Data sheet

AT-09

WWW.FOHHN.COM

Arc-Series

Architectural Sound Design.

AT-09 loudspeaker

The well-designed Fohhn® AT-09 is essential for all applications requiring maximum acoustic efficiency and extremely compact speaker dimensions. Outstanding speech intelligibility combined with excellent dispersion characteristics make the AT-09 the ultimate all-rounder.

Description

The AT-09 is fitted with an exclusive 2x 6.5”/1” CD speaker in d´Apollito arrangement. The CD horn can be rotated 90°. A precision-made crossover with electronic high-frequency protection circuit and auto-subsonic shift filter is also integrated.
The rounded multiply birch wood housing is reinforced on the inside with steel brackets. 10 M6 threaded inserts guarantee safe speaker and bracket installation in accordance with all current regulations. The AT-09 can be used as a fullrange or mid-high system in combination with Fohhn subwoofer systems AS-20/ASP-20, AS-30/ASP-30 and AS-40.

Optional versions

Optional special weatherproof plastic coating.
Optional 100 volts version. All RAL colours

Applications

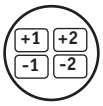
Conference and training rooms, hotels, clubs, theatres, churches, multimedia presentations, horizontal assembly under balconies and galleries, surround sound applications, airports.

Connections

Dual connector panel - Speakon and internal 4-way terminal connector with cable outlet. You can either use the Speakon socket or connect the stripped cable ends to the terminal and insert the cable through the outlet.

Speakon configuration

1- = In- LowZ (Common 100 Volt)
1+ = In+ LowZ od. 25% (100 Volt)
2- = Input 50% (100 Volt Option)
2+ = Input 100% (100 Volt Option)
Optional 100 volts version.



Technical specifications

electro-acoustical features	
acoustic design	passive loudspeaker, 2-way, symmetrical design, sealed box
components	2x 6,5” / 1” on rotatable CD-horn, with self-resetting Polyswitch-HF protection
power rating (nominal)[1]	200 W
power rating (program)[2]	400 W
power rating (peak)[3]	800 W
sensitivity[4]	97 dB
maximum SPL[3]	125 dB
frequency range[5]	75 Hz – 20 kHz
nominal dispersion (h x v)[6]	90° 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.

features	
enclosure	birch plywood designer cabinet, metal strengthened
protection grille	ball impact resistant metal, powder coated finish
rigging points	10x M6 thread
connections	1x Neutrik NL4 Speakon and 4-pole connector inside
standard colours	textured finish black or white
frontal design	acoustic foam, same colour as enclosure
dimensions (W x H x D)	195 x 510 x 230 mm
weight[7]	8,1 kg
optional features	
integrated 100 V-transformer	60/30/15 W or 120/60/30 W
optional colours	all RAL-colours
weather protection	scratch-proof plastic coating, impregnated speaker membranes
CAAD simulation data	ULYSSES, EASE

[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
[7] net weight without optional equipment
[*] Intelligent Protection Circuit. Voltage-controlled semiconductor circuit protecting the HF-driver against overload highly effective and with very short attack time.

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.

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.

1.1 Amplifier recommendations for the Arc-Series

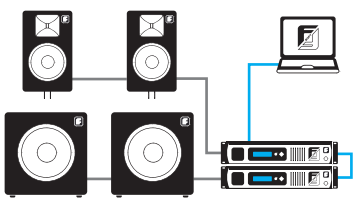
D-2.750

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

	Arc-Tops													Linea		Arc-Subs								
	AT-05	AT-06	AT-07	AT-08	AT-09	AT-10	AT-20	AT-21w	AT-30	AT-35	AT-40	AT-50	AT-66	AL-10-150		AS-10	ASP-10	AS-20	ASP-20	AS-30	ASP-30	AS-40	ASP-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	x	x
A-2.2100										x	x	x	x							x	x	x	x



2x Sub *passive* / 2x Top *passive*
2x DSP amplifier (D-Series or A-Series)

2. Standard amplifiers combined with Fohhn controllers

Standard amplifiers / 100V amplifiers / multichannel amplifiers combined with Fohhn FC-8 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-8 Fohhn DSP system controller for applications involving standard multichannel amplifiers, 100V amplifiers or monitored amplifiers according to EN 60849.
The FC-8 guarantees maximum sound quality, operational reliability and performance features that no other standard controller can offer in combination with our Fohhn speakers.

FC-8 DSP system controller

DIN **EN 60849** (VDE **0828**)

Bittner amplifiers

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-8 controller:

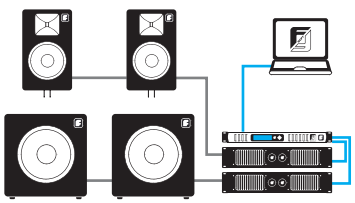
Perfect adaptation to all standard amplifiers
Automatic amplifier calibration function and integrated amplifier database for perfect adaptation.

Dual DSP technology
The FC-8 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.

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 sweeptone 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-8

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 (paralelled). 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-09

WAT-08
Wall bracket short, universal adjustment 360° for AT-05, AT-06, AT-07, AT-08, AT-09, AT-10, AT-20, AL-50/100/150

WAT-08k
Wall bracket, universal adjustment 360° for AT-05, AT-06, AT-07, AT-08, AT-09, AT-10, AT-20, AL-50/100/150

WAT-12
Wall bracket, universal adjustment 360° for AT-30/35/40/50 and heavy duty also for AT-08/09/10/20

QAT-09
Horizontal bracket for AT-08/09

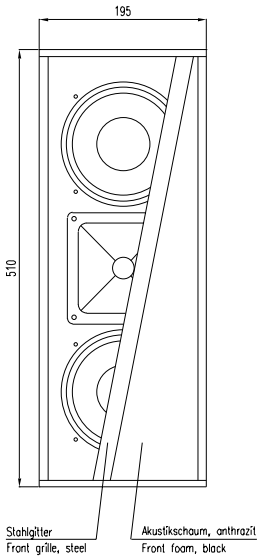
VAT-08
Special bracket for traverse mounting e.g. with Supaclamp (price without Clamp!) with M10 female thread, extendable with VL-89, no. 830 401/830 402.
Clamp+bolt: SuperClamp with threat bolt M10 for traverse mounting up to 15kg
VL-89: Extension for VAT-08 and VAT-09 l=180mm, M10 thread

VAT-09
bracket for ceiling mounting for AT-05/06/07/08/09 l=180mm M10 thread, extendable with VL-89, order no. 830 401 / 830 402)

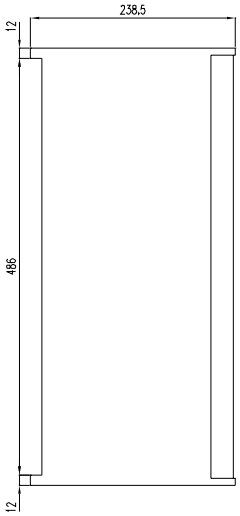
Ring stud
Ring stud DIN 580, zinc, for safety M6 thread for AT-06/07/08/09/10

Views of AT-08

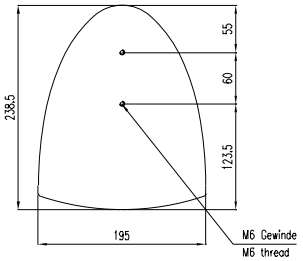
Front view



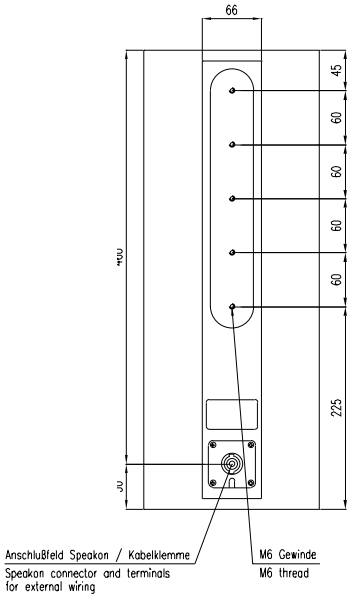
Side view



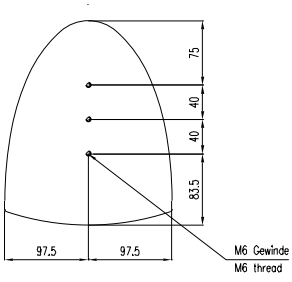
Top View



Rear view

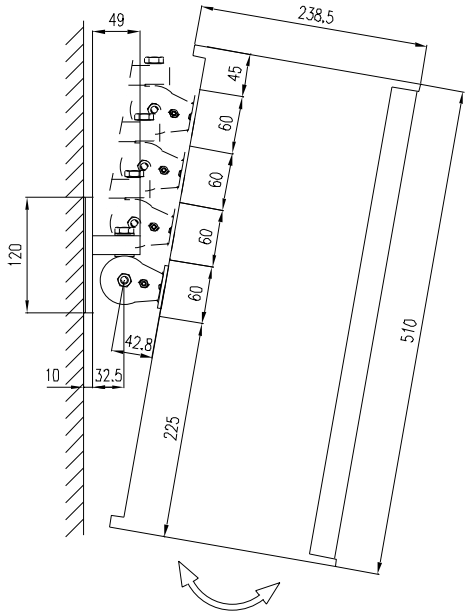


Bottom view

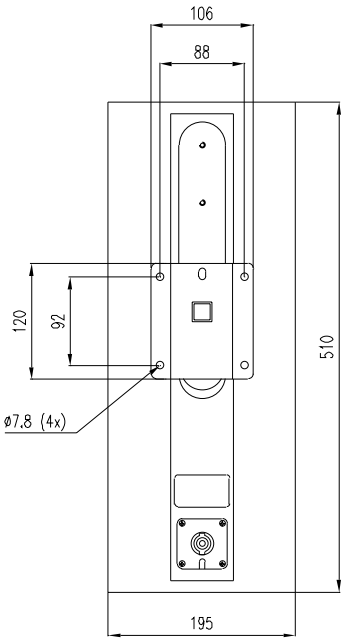


Wall mount

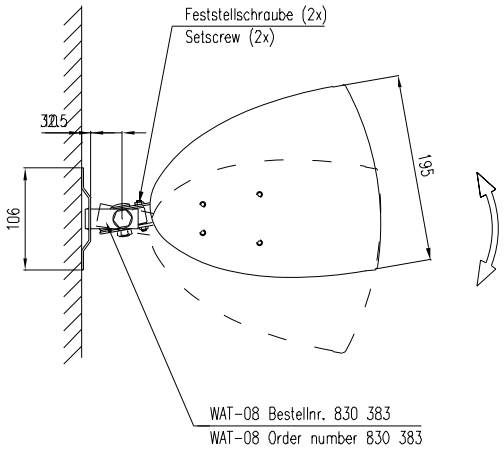
Side view



Rear view

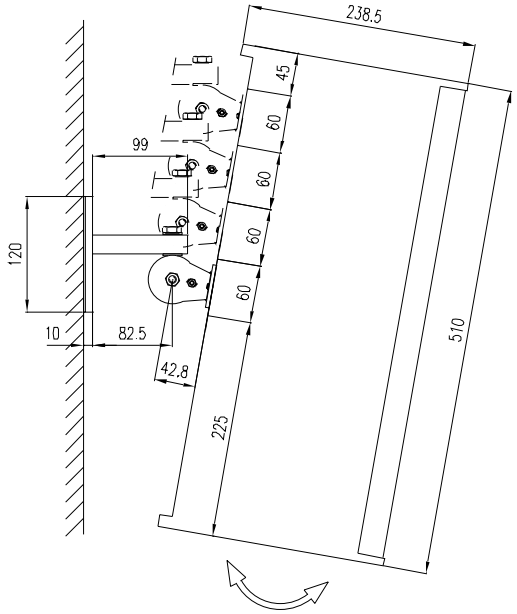


Top view

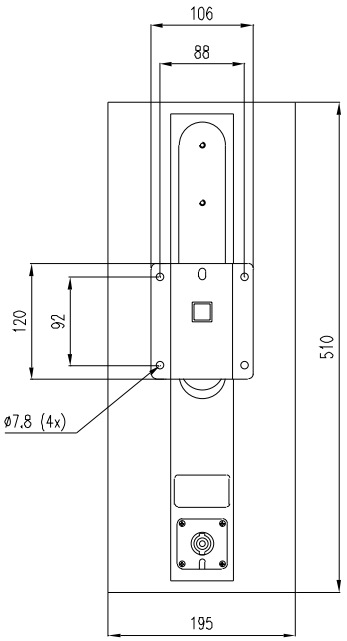


Wall mount

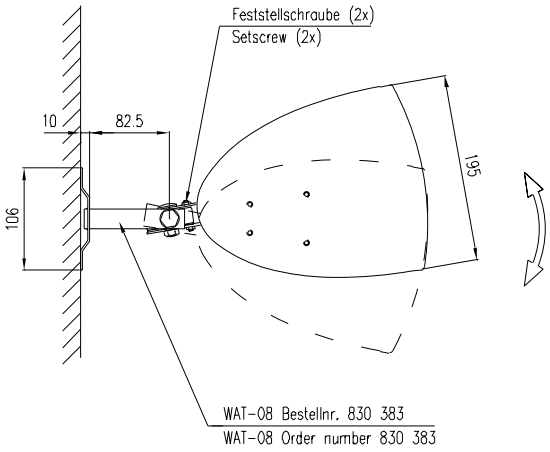
Side view



Rear view

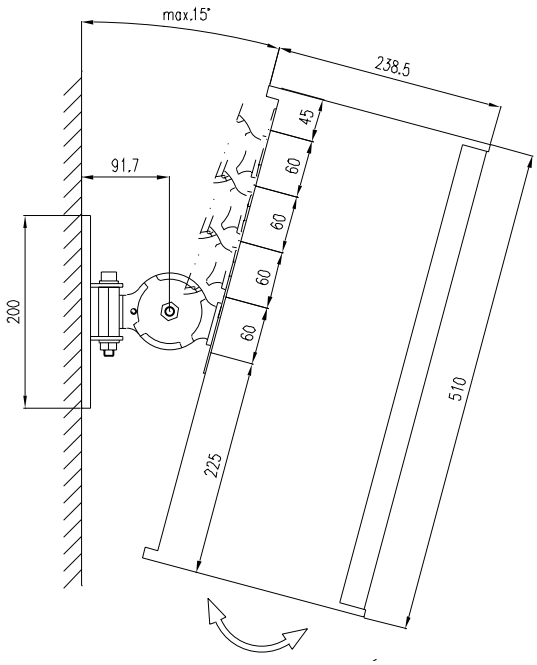


Top view

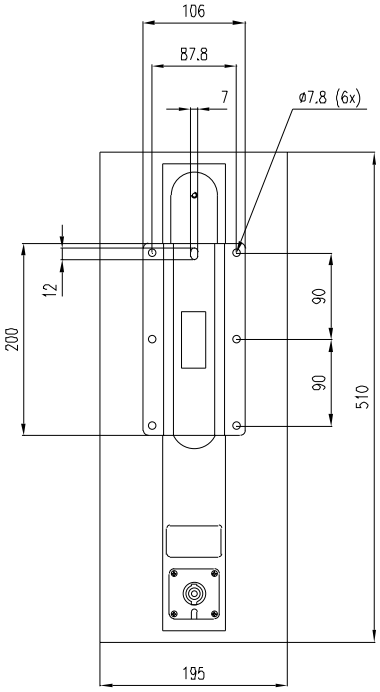


Wall mount

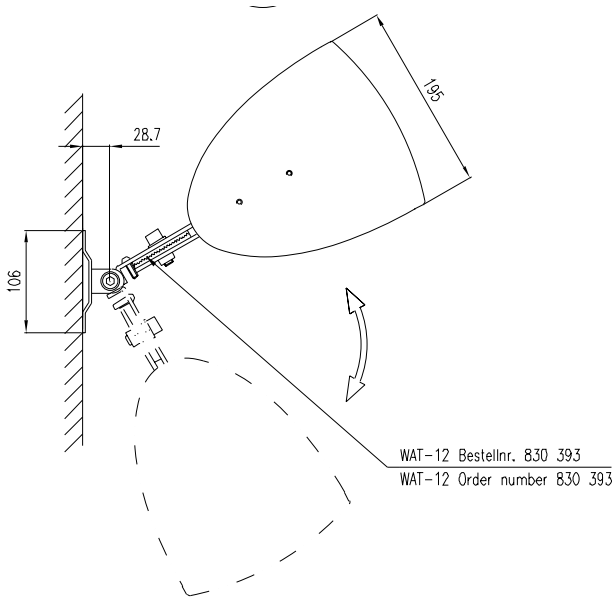
Side view



Rear view

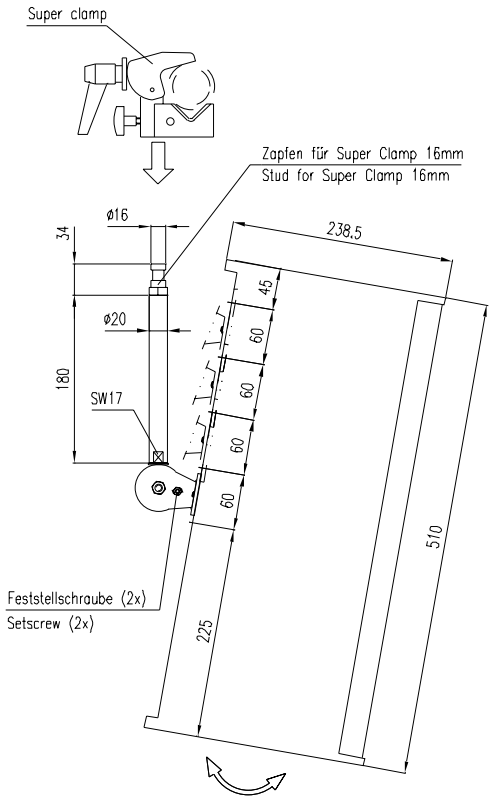


Top view

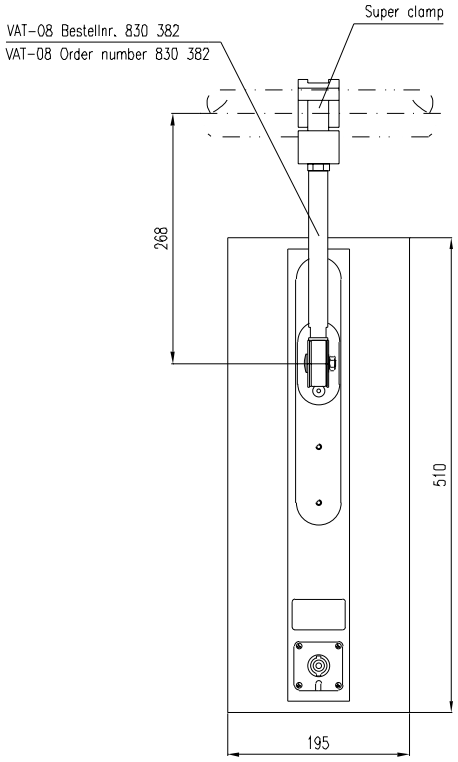


Traverse mount

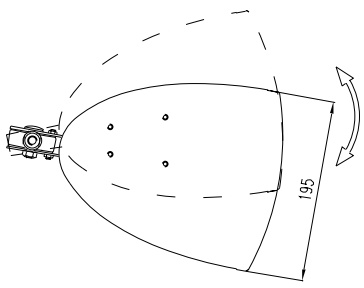
Side view



Rear view

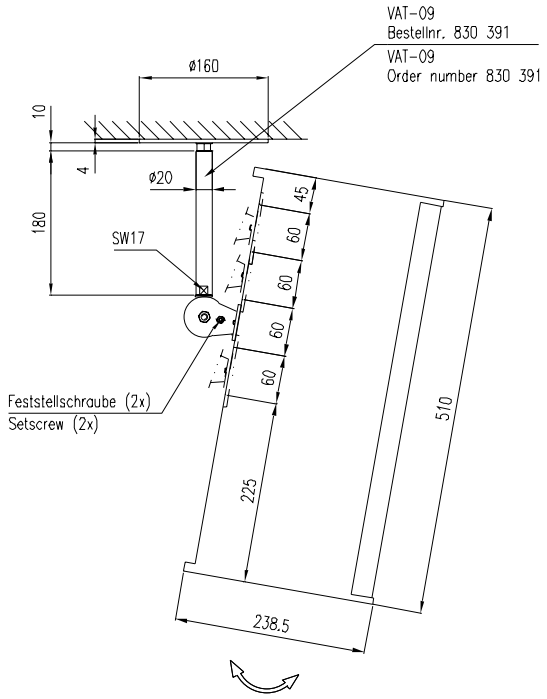


Top view

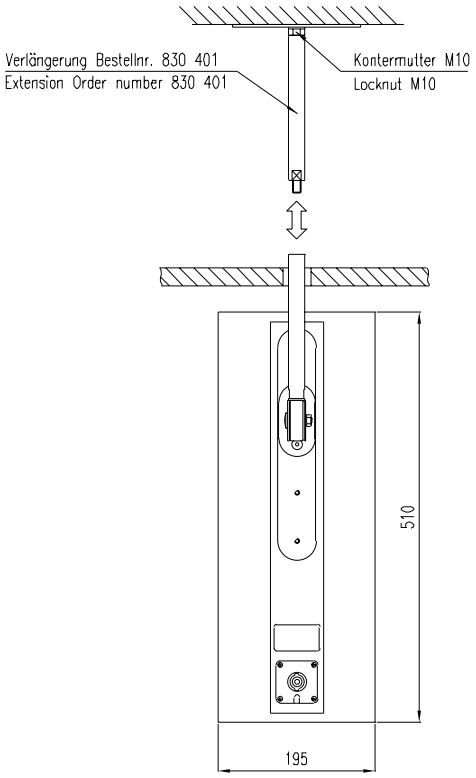


Ceiling mount

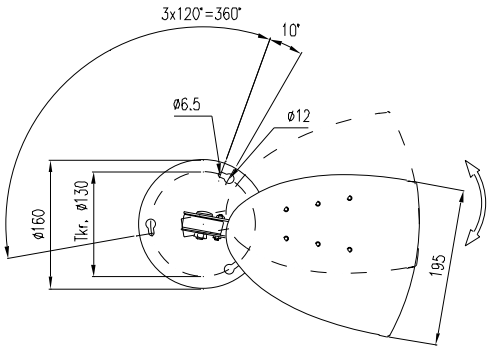
Side view



Rear view



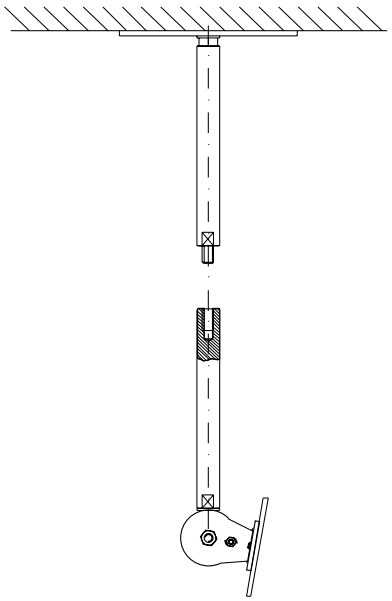
Top view

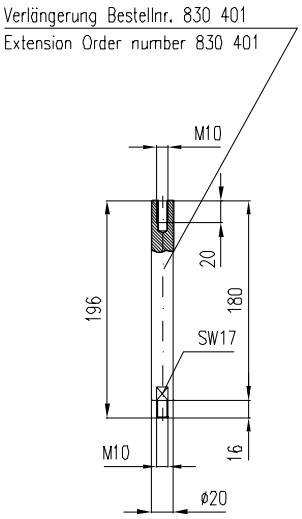


VL-89 Extension

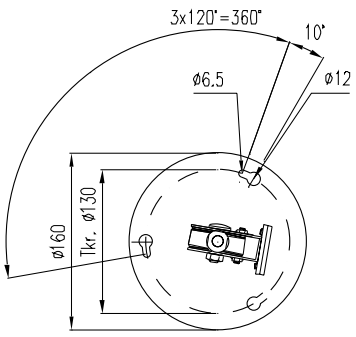
Ceiling mount

Seitenansicht / Side view



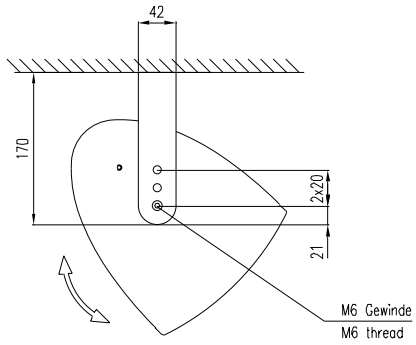


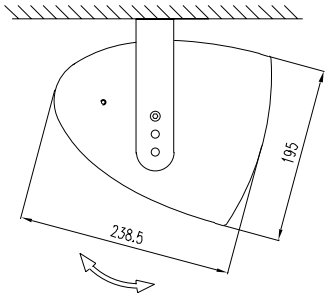
Top view



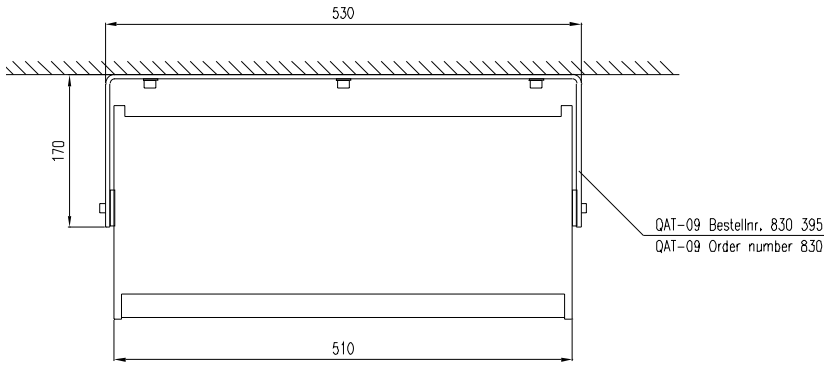
Horizontal mount

Side view

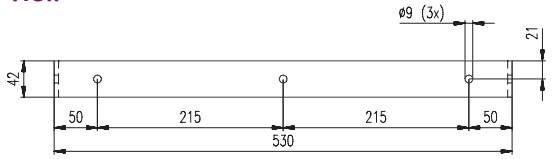




Front view



Top view



High-performance 2-way passive speaker in design enclosure

High-performance 2-way passive speaker in design enclosure, equipped with a 6,5“ sub-mid speaker and a 1“- HF-driver on a revolvable CD horn in time-aligned and symmetrical speaker arrangement. The speaker is temporary able to work under 800 W and generates acoustic pressure of maximal 125 dB. In a wide frequency range of 75 Hz to 20 kHz, the speaker has a defined dispersion of 90° x 40° (h x v). High-tensile multiplex birch wood enclosure with rounded sides, strutted with internal metal brackets to maintain safety instructions. Durable textured finish, available in black or white. Optional available in all RAL-colours or in weatherproof polyurethane-coating with impregnated speaker membranes. 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. Ten pieces M6 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 120 W. Connections: 1x Neutrik NL4 Speakon and internal fourfold terminal. Specific brackets to assemble the system on ceilings, walls and traverses are available. Simulation data CAAD for ULYSSES and EASE are available.

electro-acoustical features

acoustic design	passive loudspeaker, 2-way, symmetrical design, sealed box
components	2x 6,5“ / 1“ on rotatable CD-horn, with self-resetting Polyswitch-HF protection
power rating (nominal)	200 W
power rating (program)	400 W
power rating (peak)	800 W
sensitivity	97 dB
maximum SPL	125 dB
frequency range	75 Hz – 20 kHz
nominal dispersion (h x v)	90° x 40°
nominal impedance	8 ohms

features

enclosure	birch plywood designer cabinet, metal strengthened
protection grille	ball impact resistant metal, powder coating
rigging points	10x M6 thread
connections	1x Neutrik NL4 Speakon and 4-pole connector inside
standard colours	textured finish black or white
frontal design	acoustic foam, same colour as enclosure
dimensions (W x H x D)	195 x 510 x 230 mm
weight[7]	8,1 kg

optional features

integrated 100 V-transformer	60/30/15 W or 120/60/30 W
optional colours	all RAL-colours
weather protection	scratch-proof plastic coating, impregnated speaker membranes

CAAD simulation data	**ULYSSES, EASE**
Make	**Fohhn Audio AG**
Type	**AT-09**

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