Fohhn

Manual
Focus Slim - Serie

Inhalt

22.11.2023

1. Important safety information

Please read and follow these safety instructions and any other instructions given for your Fohhn products before using or installing them. Always keep the instructions near the devices. Reading them does not replace the need for awareness of and compliance with currently applicable national safety regulations and standards, or the observance of safe on-site working methods. All information published here are based on data that was available at the time of publication. We expressly reserve the right to make any changes.

This document is intended exclusively for qualified specialist personnel or people with appropriate technical training. The information contained herein is intended for the installation, maintenance and repair of this product and requires a thorough understanding of the technical aspects and applicable safety standards. By using this product, you agree that you have the necessary professional competence to install, maintain or repair it safely and properly. Any actions outside your scope of authority may pose risks and are not recommended. If you are unclear or have any questions, please contact our technical support or contact an authorized specialist dealer. The information presented here is intended as ancillary advice and does not affect the user's ultimate responsibility to ensure safe operation on site.

1.1 Explanation of terms

⚠️ **Danger!**	This signal word indicates a hazard with a high risk level, which, if not avoided, could result in death or serious injury.
⚠️ **Warning!**	This signal word indicates a hazard with a medium risk level, which, if not avoided, could result in death or serious injury.
⚠️ **Caution!**	This signal word indicates a hazard with a lower risk level, which, if not avoided, could result in minor or moderate injury.

1.2 General safety instructions

All components required for the mounting or suspension of a Fohhn system have been designed and constructed in accordance and compliance with the following regulations that are applicable in Germany: DGUV V17 (formerly BGV-C1), DGUV I215-313 (formerly BGI 810-3), DIN EN 1993-1-1 and DIN EN 1999-1-1.

⚠️ **Danger!**	To avoid danger to life or limb, please ensure that all personnel involved in installing or deconstructing such a system have read and understood the contents of this manual. All personnel should be aware of local regulations concerning workplace safety. It is strongly recommended to wear suitable helmets and safety footwear during the rigging procedure. The information presented here should, however, be regarded as accompanying advice and it does not affect the ultimate responsibility of the user to ensure safe on-site operation.
⚠️ **Warning!**	To prevent injury caused by a collapsing or falling system, this device must be securely mounted in accordance with the rigging instructions and current safety guidelines. Only use the specified and original Fohhn mounting accessories and never exceed their maximum load capacity. the load limit of any component that will be used for system suspension (including shackles, chains and hoists) must not be exceeded. In order to comply with local safety regulations, these load limits may, in certain circumstances due to underlying safety factors (operating ratios), need to be recalculated and, if necessary, reduced. the device must be regularly inspected for any signs of wear or loosening of the rigging connections.

22.11.2023

		it is necessary to ensure that the mounting points on a building, scaffolding or truss structure have sufficient load-bearing capacity and are structurally viable. all components of a hung/"flown" device must be visually inspected before installation. Any component showing missing parts, deformations, cracks, corrosion, fractured welds or other signs of wear must not be used under any circumstances. • it is strongly recommended that a flown (loudspeaker) system should be landed and dismounted if local wind intensity is equal or greater than 6 Bft (Beaufort Scale).
⚠️	**Warning!**	To prevent injury through accidents, the stability of the entire system (e.g. during assembly, in a vertical stack or when using a pole-mounted flange) must be guaranteed. Make sure that the system cannot topple over (e.g. as the result of a sloping surface or wind) and that it is protected against being hit from people or vehicles, for example.
⚠️	**Caution!**	To avoid injury, • the device must be stored, installed and operated well away from children. • no one must climb on either flown or stacked loudspeaker systems. • the device must be taken out of operation, marked appropriately and protected against accidental use if it shows visible signs of damage, appears to contain loose parts, is not working correctly or has been subjected to poor transportation conditions (e.g. with unsuitable packaging). If necessary, please contact your Fohhn dealer and the transportation company immediately.

1.3 Acoustic safety instructions

⚠️	**Warning!**	Fohhn systems are capable of generating very high sound pressure levels, which can cause irreparable damage to hearing. To avoid potential damage to your hearing, never stand in the immediate vicinity of the system when it is in use. Keep more than 5 metres away from powerful Fohhn systems, but also at least 1 metre away from smaller ones for the near field. To prevent both hearing impairment and damage to the device, avoid the following while the device is in operation: • acoustic feedback • high powered, permanently distorted signals • impulse noises, which may occur when some other device in the signal chain is switched on or off, connected or disconnected from the system (e.g. a mixing desk, audio matrix or controller).

1.4 Electrical safety instructions

All Fohhn products that are or contain Fohhn power amplifiers are protection class 1 appliances. They are built and certified in accordance with the VDE safety measures for electronic devices and, safety-wise, leave our factory in perfect condition. The devices comply with all currently applicable EMC directives: Confirmed by the attached CE marking.

⚠️	**Warning!**	To minimize the risk of electric shock, • the mains plug grounding pin must never be separated and under no circumstances should the plug be taped up. • the device must only be connected to a professionally tested shockproof socket. • the amplifier housing and loudspeaker enclosure must never be opened. It does not contain any components that can be repaired by the user. In the case of a defect, please consult qualified service personnel and/or the Fohhn dealer. Please also ensure that the local mains supply voltage matches the power supply voltage specified on the device. To minimize the risk of an electric shock or fire, • the device must not be subjected to moisture/wet conditions for a long period of time. • containers filled with liquid (e.g. beverage containers) must not be placed on the device. • ventilation slots must not be covered with objects (e.g. protective rain covers). • the device must not be subjected to excessive heat, sunshine, fire or similar. • no open sources of flame (e.g. pyrotechnics) must be placed on the device.
⚠️	**Caution!**	To avoid damaging the device, do not leave the power cable plugged in if the device is not going to be used for a while. Remove the plug from the mains socket to completely disconnect the device.

1.5 Connections and wiring

		Please note the following when wiring up your system:
⚠️	**Warning!**	- Wiring of loudspeakers systems should only be carried out by suitably qualified personnel. - Only use cabling- and connector materials that meet professional standards and are working faultlessly. - Only use properly shielded plugs and cables with a sufficient cross section. - Only use power cables with a fully intact grounding pin. - Lay and secure the cabling in a way that it can't be damaged by tools, machinery, the loudspeakers or its accessories. - Lay the cabling in such a way that it cannot be tripped over. - Protect any laid cables from unnecessary traction. - Never use any signal or power cables for mounting, hoisting or securing a system. - Note the respective pin assignment of audio and data cabling. - Avoid excessive tightening of the screws on connection terminals.

1.6 Operating conditions

⚠️	**Warnung!**	The device should be immediately inspected by a Fohhn approved service partner if - the mains power socket is damaged, - a foreign body or liquid has got into the interior of the device, - the device is not working normally i.e it is showing marked differences in performance, - the device is damaged (e.g. after a fall).
⚠️	**Caution!**	Please note the following when operating your Fohhn system: - The permitted ambient temperature of the device during operation ranges from 0 °C to +40 °C. A short period of use outside this temperature range is possible, but not advisable. - The device is intended for use in a dry environment with normal levels of dust and humidity in the air. - Never expose the device to any aggressive chemical fluids or vapours. - Always make sure that heat can be dissipated via the rear surface of the device enclosure. Maintain these gaps: left/right side >5 cm, back >10 cm, top >10 cm. - Always make sure that the device is well ventilated. To ensure adequate cooling, the device must not be covered with towels or cloths. Avoid letting the enclosure become hot through exposure to sunlight or strong spotlights. - Never expose the device to strong vibration.

Information on abnormal operation: If the permissible operating temperature of a powered Fohhn device (active speaker system or amplifier) is too high (over 75 °C), the device will shut down automatically to protect itself. As soon as the temperature returns to within the normal operating range, the device will automatically power up again. The temperature of the Fohhn system can be monitored in Fohhn Audio Soft. Shutdown is getting more likely if the product is exposed to direct sunlight or very high environmental temperatures.

1.7 Storage and transportation

Please note the following:
- The device should only be transported in its dedicated transport case.
- Store the device in a dry environment with a constant ambient temperature to avoid condensation.
- The permitted ambient temperature range for storing the device is -10 °C to +70 °C.
- Due to fluctuations in temperature during transportation and storage, condensation may start to build up on the surface of the device. Before operating the device, examine its surface for any signs of moisture. If this is the case, allow the unpacked device to acclimatise for two hours in the environmental temperature before using it.

22.11.2023

2. The Product

2.1 Product introduction

All functions - more compact & more affordable. With Focus Slim, Fohhn completes its broad and renowned Beam Steering portfolio. The four super-slim models have all the features of Fohhn Beam Steering technology, making them attractive for smaller and more price-sensitive projects. The beam angle can be easily adjusted using the mouse wheel - the systems remain straight on the wall or screen without any mechanical tilt. This allows you to achieve first-class, clear Fohhn sound and the best speech intelligibility without annoying reflections. Simply integrated. Only 8.4 cm wide. Equipped with Dante and analog inputs. Integrated bass reflex system.

2.2 Scope of supply

Every product is checked to the highest quality and safety standards before shipping. Please inspect your product carefully for transport damage and inform your dealer and the transport company immediately in the event of damage. Please check that the packaging contains all the components belonging to the device. Your Fohhn system is included in the scope of delivery:

- •   1 × Fohhn Focus Slim Speakersystem
- •   1 × 3-Pin Phönix-plug for input terminal
- •   1 × 3-Pin Phönix-plug for mains connection
- •   4 × M6 Nuts fot the T-slot
- •   1 × cover for connection panel
- •   1 × Operating instructions (or available at www.fohhn.com)

If the scope of delivery is not complete, please contact your Fohhn dealer!

3. Setup and operation

3.1 Installation and mounting

Focus Slim has the following connections and displays on the back of the housing: The cables must be connected by a specialist when the system is switched off.

22.11.2023

(1) Status LEDs

Ready - This LED lights up blue when the system is ready for use.

Protect - This LED lights up red if there is an error during operation.

(2) USB-C config socket & LED

The Focus Slim is equipped with a USB-C socket on the back of the housing. This enables optional, direct configuration of the device using a PC and Fohhn Audio Soft control software without using a Fohhn network adapter. The USB-C config LED lights up blue when the speaker is connected to a control computer via the USB-C socket.

The LED flashes blue/white when communication with the control computer is taking place.

The LED flashes green/yellow when communication is taking place via Dante.

(3) Analog input

An analog audio signal is fed into the Phoenix terminal. The two input channels Analog and Dante are summed by default and played back simultaneously via the loudspeaker system.

(4) Dante input

A digital audio signal is fed in at the Dante network socket and the control signals are transmitted via Ethernet.

The two input channels Analog and Dante are summed as standard and played back simultaneously via the loudspeaker system.

(5) Mains

This is where you establish a connection to the mains supply using the 3-pin terminal.

(6) Cable strain relief

You can use this metal lug to provide cable strain relief, e.g. using cable ties.

3.2 Cover oft he connection panel

Once the Focus Slim has been successfully put into operation, the cover (6) of the connection panel must be attached. The cover should be attached so that the cable outlet of the signal cable and the mains cable points downwards. The enclosed screws (7) are used to secure the cover. In addition, the strain relief (6) can be implemented using the holes provided in the cover and the cable ties supplied.

3.3 Slot nut mounting

- Inserting the T-nuts is described in the following steps.

- Press the T-Slot Nut into the slot with slight pressure.
- The T-slot nut must still be correctly aligned to allow a screw to be screwed in. A screwdriver or an Allen key can be used for this purpose.

3.4 setup and configuration

Once you have made the relevant connections described in Connections and status display, the Focus Slim is ready for operation. However, if you want to change configurations such as routing, EQ or level, load a new preset or monitor the Focus Slim using software, connect it to a control computer using the USB-C socket or the Dante network. You will need a Windows PC with the Fohhn Audio Soft control software installed (free download at www.fohhn.com).

4 Technical data

	FS-70	FS-110	FS-150	FS-200
Electroacoustic features				
Acoustic design	Ultra-compact, electronically controllable line source system, bass reflex			
Components	4 x 2,5"	8 x2,5"	12 x2,5"	16 x2,5"
	4 × 2.5" broadband chassis, water-repellent membrane, with coaxial Fohhn diffraction waveguide			
Max SPL [1]	111 dB	117 dB	121 dB	123 dB
Operating mode	active, 4 × DSP amplifier, Class-D			
Amplifier channels	4	8	12	16
Transmission range [2]	62 Hz – 17 kHz			

22.11.2023

nominal dispersion, horizontal [3]	140°			
vertical beam width, digitally controlled	0° bis +90° in 0,1°-increments			
vertical inclination angle, digitally controlled	-40° bis +40° in 0,1°-increments			
acoustic centre	both beams moveable between 0 – 100 % (from speaker bottom to top)			
Physical features				
enclosure	aluminum, powder coated			
front design	Front grille in enclosure color			
protection grille	Steel grille, powder coated, backed with acoustically transparent 3D mesh			
mounting points	continuous T-slot at rear			
connectors	Dante audio and control with 100Base-TX Ethernet, analog input, mains power, USB-C Config for local configuration			
standard colours	black or white powder coated			
Dimensions without / incl. connection cover (w x h x d)	85 × 700 × 90 / 100 mm	85 × 1100 × 90 / 100 mm	85 × 1500 × 90 / 100 mm	85 × 2000 × 90 / 100 mm
weight. [4]	3,9 kg	5,8 kg	7,9 kg	10,1 kg
protection grade	IP 54			
Electronic features				
Amplifier type	Class D - Pure Path Digital PWM			
support AES67	Yes			
DSP channels Fohhn Audio DSP	4	8	12	16
Amplifier power (1 kHz, THD+N < 1%)	4 × 75 W	8 × 75 W	12 × 75 W	16 × 75 W
Frequency response	20 Hz – 20 kHz			
Gain	25 dB			
Input sensitivity	0 dBFS / +4,2 dBV			
signal/noise ratio	> 103 dB (A-gewichtet)			
Dynamic range	> 120 dB			
System latency	Dante + 1,2 ms			
THD+N	0,08 % (1 kHz, 8 Ohm, 3 dB below Clipping)			
Auto Power Save	Adjustable from 1 s to 12 h, or			
Password protection	Yes			
Protective circuit	over voltage protection, over current protection, over temperature protection, short-circuit protection, DC protection, power on delay, soft start and inrush current limit			
power supply	100 – 240 V AC 50/60 Hz, Universal-Netzteil mit Leistungsfaktorkorrektur (PFC)			
power consumption,	100 W / 10 W	200 W / 15 W	300 W / 20 W	400 W / 25 W
	Auto Power Save 4 W, Standby 3 W			
power factor (PFC)	> 90 %			
Temperature range	0 – 40 °C			
Storage temperature	-10 -70 °C			
relative humidity	max. 90% non-condensing			
cooling	passive			
Controller				
FIR-Filter	yes			
Gain	-80 dB – +12 dB			
Volume	-80 dB – +12 dB			
EQ Input	10 fully parametric filters, Gain +/-12 dB, Frequency 10 Hz – 20 kHz, Q 0.1 – 100			
EQ Output	10 fully parametric filters, Gain +/-12 dB, Frequency 10 Hz – 20 kHz, Q 0.1 – 100			
Selective 3-band-Limiting	bass / mid / high			
Limiter / Compressor	2 × Input, 1 × Output			
Noise Gate	2 × Input, 1 × Output			
Delay Input	0 – 350 ms (0 – 120 m)			
Delay Output	0 – 640 ms (0 – 220 m)			
X-Over	Linkwitz-Riley 4th order (24 dB/octave), high pass 10 Hz - 20 kHz, low pass 10 Hz - 20 kHz, each 2 × input, 1 × output			

22.11.2023

User Presets	100
system latency	Dante + 1,2 ms
simulation beam	Fohhn Net, Fohhn Audio Soft
band-specific time constants	yes
filter technology	80-bit double precision
Anschlüsse und Bedienelemente	
inputs & control	1 × 100Base-TX Ethernet (RJ-45) for Dante audio and control, 1 × terminal for analog audio, balanced 1 × USB-C for control
mains connection	1 × 3-pin terminal (4.0 mm² rigid / 2.5 mm² flex)
Remote control and remote monitoring	
remote control	Fohhn Audio Soft, Fohhn Net over IP
remote monitoring	Temperatur, Protect, Signale, Power Supply, Fohhn Net, Fohhn Audio Soft
integration in media control	UDP-Textprotokoll, Q-SYS Plugin verfügbar
Options	
Spezial color	RAL Classic / NCS / Pantone auf Anfrage, Fohhn Texture Design auf Anfrage
notes	
[1]	according to IEC-60268-5 long term
[2]	according to IEC-60268-5 short term
[3]	Peak, 20 ms with bandpass filtered pink noise signal according to IEC 60268-2 at one octave above the lower limit of the frequency range
[4]	Peak, 20 ms with bandpass filtered pink noise signal according to IEC 60268-2 at one octave above the lower limit of the frequency range, with speaker preset
[5]	-10 dB under anechoic halfspace-conditions, with speaker preset
[6]	horizontal x vertical at -6 dB
[7]	net weight without optional equipment

[1] Peak, 20 ms mit bandgefiltertem rosa Rauschen entsprechend IEC 60268-2, eine Oktave über der unteren Grenzfrequenz, mit Speakerpreset

[2] -10 dB unter reflexionsfreien Halbraum-Bedingungen mit Speakerpreset

[3] Horizontal x vertikal bei -6dB

[4] Nettogewicht ohne Zusatzausstattung

5. Servicing and repair

Servicing and/or repairs should only be carried out by qualified personnel who have been trained by Fohhn.
To find a Fohhn Service centre in your area, please contact us at the address on the back page of this manual.
Keep the packaging that has been supplied with this system so that, in the event of any damage, it can be returned in its original packaging. This will reduce the risk of any further damage occurring during transportation.

6. Disposal

Please note that this product must not be disposed of with household waste, but must be taken to a disposal point for electrical/electronic waste. Observe all applicable national or local legal regulations. For more information, please contact your local city office, your local waste transfer station or your local distributor.

22.11.2023

7. CE-marking

We hereby certify that this product complies with the currently applicable standards of the EMC Act and that the CE mark shown here is therefore affixed to the product.

8. Contact adress

Fohhn Audio AG
Großer Forst 15
72622 Nürtingen
Deutschland
Tel. +49 7022 93323-0
Fax +49 7022 93324-0
www.fohhn.com
info@fohhn.com

22.11.2023