

Data sheet

AT-221w (weatherproof)



Arc-Series

Architectural Sound Design.



AT-221w loudspeaker



The Fohhn® AT-221w is a weatherproof speaker system specially developed for outdoor applications. Its compact dimensions, excellent power output and outstanding speech intelligibility are impressive.

Description

The tough VSM housing is fitted with impregnated 10"/1 CD high-performance speakers. The speakers are time-aligned and well protected by a robust metal protective grille on the front. A special sound-transparent filter foam lining also provides effective protection against water and dust. 2 speakon sockets are installed on the bottom of the housing. A precision-made crossover with electronic high-frequency protection circuit is also integrated. The inside of the housing is reinforced throughout with metal brackets and equipped with 5 M8 threaded inserts for safe installation. The AT-20 can be combined with subwoofers AS-20, AS-31 and AS-40.

Technical specifications

electro-acoustical features

acoustic design	passive loudspeaker, 2-way, vented, weather resistant
components ^[1]	10" / 1" on rotatable CD-horn, with self-resetting IPC ^[1] -HF protection
power rating (nominal) ^[1]	300 W
power rating (program) ^[2]	600 W
power rating (peak) ^[3]	1200 W
sensitivity ^[4]	101 dB
maximum SPL ^[3]	131 dB
frequency range ^[5]	70 Hz – 20 kHz
nominal dispersion (h x v) ^[6]	90° x 60° or 60° x 40°
nominal impedance	8 ohms

The manufacturer reserves the right to make technical modifications according to legal regulations stipulating the continual improvement of product features.

^[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] 2,83 V at 8 ohms (2 V at 4 ohms, 4 V at 16 ohms) at a distance of 1 meter under anechoic fullspace conditions

^[5] -10 dB under anechoic halfspace-conditions

^[6] horizontal x vertical at -6 dB, rotatable horn

Applications

Sound production in open or damp environments such as sports arenas, stadiums, ski huts, etc.

Connections

2x Speakon sockets on bottom side or open cable end.

Optional versions

Optional special weatherproof plastic coating.

Optional 100 volts version. All RAL colours.

features

enclosure	Weatherproof VSM cabinet, reinforced with steel braces
protection grille	ball impact resistant metal, powder coated finish
rigging points	5x M8 thread
connections	2x Neutrik NL4 Speakon connectors in the bottom panel, watertight cable gland with 3m of wire
standard colours	scaratch-proof polyurethane coating, black
frontal design	acoustic foam in enclosure colour
weather protection	polyurethane coating with UV-resistant finish and water-repellant speaker cone impregnation
dimensions (W x H x D)	320 x 510 x 290 mm
weight ^[7]	14,5 kg

optional features

integrated 100 V-transformer	60/30/15 W or 120/60/30 W or 240/120/60 W
optional colours	all RAL-colours
CAAD simulation data	EASE

^[7] net weight without optional equipment

^[1] Intelligent Protection Circuit. Voltage-controlled semiconductor circuit protecting the HF-driver against overload highly effective and with very short attack time.

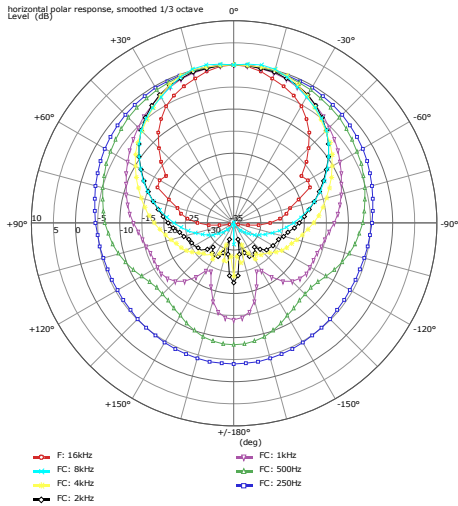


Fig. 1: Horizontal polar pattern 90°x60°

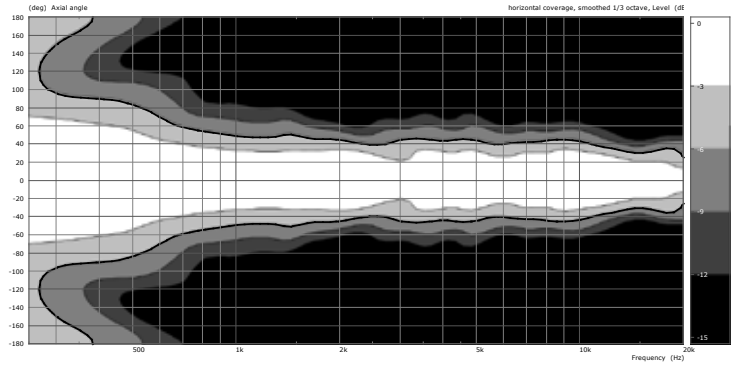


Fig. 2: Horizontal coverage 90°x60°

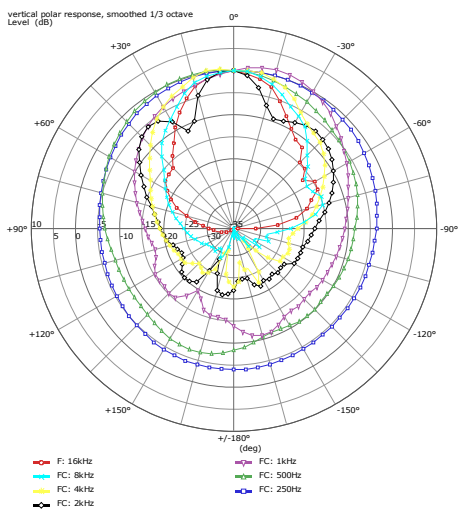


Fig. 3: Vertical polar pattern 90°x60°

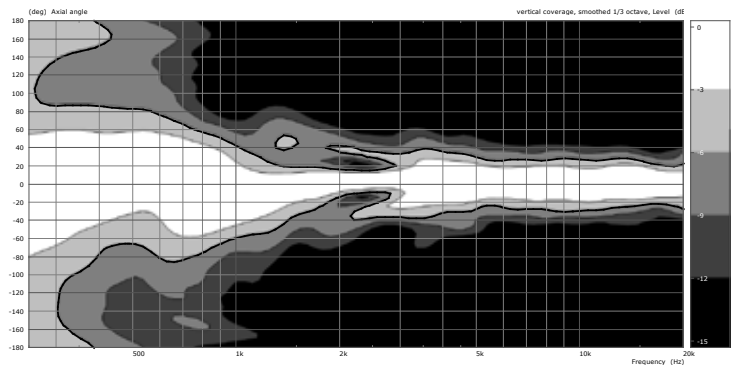


Fig. 4: Vertical coverage 90°x60°

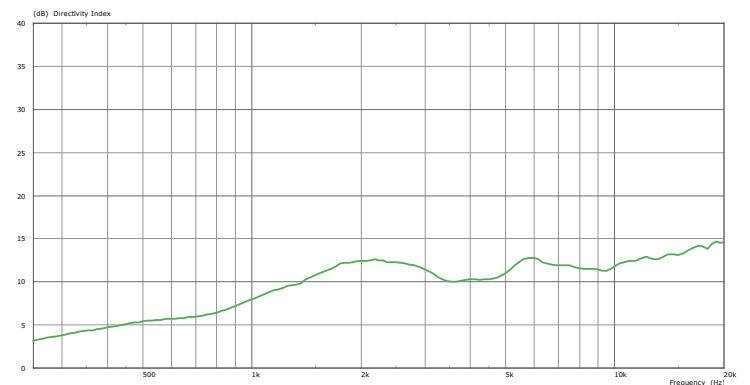


Fig. 5: Directivity index 90°x60°

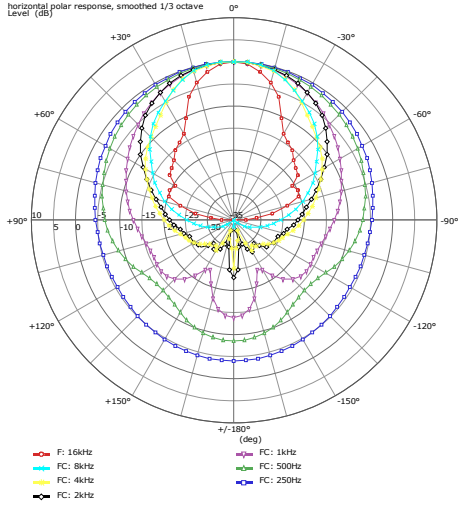


Fig. 6: Horizontal polar pattern 60°x40°

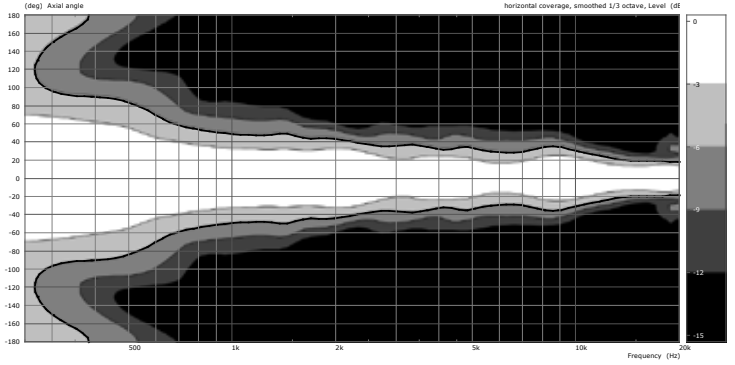


Fig. 7: Horizontal coverage 60°x40°

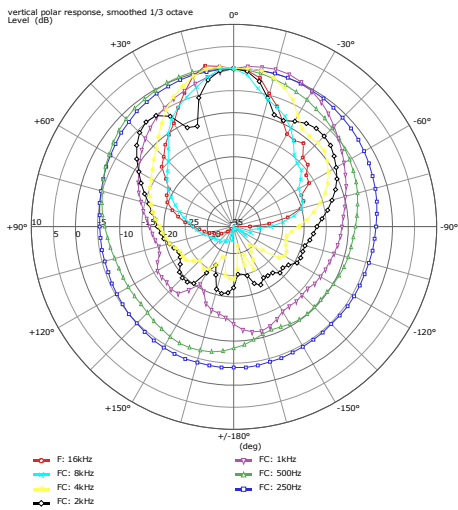


Fig. 8: Vertical polar pattern 60°x40°

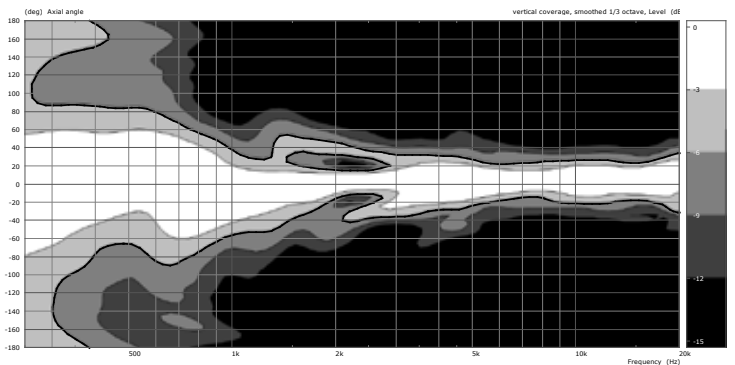


Fig. 9: Vertical coverage 60°x40°

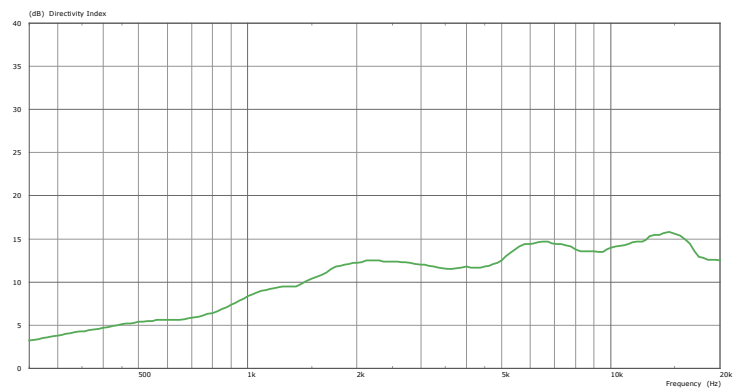


Fig. 10: Directivity index 60°x40°

Fig. 11: Frequency response

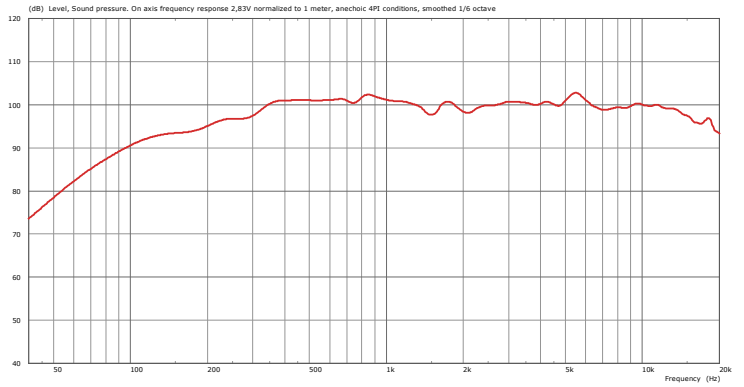


Fig. 12: Impedance

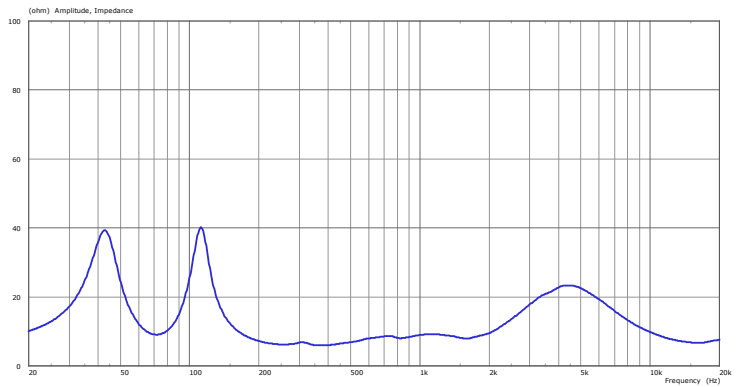
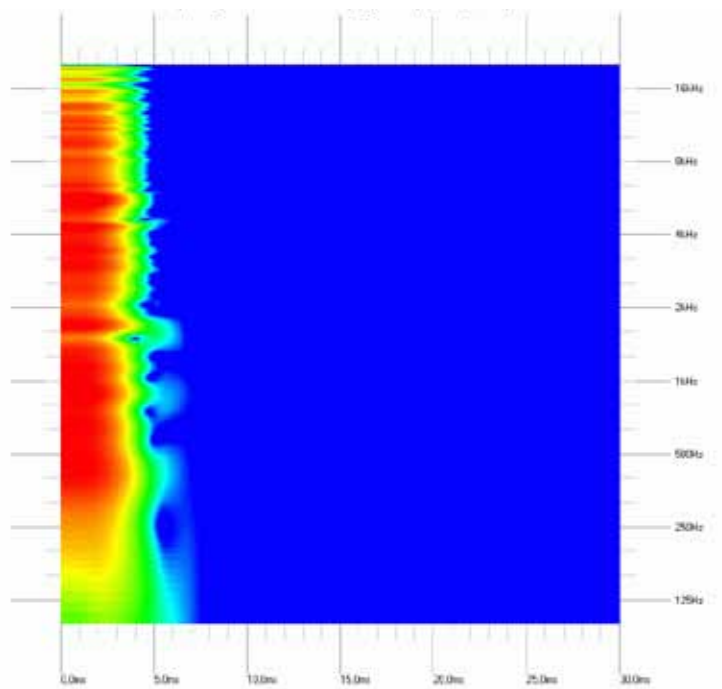


Fig. 13: Spectral decay



Controlling Arc-Series speakers

1. Fohhn system DSP amplifiers

Fohhn offers a range of specially adapted system DSP amplifiers for controlling Arc speaker systems, which guarantee maximum sound performance and operational reliability for your Fohhn products. As manufacturers of speaker, amplifier and DSP technology, we know our systems inside and out right down to the smallest detail and are therefore in a perfect position to provide our users with the best overall system.

Fohhn System DSP amplifier are offering following advantages:

Integrated high-performance DSP technology:

- quick set-up,
- minimal space requirements in electronics cabinet,
- minimal cable requirements,
- fewer cable faults,
- controller and amplifier can be controlled and monitored using the same software.

Dual DSP technology

The DSP amplifiers contain 2 separate DSP engines with enormous capacity and processing power for 5 digital audio devices (DSP-1) and Fohhn specific speaker databases (DSP-2).

Remote monitoring and control

Integrated temperature and operating time monitor, status indicator / protection, remote control capability / network compatibility using a laptop, wall installation modules or media control systems.

1.1 Amplifier recommendations for the Arc-Series



Fohhn® dual DSP technology

DSP-1: Integrated digital audio devices

Each amplifier channel has a:

- programmable 10 band parametric EQ,
- compressor/limiter/noise gate,
- delay,
- X-over function,
- top-quality pink noise and sweeptone generator

DSP-2: Speaker management

An integrated speaker database guarantees excellent sound quality and protection for all Fohhn speaker types. A sophisticated algorithm developed by Fohhn engineers and adapted to each speaker allows the individual monitoring and adjustment of bass, mid and high ranges.

D-2.750

2 channel operation, 2x 750 W / 4 ohms, 2x 390 W / 8 ohms, Fohhn Audio DSP, display, remote control

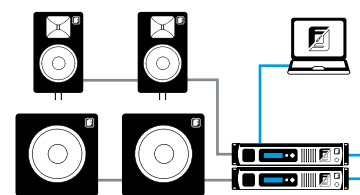
D-4.750

4+2 channel operation, 4x 750 W / 4 ohms, 4x 390 W / 8 ohms, **2x DSP line out channels for controlling a conventional amplifier**, Fohhn Audio DSP, display, remote control

D-4.1200

4+2 channel operation, 4x 1.200 W / 4 ohms, 4x 750 W / 8 ohms, **2x DSP line out channels for controlling a conventional amplifier**, Fohhn Audio DSP, display, remote control

	Arc-Tops										Linea		Arc-Subs									
	AT-05	AT-061	AT-07	AT-08	AT-09	AT-10	AT-201	AT-221w	AT-30	AT-35	AT-40	AT-50	AT-661w	AL-10-150	LX-100/150	AS-10	ASP-10	AS-20	ASP-20	AS-31	AS-40	
D-2.750	x	x	x	x	x	x	x	x	x					x	x	x	x	x				
D-4.750	x	x	x	x	x	x	x	x	x					x	x	x	x	x				
D-2.1500									x	x	x	x	x							x	x	
D-4.1200							x	x	x	x	x	x								x	x	



2x Sub passive / 2x Top passive
2x DSP amplifier

Controlling Arc-Series speakers

2. Standard amplifiers combined with Fohhn controllers

Standard amplifiers / 100V amplifiers / multichannel amplifiers combined with Fohhn FC-9 DSP system controllers

All of the speaker systems in the Fohhn Arc-Series can be operated in combination with standard amplifiers (e.g. Bittner amplifiers). Each Fohhn speaker model has a linear design, neutral sound adaptation function and is fitted with an integrated crossover with electronic tweeter protection.

We recommend integrating the FC-9 Fohhn DSP system controller for applications involving standard multichannel amplifiers, 100V amplifiers or monitored amplifiers according to EN 60849.

The FC-9 guarantees maximum sound quality, operational reliability and performance features that no other standard controller can offer in combination with our Fohhn speakers.

Sound quality. Reliability. Intelligent control.

- * Fohhn DSPs guarantee maximum sound performance
- * 5 premium audio tools such as Parametric EQ are integrated
- * Integral speaker and amplifier database for maximum operating reliability
- * Remote monitoring/operation, network-compatible
- * Automatic amplifier calibration function CAS
- * 8 input switching contacts for easy system integration
- * Perfect adaptation to all standard amplifiers

FC-9 DSP system controller



DIN EN 60849 (VDE 0828)

Bittner amplifiers



BITTNER
AUDIO

In addition to our special Fohhn® DSP amplifiers, we also offer the complete range of **amplifiers manufactured by Bittner Audio** for low-ohm or 100 volt applications. Bittner Audio offers solutions such as multichannel amplifiers with eight standard channels and **important features for integration in electroacoustic emergency warning systems according to DIN EN 60849 (VDE 0828)**. Contact us for more information!

Advantages of the FC-9 controller:

Perfect adaptation to all standard amplifiers

Automatic amplifier calibration function and integrated amplifier database for perfect adaptation.

Dual DSP technology

The FC-9 contains 2 separate DSP engines with enormous capacity and processing power for Fohhn specific speaker databases and 5 digital audio devices.

Integrated speaker database

Guarantees excellent sound quality and protection for all Fohhn speaker types.

A sophisticated algorithm developed by Fohhn engineers and adapted to each speaker allows the individual monitoring and adjustment of bass, mid and high ranges.

Remote monitoring and control

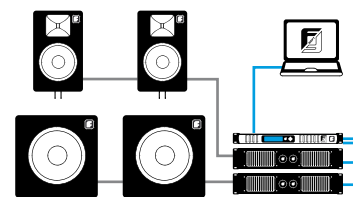
Remote control capability / network compatibility using a laptop, wall installation modules or media control systems.

8 input switching contacts

The FC-9 has 8 input contacts. The inputs can be utilized to switch between the different presets of the FC-9, as well as other Fohhn-Net devices. With two inputs and two pushbuttons (shutters) connected to them, a volume control can be realized as well.

4 inputs / 6 outputs (24 nodes)

A programmable 10-band parametric EQ, compressor/ limiter/noise gate, delay, X-over function, top-quality pink noise and sweptone generator are available at each output, allowing you to conveniently adapt the Fohhn system to the room acoustics or your own personal requirements.



2x Sub passive / 2x Top passive
2x standard amplifiers
1x DSP system controller FC-9

Remote control and network ability of Fohhn devices with integrated DSP

FR-10

remote control wall panel designed for the remote operation of Fohhn devices with integrated DSP.



Description

The FR-10 is a wall mount remote control module designed for the remote operation of Fohhn DSP amplifiers, DSP controllers and active Fohhn speakers systems. The FR-10 is extremely easy to operate because the controls are so well arranged. It is virtually impossible for the end customer to make operating errors because the only operating elements are the 8 labelled buttons.

Easy handling

Control up to 32 Fohhn devices individually with this stylish FR-10 wall panel. 8 programmable buttons can be configured to control the overall volume of a system, the volume in different zones or presets for different room effects, for example. The system also has a special function that confirms whether all commands have been executed successfully. The buttons indicate this by changing red or green shortly after they are pressed. For example, if a device is not switched on, the button changes red to indicate that a command could not be executed. This additional monitoring function ultimately contributes to the overall operating reliability of your system. The wall panel is easy to configure using a standard computer with intuitive Fohhn-Net Remote software installed.

Connections

Two terminal strips (paralleled). Alternative connection via standard 4-wire telephone cable.

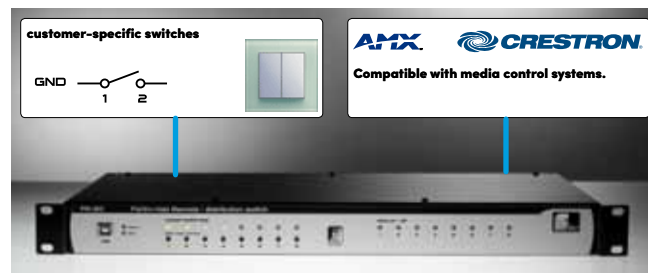
Applications

The FR-10 is ideal for training rooms, hotels, churches, halls, restaurants or any venue where a simple, efficient system is required to control your audio equipment from a central location.

The FR-10 is also ideal for projects where complex media control systems are not viable or inappropriate, but the user wishes to control the speaker system centrally.

FR-20

19" remote control unit can be controlled via conventional external buttons or switches.



Description

The FR-20 can be controlled via conventional external buttons or switches (e.g. Jung, Vitra, etc.) or switching contacts (e.g. media control system). Buttons and switches may come in the form of a wall installation module or an individually manufactured control panel, for example.

Presets stored in the connected Fohhn DSP devices are activated simultaneously and settings for different scenarios such as speech, music, empty room, full room, etc are loaded when the buttons/switches are pressed. You can also adjust the volume quickly and easily in 1 dB increments using the FR-20. A maximum of 31 Fohhn devices connected to the network can be activated simultaneously at the press of a single button.

Integration in a media control system

The FR-20 allows the convenient integration of all DSP-controlled Fohhn devices into media control systems (e.g. AMX, Crestron) by means of 8 switching contacts or RS-485 interface.

Integration in a EIB bus technology

One building, one concept, one system.

Fohhn systems equipped with a FR-20 distribution switch comply with the „European installation bus technology“ standard, including all operating comforts.

Applications

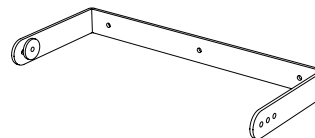
The FR-20 is ideal for training rooms, hotels, churches, halls, restaurants, clubs, bars and many other venues.

For simple, reliable remote operation of your audio system without having to install complex, expensive media control systems.

Accessories for AT-221w

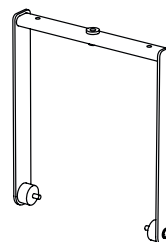
QAT-20

Horizontal bracket for AT-201 / AT-221w



VAT-20

Vertical bracket for AT-201 / AT-221w pivots and tilts



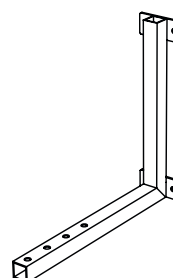
EB-08

Ring stud DIN 580, zinc, for safety M8 thread
for AT-201/221w/30/35/40/50/661w



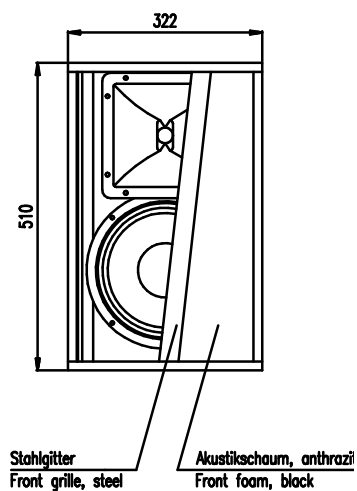
L-bracket

Wall bracket up to 40kg for wall mounting of AT-221w with
VAT-20

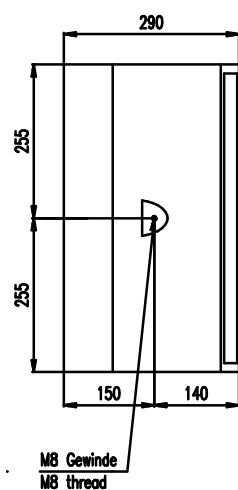


Views of AT-221w

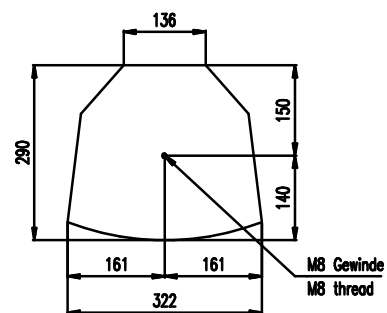
Front view



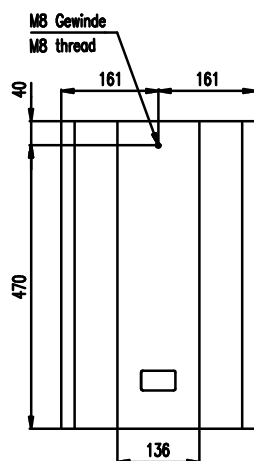
Side view



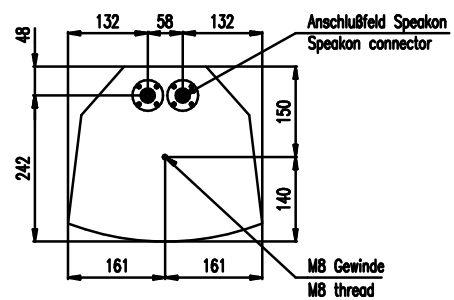
Top View



Rear view



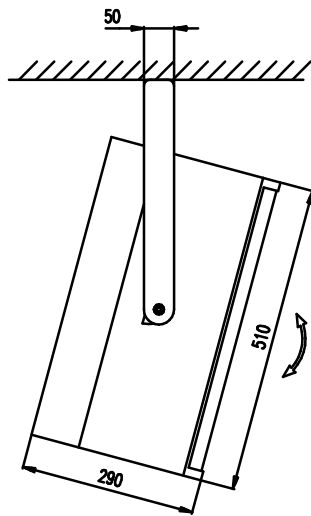
Bottom view



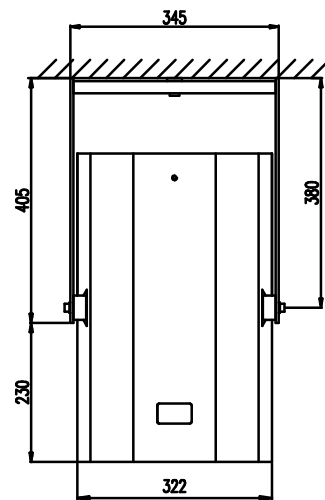
VAT-20

Traverse mount

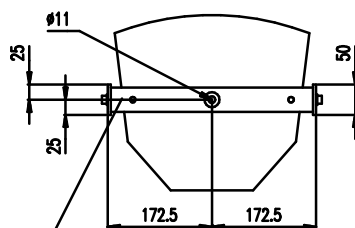
Side view



Rear view



Top view

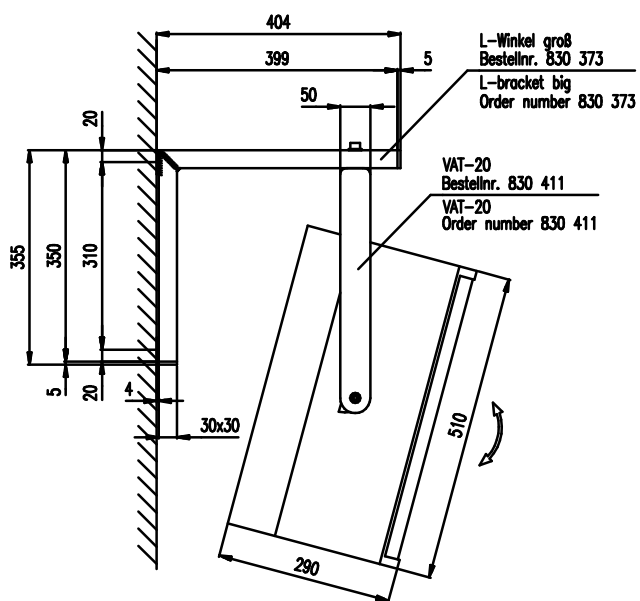


VAT-20 Bestellnr. 830 411
VAT-20 Order number 830 411

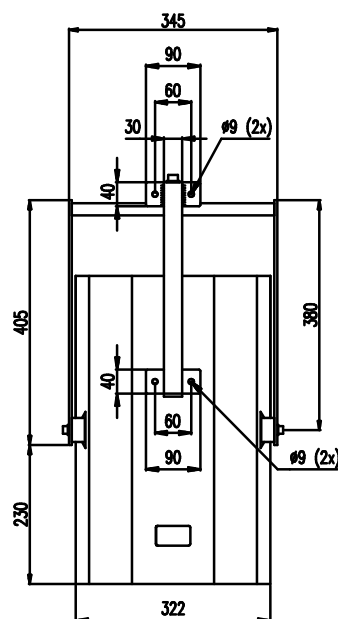
VAT - 20 + L-bracket big

Wall mount

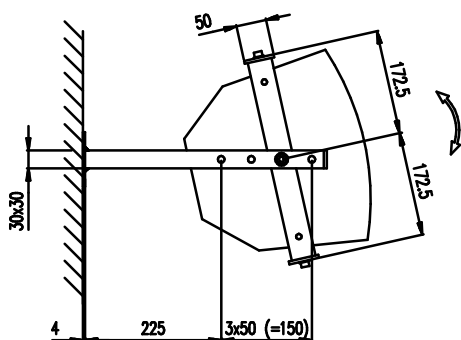
Side view



Rear view



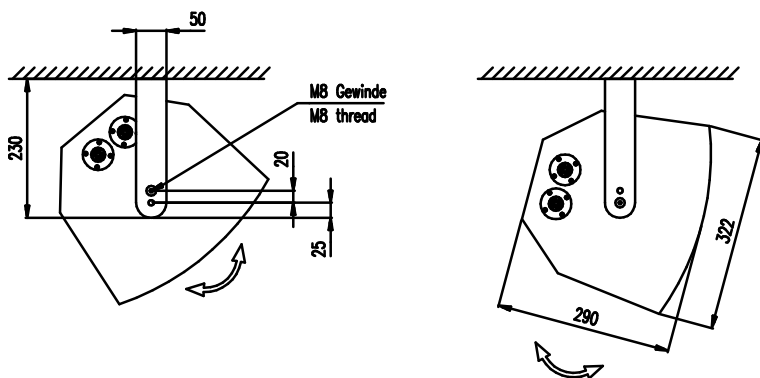
Top view



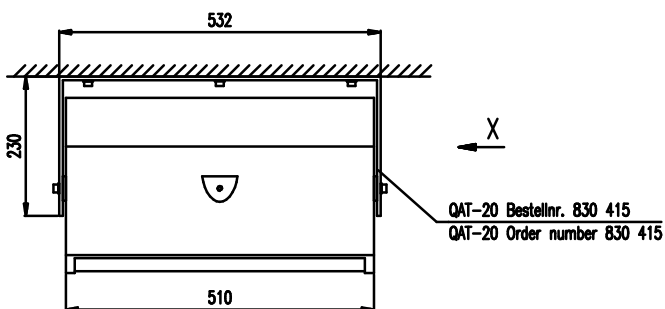
QAT-20

Horizontal mount

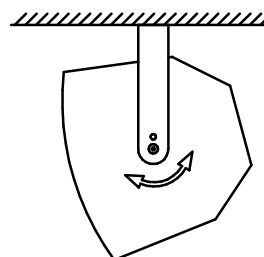
Side view



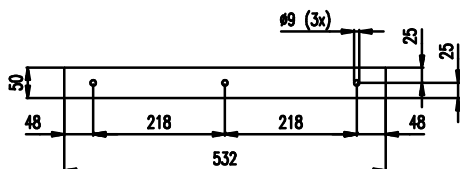
Front view



View X



Top view



Tender specifications

Weatherproof high-performance 2-way passive speaker

Weatherproof high-performance 2-way passive speaker, equipped with one 10"-sub-mid speaker and one 1"- HF-driver on a 90° revolvable CD horn in time-aligned speaker arrangement. The speaker is temporary able to work under 1200 W and generates acoustic pressure of maximal 129 dB. In a wide frequency range of 70 Hz to 20 kHz, the speaker has a defined dispersion of 90° x 60° or 60° x 40° (h x v). High-tensile and weatherproof VSM enclosure, strutted with internal steel brackets to maintain safety instructions. Weatherproof polyurethane-coating with impregnated speaker membranes, available in black. Optional available in all RAL colours. For the protection of the speaker chassis and the electronics, the enclosure is equipped with a ball impact resistant, extremely sound-permeable front grille, which is made of powder-coated steel and equipped with a moisture- and dust repellent acoustic foam in enclosure colour. Five M8 thread applications in ground, back and upper side are integrated to the admission of ring studs and system brackets. The loudspeaker system is optionally available with 100V technology in different performance classes up to 240 W. Connections: 2x Neutrik NL4 Speakon connectors in bottom panel or watertight cable gland with 3m of wire. All contacts exist twice, to connect very easy and safe to the next speaker. Specific brackets to assemble the system on ceilings, walls and traverses are available. Simulation data CAAD for EASE are available.

electro-acoustical features

acoustic design	passive point source speaker system, 2-way, vented, weather resistant
components	10" / 1" on rotatable CD-horn, with self-resetting IPC-HF protection
power rating (nominal)	300 W
power rating (program)	600 W
power rating (peak)	1200 W
sensitivity	101 dB
maximum SPL	131 dB
frequency range	70 Hz – 20 kHz
nominal dispersion (h x v)	90° x 60° or 60° x 40°
nominal impedance	8 ohms

features

enclosure	Weatherproof VSM cabinet, reinforced with steel braces
protection grille	ball impact resistant metal, powder coating
rigging points	5x M8 thread
connections	2x Neutrik NL4 Speakon connectors in bottom panel or watertight cable gland with 3m of wire
frontal design	acoustic foam in enclosure colour
weather protection	scratch-proof polyurethane coating, VSM housing, speaker membranes
impregnated	
dimensions (W x H x D)	320 x 510 x 290 mm
weight	14,5 kg

optional features

integrated 100 V-transformer	60/30/15 W or 120/60/30 W or 240/120/60 W
optional colours	all RAL-colours

CAAD simulation data

EASE

Make
Type

Fohhn Audio AG
AT-221w

FOHNN.
SOUNDS PERFECT.
IS PERFECT.



■ GERMAN QUALITY
■ ENGINEERED AND MADE
■ BY FOHNN®

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