSS 28	PU, black 2x 200W + 500W	Versio Series	Subwoofer digital active
1-154-018	Versio SD1 2x VL 3 i + VSS 28	PU, black 650 W	Versio Series	PA systems active digital
1-154-027	Versio SDX 2x VL 4 + VSS 28	PU black 800 W	Versio Series	PA systems active digital

Complies with the provisions of the Directive of the Council of the European Communities on the approximation of laws of the Member States relating to electromagnetic compatibility (EMC Directive 89/336/EEC).

This declaration of conformity of the European Communities is the result of an examination carried out by the Quality Assurance Department of Klingenthaler Musikelektronik GmbH in accordance with European Standards:

VDE	839	Teil 6-1/08.2002	DIN EN 61000-6-1
VDE	839	Teil 6-3/06.2005	DIN EN 61000-6-3
VDE	838	Teil 2/12.2001	DIN EN 61000-3-2
VDE	838	Teil 3/05.2002	DIN EN 61000-3-3
VDE	860	Stand: 01/2003	DIN EN 60065
VDE	875	Teil 1/06.1997	DIN EN 55103-1
VDE	875	Teil 2/06.1997	DIN EN 55103-2

This declaration is given by

Klingenthaler Musikelektronik GmbH
Auerbacher Straße 268
D-08248 Klingenthal

Klingenthal, July 2012

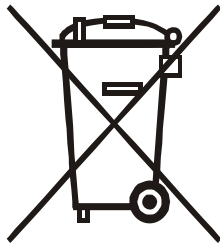

Dieter Glaß
Managing Director

Warranty claims can be found on the the warranty card included.

You will find the User Manual of the VERSIO-Series in an additional Manual or on the website of K.M.E. www.kme-sound.com.



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Deutsch Entsorgung von Altgeräten

1. Wenn dieses Symbol eines durchgestrichenen Abfalleimers auf einem Produkt angebracht ist, unterliegt dieses Produkt der europäischen Richtlinie 2002/96/EC.
2. Alle Elektronik-Altgeräte müssen getrennt vom Hausmüll über dafür staatlich vorgesehene Stellen entsorgt werden.
3. Mit der ordnungsgemäßen Entsorgung des alten Gerätes vermeiden Sie Umweltschäden und eine Gefährdung der persönlichen Gesundheit.
4. Weitere Informationen zur Entsorgung des alten Gerätes erhalten Sie bei der Stadtverwaltung, beim Entsorgungsamt oder in dem Geschäft, wo Sie das Produkt erworben haben.

English Disposal of your old appliance

1. When this crossed-out wheeled bin symbol is attached to a product it means the product is covered by the European Directive 2002/96/EC.
2. All electrical and electronic products should be disposed of a separately from the municipal waste stream via designated collection facilities appointed by the government of the local authorities.
3. The correct disposal of your old appliance will help prevent potential negative consequences for the environment and human health.
4. For more detailed information about disposal of your old appliance, please contact your city office, waste disposal service or shop where you purchased the product.

WEEE-Reg.-Nr. DE 84296747



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Technical Details actual by July 2012.

The content corresponds to the version actual at printing time. Technical changes, printing mistakes and errors are reserved.