

K&F PASSIO SUB 12



User's Manual

Translation of the original instructions

Version 4.4

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**Important Information,
Please Read Before Use!**

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1. Introduction

Thank you for purchasing a KLING & FREITAG product. To guarantee a trouble-free operating of the equipment and to allow your KLING & FREITAG PASSIO SUB 12 system to achieve its full potential read the user's manual carefully before use. This item is a quality accessory for the PASSIO SUB 12 speaker system. As the owner of a PASSIO SUB 12 loudspeaker, you now have a versatile and highly professional tool which, when operated properly, is a true pleasure to use.

1.1 Icons Used



Warning

This icon indicates a risk of injury or death. Not following these instructions may result in serious health problems including potentially fatal injuries.



Caution

This icon indicates a possibly dangerous situation. Not following these instructions may cause minor injuries or damage.



Notice

This icon marks instructions for proper use of the described products. Not following these instructions may cause malfunctions or damage.



Tip

This icon marks information provided for simplified use of the described products.

1.2 About this Manual

© KLING & FREITAG GmbH. All rights reserved.

All specifications regarding the features of the described products and applicable safety guidelines provided in this manual are based on information available at the time of publishing.

We assume no responsibility for technical specifications, dimensions, weights, and properties.

All information in this manual is subject to change without notice.

All persons who use the speaker system must have this guide and all further information for safe operations available to them during assembly, disassembly, and use. The speaker system may neither be set up nor used until these user's manual has been read, understood and kept readily available in site.

All KLING & FREITAG manuals are originally authored in German.

KLING & FREITAG spare manuals are separately available for order or can be downloaded from our website: www.kling-freitag.de.

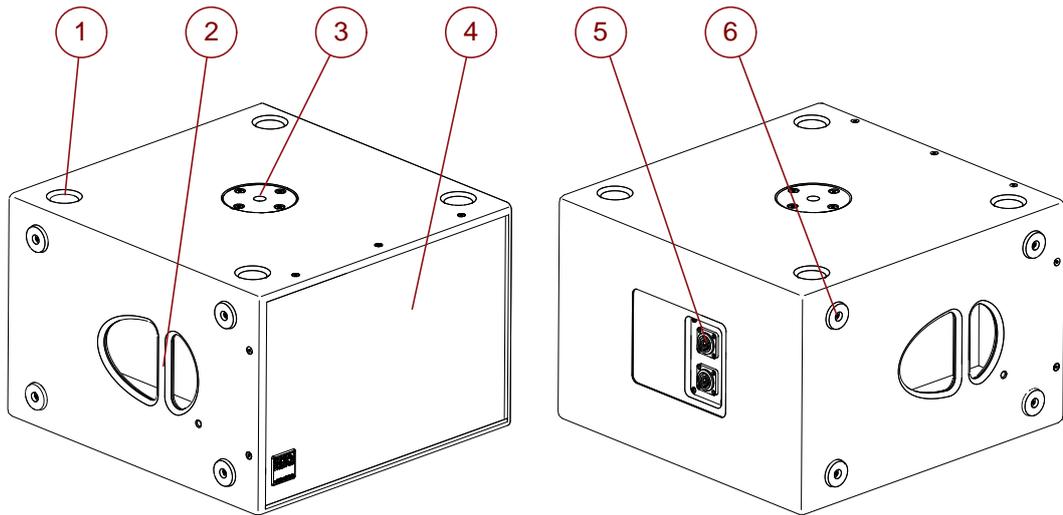
Contact Us: info@kling-freitag.de
KLING & FREITAG GMBH, Junkersstr. 14, D-30179 Hannover
Phone +49 511 96 99 70, fax +49 511 67 37 94 (other countries)

2. Product Description

2.1 Items Included

- Subwoofer PASSIO SUB 12
- (1x) User manual

2.2 Components



1. **(4x) Stacking grooves** on top of the enclosure, for stackings of identical enclosures
2. **(2x) handle**
3. **Threaded stand flange** with M20 threads for use with distance rod.
4. **Front grille**
5. **(2x) SpeakOn connector** 4-pin NLT4MP (parallel)
6. **(8x) rubber foot** 4 x on the side, 4 x on the bottom.

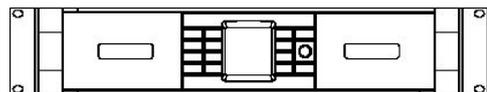
2.3 System Requirements

Lab.gruppen IPD 2400



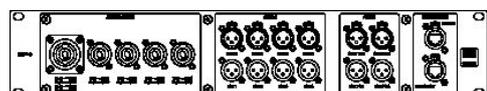
or

K&F PLM+ 20k44 (SystemAmp, ProRental)
K&F PLM+ 12k44 (SystemAmp, ProRental)



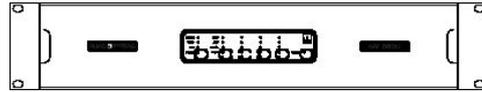
with

K&F Connector Panel CP+
Terminalpanel (optional)



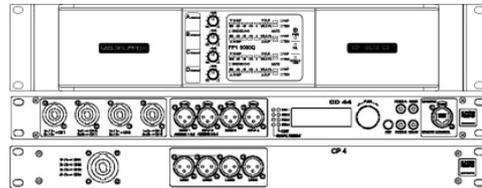
or

K&F D200:4 (SystemAmp, InstallSound)
 K&F D120:4 (SystemAmp, InstallSound)
 K&F D80:4 (SystemAmp, InstallSound)



or

K&F SystemRack



3. Safety Instructions

3.1 Notes for Mounting the Speakers



Warning

Mount the speakers securely. To avoid injury or damage, always be sure to mount the speakers securely so that they do not fall.

Please note that speakers can move as a result of vibrations. To prevent them from falling from their mounted position, they must be secured properly.

Run the cables in a way that nobody can trip over them.

3.2 Instructions for Speaker Stacking



Warning

Falling speakers pose the threat of fatal injuries to people near them!

Be sure to follow the relevant national specifications, norms, and safety regulations.

Always make sure that a sufficient safety level is still given, even when outside forces have an additional impact on the stacked speakers. Before setup, carefully ascertain if there are any possible outside forces that could result in the array falling over. (Slant of the ground / the bearing capacity of the ground / wind / person or vehicle impact, etc.). A technical expert who is responsible for the setup must evaluate and determine necessary measures (including calculating the statics). If necessary, obtain expert proof of stability.

Stacked systems may not fall over even if they are inclined by 15° in each direction. If this requirement is not fulfilled, then it is necessary to take steps to achieve compliance. Possible measures include strapping it to an appropriate base structure or fastening it using safety straps. A planned tilt of the loudspeakers is not permissible. In calculations, the tilted setup serves the purpose of levelling out unevenness.

With the set-up systems for which you cannot verify the structural safety without safeguards, you must secure them to prevent sliding or tipping in order to provide proof of this safety. To secure the system from tipping over, use water tanks or floor bolts. Other possible measures include strapping it to a suitable substructure or tying it using safety straps.

For outdoor and trade fair venues in which wind loads must be considered, additional proof of stability is necessary.

Make sure that the stacking feet of subwoofers stacked on top of one another are securely positioned in the grooves of the lower speaker.

If you place a top speaker on a PASSIO SUB 12 you must always strap the speakers to one another and secure them from falling over.

3.3 Preventing Hearing Damage



Caution

Keep your distance from operating speakers. This equipment is capable of delivering sound pressure levels in excess of 90 dB SPL, which may cause permanent hearing damage.

3.4 Protecting the Speakers / Operating Safety

Notice

PASSIO SUB 12 speakers may only be used in combination with a K&F SystemAmp/SystemRack.

In general, audio signals must not be overdriven. This may be caused by mixing consoles, equalizers, effect equipment, etc. and should be indicated on this equipment. When a power amplifier is overloaded at the output (clipping), then the amplifier activates a clipping warning signal. In any case, the signal must be reduced as soon as it sounds unnaturally distorted.

For damage caused by

- overloading the speakers or
- using the speakers without K&F SystemAmp/SystemRack

we do not assume warranty and excludes liability for possible consequential damage.

The following signals may damage the speakers:

- permanent high-level signals with high frequency and continuous noise from feedback,
- permanently distorted high-level signals,
- noises, which occur when the amplifier is on while equipment is being connected, disconnected or switched on.

Do not install devices in any of the following places:

- where the devices are permanently exposed to direct sunlight.
- where the devices are exposed to high moisture or rain.
- where the devices are exposed to strong vibrations and dust.

Damage caused by the speakers' magnetic fields

Speakers are permanently surrounded by a magnetic field, even when they are not connected. Therefore, during transport and placement of the speakers, it is important to ensure that there is always approx. 1 m between the speakers and magnetic data media and computer/video monitors.

4. Fuse in the PASSIO SUB 12

To increase the operating safety of the PASSIO SUB 12, the subwoofer is equipped with fuses at the signal input mounted on the crossover. This fuse reduces the risk of consequential damage resulting from a short circuit (i.e. charred cables / connectors / fire damage).

4.1 Replacing the Fuses

**Notice**

When the fuse is burned out, then the chassis is most likely already ruined, as the fuse just prevents consequential damage resulting from a short circuit of the chassis. A replacement of the chassis is, therefore, unavoidable.

Required tools:

1. 3 mm Allen key for loosening the front grille
2. 3 mm Allen key for loosening the chassis

Instructions:

1. Remove the front grille.
2. Remove the speaker chassis.
3. Replace the fuse.

The fuse holder is mounted on the internal crossover.

Replace the fuse with the following original fuse only:

Bussmann S 506-8A, T 250 V

4. Insert the (replacement) chassis.

By tightening the screws diagonally in two steps, a deformation of the chassis and thus a possible deentring of the voice coil can be avoided.

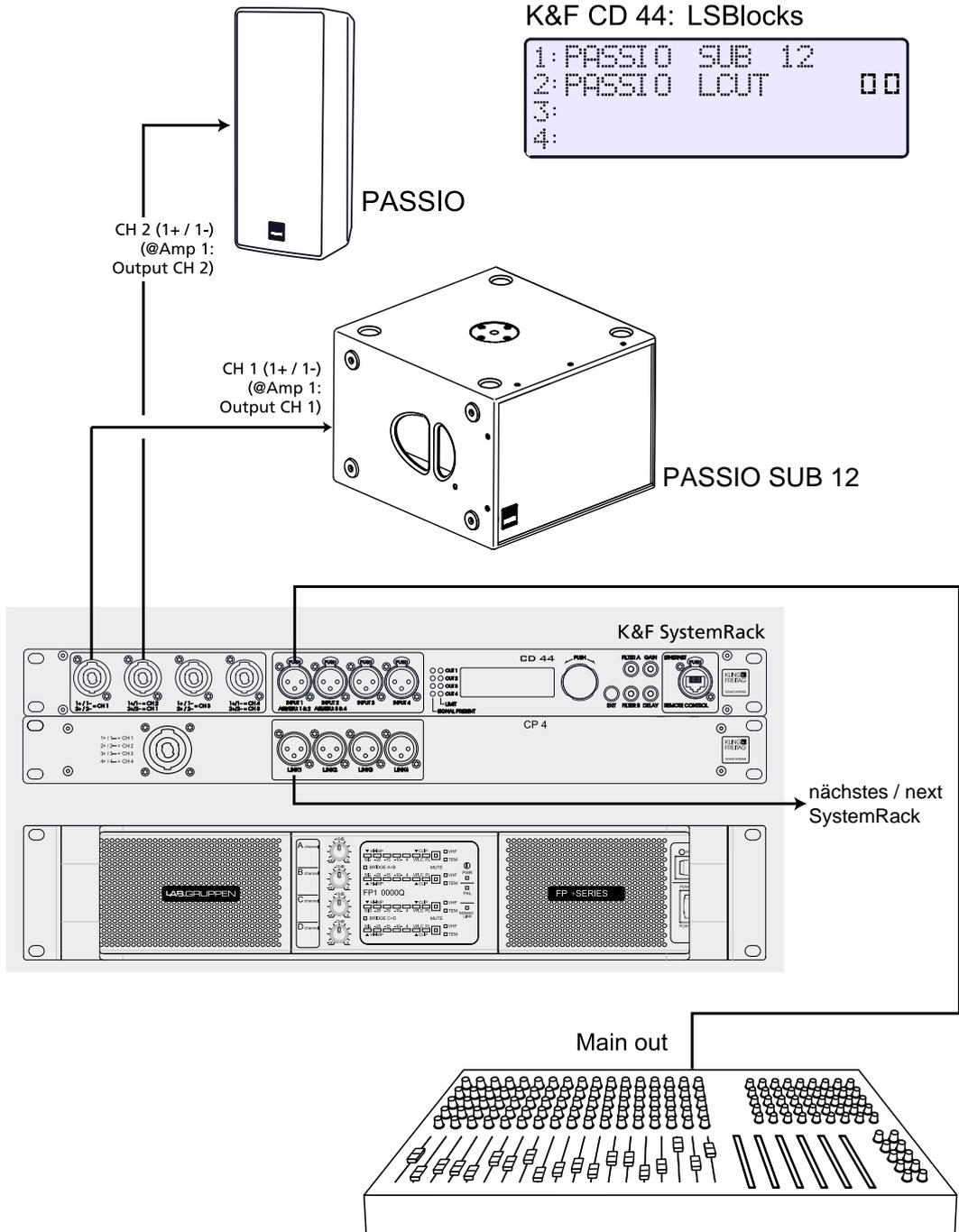
5. Mount the front grille.

5. Configuration and Connecting Diagram

5.1 Combination with Top Speakers in 2-Channel Mode

The PASSIO SUB 12 can only be combined in 2 channel mode with all K&F top speakers when using a K&F systemamp or systemrack.

To do so, select the desired LS blocks for the top speaker in the K&F systemamp or systemrack, and combine these with the LS block for the PASSIO SUB 12 subwoofer.

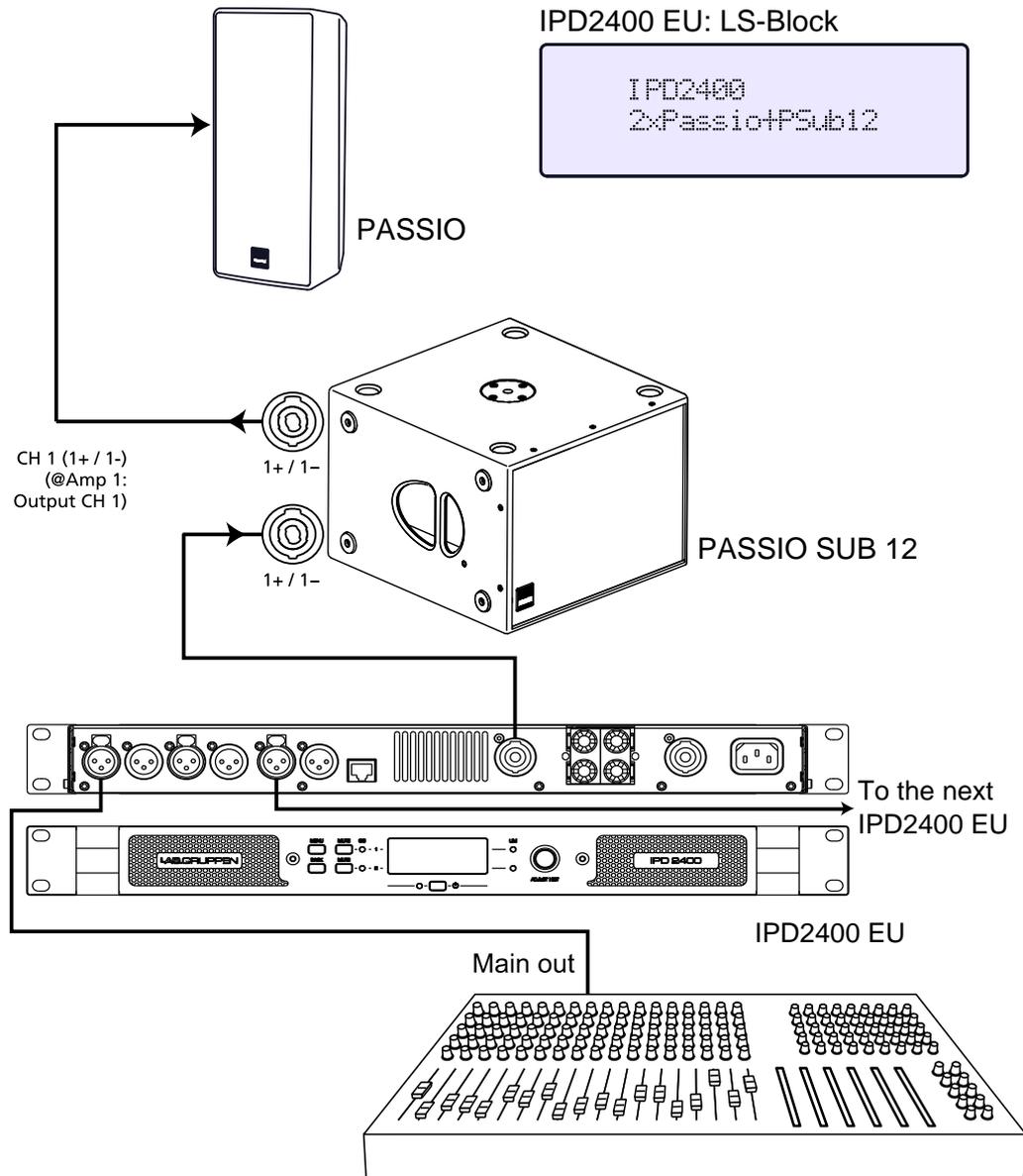


The 2-channel mode guarantees best sound quality and performance

5.2 Combination with Top Speakers in 1-Channel Mode

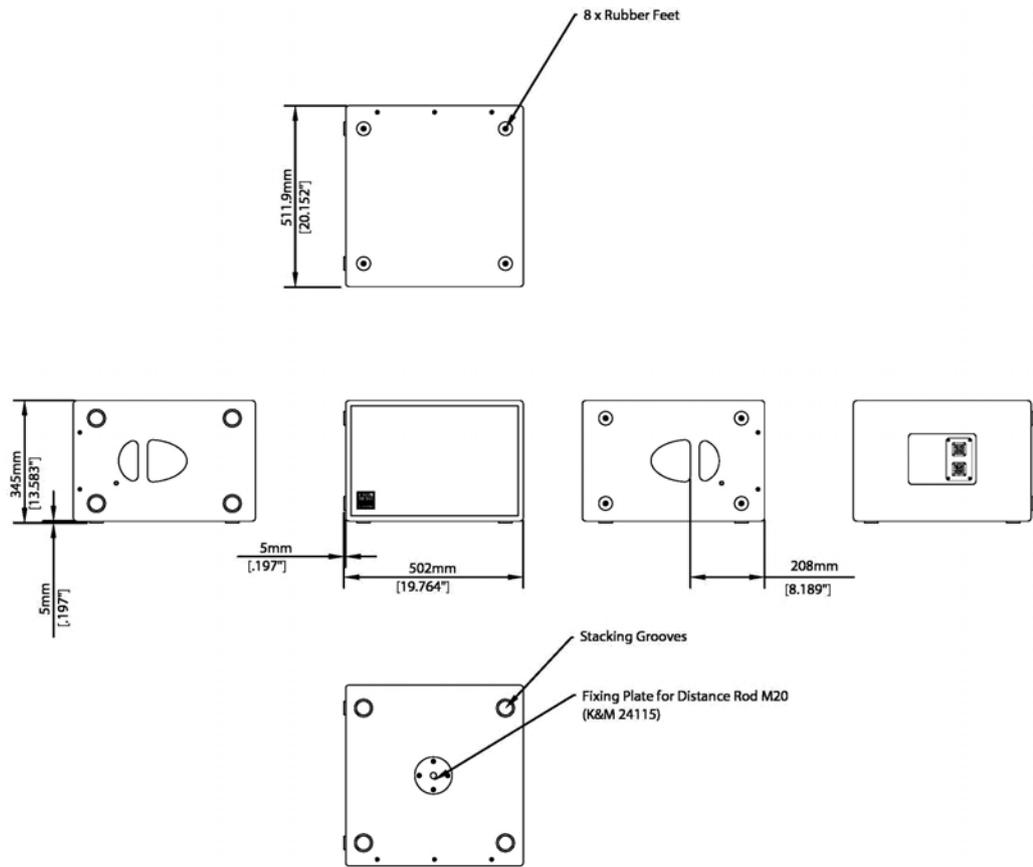
If you want to drive the loudspeaker in conjunction with a top using only one channel, you have to use a Lab.gruppen IPD2400 EU-amp and one of the following tops:

PASSIO SUB 12 combined with...	Selected LSBlock (Controller CD 44)	Filename
K&F PASSIO	2xPassio+PSub12	K&F 2x Passio + Passio Sub 12
K&F GRAVIS 8	2xGra8W+PSub12	K&F 2x Gravis 8 W + Passio Sub 12
K&F GRAVIS 12N	2xGra12+N+PSub12	K&F 2x Gravis 12+N + Passio Sub 12
K&F GRAVIS 12W	2xGra12+W+PSub12	K&F 2x Gravis 12+W + Passio Sub 12
K&F GRAVIS 12XW	2xGr12+XW+PSub12	K&F 2x Gravis 12+XW + Passio Sub 12
K&F CA 106	2xCA106+PaSub12	K&F 2x CA106 + Passio Sub 12
K&F CA 1001	2xCA1001+PSub12	K&F 2x CA1001 + Passio Sub 12



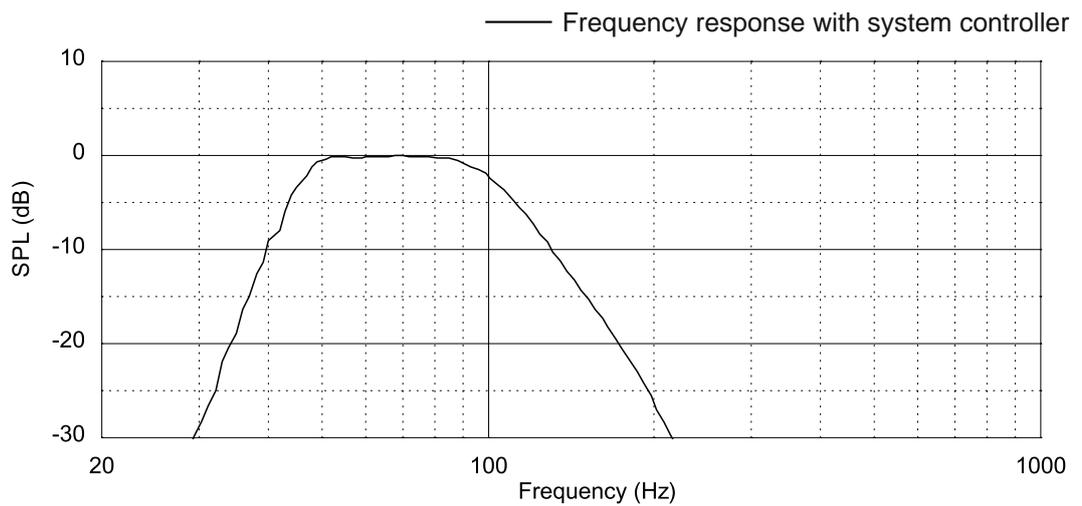
Depending on the top used, you must make allowances in 1-channel operations for more or less significant volume losses as compared to 2-channel operations.

6. Dimensions PASSIO SUB 12



7. Measuring Diagrams

Frequency response



8. Technical Specifications

PASSIO SUB 12	
Concept	Bass reflex system
Operated with	K&F PLM+ Serie, K&F D-Serie, Lab.Gruppen IPD 2400, K&F SystemRack, K&F TOPAS
Lower cut-off frequency	44 Hz (-3 dB)/40 Hz (-10 dB)
Coverage	Omnidirectional
Nominal power handling	400 watts
program	800 watts
peak	1600 watts
Max. SPL (1 m)	129 dB (SPL Peak/1 m/half space)
Impedance nominal	8 Ohm
loudspeaker/channel	see matrix
Components	12" long excursion chassis, 75 mm voice coil with double centering, internal and external ventilation, demodulation ring for minimal distortion
Connection	2 x speakON® 4-pol NLT4MP (+1/-1), IN parallel zu OUT
Enclosure Design	
	Frame reinforced enclosure, 15 mm multiplex with highly resilient Polyurea synthetic black coating, 2 ergonomical handles, 8 rubber feet, 8 stacking grooves for save stacking of identical enclosures, ball-proof steel grille with black acoustic foam.
Dimensions (H x W x D)	502 x 345 x 512 mm
Weight	20.6 kg
Color	RAL 9005 (black) oder RAL 9010 (white)
Options	special finish in RAL colours

9. EC Declaration of Conformity

applicable to all products designated hereafter and distributed by KLING & FREITAG GmbH including model variants unless these products have been altered afterwards.

Loudspeaker systems:

ACCESS B5	E 90 MK II	SEQUENZA 10 N/W
ACCESS B10	LINE 212 -6/-9	SEQUENZA 10 B
ACCESS T5/T9	NOMOS LS CIN	SEQUENZA 5 W
CA 106	NOMOS LS II	SEQUENZA 5 B
CA 205 *) **)	NOMOS LT	SONA 5 **)
CA 1001	NOMOS XLC	SONA 6
CA 1201 *)	NOMOS XLS	SONA 8
CA 1215 -6/-9	NOMOS XLT	SONA SUB **)
CA 1515 -6/-9	PASSIO **)	SONS SUB II
GRAVIS 8 W	PASSIO SUB 12	SW 112
GRAVIS 12 N/W*	PASSIO SUB 15	SW 115D *)
GRAVIS 12+ N/W/XW	SCENA 15	SW 115E
GRAVIS 12+ N/W/XW AS		SW 118E
GRAVIS 15 N/W/XW		SW 212E

*) These products are discontinued.

***) These systems are not covered by the Low Voltage Directive because of the rated voltage used.

We declare that the designated product(s) are in conformity with the protection requirements imposed by the following EU directives:

Electromagnetic Compatibility (EMC) Directive	(2004/108/EC)
Low Voltage Directive	(2006/95/EC)
Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances	(VDE 0042-12:2013-02)

The operating conditions specified in these user's manual must be met accordingly.

This declaration is issued under sole responsibility of the manufacturer:

KLING & FREITAG GmbH
Junkersstraße 14, D-30179 Hannover, Germany

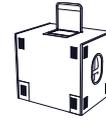


Hannover, 30th March 2015

Jürgen Freitag
 (Managing Director / CEO)

10. Accessories

Protective Cover PASSIO SUB 12



Distance rod 337



11. Care and Maintenance



Warning

1. For the owner and user, it is mandatory to be aware of the safety relevance of speakers that can be flown.

Note that the mains cable is supplied with either a connector appropriate for the place of delivery (see item number) or with open terminals (on the mains side).

The PASSIO SUB 12 system can exhibit signs of wear over the years, for example, from mechanical strain, transport damage, corrosion, or improper handling. Remember that flying speakers always impose a high safety risk.

Generally, perform a visual inspection of your speaker every time you suspend it or take it down. In fixed installations, check the speaker for signs of wear at regular intervals.

When performing those checks, particularly look for deformations, cracks, dents, damage to threads, and corrosion. Also check slings and lifts (e.g. shackles, chains, and steel ropes) carefully for wear and deformation.

If as a result of these checks any uncertainty should arise with regard to safety or defects are found, don't use the speaker any longer.

Inspection regulations may vary depending on application and country of use. Observe all applicable regulations; when in doubt, contact the local authorities.

Many countries require regular inspection of mounting components and accessories. An additional annual inspection is typically required to be performed by a technical expert. Moreover, a legally certified or official authority must perform a detailed inspection every four years.

Therefore, be sure to maintain an inspection log. Enter the values determined for each speaker and accessory during the periodic checks into this log. This way, relevant data are always at hand in case of inspection. The log should also document maintenance measures and inspection intervals and contain parts lists.

2. The Polyurea synthetic coating used by KLING & FREITAG is impact proof and highly resistant. We recommend using protective coverings or transport cases to help avoid damaging the paint in case of continuous mobile use, etc.
3. To replace the filter foam, send the front grille incl. foam to KLING & FREITAG GMBH. Upon payment for expenses, the grille with the new covering will be returned.

12. Transportation and Storage

The PASSIO SUB 12 is protected against short-term moisture. despite, be sure to store, transport, and use the accessories in dry environments only. The PASSIO SUB 12 System is not designed for long-term use in a corrosive environment.

Make sure that the system is adequately ventilated during longer storage periods so any residual moisture can escape from the equipment.

Furthermore, you should ensure that the PASSIO SUB 12 System is protected from mechanical strain to prevent possible damage.

We recommend using suitable transport and storage cases and the optional soft cover that protects from the above-mentioned influences.

13. Disposal

Please recycle the packaging material of the device.

13.1 Germany

Don't dispose of waste electrical equipment through household waste.

Don't deliver it to official recycling points either.

All KLING & FREITAG products are plain business-to-business (B2B) products. Therefore, KLING & FREITAG GmbH is exclusively responsible for disposing of all KLING & FREITAG waste equipment marked with a garbage-can icon. Please call the below phone number when you have a KLING & FREITAG product (marked with the garbage-can icon) for disposal. We will offer you a straightforward and professional disposal at no cost.



KLING & FREITAG equipment with no such icon was sold before 24 March 2006; in that case, the owner is legally responsible for disposal. We will, however, gladly assist you by naming appropriate ways of disposal.

For further disposal information of KLING & FREITAG waste products, call +49 (0)511-96 99 7-0

Background information: The Electrical and Electronic Equipment and Appliances Act (ElektroG) is the German implementation of the European (EU) Waste Electrical and Electronic Equipment Directive (WEEE, 2002/96/EC).

Therefore, starting on 24 March 2006, KLING & FREITAG GmbH has marked all products subject to the WEEE that are distributed in Germany with an icon showing a crossed-out garbage can with a white bar below it. The icon indicates that the equipment was distributed on or after 24 March 2006 and must not be disposed of through household waste.

KLING & FREITAG GmbH is legally registered as a manufacturer with the German waste-equipment registration authority (EAR). The WEEE registration number is: DE64110372.

We substantiated towards the EAR that our products are for B2B trade only.

13.2 EU, Norway, Iceland, and Liechtenstein

Don't dispose of waste electrical equipment through household waste.

Starting on 13 August 2005, KLING & FREITAG GMBH has marked all products subject to the WEEE directive that are distributed in any member state of the European Union (except Germany), Norway, Iceland, or Liechtenstein with an icon showing a crossed-out garbage can with a white bar below it.



The icon indicates that the equipment was distributed on or after 13 August 2005 and must not be disposed of through household waste.

Unfortunately, the European WEEE directive was implemented in different national legislation in the EU member states, making it impossible to offer a consistent disposal solution throughout Europe.

The local distributor (sales partner) in the respective country is responsible for complying with the applicable legislation.

Contact your retailer or the local authorities for information on the regulations applicable in any EU member state (except Germany).

13.3 All Other Countries

Contact your retailer or the local authorities for information on the regulations applicable in any country not listed above.

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